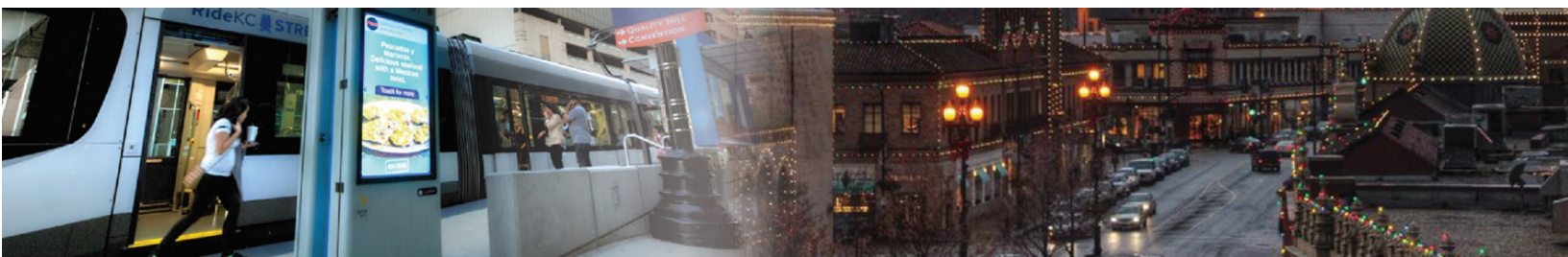




# 2018 Kansas City Regional ITS Architecture Comprehensive Architecture Document



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Submitted to

**Mid-America Regional Council**

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## **1 Introduction**

The Kansas City Regional ITS Architecture Update project revised the Kansas City Regional ITS Architecture, which was last updated in 2012. The updated Architecture is now based on the USDOT's Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT) Version 8.1. Intelligent Transportation Systems (ITS) has evolved since the Kansas City Regional ITS Architecture was previously published. Advances in communications, mobile electronics, and vehicle technology are changing the capabilities of infrastructure equipment and mobile platforms making possible the emergency of connected and automated vehicles.

Kansas City has evolved as well, deploying the early instances of the Smart City initiative. The RideKC Streetcar, smart street lights, expanding city wi-fi communications availability and smart kiosks are some of the Smart City Initiative deployments. This initiative is going to be expanded in the coming years and transportation will become an increasingly important part of the implementation.

Kansas City Scout anchors the freeway system in Kansas City and numerous city agencies manage the arterial traffic signal network across the diverse metropolitan landscape. The Kansas City Area Transportation Authority (KCATA) along with its partner transit authorities in the region continues to consolidate and optimize transit operations making it easier for riders to understand the system and making the services more convenient.

Intermodal freight is a vital part of the Kansas City economic environment and partnership between transportation management organizations and intermodal operations is important to its growth in the area using the transportation facilities that exist. The growth of employment centers such as those along the southern section of I-435 with health care and corporate tenants puts strain on the transportation system's capacity.

## **2 Architecture Scope**

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

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

### ***Description***

The Kansas City Area Regional ITS Architecture was created as a consensus view of what ITS projects have been implemented and what ITS projects will be implemented in the future. The architecture should be modified as plans and priorities change, ITS projects are implemented, and the ITS needs and services evolve in the area.

### ***Timeframe***

10 Years (2018-2028)

### ***Geographic Scope***

The area covered by the Kansas City Area Regional ITS Architecture is consistent with the transportation planning boundary of the Mid-America Regional Council, the metropolitan planning organization for the bistate Kansas City region. This boundary currently consists of the entirety of seven counties: Cass, Clay, Jackson and Platte counties in Missouri, and Johnson, Leavenworth, Miami, and Wyandotte counties in Kansas.

### ***Service Scope***

Archived Data Management, Public Transportation, Traveler Information, Traffic Management, Commercial Vehicle Operations, Emergency Management, Maintenance and Construction Management

### **3 Architecture Needs**

The Architecture update took these new and evolving issues into account in the update of the Architecture. The project started with two workshops to gathering information from stakeholders regarding the most challenges in the region that needed to be addressed over the next 10 years. The first Stakeholder Workshop was held on September 11, 2017 to identify regional project priorities, needs and problem areas in preparation for the architecture update.

Attendees prioritized ITS focus areas in the following order of importance:

- Safety and Security
- KC Scout/Operation Green Light
- Connected Vehicles
- Smart Cities
- Transit
- Integrated Corridor Management
- Major Intermodal
- Other
- Ride Hailing

Attendees identified problem areas in the region as follows:

- Mobility
  - Mobility issues exist along many corridors and major interchanges.
  - Mobility issues regarding transit services exist along particular corridors such as I-35 and in Northland.
  - KC Scout expansion was highlighted on many corridors.
  - Job access for low income communities.
  - Large employment centers/corridors and Intermodal facilities are generating local mobility issues due to volume.
  - Event Management at Kansas City Speedway and Arrowhead Stadium areas.
  - Signal coordination along corridors and between jurisdictions.
- Safety
  - Safety issues exist along many corridors, interchanges, bottlenecks, and arterial intersections.
  - Limited data collection exists for bridge ice detection and road weather information for travelers.
  - Work zone safety for construction and maintenance activities.
  - Motorist assistance program expansion or response improvements needed.

- Enhanced Queue Warning and Pedestrian Safety innovations are needed.
- Environmental
  - Downtown KC, major interchanges, and corridors have particulate concerns.
  - Flood detection needed along some creeks with adjacent roadways
  - Ride-sharing and transit support,
- Other comments

Existing infrastructure needs to accommodate and support Smart Cities and ITS activities.

The second Stakeholder Workshop was held on December 4, 2017 to explore ITS project concepts and priorities. The stakeholder feedback resulted in the project ideas and priorities.

The stakeholder inputs provided a basis for further analysis and assessment of the deployment strategy as well as refinement of the architecture update. The workshops were followed by individual stakeholder reviews of the draft architecture update content.

The Kansas City Regional ITS Architecture defines ITS projects identifying stakeholders involved, systems or inventory elements, services provided, interfaces included, and recommended standards based on the interfaces recommended.

## **4 Architecture Content**

The Architecture content is provided in the collection of appendices that follow. The Architecture content is also available in additional detail through a hyperlinked user interface on the Kansas City Regional ITS Architecture website available from the MARC website.

- Appendix A - ITS Stakeholders Details
- Appendix B - ITS Inventory Details
- Appendix C - ITS Services Details
- Appendix D - Operational Concept Details
- Appendix E - Functional Requirements Details
- Appendix F - Interfaces Details
- Appendix G - ITS Standards Details
- Appendix H - Agreement Details

## Appendix A. ITS Stakeholders Details

Identifying stakeholders is an important task in ITS architecture development since effective ITS involves the integration of multiple stakeholders and their transportation systems. This section describes the stakeholders who either participated in the creation of the Kansas City Area Regional ITS Architecture or whom the participating stakeholders felt were needed to be included in the architecture. Some stakeholders have been grouped in order to better reflect mutual participation or involvement in transportation services and elements. Every stakeholder in this appendix is related to one or more of the transportation inventory elements described in chapter 5 either as an individual stakeholder or as a member of a stakeholder group.

**Table 1 – ITS Stakeholders Details**

Stakeholder Name	Stakeholder Description
Airborne Emergency Response Services	Life Flight Eagle and Life Net EMS are airborne medivac resources that serve the Kansas City area. Their services are an integral part of the emergency response organization in the region. Strategically located in the middle of the country LifeNet Air Medical Services operates five aircraft from four locations in Kansas, Missouri, Iowa and Nebraska. The service provides the safe and rapid transports by helicopter of critically ill and injured patients. LifeFlight Eagle is a non profit organization dedicated to serving the community by providing safe, quality air transport of critically ill and injured persons in a timely and cost effective manner. Physicians/hospitals, EMS agencies, law enforcement, fire and the 911 Dispatch Systems have access to LifeFlight Eagle's in-house communication center. The LifeFlight Eagle in house communication center alerts the closest appropriate helicopter to these requests.
Archive Data Users	Represents users of archive data for planning, research, analysis and operations.
City of Independence, MO	Independence is the fifth-largest city in the U.S. state of Missouri. It lies within Jackson County, of which it is the county seat. Independence is a satellite city of Kansas City, Missouri, and is part of the Kansas City metropolitan area. It has a population of approximately 117,000.
City of Kansas City, MO	Kansas City, Missouri is the largest city in the state of Missouri and is the anchor city of the Kansas City Metropolitan Area, the second largest metropolitan area in Missouri. The city encompasses over 300 square miles in parts of Jackson, Clay, Cass, and Platte counties. It has a population of approximately 482,000.
City of Lees Summit, MO	Lee's Summit is a city located within the counties of Jackson (primarily) and Cass in the U.S. state of Missouri. It has a population of approximately 96,000, making it the sixth-largest city in both the state and in the Kansas City Metropolitan Area.
City of Lenexa, KS	Lenexa is a city in Johnson County, Kansas and part of the Kansas City Metropolitan Area. It has a population of approximately 53,000. It is bordered by the cities of Shawnee to the north, Overland Park to the east, De Soto to the west and Olathe to the south.
City of Olathe, KS	Olathe is the second largest among the 21 communities in Johnson County, and the fourth largest city in the state. It is located 20 miles southwest of downtown Kansas City. It has a population of approximately 135,000.
City of Overland Park, KS	A suburb of the greater Kansas City metropolitan area, Overland Park was incorporated as a first-class city May 20, 1960 with a population of 28,085. Since then, the city has grown to more than 191,000 residents, making it the second most populous city in Kansas.
Communication System Providers	Communication System Providers represent providers of wireless and wireline communication services.



Stakeholder Name	Stakeholder Description
Connected Vehicle Stakeholder	Connected Vehicle technologies are evolving and are becoming part of the solution set for transportation in the future. With the connected vehicle applications not yet determined for implementation in the Kansas City region, connected vehicle services have been included in the architecture. The Connected Vehicle Stakeholder is a placeholder for any stakeholder who decides to pursue connected vehicle for deployment in the region. As the plans become more specific and stakeholders are identified to fill this role, the architecture will be updated to reflect those developments.
Counties and Cities	County-level and city-level agencies.
Credentials Service Provider	Credentials are required to communicate in a trustworthy and secure manner for devices in the connected vehicle environment. The Credentials Service Provider will manage, operate and maintain the credentials management system.
Customs Agencies	Domestic and foreign governmental agencies responsible for the regulation of trade, and the enforcement of customs and immigration laws. These agencies include U.S. Department of Homeland Security (DHS) and its counterparts in Canada and Mexico. DHS includes components like Customs and Border Protection (CBP), Immigration and Customs Enforcement (ICE), and Transportation Security Administration (TSA). Other agencies include secondary trade agencies (e.g., U.S. Food and Drug Administration, U.S. Department of Agriculture, other USDOT departments, etc.), and agencies from other trading nations. The systems they manage coordinate activities related to the border crossings. These systems support import/export cargo processing and enforcement operations at the border, including programs such as FAST, Automated Commercial Environment (ACE), Nexus (Canada), SENTRI (Mexico), and US-VISIT.
Event Sponsors/Facilities	This is a collection of stakeholders representing Event Sponsors and Facilities such as the Kansas City Speedway, Kansas City Sports Complex, and entertainment and convention facilities.
Foreign Trade Zone Facilities	Kansas City was a pioneer in the setting of distributed foreign trade zones (FTZ), which conveys several operational advantages in managing freight distribution, particularly when foreign cargo is involved. Each FTZ is not a unique real estate asset at a single location, but a set of sites (sub-zones), each enabling to exploit a specific locational advantage such as an airport, intermodal rail yard, or highway interchange. A total of 14 FTZ sites accounting for 10,000 acres of land are available.
Freight and Intermodal Companies	Freight and Intermodal Companies represents the freight and intermodal shipping industry in the Kansas City area who own and operate businesses using freight containers, intermodal chassis or trailers and provide information to support safe, secure and efficient freight operations.
Independence Transit Authority	Operates and manages the City of Independence Transit System (IndeBus).
Intermodal Facilities	Intermodal Facilities handle the movement of freight between roadway freight transportation and air, rail, and/or water shipping modes. The facilities normally handle containerized freight and include electronic gate control for entrance and exit from the facility, automated guidance of vehicles within the facility, alerting appropriate parties of container arrivals and departures, and inventory and location of temporarily stored containers.
Johnson County Transit	Johnson County Transit (JCT) operates public transit service in Johnson County, KS. JCT services include: Standard Express: Operating between points in Johnson County, KS, downtown Kansas City, Missouri, and Crown Center. K10 Commuter: Operating express service between Johnson County, KS and Douglas County, KS Local Link: Service which operates within a designated service area in Johnson County, KS The JO-Special Edition: This is an affordable curb-to-curb transportation service for elderly, disabled, or low income Johnson County residents that live within the service area.

Stakeholder Name	Stakeholder Description
Kansas Bureau of Investigation (KBI)	KBI (Kansas Bureau of Investigation) provides professional investigative and laboratory services to criminal justice agencies and collects and disseminates criminal justice information to public and private agencies for the purpose of promoting public safety and the prevention of crime in Kansas.
Kansas City Health and Social Services	This stakeholder group includes organizations that provide health and social services in the Kansas City area.
Kansas City Health Care Organizations	This stakeholder includes organizations that provide health care in the Kansas City area as well as organizations that oversee health care at a government level. It includes hospitals, urgent care providers, and medical facilities across the region. Government organizations include departments of health in Cass County, City of Independence, City of Kansas City MO, Clay County, Jackson County, Johnson County KS, Johnson County MO, Leavenworth, Miami County, Platte County, Ray County, and Unified Government of Wyandotte County and Kansas City KS.
Kansas City Power and Lighting	Kansas City Power and Lighting (KCP&L) is partner in the Kansas City Smart City initiative providing charging stations for electric vehicles.
Kansas City SmartPort	Kansas City SmartPort is a non-profit economic development organization that focuses on (1) improving the area's transportation industry by attracting businesses with significant transportation and logistics elements, and (2) making it cheaper, faster, more efficient, and secure for companies to move goods into, from, and through the Kansas City area.
Kansas City Speedway	The Kansas City Speedway includes a 1.5 mile tri-oval and a 2.37 mile road course on over 1,200 acres located in Wyandotte County Kansas near the interchange of I-435 and I-70. It has a parking capacity of over 35,000 vehicles and hosts NASCAR and other motorsports racing events.
Kansas City Sports Complex	The Kansas City Sports Complex, also known as the Truman Sports Complex, includes Arrowhead Stadium, home of the Kansas City Chiefs NFL football team and Kauffman Stadium, home of the Kansas City Royals Major League Baseball Team.
Kansas Department of Transportation (KDOT)	The Kansas Department of Transportation (KDOT). State-level agency responsible for the transportation system for Kansas.
Kansas Div of Emergency Management (KDEM)	Kansas Division of Emergency Management (KDEM) is a state-level agency that works to reduce loss of life and property and protect Kansans from all hazards by providing and coordinating resources, expertise, leadership and advocacy through a comprehensive, risk-based emergency management program of mitigation, preparedness, response and recovery.
Kansas Highway Patrol	The Kansas Highway Patrol (KHP) is a state-level agency responsible for incident and emergency management and enforcement of Kansas Interstate highways. 11 Troops serve east, central, and west regions throughout the state. Troop A serves the Kansas City region and provides Motorist Assist services in addition to traffic enforcement and criminal interdiction.
KC Streetcar Authority	The Kansas City Streetcar Authority (KCSA) is a not-for-profit organization formed for the purpose of managing, operating, and maintaining the streetcar once it is operational. In addition to overseeing streetcar operations, the KCSA supports system branding, marketing, public communication, and community engagement. While the KCSA is a separate entity, it works closely with the City of Kansas City, Missouri and the downtown Transportation Development District (TDD) to coordinate service development and long-term management of the streetcar. The day-to-day functions of the KCSA are managed by its staff with oversight from the Board of Directors. Streetcar operations use KCATA scheduling and radio systems.

Stakeholder Name	Stakeholder Description
KCATA	The Kansas City Area Transportation Authority (KCATA) is a bi-state agency created by a compact between the States of Missouri and Kansas, and approved by the United States Congress. The compact was authorized by legislation passed in both states in 1965. The compact gives the ATA responsibility for planning, construction, owning and operating passenger transportation systems and facilities within the seven-county Kansas City metropolitan area. The compact defines the ATA district as the counties of Cass, Clay, Jackson, and Platte in Missouri; and Johnson, Leavenworth, and Wyandotte in Kansas. The Authority's jurisdiction is limited to these seven counties. KCATA oversees the operations contracts of Johnson County Transit, Unified Government Transit and Indebus. The ATA operates RideKC bus service, the Metro Area Express (MAX) Bus Rapid Transit service, Flex demand-response routes, RideKC Freedom paratransit service for the elderly and persons with disabilities, and RideKC vanpool service. KCATA oversees the operations contracts for Johnson County Transit and Unified Government Transit.
KDOT / MoDOT	The Kansas and Missouri Departments of Transportation. These agencies are responsible for the operation of the Kansas City Scout Operations Center in the bi-state Kansas City metropolitan area.
KDOT District/ Area/Sub-area Offices	KDOT District/ Area/Sub-area Offices support central office performing district/area/sub-area specific emergency and incident management, traffic management and maintenance and construction activities.
KDOT Division of Public Affairs	The KDOT Bureau of Transportation Information, a bureau within the KDOT Division of Public Affairs, manages statewide traveler information systems.
KTA	KTA (Kansas Turnpike Authority) is responsible for the administration and collection of tolls, enforcement and maintenance along the Kansas Turnpike.
Life Flight Eagle	LifeFlight Eagle is a non profit organization dedicated to serving the community by providing safe, quality air transport of critically ill and injured persons in a timely and cost effective manner. Physicians/hospitals, EMS agencies, law enforcement, fire and the 911 Dispatch Systems have access to LifeFlight Eagle's in-house communication center. The LifeFlight Eagle in house communication center alerts the closest appropriate helicopter to these requests.
Life Net in the Heartland	Strategically located in the middle of the country LifeNet Air Medical Services operates five aircraft from four locations in Kansas, Missouri, Iowa and Nebraska. The service provides the safe and rapid transports by helicopter of critically ill and injured patients.
LinkforCare	Link for Care is a community service for caregivers, individuals needing personal assistance, healthcare professionals, social workers, discharge planners, and mental health professionals in Kansas City. Link for Care can be accessed at <a href="http://www.LinkforCare.org">www.LinkforCare.org</a> . Link for Care is maintained and managed by the Central Plains Geriatric Staff at the University of Kansas Medical Center, Landon Center on Aging, and was developed in part with funding from the Department of Veteran's Affairs and the Department of Transportation. MARC is also a partner.
Major KC Shipping and Industrial Firms	Kansas City is home to major shipping and industrial firms such as Amazon, FedEx, UPS, Home Depot, Foot Locker, Target, and Walmart.

Stakeholder Name	Stakeholder Description
MARC	The Mid-America Regional Council (MARC) serves as the association of city and county governments and the metropolitan planning organization (MPO) for the bi-state Kansas City region. MARC's Board of Directors consists of 33 locally elected leaders representing the nine counties and 120 cities in the bi-state metropolitan Kansas City region. As the designated MPO for the Kansas City region, MARC is responsible for the development of plans and programs that provide for the development and integrated management and operation of transportation systems, and facilities that will function as a multimodal transportation system for a geographic area that is projected to be urbanized within the next 20 years. For purposes of metropolitan transportation planning, MARC's current jurisdiction consists of seven counties: Cass, Clay, Jackson and Platte counties in Missouri, and Johnson, Leavenworth, Wyandotte, and Miami counties in Kansas — encompassing a population of approximately 2.0 million people. MARC operates the Operation Green Light which is a cooperative effort to improve coordination of traffic signals and incident response on major routes in the Kansas City area.
Media	This stakeholder represents the information systems that provide traffic reports, travel conditions, and other transportation-related news services to the traveling public through radio, TV, and other media.
Missouri Department of Public Safety	The Department of Public Safety is comprised of eight different agencies (including two commissions) and six separate programs (including the Highway Patrol) all committed to ensuring the safety of the citizens of Missouri. Additionally, The Office of the Director administers the Homeland Security Program and state and federal funds in grants for juvenile justice, victims' assistance, law enforcement and narcotics control.
Missouri State Emergency Mgmt Agency	The State Emergency Management Agency's mission is to protect the lives and property of all Missourians when major disasters threaten public safety in any city, county or region of Missouri. SEMA responds to two types of disasters - natural and those caused by man. Natural disasters are major snow and/or ice storms, floods, tornadoes and/or severe weather, as well as a potential major earthquake along Missouri's New Madrid Fault. Man-made disasters, also known as technological emergencies, may include hazardous material incidents, nuclear power plant accidents and other radiological hazards. SEMA is also responsible for developing a State Emergency Operations Plan which coordinates the actions of Missouri state government departments and agencies in the event of any emergency requiring the use of state resources and personnel. SEMA also serves as the statewide coordinator for activities associated with the National Flood Insurance Program.
MoDOT	The Missouri Department of Transportation (MODOT). State-level agency responsible for the transportation system for Missouri.
NOAA	The National Oceanic and Atmospheric Administration (NOAA) who runs the National Weather Service (NWS).
Object Registration Service Providers	Object Registration Service Providers provide registration and lookup services necessary to allow objects to locate (for communications purposes) other objects operating within the Connected Vehicle Environment.
Parking Facility Operators	This represent operators of parking facilities in the Kansas City Metropolitan Area.
Private Information Service Providers	Private entities that collect, process, store, and disseminate transportation information to system operators and the traveling public.
Private Mayday Service Providers	Entities that allow users to signal a need for emergency assistance to a monitored response center.
Private Paratransit Providers	Private transit systems that provide service to elderly and handicapped riders.

Stakeholder Name	Stakeholder Description
Private Trucking Companies	A stakeholder group representing trucking companies that operate commercial vehicles.
Railroad Companies	This stakeholder represents the various railroad operators in the Kansas City area. Among these operators are the Union Pacific (UPRR), Burlington Northern Sante Fe (BNSF), Kansas City Southern (KCS), Norfolk Southern (NS), and Kansas City Terminal Railroad (KCT).
Regional Transit Operators	The Regional Transit Operators stakeholder group represents the three major providers of transit in the Kansas City Area.
Ride Hailing Services	Ride Hailing Services provide ride matching or ridesharing service, including those provided by companies such as Uber and Lyft. These are private sector services.
System Terminators	Terminators define the boundary of an architecture. The National ITS Architecture terminators represent the people, systems, and general environment that interface to ITS. The interfaces between terminators and the subsystems and processes within the National ITS Architecture are defined, but no functional requirements are allocated to terminators.
Travelers	Stakeholder group representing travelers or users of the transportation system.
Unified Government Public Works	Unified Government Of Kansas City, Kansas and Wyandotte County is a unique consolidated city-county government. Unified Government Public Works provides the administration, planning, and engineering for the City's infrastructure. This includes design, maintenance and installation of streets and right-of-ways, bridges and roads, and all traffic control devices. Kansas City, Kansas is the third largest city in the state of Kansas and is the county seat of Wyandotte County.
Unified Government Transit	Unified Government Transit (UGT) operates public transit service in Wyandotte County, KS. Services offered include fixed route operations, dial-a-ride, and aging/senior transportation services.

## Appendix B. ITS Inventory Details

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

This section describes every surface transportation inventory element for the region. A transportation element can be either a center, vehicle, traveler or field equipment. Each transportation element listed below has one or more stakeholders associated with it from Chapter 3. In order to reduce the complexity of the architecture, some transportation elements with like functionality have been grouped together. Each transportation inventory element is mapped to at least one ARC-IT physical object.

**Table 2 – ITS Inventory Details**

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Airborne Emergency Response Service	Airborne Emergency Response Services is a collection of medivac services providing aerial transport of critically injured from incident locations.	Airborne Emergency Response Services	Existing	Transportation	Emergency Management Center
Archived Data User Systems	Archived Data User System represents the systems users employ to access archived data. The general interface provided allows a broad range of users (e.g. planners, researchers, analysts, operators) and their systems (e.g. databases, models, analytical tools, user interface devices) to acquire data and analyses results from the archive.	Archive Data Users	Existing	Transportation	Archived Data User System
Basic Commercial Vehicle	Basic Commercial Vehicle represents the commercial vehicle that hosts the on-board equipment that provides ITS capabilities. It includes the heavy vehicle databus and all other interface points between on-board systems and the rest of the commercial vehicle. This vehicle is used to transport goods, is operated by a professional driver and typically administered as part of a larger fleet. Commercial Vehicle classification applies to all goods transport vehicles ranging from small panel vans used in local pick-up and delivery services to large, multi-axle tractor-trailer rigs operating on long haul routes.	Private Trucking Companies	Existing	Transportation	Basic Commercial Vehicle

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Basic Vehicle	<p>Basic Vehicle represents a complete operating vehicle. It includes the vehicle platform that interfaces with and hosts ITS electronics and all of the driver convenience and entertainment systems, and other non-ITS electronics on-board the vehicle. Interfaces represent both internal on-board interfaces between ITS equipment and other vehicle systems and other passive and active external interfaces or views of the vehicle that support vehicle/traffic monitoring and management. External interfaces may also represent equipment that is carried into the vehicle (e.g., a smartphone that is brought into the vehicle). Internal interfaces are often implemented through a vehicle databus, which is also included in this object. Note that 'Vehicle' represents the general functions and interfaces that are associated with personal automobiles as well as commercial vehicles, emergency vehicles, transit vehicles, and other specialized vehicles.</p>	Travelers	Existing	Transportation	Basic Vehicle

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Border Inspection Administration	Border Inspection Administration represents back-office systems and databases run by domestic and foreign governmental agencies responsible for the regulation of trade, and the enforcement of customs and immigration laws. These agencies include U.S. Department of Homeland Security (DHS) and its counterparts in Canada and Mexico. DHS includes components like Customs and Border Protection (CBP), Immigration and Customs Enforcement (ICE), and Transportation Security Administration (TSA). Other agencies include secondary trade agencies (e.g., U.S. Food and Drug Administration, U.S. Department of Agriculture, other USDOT departments, etc.), and agencies from other trading nations. The systems they manage coordinate activities related to the border crossings. These systems support import/export cargo processing and enforcement operations at the border, including programs such as FAST, Automated Commercial Environment (ACE), Nexus (Canada), SENTRI (Mexico), and US-VISIT.	Customs Agencies	Planned	Transportation	Border Inspection Administration Center
Border Inspection Systems	'Border Inspection System' represents data systems used at the border or, in Kansas City, a foreign trade zone for the inspection of people or goods. It supports immigration, customs (trade), agricultural, and FDA inspections as applicable. It includes sensors and surveillance systems to identify and classify drivers and their cargo as they approach a border crossing, the systems used to interface with the back-office administration systems and provide information on status of the crossing or events.	Customs Agencies	Planned	Transportation	Border Inspection System



Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Commercial Vehicle Driver	The 'Commercial Vehicle Driver' represents the people that operate vehicles transporting goods, including both long haul trucks and local pick-up and delivery vans. This physical object is complementary to the Driver physical object in that it represents those interactions which are unique to Commercial Vehicle Operations. Information flowing from the Commercial Vehicle Driver includes those system inputs specific to Commercial Vehicle Operations.	Private Trucking Companies	Existing	Transportation	Commercial Vehicle Driver
Commercial Vehicle OBE	The Commercial Vehicle On-Board Equipment (OBE) resides in a commercial vehicle and provides the sensory, processing, storage, and communications functions necessary to support safe and efficient commercial vehicle operations. It provides two-way communications between the commercial vehicle drivers, their fleet managers, attached freight equipment, and roadside officials. A separate 'Vehicle OBE' physical object supports vehicle safety and driver information capabilities that apply to all vehicles, including commercial vehicles. The Commercial Vehicle OBE supplements these general ITS capabilities with capabilities that are specific to commercial vehicles.	Freight and Intermodal Companies	Planned	Transportation	Commercial Vehicle OBE
Conditions Acquisition and Reporting System	A system to collect and disseminate road condition information.	MoDOT	Existing	Transportation	Transportation Information Center

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Connected Vehicle Roadside Equipment	'Connected Vehicle Roadside Equipment' (CV RSE) represents the Connected Vehicle roadside devices that are used to send messages to, and receive messages from, nearby vehicles using Dedicated Short Range Communications (DSRC) or other alternative wireless communications technologies. Communications with adjacent field equipment and back office centers that monitor and control the RSE are also supported. This device operates from a fixed position and may be permanently deployed or a portable device that is located temporarily in the vicinity of a traffic incident, road construction, or a special event. It includes a processor, data storage, and communications capabilities that support secure communications with passing vehicles, other field equipment, and centers.	Connected Vehicle Stakeholder	Future	Transportation	Connected Vehicle Roadside Equipment
County and City 911 Dispatch Centers	This element represents local dispatch centers that receive 911 calls, and dispatch the appropriate sheriff, police, fire and EMS within the jurisdiction area via communication system. Dispatch centers exchanges mutual aid and incident information with other local agencies as necessary. Some centers may be equipped with CAD and AVL technologies.	Counties and Cities	Existing	Transportation	Center, Emergency Management Center
County and City Emergency Vehicles	Emergency vehicles include ITS equipment that provides the processing, sensory, storage, and communications functions necessary to support safe and efficient emergency response at the county and city level.	Counties and Cities	Existing	Transportation	Emergency Vehicle OBE
County and City Fire and EMS Departments	This element represents local fire and EMS departments throughout the region.	Counties and Cities	Existing	Transportation	Center, Emergency Management Center

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
County and City Maintenance and Construction Vehicles	A collection of maintenance vehicles that include ITS equipment that provides the processing, sensory, storage, and communications functions necessary to support road maintenance and construction. Vehicles may be equipped or plan to be equipped with ITS components, such as AVL, environmental sensors and vehicle monitoring sensors.	Counties and Cities	Existing	Transportation	Maint and Constr Vehicle OBE
County and City Public Works Offices	This element represents county and city Public Works departments that perform the maintenance and construction activity including planned activities (road maintenance, snow plowing, etc.) and unplanned incidents within the jurisdiction area, and communicate maintenance and construction schedules and other related information to other agencies.	Counties and Cities	Existing	Transportation	Center, Maint and Constr Management Center, Traffic Management Center
County and City Traffic Signal Systems	This element represents traffic signal systems and other roadside equipment used for traffic control and management, and communication of traffic related information with other agencies. Systems may include loop detectors, video detection, and other signal operation equipment used for the control and management of traffic at intersections. Signal systems may be interconnected and/or coordinated with each other. Emergency vehicle signal preemption may be existing or planned at city and/or county levels.	Counties and Cities	Existing	Transportation	ITS Roadway Equipment
County and City Websites	Websites operated at the county and city level to disseminate work zone, road closures and restrictions and detours information to the public.	Counties and Cities	Existing	Transportation	Transportation Information Center
County Sheriff and City Police Departments	This element represents local law enforcement agencies throughout the region.	Counties and Cities	Existing	Transportation	Center, Emergency Management Center, Enforcement Center

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Credentials Management System	The Credentials Management System is a high-level aggregate representation of the interconnected systems that enable trusted communications between mobile devices and other mobile devices, roadside devices, and centers and protect data they handle from unauthorized access. Representing the different interconnected systems that make up a Public Key Infrastructure (PKI), this physical object represents an end user view of the credentials management system with focus on the exchanges between the CCMS and user devices that support the secure distribution, use, and revocation of trust credentials.	Credentials Service Provider	Future	Transportation	Cooperative ITS Credentials Management System
Data Distribution System	The 'Data Distribution System' collects, processes, and distributes ITS data, connecting data producers with data consumers and facilitating data exchange, such as through a data portal.	Connected Vehicle Stakeholder	Planned	Communication	Data Distribution System
Driver	The 'Driver' represents the person that operates a vehicle on the roadway. Included are operators of private, transit, commercial, and emergency vehicles where the interactions are not particular to the type of vehicle (e.g., interactions supporting vehicle safety applications). The Driver originates driver requests and receives driver information that reflects the interactions which might be useful to all drivers, regardless of vehicle classification. Information and interactions which are unique to drivers of a specific vehicle type (e.g., fleet interactions with transit, commercial, or emergency vehicle drivers) are covered by separate objects.	Travelers	Existing	Transportation	Driver
Emergency Notification and Evacuation System	This is a "reverse 911" system that allows public safety to selectively notify residents about relevant emergencies.	City of Overland Park, KS	Existing	Transportation	Emergency Telecommunications System

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Emergency Response Vehicles (Missouri)	Each vehicle is equipped with a four-way wrench and jack for changing tires, jumper cables, gasoline cans, message boards, push bumpers, and numerous other tools.	MoDOT	Existing	Transportation	Emergency Vehicle OBE
Event Promoters	Event Promoters represents Special Event Sponsors that have knowledge of events that may impact travel on roadways or other modal means. Examples of special event sponsors include sporting events, conventions, motorcades/parades, and public/political events. These promoters interface to the ITS to provide event information such as date, time, estimated duration, location, and any other information pertinent to traffic movement in the surrounding area.	Event Sponsors/Facilities	Existing	Transportation	Event Promoter System
Fleet-Freight Manager	Fleet-Freight Manager represents the people that are responsible for the dispatching and management of Commercial Vehicle fleets (e.g. traditional Fleet Managers) and Freight Equipment assets. It may be many people in a large tracking organization or a single person (owner driver) in the case of single vehicle fleets. The Fleet-Freight Manager provides instructions and coordination for Commercial Vehicles and Freight Equipment and receives the status of the vehicles and freight equipment in the fleet that they manage. The Fleet-Freight Manager is expected to interface with ITS on a regular basis to enhance productivity. Many interfaces with the system are also provided through normal user interfaces.	Freight and Intermodal Companies	Existing	Transportation	Fleet-Freight Manager

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Flood Warning System-StormWatch	Stormwatch.com presents the user with data collected from a flood warning system consisting of remote weather stations located throughout the Kansas City Metropolitan area. The majority of the stations report real-time rainfall. Some stations also report stream levels, temperature, relative humidity, wind, pavement temperature, pavement state, and other weather data. All data is collected and stored into a database. The earliest stations were installed in the 1980s and information from those sites can be queried directly from this website. This is a joint venture between Overland Park Public Works Department and Johnson County Stormwater Management.	City of Overland Park, KS	Existing	Transportation	Surface Transportation Weather Service, Transportation Information Center
Foreign Trade Zone Facilities - Inspection Center	The Foreign trade zones (FTZ) Inspection Center represents back-office systems and databases run by domestic and foreign governmental agencies responsible for the regulation of trade, and the enforcement of customs and immigration laws in the Kansas City Area. FTZs manage freight distribution, particularly when foreign cargo is involved. Each FTZ is not a unique real estate asset at a single location, but a set of sites (sub-zones), each enabling to exploit a specific locational advantage such as an airport, intermodal rail yard, or highway interchange.	Foreign Trade Zone Facilities	Planned	Transportation	Border Inspection Administration Center
Foreign Trade Zone Facilities - Inspection System	The Foreign trade zones (FTZ) Inspection System represents data systems used at the FTZ for the inspection of goods. It supports customs (trade), agricultural, and FDA inspections as applicable. It includes sensors and surveillance systems to identify and classify drivers and their cargo as they approach a FTZ, the systems used to interface with the back-office administration systems and provide information on status of the crossing or events.	Foreign Trade Zone Facilities	Planned	Transportation	Border Inspection System

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Freight Equipment	Freight equipment represents a freight container, intermodal chassis or trailer and provides information to support safe, secure and efficient freight operations. It provides equipment safety data and status and can alert the appropriate systems of an incident, breach, or tamper event. It provides accurate position information to support in-transit visibility of freight equipment.	Freight and Intermodal Companies	Existing	Transportation	Freight Equipment
Health and Social Services	Health and Social Services Connectors provide support to connect people with health care and social services they need. These services are designed to be a community service for caregivers, individuals needing personal assistance, healthcare professionals, social workers, discharge planners, and mental health professionals. In Kansas City, an example of this service is Link for Care at <a href="http://www.LinkforCare.org">www.LinkforCare.org</a> . Link for Care is maintained and managed by the Central Plains Geriatric Staff at the University of Kansas Medical Center, Landon Center on Aging, and was developed in part with funding from the Department of Veteran's Affairs and the Department of Transportation. MARC is also a partner.	Kansas City Health and Social Services	Existing	Transportation	Transportation Information Center
IndeBus Operations Center	IndeBus is the transit system serving Independence MO.	City of Independence , MO	Existing	Transportation	Transit Management Center
IndeBus Transit Vehicles	Transit Vehicles of the IndeBus Transit System.	City of Independence , MO	Planned	Transportation	Transit Vehicle OBE

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Intermodal Freight Depot	Intermodal Freight Depot represents the terminal areas corresponding to modal change points. This includes interfaces between roadway freight transportation and air, rail, and/or water shipping modes. The basic unit of cargo handled by the Intermodal Terminal physical object is the container; less-than-container load handling is typically handled at a different facility (i.e., Freight Consolidation Station). The Intermodal Terminal can include electronic gate control for entrance and exit from the facility, automated guidance of vehicles within the facility, alerting appropriate parties of container arrivals and departures, and inventory and location of temporarily stored containers.	Intermodal Facilities	Existing	Transportation	Intermodal Terminal
Intermodal Freight Shipper	The Intermodal Freight Shipper provides the capability for commercial drivers and fleet-freight managers to receive real-time routing information and access databases containing vehicle and/or freight equipment locations as well as carrier, vehicle, freight equipment and driver information. The 'Fleet and Freight Management Center' also provides the capability for fleet managers to monitor the safety and security of their commercial vehicle drivers and fleet. It represents organizations that engage in the shipment of freight, either originator (consigner or shipper) or recipient of the cargo shipment. They enable the movement of goods on routes that require the use of other modes of transportation such as heavy rail, air, sea, etc. The Intermodal Customer System includes those personnel responsible for the movement of freight across international borders.	Freight and Intermodal Companies	Existing	Transportation	Center, Fleet and Freight Management Center, Intermodal Customer System
JCT Operations Center	Manages the operations of Johnson County Transit with a third party private operator that KCATA oversees.	Johnson County Transit	Existing	Transportation	Center, Emergency Management Center, Transit Management Center



Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
JCT Traveler Information Field Equipment	JCT Field Equipment provides access to traveler information at transit stations, transit stops, other fixed sites along travel routes. Traveler information access points may include kiosks and informational displays supporting varied levels of interaction and information access.	Johnson County Transit	Planned	Transportation	Traveler Support Equipment
JCT Vehicles	This elements represents the transit vehicles that are dispatched by JCT. These transit vehicles have ITS devices that support the safe and efficient movement of passengers. These systems collect, manage, and disseminate transit-related information to the driver, operations and maintenance personnel, and transit system patrons.	Johnson County Transit	Existing	Transportation	Transit Vehicle OBE
JCT Website	This element represents the JCT website that provides transit related information to aid travelers in their planning. This website display schedules, fares, vehicle location information, and arrival times.	Johnson County Transit	Existing	Transportation	Transportation Information Center
Kansas City Emergency Response (Missouri)	The Missouri Emergency Response patrols some of the busiest interstates in and around the Kansas City metropolitan area offering assistance to disabled motorists, searching for lane obstructions be it stalled vehicles in traffic lanes, on the shoulder, car accidents or debris in the roadway. Emergency Response vehicles are dispatched by Emergency Response staff at the Kansas City Scout Traffic Management Center 24/7. Staffing of the Missouri Emergency Response program is provided by the Missouri Department of Transportation. Each vehicle is equipped with a four-way wrench and jack for changing tires, jumper cables, gasoline cans and numerous other tools.	MoDOT	Existing	Transportation	Center, Emergency Management Center, Traffic Management Center

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Kansas City International Airport	<p>Kansas City International Airport was built by the City of Kansas City, Missouri and opened in 1972. Its low congestion, easy terminal access and small number of flight delays have long established it as one of the most convenient commercial airports in the world. The airport complex spans more than 10,000 acres, and its three runways can accommodate up to 139 aircraft operations per hour. Uncongested air and ground space, short taxi time, and a low weather-related closure/cancellation rate are why MCI consistently ranks among the lowest in delays of all U.S. airports. Three runways, two of them parallel with 6,575 feet of separation, Category III instrument Landing System and other features help keep operations smooth in even the worst of weather. New surfaces on the runways, taxiways and terminal aprons, along with ongoing infrastructure improvements, enhance the airport's efficiency and convenience to air carriers.</p>	City of Kansas City, MO	Existing	Transportation	Alternate Mode Transportation Center, Traffic Management Center
Kansas City Motorist Assist (Kansas)	<p>Motorist Assist and Emergency Response patrol some of the busiest interstates in and around the Kansas City metropolitan area offering assistance to disabled motorists, searching for lane obstructions be it stalled vehicles in traffic lanes, on the shoulder, car accidents or debris in the roadway. Staffing of the Kansas Motorist Assist program is provided by civilian members of the Kansas Highway Patrol. The patrols are dispatched out of Kansas Highway Patrol in Salina, KS. Each vehicle is equipped with a four-way wrench and jack for changing tires, jumper cables, gasoline cans, arrow boards, message boards, and numerous other tools.</p>	Kansas Highway Patrol	Existing	Transportation	Center, Emergency Management Center, Traffic Management Center

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Kansas City Scout Field Equipment	Field Equipment includes any and all equipment distributed on and along the roadway which monitors and controls traffic. This includes 279 cameras to monitor the highways from its traffic management center in Lee's Summit, sensors to gage traffic flow, 72 dynamic message signs to send traffic notices and other information to drivers along the freeways, and ramp metering to manage traffic flow onto the freeway system.	KDOT / MoDOT	Existing	Transportation	ITS Roadway Equipment
Kansas City Scout Traffic Management Center	Kansas City Scout is Kansas City's bi-state traffic management system. The Kansas and Missouri Departments of transportation (KDOT, MoDOT) designed Scout to lessen traffic jams by improving rush-hour speeds, to increase safety by decreasing the number of rush-hour accidents, and to improve emergency response to traffic situations. Scout manages traffic on more than 125 miles of continuous freeways in the greater Kansas City metropolitan area. Scout uses cameras to monitor the highways from its traffic management center in Lee's Summit, relies on sensors to gage traffic flow, uses large electronic message boards to send traffic notices and other information to drivers along the freeways and operates ramp meters to control the traffic entering the freeway system.	KDOT / MoDOT	Existing	Transportation	Archived Data System, Archived Data User System, Center, Emergency Management Center, Traffic Management Center, Transportation Information Center
Kansas City Scout Website	This element represents the Kansas City Scout website that provides traffic related information to aid travelers in their planning. Information displayed on the website includes camera images, incidents, DMS messages, and construction zones.	KDOT / MoDOT	Existing	Transportation	Transportation Information Center
Kansas CVISN	A collection of information systems and communications networks that support commercial vehicle operations in Kansas.	Kansas Department of Transportation (KDOT)	Existing	Transportation	Commercial Vehicle Administration Center

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Kansas Highway Patrol Dispatch	AVL/Dispatch for the Kansas Highway Patrol.	Kansas Highway Patrol	Existing	Transportation	Center, Emergency Management Center, Enforcement Center
Kansas Highway Patrol Vehicles	Kansas Highway Patrol vehicles. Vehicles are equipped with AVL systems.	Kansas Highway Patrol	Existing	Transportation	Emergency Vehicle OBE
Kansas State Emergency Operations Center	Located in Topeka, the Kansas State Emergency Operations Center (SEOC) is operated by the Kansas Division of Emergency Management (KDEM). The SEOC provides logistical support and resources to county-level EOC's during local emergencies and helps coordinate response. In the event of a declaration from the governor, KDEM directs and coordinates other agencies as needed to initiate and complete the emergency response. During a national emergency, the SEOC helps disseminate information and coordinate resources.	Kansas Div of Emergency Management (KDEM)	Existing	Transportation	Center, Emergency Management Center
KBI AMBER Alert System	KDOT participates in the Kansas AMBER Alert program by using its traveler information systems to assist the Kansas Bureau of Investigation (KBI) in the dissemination of child abduction information. The Kanroad/511 website has a link to the Kansas AMBER Alert website, and Kansas 511 features an alert system that enables it to broadcast AMBER Alert information as needed. AMBER Alert messages are also placed on Dynamic Message Signs (DMS) across the state and disseminated to traffic operations centers (TOCs) such as Kansas City Scout. KDOT's future plans call for improving the efficiency of information dissemination by automating the communication of AMBER Alerts to 511, websites, and TOCs.	Kansas Bureau of Investigation (KBI)	Existing	Transportation	Alerting and Advisory System, Emergency Management Center

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
KC Freight and Intermodal Facilities		Freight and Intermodal Companies	Existing	Transportation	Event Promoter System
KC Metro Road Weather Information System	This system is run with a server at KCMO Public Works, but it includes components from other state and local agencies.	City of Kansas City, MO	Existing	Transportation	ITS Roadway Equipment
KCIA Emergency Services	Handles emergency services for the Kansas City International Airport complex.	City of Kansas City, MO	Existing	Transportation	Center, Emergency Management Center
KCIA Transit Dispatch	Coordinates movement of passengers between terminals and parking facilities at the Kansas City International Airport complex.	City of Kansas City, MO	Existing	Transportation	Center, Transit Management Center
KCIA Transit Vehicles	Transit Vehicles used to transport passengers around the Kansas City International Airport complex.	City of Kansas City, MO	Existing	Transportation	Transit Vehicle OBE
KCMO ATMS	Advanced Traffic Management System for the City of Kansas City, MO.	City of Kansas City, MO	Existing	Transportation	Center, Traffic Management Center, Transportation Information Center
KCMO ATMS Field Equipment	Field Equipment includes any and all equipment distributed on and along the roadway which monitors and controls traffic. This includes equipment for traffic signals, video detection, loops, radar detection and ramp metering. Through a PPP, the fiber communications system is being expanded throughout the metropolitan area. KCMO has approximately 650 traffic signals of which about 200 are on fiber and 100 on wireless communication.	City of Kansas City, MO	Existing	Transportation	ITS Roadway Equipment
KCMO Maintenance and Construction Operations Center	KCMO Public Works operations includes AVL and management of maintenance vehicles.	City of Kansas City, MO	Existing	Transportation	Center, Maint and Constr Management Center

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
KCMO Maintenance and Construction Vehicles	This is a collection of maintenance and construction vehicles that utilize ITS equipment that provides the sensory functions necessary to support maintenance and construction. AVL and on-board environmental sensors are planned to track vehicle locations and monitor roadway conditions.	City of Kansas City, MO	Existing	Transportation	Maint and Constr Vehicle OBE
KCMO Parking Management	The Parking Management Subsystem provides electronic monitoring and management of parking facilities. It also includes the instrumentation, signs, and other infrastructure that monitors parking lot usage and provides local information about parking availability and other general parking information. As part of the Smart Cities initiative, smart street lights were installed to collect on-street parking availability as well as other data.	City of Kansas City, MO	Planned	Transportation	Parking Management System
KCPL Clean Charge Network	The KCP&L Clean Charge Network consists of over 1,000 electric vehicle charging stations. Station locations are currently found in the Clean Charge Network website.	Kansas City Power and Lighting	Existing	Transportation	Electric Charging Station
KDOT 511 Traveler Information System	KanRoad/511 Traveler Information Website provides real time travel information including weather-related road conditions and construction/maintenance work zones and detours. The information covers each of the six KDOT districts and the Kansas City, Topeka, and Wichita metropolitan areas. Road conditions for the Kansas Turnpike are also provided. The Kanroad/511 website provides a link to the Kansas AMBER Alert website. The system has telephony or text distribution and can be accessed by calling 511 or 1-866-511-KDOT (5368) or via the internet.	KDOT Division of Public Affairs	Existing	Transportation	Center, Transportation Information Center, Traveler Information Voice System
KDOT Construction and Maintenance	Provides maintenance and construction services for the Kansas state highway system.	Kansas Department of Transportation (KDOT)	Existing	Transportation	Center, Maint and Constr Management Center

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
KDOT District Maintenance and Construction Management Systems	KDOT Field offices coordinate the maintenance and construction activity for KDOT including planned field activities (road maintenance, construction projects, snow plowing, etc.) and unplanned incident response within the jurisdiction area, and communicate maintenance and construction schedules and other related information to other agencies and the public. KDOT has maintenance and construction systems that store construction inspections and routine maintenance related information. This information is used to document activities performed and provide assistance in decision making by managers. This element also represents the district operations offices for operating traffic control devices and implementing traffic management and operations strategies.	KDOT District/ Area/Sub-area Offices	Existing	Transportation	Archived Data User System, Center, Maint and Constr Management Center
KDOT Field Equipment	Field Equipment includes any and all equipment distributed on and along the roadway which monitors and controls traffic. This includes roadway treatment systems and environmental sensors (RWIS).	Kansas Department of Transportation (KDOT)	Existing	Transportation	ITS Roadway Equipment
KDOT KanDrive Traveler Information Website	The KanDrive Traveler Information Website provides real time travel information including weather-related road conditions and construction/maintenance work zones and detours, DMS messages and CCTV snapshots. The information covers each of the six KDOT districts and the Kansas City, Topeka, and Wichita metropolitan areas. Road conditions for the Kansas Turnpike are also provided. The KanDrive website provides a link to the Kansas AMBER Alert website, neighboring state's websites and other traveler information sites. The website address is: <a href="http://kandrive.org/">http://kandrive.org/</a> .	KDOT Division of Public Affairs	Existing	Transportation	Transportation Information Center

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
KDOT KanRoad Reporting System	KANROAD is an internet-based software that allows multiple users, primarily KDOT and KTA personnel, to enter information about construction work zones, maintenance work zones, detours, weather-related road conditions and other hazards into a reporting system. Data gathered by the KANROAD is then provided to the KDOT Internet website and the 511 system for public use. Road condition data is fully automated to 511. Construction and maintenance data is only partially automated at the current time but will be fully automated in the future.	KDOT Division of Public Affairs	Existing	Transportation	Archived Data System, Center, Transportation Information Center
KDOT Maintenance and Construction Vehicles	This is a collection of maintenance and construction vehicles that utilize ITS equipment that provides the sensory functions necessary to support maintenance and construction. AVL and on-board environmental sensors are planned to track vehicle locations and monitor roadway conditions. Statewide expansion of AVL use and integration of maintenance vehicles with RWIS has been planned. It is planned to install an AVL system on all KDOT paint trucks. In following the KHP AVL model, the KDOT AVL system will use GPS receivers integrated with the 800 MHz radio system. MDSS system interface is also planned to be operational on all KDOT maintenance vehicles.	KDOT District/ Area/Sub-area Offices	Existing	Transportation	Maint and Constr Vehicle OBE



Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
KDOT Road Weather Information System	Weather-related information is transmitted by a combination of land lines, cell phones, radios and Local Area- or Wide-Area-Networks (LAN/WAN) from weather stations to a central server located in Topeka. The information is presented both on an Intranet-based Website for KDOT use as well as a KDOT Internet site for the public. KDOT owns and operates 43 RWIS stations located throughout the state. The KDOT RWIS also leverages other Kansas RWIS assets by integrating information from 10 additional weather stations owned by the KTA. It uses sensors both mounted in the road surface as well as mounted away from the road to determine pavement temperature, subsurface temperature, ambient air temperature, wind speed, wind direction, pavement wet/dry, precipitation, and relative humidity.	Kansas Department of Transportation (KDOT)	Existing	Transportation	Surface Transportation Weather Service, Transportation Information Center
KDOT Traffic Data Warehouse	This existing system collects KDOT information.	Kansas Department of Transportation (KDOT)	Existing	Transportation	Archived Data System
KDOT Work Zone Intrusion Detection System	This element represents field devices that detect vehicle intrusions in work zones and warns crew workers and drivers of imminent encroachment.	KDOT District/Area/Sub-area Offices	Planned	Transportation	Connected Vehicle Roadside Equipment, ITS Roadway Equipment
KHP Scales and Weigh Stations	Weigh stations and scales in Kansas.	Kansas Highway Patrol	Existing	Transportation	Commercial Vehicle Check Equipment, Connected Vehicle Roadside Equipment
KTA K-Tag Field Equipment	Roadside equipment that recognizes K-Tag Electronic Tags attached on the inside of vehicle windshields traveling along the Kansas Turnpike.	KTA	Existing	Transportation	ITS Roadway Payment Equipment

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
KTA Maintenance and Construction Vehicles	A collection of maintenance vehicles that are utilized to support road maintenance, such as snow plow trucks, salt/sand trucks, and road repair trucks for the Kansas Turnpike Authority. These vehicles support communications with the KTA operations center to receive information and instructions that are provided to vehicle operators. AVL system and automated vehicle maintenance scheduling system may be planned.	KTA	Existing	Transportation	Maint and Constr Vehicle OBE
KTA Operations Center	Located in Wichita, the Kansas Turnpike Authority (KTA) operations center manages the toll collection process on the Kansas Turnpike. The center also receives call from KHP Salina central dispatch (transferring 911 calls) and from the public who dial *582 (*KTA) which is an automated number for motorists using their cell phones to call in traffic incidents along the Kansas Turnpike. The KTA center dispatches KHP Troop G and KTA's maintenance, as well as emergency and towing services as necessary. The KTA center also communicates with KDOT's RCRS by providing up to date road and road surface conditions. The center operates a Traveler Advisory Radio system along the route to disseminate motorist information and is in the process of deploying variable message signs along the Turnpike.	KTA	Existing	Transportation	Center, Emergency Management Center, Maint and Constr Management Center, Payment Administration Center, Traffic Management Center, Transportation Information Center
KTA Travel Information Website	The KTA Travel Information website provides weather information, traffic alerts and advisories, toll schedules, and construction information to users planning to travel along the Kansas Turnpike.	KTA	Existing	Transportation	Transportation Information Center
Large Employment Centers	Large Employment Centers represent companies with large campuses or building facilities that employ more than 500 employees in one location. These centers are important because they are major traffic generators.	Major KC Shipping and Industrial Firms	Planned	Transportation	Event Promoter System

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
MARC Congestion Management Process	The MARC Congestion Management Process is intended to be a systematic way of: Monitoring, measuring and diagnosing the causes of current and future congestion on a region's multi-modal transportation systems; Evaluating and implementing strategies to manage current and future regional congestion; and Monitoring the effectiveness of strategies implemented to manage congestion. The CMP includes an ongoing method to provide information on the performance of the transportation system and on alternative strategies to manage congestion and enhance mobility and safety. The CMP uses an objectives-driven, performance-based approach to managing congestion, and emphasizes effective management of existing facilities through use of travel demand and operational management strategies.	MARC	Existing	Transportation	Archived Data System
Media	Represents the information systems that provide traffic reports, travel conditions, and other transportation-related news services to the traveling public through radio, TV, and other media. Traffic and travel advisory information that are collected by ITS are provided to this terminator. It is also a source for traffic flow information, incident and special event information, and other events which may have implications for the transportation system.	Media	Existing	Transportation	Media
Missouri Amber Alert System	The mission of the AMBER Alert Program is to develop and coordinate the efforts of law enforcement, the media, and transportation in order to increase public participation in safely recovering abducted children through targeted education, increased communication, and effective sharing of resources.	Missouri Department of Public Safety	Existing	Transportation	Alerting and Advisory System, Emergency Management Center
Missouri CVISN System	A collection of information systems and communications networks that support commercial vehicle operations in Missouri.	MoDOT	Existing	Transportation	Commercial Vehicle Administration Center

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Missouri State Emergency Management Center	The SEMC provides logistical support and resources to county-level EOC's during local emergencies and helps coordinate response. In the event of a declaration from the governor, SEMC directs and coordinates other agencies as needed to initiate and complete the emergency response. During a national emergency, the SEMC helps disseminate information and coordinate resources.	Missouri State Emergency Mgmt Agency	Existing	Transportation	Center, Emergency Management Center
Missouri State Highway Patrol Dispatch	AVL/Dispatch for the Missouri State Highway Patrol.	Missouri Department of Public Safety	Existing	Transportation	Center, Emergency Management Center, Enforcement Center
Missouri State Highway Patrol Vehicles	Missouri State Highway Patrol Vehicles. Vehicles are equipped with AVL systems.	Missouri Department of Public Safety	Existing	Transportation	Emergency Vehicle OBE
MoDOT Field Equipment	Field Equipment includes any and all equipment distributed on and along the roadway which monitors and controls traffic. This can include equipment for ramp metering, count stations, cameras, roadway treatment systems and environmental sensors.	MoDOT	Existing	Transportation	ITS Roadway Equipment
MoDOT Maintenance Vehicles	This is a collection of maintenance and construction vehicles that utilize ITS equipment that provides the sensory functions necessary to support maintenance and construction. AVL and on-board environmental sensors are planned to track vehicle locations and monitor roadway conditions. Statewide expansion of AVL use and integration of maintenance vehicles with RWIS has been planned.	MoDOT	Existing	Transportation	Maint and Constr Vehicle OBE
MoDOT Operations	Provides maintenance and construction services for the Missouri state highway system.	MoDOT	Existing	Transportation	Center, Maint and Constr Management Center

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
MoDOT Road Weather Information System	Weather-related information is transmitted by a combination of land lines, cell phones, radios and Local Area- or Wide-Area-Networks (LAN/WAN) from road weather stations to a central server. It uses sensors both mounted in the road surface as well as mounted away from the road to determine pavement temperature, subsurface temperature, ambient air temperature, wind speed, wind direction, pavement wet/dry, precipitation, and relative humidity.	MoDOT	Existing	Transportation	Transportation Information Center
MoDOT Traffic Signal System	This element represents 600 traffic signal systems (200 in the OGL program) and other roadside equipment used for traffic control and management, and communication of traffic related information with other agencies. Systems may include loop detectors, video detection, and other signal operation equipment used for the control and management of traffic at intersections. Signal systems may be interconnected and/or coordinated with others. Includes the operation of Jefferson City traffic signals.	MoDOT	Existing	Transportation	Center, Traffic Management Center
MoDOT Transportation Management System	TMS allows users to integrate data from multiple sources such as bridge, pavement, safety, traffic monitoring/congestion, outdoor advertising (billboards), junkyards, and travelways. TMS allows the user to graphically view and analyze data to make better decisions concerning preservation and construction of MoDOT's transportation systems.	MoDOT	Existing	Transportation	Archived Data System, Center
MoDOT Web Site	Website maintained by MoDOT to disseminate transportation related information including road work, incidents, and camera images..	MoDOT	Existing	Transportation	Transportation Information Center
Motorist Assist Vehicles (Kansas)	Each vehicle is equipped with a four-way wrench and jack for changing tires, jumper cables, gasoline cans and numerous other tools.	Kansas Highway Patrol	Existing	Transportation	Emergency Vehicle OBE

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
MSHP Scales and Inspection Facilities	Weigh stations and scales in Missouri.	Missouri Department of Public Safety	Existing	Transportation	Commercial Vehicle Check Equipment, Connected Vehicle Roadside Equipment
National Weather Service	The National Weather Service (NWS) provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life.	NOAA	Existing	Transportation	Weather Service System
Object Registration and Discovery System	Object Registration and Discovery System represents one or more center-based applications that provide registration and lookup services necessary to allow objects to locate (for communications purposes) other objects operating within the Connected Vehicle Environment.	Object Registration Service Providers	Future	Transportation	Object Registration and Discovery System
Olathe ATMS	Advanced Traffic Management System for the City of Olathe, KS. The ATMS operates in an environment including freight rail, intermodal centers, and interstate shipping.	City of Olathe, KS	Existing	Transportation	Center, Traffic Management Center, Transportation Information Center
Olathe ATMS Field Equipment	Field Equipment includes any and all equipment distributed on and along the roadway which monitors and controls traffic. This includes 130 traffic signals, 60 CCTV cameras, 40 fixed video detection, inductive loops and radar. Maintenance vehicles have AVL.	City of Olathe, KS	Existing	Transportation	ITS Roadway Equipment
Olathe Maintenance Vehicles	Olathe Maintenance Vehicles support Roadway Patrol services.	City of Olathe, KS	Existing	Transportation	Emergency Vehicle OBE

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Operation Green Light	Operation Green Light is a cooperative effort to improve the coordination of traffic signals and incident response on major routes throughout the Kansas City area on both sides of the state line. Operation Green Light helps synchronize traffic signals on major routes throughout the region, especially those that cross city limits. This will help reduce unnecessary delay, improve traffic flow and reduce emissions that contribute to ozone pollution.	MARC	Existing	Transportation	Center, Emissions Management Center, Traffic Management Center
Operation Green Light Field Equipment	Operation Green Light is a cooperative effort to improve the coordination of traffic signals and incident response on major routes throughout the Kansas City area on both sides of the state line. Operation Green Light helps synchronize traffic signals on major routes throughout the region, especially those that cross city limits. This will help reduce unnecessary delay, improve traffic flow and reduce emissions that contribute to ozone pollution. Operation Green Light field equipment consists of communications equipment that connects directly to traffic signals and vehicle detection sensors that are part of the Operation Green Light program.	MARC	Existing	Transportation	ITS Roadway Equipment
Overland Park ATMS	Advanced Traffic Management System (ATMS) for the City of Overland Park, KS. The ATMS collects transportation-related data from traffic surveillance sensors and cameras, manages the traffic signal system, and disseminates information to travelers through dynamic message signs with information such as travel times.	City of Overland Park, KS	Existing	Transportation	Center, Emissions Management Center, Traffic Management Center, Transportation Information Center
Overland Park ATMS Field Equipment	Field Equipment includes any and all equipment distributed on and along the roadway which monitors and controls traffic. This can include equipment for ramp metering, roadway treatment systems, traffic surveillance, traveler information such dynamic message signs, and environmental sensors.	City of Overland Park, KS	Existing	Transportation	ITS Roadway Equipment

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Overland Park Motorist Assist Vehicles	Motorist Assistance Vehicles operated by the City of Overland Park and dispatched by the Overland Park Police Department (County Sheriff and City Police Departments).	City of Overland Park, KS	Existing	Transportation	Emergency Vehicle OBE
Overland Park Traffic Information Website	This element represents the Overland Park Traffic Information website that provides traffic related information to aid travelers in their planning.	City of Overland Park, KS	Existing	Transportation	Center, Transportation Information Center
Parking Operator	This terminator is the human entity that may be physically present at the parking lot facility to monitor the operational status of the facility.	Parking Facility Operators	Existing	Transportation	Parking Operator
Payment Device	Payment devices enable the electronic transfer of funds from the user of a service (i.e. a traveler) to the provider of the service. Potential implementations include smart cards that support payment for products and services such as transportation services, and general purpose devices like smart phones that support a broad array of services such as electronic payment. In addition to user account information, the payment device may also hold and update associated user information such as personal profiles, preferences, and trip histories.	Travelers	Existing	Transportation	Payment Device



Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Pedestrians/Cyclists	'Pedestrian' participates in ITS services that support safe, shared use of the transportation network by motorized and non-motorized transportation modes. Representing those using non-motorized travel modes, pedestrians provide input (e.g. a call signal requesting right of way at an intersection) and may be detected by ITS services to improve safety. Pedestrians may comprise those on foot and those in wheelchairs. 'Cyclist' participates in ITS services that support safe, shared use of the transportation network by motorized and non-motorized transportation modes. Representing those using non-motorized travel modes, and in particular bicyclists that sometimes share motor vehicle lanes, cyclists provide input (e.g. a call signal requesting right of way at an intersection) and may be detected by ITS services to improve safety.	Travelers	Existing	Transportation	Cyclist, Pedestrian
Private ISP Systems	Examples are Road Watch America, Airborne News Network, and WAZE.	Private Information Service Providers	Existing	Transportation	Center, Transportation Information Center
Private Mayday Services	Allows users to signal a need for emergency assistance to a monitored response center.	Private Mayday Service Providers	Existing	Transportation	Emergency Management Center
Private Paratransit Dispatch	Private transit systems that provide service to elderly and handicapped riders.	Private Paratransit Providers	Existing	Transportation	Transit Management Center
Private Ride Hailing Services	Ride matching or ridesharing service in which a traveler schedules pickup through a website or smartphone application. This is a private sector service.	Ride Hailing Services	Existing	Transportation	Transportation Information Center
Private Trucking Companies	Private trucking companies represent those companies that own and manage their own commercial fleets of vehicles traveling through the region.	Private Trucking Companies	Existing	Transportation	Fleet and Freight Management Center

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Private Trucking Companies Commercial Vehicles	This ITS element represents commercial vehicles equipped with the sensory, processing, storage, and communications functions to promote the safe and efficient operation of commercial vehicles in the state of Kansas. These vehicles may be equipped with two-way communications allowing commercial vehicle drivers to communicate with their fleet managers, and roadside officials. The vehicle may also have the capability to collect and process vehicle, cargo information from the attached freight equipment, and driver safety data and status and alert the driver whenever there is a potential safety or security problem. Basic identification, security and safety status data may be supplied to inspection facilities at mainline speeds.	Private Trucking Companies	Existing	Transportation	Commercial Vehicle OBE
Railroad Operations Central Dispatch	Railroad Dispatch	Railroad Companies	Existing	Transportation	Rail Operations Center
Regional Call Center for Transit Info	Provides transit information and language translation services.	Regional Transit Operators	Existing	Transportation	Center, Transportation Information Center
RideKC Field Equipment	KCATA Field Equipment provides access to traveler information at transit stations, transit stops, other fixed sites along travel routes. Traveler information access points include kiosks and informational displays supporting varied levels of interaction and information access such as real-time arrival information at BRT stations. Fare Payment Kiosks at stations and stops and mobile fare payment support are planned.	KCATA	Existing	Transportation	Traveler Support Equipment
RideKC Freedom	RideKC Freedom is an on-demand paratransit service offered by KCATA as part of the RideKC system.	KCATA	Existing	Transportation	Transit Vehicle OBE

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
RideKC Operations Center	This element is responsible for the management and maintenance of KCATA's RideKC transit fleet for the service area.	KCATA	Existing	Transportation	Archived Data User System, Center, Emergency Management Center, Transit Management Center
RideKC Streetcar	The KC Streetcar is a rail system that runs through the heart of downtown Kansas City and connects to Ride KC buses at either end of the route and at the 10th & Main Transit Center.	KC Streetcar Authority	Existing	Transportation	Transit Vehicle OBE
RideKC Streetcar Operations Center	RideKC Streetcar operations center monitors and controls streetcar operations. RideKC Streetcar operations use the same radio and scheduling system as KCATA RideKC Bus system.	KC Streetcar Authority	Existing	Transportation	Transit Management Center
RideKC Streetcar Website	RideKC Streetcar website provides information about streetcar route, attractions, parking and RideKC bus service connections.	KC Streetcar Authority	Existing	Transportation	Transportation Information Center
RideKC Transit Police	The Transit Police provide security for the RideKC transit system.	KCATA	Existing	Transportation	Emergency Management Center
RideKC Transit Vehicles	This elements represents the transit vehicles that are dispatched by RideKC operated by KCATA. These transit vehicles have ITS devices that support the safe and efficient movement of passengers. These systems collect, manage, and disseminate transit-related information to the driver, operations and maintenance personnel, and transit system patrons.	KCATA	Existing	Transportation	Transit Vehicle OBE
RideKC Website	This element represents the RideKC website that provides transit related information to aid travelers in their planning. This website display schedules, fares, vehicle location information, and arrival times.	KCATA	Existing	Transportation	Transportation Information Center

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
RideshareKC	RideshareKC is a publicly funded program that provides commuter resources to individuals and employers in the Kansas City region — helping to create transportation options for area workers. Established in 1980, the program serves commuters from five counties in Missouri and four counties in Kansas. The program offers a commuter-matching service for anyone who lives, works or attends school in the greater Kansas City area or within 75 miles of downtown Kansas City, Missouri. RideshareKC.org provides a free carpool matching service, information and links to regional transportation options and facilitates the annual Green Commute Challenge. These resources are also available on the RideshareKC mobile app for iPhone and Android devices	MARC	Existing	Transportation	Center, Transportation Information Center
Smart City Kiosks	The Smart City Kiosks are 25 transportation information kiosks at platforms along the downtown Kansas City streetcar route on nearby streets. They have information about where the streetcar vehicle is along its route; what restaurants are offering specials that day; and what theater, arts and sporting events are scheduled. There is a 911 button to report emergencies and ways to report problems with city services to the 311 Action Center.	City of Kansas City, MO	Existing	Transportation	Traveler Support Equipment
Traffic Operations Personnel	'Traffic Operations Personnel' represents the people that operate a traffic management center. These personnel interact with traffic control systems, traffic surveillance systems, incident management systems, work zone management systems, and travel demand management systems. They provide operator data and command inputs to direct system operations to varying degrees depending on the type of system and the deployment scenario.	System Terminators	Existing	Transportation	Traffic Operations Personnel

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Transit Operations Personnel	<p>'Transit Operations Personnel' represents the people that are responsible for fleet management, maintenance operations, and scheduling activities of the transit system. These different roles represent a variety of individuals in the transit industry. Within the transit industry the person responsible for fleet management is known by many names: Street Supervisor, Starter, Dispatcher, Supervisor, Traffic Controller, Transportation Coordinator. This person actively monitors, controls, and modifies the transit fleet routes and schedules on a day to day basis (dynamic scheduling). The modifications will take account of abnormal situations such as vehicle breakdown, vehicle delay, detours around work zones or incidents (detour management, connection protection, and service restoration), and other causes of route or schedule deviations. Transit operations personnel are also responsible for demand responsive transit operation and for managing emergency situations within the transit network such as silent alarms on board transit vehicles, or the remote disabling of the vehicle. In addition the Transit Operations Personnel may be responsible for assigning vehicle operators to routes, checking vehicle operators in and out, and managing transit stop issues. This object also represents the personnel in the transit garage that are responsible for maintenance of the transit fleets, including monitoring vehicle status, matching vehicles with operators, and maintenance checking of transit vehicles. Finally, it represents the people responsible for planning, development, and management of transit routes and schedules.</p>	System Terminators	Existing	Transportation	Transit Operations Personnel

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Transit Vehicle Operator	The 'Transit Vehicle Operator' represents the person that receives and provides additional information that is specific to operating the ITS functions in all types of transit vehicles. The information received by the operator would include status of on-board systems. Additional information received depends upon the type of transit vehicle. In the case of fixed route transit vehicles, the Transit Vehicle Operator would receive operator instructions that might include actions to take to correct schedule deviations. In the case of flexible fixed routes and demand response routes the information would also include dynamic routing or passenger pickup information.	Regional Transit Operators	Existing	Transportation	Transit Vehicle Operator
Traveler	The 'Traveler' represents any individual who uses transportation services. The interfaces to the traveler provide general pre-trip and en-route information supporting trip planning, personal guidance, and requests for assistance in an emergency that are relevant to all transportation system users. It also represents users of a public transportation system and addresses interfaces these users have within a transit vehicle or at transit facilities such as roadside stops and transit centers.	Travelers	Existing	Transportation	Traveler
UGT Operations Center	This element is responsible for the management and maintenance of the UGT fleet for the service area.	Unified Government Transit	Existing	Transportation	Center, Emergency Management Center, Transit Management Center
UGT Vehicles	This elements represents the transit vehicles that are dispatched by UGT. These transit vehicles have ITS devices that support the safe and efficient movement of passengers. These systems collect, manage, and disseminate transit-related information to the driver, operations and maintenance personnel, and transit system patrons.	Unified Government Transit	Existing	Transportation	Transit Vehicle OBE

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
User Personal Computing Devices	The 'Personal Information Device' provides the capability for travelers to receive formatted traveler information wherever they are. Capabilities include traveler information, trip planning, and route guidance. Frequently a smart phone, the Personal Information Device provides travelers with the capability to receive route planning and other personally focused transportation services from the infrastructure in the field, at home, at work, or while en-route. Personal Information Devices may operate independently or may be linked with connected vehicle on-board equipment.	Travelers	Existing	Transportation	Personal Information Device

Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Vehicle	<p>The Vehicle On-Board Equipment (OBE) provides the vehicle-based sensory, processing, storage, and communications functions that support efficient, safe, and convenient travel. The Vehicle OBE includes general capabilities that apply to passenger cars, trucks, and motorcycles. Many of these capabilities (e.g., see the Vehicle Safety service packages) apply to all vehicle types including personal vehicles, commercial vehicles, emergency vehicles, transit vehicles, and maintenance vehicles. From this perspective, the Vehicle OBE includes the common interfaces and functions that apply to all motorized vehicles. The radio(s) supporting V2V and V2I communications are a key component of the Vehicle OBE. Both one-way and two-way communications options support a spectrum of information services from basic broadcast to advanced personalized information services. Route guidance capabilities assist in formulation of an optimal route and step by step guidance along the travel route. Advanced sensors, processors, enhanced driver interfaces, and actuators complement the driver information services so that, in addition to making informed mode and route selections, the driver travels these routes in a safer and more consistent manner. This physical object supports all six levels of driving automation as defined in SAE J3016. Initial collision avoidance functions provide 'vigilant co-pilot' driver warning capabilities. More advanced functions assume limited control of the vehicle to maintain lane position and safe headways. In the most advanced implementations, this Physical Object supports full automation of all aspects of the driving task, aided by communications with other vehicles in the vicinity and in coordination with supporting infrastructure subsystems.</p>	Travelers	Existing	Transportation	Vehicle OBE



Element Name	Element Description	Stakeholder	Element Status	Element Domain	Associated Physical Objects
Wayside Equipment	'Wayside Equipment' represents train interface equipment (usually) maintained and operated by the railroad and (usually) physically located at or near a grade crossing. It is a source and destination for information for, or about, approaching trains and their crews (e.g. the time at which the train will arrive and the time it will take to clear a crossing, crossing status or warnings, etc.). Generally one wayside equipment interface would be associated with one highway rail intersection. However, multiple crossings may be controlled using information based on data from one wayside equipment interface.	Railroad Companies	Existing	Transportation	Wayside Equipment
Wide Area Information Disseminator System	Systems and communications equipment used to send messages to equipped vehicles using wide-area wireless communications such as satellite radio, terrestrial FM broadcast subcarrier, or cellular data networks.	Communication System Providers	Planned	Communication	Wide Area Information Disseminator System

## Appendix C. ITS Services Details

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

**Table 3 – ITS Services Details**

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
CVO01	Carrier Operations and Fleet Management	This service package manages a fleet of commercial vehicles. The Fleet and Freight Management Center monitors the vehicle fleet and can provide routes using either an in-house capability or an external provider. Routes generated by either approach are constrained by hazardous materials and other restrictions (such as height or weight). A route is electronically sent to the Commercial Vehicle with any appropriate dispatch instructions. The location of the Commercial Vehicle can be monitored by the Fleet and Freight Management Center and routing changes can be made depending on current road network conditions. This service package also supports maintenance of fleet vehicles with on-board monitoring equipment. Records of vehicle mileage, preventative maintenance and repairs are maintained.	Existing	No	Basic Commercial Vehicle, Commercial Vehicle Driver, Commercial Vehicle OBE, Fleet-Freight Manager, Intermodal Freight Shipper, Kansas City Scout Website, Kansas CVISN, Missouri CVISN System, Private ISP Systems
CVO01	Carrier Operations and Fleet Management (ITS)	--Instance of <CVO01>-- This service package manages a fleet of commercial vehicles. The Fleet and Freight Management Center monitors the vehicle fleet and can provide routes using either an in-house capability or an external provider. Routes generated by either approach are constrained by hazardous materials and other restrictions (such as height or weight). A route would be electronically sent to the Commercial Vehicle with any appropriate dispatch instructions. The location of the Commercial Vehicle can be monitored by the Fleet and Freight Management Center and routing changes can be made depending on current road network conditions.	Planned	Yes	Basic Commercial Vehicle, Commercial Vehicle Driver, Fleet-Freight Manager, Intermodal Freight Shipper, Kansas City Scout Website, Kansas CVISN, Missouri CVISN System, Private ISP Systems

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
CVO01	Carrier Operations and Fleet Management (With CV)	--Instance of <CVO01>-- This service package manages a fleet of commercial vehicles. The Fleet and Freight Management Center monitors the vehicle fleet and can provide routes using either an in-house capability or an external provider. Routes generated by either approach are constrained by hazardous materials and other restrictions (such as height or weight). A route would be electronically sent to the Commercial Vehicle with any appropriate dispatch instructions. The location of the Commercial Vehicle can be monitored by the Fleet and Freight Management Center and routing changes can be made depending on current road network conditions.	Future	Yes	Basic Commercial Vehicle, Commercial Vehicle Driver, Commercial Vehicle OBE, Fleet-Freight Manager, Intermodal Freight Shipper, Kansas City Scout Website, Kansas CVISN, Missouri CVISN System, Private ISP Systems
CVO05	International Border Electronic Clearance	This service package provides for automated clearance at international border crossings. It augments the Electronic Clearance service package by allowing interface with border administration and border inspection related functions. This service package processes the entry documentation for vehicle, cargo, and driver, checks compliance with import/export and immigration regulations, handles duty fee processing, and reports the results of the crossing event to manage release of commercial vehicle, cargo, and driver across an international border. It interfaces with administrative systems used by customs and border protection, immigration, carriers, and service providers (e.g., brokers) and inspection systems at international border crossings to generate, process, and store entry documentation.	Planned	No	Border Inspection Administration, Border Inspection Systems, Connected Vehicle Roadside Equipment, Freight Equipment, Intermodal Freight Shipper, Kansas CVISN, KHP Scales and Weigh Stations, Missouri CVISN System, MSHP Scales and Inspection Facilities, Private Trucking Companies
CVO05	International Border Electronic Clearance (CV - Kansas)	--Instance of <CVO05>-- This service package provides for automated clearance at international border crossings. It augments the Electronic Clearance service package by allowing interface with border administration and border inspection related functions. This service package processes the entry documentation for vehicle, cargo, and driver, checks compliance with import/export and immigration regulations, handles duty fee processing, and reports the results of the crossing event to manage release of commercial vehicle, cargo, and driver across an international border. It interfaces with administrative systems used by customs and border protection, immigration, carriers, and service providers (e.g., brokers) and inspection systems at international border crossings to generate, process, and store entry documentation.	Future	Yes	Border Inspection Administration, Border Inspection Systems, Connected Vehicle Roadside Equipment, Freight Equipment, Intermodal Freight Shipper, Kansas CVISN, KHP Scales and Weigh Stations, Private Trucking Companies

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
CVO05	International Border Electronic Clearance (CV - Missouri)	--Instance of <CVO05>-- This service package provides for automated clearance at international border crossings. It augments the Electronic Clearance service package by allowing interface with border administration and border inspection related functions. This service package processes the entry documentation for vehicle, cargo, and driver, checks compliance with import/export and immigration regulations, handles duty fee processing, and reports the results of the crossing event to manage release of commercial vehicle, cargo, and driver across an international border. It interfaces with administrative systems used by customs and border protection, immigration, carriers, and service providers (e.g., brokers) and inspection systems at international border crossings to generate, process, and store entry documentation.	Future	Yes	Border Inspection Administration, Border Inspection Systems, Connected Vehicle Roadside Equipment, Freight Equipment, Intermodal Freight Shipper, Missouri CVISN System, MSHP Scales and Inspection Facilities, Private Trucking Companies
CVO05	International Border Electronic Clearance (FTZ CV)	--Instance of <CVO05>-- This service package provides for automated clearance at international border crossings. It augments the Electronic Clearance service package by allowing interface with border administration and border inspection related functions. This service package processes the entry documentation for vehicle, cargo, and driver, checks compliance with import/export and immigration regulations, handles duty fee processing, and reports the results of the crossing event to manage release of commercial vehicle, cargo, and driver across an international border. It interfaces with administrative systems used by customs and border protection, immigration, carriers, and service providers (e.g., brokers) and inspection systems at international border crossings to generate, process, and store entry documentation.	Future	Yes	Commercial Vehicle Driver, Commercial Vehicle OBE, Connected Vehicle Roadside Equipment, Foreign Trade Zone Facilities - Inspection Center, Foreign Trade Zone Facilities - Inspection System, Freight Equipment, Intermodal Freight Shipper, Private Trucking Companies, Private Trucking Companies Commercial Vehicles
CVO05	International Border Electronic Clearance (FTZ ITS)	--Instance of <CVO05>-- This service package provides for automated clearance at international border crossings. It augments the Electronic Clearance service package by allowing interface with border administration and border inspection related functions. This service package processes the entry documentation for vehicle, cargo, and driver, checks compliance with import/export and immigration regulations, handles duty fee processing, and reports the results of the crossing event to manage release of commercial vehicle, cargo, and driver across an international border. It interfaces with administrative systems used by customs and border protection, immigration, carriers, and service providers (e.g., brokers) and inspection systems at international border crossings to generate, process, and store entry documentation.	Planned	Yes	Commercial Vehicle Driver, Commercial Vehicle OBE, Foreign Trade Zone Facilities - Inspection Center, Foreign Trade Zone Facilities - Inspection System, Freight Equipment, Intermodal Freight Shipper, Private Trucking Companies, Private Trucking Companies Commercial Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
CVO05	International Border Electronic Clearance (ITS - Kansas)	--Instance of <CVO05>-- This service package provides for automated clearance at international border crossings. It augments the Electronic Clearance service package by allowing interface with border administration and border inspection related functions. This service package processes the entry documentation for vehicle, cargo, and driver, checks compliance with import/export and immigration regulations, handles duty fee processing, and reports the results of the crossing event to manage release of commercial vehicle, cargo, and driver across an international border. It interfaces with administrative systems used by customs and border protection, immigration, carriers, and service providers (e.g., brokers) and inspection systems at international border crossings to generate, process, and store entry documentation.	Planned	Yes	Border Inspection Administration, Border Inspection Systems, Freight Equipment, Intermodal Freight Shipper, Kansas CVISN, KHP Scales and Weigh Stations, Private Trucking Companies
CVO05	International Border Electronic Clearance (ITS - Missouri)	--Instance of <CVO05>-- This service package provides for automated clearance at international border crossings. It augments the Electronic Clearance service package by allowing interface with border administration and border inspection related functions. This service package processes the entry documentation for vehicle, cargo, and driver, checks compliance with import/export and immigration regulations, handles duty fee processing, and reports the results of the crossing event to manage release of commercial vehicle, cargo, and driver across an international border. It interfaces with administrative systems used by customs and border protection, immigration, carriers, and service providers (e.g., brokers) and inspection systems at international border crossings to generate, process, and store entry documentation.	Planned	Yes	Border Inspection Administration, Border Inspection Systems, Freight Equipment, Intermodal Freight Shipper, Missouri CVISN System, MSHP Scales and Inspection Facilities, Private Trucking Companies
CVO05	International Border Electronic Clearance (ITS)	--Instance of <CVO05>-- This service package provides for automated clearance at international border crossings. It augments the Electronic Clearance service package by allowing interface with border administration and border inspection related functions. This service package processes the entry documentation for vehicle, cargo, and driver, checks compliance with import/export and immigration regulations, handles duty fee processing, and reports the results of the crossing event to manage release of commercial vehicle, cargo, and driver across an international border. It interfaces with administrative systems used by customs and border protection, immigration, carriers, and service providers (e.g., brokers) and inspection systems at international border crossings to generate, process, and store entry documentation.	Planned	Yes	Border Inspection Administration, Border Inspection Systems, Freight Equipment, Intermodal Freight Shipper, Kansas CVISN, KHP Scales and Weigh Stations, Missouri CVISN System, MSHP Scales and Inspection Facilities, Private Trucking Companies

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
CVO05	International Border Electronic Clearance (with CV)	--Instance of <CVO05>-- This service package provides for automated clearance at international border crossings. It augments the Electronic Clearance service package by allowing interface with border administration and border inspection related functions. This service package processes the entry documentation for vehicle, cargo, and driver, checks compliance with import/export and immigration regulations, handles duty fee processing, and reports the results of the crossing event to manage release of commercial vehicle, cargo, and driver across an international border. It interfaces with administrative systems used by customs and border protection, immigration, carriers, and service providers (e.g., brokers) and inspection systems at international border crossings to generate, process, and store entry documentation.	Future	Yes	Border Inspection Administration, Border Inspection Systems, Commercial Vehicle Driver, Commercial Vehicle OBE, Connected Vehicle Roadside Equipment, Freight Equipment, Intermodal Freight Shipper, Kansas CVISN, KHP Scales and Weigh Stations, Missouri CVISN System, MSHP Scales and Inspection Facilities, Private Trucking Companies
CVO12	HAZMAT Management	This service package integrates incident management capabilities with commercial vehicle tracking to assure effective treatment of HAZMAT material and incidents. HAZMAT tracking is performed by the Fleet and Freight Management Center. The Emergency Management Center is notified by the Commercial Vehicle if an incident occurs and coordinates 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 or gathered following the incident depending on the selected policy and implementation.	Planned	No	County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Freight Equipment, Intermodal Freight Shipper, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas Highway Patrol Dispatch, KCIA Emergency Services, Missouri State Highway Patrol Dispatch

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
CVO12	HAZMAT Management (ITS)	--Instance of <CVO12>-- This service package integrates incident management capabilities with commercial vehicle tracking to assure effective treatment of HAZMAT material and incidents. HAZMAT tracking is performed by the Fleet and Freight Management Center. The Emergency Management Center is notified by the Commercial Vehicle if an incident occurs and coordinates 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 or gathered following the incident depending on the selected policy and implementation.	Planned	Yes	County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Freight Equipment, Intermodal Freight Shipper, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas Highway Patrol Dispatch, KCIA Emergency Services, Missouri State Highway Patrol Dispatch
CVO12	HAZMAT Management (With CV)	--Instance of <CVO12>-- This service package integrates incident management capabilities with commercial vehicle tracking to assure effective treatment of HAZMAT material and incidents. HAZMAT tracking is performed by the Fleet and Freight Management Center. The Emergency Management Center is notified by the Commercial Vehicle if an incident occurs and coordinates 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 or gathered following the incident depending on the selected policy and implementation.	Future	Yes	Commercial Vehicle OBE, County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Freight Equipment, Intermodal Freight Shipper, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas Highway Patrol Dispatch, KCIA Emergency Services, Missouri State Highway Patrol Dispatch

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
DM01	ITS Data Warehouse	This service package provides access to 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.	Existing	No	Archived Data User Systems, Flood Warning System-StormWatch, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, KDOT District Maintenance and Construction Management Systems, KDOT Field Equipment, KDOT KanRoad Reporting System, KDOT Road Weather Information System, KDOT Traffic Data Warehouse, MARC Congestion Management Process, MoDOT Field Equipment, MoDOT Operations, MoDOT Road Weather Information System, MoDOT Transportation Management System, Operation Green Light, Private ISP Systems, RideKC Operations Center
DM02	Performance Monitoring	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.	Planned	No	Archived Data User Systems, Data Distribution System, Kansas City Scout Traffic Management Center, KCMO ATMS, KDOT KanRoad Reporting System, KDOT Traffic Data Warehouse, MARC Congestion Management Process, MoDOT Operations, Olathe ATMS, Overland Park ATMS, RideKC Operations Center



Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
DM02	Performance Monitoring (Arterial)	--Instance of DM02-- 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.	Planned	Yes	Archived Data User Systems, Data Distribution System, KCMO ATMS, MARC Congestion Management Process, Olathe ATMS, Overland Park ATMS
DM02	Performance Monitoring (KC Scout Freeway)	--Instance of DM02-- 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.	Planned	Yes	Archived Data User Systems, Data Distribution System, Kansas City Scout Traffic Management Center, MARC Congestion Management Process

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
DM02	Performance Monitoring (Transit System)	--Instance of DM02-- 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.	Planned	Yes	Archived Data User Systems, Data Distribution System, MARC Congestion Management Process, RideKC Operations Center
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.	Existing	No	County and City Maintenance and Construction Vehicles, County and City Public Works Offices, KCMO Maintenance and Construction Operations Center, KCMO Maintenance and Construction Vehicles, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT Maintenance and Construction Vehicles, KTA Maintenance and Construction Vehicles, KTA Operations Center, MoDOT Maintenance Vehicles, MoDOT Operations
MC01	Maintenance and Construction Vehicle and Equipment Tracking (County and City)	--Instance of <MC01>-- 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.	Existing	Yes	County and City Maintenance and Construction Vehicles, County and City Public Works Offices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC01	Maintenance and Construction Vehicle and Equipment Tracking (KCMO)	--Instance of <MC01>-- 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.	Existing	Yes	KCMO Maintenance and Construction Operations Center, KCMO Maintenance and Construction Vehicles
MC01	Maintenance and Construction Vehicle and Equipment Tracking (KTA)	--Instance of <MC01>-- 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.	Existing	Yes	KTA Maintenance and Construction Vehicles, KTA Operations Center
MC01	Maintenance and Construction Vehicle and Equipment Tracking (MoDOT)	--Instance of <MC01>-- 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.	Existing	Yes	MoDOT Maintenance Vehicles, MoDOT Operations

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC04	Winter Maintenance	<p>This service package supports winter road maintenance including snow plow operations, roadway treatments (e.g., salt spraying and other anti-icing material applications), and other snow and ice control activities. This package monitors environmental conditions and weather forecasts and uses the information to schedule winter maintenance activities, determine the appropriate snow and ice control response, and track and manage response operations.</p>	Existing	No	<p>Kansas City Scout Traffic Management Center, KCMO ATMS, KCMO Maintenance and Construction Operations Center, KCMO Maintenance and Construction Vehicles, KDOT 511 Traveler Information System, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, KDOT Maintenance and Construction Vehicles, KDOT Road Weather Information System, KTA Maintenance and Construction Vehicles, KTA Operations Center, KTA Travel Information Website, Media, MoDOT Maintenance Vehicles, MoDOT Operations, MoDOT Road Weather Information System, MoDOT Traffic Signal System, Olathe ATMS, Overland Park ATMS, Overland Park Traffic Information Website, Private ISP Systems, RideKC Operations Center</p>

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC06	Work Zone Management	This service package manages work zones, controlling traffic in areas of the roadway where maintenance, construction, and utility work activities are underway. Traffic conditions are monitored using CCTV cameras and controlled using dynamic message signs (DMS), Highway Advisory Radio (HAR), gates and barriers. Work zone information is coordinated with other groups (e.g., TIC, traffic management, other maintenance and construction centers). Work zone speeds and delays are provided to the motorist prior to the work zones. This service package provides control of field equipment in all maintenance and construction areas, including fixed, portable, and truck-mounted devices supporting both stationary and mobile work zones.	Existing	No	Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, KDOT 511 Traveler Information System, KDOT District Maintenance and Construction Management Systems, KDOT Field Equipment, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, KDOT Maintenance and Construction Vehicles, KTA Maintenance and Construction Vehicles, KTA Operations Center, Media, RideKC Operations Center
MC06	Work Zone Management (ITS)	--Instance of <MC06>-- 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. This service package provides control of field equipment in all maintenance and construction areas, including fixed, portable, and truck-mounted devices supporting both stationary and mobile work zones.	Existing	Yes	Driver, Kansas City Motorist Assist (Kansas), Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, KDOT 511 Traveler Information System, KDOT District Maintenance and Construction Management Systems, KDOT Field Equipment, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, KDOT Maintenance and Construction Vehicles, KTA Maintenance and Construction Vehicles, KTA Operations Center, KTA Travel Information Website, Media, Private ISP Systems

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC06	Work Zone Management (KC Scout)	--Instance of <MC06>-- 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. 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.	Planned	Yes	Driver, Kansas City Motorist Assist (Kansas), Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, KDOT 511 Traveler Information System, KDOT District Maintenance and Construction Management Systems, KDOT Field Equipment, KDOT KanRoad Reporting System, KDOT Maintenance and Construction Vehicles, Media, MoDOT Operations, MoDOT Traffic Signal System
MC06	Work Zone Management (KCATA)	--Instance of <MC06>-- 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. 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.	Planned	Yes	Kansas City Scout Traffic Management Center, KCMO Maintenance and Construction Operations Center, KCMO Maintenance and Construction Vehicles, KDOT District Maintenance and Construction Management Systems, KDOT Field Equipment, KDOT KanRoad Reporting System, KDOT Maintenance and Construction Vehicles, Media, MoDOT Field Equipment, MoDOT Maintenance Vehicles, MoDOT Operations, RideKC Operations Center

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC06	Work Zone Management (KDOT ITS)	--Instance of <MC06>-- 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. 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.	Planned	Yes	Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, KDOT 511 Traveler Information System, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT Field Equipment, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, KDOT Maintenance and Construction Vehicles, Media, Private ISP Systems
MC06	Work Zone Management (MoDOT ITS)	--Instance of <MC06>-- 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. 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.	Planned	Yes	Driver, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas City Scout Website, Media, Missouri State Highway Patrol Dispatch, MoDOT Field Equipment, MoDOT Maintenance Vehicles, MoDOT Operations, MoDOT Web Site, Private ISP Systems, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC06	Work Zone Management (with CV)	--Instance of <MC06>-- 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. 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.	Future	Yes	Connected Vehicle Roadside Equipment, Kansas City Motorist Assist (Kansas), Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, KDOT 511 Traveler Information System, KDOT District Maintenance and Construction Management Systems, KDOT Field Equipment, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, KDOT Maintenance and Construction Vehicles, KTA Maintenance and Construction Vehicles, KTA Operations Center, Media, Private ISP Systems, Vehicle
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).	Future	No	Connected Vehicle Roadside Equipment, Driver, KCMO ATMS Field Equipment, KCMO Maintenance and Construction Operations Center, KCMO Maintenance and Construction Vehicles, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT Field Equipment, KDOT Maintenance and Construction Vehicles, MoDOT Field Equipment, MoDOT Maintenance Vehicles, MoDOT Operations, User Personal Computing Devices, Vehicle



Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC07	Work Zone Safety Monitoring (KCMO)	--Instance of <MC07>-- 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).	Future	Yes	Connected Vehicle Roadside Equipment, Driver, KCMO ATMS Field Equipment, KCMO Maintenance and Construction Operations Center, KCMO Maintenance and Construction Vehicles, User Personal Computing Devices, Vehicle
MC07	Work Zone Safety Monitoring (KDOT)	--Instance of <MC07>-- 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).	Future	Yes	Connected Vehicle Roadside Equipment, Driver, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT Field Equipment, KDOT Maintenance and Construction Vehicles, KDOT Work Zone Intrusion Detection System, User Personal Computing Devices, Vehicle
MC07	Work Zone Safety Monitoring (MoDOT)	--Instance of <MC07>-- 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).	Future	Yes	Connected Vehicle Roadside Equipment, Driver, MoDOT Field Equipment, MoDOT Maintenance Vehicles, MoDOT Operations, User Personal Computing Devices, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
MC09	Infrastructure Monitoring	This service package monitors the condition of pavement, bridges, tunnels, associated hardware, and other transportation-related infrastructure (e.g., 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.	Future	No	Connected Vehicle Roadside Equipment, Kansas City Scout Field Equipment, KCMO ATMS Field Equipment, KCMO Maintenance and Construction Operations Center, KCMO Maintenance and Construction Vehicles, KDOT District Maintenance and Construction Management Systems, KDOT Field Equipment, KDOT Maintenance and Construction Vehicles, MoDOT Field Equipment, MoDOT Maintenance Vehicles, MoDOT Operations, Vehicle
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	No	Driver, Kansas City International Airport, KCMO Parking Management, Parking Operator
PM01	Parking Space Management (ITS)	--Instance of <PM01>-- 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	Yes	Driver, Kansas City International Airport, KCMO Parking Management, Parking Operator

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PM01	Parking Space Management (parking project with CV)	--Instance of PM01-- 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	Yes	Connected Vehicle Roadside Equipment, Driver, Kansas City International Airport, KCMO Parking Management, Parking Operator, User Personal Computing Devices, Vehicle
PM01	Parking Space Management (With CV)	--Instance of <PM01>-- 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.	Future	Yes	Connected Vehicle Roadside Equipment, Driver, Kansas City International Airport, KCMO Parking Management, Parking Operator, Vehicle
PM03	Parking Electronic Payment	This service package supports electronic collection of parking fees. It collects parking fees from in-vehicle equipment, contact or proximity cards, or any smart payment device. User accounts may be established to enhance services offered to frequent customers.	Planned	No	Driver, KCMO Parking Management, Parking Operator, Payment Device
PM03	Parking Electronic Payment (ITS)	--Instance of <PM03>-- This service package supports electronic collection of parking fees. It collects parking fees from in-vehicle equipment, contact or proximity cards, or any smart payment device. User accounts may be established to enhance services offered to frequent customers.	Planned	Yes	Driver, KCMO Parking Management, Parking Operator, Payment Device
PM03	Parking Electronic Payment (With CV)	--Instance of <PM03>-- This service package supports electronic collection of parking fees. It collects parking fees from in-vehicle equipment, contact or proximity cards, or any smart payment device. User accounts may be established to enhance services offered to frequent customers.	Future	Yes	Connected Vehicle Roadside Equipment, Driver, KCMO Parking Management, Parking Operator, Payment Device, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS01	Emergency Call-Taking and Dispatch	This service package provides basic public safety call-taking and dispatch services. It includes emergency vehicle equipment, equipment used to receive and route emergency calls, and wireless communications that enable safe and rapid deployment of appropriate resources to an emergency. Coordination between Emergency Management 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.	Existing	No	Airborne Emergency Response Service, County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, JCT Operations Center, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KCIA Emergency Services, KCMO ATMS, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS, RideKC Operations Center, UGT Operations Center
PS01	Emergency Call-Taking and Dispatch (KC Scout 1)	--Instance of <PS01>-- 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.	Planned	Yes	County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Kansas City Scout Traffic Management Center, Kansas State Emergency Operations Center, Missouri State Emergency Management Center

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS01	Emergency Call-Taking and Dispatch (KC Scout 2)	--Instance of <PS01>-- 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.	Planned	Yes	JCT Operations Center, Kansas City Scout Traffic Management Center, RideKC Operations Center, UGT Operations Center
PS01	Emergency Call-Taking and Dispatch (KC Scout 3)	--Instance of <PS01>-- 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.	Planned	Yes	Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Missouri State Highway Patrol Dispatch
PS01	Emergency Call-Taking and Dispatch (KC Scout 4)	--Instance of <PS01>-- 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.	Planned	Yes	Kansas City Scout Traffic Management Center, KCMO ATMS, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS01	Emergency Call-Taking and Dispatch (KCATA)	--Instance of <PS01>-- 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.	Planned	Yes	County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KCMO ATMS, Missouri State Highway Patrol Dispatch, RideKC Operations Center
PS01	Emergency Call-Taking and Dispatch (KCMO)	--Instance of <PS01>-- 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.	Planned	Yes	County and City Fire and EMS Departments, County Sheriff and City Police Departments, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, KCMO ATMS, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS01	Emergency Call-Taking and Dispatch (MoDOT)	--Instance of <PS01>-- 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.	Planned	Yes	County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Kansas City Emergency Response (Missouri), Kansas City Scout Traffic Management Center, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, MoDOT Traffic Signal System, Operation Green Light

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS01	Emergency Call-Taking and Dispatch (OGL)	--Instance of <PS01>-- 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.	Planned	Yes	County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, JCT Operations Center, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KCIA Emergency Services, KCMO ATMS, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS, RideKC Operations Center, UGT Operations Center
PS01	Emergency Call-Taking and Dispatch (Olathe)	--Instance of <PS01>-- 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.	Planned	Yes	County and City Fire and EMS Departments, County Sheriff and City Police Departments, JCT Operations Center, Kansas City Motorist Assist (Kansas), Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, Olathe ATMS



Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS01	Emergency Call-Taking and Dispatch (Overland Park)	--Instance of <PS01>-- 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.	Planned	Yes	County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, Overland Park ATMS, RideKC Operations Center
PS02	Routing Support for Emergency Responders	This service package 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.	Planned	No	Airborne Emergency Response Service, County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County and City Public Works Offices, County Sheriff and City Police Departments, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, KCMO ATMS, KCMO Maintenance and Construction Operations Center, KDOT District Maintenance and Construction Management Systems, Missouri State Highway Patrol Dispatch, MoDOT Operations, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS02	Routing Support for Emergency Responders (KCMO)	--Instance of <PS02>-- This service package 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.	Planned	Yes	County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Kansas City Emergency Response (Missouri), KCMO ATMS, KCMO Maintenance and Construction Operations Center, Missouri State Highway Patrol Dispatch
PS02	Routing Support for Emergency Responders (KCSout)	--Instance of <PS02>-- This service package 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.	Planned	Yes	County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County and City Public Works Offices, County Sheriff and City Police Departments, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, KCMO ATMS, KCMO Maintenance and Construction Operations Center, KDOT District Maintenance and Construction Management Systems, Missouri State Highway Patrol Dispatch, MoDOT Operations, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS02	Routing Support for Emergency Responders (MoDOT)	--Instance of <PS02>-- This service package 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.	Planned	Yes	Airborne Emergency Response Service, County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County and City Public Works Offices, County Sheriff and City Police Departments, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, KCMO ATMS, KCMO Maintenance and Construction Operations Center, KDOT District Maintenance and Construction Management Systems, Missouri State Highway Patrol Dispatch, MoDOT Operations, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS
PS02	Routing Support for Emergency Responders (Olathe)	--Instance of <PS02>-- This service package 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.	Planned	Yes	County and City Fire and EMS Departments, County Sheriff and City Police Departments, Kansas City Motorist Assist (Kansas), Kansas Highway Patrol Dispatch, Olathe ATMS

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS02	Routing Support for Emergency Responders (Overland Park)	--Instance of <PS02>-- This service package 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.	Planned	Yes	County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Kansas Highway Patrol Dispatch, Overland Park ATMS

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS03	Emergency Vehicle Preemption	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.	Planned	No	Airborne Emergency Response Service, County and City 911 Dispatch Centers, County and City Emergency Vehicles, County and City Fire and EMS Departments, County and City Public Works Offices, County and City Traffic Signal Systems, County Sheriff and City Police Departments, Emergency Response Vehicles (Missouri), Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas Highway Patrol Vehicles, KCMO ATMS, KCMO ATMS Field Equipment, Missouri State Highway Patrol Dispatch, Missouri State Highway Patrol Vehicles, MoDOT Field Equipment, MoDOT Traffic Signal System, Motorist Assist Vehicles (Kansas), Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Overland Park Motorist Assist Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS03	Emergency Vehicle Preemption (KCMO with CV)	--Instance of <PS03>-- 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.	Future	Yes	Connected Vehicle Roadside Equipment, County and City Emergency Vehicles, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Emergency Response Vehicles (Missouri), Kansas City Emergency Response (Missouri), KCMO ATMS, KCMO ATMS Field Equipment, Missouri State Highway Patrol Dispatch, Missouri State Highway Patrol Vehicles
PS03	Emergency Vehicle Preemption (KCMO)	--Instance of <PS03>-- 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.	Planned	Yes	County and City Emergency Vehicles, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Emergency Response Vehicles (Missouri), Kansas City Emergency Response (Missouri), KCMO ATMS, KCMO ATMS Field Equipment, Missouri State Highway Patrol Dispatch, Missouri State Highway Patrol Vehicles
PS03	Emergency Vehicle Preemption (MoDOT with CV)	--Instance of <PS03>-- 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.	Future	Yes	Connected Vehicle Roadside Equipment, County and City Emergency Vehicles, Emergency Response Vehicles (Missouri), Missouri State Highway Patrol Vehicles, MoDOT Field Equipment, MoDOT Traffic Signal System

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS03	Emergency Vehicle Preemption (MoDOT)	--Instance of <PS03>-- 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.	Planned	Yes	County and City Emergency Vehicles, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Emergency Response Vehicles (Missouri), Missouri State Highway Patrol Dispatch, Missouri State Highway Patrol Vehicles, MoDOT Field Equipment, MoDOT Traffic Signal System
PS03	Emergency Vehicle Preemption (OGL with CV)	--Instance of <PS03>-- 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.	Future	Yes	Connected Vehicle Roadside Equipment, County and City Emergency Vehicles, Emergency Response Vehicles (Missouri), Kansas Highway Patrol Vehicles, Missouri State Highway Patrol Vehicles, Motorist Assist Vehicles (Kansas), Operation Green Light, Operation Green Light Field Equipment, Overland Park Motorist Assist Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS03	Emergency Vehicle Preemption (OGL)	--Instance of <PS03>-- 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.	Planned	Yes	County and City Emergency Vehicles, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Emergency Response Vehicles (Missouri), Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas Highway Patrol Dispatch, Kansas Highway Patrol Vehicles, Missouri State Highway Patrol Dispatch, Missouri State Highway Patrol Vehicles, Motorist Assist Vehicles (Kansas), Operation Green Light, Operation Green Light Field Equipment, Overland Park Motorist Assist Vehicles
PS03	Emergency Vehicle Preemption (Olathe with CV)	--Instance of <PS03>-- 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.	Future	Yes	Connected Vehicle Roadside Equipment, County and City Emergency Vehicles, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Kansas City Motorist Assist (Kansas), Kansas Highway Patrol Dispatch, Kansas Highway Patrol Vehicles, Motorist Assist Vehicles (Kansas), Olathe ATMS, Olathe ATMS Field Equipment



Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS03	Emergency Vehicle Preemption (Olathe)	--Instance of <PS03>-- 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.	Planned	Yes	County and City Emergency Vehicles, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Kansas City Motorist Assist (Kansas), Kansas Highway Patrol Dispatch, Kansas Highway Patrol Vehicles, Motorist Assist Vehicles (Kansas), Olathe ATMS, Olathe ATMS Field Equipment
PS03	Emergency Vehicle Preemption (Overland Park with CV)	--Instance of <PS03>-- 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.	Future	Yes	Connected Vehicle Roadside Equipment, County and City Emergency Vehicles, Kansas Highway Patrol Vehicles, Motorist Assist Vehicles (Kansas), Overland Park ATMS, Overland Park ATMS Field Equipment, Overland Park Motorist Assist Vehicles
PS03	Emergency Vehicle Preemption (Overland Park)	--Instance of <PS03>-- 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.	Planned	Yes	County and City Emergency Vehicles, Kansas Highway Patrol Vehicles, Motorist Assist Vehicles (Kansas), Overland Park ATMS, Overland Park ATMS Field Equipment, Overland Park Motorist Assist Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	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>	Existing	No	<p>Basic Vehicle, County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Driver, Private Mayday Services, Traveler, User Personal Computing Devices, Vehicle</p>
PS07	Incident Scene Safety Monitoring	<p>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.</p>	Future	No	<p>Connected Vehicle Roadside Equipment, Driver, Emergency Response Vehicles (Missouri), Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas Highway Patrol Vehicles, Missouri State Highway Patrol Dispatch, Missouri State Highway Patrol Vehicles, MoDOT Field Equipment, MoDOT Traffic Signal System, Motorist Assist Vehicles (Kansas), User Personal Computing Devices, Vehicle</p>

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS07	Incident Scene Safety Monitoring (KCScout)	--Instance of <PS07>-- 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.	Future	Yes	Connected Vehicle Roadside Equipment, Driver, Emergency Response Vehicles (Missouri), Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas Highway Patrol Vehicles, Missouri State Highway Patrol Dispatch, Missouri State Highway Patrol Vehicles, Motorist Assist Vehicles (Kansas), User Personal Computing Devices, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS08	Roadway Service Patrols	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.	Existing	No	County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County and City Public Works Offices, County and City Websites, County Sheriff and City Police Departments, Emergency Response Vehicles (Missouri), Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas City Scout Website, KDOT 511 Traveler Information System, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, MoDOT Operations, MoDOT Web Site, Motorist Assist Vehicles (Kansas), Olathe ATMS, Operation Green Light, Overland Park ATMS, Overland Park Motorist Assist Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS08	Roadway Service Patrols (Olathe)	--Instance of <PS08>-- 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.	Planned	Yes	County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County and City Public Works Offices, County and City Websites, County Sheriff and City Police Departments, Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas City Scout Website, KDOT 511 Traveler Information System, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, Motorist Assist Vehicles (Kansas), Olathe ATMS, Olathe Maintenance Vehicles, Operation Green Light, Overland Park ATMS, Overland Park Motorist Assist Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS10	Wide-Area Alert	This service package uses ITS driver and traveler information systems to alert the public in emergency situations such as child abductions, severe weather events, civil emergencies, and other situations that pose a threat to life and property. The alert includes information and instructions for transportation system operators and the traveling public, improving public safety and enlisting the public's help in some scenarios. The ITS technologies will supplement and support other emergency and homeland security alert systems such as the Emergency Alert System (EAS). When an emergency situation is reported and verified and the terms and conditions for system activation are satisfied, a designated agency broadcasts emergency information to traffic agencies, transit agencies, information service providers, toll operators, and others that operate ITS systems. The ITS systems, in turn, provide the alert information to transportation system operators and the traveling public using ITS technologies such as dynamic message signs, highway advisory radios, in-vehicle displays, transit displays, 511 traveler information systems, and traveler information web sites.	Existing	No	County Sheriff and City Police Departments, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, KBI AMBER Alert System, Missouri Amber Alert System, Missouri State Highway Patrol Dispatch, User Personal Computing Devices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
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 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-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>	Planned	No	<p>County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Emergency Notification and Evacuation System, Flood Warning System-StormWatch, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KCMO ATMS, KDOT 511 Traveler Information System, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, Media, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, National Weather Service, Olathe ATMS, Operation Green Light, Overland Park ATMS, Private ISP Systems, RideKC Operations Center, Smart City Kiosks, User Personal Computing Devices, Vehicle</p>

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS14	Disaster Traveler Information (Diagram 1)	<p>--Instance of PS14-- 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 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-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>	Planned	Yes	<p>County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Emergency Notification and Evacuation System, Flood Warning System-StormWatch, Kansas City Scout Traffic Management Center, KCMO ATMS, Media, National Weather Service, Olathe ATMS, Operation Green Light, Overland Park ATMS, Private ISP Systems, RideKC Operations Center, User Personal Computing Devices, Vehicle</p>



Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS14	Disaster Traveler Information (Diagram 2)	<p>--Instance of PS14-- 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 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-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>	Planned	Yes	Emergency Notification and Evacuation System, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KDOT 511 Traveler Information System, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, Media, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, National Weather Service, Private ISP Systems, Smart City Kiosks, User Personal Computing Devices, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS14	Disaster Traveler Information (KCATA)	<p>--Instance of &lt;PS14&gt;-- 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 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-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>	Planned	Yes	<p>Kansas City Scout Traffic Management Center, KCMO ATMS, KDOT 511 Traveler Information System, Media, Private ISP Systems, RideKC Operations Center, Smart City Kiosks, User Personal Computing Devices, Vehicle</p>

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS14	Disaster Traveler Information (MARC)	<p>--Instance of &lt;PS14&gt;-- 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 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-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>	Planned	Yes	<p>County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Emergency Notification and Evacuation System, Flood Warning System-StormWatch, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KCMO ATMS, KDOT 511 Traveler Information System, KDOT KanRoad Reporting System, Media, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, National Weather Service, Olathe ATMS, Operation Green Light, Overland Park ATMS, Private ISP Systems, RideKC Operations Center, Smart City Kiosks, User Personal Computing Devices, Vehicle</p>

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PS14	Disaster Traveler Information (Olathe)	<p>--Instance of &lt;PS14&gt;-- 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 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-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>	Planned	Yes	<p>County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Emergency Notification and Evacuation System, Flood Warning System-StormWatch, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, Media, National Weather Service, Olathe ATMS, Operation Green Light, Overland Park ATMS, Private ISP Systems, RideKC Operations Center, User Personal Computing Devices, Vehicle</p>

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PT01	Transit Vehicle Tracking	This service package monitors current transit vehicle location using an Automated Vehicle Location System. The location data may be used to determine real time schedule adherence and update the transit system's schedule in real-time.	Existing	No	IndeBus Operations Center, IndeBus Transit Vehicles, JCT Operations Center, JCT Vehicles, JCT Website, Kansas City Scout Traffic Management Center, KCIA Transit Dispatch, KCIA Transit Vehicles, KCMO ATMS, Olathe ATMS, Overland Park ATMS, RideKC Operations Center, RideKC Streetcar, RideKC Streetcar Operations Center, RideKC Streetcar Website, RideKC Transit Vehicles, RideKC Website, UGT Operations Center, UGT Vehicles
PT01	Transit Vehicle Tracking (Bus)	--Instance of <PT01>-- 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.	Existing	Yes	IndeBus Operations Center, IndeBus Transit Vehicles, JCT Operations Center, JCT Vehicles, JCT Website, Kansas City Scout Traffic Management Center, KCIA Transit Dispatch, KCIA Transit Vehicles, KCMO ATMS, Olathe ATMS, Overland Park ATMS, RideKC Operations Center, RideKC Transit Vehicles, RideKC Website, UGT Operations Center, UGT Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PT01	Transit Vehicle Tracking (Diagram 1)	--Instance of PT01-- 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.	Planned	Yes	IndeBus Operations Center, IndeBus Transit Vehicles, Kansas City Scout Traffic Management Center, KCIA Transit Dispatch, KCIA Transit Vehicles, KCMO ATMS, RideKC Operations Center, RideKC Transit Vehicles, RideKC Website, UGT Operations Center, UGT Vehicles
PT01	Transit Vehicle Tracking (Diagram 2)	--Instance of PT01-- 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.	Planned	Yes	JCT Operations Center, JCT Vehicles, JCT Website, Olathe ATMS, Overland Park ATMS, RideKC Operations Center, RideKC Transit Vehicles, RideKC Website, UGT Operations Center, UGT Vehicles
PT01	Transit Vehicle Tracking (Streetcar)	--Instance of <PT01>-- 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.	Existing	Yes	KCMO ATMS, RideKC Operations Center, RideKC Streetcar, RideKC Streetcar Operations Center, RideKC Streetcar Website, RideKC Transit Vehicles, RideKC Website

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PT02	Transit Fixed-Route Operations	This service package performs automated dispatch and system monitoring for fixed-route and flexible-route transit services. This service performs scheduling activities including the creation of schedules, blocks and runs, as well as operator assignment. This service monitors the transit vehicle trip performance against the schedule and provides information displays at the Transit Management Center.	Existing	No	IndeBus Operations Center, JCT Operations Center, JCT Website, Kansas City Scout Traffic Management Center, KCIA Transit Dispatch, KCMO ATMS, Olathe ATMS, Operation Green Light, Overland Park ATMS, Private ISP Systems, Regional Call Center for Transit Info, RideKC Operations Center, RideKC Streetcar, RideKC Streetcar Operations Center, RideKC Streetcar Website, RideKC Website, Transit Operations Personnel, Transit Vehicle Operator, UGT Operations Center
PT02	Transit Fixed-Route Operations (Bus)	--Instance of <PT02>-- 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.	Planned	Yes	JCT Website, Kansas City Scout Traffic Management Center, KCIA Transit Dispatch, KCMO ATMS, Olathe ATMS, Operation Green Light, Overland Park ATMS, Private ISP Systems, Regional Call Center for Transit Info, RideKC Operations Center, RideKC Transit Vehicles, RideKC Website, Transit Operations Personnel, Transit Vehicle Operator
PT02	Transit Fixed-Route Operations (Streetcar)	--Instance of <PT02>-- 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.	Planned	Yes	KCMO ATMS, Private ISP Systems, RideKC Operations Center, RideKC Streetcar, RideKC Streetcar Operations Center, RideKC Streetcar Website, RideKC Website, Transit Operations Personnel, Transit Vehicle Operator

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PT03	Dynamic Transit Operations	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. T106 covers other shared use transportation options.	Planned	No	KCMO ATMS, Olathe ATMS, Overland Park ATMS, Private ISP Systems, Private Paratransit Dispatch, Private Ride Hailing Services, Regional Call Center for Transit Info, RideKC Freedom, RideKC Operations Center, RideKC Transit Vehicles, RideKC Website, RideshareKC, Transit Operations Personnel, Transit Vehicle Operator, Traveler, User Personal Computing Devices



Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
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 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>	Existing	No	<p>County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, IndeBus Transit Vehicles, JCT Vehicles, JCT Website, KCIA Emergency Services, KCIA Transit Dispatch, KCIA Transit Vehicles, Media, Private ISP Systems, Private Paratransit Dispatch, Railroad Operations Central Dispatch, Regional Call Center for Transit Info, RideKC Operations Center, RideKC Streetcar, RideKC Streetcar Operations Center, RideKC Transit Police, RideKC Transit Vehicles, RideKC Website, Traveler, UGT Vehicles</p>

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PT05	Transit Security (KCATA)	<p>--Instance of &lt;PT05&gt;-- 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 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>	Planned	Yes	<p>County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, JCT Vehicles, Media, Private ISP Systems, Private Paratransit Dispatch, Railroad Operations Central Dispatch, Regional Call Center for Transit Info, RideKC Operations Center, RideKC Transit Police, RideKC Transit Vehicles, RideKC Website, Traveler, UGT Vehicles</p>

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PT05	Transit Security (Streetcar)	<p>--Instance of &lt;PT05&gt;-- 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 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>	Planned	Yes	<p>County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Media, Private ISP Systems, RideKC Operations Center, RideKC Streetcar, RideKC Streetcar Operations Center, RideKC Transit Police, RideKC Website, Traveler</p>

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PT08	Transit Traveler Information	This service package provides transit users at transit stops and on-board transit vehicles with ready access to transit information. The information services include transit stop announcement, imminent arrival signs, and real-time transit schedule displays that are of general interest to transit users. Systems that provide custom transit trip itineraries and other tailored transit information services are also represented by this service package.	Existing	No	IndeBus Operations Center, JCT Operations Center, JCT Traveler Information Field Equipment, JCT Website, Kansas City Scout Traffic Management Center, Kansas City Scout Website, KCIA Transit Dispatch, KCIA Transit Vehicles, Media, Private ISP Systems, Regional Call Center for Transit Info, RideKC Field Equipment, RideKC Operations Center, RideKC Streetcar, RideKC Streetcar Operations Center, RideKC Streetcar Website, RideKC Website, Smart City Kiosks, Traveler, UGT Operations Center, User Personal Computing Devices
PT08	Transit Traveler Information (Bus)	--Instance of <PT08>-- This service package provides transit users at transit stops and on-board transit vehicles with ready access to transit information. The information services include transit stop announcement, imminent arrival signs, and real-time transit schedule displays that are of general interest to transit users. Systems that provide custom transit trip itineraries and other tailored transit information services are also represented by this service package.	Existing	Yes	Health and Social Services, JCT Operations Center, JCT Traveler Information Field Equipment, JCT Website, Kansas City Scout Traffic Management Center, Kansas City Scout Website, KCIA Transit Dispatch, KCIA Transit Vehicles, Media, Private ISP Systems, Regional Call Center for Transit Info, RideKC Field Equipment, RideKC Operations Center, RideKC Website, Smart City Kiosks, Traveler, UGT Operations Center, User Personal Computing Devices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PT08	Transit Traveler Information (Streetcar)	--Instance of <PT08>-- This service package provides transit users at transit stops and on-board transit vehicles with ready access to transit information. The information services include transit stop annunciation, imminent arrival signs, and real-time transit schedule displays that are of general interest to transit users. Systems that provide custom transit trip itineraries and other tailored transit information services are also represented by this service package.	Planned	Yes	Media, Private ISP Systems, RideKC Field Equipment, RideKC Operations Center, RideKC Streetcar, RideKC Streetcar Operations Center, RideKC Streetcar Website, RideKC Website, Smart City Kiosks, Traveler, User Personal Computing Devices
PT09	Transit Signal Priority	The Transit Signal Priority service package uses transit vehicle to infrastructure communications to allow a transit vehicle to request priority at one or a series of intersections. The service package provides feedback to the transit driver indicating whether the signal priority has been granted or not. This service package can contribute to improved operating performance of the transit vehicles by reducing the time spent stopped at a red light.	Existing	No	JCT Operations Center, JCT Vehicles, KCMO ATMS, KCMO ATMS Field Equipment, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, RideKC Operations Center, RideKC Transit Vehicles, Transit Operations Personnel, Transit Vehicle Operator, UGT Operations Center, UGT Vehicles
PT09	Transit Signal Priority (KCMO 3.4)	--Instance of PT09-- The Transit Signal Priority service package uses transit vehicle to infrastructure communications to allow a transit vehicle to request priority at one or a series of intersections. The service package provides feedback to the transit driver indicating whether the signal priority has been granted or not. This service package can contribute to improved operating performance of the transit vehicles by reducing the time spent stopped at a red light.	Planned	Yes	JCT Operations Center, JCT Vehicles, KCMO ATMS, KCMO ATMS Field Equipment, RideKC Operations Center, RideKC Transit Vehicles, Transit Operations Personnel, Transit Vehicle Operator, UGT Operations Center, UGT Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PT09	Transit Signal Priority (KCMO with CV)	--Instance of <PT09>-- The Transit Signal Priority service package uses transit vehicle to infrastructure communications to allow a transit vehicle to request priority at one or a series of intersections. The service package provides feedback to the transit driver indicating whether the signal priority has been granted or not. This service package can contribute to improved operating performance of the transit vehicles by reducing the time spent stopped at a red light.	Future	Yes	Connected Vehicle Roadside Equipment, KCMO ATMS, KCMO ATMS Field Equipment, RideKC Operations Center, RideKC Transit Vehicles, Transit Operations Personnel, Transit Vehicle Operator
PT09	Transit Signal Priority (KCMO)	--Instance of <PT09>-- The Transit Signal Priority service package uses transit vehicle to infrastructure communications to allow a transit vehicle to request priority at one or a series of intersections. The service package provides feedback to the transit driver indicating whether the signal priority has been granted or not. This service package can contribute to improved operating performance of the transit vehicles by reducing the time spent stopped at a red light.	Planned	Yes	KCMO ATMS, KCMO ATMS Field Equipment, RideKC Operations Center, RideKC Transit Vehicles, Transit Operations Personnel, Transit Vehicle Operator
PT09	Transit Signal Priority (OGL 3.4)	--Instance of PT09-- The Transit Signal Priority service package uses transit vehicle to infrastructure communications to allow a transit vehicle to request priority at one or a series of intersections. The service package provides feedback to the transit driver indicating whether the signal priority has been granted or not. This service package can contribute to improved operating performance of the transit vehicles by reducing the time spent stopped at a red light.	Planned	Yes	JCT Operations Center, JCT Vehicles, Operation Green Light, Operation Green Light Field Equipment, RideKC Operations Center, RideKC Transit Vehicles, Transit Operations Personnel, Transit Vehicle Operator, UGT Operations Center, UGT Vehicles
PT09	Transit Signal Priority (OGL with CV)	--Instance of <PT09>-- The Transit Signal Priority service package uses transit vehicle to infrastructure communications to allow a transit vehicle to request priority at one or a series of intersections. The service package provides feedback to the transit driver indicating whether the signal priority has been granted or not. This service package can contribute to improved operating performance of the transit vehicles by reducing the time spent stopped at a red light.	Future	Yes	Connected Vehicle Roadside Equipment, JCT Vehicles, Operation Green Light, Operation Green Light Field Equipment, RideKC Transit Vehicles, Transit Operations Personnel, Transit Vehicle Operator, UGT Vehicles

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PT09	Transit Signal Priority (OGL)	--Instance of <PT09>-- The Transit Signal Priority service package uses transit vehicle to infrastructure communications to allow a transit vehicle to request priority at one or a series of intersections. The service package provides feedback to the transit driver indicating whether the signal priority has been granted or not. This service package can contribute to improved operating performance of the transit vehicles by reducing the time spent stopped at a red light.	Planned	Yes	JCT Operations Center, JCT Vehicles, Operation Green Light, Operation Green Light Field Equipment, RideKC Operations Center, RideKC Transit Vehicles, Transit Operations Personnel, Transit Vehicle Operator, UGT Operations Center, UGT Vehicles
PT09	Transit Signal Priority (Olathe 3.4)	--Instance of PT09-- The Transit Signal Priority service package uses transit vehicle to infrastructure communications to allow a transit vehicle to request priority at one or a series of intersections. The service package provides feedback to the transit driver indicating whether the signal priority has been granted or not. This service package can contribute to improved operating performance of the transit vehicles by reducing the time spent stopped at a red light.	Planned	Yes	JCT Operations Center, JCT Vehicles, Olathe ATMS, Olathe ATMS Field Equipment, RideKC Operations Center, RideKC Transit Vehicles, Transit Operations Personnel, Transit Vehicle Operator, UGT Operations Center, UGT Vehicles
PT09	Transit Signal Priority (Olathe with CV)	--Instance of <PT09>-- The Transit Signal Priority service package uses transit vehicle to infrastructure communications to allow a transit vehicle to request priority at one or a series of intersections. The service package provides feedback to the transit driver indicating whether the signal priority has been granted or not. This service package can contribute to improved operating performance of the transit vehicles by reducing the time spent stopped at a red light.	Future	Yes	Connected Vehicle Roadside Equipment, JCT Vehicles, Olathe ATMS, Olathe ATMS Field Equipment, RideKC Operations Center, Transit Vehicle Operator
PT09	Transit Signal Priority (Olathe)	--Instance of <PT09>-- The Transit Signal Priority service package uses transit vehicle to infrastructure communications to allow a transit vehicle to request priority at one or a series of intersections. The service package provides feedback to the transit driver indicating whether the signal priority has been granted or not. This service package can contribute to improved operating performance of the transit vehicles by reducing the time spent stopped at a red light.	Planned	Yes	JCT Vehicles, Olathe ATMS, Olathe ATMS Field Equipment, RideKC Operations Center, Transit Operations Personnel, Transit Vehicle Operator

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PT09	Transit Signal Priority (OP 3.4)	--Instance of PT09-- The Transit Signal Priority service package uses transit vehicle to infrastructure communications to allow a transit vehicle to request priority at one or a series of intersections. The service package provides feedback to the transit driver indicating whether the signal priority has been granted or not. This service package can contribute to improved operating performance of the transit vehicles by reducing the time spent stopped at a red light.	Planned	Yes	JCT Operations Center, JCT Vehicles, Overland Park ATMS, Overland Park ATMS Field Equipment, RideKC Operations Center, RideKC Transit Vehicles, Transit Operations Personnel, Transit Vehicle Operator, UGT Operations Center, UGT Vehicles
PT09	Transit Signal Priority (Overland Park with CV)	--Instance of <PT09>-- The Transit Signal Priority service package uses transit vehicle to infrastructure communications to allow a transit vehicle to request priority at one or a series of intersections. The service package provides feedback to the transit driver indicating whether the signal priority has been granted or not. This service package can contribute to improved operating performance of the transit vehicles by reducing the time spent stopped at a red light.	Future	Yes	Connected Vehicle Roadside Equipment, JCT Operations Center, JCT Vehicles, Overland Park ATMS, Overland Park ATMS Field Equipment, RideKC Operations Center, Transit Operations Personnel, Transit Vehicle Operator
PT09	Transit Signal Priority (Overland Park)	--Instance of <PT09>-- The Transit Signal Priority service package uses transit vehicle to infrastructure communications to allow a transit vehicle to request priority at one or a series of intersections. The service package provides feedback to the transit driver indicating whether the signal priority has been granted or not. This service package can contribute to improved operating performance of the transit vehicles by reducing the time spent stopped at a red light.	Planned	Yes	JCT Operations Center, JCT Vehicles, Overland Park ATMS, Overland Park ATMS Field Equipment, RideKC Operations Center, Transit Operations Personnel, Transit Vehicle Operator



Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PT09	Transit Signal Priority (With CV)	--Instance of <PT09>-- The Transit Signal Priority service package uses transit vehicle to infrastructure communications to allow a transit vehicle to request priority at one or a series of intersections. The service package provides feedback to the transit driver indicating whether the signal priority has been granted or not. This service package can contribute to improved operating performance of the transit vehicles by reducing the time spent stopped at a red light.	Future	Yes	Connected Vehicle Roadside Equipment, JCT Operations Center, JCT Vehicles, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, RideKC Operations Center, RideKC Transit Vehicles, Transit Operations Personnel, Transit Vehicle Operator, UGT Operations Center, UGT Vehicles
PT10	Intermittent Bus Lanes	This service package provides dedicated bus lanes during peak demand times to enhance transit operations mobility. An intermittent bus lane is a lane that can change its status from regular lane (accessible for all vehicles) to bus lane, for the time strictly necessary for a bus or set of buses to pass. The status of the IBL is communicated to drivers using roadside message signs and through in-vehicle signage. The creation and removal of dedicated bus lanes is managed through coordination between traffic and transit centers.	Planned	No	Connected Vehicle Roadside Equipment, Driver, JCT Operations Center, JCT Vehicles, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Missouri State Highway Patrol Dispatch, RideKC Operations Center, Transit Vehicle Operator, Vehicle
PT10	Intermittent Bus Lanes (ITS)	--Instance of <PT10>-- This service package provides dedicated bus lanes during peak demand times to enhance transit operations mobility. An intermittent bus lane is a lane that can change its status from regular lane (accessible for all vehicles) to bus lane, for the time strictly necessary for a bus or set of buses to pass. The status of the IBL is communicated to drivers using roadside message signs and through in-vehicle signage. The creation and removal of dedicated bus lanes is managed through coordination between traffic and transit centers.	Planned	Yes	Driver, JCT Operations Center, JCT Vehicles, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Missouri State Highway Patrol Dispatch, RideKC Operations Center, Transit Vehicle Operator, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
PT10	Intermittent Bus Lanes (with CV)	--Instance of <PT10>-- This service package provides dedicated bus lanes during peak demand times to enhance transit operations mobility. An intermittent bus lane is a lane that can change its status from regular lane (accessible for all vehicles) to bus lane, for the time strictly necessary for a bus or set of buses to pass. The status of the IBL is communicated to drivers using roadside message signs and through in-vehicle signage. The creation and removal of dedicated bus lanes is managed through coordination between traffic and transit centers.	Future	Yes	Connected Vehicle Roadside Equipment, Driver, JCT Operations Center, JCT Vehicles, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Missouri State Highway Patrol Dispatch, RideKC Operations Center, Transit Vehicle Operator, Vehicle
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	No	Event Promoters, Kansas City International Airport, Kansas City Scout Traffic Management Center, KCMO ATMS, KCMO Parking Management, Large Employment Centers, Olathe ATMS, Operation Green Light, Overland Park ATMS, RideKC Operations Center, RideKC Streetcar, RideKC Streetcar Operations Center, Transit Operations Personnel
PT14	Multi-modal Coordination (Employment Center Coordination)	--Instance of PT14-- 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	Yes	Event Promoters, Kansas City International Airport, Kansas City Scout Traffic Management Center, KCMO ATMS, Large Employment Centers, Olathe ATMS, Operation Green Light, Overland Park ATMS, RideKC Operations Center, RideKC Streetcar, RideKC Streetcar Operations Center, Transit Operations Personnel

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ST05	Electric Charging Stations Management	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 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.	Existing	No	Driver, KCPL Clean Charge Network, Private ISP Systems, Vehicle
ST05	Electric Charging Stations Management (CV)	--Instance of <ST05>-- 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 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.	Future	Yes	Connected Vehicle Roadside Equipment, Driver, KCPL Clean Charge Network, Private ISP Systems, Vehicle
ST08	Eco-Approach and Departure at Signalized Intersections	The Eco-Approach and Departure at Signalized Intersections service package uses wireless data communications sent from a connected vehicle roadside equipment (RSE) unit to connected vehicles to encourage "green" approaches to and departures from signalized intersections. The vehicle collects intersection geometry information and signal phase movement information using V2I communications and data from nearby vehicles using V2V communications. Upon receiving this information, the service package performs calculations to provide speed advice to the driver, allowing the driver to adapt the vehicle's speed to pass the next traffic signal on green or to decelerate to a stop in the most eco-friendly manner. The service package also considers a vehicle's acceleration as it departs from a signalized intersection. Finally, the service package may perform engine adjustments that provide increased fuel efficiency.	Planned	No	Connected Vehicle Roadside Equipment, Driver, KCMO ATMS, KCMO ATMS Field Equipment, Olathe ATMS, Olathe ATMS Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ST08	Eco-Approach and Departure at Signalized Intersections (KCMO)	--Instance of ST08-- The Eco-Approach and Departure at Signalized Intersections service package uses wireless data communications sent from a connected vehicle roadside equipment (RSE) unit to connected vehicles to encourage "green" approaches to and departures from signalized intersections. The vehicle collects intersection geometry information and signal phase movement information using V2I communications and data from nearby vehicles using V2V communications. Upon receiving this information, the service package performs calculations to provide speed advice to the driver, allowing the driver to adapt the vehicle's speed to pass the next traffic signal on green or to decelerate to a stop in the most eco-friendly manner. The service package also considers a vehicle's acceleration as it departs from a signalized intersection. Finally, the service package may perform engine adjustments that provide increased fuel efficiency.	Planned	Yes	Connected Vehicle Roadside Equipment, Driver, KCMO ATMS, KCMO ATMS Field Equipment, Vehicle
ST08	Eco-Approach and Departure at Signalized Intersections (Olathe)	--Instance of ST08-- The Eco-Approach and Departure at Signalized Intersections service package uses wireless data communications sent from a connected vehicle roadside equipment (RSE) unit to connected vehicles to encourage "green" approaches to and departures from signalized intersections. The vehicle collects intersection geometry information and signal phase movement information using V2I communications and data from nearby vehicles using V2V communications. Upon receiving this information, the service package performs calculations to provide speed advice to the driver, allowing the driver to adapt the vehicle's speed to pass the next traffic signal on green or to decelerate to a stop in the most eco-friendly manner. The service package also considers a vehicle's acceleration as it departs from a signalized intersection. Finally, the service package may perform engine adjustments that provide increased fuel efficiency.	Planned	Yes	Connected Vehicle Roadside Equipment, Driver, Olathe ATMS, Olathe ATMS Field Equipment, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
ST08	Eco-Approach and Departure at Signalized Intersections (Overland Park)	--Instance of ST08-- The Eco-Approach and Departure at Signalized Intersections service package uses wireless data communications sent from a connected vehicle roadside equipment (RSE) unit to connected vehicles to encourage "green" approaches to and departures from signalized intersections. The vehicle collects intersection geometry information and signal phase movement information using V2I communications and data from nearby vehicles using V2V communications. Upon receiving this information, the service package performs calculations to provide speed advice to the driver, allowing the driver to adapt the vehicle's speed to pass the next traffic signal on green or to decelerate to a stop in the most eco-friendly manner. The service package also considers a vehicle's acceleration as it departs from a signalized intersection. Finally, the service package may perform engine adjustments that provide increased fuel efficiency.	Planned	Yes	Connected Vehicle Roadside Equipment, Driver, Overland Park ATMS, Overland Park ATMS Field Equipment, Vehicle
SU03	Data Distribution	This service package manages the distribution of data from data providers to data consumers and protects those data from unauthorized access. It informs data providers of how to provide data, manages data subscriptions, and provides data forwarding capabilities. The service package also maintains a directory of System Users that want data and supports multiple distribution mechanisms including publish-subscribe and directly from data provider to data consumer. It allows data consumers to specify (and change the specification of) data they wish to receive.	Planned	No	Data Distribution System, Kansas City Scout Traffic Management Center, KCMO ATMS, KCMO Maintenance and Construction Operations Center, KDOT District Maintenance and Construction Management Systems, MoDOT Operations, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS, Private ISP Systems, RideKC Operations Center, User Personal Computing Devices, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
SU03	Data Distribution (CV)	--Instance of <SU03>-- This service package manages the distribution of data from data providers to data consumers and protects those data from unauthorized access. It informs data providers of how to provide data, manages data subscriptions, and provides data forwarding capabilities. The service package also maintains a directory of System Users that want data and supports multiple distribution mechanisms including publish-subscribe and directly from data provider to data consumer. It allows data consumers to specify (and change the specification of) data they wish to receive.	Future	Yes	KCMO Maintenance and Construction Operations Center, KDOT District Maintenance and Construction Management Systems, MoDOT Operations, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS, Private ISP Systems, RideKC Operations Center, User Personal Computing Devices, Vehicle, Connected Vehicle Roadside Equipment, Data Distribution System, Kansas City Scout Traffic Management Center, KCMO ATMS
SU03	Data Distribution (Instance 1)	--Instance of SU03-- This service package manages the distribution of data from data providers to data consumers and protects those data from unauthorized access. It informs data providers of how to provide data, manages data subscriptions, and provides data forwarding capabilities. The service package also maintains a directory of System Users that want data and supports multiple distribution mechanisms including publish-subscribe and directly from data provider to data consumer. It allows data consumers to specify (and change the specification of) data they wish to receive.	Planned	Yes	Data Distribution System, Intermodal Freight Shipper, Kansas City Scout Traffic Management Center, KCMO ATMS, KCMO Maintenance and Construction Operations Center, KDOT District Maintenance and Construction Management Systems, MoDOT Operations, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS, Private ISP Systems, RideKC Operations Center, User Personal Computing Devices, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
SU06	Object Registration and Discovery	This service package provides registration and lookup services necessary to allow objects to locate other objects operating within the Connected Vehicle Environment. An object registry is like a phone book for all the connected centers, systems, and equipment in the transportation system (the "objects"). In this service package, each object registers itself with the ORDS and tells the registry where it lives in the communication network (e.g., host, port, node name) and information about the services it provides - information that other objects can use to determine the type of service, the geographic scope of the service, and other information that helps users of the registry to make informed decisions about which object(s) support a needed service or information stream. This is the "Discovery" part of the service. Connected objects can use the registry to find (discover) objects that can be used to get needed information or services.	Future	No	Connected Vehicle Roadside Equipment, Data Distribution System, Kansas City Scout Traffic Management Center, KCMO ATMS, Object Registration and Discovery System, Olathe ATMS, Overland Park ATMS, RideKC Operations Center, User Personal Computing Devices, Vehicle, Wide Area Information Disseminator System
SU08	Security and Credentials Management	This service package is used to ensure trusted communications between mobile devices and other mobile devices or roadside devices and protect data they handle from unauthorized access. The service package grants trust credentials to qualified mobile devices and infrastructure devices in the Connected Vehicle Environment so that those devices may be considered trusted by other devices that receive trust credentials from the SCM service package. The service package allows credentials to be requested and revoked and secures the exchange of trust credentials between parties, so that no other party can intercept and use those credentials illegitimately. The service package provides security to the transmissions between connected devices, ensuring authenticity and integrity of the transmissions. Additional security features include privacy protection, authorization and privilege class definition, as well as non-repudiation of origin.	Future	No	Connected Vehicle Roadside Equipment, Credentials Management System, Data Distribution System, Kansas City Scout Traffic Management Center, KCMO ATMS, Object Registration and Discovery System, Olathe ATMS, Overland Park ATMS, RideKC Operations Center, User Personal Computing Devices, Vehicle, Wide Area Information Disseminator System

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TI01	Broadcast Traveler Information	This service package provides a digital broadcast service that disseminates traveler information to all equipped travelers within range. It collects traffic conditions, advisories, general public transportation, toll and parking information, incident information, roadway maintenance and construction information, air quality and weather information, and broadcasts the information to travelers using technologies such as FM subcarrier, satellite radio, cellular data broadcasts, and Internet streaming technologies. This service package also provides location-specific or situation-relevant information to travelers in vehicles using Dedicated Short Range Communications (DSRC) infrastructure supporting mobility service packages for connected vehicles. DSRC is used to deliver real-time traveler information including travel times, incident information, road conditions, and emergency traveler information to vehicles as they pass connected vehicle roadside equipment along their route. This service package provides public information that is available to all equipped vehicles in the vicinity of the roadside equipment.	Existing	No	User Personal Computing Devices, County and City Websites, JCT Operations Center, JCT Website, Kansas City Scout Traffic Management Center, Kansas City Scout Website, KCMO ATMS, KDOT 511 Traveler Information System, KDOT KanDrive Traveler Information Website, Media, MoDOT Web Site, National Weather Service, Olathe ATMS, Operation Green Light, Overland Park Traffic Information Website, Private ISP Systems, Regional Call Center for Transit Info, RideKC Operations Center, RideKC Website
TI01	Broadcast Traveler Information (Diagram 1)	--Instance of TI01-- This service package provides a digital broadcast service that disseminates traveler information to all equipped travelers within range. It collects traffic conditions, advisories, general public transportation, toll and parking information, incident information, roadway maintenance and construction information, air quality and weather information, and broadcasts the information to travelers using technologies such as FM subcarrier, satellite radio, cellular data broadcasts, and Internet streaming technologies. This service package also provides location-specific or situation-relevant information to travelers in vehicles using Dedicated Short Range Communications (DSRC) infrastructure supporting mobility service packages for connected vehicles. DSRC is used to deliver real-time traveler information including travel times, incident information, road conditions, and emergency traveler information to vehicles as they pass connected vehicle roadside equipment along their route. This service package provides public information that is available to all equipped vehicles in the vicinity of the roadside equipment.	Planned	Yes	County and City Websites, JCT Operations Center, JCT Website, KCMO ATMS, Media, National Weather Service, Olathe ATMS, Operation Green Light, Overland Park Traffic Information Website, Private ISP Systems, Regional Call Center for Transit Info, RideKC Operations Center, RideKC Website, User Personal Computing Devices



Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TI01	Broadcast Traveler Information (Diagram 2)	--Instance of TI01-- This service package provides a digital broadcast service that disseminates traveler information to all equipped travelers within range. It collects traffic conditions, advisories, general public transportation, toll and parking information, incident information, roadway maintenance and construction information, air quality and weather information, and broadcasts the information to travelers using technologies such as FM subcarrier, satellite radio, cellular data broadcasts, and Internet streaming technologies. This service package also provides location-specific or situation-relevant information to travelers in vehicles using Dedicated Short Range Communications (DSRC) infrastructure supporting mobility service packages for connected vehicles. DSRC is used to deliver real-time traveler information including travel times, incident information, road conditions, and emergency traveler information to vehicles as they pass connected vehicle roadside equipment along their route. This service package provides public information that is available to all equipped vehicles in the vicinity of the roadside equipment.	Planned	Yes	Kansas City Scout Traffic Management Center, Kansas City Scout Website, KDOT 511 Traveler Information System, KDOT KanDrive Traveler Information Website, Media, MoDOT Web Site, National Weather Service, Private ISP Systems, User Personal Computing Devices
TI01	Broadcast Traveler Information (Olathe)	--Instance of <TI01>-- This service package provides a digital broadcast service that disseminates traveler information to all equipped travelers within range. It collects traffic conditions, advisories, general public transportation, toll and parking information, incident information, roadway maintenance and construction information, air quality and weather information, and broadcasts the information to travelers using technologies such as FM subcarrier, satellite radio, cellular data broadcasts, and Internet streaming technologies. This service package also provides location-specific or situation-relevant information to travelers in vehicles using Dedicated Short Range Communications (DSRC) infrastructure supporting mobility service packages for connected vehicles. DSRC is used to deliver real-time traveler information including travel times, incident information, road conditions, and emergency traveler information to vehicles as they pass connected vehicle roadside equipment along their route. This service package provides public information that is available to all equipped vehicles in the vicinity of the roadside equipment.	Planned	Yes	County and City Websites, JCT Operations Center, JCT Website, Kansas City Scout Traffic Management Center, Kansas City Scout Website, KDOT 511 Traveler Information System, KDOT KanDrive Traveler Information Website, Media, National Weather Service, Olathe ATMS, Private ISP Systems, Regional Call Center for Transit Info, RideKC Operations Center, RideKC Website, User Personal Computing Devices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TI01	Broadcast Traveler Information (Overland Park)	--Instance of <TI01>-- This service package provides a digital broadcast service that disseminates traveler information to all equipped travelers within range. It collects traffic conditions, advisories, general public transportation, toll and parking information, incident information, roadway maintenance and construction information, air quality and weather information, and broadcasts the information to travelers using technologies such as FM subcarrier, satellite radio, cellular data broadcasts, and Internet streaming technologies. This service package also provides location-specific or situation-relevant information to travelers in vehicles using Dedicated Short Range Communications (DSRC) infrastructure supporting mobility service packages for connected vehicles. DSRC is used to deliver real-time traveler information including travel times, incident information, road conditions, and emergency traveler information to vehicles as they pass connected vehicle roadside equipment along their route. This service package provides public information that is available to all equipped vehicles in the vicinity of the roadside equipment.	Planned	Yes	Overland Park ATMS, Overland Park Traffic Information Website, Private ISP Systems
TI02	Personalized Traveler Information	This service package provides tailored information in response to a traveler request. Both real-time interactive request/response systems and information systems that "push" a tailored stream of information to the traveler based on a submitted profile are supported. The traveler can obtain current information regarding traffic conditions, roadway maintenance and construction, transit services, ride share/ride match, parking management, detours and pricing information. Although the Internet is the predominate network used for traveler information dissemination, a range of two-way wide-area wireless and fixed-point to fixed-point communications systems may be used to support the required data communications 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.	Existing	No	JCT Operations Center, Kansas City Scout Traffic Management Center, Media, National Weather Service, Private ISP Systems, Regional Call Center for Transit Info, RideKC Operations Center, RideshareKC, UGT Operations Center, User Personal Computing Devices
TI03	Dynamic Route Guidance	This service package offers advanced route planning and guidance that is responsive to current conditions. The package augments a user's navigation system equipment with a digital receiver capable of receiving real-time traffic, transit, and road condition information, which is used by the user equipment to provide real-time route guidance that factors in current conditions.	Existing	No	Driver, Traveler, User Personal Computing Devices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TI04	Infrastructure-Provided Trip Planning and Route Guidance	This service package offers the user trip planning and en-route guidance services. It generates a trip plan, including a multimodal route and associated service information (e.g., parking information), based on traveler preferences and constraints. Routes may be based on static information or reflect real time network conditions. Unlike TI03, where the user equipment determines the route, the route determination functions are performed by the center in this service package. The trip plan may be confirmed by the traveler and advanced payment and reservations for transit and alternate mode (e.g., airline, rail, and ferry) trip segments, and ancillary services are accepted and processed. The confirmed trip plan may include specific routing information that can be supplied to the traveler as general directions or as turn-by-turn route guidance depending on the level of user equipment.	Existing	No	IndeBus Operations Center, JCT Operations Center, Kansas City International Airport, Kansas City Scout Traffic Management Center, Regional Call Center for Transit Info, RideKC Field Equipment, RideKC Operations Center, RideKC Website, Smart City Kiosks, UGT Operations Center, User Personal Computing Devices
TI06	Dynamic Ridesharing and Shared Use Transportation	This service package addresses dynamic ridesharing/ride matching services to travelers and other forms of shared use transportation. 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 user's experience for future trips. The shared use aspect of the service package addresses three types of shared use that may be arranged using an internet connected personal device. In the first type, a traveler arranges for the temporary use of a vehicle. In the second type of shared use, a traveler arranges for a vehicle to pick them up at a specific location and take them to another location. The second type of shared use may be implemented as a ride matching or ridesharing service, including those provided by Uber and Lyft. The third type of shared use is a bikeshare capability.	Existing	No	IndeBus Operations Center, JCT Operations Center, Private ISP Systems, Private Paratransit Dispatch, RideKC Operations Center, RideshareKC, Traveler, UGT Operations Center, User Personal Computing Devices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TI06	Dynamic Ridesharing and Shared Use Transportation (Ride Hailing Services)	--Instance of <TI06>-- This service package addresses dynamic ridesharing/ride matching services to travelers and other forms of shared use transportation. 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 user's experience for future trips. The shared use aspect of the service package addresses three types of shared use that may be arranged using an internet connected personal device. In the first type, a traveler arranges for the temporary use of a vehicle. In the second type of shared use, a traveler arranges for a vehicle to pick them up at a specific location and take them to another location. The second type of shared use may be implemented as a ride matching or ridesharing service, including those provided by Uber and Lyft. The third type of shared use is a bikeshare capability.	Existing	Yes	Payment Device, Private Ride Hailing Services, Traveler, User Personal Computing Devices
TI06	Dynamic Ridesharing and Shared Use Transportation (RideshareKC)	--Instance of <TI06>-- This service package addresses dynamic ridesharing/ride matching services to travelers and other forms of shared use transportation. 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 user's experience for future trips. The shared use aspect of the service package addresses three types of shared use that may be arranged using an internet connected personal device. In the first type, a traveler arranges for the temporary use of a vehicle. In the second type of shared use, a traveler arranges for a vehicle to pick them up at a specific location and take them to another location. The second type of shared use may be implemented as a ride matching or ridesharing service, including those provided by Uber and Lyft. The third type of shared use is a bikeshare capability.	Existing	Yes	RideshareKC, Traveler, User Personal Computing Devices

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TI06	Dynamic Ridesharing and Shared Use Transportation (Transit)	--Instance of <TI06>-- This service package addresses dynamic ridesharing/ride matching services to travelers and other forms of shared use transportation. 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 user's experience for future trips. The shared use aspect of the service package addresses three types of shared use that may be arranged using an internet connected personal device. In the first type, a traveler arranges for the temporary use of a vehicle. In the second type of shared use, a traveler arranges for a vehicle to pick them up at a specific location and take them to another location. The second type of shared use may be implemented as a ride matching or ridesharing service, including those provided by Uber and Lyft. The third type of shared use is a bikeshare capability.	Planned	Yes	JCT Operations Center, Payment Device, Private ISP Systems, Private Paratransit Dispatch, RideKC Operations Center, Smart City Kiosks, Traveler, UGT Operations Center, User Personal Computing Devices, Vehicle
TI07	In-Vehicle Signage	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.	Future	No	Connected Vehicle Roadside Equipment, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, KCMO ATMS, KCMO ATMS Field Equipment, KDOT Field Equipment, KDOT Maintenance and Construction Vehicles, MoDOT Field Equipment, MoDOT Maintenance Vehicles, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TI07	In-Vehicle Signage (Diagram 1)	--Instance of TI07-- 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.	Planned	Yes	Connected Vehicle Roadside Equipment, KCMO ATMS, KCMO ATMS Field Equipment, KDOT Field Equipment, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Vehicle
TI07	In-Vehicle Signage (Diagram 2)	--Instance of TI07-- 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.	Planned	Yes	Connected Vehicle Roadside Equipment, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, KDOT Field Equipment, KDOT Maintenance and Construction Vehicles, MoDOT Field Equipment, MoDOT Maintenance Vehicles, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TI07	In-Vehicle Signage (KDOT)	--Instance of <TI07>-- 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.	Future	Yes	Connected Vehicle Roadside Equipment, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, KDOT Field Equipment, KDOT Maintenance and Construction Vehicles, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Vehicle
TI07	In-Vehicle Signage (OGL KCSout MoDOT)	--Instance of <TI07>-- 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.	Future	Yes	Connected Vehicle Roadside Equipment, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, MoDOT Field Equipment, MoDOT Traffic Signal System, Operation Green Light, Operation Green Light Field Equipment, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TI07	In-Vehicle Signage (Olathe)	--Instance of <TI07>-- 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.	Future	Yes	Connected Vehicle Roadside Equipment, Olathe ATMS, Olathe ATMS Field Equipment, Vehicle
TM01	Infrastructure-Based Traffic Surveillance	This service package includes traffic detectors, other surveillance equipment, the supporting field equipment, and Center to Field communications to transmit the collected data back to the Traffic Management Center. The derived data can be used locally such as when traffic detectors are connected directly to a signal control system or remotely (e.g., when a CCTV system sends data back to the Traffic Management Center). The data generated by this service package enables traffic managers to monitor traffic and road conditions, identify and verify incidents, detect faults in indicator operations, and collect census data for traffic strategy development and long range planning. The collected data can also be analyzed and made available to users and the Traveler Information Center physical object.	Existing	No	County and City Traffic Signal Systems, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas City Scout Website, KCMO ATMS, KCMO ATMS Field Equipment, MoDOT Field Equipment, MoDOT Traffic Signal System, MoDOT Web Site, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Overland Park Traffic Information Website, Private ISP Systems, Traffic Operations Personnel



Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM01	Infrastructure-Based Traffic Surveillance (Diagram 1)	--Instance of TM01-- 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.	Planned	Yes	County and City Traffic Signal Systems, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas City Scout Website, MoDOT Field Equipment, MoDOT Traffic Signal System, MoDOT Web Site, Private ISP Systems, Traffic Operations Personnel
TM01	Infrastructure-Based Traffic Surveillance (Diagram 2)	--Instance of TM01-- 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.	Planned	Yes	Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Overland Park Traffic Information Website, Private ISP Systems, Traffic Operations Personnel, KCMO ATMS, KCMO ATMS Field Equipment, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light
TM01	Infrastructure-Based Traffic Surveillance (KCMO)	--Instance of <TM01>-- 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.	Existing	Yes	Kansas City Scout Traffic Management Center, KCMO ATMS, KCMO ATMS Field Equipment, Private ISP Systems, Traffic Operations Personnel

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM01	Infrastructure-Based Traffic Surveillance (KCSout)	--Instance of <TM01>-- 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.	Existing	Yes	Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas City Scout Website, Private ISP Systems, Traffic Operations Personnel
TM01	Infrastructure-Based Traffic Surveillance (MoDOT)	--Instance of <TM01>-- 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.	Existing	Yes	Kansas City Scout Traffic Management Center, MoDOT Field Equipment, MoDOT Traffic Signal System, MoDOT Web Site, Private ISP Systems, Traffic Operations Personnel
TM01	Infrastructure-Based Traffic Surveillance (OGL)	--Instance of <TM01>-- 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.	Existing	Yes	Kansas City Scout Traffic Management Center, KCMO ATMS, Operation Green Light, Operation Green Light Field Equipment, Private ISP Systems, Traffic Operations Personnel

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM01	Infrastructure-Based Traffic Surveillance (Olathe)	--Instance of <TM01>-- 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.	Existing	Yes	Kansas City Scout Traffic Management Center, Olathe ATMS, Olathe ATMS Field Equipment, Private ISP Systems, Traffic Operations Personnel
TM01	Infrastructure-Based Traffic Surveillance (Overland Park)	--Instance of <TM01>-- 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.	Existing	Yes	Kansas City Scout Traffic Management Center, Overland Park ATMS, Overland Park ATMS Field Equipment, Overland Park Traffic Information Website, Private ISP Systems, Traffic Operations Personnel

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM02	Vehicle-Based Traffic Surveillance	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).	Future	No	Connected Vehicle Roadside Equipment, Kansas City Scout Traffic Management Center, MoDOT Traffic Signal System, Operation Green Light, Private ISP Systems, RideKC Operations Center, Vehicle
TM03	Traffic Signal Control	This service package provides the central control and monitoring equipment, communication links, and the signal control equipment that support traffic control at signalized intersections. A range of traffic signal control systems 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.	Existing	No	County and City Traffic Signal Systems, Driver, KCMO ATMS, KCMO ATMS Field Equipment, MoDOT Field Equipment, MoDOT Traffic Signal System, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Pedestrians/Cyclists, Traffic Operations Personnel

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM03	Traffic Signal Control (City + County)	--Instance of TM03-- 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.	Planned	Yes	County and City Traffic Signal Systems, Driver, Pedestrians/Cyclists, Traffic Operations Personnel
TM03	Traffic Signal Control (KCMO 3.4)	--Instance of TM03-- 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.	Planned	Yes	Driver, KCMO ATMS, KCMO ATMS Field Equipment, Pedestrians/Cyclists, Traffic Operations Personnel

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM03	Traffic Signal Control (KCMO)	--Instance of <TM03>-- 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.	Existing	Yes	Driver, KCMO ATMS, KCMO ATMS Field Equipment, Pedestrians/Cyclists, Traffic Operations Personnel
TM03	Traffic Signal Control (MoDOT)	--Instance of <TM03>-- 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.	Existing	Yes	Driver, MoDOT Field Equipment, MoDOT Traffic Signal System, Pedestrians/Cyclists, Traffic Operations Personnel

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM03	Traffic Signal Control (OGL 3.4)	--Instance of TM03-- 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.	Planned	Yes	Driver, Operation Green Light, Operation Green Light Field Equipment, Pedestrians/Cyclists, Traffic Operations Personnel
TM03	Traffic Signal Control (OGL)	Operation Green Light is a cooperative effort to improve the coordination of traffic signals and incident response on major routes throughout the Kansas City area on both sides of the state line. Operation Green Light helps synchronize traffic signals on major routes throughout the region, especially those that cross city limits. This helps reduce unnecessary delay, improve traffic flow and reduce emissions that contribute to ozone pollution. OGL works with partner agencies to coordinate signal optimization using the agencies' equipment. In the architecture OGL's field equipment is representative of the OGL partner's field equipment. --Instance of <TM03>-- 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.	Existing	Yes	Driver, Operation Green Light, Operation Green Light Field Equipment, Pedestrians/Cyclists, Traffic Operations Personnel

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM03	Traffic Signal Control (Olathe 3.4)	--Instance of TM03-- 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.	Planned	Yes	Driver, Olathe ATMS, Olathe ATMS Field Equipment, Pedestrians/Cyclists, Traffic Operations Personnel
TM03	Traffic Signal Control (Olathe)	--Instance of <TM03>-- 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.	Existing	Yes	Driver, Olathe ATMS, Olathe ATMS Field Equipment, Pedestrians/Cyclists, Traffic Operations Personnel



Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM03	Traffic Signal Control (OP 3.4)	--Instance of TM03-- 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.	Planned	Yes	Driver, Overland Park ATMS, Overland Park ATMS Field Equipment, Pedestrians/Cyclists, Traffic Operations Personnel
TM03	Traffic Signal Control (Overland Park)	--Instance of <TM03>-- 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.	Existing	Yes	Driver, Overland Park ATMS, Overland Park ATMS Field Equipment, Pedestrians/Cyclists, Traffic Operations Personnel

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM04	Connected Vehicle Traffic Signal System	This service package uses both vehicle location and movement information from connected vehicles as well as infrastructure measurement of non-equipped vehicles to improve the operations of traffic signal control systems. The service package utilizes the vehicle information to adjust signal timing for an intersection or group of intersections in order to improve traffic flow, including allowing platoon flow through the intersection. Other service package provide related mobility services such as Transit Signal Priority, Freight Signal Priority, Emergency Vehicle Preemption, and Pedestrian Mobility to maximize overall arterial network performance.	Future	No	Connected Vehicle Roadside Equipment, KCMO ATMS, KCMO ATMS Field Equipment, MoDOT Field Equipment, MoDOT Traffic Signal System, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Pedestrians/Cyclists, Vehicle
TM04	Connected Vehicle Traffic Signal System (KCMO)	--Instance of TM04-- This service package uses both vehicle location and movement information from connected vehicles as well as infrastructure measurement of non-equipped vehicles to improve the operations of traffic signal control systems. The service package utilizes the vehicle information to adjust signal timing for an intersection or group of intersections in order to improve traffic flow, including allowing platoon flow through the intersection. Other service package provide related mobility services such as Transit Signal Priority, Freight Signal Priority, Emergency Vehicle Preemption, and Pedestrian Mobility to maximize overall arterial network performance.	Planned	Yes	Connected Vehicle Roadside Equipment, KCMO ATMS, KCMO ATMS Field Equipment, Pedestrians/Cyclists, Vehicle
TM04	Connected Vehicle Traffic Signal System (MoDOT)	--Instance of TM04-- This service package uses both vehicle location and movement information from connected vehicles as well as infrastructure measurement of non-equipped vehicles to improve the operations of traffic signal control systems. The service package utilizes the vehicle information to adjust signal timing for an intersection or group of intersections in order to improve traffic flow, including allowing platoon flow through the intersection. Other service package provide related mobility services such as Transit Signal Priority, Freight Signal Priority, Emergency Vehicle Preemption, and Pedestrian Mobility to maximize overall arterial network performance.	Planned	Yes	Connected Vehicle Roadside Equipment, MoDOT Field Equipment, MoDOT Traffic Signal System, Pedestrians/Cyclists, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM04	Connected Vehicle Traffic Signal System (OGL)	--Instance of TM04-- This service package uses both vehicle location and movement information from connected vehicles as well as infrastructure measurement of non-equipped vehicles to improve the operations of traffic signal control systems. The service package utilizes the vehicle information to adjust signal timing for an intersection or group of intersections in order to improve traffic flow, including allowing platoon flow through the intersection. Other service package provide related mobility services such as Transit Signal Priority, Freight Signal Priority, Emergency Vehicle Preemption, and Pedestrian Mobility to maximize overall arterial network performance.	Planned	Yes	Connected Vehicle Roadside Equipment, Operation Green Light, Operation Green Light Field Equipment, Pedestrians/Cyclists, Vehicle
TM04	Connected Vehicle Traffic Signal System (Olathe 3.2)	--Instance of TM04-- This service package uses both vehicle location and movement information from connected vehicles as well as infrastructure measurement of non-equipped vehicles to improve the operations of traffic signal control systems. The service package utilizes the vehicle information to adjust signal timing for an intersection or group of intersections in order to improve traffic flow, including allowing platoon flow through the intersection. Other service package provide related mobility services such as Transit Signal Priority, Freight Signal Priority, Emergency Vehicle Preemption, and Pedestrian Mobility to maximize overall arterial network performance.	Planned	Yes	Connected Vehicle Roadside Equipment, Olathe ATMS, Olathe ATMS Field Equipment, Pedestrians/Cyclists, Vehicle
TM04	Connected Vehicle Traffic Signal System (Olathe)	--Instance of <TM04>-- This service package uses both vehicle location and movement information from connected vehicles as well as infrastructure measurement of non-equipped vehicles to improve the operations of traffic signal control systems. The service package utilizes the vehicle information to adjust signal timing for an intersection or group of intersections in order to improve traffic flow, including allowing platoon flow through the intersection. Other service package provide related mobility services such as Transit Signal Priority, Freight Signal Priority, Emergency Vehicle Preemption, and Pedestrian Mobility to maximize overall arterial network performance.	Future	Yes	Connected Vehicle Roadside Equipment, Olathe ATMS, Olathe ATMS Field Equipment, Pedestrians/Cyclists, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM04	Connected Vehicle Traffic Signal System (OP)	--Instance of TM04-- This service package uses both vehicle location and movement information from connected vehicles as well as infrastructure measurement of non-equipped vehicles to improve the operations of traffic signal control systems. The service package utilizes the vehicle information to adjust signal timing for an intersection or group of intersections in order to improve traffic flow, including allowing platoon flow through the intersection. Other service package provide related mobility services such as Transit Signal Priority, Freight Signal Priority, Emergency Vehicle Preemption, and Pedestrian Mobility to maximize overall arterial network performance.	Planned	Yes	Connected Vehicle Roadside Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Pedestrians/Cyclists, Vehicle
TM05	Traffic Metering	This service package provides central monitoring and control, communications, and field equipment that support metering of traffic. It supports the complete range of metering strategies including ramp, interchange, and mainline metering. This package incorporates the instrumentation included in the TM01 service package (traffic sensors are used to measure traffic flow and queues) to support traffic monitoring so responsive and adaptive metering strategies can be implemented. Also included is configurable field equipment to provide information to drivers approaching a meter, such as advance warning of the meter, its operational status (whether it is currently on or not, how many cars per green are allowed, etc.), lane usage at the meter (including a bypass lane for HOVs) and existing queue at the meter.	Existing	No	Driver, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Traffic Operations Personnel

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM06	Traffic Information Dissemination	<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 construction activities to be disseminated.</p>	Existing	No	<p>Basic Vehicle, County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County and City Public Works Offices, County Sheriff and City Police Departments, JCT Operations Center, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KCIA Emergency Services, KCMO ATMS, KCMO ATMS Field Equipment, KCMO Maintenance and Construction Operations Center, KDOT 511 Traveler Information System, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, Media, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, MoDOT Operations, Private ISP Systems, Regional Call Center for Transit Info, RideKC Operations Center, UGT Operations Center</p>

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM06	Traffic Information Dissemination (Diagram 1)	--Instance of TM06-- This service package provides driver information using roadway equipment such as dynamic message signs or highway advisory radio. A wide range of information can be disseminated including traffic and road conditions, closure and detour information, travel restrictions, incident information, and emergency alerts and driver advisories. This package provides information to drivers at specific equipped locations on the road network. Careful placement of the roadway equipment provides the information at points in the network where the drivers have recourse and can tailor their routes to account for the new information. This package also covers the equipment and interfaces that provide traffic information from a traffic management center to the media (for instance via a direct tie-in between a traffic management center and radio or television station computer systems), Transit Management, Emergency Management, and Transportation Information Centers. A link to the Maintenance and Construction Management Center allows real time information on road/bridge closures and restrictions due to maintenance and construction activities to be disseminated.	Planned	Yes	Basic Vehicle, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KCIA Emergency Services, KDOT 511 Traveler Information System, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, Media, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, MoDOT Operations, Private ISP Systems

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM06	Traffic Information Dissemination (Diagram 2)	--Instance of TM06-- This service package provides driver information using roadway equipment such as dynamic message signs or highway advisory radio. A wide range of information can be disseminated including traffic and road conditions, closure and detour information, travel restrictions, incident information, and emergency alerts and driver advisories. This package provides information to drivers at specific equipped locations on the road network. Careful placement of the roadway equipment provides the information at points in the network where the drivers have recourse and can tailor their routes to account for the new information. This package also covers the equipment and interfaces that provide traffic information from a traffic management center to the media (for instance via a direct tie-in between a traffic management center and radio or television station computer systems), Transit Management, Emergency Management, and Transportation Information Centers. A link to the Maintenance and Construction Management Center allows real time information on road/bridge closures and restrictions due to maintenance and construction activities to be disseminated.	Planned	Yes	Basic Vehicle, County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County and City Public Works Offices, County Sheriff and City Police Departments, JCT Operations Center, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, KCMO ATMS, KCMO ATMS Field Equipment, KCMO Maintenance and Construction Operations Center, Media, Private ISP Systems, Regional Call Center for Transit Info, RideKC Operations Center, UGT Operations Center
TM07	Regional Traffic Management	This service package provides for the sharing of information and control among traffic management centers to support regional traffic management strategies. Regional traffic management strategies that are supported include inter-jurisdictional, real-time coordinated traffic signal control systems and coordination between freeway operations and traffic signal control within a corridor. This service package advances the TM03-Traffic Signal Control and TM05-Traffic Metering service packages by adding the communications links and integrated control strategies that enable integrated, interjurisdictional traffic management. The nature of optimization and extent of information and control sharing is determined through working arrangements between jurisdictions. This package relies principally on roadside instrumentation supported by the Traffic Signal Control and Traffic Metering service packages and adds hardware, software, and fixed-point communications capabilities to implement traffic management strategies that are coordinated between allied traffic management centers. Several levels of coordination are supported from sharing of information through sharing of device control between traffic management centers.	Planned	No	Kansas City Scout Traffic Management Center, KCMO ATMS, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS, Traffic Operations Personnel

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM08	Traffic Incident Management System	<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 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>	Existing	No	<p>Airborne Emergency Response Service, County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County and City Public Works Offices, County and City Traffic Signal Systems, County Sheriff and City Police Departments, Event Promoters, Flood Warning System-StormWatch, JCT Operations Center, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KC Metro Road Weather Information System, KClA Emergency Services, KCMO ATMS, KCMO Maintenance and Construction Operations Center, KDOT 511 Traveler Information System, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, KDOT Road Weather Information System, Media, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, MoDOT Field Equipment, MoDOT Operations, MoDOT Traffic Signal System, MoDOT Web Site, Olathe</p>



Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM08	Traffic Incident Management System (Diagram 1)	--Instance of TM08-- This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Planned	Yes	Airborne Emergency Response Service, Event Promoters, Flood Warning System- StormWatch, JCT Operations Center, KC Metro Road Weather Information System, Media, Olathe ATMS, Olathe ATMS Field Equipment, Private ISP Systems, Railroad Operations Central Dispatch, RideKC Operations Center, UGT Operations Center

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM08	Traffic Incident Management System (Diagram 2)	--Instance of TM08-- This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Planned	Yes	Airborne Emergency Response Service, Event Promoters, Flood Warning System-StormWatch, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, KC Metro Road Weather Information System, KCIA Emergency Services, Media, Private ISP Systems

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM08	Traffic Incident Management System (Diagram 3)	--Instance of TM08-- This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Planned	Yes	Kansas City Motorist Assist (Kansas), Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT KanRoad Reporting System, KDOT Road Weather Information System

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM08	Traffic Incident Management System (Diagram 4)	--Instance of TM08-- This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Planned	Yes	JCT Operations Center, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Media, Overland Park ATMS, Overland Park ATMS Field Equipment, Private ISP Systems, Railroad Operations Central Dispatch, RideKC Operations Center, UGT Operations Center

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM08	Traffic Incident Management System (Diagram 5)	--Instance of TM08-- This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Planned	Yes	County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County and City Public Works Offices, County and City Traffic Signal Systems, County Sheriff and City Police Departments, Kansas City Scout Traffic Management Center, KCMO ATMS, KCMO Maintenance and Construction Operations Center, RideKC Operations Center

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM08	Traffic Incident Management System (Diagram 6)	--Instance of TM08-- This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Existing	Yes	Kansas City Emergency Response (Missouri), Kansas City Scout Traffic Management Center, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, MoDOT Field Equipment, MoDOT Operations, MoDOT Traffic Signal System

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM08	Traffic Incident Management System (Diagram 7)	--Instance of TM08-- This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Planned	Yes	Airborne Emergency Response Service, County and City 911 Dispatch Centers, Flood Warning System-StormWatch, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KC Metro Road Weather Information System, KDOT KanDrive Traveler Information Website, KDOT Road Weather Information System, Private ISP Systems

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM08	Traffic Incident Management System (Kansas local)	--Instance of <TM08>-- This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Planned	Yes	County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County and City Public Works Offices, County and City Traffic Signal Systems, County Sheriff and City Police Departments, KC Metro Road Weather Information System, KDOT 511 Traveler Information System, Media, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Private ISP Systems



Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM08	Traffic Incident Management System (Kansas state)	--Instance of <TM08>-- This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Planned	Yes	Event Promoters, Flood Warning System- StormWatch, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KC Metro Road Weather Information System, KDOT 511 Traveler Information System, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, KDOT Road Weather Information System, Media, Private ISP Systems

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM08	Traffic Incident Management System (Kansas)	--Instance of <TM08>-- This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Planned	Yes	County and City 911 Dispatch Centers, County and City Emergency Vehicles, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Event Promoters, Kansas City Motorist Assist (Kansas), Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KC Metro Road Weather Information System, KDOT 511 Traveler Information System, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, KDOT Road Weather Information System, KTA Operations Center, KTA Travel Information Website, Media, Private ISP Systems

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM08	Traffic Incident Management System (KCMO 1)	--Instance of <TM08>-- This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Planned	Yes	County and City 911 Dispatch Centers, Event Promoters, Kansas City Emergency Response (Missouri), KCIA Emergency Services, KCMO ATMS, KCMO Maintenance and Construction Operations Center, Private ISP Systems

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

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM08	Traffic Incident Management System (KCMO 3)	--Instance of <TM08>-- This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Planned	Yes	County and City Fire and EMS Departments, County Sheriff and City Police Departments, KCMO ATMS, Missouri State Highway Patrol Dispatch

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM08	Traffic Incident Management System (KCMO)	--Instance of <TM08>-- This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Planned	Yes	County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Event Promoters, Kansas City Emergency Response (Missouri), Kansas City Scout Traffic Management Center, KC Metro Road Weather Information System, KCIA Emergency Services, KCMO ATMS, KCMO Maintenance and Construction Operations Center, Media, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, MoDOT Operations, Operation Green Light, Private ISP Systems, Railroad Operations Central Dispatch, RideKC Operations Center

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM08	Traffic Incident Management System (Olathe)	--Instance of <TM08>-- This service package manages both unexpected incidents and planned events so that the impact to the transportation network and traveler safety is minimized. The service package includes incident detection capabilities through roadside surveillance devices (e.g. CCTV) and through regional coordination with other traffic management, maintenance and construction management and emergency management centers as well as rail operations and event promoters. Information from these diverse sources is collected and correlated by this service package to detect and verify incidents and implement an appropriate response. This service package supports traffic operations personnel in developing an appropriate response in coordination with emergency management, maintenance and construction management, and other incident response personnel to confirmed incidents. The response may include traffic control strategy modifications or resource coordination between centers. Incident response also includes presentation of information to affected travelers using the Traffic Information Dissemination service package and dissemination of incident information to travelers through the Broadcast Traveler Information or Interactive Traveler Information service packages. The roadside equipment used to detect and verify incidents also allows the operator to monitor incident status as the response unfolds. The coordination with emergency management might be through a CAD system or through other communication with emergency field personnel. The coordination can also extend to tow trucks and other allied response agencies and field service personnel.	Planned	Yes	Airborne Emergency Response Service, County and City Fire and EMS Departments, County and City Public Works Offices, County Sheriff and City Police Departments, Flood Warning System-StormWatch, Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KDOT 511 Traveler Information System, Media, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Overland Park ATMS, Private ISP Systems, RideKC Operations Center

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM09	Integrated Decision Support and Demand Management	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 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.	Planned	No	County Sheriff and City Police Departments, Event Promoters, Health and Social Services, Kansas City Scout Traffic Management Center, Kansas City Scout Website, Kansas Highway Patrol Dispatch, KC Freight and Intermodal Facilities, KCMO ATMS, KCMO Parking Management, KDOT 511 Traveler Information System, KDOT KanDrive Traveler Information Website, Large Employment Centers, Missouri State Highway Patrol Dispatch, MoDOT Traffic Signal System, Olathe ATMS, Overland Park ATMS, Private ISP Systems, RideKC Operations Center, Traffic Operations Personnel



Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM09	Integrated Decision Support and Demand Management (Instance 1)	--Instance of TM09-- 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 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.	Planned	Yes	Kansas City Scout Traffic Management Center, KC Freight and Intermodal Facilities, KCMO ATMS, KDOT KanDrive Traveler Information Website, Olathe ATMS, Overland Park ATMS, Private ISP Systems, Traffic Operations Personnel
TM10	Electronic Toll Collection	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.	Existing	No	KTA K-Tag Field Equipment, KTA Operations Center, KTA Travel Information Website, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM10	Electronic Toll Collection (with CV)	--Instance of <TM10>-- 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.	Future	Yes	Connected Vehicle Roadside Equipment, KTA K-Tag Field Equipment, KTA Operations Center, KTA Travel Information Website, Payment Device, Private ISP Systems, User Personal Computing Devices, Vehicle
TM12	Dynamic Roadway Warning	This service package includes systems that dynamically warn drivers approaching hazards on a roadway. Such hazards include roadway weather conditions, road surface conditions, traffic conditions including queues, obstacles or animals in the roadway and any other transient event that can be sensed. These dynamic roadway warning systems can alert approaching drivers via warning signs, flashing lights, in-vehicle messages, etc. Such systems can increase the safety of a roadway by reducing the occurrence of incidents. The system can be centrally monitored and controlled by a traffic management center or it can be autonomous. Speed warnings that consider the limitations of a given vehicle for the geometry of the roadway (e.g., rollover risk for tall vehicles) are not included in this service package but are covered by the TM17 – Speed Warning and Enforcement service package. Roadway warning systems, especially queue warning systems are an Active Traffic Management (ATM) strategy and are typically used in conjunction with other ATM strategies (such as TM20-Variable Speed Limits and TM22-Dynamic Lane Management and Shoulder Use).	Planned	No	Driver, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, MoDOT Field Equipment, MoDOT Traffic Signal System, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Traffic Operations Personnel

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM12	Dynamic Roadway Warning (Kansas), Dynamic Roadway Warning (KC Scout)	--Instance of <TM12>-- This service package includes systems that dynamically warn drivers approaching hazards on a roadway. Such hazards include roadway weather conditions, road surface conditions, traffic conditions including queues, obstacles or animals in the roadway and any other transient event that can be sensed. These dynamic roadway warning systems can alert approaching drivers via warning signs, flashing lights, in-vehicle messages, etc. Such systems can increase the safety of a roadway by reducing the occurrence of incidents. The system can be centrally monitored and controlled by a traffic management center or it can be autonomous. Speed warnings that consider the limitations of a given vehicle for the geometry of the roadway (e.g., rollover risk for tall vehicles) are not included in this service package but are covered by the TM17 – Speed Warning and Enforcement service package. Roadway warning systems, especially queue warning systems are an Active Traffic Management (ATM) strategy and are typically used in conjunction with other ATM strategies (such as TM20-Variable Speed Limits and TM22-Dynamic Lane Management and Shoulder Use).	Planned	Yes	Driver, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Traffic Operations Personnel
TM12	Dynamic Roadway Warning (OGL KCS MoDOT)	--Instance of <TM12>-- This service package includes systems that dynamically warn drivers approaching hazards on a roadway. Such hazards include roadway weather conditions, road surface conditions, traffic conditions including queues, obstacles or animals in the roadway and any other transient event that can be sensed. These dynamic roadway warning systems can alert approaching drivers via warning signs, flashing lights, in-vehicle messages, etc. Such systems can increase the safety of a roadway by reducing the occurrence of incidents. The system can be centrally monitored and controlled by a traffic management center or it can be autonomous. Speed warnings that consider the limitations of a given vehicle for the geometry of the roadway (e.g., rollover risk for tall vehicles) are not included in this service package but are covered by the TM17 – Speed Warning and Enforcement service package. Roadway warning systems, especially queue warning systems are an Active Traffic Management (ATM) strategy and are typically used in conjunction with other ATM strategies (such as TM20-Variable Speed Limits and TM22-Dynamic Lane Management and Shoulder Use).	Planned	Yes	Driver, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, MoDOT Field Equipment, MoDOT Traffic Signal System, Operation Green Light, Operation Green Light Field Equipment, Traffic Operations Personnel

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM13	Standard Railroad Grade Crossing	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 interfaces to the Traffic Management Center.	Existing	No	County and City Traffic Signal Systems, Driver, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Pedestrians/Cyclists, Railroad Operations Central Dispatch, Wayside Equipment
TM14	Advanced Railroad Grade Crossing	This service package manages highway traffic at highway-rail intersections (HRIs) where operational requirements demand advanced features (e.g., where rail operational speeds are greater than 80 miles per hour). This service package includes all capabilities from the Standard Railroad Grade Crossing service package and augments these with additional safety features to mitigate the risks associated with higher rail speeds and leverage Connected Vehicle technologies. The active warning systems supported by this service package include positive barrier systems that preclude entrance into the intersection when the barriers are activated. Like the Standard package, the HRI equipment is activated on notification by wayside interface equipment which detects, or communicates with the approaching train. In this service package, the wayside equipment provides additional information about the arriving train so that the train's direction of travel, estimated time of arrival, and estimated duration of closure may be derived. This service package will alert and/or warn drivers who are approaching an at-grade railroad crossing if they are on a crash-imminent trajectory to collide with a crossing or approaching train. This enhanced information may be conveyed to the driver prior to, or in context with, warning system activation. This service package also includes additional detection capabilities that enable it to detect an entrapped or otherwise immobilized vehicle within the HRI and provide an immediate notification to highway and railroad officials.	Future	No	Connected Vehicle Roadside Equipment, County and City Traffic Signal Systems, Driver, Operation Green Light, Railroad Operations Central Dispatch, Vehicle, Wayside Equipment

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
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	No	County and City Traffic Signal Systems, KCMO ATMS, KCMO ATMS Field Equipment, MoDOT Traffic Signal System, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Private ISP Systems, Railroad Operations Central Dispatch
TM15	Railroad Operations Coordination (OGL and MoDOT)	--Instance of <TM15>-- 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	Yes	MoDOT Field Equipment, MoDOT Traffic Signal System, Operation Green Light, Operation Green Light Field Equipment, Private ISP Systems, Railroad Operations Central Dispatch
TM15	Railroad Operations Coordination (Olathe)	--Instance of <TM15>-- 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	Yes	Olathe ATMS, Olathe ATMS Field Equipment, Private ISP Systems, Railroad Operations Central Dispatch

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM20	Variable Speed Limits	This service package sets variable speed limits along a roadway to create more uniform speeds, to promote safer driving during adverse conditions (such as fog), and/or to reduce air pollution. Also known as speed harmonization, this service monitors traffic and environmental conditions along the roadway. Based on the measured data, the system calculates and sets suitable speed limits, usually by lane. Equipment over and along the roadway displays the speed limits and additional information such as basic safety rules and current traffic information. The system can be centrally monitored and controlled by a traffic management center or it can be autonomous. This service establishes variable speed limits and communicates the speed limits to drivers. Speed warnings and enforcement of speeds limits, including variable speed limits, is covered in the TM17-Speed Warning and Enforcement service package. Variable speed limits are an Active Traffic Management (ATM) strategy and are typically used in conjunction with other ATM strategies (such as TM22-Dynamic Lane Management and Shoulder Use and TM23-Dynamic Roadway Warning).	Planned	No	Driver, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Traffic Operations Personnel
TM22	Dynamic Lane Management and Shoulder Use	This service package provides for active management of travel lanes along a roadway. The package includes the field equipment, physical overhead lane signs and associated control electronics that are used to manage and control specific lanes and/or the shoulders. This equipment can be used to change the lane configuration on the roadway according to traffic demand and lane destination along a typical roadway section or on approach to or access from a border crossing, multimodal crossing or intermodal freight depot. This package can be used to allow temporary or interim use of shoulders as travel lanes. The equipment can be used to electronically reconfigure intersections and interchanges and manage right-of-way dynamically including merges. Also, lanes can be designated for use by special vehicles only, such as buses, high occupancy vehicles (HOVs), vehicles attending a special event, etc. Prohibitions or restrictions of types of vehicles from using particular lanes can be implemented. The lane management system can be centrally monitored and controlled by a traffic management center or it can be autonomous. This service also can include automated enforcement equipment that notifies the enforcement agency of violators of the lane controls. Dynamic lane management and shoulder use is an Active Traffic Management (ATM) strategy and is typically used in conjunction with other ATM strategies (such as TM20-Variable Speed Limits and TM12-Dynamic Roadway Warning).	Planned	No	Driver, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Traffic Operations Personnel

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM22	Dynamic Lane Management and Shoulder Use (CV)	--Instance of <TM22>-- This service package provides for active management of travel lanes along a roadway. The package includes the field equipment, physical overhead lane signs and associated control electronics that are used to manage and control specific lanes and/or the shoulders. This equipment can be used to change the lane configuration on the roadway according to traffic demand and lane destination along a typical roadway section or on approach to or access from a border crossing, multimodal crossing or intermodal freight depot. This package can be used to allow temporary or interim use of shoulders as travel lanes. The equipment can be used to electronically reconfigure intersections and interchanges and manage right-of-way dynamically including merges. Also, lanes can be designated for use by special vehicles only, such as buses, high occupancy vehicles (HOVs), vehicles attending a special event, etc. Prohibitions or restrictions of types of vehicles from using particular lanes can be implemented. The lane management system can be centrally monitored and controlled by a traffic management center or it can be autonomous. This service also can include automated enforcement equipment that notifies the enforcement agency of violators of the lane controls. Dynamic lane management and shoulder use is an Active Traffic Management (ATM) strategy and is typically used in conjunction with other ATM strategies (such as TM20-Variable Speed Limits and TM12-Dynamic Roadway Warning).	Future	Yes	Connected Vehicle Roadside Equipment, Driver, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Traffic Operations Personnel, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
TM22	Dynamic Lane Management and Shoulder Use (ITS)	--Instance of <TM22>-- This service package provides for active management of travel lanes along a roadway. The package includes the field equipment, physical overhead lane signs and associated control electronics that are used to manage and control specific lanes and/or the shoulders. This equipment can be used to change the lane configuration on the roadway according to traffic demand and lane destination along a typical roadway section or on approach to or access from a border crossing, multimodal crossing or intermodal freight depot. This package can be used to allow temporary or interim use of shoulders as travel lanes. The equipment can be used to electronically reconfigure intersections and interchanges and manage right-of-way dynamically including merges. Also, lanes can be designated for use by special vehicles only, such as buses, high occupancy vehicles (HOVs), vehicles attending a special event, etc. Prohibitions or restrictions of types of vehicles from using particular lanes can be implemented. The lane management system can be centrally monitored and controlled by a traffic management center or it can be autonomous. This service also can include automated enforcement equipment that notifies the enforcement agency of violators of the lane controls. Dynamic lane management and shoulder use is an Active Traffic Management (ATM) strategy and is typically used in conjunction with other ATM strategies (such as TM20-Variable Speed Limits and TM12-Dynamic Roadway Warning).	Planned	Yes	Driver, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Traffic Operations Personnel, Vehicle
VS13	Intersection Safety Warning and Collision Avoidance	This service package enables a connected vehicle approaching an instrumented signalized intersection to receive information from the infrastructure regarding the signal timing and the geometry of the intersection. The vehicle uses its speed and acceleration profile, along with the signal timing and geometry information to determine if it appears likely that the vehicle will be able to pass safely through the intersection without violating the signal or colliding with other vehicles. If the vehicle determines that proceeding through the intersection is unsafe, a warning is provided to the driver and/or collision avoidance actions are taken, depending on the automation level of the vehicle.	Future	No	Connected Vehicle Roadside Equipment, Driver, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, KCMO ATMS, KCMO ATMS Field Equipment, MoDOT Field Equipment, MoDOT Traffic Signal System, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Vehicle



Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
VS13	Intersection Safety Warning and Collision Avoidance (MoDOT)	--Instance of <VS13>-- This service package enables a connected vehicle approaching an instrumented signalized intersection to receive information from the infrastructure regarding the signal timing and the geometry of the intersection. The vehicle uses its speed and acceleration profile, along with the signal timing and geometry information to determine if it appears likely that the vehicle will be able to pass safely through the intersection without violating the signal or colliding with other vehicles. If the vehicle determines that proceeding through the intersection is unsafe, a warning is provided to the driver and/or collision avoidance actions are taken, depending on the automation level of the vehicle.	Future	Yes	Connected Vehicle Roadside Equipment, Driver, MoDOT Field Equipment, MoDOT Traffic Signal System, Vehicle
VS13	Intersection Safety Warning and Collision Avoidance (OGL)	--Instance of <VS13>-- This service package enables a connected vehicle approaching an instrumented signalized intersection to receive information from the infrastructure regarding the signal timing and the geometry of the intersection. The vehicle uses its speed and acceleration profile, along with the signal timing and geometry information to determine if it appears likely that the vehicle will be able to pass safely through the intersection without violating the signal or colliding with other vehicles. If the vehicle determines that proceeding through the intersection is unsafe, a warning is provided to the driver and/or collision avoidance actions are taken, depending on the automation level of the vehicle.	Future	Yes	Connected Vehicle Roadside Equipment, Driver, Operation Green Light, Operation Green Light Field Equipment, Vehicle
VS13	Intersection Safety Warning and Collision Avoidance (Olathe)	--Instance of <VS13>-- This service package enables a connected vehicle approaching an instrumented signalized intersection to receive information from the infrastructure regarding the signal timing and the geometry of the intersection. The vehicle uses its speed and acceleration profile, along with the signal timing and geometry information to determine if it appears likely that the vehicle will be able to pass safely through the intersection without violating the signal or colliding with other vehicles. If the vehicle determines that proceeding through the intersection is unsafe, a warning is provided to the driver and/or collision avoidance actions are taken, depending on the automation level of the vehicle.	Future	Yes	Connected Vehicle Roadside Equipment, Driver, Olathe ATMS, Olathe ATMS Field Equipment, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
VS16	Automated Vehicle Operations	This service package provides full vehicle automation, controlling both the steering and acceleration/deceleration on areas of the highway system that support full automation. Communications between vehicles and between the vehicles and supporting infrastructure equipment supports cooperative check-in to the automated portion of the system and transition to automated mode, coordination of maneuvers between vehicles in automated mode, and checkout from the automated system. This service package is distinguished from the most advanced CACC systems in that full longitudinal and lateral control automation are supported, enabling closely spaced, tightly coupled platoons of vehicles to operate with short fixed gaps, providing greatly enhanced highway capacity and throughput with enhanced efficiency since aerodynamic drag is reduced.	Future	No	Basic Vehicle, Connected Vehicle Roadside Equipment, Driver, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, KCMO ATMS, KCMO ATMS Field Equipment, MoDOT Field Equipment, MoDOT Traffic Signal System, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Vehicle
VS16	Automated Vehicle Operations (KC Scout)	--Instance of <VS16>-- This service package provides full vehicle automation, controlling both the steering and acceleration/deceleration on areas of the highway system that support full automation. Communications between vehicles and between the vehicles and supporting infrastructure equipment supports cooperative check-in to the automated portion of the system and transition to automated mode, coordination of maneuvers between vehicles in automated mode, and checkout from the automated system. This service package is distinguished from the most advanced CACC systems in that full longitudinal and lateral control automation are supported, enabling closely spaced, tightly coupled platoons of vehicles to operate with short fixed gaps, providing greatly enhanced highway capacity and throughput with enhanced efficiency since aerodynamic drag is reduced.	Future	Yes	Basic Vehicle, Connected Vehicle Roadside Equipment, Driver, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
VS16	Automated Vehicle Operations (MoDOT)	--Instance of <VS16>-- This service package provides full vehicle automation, controlling both the steering and acceleration/deceleration on areas of the highway system that support full automation. Communications between vehicles and between the vehicles and supporting infrastructure equipment supports cooperative check-in to the automated portion of the system and transition to automated mode, coordination of maneuvers between vehicles in automated mode, and checkout from the automated system. This service package is distinguished from the most advanced CACC systems in that full longitudinal and lateral control automation are supported, enabling closely spaced, tightly coupled platoons of vehicles to operate with short fixed gaps, providing greatly enhanced highway capacity and throughput with enhanced efficiency since aerodynamic drag is reduced.	Future	Yes	Basic Vehicle, Connected Vehicle Roadside Equipment, Driver, MoDOT Field Equipment, MoDOT Traffic Signal System, Vehicle
VS16	Automated Vehicle Operations (OGL)	--Instance of <VS16>-- This service package provides full vehicle automation, controlling both the steering and acceleration/deceleration on areas of the highway system that support full automation. Communications between vehicles and between the vehicles and supporting infrastructure equipment supports cooperative check-in to the automated portion of the system and transition to automated mode, coordination of maneuvers between vehicles in automated mode, and checkout from the automated system. This service package is distinguished from the most advanced CACC systems in that full longitudinal and lateral control automation are supported, enabling closely spaced, tightly coupled platoons of vehicles to operate with short fixed gaps, providing greatly enhanced highway capacity and throughput with enhanced efficiency since aerodynamic drag is reduced.	Future	Yes	Basic Vehicle, Connected Vehicle Roadside Equipment, Driver, Operation Green Light, Operation Green Light Field Equipment, Vehicle

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
VS16	Automated Vehicle Operations (Olathe)	--Instance of <VS16>-- This service package provides full vehicle automation, controlling both the steering and acceleration/deceleration on areas of the highway system that support full automation. Communications between vehicles and between the vehicles and supporting infrastructure equipment supports cooperative check-in to the automated portion of the system and transition to automated mode, coordination of maneuvers between vehicles in automated mode, and checkout from the automated system. This service package is distinguished from the most advanced CACC systems in that full longitudinal and lateral control automation are supported, enabling closely spaced, tightly coupled platoons of vehicles to operate with short fixed gaps, providing greatly enhanced highway capacity and throughput with enhanced efficiency since aerodynamic drag is reduced.	Future	Yes	Basic Vehicle, Connected Vehicle Roadside Equipment, Driver, Olathe ATMS, Olathe ATMS Field Equipment, Vehicle
WX01	Weather Data Collection	This service package collects current road and weather conditions using data collected from environmental sensors deployed on and about the roadway. It also collects data from vehicles in the road network that can be used to directly measure or infer current environmental conditions. It leverages vehicle on-board systems that measure temperature, sense current weather conditions (rain and sun sensors) and also can monitor aspects of the vehicle operational status (e.g., use of headlights, wipers, and traction control system) to gather information about local environmental conditions. In addition, environmental sensor systems located on Maintenance and Construction Vehicles are also potential data sources. The collected environmental data is used by the Weather Information Processing and Distribution service package to process the information and make decisions on operations. The collected environmental data may be aggregated, combined with data attributes and sent to meteorological systems for data qualification and further data consolidation. The service package may also request and receive qualified data sets from meteorological systems.	Existing	No	Conditions Acquisition and Reporting System, County and City Public Works Offices, Flood Warning System-StormWatch, Kansas City Scout Traffic Management Center, KC Metro Road Weather Information System, KCMO ATMS, KCMO Maintenance and Construction Operations Center, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT Field Equipment, KDOT KanRoad Reporting System, KDOT Road Weather Information System, KTA Operations Center, MoDOT Operations, MoDOT Road Weather Information System, MoDOT Traffic Signal System, National Weather Service, Olathe ATMS, Operation Green Light

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
WX01	Weather Data Collection (Kansas)	--Instance of <WX01>-- This service package collects current road and weather conditions using data collected from environmental sensors deployed on and about the roadway. It also collects data from vehicles in the road network that can be used to directly measure or infer current environmental conditions. It leverages vehicle on-board systems that measure temperature, sense current weather conditions (rain and sun sensors) and also can monitor aspects of the vehicle operational status (e.g., use of headlights, wipers, and traction control system) to gather information about local environmental conditions. In addition, environmental sensor systems located on Maintenance and Construction Vehicles are also potential data sources. The collected environmental data is used by the Weather Information Processing and Distribution service package to process the information and make decisions on operations. The collected environmental data may be aggregated, combined with data attributes and sent to meteorological systems for data qualification and further data consolidation. The service package may also request and receive qualified data sets from meteorological systems.	Existing	Yes	Flood Warning System-StormWatch, Kansas City Scout Traffic Management Center, KC Metro Road Weather Information System, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT Field Equipment, KDOT KanRoad Reporting System, KDOT Road Weather Information System, KTA Operations Center, National Weather Service
WX01	Weather Data Collection (Olathe)	--Instance of <WX01>-- This service package collects current road and weather conditions using data collected from environmental sensors deployed on and about the roadway. It also collects data from vehicles in the road network that can be used to directly measure or infer current environmental conditions. It leverages vehicle on-board systems that measure temperature, sense current weather conditions (rain and sun sensors) and also can monitor aspects of the vehicle operational status (e.g., use of headlights, wipers, and traction control system) to gather information about local environmental conditions. In addition, environmental sensor systems located on Maintenance and Construction Vehicles are also potential data sources. The collected environmental data is used by the Weather Information Processing and Distribution service package to process the information and make decisions on operations. The collected environmental data may be aggregated, combined with data attributes and sent to meteorological systems for data qualification and further data consolidation. The service package may also request and receive qualified data sets from meteorological systems.	Planned	Yes	Flood Warning System-StormWatch, KC Metro Road Weather Information System, KDOT Road Weather Information System, National Weather Service, Olathe ATMS

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
WX02	Weather Information Processing and Distribution	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.	Existing	No	Conditions Acquisition and Reporting System, County and City Websites, Flood Warning System-StormWatch, JCT Operations Center, Kansas City Scout Traffic Management Center, Kansas City Scout Website, KCMO ATMS, KCMO Maintenance and Construction Operations Center, KDOT 511 Traveler Information System, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, KTA Travel Information Website, Media, MoDOT Operations, MoDOT Road Weather Information System, National Weather Service, Olathe ATMS, Operation Green Light, Overland Park ATMS, Private ISP Systems, Railroad Operations Central Dispatch, RideKC Operations Center, UGT Operations Center

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
WX02	Weather Information Processing and Distribution (Kansas)	--Instance of <WX02>-- 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.	Planned	Yes	Conditions Acquisition and Reporting System, County and City Websites, Flood Warning System-StormWatch, JCT Operations Center, Kansas City Scout Traffic Management Center, Kansas City Scout Website, KDOT 511 Traveler Information System, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, KTA Travel Information Website, Media, MoDOT Operations, MoDOT Road Weather Information System, National Weather Service, Olathe ATMS, Operation Green Light, Overland Park ATMS, Private ISP Systems, UGT Operations Center
WX02	Weather Information Processing and Distribution (Olathe)	--Instance of <WX02>-- 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.	Planned	Yes	Flood Warning System-StormWatch, KDOT 511 Traveler Information System, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KDOT KanDrive Traveler Information Website, KTA Travel Information Website, Media, National Weather Service, Olathe ATMS, Private ISP Systems

Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
WX03	Spot Weather Impact Warning	This service package will alert drivers 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, or fog. The service packages is designed to use standalone weather systems to warn drivers about inclement weather conditions that may impact travel conditions. Real time weather information is collected from fixed environmental sensor stations and vehicle based sensors. The information is processed to determine the nature of the alert or warning to be delivered and then communicated to connected vehicles. 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 to the connected vehicle or on roadway signage.	Future	No	Connected Vehicle Roadside Equipment, Driver, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, KCMO ATMS, KCMO ATMS Field Equipment, MoDOT Field Equipment, MoDOT Traffic Signal System, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Private ISP Systems, Vehicle
WX03	Spot Weather Impact Warning (Kansas)	--Instance of <WX03>-- This service package will alert drivers 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, or fog. The service packages is designed to use standalone weather systems to warn drivers about inclement weather conditions that may impact travel conditions. Real time weather information is collected from fixed environmental sensor stations and vehicle based sensors. The information is processed to determine the nature of the alert or warning to be delivered and then communicated to connected vehicles. 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 to the connected vehicle or on roadway signage.	Future	Yes	Connected Vehicle Roadside Equipment, Driver, Kansas City Scout Field Equipment, Kansas City Scout Traffic Management Center, Olathe ATMS, Olathe ATMS Field Equipment, Operation Green Light, Operation Green Light Field Equipment, Overland Park ATMS, Overland Park ATMS Field Equipment, Private ISP Systems, Vehicle



Service Package	Service Package Name	Service Package Description	Service Package Status	Service Package Instance	Included Elements
WX03	Spot Weather Impact Warning (Olathe)	--Instance of <WX03>-- This service package will alert drivers 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, or fog. The service packages is designed to use standalone weather systems to warn drivers about inclement weather conditions that may impact travel conditions. Real time weather information is collected from fixed environmental sensor stations and vehicle based sensors. The information is processed to determine the nature of the alert or warning to be delivered and then communicated to connected vehicles. 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 to the connected vehicle or on roadway signage.	Future	Yes	Connected Vehicle Roadside Equipment, Driver, Olathe ATMS, Olathe ATMS Field Equipment, Private ISP Systems, Vehicle

## Appendix D. Operational Concept Details

This 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.

**Table 4 – Operational Concept Details**

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Archived Data Systems	The stakeholders in this regional area interface with each other to provide transportation related data archive management for the Kansas City Area.	Counties and Cities	Archived data maintenance.	Existing
Archived Data Systems	The stakeholders in this regional area interface with each other to provide transportation related data archive management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Collect data from other agencies (e.g., public safety agencies) and other data sources.	Existing
Archived Data Systems	The stakeholders in this regional area interface with each other to provide transportation related data archive management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Manage KDOT databases including KDOT GIS web portal (KGATE), KANSYS, KandRoad, RWIS, KARS, etc.	Existing
Archived Data Systems	The stakeholders in this regional area interface with each other to provide transportation related data archive management for the Kansas City Area.	Kansas Highway Patrol	Provide public safety information for archival purposes.	Existing
Archived Data Systems	The stakeholders in this regional area interface with each other to provide transportation related data archive management for the Kansas City Area.	KDOT / MoDOT	Collect freeway transportation related data (e.g, traffic volumes, accidents) to provide basic data quality, data privacy, and metadata management.	Existing
Archived Data Systems	The stakeholders in this regional area interface with each other to provide transportation related data archive management for the Kansas City Area.	MARC	Extract archived data for planning purposes.	Existing
Archived Data Systems	The stakeholders in this regional area interface with each other to provide transportation related data archive management for the Kansas City Area.	Missouri Department of Public Safety	Provide public safety information for archival purposes.	Existing
Archived Data Systems	The stakeholders in this regional area interface with each other to provide transportation related data archive management for the Kansas City Area.	MoDOT	Manage MoDOT databases.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Archived Data Systems	The stakeholders in this regional area interface with each other to provide transportation related data archive management for the Kansas City Area.	MoDOT	Collect transportation related data (e.g, traffic volumes, accidents) to provide basic data quality, data privacy, and metadata management.	Planned
Archived Data Systems	The stakeholders in this regional area interface with each other to provide transportation related data archive management for the Kansas City Area.	MoDOT	Collect data from other agencies (e.g., public safety agencies) and other data sources.	Planned
Commercial Vehicle Operations	The stakeholders in this regional area interface with each other to provide commercial vehicle management for the Kansas City Area.	Kansas City SmartPort	Facilitate an open, secure, member run and owned global community that will solve supply chain process, standards and technology challenges by sharing and communicating logistics data, and working collaboratively to research, develop and implement solutions. Key beneficiaries will be member and non-member entities including exporters, importers, carriers, government and insurance agencies, brokers and other related participants in the supply chain.	Planned
Commercial Vehicle Operations	The stakeholders in this regional area interface with each other to provide commercial vehicle management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Manage TRIS (Truck Routing Information Systems).	Planned
Commercial Vehicle Operations	The stakeholders in this regional area interface with each other to provide commercial vehicle management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Support Commercial Vehicle Information Exchange Window (CVIEW) - an electronic data exchange system that will provide carrier, vehicle, safety and credential information to fixed and mobile roadside inspection stations, state agencies, and other third party users.	Planned
Commercial Vehicle Operations	The stakeholders in this regional area interface with each other to provide commercial vehicle management for the Kansas City Area.	Kansas Highway Patrol	Kansas Highway Patrol is responsible for verifying safety and credential information of commercial vehicle drivers once they have pulled into a check station.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Commercial Vehicle Operations	The stakeholders in this regional area interface with each other to provide commercial vehicle management for the Kansas City Area.	KDOT / MoDOT	Disseminate transportation related information on DMS and HAR signs and sharing with other agencies in the Kansas City Area.	Existing
Commercial Vehicle Operations	The stakeholders in this regional area interface with each other to provide commercial vehicle management for the Kansas City Area.	Missouri Department of Public Safety	MSHP is responsible for verifying safety and credential information of commercial vehicle drivers once they have pulled into a check station.	Existing
Commercial Vehicle Operations	The stakeholders in this regional area interface with each other to provide commercial vehicle management for the Kansas City Area.	MoDOT	Support Commercial Vehicle Information Exchange Window (CVIEW) - an electronic data exchange system that will provide carrier, vehicle, safety and credential information to fixed and mobile roadside inspection stations, state agencies, and other third party users.	Planned
Commercial Vehicle Operations	The stakeholders in this regional area interface with each other to provide commercial vehicle management for the Kansas City Area.	Private Trucking Companies	Own and manage commercial fleets of vehicles equipped with sensory, processing, storage, and communications functions necessary to support safe and efficient commercial vehicle operations.	Existing
Electronic Toll and Fare Collection	The stakeholders in this regional area to provide electronic toll and fare management for the Kansas City Area.	KTA	Operate the multifunction Kansas Turnpike Authority (KTA) operation center located in Wichita. Manage the toll collection process on the Turnpike.	Existing
Electronic Toll and Fare Collection	The stakeholders in this regional area to provide electronic toll and fare management for the Kansas City Area.	Regional Transit Operators	Operate electronic fare payment systems.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Counties and Cities	Respond to 911 emergency dispatches.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Counties and Cities	Coordinate emergency response with local emergency management agencies, public safety agencies, and/or transportation agencies.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Counties and Cities	Provide disaster-related information to the public.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Counties and Cities	Provide resources when requested by emergency agency.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Counties and Cities	Provide emergency call taking (911) within the city and/or county jurisdiction area and dispatch Sheriff, Police, Fire and EMS services.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Share information and personnel with KDEM Emergency Operations Center for emergency response.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Support disaster response and recovery, and disaster evacuation.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Operate DMS and HAR for AMBER Alerts and other appropriate emergencies.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Participate in coordinated emergency response with emergency management agencies, law enforcement agencies, and/or transportation agencies.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Provide resources to support emergency management when requested by emergency agencies.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Disseminate disaster-related information to the public.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Provide weather alerts on rest area kiosks.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Div of Emergency Management (KDEM)	Coordinate with local, state, and federal agencies.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Div of Emergency Management (KDEM)	Issue nationwide and regional warnings to government authorities and the civilian population in areas endangered by disasters.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Div of Emergency Management (KDEM)	Manage web EOC which is an Internet-based software program that posts information from multiple agencies during an emergency.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Div of Emergency Management (KDEM)	Operate an alternate EOC during statewide emergencies when the Kansas EOC is inoperable.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Div of Emergency Management (KDEM)	Provide emergency management center for statewide emergency operations and national response during major emergencies and disasters.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Highway Patrol	Provide disaster-related information to the public.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Highway Patrol	Support disaster response and recovery, and disaster evacuation.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Highway Patrol	Operate a statewide communication and dispatching center in Salina, KS. Provide emergency calls taking and dispatching state patrol vehicles. Communicate with KDOT's District, Area, or Sub-Area offices when KDOT personnel, equipment, or materials are needed to support incident management and response to emergency calls.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Kansas Highway Patrol	Coordinate emergency response with local emergency management agencies, public safety agencies, and/or transportation agencies.	Planned

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	KDOT / MoDOT	Support disaster response and recovery, and disaster evacuation.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	KDOT / MoDOT	Operate DMS and HAR (KDOT) for AMBER Alerts and other appropriate emergencies.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	KDOT / MoDOT	Provide resources to support emergency management when requested by emergency agencies.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	KDOT / MoDOT	Coordinate emergency response with local emergency management agencies, public safety agencies, and/or transportation agencies.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	KDOT / MoDOT	Disseminate disaster-related information to the public.	Planned
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	KTA	Operate portable and permanent DMS (planned) to direct traffic for AMBER Alert.	Planned
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	MARC	Coordinate emergency response with local emergency management agencies, public safety agencies, and/or transportation agencies.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	MARC	Provide disaster-related information to the public.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	MARC	Provide resources when requested by emergency agency.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Missouri Department of Public Safety	Coordinate emergency response with local emergency management agencies, public safety agencies, and/or transportation agencies.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Missouri Department of Public Safety	Provide disaster-related information to the public.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Missouri Department of Public Safety	Support disaster response and recovery, and disaster evacuation.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Missouri State Emergency Mgmt Agency	Coordinate with local, state, and federal agencies.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Missouri State Emergency Mgmt Agency	Issue nationwide and regional warnings to government authorities and the civilian population in areas endangered by disasters.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Missouri State Emergency Mgmt Agency	Operate an alternate EOC during statewide emergencies when the Missouri EOC is inoperable.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Missouri State Emergency Mgmt Agency	Provide emergency management center for statewide emergency operations and national response during major emergencies and disasters.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	MoDOT	Share information and personnel with the Missouri State Emergency Management Agency for emergency response.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	MoDOT	Support disaster response and recovery, and disaster evacuation.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	MoDOT	Operate DMS and HAR for AMBER Alerts and other appropriate emergencies.	Existing
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	MoDOT	Disseminate disaster-related information to the public.	Planned
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	MoDOT	Provide resources to support emergency management when requested by emergency agencies.	Planned



RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Emergency Management	The stakeholders in this regional area interface with each other to provide disaster emergency management for the Kansas City Area.	Regional Transit Operators	Support disaster response and recovery, and disaster evacuation.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Collect measures of effectiveness on the freeway system to aid in monitoring and managing traffic conditions.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Coordinate incident response and road closures with local emergency management agencies, public safety agencies, and/or transportation agencies.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Disseminate transportation related information on DMS and HAR signs and sharing with other agencies in the Kansas City Area.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Provide resources to support incident management when requested by emergency agencies.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	Kansas Highway Patrol	Coordinate incident response with KDOT and local emergency management agencies, public safety agencies, and/or transportation agencies including road closure.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	Kansas Highway Patrol	Provide motorist assistance service to travelers.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	KDOT / MoDOT	Collect measures of effectiveness on the freeway system to aid in monitoring and managing traffic conditions.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	KDOT / MoDOT	Disseminate transportation related information on DMS and HAR signs and sharing with other agencies in the Kansas City Area.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	KDOT / MoDOT	Use the collected information to implement control and response measures (e.g., ramp metering) to restore traffic back to normal operating conditions.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	KDOT / MoDOT	Coordinate incident response and road closures with local emergency management agencies, public safety agencies, and/or transportation agencies.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	KDOT / MoDOT	Perform incident detection and verification through video surveillance.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	KDOT / MoDOT	Provide resources to support incident management when requested by emergency agencies.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	KDOT / MoDOT	Provide incident information to local public safety agencies.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	KDOT / MoDOT	Dispatch motorists assistance service / emergency response to travelers.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	KTA	Operate portable and permanent DMS (planned) to provide information and direct traffic for incident management along the corridor.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	KTA	Collect measures of effectiveness on the freeway system to aid in monitoring and managing traffic conditions.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	Media	Collect incident and disaster information from the traffic management and public safety agencies in the Kansas City area.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	Media	Provide incident information to the traffic management and public safety agencies in the Kansas City area.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	Missouri Department of Public Safety	Provide motorist assistance service to travelers.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	Missouri Department of Public Safety	Coordinate incident response with MoDOT and local emergency management agencies, public safety agencies, and/or transportation agencies including road closure.	Planned
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	MoDOT	Collect measures of effectiveness on the freeway system to aid in monitoring and managing traffic conditions.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	MoDOT	Coordinate incident response and road closures with local emergency management agencies, public safety agencies, and/or transportation agencies.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	MoDOT	Disseminate transportation related information on DMS and HAR signs and sharing with other agencies in the Kansas City Area.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	MoDOT	Provide resources to support incident management when requested by emergency agencies.	Existing
Freeway Management	The stakeholders in this regional area interface with each other to provide freeway management for the Kansas City Area.	Private Information Service Providers	Disseminate transportation related information in the Kansas City Area.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Counties and Cities	Respond to incident dispatch.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Counties and Cities	Coordinates incident response with local emergency management agencies, public safety agencies and/or transportation agencies.	Planned
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Operate DMS and HAR for incident management.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Perform incident detection and verification through video surveillance.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Provide incident information to local public safety agencies.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Provide resources to support incident management when requested by emergency agencies.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Coordinate incident response and road closures with local emergency management agencies, public safety agencies, and/or transportation agencies.	Planned
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Kansas Highway Patrol	Coordinate incident response with KDOT and local emergency management agencies, public safety agencies, and/or transportation agencies, including road closure.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Kansas Highway Patrol	Dispatch Private Towing Companies contracted with the KHP and KTA for vehicles traveling along Kansas interstate highways that require towing.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Kansas Highway Patrol	Provide motorists assistance service to travelers.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Kansas Highway Patrol	Receive emergency calls for incidents within the jurisdiction area and dispatch state patrol vehicles responding to emergency calls.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Kansas Highway Patrol	Routinely patrol major roadways including interstates, US highways, state highways and secondary county roads, and enforce motor vehicle laws.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	KDOT / MoDOT	Coordinate incident response and road closures with local emergency management agencies, public safety agencies, and/or transportation agencies.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	KDOT / MoDOT	Operate DMS and HAR for incident management.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	KDOT / MoDOT	Perform incident detection and verification through video surveillance.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	KDOT / MoDOT	Provide incident information to local public safety agencies.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	KDOT / MoDOT	Provide resources to support incident management when requested by emergency agencies.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	KDOT / MoDOT	Dispatch motorist assistance service to travelers.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	KTA	Operate portable and permanent DMS (planned) to direct traffic for incident management along the corridor.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	MARC	Coordinates incident response with local emergency management agencies, public safety agencies and/or transportation agencies.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	MARC	Perform incident detection and verification through video surveillance.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	MARC	Provide incident information to local public safety agencies.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	MARC	Respond to incident dispatch.	Planned
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Media	Collect incident and disaster information from the traffic management and public safety agencies in the Kansas City area.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Media	Provide incident information to the traffic management and public safety agencies in the Kansas City area.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Media	Share the information it receives from the traffic management and public safety agencies in the Kansas City area with the public.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Missouri Department of Public Safety	Dispatch Private Towing Companies contracted with the MSHP for vehicles traveling along Missouri interstate highways that require towing.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Missouri Department of Public Safety	Provide motorists assistance service to travelers.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Missouri Department of Public Safety	Receive emergency calls for incidents within the jurisdiction area and dispatch state patrol vehicles responding to emergency calls.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Missouri Department of Public Safety	Routinely patrol major roadways including interstates, US highways, state highways and secondary county roads, and enforce motor vehicle laws.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Missouri Department of Public Safety	Coordinate incident response with MoDOT and local emergency management agencies, public safety agencies, and/or transportation agencies, including road closure.	Planned
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	MoDOT	Coordinate incident response and road closures with local emergency management agencies, public safety agencies, and/or transportation agencies.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	MoDOT	Operate DMS and HAR for incident management.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	MoDOT	Perform incident detection and verification through video surveillance.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	MoDOT	Provide incident information to local public safety agencies.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	MoDOT	Provide resources to support incident management when requested by emergency agencies.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Regional Transit Operators	Operate on-board security cameras, to remotely monitor the vehicles.	Existing
Incident Management	The stakeholders in this regional area interface with each other to provide traffic incident management for the Kansas City Area.	Regional Transit Operators	Report incident information to public safety agencies.	Planned
KCATA	KCATA is responsible for safe operation of the transit system and cooperation with other agencies in the region in emergency situations.	KCATA		
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	Counties and Cities	Dispatch maintenance vehicles for planned activities (road maintenance, snow plowing, etc.) and unplanned incidents within the jurisdictions.	Existing
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	Counties and Cities	Manage maintenance and construction activities of county and city roads.	Existing
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	Counties and Cities	Operate and maintain agency vehicle fleet.	Existing
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	Counties and Cities	Operate or plan to operate AVL system to track vehicle locations	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	Counties and Cities	Communicate maintenance and construction schedule and other related information to local agencies.	Planned
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Communicate maintenance and construction schedule and other related information with local agencies.	Existing
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Provide and operate RWIS system and collect road weather information along major roadways, and distribute road weather information to local public safety agencies and transportation agencies.	Planned
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Perform construction management.	Planned
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	KDOT District/Area/Sub-area Offices	Dispatch maintenance vehicles for planned activities (road maintenance, snow plowing, etc.) and unplanned incidents within the jurisdiction area.	Existing
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	KDOT District/Area/Sub-area Offices	Operate and maintain agency vehicle fleet.	Existing
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	KDOT District/Area/Sub-area Offices	Operate automated bridge de-icing system.	Existing
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	KDOT District/Area/Sub-area Offices	Operate field devices including sensors, cameras, and/or DMS/HAR for maintenance and construction activities.	Existing
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	KDOT District/Area/Sub-area Offices	Operate permanent and mobile Weight-in-Motion Stations in conjunction with KMCA, KDOR, KCC, KHP.	Existing



RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	KDOT District/Area/Sub-area Offices	Communicate maintenance and construction schedule and other related information with local agencies.	Planned
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	KDOT District/Area/Sub-area Offices	Maintain DOT owned ITS roadside equipment such as DMS, HAR, traffic recorders, etc.	Planned
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	KDOT District/Area/Sub-area Offices	Operate Computer Aided System for Planning Efficient Routes (CASPER) to re-design network snow service routes and optimize the plowing process.	Planned
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	KDOT District/Area/Sub-area Offices	Perform maintenance of interstate, state highways and bridges.	Planned
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	KTA	Operate portable DMS to direct traffic for special events, and maintenance and construction. Permanent DMSs are planned.	Existing
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	MoDOT	Perform construction management.	Existing
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	MoDOT	Provide and operate RWIS system and collect road weather information along major roadways, and distribute road weather information to local public safety agencies and transportation agencies.	Existing
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	MoDOT	Communicate maintenance and construction schedule and other related information with local agencies.	Planned
Maintenance and Construction	The stakeholders in this regional area interface with each other to provide maintenance and construction coordination activity for the Kansas City Area.	NOAA	Make available weather forecast; issue warnings related to adverse weather conditions.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Parking Management	The stakeholders in this regional area interface with each other to provide parking management activity for the Kansas City Area.	City of Kansas City, MO	Maintain parking lot information including static information such as hours of operation, rates, location, entrance locations, capacity, type, and constraints; as well as dynamic information such as current state of the lot, occupancy, arrival rates, and departure rates.	Planned
Parking Management	The stakeholders in this regional area interface with each other to provide parking management activity for the Kansas City Area.	City of Kansas City, MO	Manage local dynamic message signs that display messages to travelers such as the parking lot state, number of spaces available, location of entrances, and current charges.	Planned
Parking Management	The stakeholders in this regional area interface with each other to provide parking management activity for the Kansas City Area.	City of Kansas City, MO	Detect, count, and classify vehicles at entrances, exits, and designated locations within a parking facility.	Planned
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	City of Kansas City, MO	City of Kansas City, MO shall staff its operations at the Traffic Operations Center (TOC).	Existing
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	City of Kansas City, MO	City of Kansas City, MO shall examine its signal system network periodically and determine if optimization is necessary.	Existing
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	City of Kansas City, MO	City of Kansas City, MO is responsible for managing the traffic signal timing and maintenance of the city's signals.	Existing
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	City of Olathe, KS	Olathe shall staff its operations at the Traffic Operations Center (TOC).	Existing
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	City of Olathe, KS	Olathe shall examine its signal system network periodically and determine if optimization is necessary.	Existing
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	City of Olathe, KS	Olathe is responsible for managing the traffic signal timing and maintenance of the city's signals.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	City of Olathe, KS	Olathe shall coordinate with Operation Greenlight and other regional entities to optimize traffic signal timing and provide incident detection and management.	Existing
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	City of Overland Park, KS	Overland Park shall staff its operations at the Traffic Operations Center (TOC).	Existing
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	City of Overland Park, KS	Overland Park shall examine its signal system network periodically and determine if optimization is necessary.	Existing
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	City of Overland Park, KS	Overland Park is responsible for managing the traffic signal timing and maintenance of the city's signals.	Planned
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	City of Overland Park, KS	Overland Park shall coordinate with Operation Greenlight and other regional entities to optimize traffic signal timing and provide incident detection and management.	Planned
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	Counties and Cities	Operate traffic signal systems within city and county jurisdictions.	Existing
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	MARC	Operation Green Light shall provide member cities with regionally optimized traffic signal timing plans for approval and download into the local controller.	Existing
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	MARC	Operation Green Light will examine the signal system network periodically and determine if optimization is necessary.	Existing
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	MARC	Operation Green Light and member agencies shall identify locations along the arterial where incidents are prone to happen. These locations shall be manually forced to run special plans when an incident is observed.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	MARC	Member agencies shall route/report citizen complaints/requests on Operation Green Light signals to the TOC and OGL shall respond to the complaint/request in a timely manner.	Existing
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	MARC	Operation Green Light shall route/report received citizen complaints to the member agencies and maintain a response log.	Existing
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	MARC	Operation Green Light may upgrade traffic controllers that are incapable of communicating with the central system software.	Existing
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	MARC	Operation Green Light shall staff its operations at the Traffic Operations Center (TOC).	Existing
Surface Street Management	The stakeholders in this regional area interface with each other to provide surface street/arterial management for the Kansas City Area.	MoDOT	MoDOT is responsible for managing the traffic signal timing and maintenance of the traffic signals under their control on the state roadway system.	Existing
Transit Services	The stakeholders in this regional area interface with each other to provide transit information and services for the Kansas City Area.	Private Paratransit Providers	Dispatch fixed time and demand responsive services within the jurisdiction area.	Existing
Transit Services	The stakeholders in this regional area interface with each other to provide transit information and services for the Kansas City Area.	Regional Transit Operators	Dispatch fixed-route and demand responsive transit services throughout urbanized areas using CAD and MDT systems.	Existing
Transit Services	The stakeholders in this regional area interface with each other to provide transit information and services for the Kansas City Area.	Regional Transit Operators	Operate AVL system to track vehicle location.	Existing
Transit Services	The stakeholders in this regional area interface with each other to provide transit information and services for the Kansas City Area.	Regional Transit Operators	Operate electronic displays at bus stops to disseminate real-time transit information.	Existing
Transit Services	The stakeholders in this regional area interface with each other to provide transit information and services for the Kansas City Area.	Regional Transit Operators	Operate on-board variable message signs and audible enunciators to provide transit information to travelers.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Transit Services	The stakeholders in this regional area interface with each other to provide transit information and services for the Kansas City Area.	Regional Transit Operators	Provide transit information such as transit routes and schedules, transit transfer options, and transit fares to travelers through the Internet and other communications methods,	Existing
Transit Services	The stakeholders in this regional area interface with each other to provide transit information and services for the Kansas City Area.	Regional Transit Operators	Operate transit signal priority system.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	City of Olathe, KS	Collect weather related road conditions information and information on construction/maintenance work zones, detours and other hazards.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	City of Overland Park, KS	Collect weather related road conditions information and information on construction/maintenance work zones, detours and other hazards.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	City of Overland Park, KS	Disseminate road weather, road restrictions, construction and maintenance work zone and detours alerts, and other transportation-related information via Internet.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	Counties and Cities	Operate local government cable channels to provide local street construction information, transit information, winter weather advisories and/or other traveler information to cable TV subscribers.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	Counties and Cities	Maintain websites to disseminate work zone, road closures and restrictions and detours information to the public.	Planned
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	Kansas Department of Transportation (KDOT)	Collect weather related road conditions information and information on construction/maintenance work zones, detours and other hazards.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	Kansas Highway Patrol	Observe winter road conditions on Interstates, US highways, and major state highways and report to KDOT field offices.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	KDOT / MoDOT	Disseminate road weather, road restrictions, construction and maintenance work zone and detours alerts, and other transportation-related information via Internet.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	KDOT / MoDOT	Collect weather related road conditions information and information on construction/maintenance work zones, detours and other hazards.	Planned
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	KDOT District/ Area/Sub-area Offices	Operate portable highway advisory radios (HARs) and rest area kiosks.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	KDOT Division of Public Affairs	Collect weather related road conditions information and information on construction/maintenance work zones, detours and other hazards.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	KDOT Division of Public Affairs	Deploy and support kiosks at traveler information centers, and rest areas providing traveler information such weather, road conditions and construction/maintenance work zones and detours in Kansas and surrounding states.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	KDOT Division of Public Affairs	Disseminate road weather, road restrictions, construction and maintenance work zone and detours alerts, and other transportation-related information via Internet. The websites include <a href="http://511.ksdot.org">http://511.ksdot.org</a> ; <a href="http://www.kanroad.org">www.kanroad.org</a> ; <a href="http://www.kcscout.net/">http://www.kcscout.net/</a> .	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	KDOT Division of Public Affairs	Operate and support a telephone traveler information system (511 System) via either cell phone or landline.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	KDOT Division of Public Affairs	Provide wireless access point at rest areas.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	KTA	Input road surface conditions to the KDOT's KanRoad.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	KTA	Provide construction information to the KDOT's KanRoad.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	KTA	Provide weather information, traffic alerts and advisories, toll schedules, and construction information via Internet.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	KTA	Disseminate road information to travelers via travel advisory radios (TARs) along the Kansas Turnpike.	Planned
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	MARC		
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	Media	Collect travel-related information from the public sector and private information sources, and broadcast that information to their customers via TV, radio stations, news media, etc.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	Missouri Department of Public Safety	Observe winter road conditions on Interstates, US highways, and major state highways and report to MoDOT field offices.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	MoDOT	Deploy and support kiosks at traveler information centers, and rest areas providing traveler information such weather, road conditions and construction/maintenance work zones and detours in Missouri and surrounding states.	Existing

RR Area Name	RR Area Description	Stakeholder	RR Description	RR Status
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	MoDOT	Disseminate road weather, road restrictions, construction and maintenance work zone and detours alerts, and other transportation-related information via Internet.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	MoDOT	Collect weather related road conditions information and information on construction/maintenance work zones, detours and other hazards.	Planned
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	NOAA	Make available weather forecast; issue warnings related to adverse weather conditions.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	Private Information Service Providers	Collect travel-related information from the public sector and private information sources, and broadcast that information to their customers via a variety of user interface equipment.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	Regional Transit Operators	Operate on-board variable message signs and audible enunciators to provide transit information to travelers.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	Regional Transit Operators	Provide transit information such as transit routes and schedules, transit transfer options, and transit fares to travelers through the Internet and other communications methods.	Existing
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	Regional Transit Operators	Operate electronic displays at bus stops to disseminate real-time transit information.	Planned
Traveler Information	The stakeholders in this regional area interface with each other to provide traveler information for the Kansas City Area.	Travelers	Receive travel-related information on various modes of transportation, including surface street, air, rail/transit, and non-motorized.	Existing



## Appendix E. Functional Requirements Details

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 Kansas City Area Regional ITS Architecture as a set of Functional Objects that make up the physical elements of the architecture.

**Table 5 – Functional Requirements Details**

Element Name	Physical Object	Functional Object	Functional Object Description
Airborne Emergency Response Service, County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, JCT Operations Center, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KCIA Emergency Services, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, Private Mayday Services, RideKC Operations Center, UGT Operations Center	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.
Airborne Emergency Response Service, County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, JCT Operations Center, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KCIA Emergency Services, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, RideKC Operations Center, UGT Operations Center	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
<p>Airborne Emergency Response Service, County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, JCT Operations Center, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Missouri State Highway Patrol Dispatch, RideKC Operations Center, UGT Operations Center</p>	<p>Emergency Management Center</p>	<p>Emergency Environmental Monitoring</p>	<p>'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.</p>
<p>Airborne Emergency Response Service, County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, JCT Operations Center, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KCIA Emergency Services, KTA Operations Center, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, RideKC Operations Center, UGT Operations Center</p>	<p>Emergency Management Center</p>	<p>Emergency Incident Command</p>	<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
<p>Airborne Emergency Response Service, County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, JCT Operations Center, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, KCIA Emergency Services, KTA Operations Center, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, RideKC Operations Center, RideKC Transit Police, UGT Operations Center</p>	<p>Emergency Management Center</p>	<p>Emergency Response Management</p>	<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>
<p>Airborne Emergency Response Service, County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Missouri State Highway Patrol Dispatch</p>	<p>Emergency Management Center</p>	<p>Emergency Routing</p>	<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.</p>

Element Name	Physical Object	Functional Object	Functional Object Description
<p>Archived Data User Systems, Basic Commercial Vehicle, Basic Vehicle, Commercial Vehicle Driver, Driver, Emergency Notification and Evacuation System, Event Promoters, Fleet-Freight Manager, Intermodal Freight Depot, KC Freight and Intermodal Facilities, Large Employment Centers, Media, National Weather Service, Wayside Equipment, Parking Operator, Payment Device, Pedestrians/Cyclists, Railroad Operations Central Dispatch, Traffic Operations Personnel, Transit Operations Personnel, Transit Vehicle Operator, Traveler</p>			
<p>Border Inspection Administration, Foreign Trade Zone Facilities - Inspection Center</p>	<p>Border Inspection Administration Center</p>	<p>Border Inspection Administration</p>	<p>'Border Inspection Administration' performs administrative functions relating to the inspection of goods and vehicles at the border.</p>
<p>Border Inspection Systems, Foreign Trade Zone Facilities - Inspection System</p>	<p>Border Inspection System</p>	<p>Border Inspection</p>	<p>'Border Inspection' manages and supports primary and secondary inspections at the border crossing.</p>
<p>Commercial Vehicle OBE</p>	<p>Commercial Vehicle OBE</p>	<p>CV On-Board Cargo Monitoring</p>	<p>'CV On-Board Cargo Monitoring' monitors the location and status of the commercial vehicle and its cargo. It sends the collected data to appropriate centers and roadside facilities, including emergency management in the case of HAZMAT incidents. Depending on the nature of the cargo, it may include sensors that measure temperature, pressure, load leveling, acceleration, and other attributes of the cargo.</p>
<p>Commercial Vehicle OBE</p>	<p>Commercial Vehicle OBE</p>	<p>CV On-Board Trip Monitoring</p>	<p>'CV On-Board Trip Monitoring' provides the capabilities to support fleet management with automatic vehicle location and automated mileage and fuel reporting and auditing. In addition, this equipment is used to monitor the planned route and notify the Fleet and Freight Management Center of any deviations. Freight-specific traveler information and restrictions are also collected and reported to the driver to support the trip.</p>

Element Name	Physical Object	Functional Object	Functional Object Description
Commercial Vehicle OBE, Private Trucking Companies Commercial Vehicles	Commercial Vehicle OBE	CV On-Board Electronic Screening Support	'CV On-Board Electronic Screening Support' exchanges information with roadside facilities, providing information such as driver, vehicle, and carrier identification to roadside facilities that can be used to support electronic screening. Pass/pull-in messages are received and presented to the commercial vehicle driver and screening events are recorded. Additional information, including trip records (e.g., border clearance information), safety inspection records, cargo information, and driver status information may also be collected, stored, and made available to the roadside facility.
Conditions Acquisition and Reporting System, County and City Websites, Flood Warning System-StormWatch, Health and Social Services, JCT Website, Kansas City Scout Traffic Management Center, Kansas City Scout Website, KCMO ATMS, KDOT 511 Traveler Information System, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, KTA Operations Center, KTA Travel Information Website, MoDOT Road Weather Information System, MoDOT Web Site, Olathe ATMS, Overland Park ATMS, Overland Park Traffic Information Website, Private ISP Systems, Private Ride Hailing Services, Regional Call Center for Transit Info, RideKC Streetcar Website, RideKC Website, RideshareKC	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.
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Automated Vehicle Operations	'RSE Automated Vehicle Operations' includes the field elements that monitor and control access to and egress from automated lanes. It monitors and coordinates automated vehicle operations within the lanes. These lanes support vehicles operating in platoons with short headways.

Element Name	Physical Object	Functional Object	Functional Object Description
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Data Subscription Management	'RSE Data Subscription Management' manages data subscriptions for an RSE. It provides access to a catalog of available data, manages the necessary identification information and rules that govern the data subscriptions, supports communications with data providers to collect data per the subscription rules, and makes the data available to other RSE applications. It supports different mechanisms for collecting data including one-time query-response as well as publish-subscribe services.
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Electric Charging Support	'RSE Electric Charging Support' uses short range communications to coordinate with a vehicle that is being charged, receiving information about the operational state of the electrical system, the maximum charge rate, and the percentage-complete of the charge from the vehicle.
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Environmental Monitoring	'RSE Environmental Monitoring' collects environmental situation (probe) data from passing vehicles that are equipped with short range communications capability. The collected data includes current environmental conditions as measured by on-board sensors (e.g., ambient temperature and precipitation measures), current status of vehicle systems that can be used to infer environmental conditions (e.g., status of lights, wipers, ABS, and traction control systems), and emissions measures reported by the vehicle. The functional object collects the provided data, aggregates and filters the data based on provided configuration parameters, and sends the collected information back to a center for processing and distribution. This functional object may also process the collected data locally and issue short-term road weather advisories for the road segment using short range communications.

Element Name	Physical Object	Functional Object	Functional Object Description
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Incident Scene Safety	'RSE Incident Scene Safety' communicates with Connected Vehicles and Personal Information Devices carried or worn by public safety responders to detect vehicle intrusions in designated work areas at an incident scene and warn responders and drivers of imminent encroachment. Public safety responder movements are also monitored so that the responders can be warned of movement beyond the designated safe zone.
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Infrastructure Monitoring	'RSE Infrastructure Monitoring' collects environmental situation (probe) data from passing vehicles that are equipped with short range communications capability with particular focus on measures that may indicate infrastructure condition. The collected data includes current environmental conditions as measured by on-board sensors (e.g., ambient temperature and precipitation measures) and current status of vehicle systems that can be used to infer infrastructure condition (e.g., status of ABS, traction control systems, vertical acceleration measures) as reported by the vehicle. This service object also supports short range communications with maintenance and construction vehicles, providing local control and monitoring of infrastructure sensors.
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Intersection Management	'RSE Intersection Management' uses short range communications to support connected vehicle applications that manage signalized intersections. It communicates with approaching vehicles and ITS infrastructure (e.g., the traffic signal controller) to enhance traffic signal operations. Coordination with the ITS infrastructure also supports conflict monitoring to ensure the RSE output and traffic signal control output are consistent and degrade in a fail safe manner.

Element Name	Physical Object	Functional Object	Functional Object Description
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Intersection Safety	'RSE Intersection Safety' uses short range communications to support connected vehicle applications that improve intersection safety. It communicates with approaching vehicles and ITS infrastructure to alert and warn drivers of potential stop sign, red light, and non-motorized user crossing conflicts or violations.
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Parking Management	'RSE Parking Management' monitors the basic safety messages generated by connected vehicles to detect vehicles parking and maintain and report spaces that are occupied by connected vehicles. It also uses short range communications to provide parking information to vehicles.
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Payment Support	'RSE Payment Support' manages vehicle payments for road use based on fee structures and payment strategies based on vehicle-reported data including VMT, emissions, vehicle class or type. Fees may vary by time or location and may include incentives or credits to reward desirable driving behavior. To support payment, it receives vehicle data (e.g., time stamped roadways used by the vehicle since the last transmission) and forwards this to the Payment Administration Center. It also receives equipment status from the vehicle and vehicle characteristics sensed from the vehicle (number of axles, weight, vehicle tag image/ID). Faults are identified and forwarded to the Payment Administration Center. Finally, it requests, receives, processes, and reports vehicle payment information.
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Rail Crossing Warning	'RSE Rail Crossing Warning' is a connected vehicle application that improves safety at rail crossings. It communicates with wayside equipment that detects or communicates with approaching trains. It provides rail crossing warnings and train arrival information to approaching vehicles and monitors connected vehicles that may intrude on the crossing.



Element Name	Physical Object	Functional Object	Functional Object Description
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Restricted Lanes Application	The 'RSE Restricted Lanes Application' uses short range communications to monitor and manage dynamic and static restricted lanes. It collects vehicle profile information from vehicles entering the lanes and monitors vehicles within the lanes, providing aggregate data to the back office center. It provides lane restriction information and signage data to the vehicles and optionally identifies vehicles that violate the current lane restrictions. These functions are performed based on operating parameters provided by the back office managing center(s).
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Situation Monitoring	'RSE Situation Monitoring' is a general functional object that supports collection of traffic, environmental, and emissions data from passing vehicles. The data is collected, filtered, and forwarded based on parameters provided by the back office. Parameters are provided to passing vehicles that are equipped to collect and send situation data to the infrastructure in snapshots. In addition, this object collects current status information from local field devices including intersection status, sensor data, and signage data, providing complete, configurable monitoring of the situation for the local transportation system in the vicinity of the RSE.

Element Name	Physical Object	Functional Object	Functional Object Description
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Speed Warning	'RSE Speed Warning' notifies connected vehicles that are approaching a reduced speed zone, providing: (1) the zone's current posted speed limit and (2) any roadway configuration changes associated with the reduced speed zone (e.g., lane closures, lane shifts) if applicable, and (3) associated warning information (i.e., the reason for the reduced speed warning). Configuration parameters that define the applicable speed limit(s), geographic location and extent of the reduced speed zone, and roadway configuration information are received from a center or provided through a local interface. This service object works in conjunction with the 'Roadway Speed Monitoring and Warning' service object, which uses traditional ITS field equipment to warn non-equipped vehicles.
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Support Services	'RSE Support Services' provides foundational functions that supports data collection, management, and distribution. It coordinates with Object Registration and Discovery to maintain its registration with respect to location/geographic scope and credentialing information. It maintains the necessary security credentials, authorizations, and associated keys to support communications in the connected vehicle environment. It maintains precise location and time information to support other services.
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Toll Collection	'RSE Toll Collection' collects electronic tolls using V2I communications in toll plazas and other designated toll collection locations. The RSE is connected with other field equipment that detects vehicles, identifies violators, and provides other toll plaza functionality.

Element Name	Physical Object	Functional Object	Functional Object Description
Connected Vehicle Roadside 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.
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Traveler Information Communications	'RSE Traveler Information Communications' includes field elements that distribute information to vehicles for in-vehicle display. The information may be provided by a center (e.g., variable information on traffic and road conditions in the vicinity of the field equipment) or it may be determined and output locally (e.g., static sign information and signal phase and timing information). This includes the interface to the center or field equipment that controls the information distribution and the short range communications equipment that provides information to passing vehicles.
Connected Vehicle Roadside Equipment	Connected Vehicle Roadside Equipment	RSE Trust Management	'RSE Trust Management' manages the certificates and associated keys that are used to sign, encrypt, decrypt, and authenticate messages. It communicates with the Security and Credentials Management System to maintain a current, valid set of security certificates and keys and identifies, logs, and reports events that may indicate a threat to Connected Vehicle Environment security.

Element Name	Physical Object	Functional Object	Functional Object Description
Connected Vehicle Roadside Equipment, KDOT Work Zone Intrusion Detection System	Connected Vehicle Roadside Equipment	RSE Work Zone Safety	'RSE Work Zone Safety' communicates with Connected Vehicles and Personal Information Devices carried or worn by the work crew to detect vehicle intrusions in work zones and warn crew workers and drivers of imminent encroachment. Crew movements are also monitored so that the crew can be warned of movement beyond the designated safe zone.
Connected Vehicle Roadside Equipment, KHP Scales and Weigh Stations, MSHP Scales and Inspection Facilities	Connected Vehicle Roadside Equipment	RSE Border Management	'RSE Border Management' supports border operations, providing functions that measure border wait times and provide wait times and other traveler information to approaching vehicles. Short range communications with vehicles and associated equipment supports collection of traveler, vehicle, and cargo information and credentials.
Connected Vehicle Roadside Equipment, KHP Scales and Weigh Stations, MSHP Scales and Inspection Facilities	Connected Vehicle Roadside Equipment	RSE Commercial Vehicle Services	'RSE Commercial Vehicle Services' provides two-way communication with approaching properly equipped commercial vehicles at mainline speeds for automated vehicle identification and credential checking.
County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas Highway Patrol Dispatch, KCIA Emergency Services, Missouri State Highway Patrol Dispatch	Emergency Management Center	Emergency Commercial Vehicle Response	'Emergency Commercial Vehicle Response' identifies and initiates a response to commercial vehicle and freight equipment related emergencies. These emergencies may include incidents involving hazardous materials as well as the detection of non-permitted transport of security sensitive hazmat. It identifies the location of the vehicle, the nature of the incident, the route information, and information concerning the freight itself. The information supports the determination of the response and identifies the responding agencies to notify.

Element Name	Physical Object	Functional Object	Functional Object Description
<p>County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Kansas State Emergency Operations Center, Missouri State Emergency Management Center, Missouri State Highway Patrol Dispatch, RideKC Operations Center</p>	<p>Emergency Management Center</p>	<p>Emergency Evacuation Support</p>	<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>
<p>County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, KCIA Emergency Services, RideKC Operations Center, RideKC Transit Police</p>	<p>Emergency Management Center</p>	<p>Emergency Secure Area Alarm Support</p>	<p>'Emergency Secure Area Alarm Support' receives traveler or transit vehicle operator alarm messages, notifies the system operator, and provides acknowledgement of alarm receipt back to the originator of the alarm. The alarms received can be generated by silent or audible alarm systems and may originate from public areas (e.g. transit stops, park and ride lots, transit stations, rest areas) or transit vehicles. The nature of the emergency may be determined based on the information in the alarm message as well as other inputs.</p>

Element Name	Physical Object	Functional Object	Functional Object Description
<p>County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, KCIA Emergency Services, RideKC Operations Center, RideKC Transit Police</p>	<p>Emergency Management Center</p>	<p>Emergency Secure Area Sensor Management</p>	<p>'Emergency Secure Area Sensor Management' manages sensors that monitor secure areas in the transportation system, processes the collected data, performs threat analysis in which data is correlated with other sensor, surveillance, and advisory inputs, and then disseminates resultant threat information to emergency personnel and other agencies. In response to identified threats, the operator may request activation of barrier and safeguard systems to preclude an incident, control access during and after an incident or mitigate impact of an incident. The sensors may be in 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. The types of sensors include acoustic, threat (e.g. chemical agent, toxic industrial chemical, biological, explosives, and radiological sensors), infrastructure condition and integrity, motion and object sensors.</p>
<p>County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, KCIA Emergency Services, RideKC Operations Center, RideKC Transit Police</p>	<p>Emergency Management Center</p>	<p>Emergency Secure Area Surveillance</p>	<p>'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.</p>

Element Name	Physical Object	Functional Object	Functional Object Description
County and City 911 Dispatch Centers, County and City Fire and EMS Departments, County Sheriff and City Police Departments, Private Mayday Services	Emergency Management Center	Emergency Notification Support	'Emergency Notification Support' receives emergency notification messages from vehicles or personal handheld devices, determines an appropriate response, and either uses internal resources or contacts a local agency to provide that response. The nature of the emergency is determined based on the information in the received message as well as other inputs. This object effectively serves as an interface between automated collision notification systems and the local public safety answering point for messages that require a public safety response. This capability depends on an up-to-date registry of public safety answering points/response agencies by coverage area, the type of emergency, and hours of service.
County and City Emergency Vehicles	Emergency Vehicle OBE	EV On-Board Incident Management Communication	'EV On-board Incident Management Communication' provides communications support to first responders. Information about the incident, information on dispatched resources, and ancillary information such as road and weather conditions are provided to emergency personnel. Emergency personnel transmit information about the incident such as identification of vehicles and people involved, the extent of injuries, hazardous material, resources on site, site management strategies in effect, and current clearance status. Emergency personnel may also send in-vehicle signing messages to approaching traffic using short range communications.
County and City Emergency Vehicles, Emergency Response Vehicles (Missouri), Kansas Highway Patrol Vehicles, Missouri State Highway Patrol Vehicles, Motorist Assist Vehicles (Kansas), Overland Park Motorist Assist Vehicles	Emergency Vehicle OBE	EV On-Board En Route Support	'EV On-Board En Route Support' provides communications functions to responding emergency vehicles that reduce response times and improve safety of responding public safety personnel and the general public. It supports traffic signal preemption via short range communication directly with signal control equipment and sends alert messages to surrounding vehicles.

Element Name	Physical Object	Functional Object	Functional Object Description
County and City Maintenance and Construction Vehicles, KCMO Maintenance and Construction Vehicles, KDOT Maintenance and Construction Vehicles, KTA Maintenance and Construction Vehicles, MoDOT Maintenance Vehicles	Maint and Constr Vehicle OBE	MCV Vehicle Location Tracking	'MCV Vehicle Location Tracking' monitors vehicle location and reports the position and timestamp information to the dispatch center.
County and City Public Works Offices, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, KCMO ATMS, KTA Operations Center, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS	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
County and City Public Works Offices, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, KCMO ATMS, KTA Operations Center, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS	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
County and City Public Works Offices, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, KCMO ATMS, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS	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.
County and City Public Works Offices, Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Olathe ATMS, Operation Green Light, Overland Park ATMS	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.
County and City Public Works Offices, Kansas City Scout Traffic Management Center, KCMO ATMS, KTA Operations Center, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS	Traffic Management Center	TMC Environmental Monitoring	'TMC Environmental Monitoring' assimilates current and forecast road conditions and surface weather information using a combination of weather service provider information, information collected by other centers such as the Maintenance and Construction Management Center, data collected from environmental sensors deployed on and about the roadway, and information collected from connected vehicles. The collected environmental information is monitored and presented to the operator. This information can be used to issue general traveler advisories and support location specific warnings to drivers.

Element Name	Physical Object	Functional Object	Functional Object Description
County and City Public Works Offices, Kansas City Scout Traffic Management Center, KCMO ATMS, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS	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.
County and City Public Works Offices, KCMO Maintenance and Construction Operations Center, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KTA Operations Center, MoDOT Operations	Maint and Constr Management Center	MCM Environmental Information Collection	'MCM Environmental Information Collection' collects current road and weather conditions using data collected from environmental sensors deployed on and about the roadway. In addition to fixed sensor stations at the roadside, this functional object also collects environmental information from sensor systems located on Maintenance and Construction Vehicles. It also collects current and forecast environmental conditions information that is made available by other systems. The functional object aggregates the sensor system data and provides it, along with data attributes to other applications.
County and City Public Works Offices, KCMO Maintenance and Construction Operations Center, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KTA Operations Center, MoDOT Operations	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.
County and City Public Works Offices, KCMO Maintenance and Construction Operations Center, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KTA Operations Center, MoDOT Operations	Maint and Constr Management Center	MCM Vehicle Tracking	'MCM Vehicle Tracking' tracks the location of maintenance and construction vehicles and other equipment. Vehicle/equipment location and associated information is presented to the operator.

Element Name	Physical Object	Functional Object	Functional Object Description
County and City Traffic Signal Systems	ITS Roadway Equipment	Roadway Advanced Rail Crossing	'Roadway Advanced Rail Crossing' manages highway traffic at highway-rail intersections (HRIs) where operational requirements demand advanced features (e.g., where rail operational speeds are greater than 80 miles per hour). The active warning systems supported by this application include positive barrier systems which preclude entrance into the intersection when the barriers are activated. This application is activated on notification by wayside interface equipment which detects, or communicates with the approaching train. In this application, additional information about the arriving train is also provided by the wayside interface equipment so that the train's direction of travel, its estimated time of arrival, and the estimated duration of closure may be derived. This enhanced information may be conveyed to the driver prior to, or in context with, warning system activation. This application also includes detection capabilities which enable it to detect an entrapped or otherwise immobilized vehicle on the grade crossing and provide an immediate notification to the wayside interface equipment and traffic management.
County and City Traffic Signal Systems, Kansas City Scout Field Equipment, KC Metro Road Weather Information System, MoDOT Field Equipment, Olathe ATMS Field Equipment, Operation Green Light Field Equipment, Overland Park ATMS 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.
County and City Traffic Signal Systems, Kansas City Scout Field Equipment, KCMO ATMS Field Equipment, MoDOT Field Equipment, Olathe ATMS Field Equipment, Operation Green Light Field Equipment, Overland Park ATMS 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
<p>County and City Traffic Signal Systems, Kansas City Scout Field Equipment, KCMO ATMS Field Equipment, MoDOT Field Equipment, Olathe ATMS Field Equipment, Operation Green Light Field Equipment, Overland Park ATMS Field Equipment</p>	<p>ITS Roadway Equipment</p>	<p>Roadway Passive Monitoring</p>	<p>'Roadway Passive Monitoring' monitors passing vehicles for a signature that can be used to recognize the same vehicle at different points in the network and measure travel times. Depending on the implementation and the penetration rate of the technology that is monitored, other point traffic measures may also be inferred by monitoring the number of vehicles within range over time. Today this approach is implemented most commonly using a Bluetooth receiver that passively monitors Bluetooth devices on-board passing vehicles and license plate readers that record the vehicle license plate number, but any widely deployed vehicle communications technology or feature that can be passively monitored to uniquely identify a vehicle could be used.</p>
<p>County and City Traffic Signal Systems, Kansas City Scout Field Equipment, KCMO ATMS Field Equipment, MoDOT Field Equipment, Olathe ATMS Field Equipment, Operation Green Light Field Equipment, Overland Park ATMS Field Equipment</p>	<p>ITS Roadway Equipment</p>	<p>Roadway Signal Control</p>	<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
County and City Traffic Signal Systems, Kansas City Scout Field Equipment, KCMO ATMS Field Equipment, MoDOT Field Equipment, Olathe ATMS Field Equipment, Operation Green Light Field Equipment, Overland Park ATMS Field Equipment	ITS Roadway Equipment	Roadway Signal Preemption	'Roadway Signal Preemption' includes the field elements that receive signal preemption requests from emergency vehicles approaching a signalized intersection and overrides the current operation of the traffic signals to stop conflicting traffic and grant right-of-way to the approaching vehicle.
County and City Traffic Signal Systems, KCMO ATMS Field Equipment, MoDOT Field Equipment, Olathe ATMS Field Equipment, Operation Green Light Field Equipment, Overland Park ATMS Field Equipment	ITS Roadway Equipment	Roadway Field Management Station Operation	'Roadway Field Management Station Operation' supports direct communications between field management stations and the local field equipment under their control.
County and City Traffic Signal Systems, Olathe ATMS Field Equipment, Operation Green Light 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
<p>County and City Websites, JCT Website, Kansas City Scout Traffic Management Center, Kansas City Scout Website, KCMO ATMS, KDOT 511 Traveler Information System, KDOT KanDrive Traveler Information Website, MoDOT Web Site, Olathe ATMS, Overland Park ATMS, Overland Park Traffic Information Website, Private ISP Systems, Regional Call Center for Transit Info, RideKC Website</p>	<p>Transportation Information Center</p>	<p>TIC Connected Vehicle Traveler Info Distribution</p>	<p>In support of connected vehicle applications, 'TIC Connected Vehicle Traveler Info Distribution' disseminates traveler information including traffic and road conditions, incident information, maintenance and construction information, event information, transit information, parking information, and weather information. Location-specific or situation-relevant traveler information is sent to short range communications transceivers at the roadside.</p>
<p>County and City Websites, JCT Website, KCMO ATMS, Kansas City Scout Traffic Management Center, Kansas City Scout Website, KDOT 511 Traveler Information System, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, KTA Operations Center, KTA Travel Information Website, MoDOT Web Site, Olathe ATMS, Overland Park ATMS, Overland Park Traffic Information Website, Private ISP Systems, Regional Call Center for Transit Info, RideKC Website</p>	<p>Transportation Information Center</p>	<p>TIC Traveler Information Broadcast</p>	<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>
<p>County Sheriff and City Police Departments, Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, KBI AMBER Alert System, Missouri Amber Alert System, Missouri State Highway Patrol Dispatch</p>	<p>Emergency Management Center</p>	<p>Emergency Early Warning System</p>	<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
Credentials Management System	Cooperative ITS Credentials Management System	CCMS Authorization	'CCMS Authorization' components provide authorization credentials (e.g., pseudonym certificates) to end entities. The end entity applies for and obtains authorization credentials, enabling the end entity to enter the "Operational" state. This function requires an interactive dialog, including at minimum a Certificate Request from the end entity desiring certificates. This request will be checked for validity, with the embedded enrollment certificate checked against an internal blacklist. If all checks are passed, this function will distribute a bundle of linked pseudonym certificates suitable for use by the requesting end entity, with the characteristics and usage rules of those certificates dependent on the operational policies of the CCMS. It also provides the secure provisioning of a given object's Decryption Key in response to an authorized request from that object. The retrieved Decryption Key will be used by the receiving object to decrypt the "next valid" batch within the set of previously retrieved Security Credential batches.
Credentials Management System	Cooperative ITS Credentials Management System	CCMS Enrollment	'CCMS Enrollment' components provide enrollment credentials to end entities. The end entity applies for and obtains enrollment credentials that can be used to communicate with other CCMS components, entering the "Unauthorized" state. CCMS Enrollment components also participate in de-registration processes through interaction with CCMS Revocation components.
Credentials Management System	Cooperative ITS Credentials Management System	CCMS Misbehavior Reporting and Action	'CCMS Misbehavior Reporting and Action' components process misbehavior reports from end entities. Misbehavior reports are analyzed and investigated if warranted. Investigated misbehavior reports are correlated with end entities and systemic issues are identified. If revocation is warranted, this component provides information to Authorization or Revocation components to initiate revocation and/or blacklisting, as appropriate.

Element Name	Physical Object	Functional Object	Functional Object Description
Credentials Management System	Cooperative ITS Credentials Management System	CCMS Provisioning	'CCMS Provisioning' components provide the end entity with material that allows it to enter the 'Unenrolled' state. This consists of root certificates and the crypto material that allows it to communicate securely with the Enrollment components. This function ensures the requesting entity meets requirements for provisioning and provides the certificates and relevant policy information to entities that meet the requirements.
Credentials Management System	Cooperative ITS Credentials Management System	CCMS Revocation	'CCMS Revocation' components generate the internal blacklist and Certificate Revocation List (CRL) and distribute them to other CCMS components and end entities. Once placed on the CRL, an end entity is in the Unauthorized state. Once placed on the blacklist, an end entity is in the Unenrolled state.
Data Distribution System	Data Distribution System	DDS Data Access Management	'DDS Data Access Management' defines the access mechanisms, structures and restrictions for inbound (from providers) and outbound (to consumers) data.
Data Distribution System	Data Distribution System	DDS Data Collection and Aggregation	'DDS Data Collection and Aggregation' collects data 'deposits' from producers including meta data such as the generation location and time. It authenticates and validates the data deposits and logs all associated meta data. Authenticated, valid data is bundled based on information type and location and made available as data products to consumers who are interested in the data. It establishes delivery parameters for data consumers that subscribe based on parameters including content type and geographic region of interest and delivers data to consumers based on these parameters.



Element Name	Physical Object	Functional Object	Functional Object Description
Data Distribution System	Data Distribution System	DDS Support Services	'DDS Support Services' provides foundational functions that support data collection, management, and distribution. It coordinates with Object Registration and Discovery to maintain its registration with respect to location/geographic scope and credentialing information. It maintains the necessary security credentials, authorizations, and associated keys to support communications in the connected vehicle environment. It also provides an overall service monitoring function.
Data Distribution System	Data Distribution System	DDS Trust Management	'DDS Trust Management' manages the certificates and associated keys that are used to sign, encrypt, decrypt, and authenticate messages. It communicates with the Cooperative ITS Credentials Management System to maintain a current, valid set of security certificates and identifies, logs, and reports events that may indicate a threat to the Connected Vehicle Environment security.
Emergency Response Vehicles (Missouri), Kansas Highway Patrol Vehicles, Missouri State Highway Patrol Vehicles, Motorist Assist Vehicles (Kansas)	Emergency Vehicle OBE	EV On-Board Safety Monitoring	'EV On-Board Safety Monitoring' detects vehicle intrusions in the vicinity of the vehicle and warns emergency personnel of imminent encroachment. Personnel movements in the vicinity of the vehicle are also monitored so that the personnel can be warned of movement beyond a designated safe zone.
Emergency Response Vehicles (Missouri), Motorist Assist Vehicles (Kansas), Olathe Maintenance Vehicles, Overland Park Motorist Assist Vehicles	Emergency Vehicle OBE	EV Service Patrol Vehicle Operations	'EV Service Patrol Vehicle Operations' provides on-board processing and communications to service patrol vehicles that reduce response times and improve safety of responding personnel. It supports service patrol vehicle dispatch and provides incident information back to the dispatching center.
Flood Warning System-StormWatch, Kansas City Scout Traffic Management Center, KDOT KanRoad Reporting System, KDOT Road Weather Information System, MoDOT Road Weather Information System, Private ISP Systems	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
<p>Flood Warning System-StormWatch, KCMO ATMS, Kansas City Scout Traffic Management Center, KDOT 511 Traveler Information System, KDOT KanDrive Traveler Information Website, KDOT KanRoad Reporting System, Olathe ATMS, Overland Park ATMS, Private ISP Systems</p>	<p>Transportation Information Center</p>	<p>TIC Emergency Traveler Information</p>	<p>'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.</p>
<p>Freight Equipment</p>	<p>Freight Equipment</p>	<p>Freight Equipment Monitoring</p>	<p>'Freight Equipment Monitoring' includes the on-board devices used to monitor intermodal freight equipment. These devices provide freight equipment location and status of the freight, container, or chassis equipment.</p>
<p>Health and Social Services, JCT Website, Kansas City Scout Traffic Management Center, Kansas City Scout Website, Private ISP Systems, Regional Call Center for Transit Info, RideKC Streetcar Website, RideKC Website, RideshareKC</p>	<p>Transportation Information Center</p>	<p>TIC Interactive Traveler Information</p>	<p>'TIC Interactive Traveler Information' disseminates personalized traveler information including traffic and road conditions, transit information, maintenance and construction information, multimodal information, event information, and weather information. Tailored information is provided based on the traveler's request in this interactive service.</p>

Element Name	Physical Object	Functional Object	Functional Object Description
Health and Social Services, KCMO ATMS, Kansas City Scout Traffic Management Center, Kansas City Scout Website, KDOT 511 Traveler Information System, KDOT KanDrive Traveler Information Website, KTA Operations Center, KTA Travel Information Website, Olathe ATMS, Overland Park ATMS, Private ISP Systems, Private Ride Hailing Services, Regional Call Center for Transit Info, RideKC Website, RideshareKC	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.
IndeBus Operations Center, JCT Operations Center, KCIA Transit Dispatch, Private Paratransit Dispatch, RideKC Operations Center, RideKC Streetcar Operations Center, UGT Operations Center	Transit Management Center	Transit Center Operator Assignment	'Transit Center Operator Assignment' automates and supports the assignment of transit vehicle operators to runs. It assigns operators to runs in a fair manner while minimizing labor and overtime services, considering operator preferences and qualifications, and automatically tracking and validating the number of work hours performed by each individual operator. It also provides an exception handling process for the operator assignment function to generate supplemental operator assignments when required by changes during the operating day.
IndeBus Operations Center, JCT Operations Center, KCIA Transit Dispatch, RideKC Operations Center, RideKC Streetcar Operations Center, UGT Operations Center	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
<p>IndeBus Operations Center, JCT Operations Center, KCIA Transit Dispatch, RideKC Operations Center, RideKC Streetcar Operations Center, UGT Operations Center</p>	<p>Transit Management Center</p>	<p>Transit Center Information Services</p>	<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 enroute. 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>
<p>IndeBus Operations Center, JCT Operations Center, KCIA Transit Dispatch, RideKC Operations Center, RideKC Streetcar Operations Center, UGT Operations Center</p>	<p>Transit Management Center</p>	<p>Transit Center Vehicle Assignment</p>	<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>

Element Name	Physical Object	Functional Object	Functional Object Description
<p>IndeBus Operations Center, JCT Operations Center, KCIA Transit Dispatch, RideKC Operations Center, RideKC Streetcar Operations Center, UGT Operations Center</p>	<p>Transit Management Center</p>	<p>Transit Center Vehicle Tracking</p>	<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>
<p>IndeBus Operations Center, JCT Operations Center, Private Paratransit Dispatch, RideKC Operations Center, UGT Operations Center</p>	<p>Transit Management Center</p>	<p>Transit Center Paratransit Operations</p>	<p>'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.</p>
<p>IndeBus Operations Center, JCT Operations Center, RideKC Operations Center, UGT Operations Center</p>	<p>Transit Management Center</p>	<p>Transit Center Connection Protection</p>	<p>'Transit Center Connection Protection' manages the coordination of transit transfers between routes within a single transit agency, between routes of different transit agencies, or between different modes (e.g. a bus transit route and a ferry route). This functional object also supports the capability for an individual traveler to obtain connection protection throughout a specific transit trip. This application may be implemented through peer-to-peer sharing between agencies control systems or as a central transit transfer request brokerage that facilitates the management and coordination of transfers across multiple agencies and control systems.</p>

Element Name	Physical Object	Functional Object	Functional Object Description
<p>IndeBus Transit Vehicles, JCT Vehicles, KCIA Transit Vehicles, RideKC Streetcar, RideKC Transit Vehicles, UGT Vehicles</p>	<p>Transit Vehicle OBE</p>	<p>Transit Vehicle On-Board Trip Monitoring</p>	<p>'Transit Vehicle On-Board Trip Monitoring' tracks vehicle location, monitors fuel usage, collects operational status (doors opened/closed, running times, etc.) and sends the collected, time stamped data to the Transit Management Center.</p>
<p>IndeBus Transit Vehicles, JCT Vehicles, KCIA Transit Vehicles, RideKC Streetcar, RideKC Transit Vehicles, UGT Vehicles</p>	<p>Transit Vehicle OBE</p>	<p>Transit Vehicle Security</p>	<p>'Transit Vehicle Security' provides security and safety functions on-board the transit vehicle. It includes surveillance and sensor systems that monitor the on-board environment, silent alarms that can be activated by transit user or vehicle operator, operator authentication, and a remote vehicle disable function. 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).</p>
<p>Intermodal Freight Shipper</p>	<p>Fleet and Freight Management Center</p>	<p>Fleet Administration</p>	<p>'Fleet Administration' provides vehicle tracking, dispatch, and reporting capabilities to fleet management personnel. It gathers current road conditions and traffic 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
Intermodal Freight Shipper	Fleet and Freight Management Center	Fleet Maintenance Management	'Fleet Maintenance Management' tracks and monitors diagnostic results, vehicle mileage, inspection records, driver logs, and repair and service records collected from a commercial vehicle fleet equipped with on-board monitoring equipment. The data is used to develop preventative maintenance and repair schedules and repair and service records are maintained.
Intermodal Freight Shipper, Private Trucking Companies	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.
JCT Operations Center, RideKC Operations Center, UGT Operations Center	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.
JCT Operations Center, RideKC Operations Center, UGT Operations Center	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.

Element Name	Physical Object	Functional Object	Functional Object Description
JCT Traveler Information Field Equipment, RideKC Field Equipment, Smart City Kiosks	Traveler Support Equipment	Transit Stop Information Services	'Transit Stop Information Services' furnishes transit users with real-time travel-related information at transit stops, multi-modal transfer points, and other public transportation areas. It provides transit users with information on transit routes, schedules, transfer options, available services, fares, and real-time schedule adherence. In addition to tailored information for individual transit users, it supports general annunciation and/or display of imminent arrival information and other information of general interest to transit users.
JCT Vehicles, RideKC Streetcar, RideKC Transit Vehicles	Transit Vehicle OBE	Transit Vehicle Schedule Management	'Transit Vehicle Schedule Management' monitors schedule performance and identifies corrective actions when a deviation is detected. It provides two-way communication between the transit vehicle and center, enabling the center to communicate with the vehicle operator and monitor on-board systems.
JCT Vehicles, RideKC Transit Vehicles, UGT Vehicles	Transit Vehicle OBE	Transit Vehicle Signal Priority	'Transit Vehicle Signal Priority' provides the capability for transit vehicles to determine eligibility for priority and request signal priority at signalized intersections, ramps, and interchanges through short range communication with traffic control equipment at the roadside.
Kansas City Emergency Response (Missouri), Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, Kansas Highway Patrol Dispatch, Missouri State Highway Patrol Dispatch	Emergency Management Center	Emergency Incident Scene Safety Management	'Emergency Incident Scene Safety Management' remotely monitors incident scene safety systems that detect vehicle intrusions in designated areas at the incident scene and warns on-scene personnel and drivers of imminent encroachment. Public safety responder movements are also monitored so that the responders can be warned of movement beyond the designated safe zone.
Kansas City International Airport, Kansas City Scout Traffic Management Center, KCMO ATMS, Olathe ATMS, Operation Green Light, Overland Park ATMS	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
<p>Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, KCMO ATMS, KTA Operations Center, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS</p>	<p>Traffic Management Center</p>	<p>TMC In-Vehicle Signing Management</p>	<p>'TMC In-Vehicle Signing Management' controls and monitors RSEs that support in-vehicle signing. Sign information that may include static regulatory, service, and directional sign information as well as variable information such as traffic and road conditions can be provided to the RSE, which uses short range communications to send the information to in-vehicle equipment. Information that is currently being communicated to passing vehicles and the operational status of the field equipment is monitored by this application. The operational status of the field equipment is reported to operations personnel.</p>
<p>Kansas City Motorist Assist (Kansas), Kansas City Scout Traffic Management Center, KTA Operations Center, MoDOT Traffic Signal System</p>	<p>Traffic Management Center</p>	<p>TMC Work Zone Traffic Management</p>	<p>'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.</p>
<p>Kansas City Scout Field Equipment</p>	<p>ITS Roadway Equipment</p>	<p>Roadway Dynamic Lane Management and Shoulder Use</p>	<p>'Roadway Dynamic Lane Management and Shoulder Use' includes the field equipment, physical overhead lane signs and associated control electronics that are used to manage and control specific lanes and/or the shoulders. This equipment can be centrally controlled by a Traffic Management Center or it can be autonomous and monitor traffic conditions and demand along the roadway and determine how to change the lane controls to respond to current conditions. Lane controls can be used to change the lane configuration of the roadway, reconfigure intersections and/or interchanges, allow use of shoulders as temporary travel lanes, designate lanes for use by special vehicles only, such as buses, high occupancy vehicles (HOVs), vehicles attending a special event, etc. and/or prohibit or restrict types of vehicles from using particular lanes. Guidance and information for drivers can be posted on dynamic message signs.</p>

Element Name	Physical Object	Functional Object	Functional Object Description
Kansas City Scout 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.
Kansas City Scout Field Equipment, KCMO ATMS Field Equipment, KC Metro Road Weather Information System, KDOT Field Equipment, MoDOT Field Equipment, Olathe ATMS Field Equipment, Operation Green Light Field Equipment, Overland Park ATMS Field Equipment	ITS Roadway Equipment	Roadway Environmental Monitoring	'Roadway Environmental Monitoring' measures environmental conditions and communicates the collected information back to a center where it can be monitored and analyzed or to other field devices to support communications to vehicles. A broad array of general weather and road surface information may be collected. Weather conditions that may be measured include temperature, wind, humidity, precipitation, and visibility. Surface and sub-surface sensors can measure road surface temperature, moisture, icing, salinity, and other measures.
Kansas City Scout Field Equipment, KCMO ATMS Field Equipment, KDOT Field Equipment, MoDOT 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.
Kansas City Scout Field Equipment, KCMO ATMS Field Equipment, KDOT Field Equipment, MoDOT Field Equipment, Olathe ATMS Field Equipment, Operation Green Light Field Equipment, Overland Park ATMS 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
<p>Kansas City Scout Field Equipment, KCMO ATMS Field Equipment, MoDOT Field Equipment, Olathe ATMS Field Equipment, Operation Green Light Field Equipment, Overland Park ATMS Field Equipment</p>	<p>ITS Roadway Equipment</p>	<p>Roadway Variable Speed Limits</p>	<p>'Roadway Variable Speed Limits' includes the field equipment, physical overhead lane signs and associated control electronics that are used to manage and control variable speed limits systems. This equipment monitors traffic and environmental conditions along the roadway. The system can be centrally monitored and controlled by a Traffic Management Center or it can be autonomous, calculating and setting suitable speed limits, usually by lane. This application displays the speed limits and additional information such as basic safety rules and current traffic information to drivers.</p>
<p>Kansas City Scout Field Equipment, KDOT Field Equipment, MoDOT Field Equipment</p>	<p>ITS Roadway Equipment</p>	<p>Roadway Data Collection</p>	<p>'Roadway Data Collection' collects traffic, road, and environmental conditions information for use in transportation planning, research, and other off-line applications where data quality and completeness take precedence over real-time performance. It includes the sensors, supporting roadside infrastructure, and communications equipment that collects and transfers information to a center for archival.</p>
<p>Kansas City Scout Field Equipment, KDOT Field Equipment, MoDOT Field Equipment</p>	<p>ITS Roadway Equipment</p>	<p>Roadway Work Zone Traffic Control</p>	<p>'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.</p>
<p>Kansas City Scout Field Equipment, MoDOT Field Equipment</p>	<p>ITS Roadway Equipment</p>	<p>Roadway Incident Scene Safety</p>	<p>'Roadway Incident Scene Safety' includes field elements that detect vehicle intrusions in geofenced areas at an incident scene and warns public safety responders and drivers of imminent encroachment. Responder movements relative to the geofence are also monitored so that public safety responders can be warned of movement beyond the designated safe zone.</p>

Element Name	Physical Object	Functional Object	Functional Object Description
<p>Kansas City Scout Field Equipment, MoDOT Field Equipment, Olathe ATMS Field Equipment, Operation Green Light Field Equipment, Overland Park ATMS Field Equipment</p>	<p>ITS Roadway Equipment</p>	<p>Roadway Warning</p>	<p>'Roadway Warning' includes the field equipment used to warn drivers approaching hazards on a roadway. Warnings may be generated in response to roadway weather conditions, road surface conditions, traffic conditions including queues, obstacles or animals in the roadway, and any other transient events that can be sensed. The equipment monitors traffic and roadway conditions and may send data to a Traffic Management Center for processing or may process it to determine when a warning should be issued. When it is determined that a warning should be issued, the equipment is used to alert approaching drivers via dynamic warning signs, flashing lights, in-vehicle messages, etc.</p>
<p>Kansas City Scout Traffic Management Center</p>	<p>Traffic Management Center</p>	<p>TMC Dynamic Lane Management and Shoulder Use</p>	<p>'TMC Dynamic Lane Management and Shoulder Use' remotely monitors and controls the system that is used to dynamically manage travel lanes, including temporary use of shoulders as travel lanes. It monitors traffic conditions and demand measured in the field and determines when the lane configuration of the roadway should be changed, when intersections and/or interchanges should be reconfigured, when the shoulders should be used for travel (as a lane), when lanes should be designated for use by special vehicles only, such as buses, high occupancy vehicles (HOVs), vehicles attending a special event, etc. and/or when types of vehicles should be prohibited or restricted from using particular lanes. It controls the field equipment used to manage and control specific lanes and the shoulders. It also can automatically notify the enforcement agency of lane control violations.</p>
<p>Kansas City Scout Traffic Management Center</p>	<p>Traffic Management Center</p>	<p>TMC Restricted Lanes CV Application</p>	<p>'TMC Restricted Lanes CV Application' manages dynamic lanes for connected vehicles. The application provides the back office functions and supports the TMC operator in establishing and managing dynamic lanes using communications to manage lane use for connected vehicles.</p>

Element Name	Physical Object	Functional Object	Functional Object Description
Kansas City Scout Traffic Management Center	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.
Kansas City Scout Traffic Management Center, KCMO ATMS, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS	Traffic Management Center	TMC Automated Vehicle Operations	'TMC Automated Vehicle Operations' remotely monitors and controls automated lanes. It monitors system operation and provides parameters that control system operation including system parameters that govern vehicle platoon formation, speeds, and gaps or headways.
Kansas City Scout Traffic Management Center, KCMO ATMS, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS	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.
Kansas City Scout Traffic Management Center, KCMO ATMS, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS	Traffic Management Center	TMC Intersection Safety	'TMC Intersection Safety' controls and monitors RSEs that support stop sign, red light, and mixed use crossing violations. It configures the RSEs for the current intersection geometry and traffic signal control equipment at the intersection. Information that is currently being communicated to passing vehicles and the operational status of the field equipment is monitored by this application. The operational status of the field equipment is reported to operations personnel.
Kansas City Scout Traffic Management Center, KCMO ATMS, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS	Traffic Management Center	TMC Passive Surveillance	'TMC Passive Surveillance' collects time stamped vehicle identities from different detection zones, correlates the identities, and calculates link travel times and derives other traffic measures.

Element Name	Physical Object	Functional Object	Functional Object Description
Kansas City Scout Traffic Management Center, KCMO ATMS, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS	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.
Kansas City Scout Traffic Management Center, KCMO ATMS, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS	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.).
Kansas City Scout Traffic Management Center, KCMO ATMS, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS	Traffic Management Center	TMC Variable Speed Limits	'TMC Variable Speed Limits' provides center monitoring and control of variable speed limits systems. It monitors data on traffic and environmental conditions collected from sensors along the roadway. Based on the measured data, it calculates and sets suitable speed limits usually by lane. It controls equipment that posts the current speed limits and displays additional information such as basic safety rules and current traffic information to drivers.
Kansas City Scout Traffic Management Center, KCMO ATMS, MoDOT Traffic Signal System, Olathe ATMS, Overland Park ATMS	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.

Element Name	Physical Object	Functional Object	Functional Object Description
<p>Kansas City Scout Traffic Management Center, KCMO ATMS, MoDOT Traffic Signal System, Olathe ATMS, Overland Park ATMS</p>	<p>Traffic Management Center</p>	<p>TMC Traffic Management Decision Support</p>	<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>

Element Name	Physical Object	Functional Object	Functional Object Description
<p>Kansas City Scout Traffic Management Center, KCMO ATMS, MoDOT Traffic Signal System, Olathe ATMS, Overland Park ATMS</p>	<p>Traffic Management Center</p>	<p>TMC Traffic Network Performance Evaluation</p>	<p>'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.</p>
<p>Kansas City Scout Traffic Management Center, KCMO ATMS, Olathe ATMS, Overland Park ATMS, RideKC Operations Center</p>	<p>Center</p>	<p>Center Support Services</p>	<p>'Center Support Services' provides foundational functions that support data collection, management, and distribution. It coordinates with Object Registration and Discovery to maintain its registration with respect to location/geographic scope and credentialing information. It maintains the necessary security credentials, authorizations, and associated keys to support communications in the connected vehicle environment.</p>
<p>Kansas City Scout Traffic Management Center, KCMO ATMS, Olathe ATMS, Overland Park ATMS, RideKC Operations Center</p>	<p>Center</p>	<p>Center Trust Management</p>	<p>'Center Trust Management' manages the certificates and associated keys that are used to sign, encrypt, decrypt, and authenticate messages. It communicates with the Security and Credentials Management System to maintain a current, valid set of security certificates and identifies, logs, and reports events that may indicate a threat to the Connected Vehicle Environment security.</p>



Element Name	Physical Object	Functional Object	Functional Object Description
Kansas City Scout Traffic Management Center, KCMO Maintenance and Construction Operations Center, KCMO ATMS, KDOT District Maintenance and Construction Management Systems, KDOT KanRoad Reporting System, MoDOT Operations, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS, Private ISP Systems, RideKC Operations Center	Center	Center Data Collection	'Center Data Collection' collects and stores information that is created in the course of center 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.
Kansas City Scout Traffic Management Center, KCMO Maintenance and Construction Operations Center, KCMO ATMS, KDOT District Maintenance and Construction Management Systems, MoDOT Operations, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS, Private ISP Systems, RideKC Operations Center	Center	Center Data Subscription Management	'Center Data Subscription Management' manages data subscriptions for an end user. It provides access to a catalog of available data, manages the necessary user information and rules that govern the data subscriptions, supports communications with data providers to collect data per the subscription rules, and makes the data available to the end user. It provides the local user interface through which a user can specify and manage subscriptions. It supports different mechanisms for collecting subscribed data for the end-user including one-time query-response as well as publish-subscribe services.
Kansas City Scout Traffic Management Center, KDOT KanRoad Reporting System, KDOT Traffic Data Warehouse, MARC Congestion Management Process	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.
Kansas City Scout Traffic Management Center, KDOT KanRoad Reporting System, KDOT Traffic Data Warehouse, MARC Congestion Management Process	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.

Element Name	Physical Object	Functional Object	Functional Object Description
Kansas City Scout Traffic Management Center, KDOT KanRoad Reporting System, KDOT Traffic Data Warehouse, MARC Congestion Management Process, MoDOT Transportation Management System	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 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>
Kansas City Scout Traffic Management Center, KDOT KanRoad Reporting System, KDOT Traffic Data Warehouse, MARC Congestion Management Process, MoDOT Transportation Management System	Archived Data System	Archive Situation Data Archival	<p>'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.</p>
Kansas City Scout Traffic Management Center, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS	Traffic Management Center	TMC Roadway Warning	<p>'TMC Roadway Warning' remotely monitors and controls the systems used to warn drivers approaching hazards on a roadway. It monitors data on roadway conditions from sensors in the field and generates warnings in response to roadway weather conditions, road surface conditions, traffic conditions including queues, obstacles or animals in the roadway, and any other transient events that can be sensed.</p>

Element Name	Physical Object	Functional Object	Functional Object Description
Kansas City Scout Traffic Management Center, MoDOT Traffic Signal System, Operation Green Light	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.
Kansas City Scout Traffic Management Center, Operation Green Light	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.
Kansas City Scout Traffic Management Center, Private ISP Systems	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.
Kansas City Scout Traffic Management Center, Private ISP Systems, Regional Call Center for Transit Info, RideshareKC	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
Kansas City Scout Traffic Management Center, RideKC Operations 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.
Kansas CVISN, Missouri CVISN System	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, 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.
Kansas CVISN, Missouri CVISN System	Commercial Vehicle Administration Center	CVAC International Administration	'CVAC International Administration' generates and processes the entry documentation necessary to obtain release of vehicle, cargo, and driver across an international border, report the results of the crossing event, and handle duty fee processing. It interfaces with the systems used by customs and border protection, immigration, carriers, and service providers (e.g., brokers) to generate, process, and store entry documentation.
KCIA Transit Dispatch, Private Paratransit Dispatch, RideKC Operations Center, RideKC Streetcar Operations Center	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
KCIA Transit Vehicles, RideKC Streetcar	Transit Vehicle OBE	Transit Vehicle On-Board Information Services	'Transit Vehicle On-board Information Services' furnishes en-route transit users with real-time travel-related information on-board a transit vehicle. Current information that can be provided to transit users includes transit routes, schedules, transfer options, fares, real-time schedule adherence, current incidents, weather conditions, non-motorized transportation services, and special events are provided. In addition to tailored information for individual transit users, it also supports general annunciation and/or display of general schedule information, imminent arrival information, and other information of general interest to transit users.
KCMO ATMS Field Equipment, KDOT Field Equipment, KDOT Work Zone Intrusion Detection System, MoDOT Field Equipment	ITS Roadway Equipment	Roadway Work Zone Safety	'Roadway Work Zone Safety' includes field elements that detect vehicle intrusions in work zones and warns crew workers and drivers of imminent encroachment. Crew movements are also monitored so that the crew can be warned of movement beyond the designated safe zone.
KCMO ATMS, Kansas City Scout Traffic Management Center, Olathe ATMS, Overland Park ATMS, Private ISP Systems	Transportation Information Center	TIC Road Weather Advisories and Warnings	'TIC Road Weather Advisories and Warnings' provides road weather advisories to drivers and other travelers.
KCMO ATMS, MoDOT Traffic Signal System, Olathe ATMS, Operation Green Light, Overland Park ATMS	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.

Element Name	Physical Object	Functional Object	Functional Object Description
<p>KCMO Maintenance and Construction Operations Center, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KTA Operations Center, MoDOT Operations</p>	<p>Maint and Constr Management Center</p>	<p>MCM Maintenance Decision Support</p>	<p>'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.</p>
<p>KCMO Maintenance and Construction Operations Center, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KTA Operations Center, MoDOT Operations</p>	<p>Maint and Constr Management Center</p>	<p>MCM Winter Maintenance Management</p>	<p>'MCM Winter Maintenance Management' manages winter road maintenance, tracking and controlling snow plow operations, roadway treatment (e.g., salt spraying and other material applications), and other snow and ice control operations. It monitors environmental conditions and weather forecasts and uses the information to schedule winter maintenance activities, determine the appropriate snow and ice control response, and track and manage response operations.</p>
<p>KCMO Maintenance and Construction Operations Center, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, KTA Operations Center, MoDOT Operations</p>	<p>Maint and Constr Management Center</p>	<p>MCM Work Zone Management</p>	<p>'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.</p>

Element Name	Physical Object	Functional Object	Functional Object Description
KCMO Maintenance and Construction Operations Center, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, MoDOT Operations	Maint and Constr Management Center	MCM Environmental Information Processing	'MCM Environmental Information Processing' processes current and forecast weather data, road condition information, local environmental data, and uses internal models to develop specialized detailed forecasts of local weather and surface conditions. The processed environmental information products are presented to center personnel and disseminated to other centers.
KCMO Maintenance and Construction Operations Center, KDOT Construction and Maintenance, KDOT District Maintenance and Construction Management Systems, MoDOT Operations	Maint and Constr Management Center	MCM Work Zone Safety Management	'MCM Work Zone Safety Management' remotely monitors work zone safety systems that detect vehicle intrusions in work zones and warns crew workers and drivers of imminent encroachment. Crew movements are also monitored so that the crew can be warned of movement beyond the designated safe zone.
KCMO Maintenance and Construction Operations Center, KDOT District Maintenance and Construction Management Systems, MoDOT Operations	Maint and Constr Management Center	MCM Infrastructure Monitoring	'MCM Infrastructure Monitoring' monitors the condition of pavement, bridges, tunnels, associated hardware, and other transportation-related infrastructure (e.g., culverts). It monitors the infrastructure, collecting data from both fixed and vehicle-based sensors. In addition to specialized infrastructure monitoring sensors, it also monitors the broader population of equipped vehicles for vertical acceleration data and other situation data that may be used to determine current pavement condition.
KCMO Maintenance and Construction Vehicles, KDOT Maintenance and Construction Vehicles, KTA Maintenance and Construction Vehicles, MoDOT Maintenance Vehicles	Maint and Constr Vehicle OBE	MCV Environmental Monitoring	'MCV Environmental Monitoring' collects current road and surface weather conditions from sensors on-board the maintenance and construction vehicle or by querying fixed sensors on or near the roadway. Environmental information including road surface temperature, air temperature, and wind speed is measured and spatially located and time stamped, and reported back to a center.

Element Name	Physical Object	Functional Object	Functional Object Description
KCMO Maintenance and Construction Vehicles, KDOT Maintenance and Construction Vehicles, KTA Maintenance and Construction Vehicles, MoDOT Maintenance Vehicles	Maint and Constr Vehicle OBE	MCV Winter Maintenance	'MCV Winter Maintenance' supports snow plow operations and other roadway treatments (e.g., salt spraying and other material applications). It supports communications with the center to receive information and instructions that are provided to the vehicle operator and also supports remote control of on-board systems. It tracks operational status of snow and ice control operations and provides this information back to the center.
KCMO Maintenance and Construction Vehicles, KDOT Maintenance and Construction Vehicles, KTA Maintenance and Construction Vehicles, MoDOT Maintenance Vehicles	Maint and Constr Vehicle OBE	MCV Work Zone Support	'MCV Work Zone Support' provides communications and support for local management of a work zone. It supports communications between field personnel and the managing center to keep the center appraised of current work zone status. It controls vehicle-mounted driver information systems (e.g., dynamic message signs) and uses short range communications to monitor and control other fixed or portable driver information systems in the work zone.
KCMO Maintenance and Construction Vehicles, KDOT Maintenance and Construction Vehicles, MoDOT Maintenance Vehicles	Maint and Constr Vehicle OBE	MCV Infrastructure Monitoring	'MCV Infrastructure Monitoring' monitors the condition of pavement, bridges, tunnels, associated hardware, and other transportation-related infrastructure (e.g., culverts). It includes vehicle-based sensors that directly monitor the infrastructure, communications that allow roadway-based infrastructure monitoring sensors to be controlled and read, and data communications that allows collected infrastructure condition information to be reported back to a center.
KCMO Maintenance and Construction Vehicles, KDOT Maintenance and Construction Vehicles, MoDOT Maintenance Vehicles	Maint and Constr Vehicle OBE	MCV Vehicle Safety Monitoring	'MCV Vehicle Safety Monitoring' detects vehicle intrusions in the vicinity of the vehicle and warns crew workers and drivers of imminent encroachment. Crew movements are also monitored so that the crew can be warned of movement beyond the designated safe zone. It can be used for stationary work zones or in mobile applications where a safe zone is maintained around the moving vehicle.



Element Name	Physical Object	Functional Object	Functional Object Description
KCMO Parking Management	Parking Management System	Parking Coordination	'Parking Coordination' supports communication and coordination between equipped parking facilities and also supports regional coordination between parking facilities and traffic management systems. Coordination with traffic management supports local traffic control coordination in and around the parking facility and broader regional coordination. It also shares information with transit management systems and information providers to support multimodal travel planning, including parking reservations capabilities. Information including current parking availability, system status, and operating strategies are shared to enable local parking facility management that supports regional transportation strategies.
KCMO Parking Management	Parking Management System	Parking Electronic Payment	'Parking 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.
KCMO Parking Management	Parking Management System	Parking Management	'Parking 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.
KCPL Clean Charge Network	Electric Charging Station	Electric Charging Station Management	'Electric Charging Station Management' manages vehicle charging. It communicates with the vehicle during charging and provides charge status information to the driver. A connection with Connected Vehicle Roadside Equipment provides the capability to integrate charging station coordination and communication into the broader Connected Vehicle Environment.

Element Name	Physical Object	Functional Object	Functional Object Description
KDOT District Maintenance and Construction Management Systems, MoDOT Operations	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.
KHP Scales and Weigh Stations, MSHP Scales and Inspection Facilities	Commercial Vehicle Check Equipment	CVCE Electronic Screening	'CVCE Electronic Screening' supports electronic credentials and safety screening of commercial vehicles at mainline speeds. It processes the data from the commercial vehicles along with accessed database information to determine whether a pull-in message is needed. It may also generate random pull-in messages with provisions for facility operators and enforcement officials to have manual override capabilities.
KHP Scales and Weigh Stations, MSHP Scales and Inspection Facilities	Commercial Vehicle Check Equipment	CVCE International Border Crossing	'CVCE International Border Crossing' checks compliance with import/export and immigration regulations to manage release of commercial vehicle, cargo, and driver across an international border. It includes interfaces to the equipment at international border crossings operated by government agencies such as Customs and Border Protection.
KTA K-Tag Field 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
KTA Operations Center	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, payment reconciliation with financial institutions, and violation notification to enforcement agencies. It also supports dynamic pricing to support demand management. Secure communications with the financial infrastructure and distributed payment infrastructure, including toll plazas, support electronic payments and other ancillary requirements such as lost payment device identification and management.
Object Registration and Discovery System	Object Registration and Discovery System	Object Registration and Discovery	'Object Registration and Discovery' facilitates the registration of services by the respective service providers and the subsequent query-based discovery of these registered services. Many of the services offered by roadside or center-based service providers operating within the project geographic boundary will require an advertisement of their existence and cyber location to potential users; which consist primarily of PIDs and vehicles, but could include roadside or other center based services.
Object Registration and Discovery System	Object Registration and Discovery System	ORDS Trust Management	'ORDS Trust Management' manages the certificates and associated keys that are used to sign, encrypt, decrypt, and authenticate messages. It communicates with the Cooperative ITS Credentials Management System to maintain a current, valid set of security certificates and keys and identifies, logs and reports events that may indicate a threat to Connected Vehicle security.
Olathe ATMS, Operation Green Light	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
Operation Green Light	Emissions Management Center	Emissions Data Collection	'Emissions Data Collection' collects and stores air quality and emissions management information that is collected in the course of Emissions Management Center 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.
Overland Park ATMS	Emissions Management Center	Emissions Zone Management	'Emissions Zone Management' identifies existing and potential emissions hot spots and coordinates with transportation agencies and their systems to establish low emissions zones to manage air quality in these areas. Through this coordination, the geographic boundary, restrictions, and pricing for the low emissions zone are established and adjusted.
Private ISP Systems	Transportation Information Center	TIC Travel Services Information and Reservation	'TIC Travel Services Information' disseminates information about traveler services such as lodging, restaurants, and service stations. Tailored traveler service information is provided on request that meets the constraints and preferences specified by the traveler. This application also supports reservations and advanced payment for traveler services.
Private ISP Systems, Private Ride Hailing Services, RideshareKC	Transportation Information Center	TIC Dynamic Ridesharing	'TIC Dynamic Ridesharing' provides dynamic rideshare matches for eligible travelers, connecting riders and drivers for specific trips based on preferences. This ridesharing/ride matching capability also arranges connections to transit or other multimodal services for portions of a multi-segment trip that includes ridesharing. Reservations and advanced payment are also supported so that each segment of the trip may be confirmed.
Private ISP Systems, Private Ride Hailing Services, RideshareKC	Transportation Information Center	TIC Shared Use	'TIC Shared Use' provides shared use services for eligible travelers, connecting with travelers for specific trips or vehicle usage based on preferences. Reservations and advanced payment are also supported so that each segment of the shared use/ trip may be confirmed.

Element Name	Physical Object	Functional Object	Functional Object Description
RideKC Field Equipment, Smart City Kiosks	Traveler Support Equipment	Traveler Trip Planning	'Traveler Trip Planning' provides a personalized trip plan to the traveler. The trip plan is calculated based on preferences and constraints supplied by the traveler and provided to the traveler for confirmation. It represents kiosks and other fixed public interactive displays that may be used by travelers in public areas.
RideKC Freedom, RideKC Transit Vehicles	Transit Vehicle OBE	Transit Vehicle On-Board Paratransit Operations	'Transit Vehicle On-board Paratransit Operations' forwards paratransit and flexible-route dispatch requests to the operator and forwards acknowledgements to the center. It coordinates with, and assists the operator in managing multi-stop runs associated with demand responsive transit services including paratransit. It collects transit vehicle passenger data and makes it available to the center.
RideKC Operations Center	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.
RideKC Operations Center, RideKC Streetcar Operations Center	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.

Element Name	Physical Object	Functional Object	Functional Object Description
Smart City Kiosks	Traveler Support Equipment	Traveler Information Reception	'Traveler Information Reception' receives formatted traffic advisories, road conditions, transit information, broadcast alerts, and other general traveler information broadcasts and presents the information to the traveler with a public traveler interface. It includes the receiver and public display device such as a large display monitor or other public display.
Smart City Kiosks	Traveler Support Equipment	Traveler Interactive Information	'Traveler Interactive Information' provides traffic information, road conditions, transit information, yellow pages (traveler services) information, special event information, and other traveler information that is specifically tailored based on the traveler's request and/or previously submitted traveler profile information. It also supports interactive services that support enrollment, account management, and payments for transportation services. The interactive traveler information capability is provided by a public traveler interface, such as a kiosk.
User Personal Computing Devices	Personal Information Device	Personal Data Subscription Management	'Personal Data Subscription Management' manages data subscriptions for an end user. It provides access to a catalog of available data, manages the necessary user information and rules that govern the data subscriptions, supports communications with data providers to collect data per the subscription rules, and makes the data available to the end user. It provides the local user interface through which a user can specify and manage subscriptions. It supports different mechanisms for collecting data for the end-user including one-time query-response as well as publish-subscribe services.
User Personal Computing Devices	Personal Information Device	Personal Emergency Notification	'Personal Emergency Notification' provides the capability for travelers to report an emergency or activate a panic button to summon assistance. The personal mayday capability is provided by a portable device such as a smart phone.

Element Name	Physical Object	Functional Object	Functional Object Description
User Personal Computing Devices	Personal Information Device	Personal Incident Scene Safety	The 'Personal Incident Scene Safety' application improves public safety responder safety by providing responder location information to the infrastructure that can be used to avoid collisions involving the public safety responders. The application may also alert responders if they travel beyond the designated safe zone. The information provided and the user interface delivery mechanism (visual, audible, or haptic) can also be tailored to the needs of the user that is carrying or wearing the device that hosts the application.
User Personal Computing Devices	Personal Information Device	Personal Interactive Traveler Information	'Personal Interactive Traveler Information' provides traffic information, road conditions, transit information, yellow pages (traveler services) information, special event information, and other traveler information that is specifically tailored based on the traveler's request and/or previously submitted traveler profile information. It also supports interactive services that support enrollment, account management, and payments for transportation services. The interactive traveler information capability is provided by personal devices including personal computers and personal portable devices such as smart phones.
User Personal Computing Devices	Personal Information Device	Personal Local Route Guidance	'Personal Local Route Guidance' provides multi-modal route planning and transition by transition route guidance capabilities that are self-contained on the personal device. It provides autonomous route guidance in the absence of real-time information or factors in real-time information provided by the infrastructure into its route selection and guidance algorithms if available. It also includes truly autonomous systems that are not configured to receive or process any external data. The route guidance capabilities are hosted on personal devices including smart phones, tablets, and personal computers.

Element Name	Physical Object	Functional Object	Functional Object Description
User Personal Computing Devices	Personal Information Device	Personal Shared Use Planning	'Personal Shared Use Planning' provides a personalized connection to shared use mobility including vehicle shared use and arranging person trips. The shared use plan is calculated based on preferences and constraints supplied by the traveler and provided to the traveler for confirmation. Many equipment configurations are possible including systems that provide a basic trip plan to the traveler as well as more sophisticated systems that can provide transition by transition guidance to the traveler along a multi-modal route with transfers. Devices represented by this functional object include desktop computers at home, work, or at major trip generation sites, plus personal devices such as tablets and smart phones.
User Personal Computing Devices	Personal Information Device	Personal Support Services	'Personal Support Services' provides foundational functions that supports data collection, management, and distribution. It coordinates with Object Registration and Discovery to maintain its registration with respect to location/geographic scope and credentialing information. It maintains the necessary security credentials, authorizations, and associated keys to support communications in the connected vehicle environment.
User Personal Computing 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.



Element Name	Physical Object	Functional Object	Functional Object Description
User Personal Computing Devices	Personal Information Device	Personal Trip Planning and Route Guidance	'Personal Trip Planning and Route Guidance' provides a personalized trip plan to the traveler. The trip plan is calculated based on preferences and constraints supplied by the traveler and provided to the traveler for confirmation. Coordination may continue during the trip so that the route plan can be modified to account for new information. Many equipment configurations are possible including systems that provide a basic trip plan to the traveler as well as more sophisticated systems that can provide transition by transition guidance to the traveler along a multi-modal route with transfers. Devices represented by this functional object include desktop computers at home, work, or at major trip generation sites, plus personal devices such as tablets and smart phones.
User Personal Computing Devices	Personal Information Device	Personal Trust Management	'Personal Trust Management' manages the certificates and associated keys that are used to sign, encrypt, decrypt, and authenticate messages. It communicates with the Security and Credentials Management System to maintain a current, valid set of security certificates and identifies, logs, and reports events that may indicate a threat to the Connected Vehicle Environment security.
User Personal Computing Devices	Personal Information Device	Personal Work Zone Safety	The 'Personal Work Zone Safety' application improves maintenance and construction crew safety by providing crew location information to the infrastructure that can be used to avoid collisions involving the work crew. The application may also alert workers if they travel beyond the designated safe zone. The information provided and the user interface delivery mechanism (visual, audible, or haptic) can also be tailored to the needs of the user that is carrying or wearing the device that hosts the application.

Element Name	Physical Object	Functional Object	Functional Object Description
Vehicle	Vehicle OBE	Vehicle Basic Safety Communication	<p>'Vehicle Basic Safety Communication' exchanges current vehicle location and motion information with other vehicles in the vicinity, uses that information to calculate vehicle paths, and warns the driver when the potential for an impending collision is detected. If available, map data is used to filter and interpret the relative location and motion of vehicles in the vicinity. Information from on-board sensors (e.g., radars and image processing) are also used, if available, in combination with the V2V communications to detect non-equipped vehicles and corroborate connected vehicle data. Vehicle location and motion broadcasts are also received by the infrastructure and used by the infrastructure to support a wide range of roadside safety and mobility applications. This object represents a broad range of implementations ranging from basic Vehicle Awareness Devices that only broadcast vehicle location and motion and provide no driver warnings to advanced integrated safety systems that may, in addition to warning the driver, provide collision warning information to support automated control functions that can support control intervention.</p>
Vehicle	Vehicle OBE	Vehicle Basic Toll/Parking Payment	<p>'Vehicle Basic Toll/Parking Payment' includes the traditional on-board systems that pay for tolls and parking electronically. It includes the 'tag' in-vehicle equipment that communicates with the toll/parking plaza and an optional interface to a carry-in payment device. See also 'Vehicle Payment Services', which provides a broader range of payment services.</p>

Element Name	Physical Object	Functional Object	Functional Object Description
Vehicle	Vehicle OBE	Vehicle Control Automation	'Vehicle Control Automation' provides lateral and/or longitudinal control of a vehicle to allow 'hands off' and/or 'feet off' driving, automating the steering, accelerator, and brake control functions. It builds on the sensors included in 'Vehicle Safety Monitoring' and 'Vehicle Control Warning' and uses the information about the area surrounding the vehicle to safely control the vehicle. It covers the range of incremental control capabilities from driver assistance systems that take over steering or acceleration/deceleration in limited scenarios with direct monitoring by the driver to full automation where all aspects of driving are automated under all roadway and environmental conditions.
Vehicle	Vehicle OBE	Vehicle Control Warning	'Vehicle Control Warning' monitors areas around the vehicle and provides warnings to a driver so the driver can take action to recover and maintain safe control of the vehicle. It includes lateral warning systems that warn of lane departures and obstacles or vehicles to the sides of the vehicle and longitudinal warning systems that monitor areas in the vehicle path and provide warnings when headways are insufficient or obstacles are detected in front of or behind the vehicle. It includes on-board sensors, including radars and imaging systems, and the driver information system that provides the visual, audible, and/or haptic warnings to the driver.
Vehicle	Vehicle OBE	Vehicle Data Subscription Management	'Vehicle Data Subscription Management' manages data subscriptions for an end user. It provides access to a catalog of available data, manages the necessary user information and rules that govern the data subscriptions, supports communications with data providers to collect data per the subscription rules, and makes the data available to the end user. It provides the local user interface through which a user can specify and manage subscriptions. It supports different mechanisms for collecting data for the end-user including one-time query-response as well as publish-subscribe services.

Element Name	Physical Object	Functional Object	Functional Object Description
Vehicle	Vehicle OBE	Vehicle Eco-Driving Assist	'Vehicle Eco-Driving Assist' provides customized real-time driving advice to drivers, allowing them to adjust behaviors to save fuel and reduce emissions. This advice includes recommended driving speeds, optimal acceleration and deceleration profiles based on prevailing traffic conditions, and local interactions with nearby vehicles, i.e., processing Basic Safety Messages (BSMs) to determine position and speed of vehicles that are between the host vehicle and the intersection. When approaching and departing signalized intersections, it uses intersection geometry information, the relative position and speed of vehicles ahead of it, and signal phase movement information to provide speed advice to the driver so that the driver can adapt the vehicle's speed to pass the next traffic signal on green, decelerate to a stop in the most eco-friendly manner, or manage acceleration as the vehicle departs from a signalized intersection. It also provides feedback to drivers on their driving behavior to encourage them to drive in a more environmentally efficient manner. It may also support vehicle-assisted strategies, where the vehicle automatically implements the eco-driving strategy (e.g., changes gears, switches power sources, or reduces its speed in an eco-friendly manner as the vehicle approaches a traffic signal or queue).
Vehicle	Vehicle OBE	Vehicle Electric Charging Assist	'Vehicle Electric Charging Assist' uses short range communications to coordinate with electric charging stations, providing information about the operational state of the electrical system, the maximum charge rate, and the percentage-complete of the charge. This application also receives current information about electric charging systems in the region and makes this information available to the driver on request.

Element Name	Physical Object	Functional Object	Functional Object Description
Vehicle	Vehicle OBE	Vehicle Emergency Notification	'Vehicle Emergency Notification' provides the capability for drivers or collision detection sensors to report an emergency and summon assistance. It gathers data from on-board collision detection sensors, provides a mechanism for the driver to summon assistance, and includes a communications capability to report the collision including indicators of collision severity, the number of passengers involved, and information about the vehicle that may affect the response.
Vehicle	Vehicle OBE	Vehicle Environmental Monitoring	'Vehicle Environmental Monitoring' collects data from on-board sensors and systems related to environmental conditions and sends the collected data to the infrastructure as the vehicle travels. The collected data is a byproduct of vehicle safety and convenience systems and includes ambient air temperature and precipitation measures and status of the wipers, lights, ABS, and traction control systems.
Vehicle	Vehicle OBE	Vehicle Interactive Traveler Information	'Vehicle Interactive Traveler Information' provides drivers with personalized traveler information including traffic and road conditions, transit information, maintenance and construction information, multimodal information, event information, and weather information. The provided information is tailored based on driver requests. Both one-time requests for information and on-going information streams based on a submitted traveler profile and preferences are supported.
Vehicle	Vehicle OBE	Vehicle Intersection Warning	'Vehicle Intersection Warning' uses V2V and V2I communications to monitor other connected vehicles at intersections and support the safe movement of the vehicle through the intersection. Driver warnings are provided and the application may also optionally take control of the vehicle to avoid collisions. The application will also notify the infrastructure and other vehicles if it detects an unsafe infringement on the intersection.

Element Name	Physical Object	Functional Object	Functional Object Description
Vehicle	Vehicle OBE	Vehicle Payment Service	'Vehicle Payment Service' supports vehicle payments including VMT- and zone-based payments and payments for other services including fuel/charging services, tolls, and parking. To support VMT-based payment, this application tracks the location of the vehicle at specific times and reports this VMT data along with vehicle identification. A variety of pricing strategies are supported, including strategies that include credits or incentives that reward desired driving patterns and behavior. The onboard equipment supports secure short range communications with connected vehicle roadside equipment to support secure payments.
Vehicle	Vehicle OBE	Vehicle Platoon Operations	'Vehicle Platoon Operations' provides the capability for vehicles to operate in cooperative platoons with short fixed gaps and a designated lead vehicle. These capabilities are provided by systems on board the vehicle that coordinate with other vehicles and regulate acceleration and braking and provide higher-level functions that enable vehicles to join and depart from vehicle platoons.
Vehicle	Vehicle OBE	Vehicle Rail Crossing Warning	'Vehicle Rail Crossing Warning ' uses I2V communications to receive alerts of trains entering HRIs and to provide warnings to drivers regarding the trains. The warning can include second train warning (meaning the HRI gates are about to lower, or remain lowered due to the arrival of a second train). The application can also provide vehicle infringement warnings by using the alert information along with vehicle trajectory information to determine that the vehicle will infringe upon a crossing that is (or will be) occupied by a train.
Vehicle	Vehicle OBE	Vehicle Restricted Lanes Application	The 'Vehicle Restricted Lanes Application' monitors and reports its own operating parameters and communicates with roadside equipment to safely enter, operate within, and exit eco-lanes and other controlled-access lanes.

Element Name	Physical Object	Functional Object	Functional Object Description
Vehicle	Vehicle OBE	Vehicle Roadside Information Reception	'Vehicle Roadside Information Reception' receives advisories, vehicle signage data, and other driver information and presents this information to the driver using in-vehicle equipment. Information presented may include fixed sign information, traffic control device status (e.g., signal phase and timing data), advisory and detour information, warnings of adverse road and weather conditions, travel times, and other driver information.
Vehicle	Vehicle OBE	Vehicle Situation Data Monitoring	'Vehicle Situation Data Monitoring' is the highest-level representation of the functionality required to collect traffic and environmental situation data by monitoring and storing the experience of the vehicle as it travels through the road network. Collected data is aggregated into snapshots that are reported when communications is available and with flow control based on parameters provided by the infrastructure. Note that this functional object supports collection of data for areas remote from RSEs or other communications infrastructure.
Vehicle	Vehicle OBE	Vehicle Support Services	'Vehicle Support Services' provides foundational functions that supports data collection, management, and distribution. It coordinates with Object Registration and Discovery to acquire necessary communications information. It maintains the necessary security credentials, authorizations, and associated keys to support communications in the connected vehicle environment.
Vehicle	Vehicle OBE	Vehicle Traveler Information Reception	'Vehicle Traveler Information Reception' provides the capability for drivers to receive general transportation information including traffic and road conditions, traffic regulations, incident information, maintenance and construction information, event information, transit information, parking information, weather information, and broadcast alerts.

Element Name	Physical Object	Functional Object	Functional Object Description
Vehicle	Vehicle OBE	Vehicle Trip Planning and Route Guidance	'Vehicle Trip Planning and Route Guidance' includes the in-vehicle system that coordinates with a traveler information center to provide a personalized trip plan to the driver. The trip plan is calculated by the Transportation Information Center (TIC) based on preferences and constraints supplied by the driver and provided to the driver for confirmation. Reservations and advanced payment may also be processed to confirm the trip plan. Coordination with the TIC may continue during the trip so that the route plan can be modified to account for new information. Many equipment configurations are possible including in-vehicle systems that provide a basic trip plan to the driver as well as more sophisticated systems that can provide turn by turn guidance to the driver along the route.
Vehicle	Vehicle OBE	Vehicle Trust Management	'Vehicle Trust Management' manages the certificates and associated keys that are used to sign, encrypt, decrypt, and authenticate messages. It communicates with the Security and Credentials Management System to maintain a current, valid set of security certificates and identifies, logs, and reports events that may indicate a threat to the Connected Vehicle Environment security.
Wide Area Information Disseminator System	Wide Area Information Disseminator System	WAID Support Services	'WAID Support Services' provides foundational functions that support data collection, management, and distribution. It coordinates with Object Registration and Discovery to maintain its registration with respect to location/geographic scope and credentialing information. It maintains the necessary security credentials, authorizations, and associated keys to support communications in the connected vehicle environment. It also provides an overall service monitoring function.



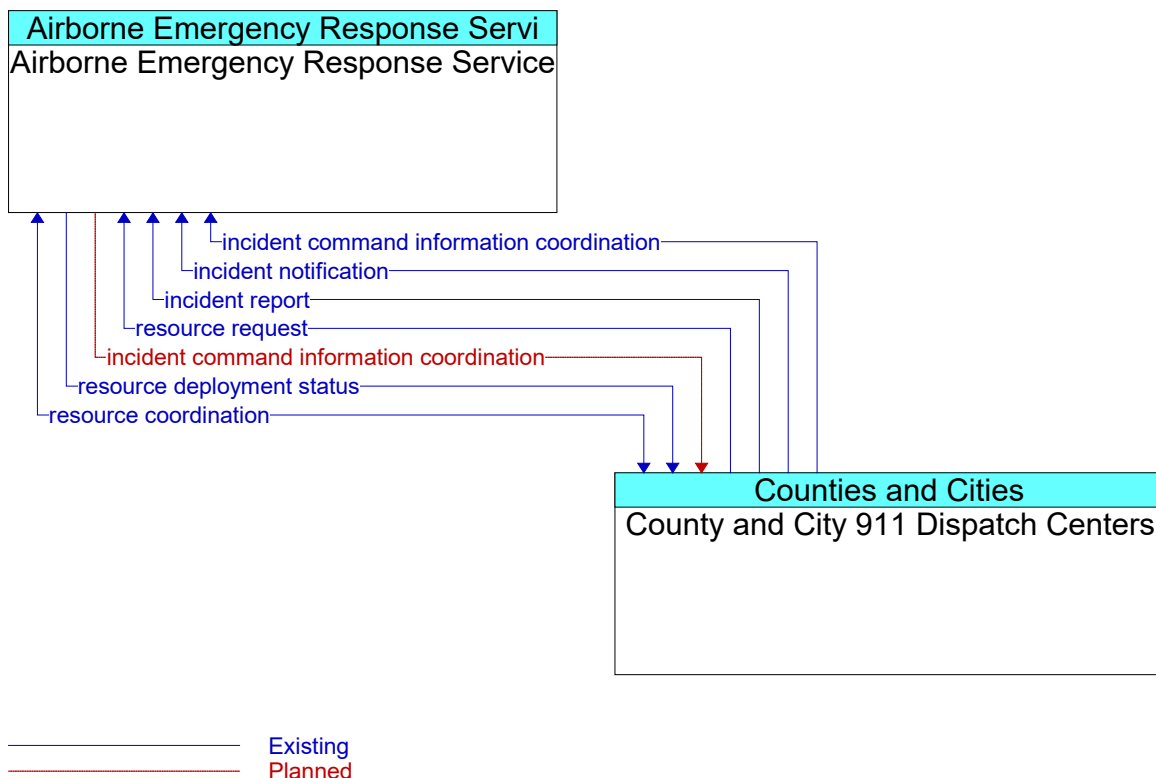
Element Name	Physical Object	Functional Object	Functional Object Description
Wide Area Information Disseminator System	Wide Area Information Disseminator System	WAID Trust Management	'WAID Trust Management' manages the certificates and associated keys that are used to sign, encrypt, decrypt, and authenticate messages. It communicates with the Cooperative ITS Credentials Management System to maintain a current, valid set of security certificates and identifies, logs, and reports events that may indicate a threat to the Connected Vehicle Environment security.

## Appendix F. Interfaces Details

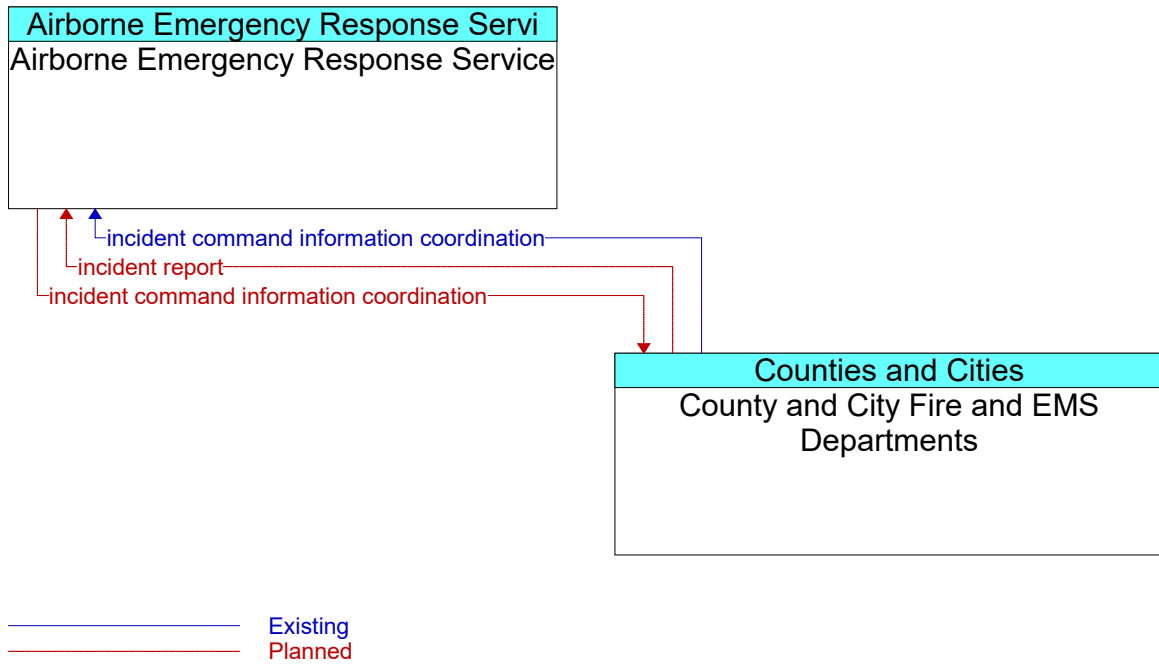
The interfaces of the transportation systems in the Kansas City Area Regional ITS Architecture are based on ARC-IT and tailored to reflect the plan for the region. Architecture diagrams display the transportation systems in the Kansas City Area Regional ITS Architecture, and more importantly, how these 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 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 appendix.

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.

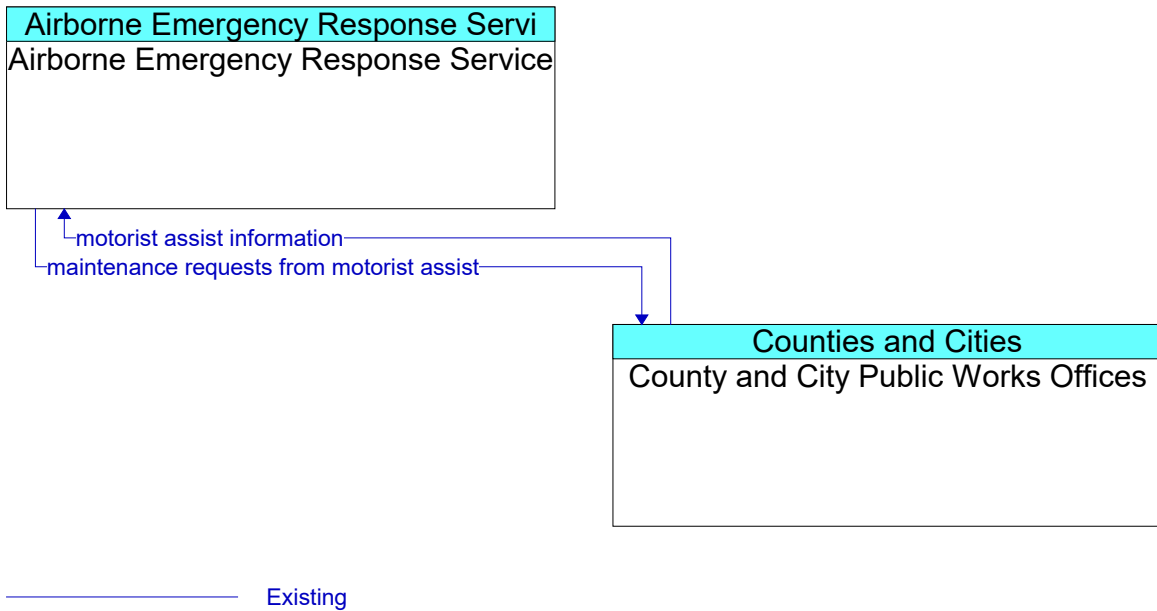
### *Kansas City Area Regional ITS Architecture Interface Diagrams*



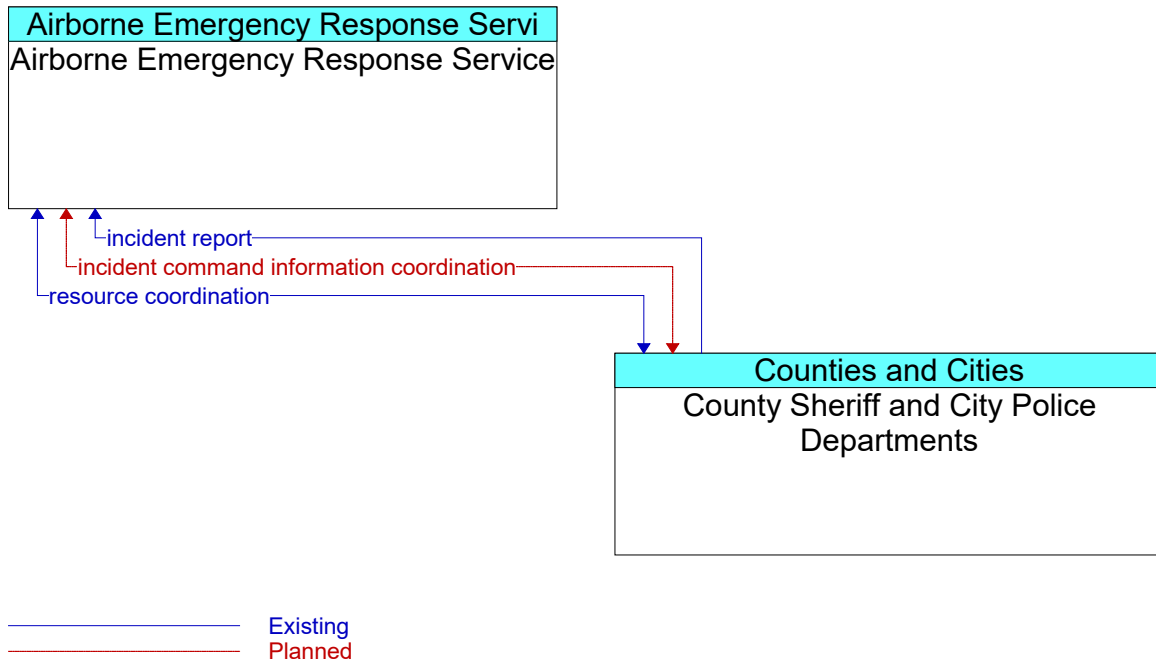
**Figure 1: Airborne Emergency Response Service - County and City 911 Dispatch Centers Interface**



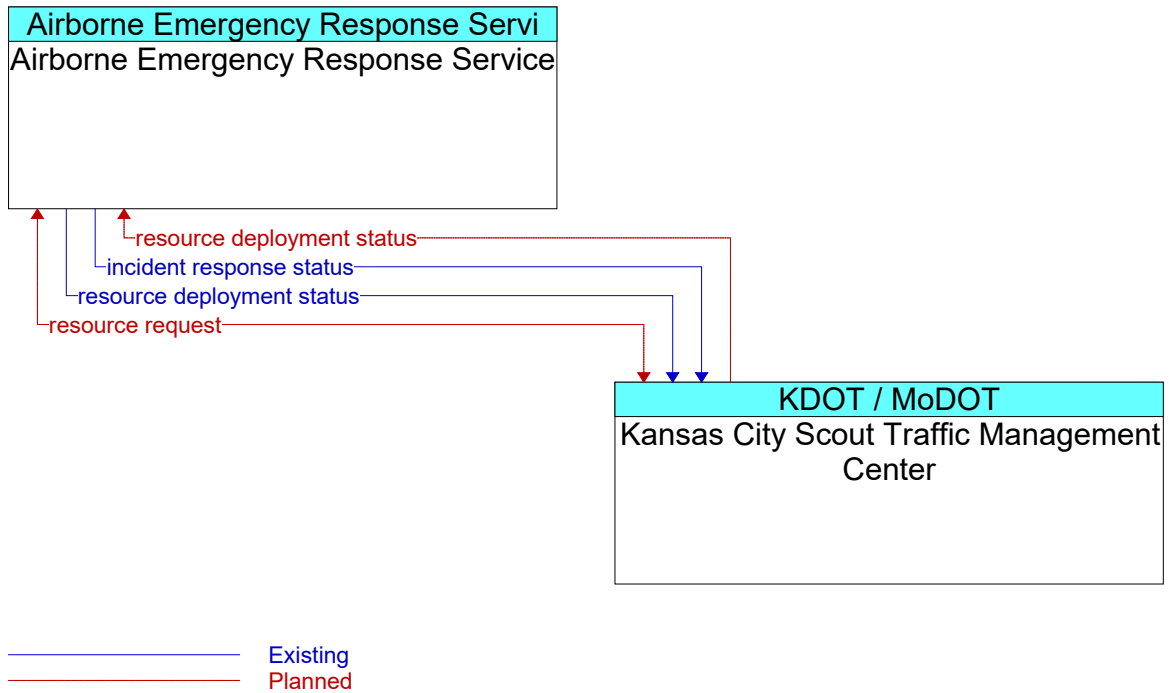
**Figure 2: Airborne Emergency Response Service - County and City Fire and EMS Departments Interface**



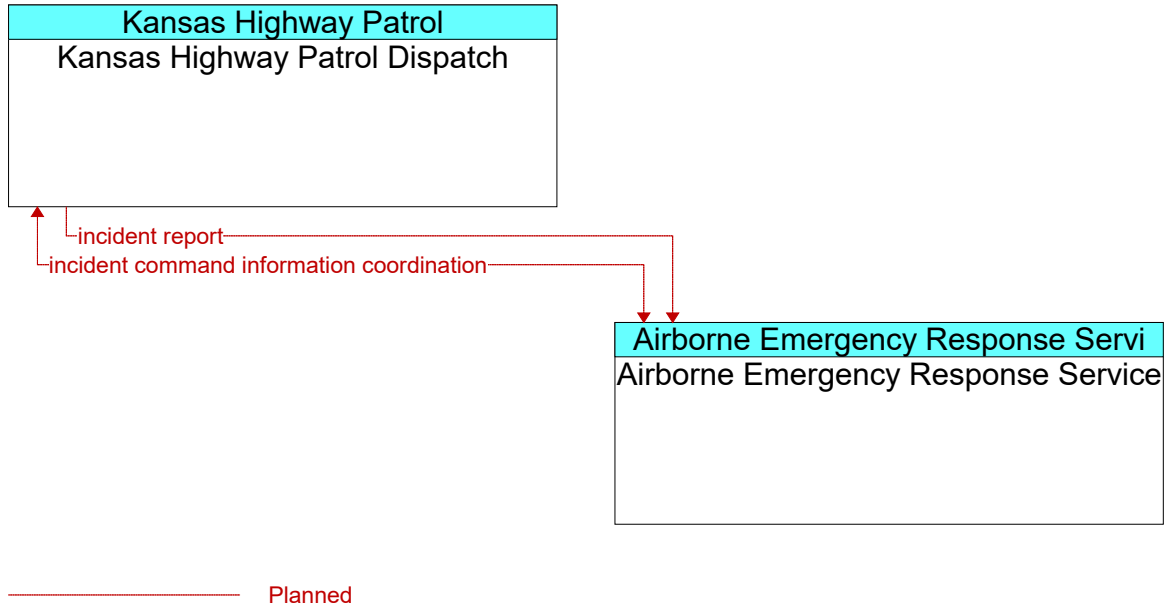
**Figure 3: Airborne Emergency Response Service - County and City Public Works Offices Interface**



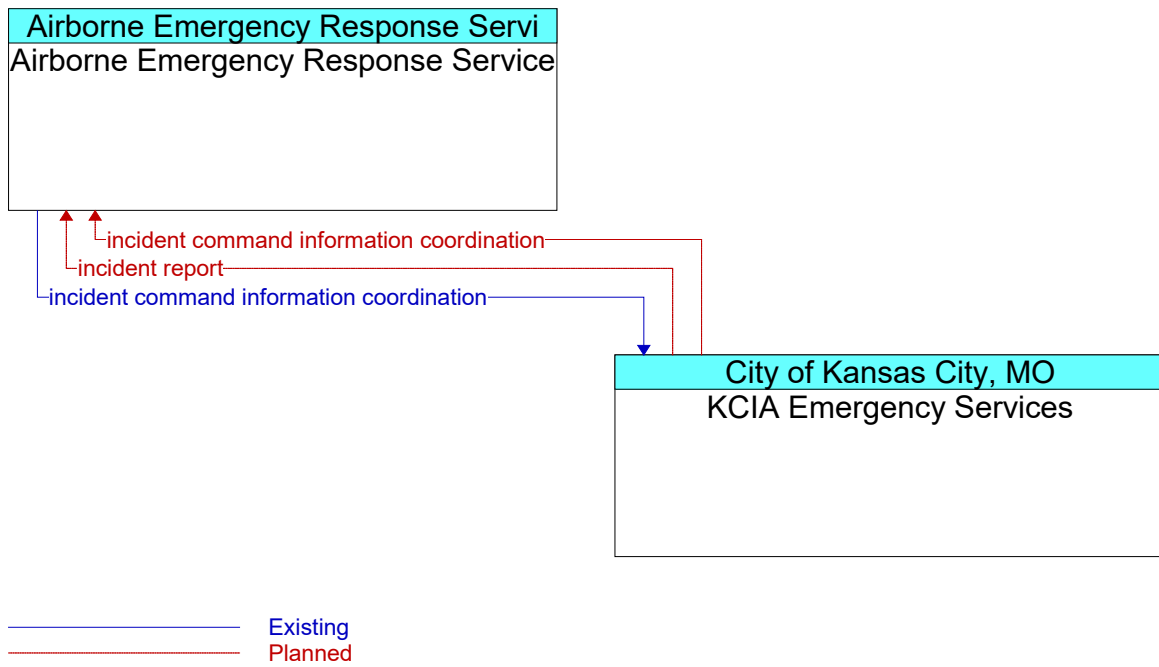
**Figure 4: Airborne Emergency Response Service - County Sheriff and City Police Departments Interface**



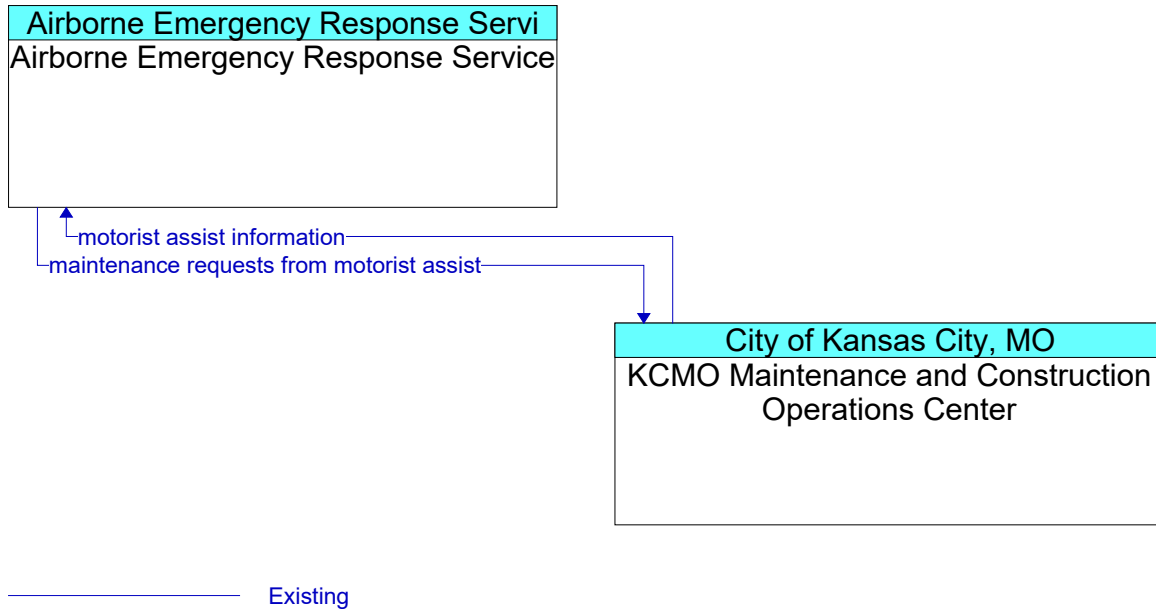
**Figure 5: Airborne Emergency Response Service - Kansas City Scout Traffic Management Center Interface**



**Figure 6: Airborne Emergency Response Service - Kansas Highway Patrol Dispatch Interface**

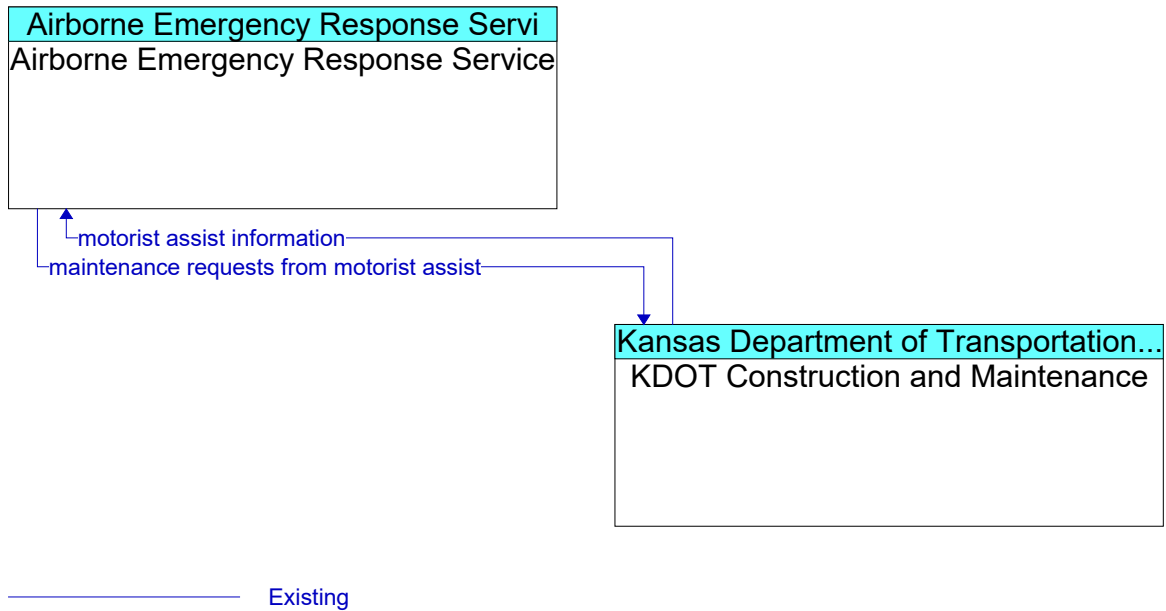


**Figure 7: Airborne Emergency Response Service - KCIA Emergency Services Interface**

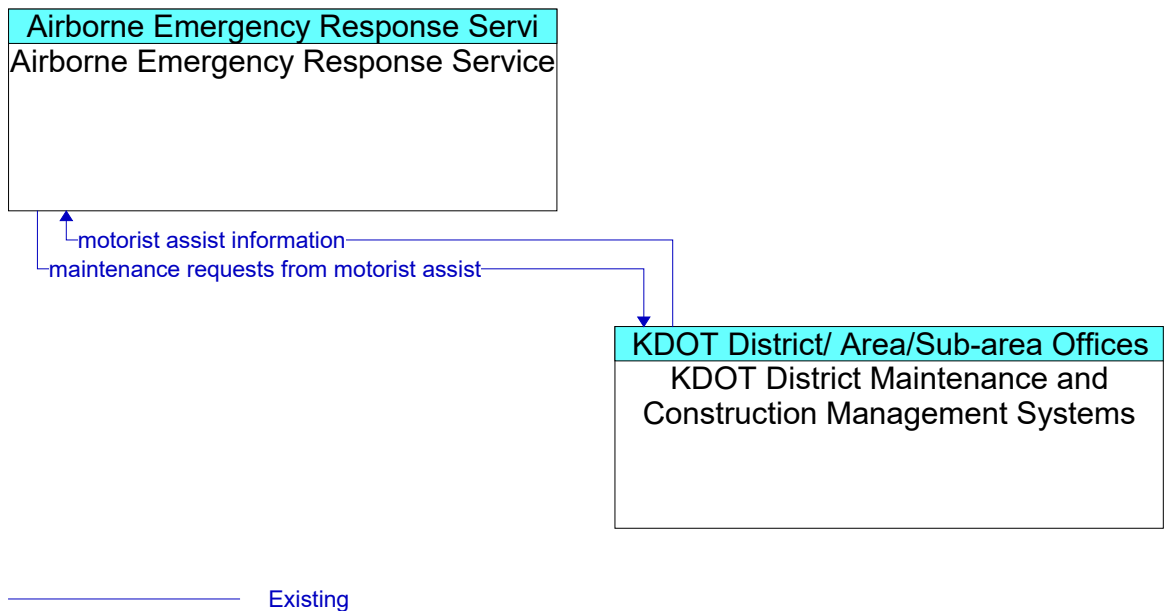


**Figure 8: Airborne Emergency Response Service - KCMO Maintenance and Construction Operations Center Interface**

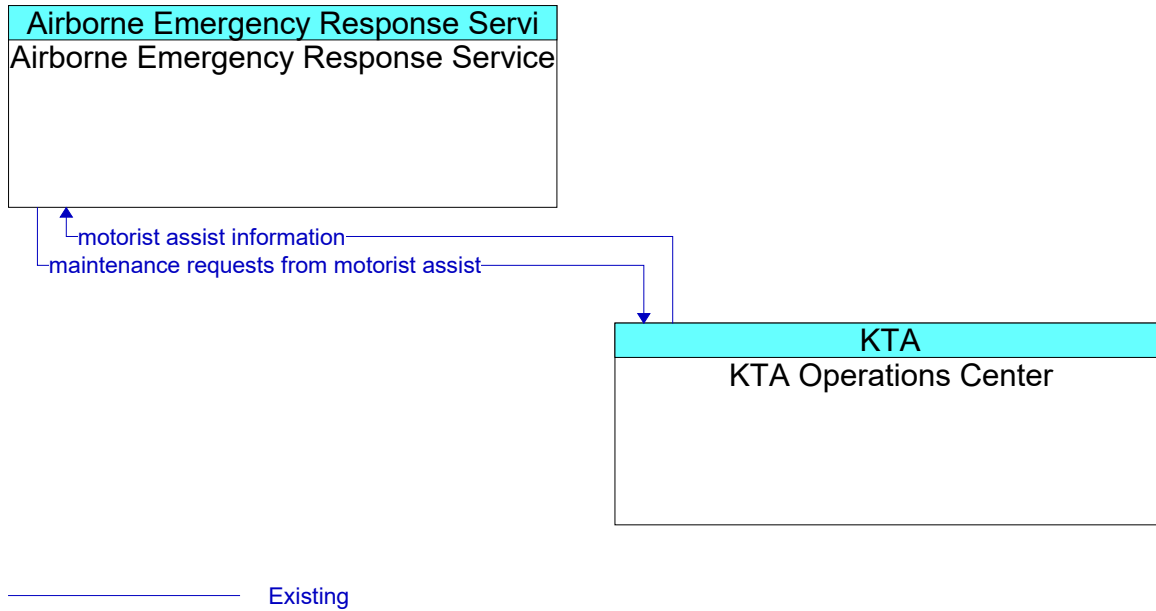




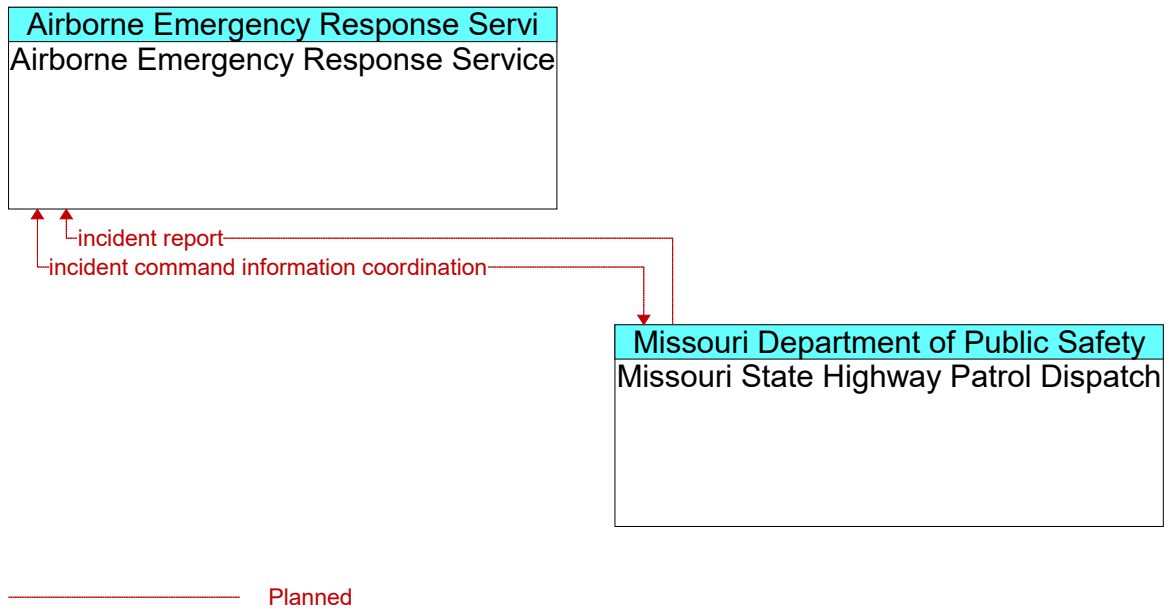
**Figure 9: Airborne Emergency Response Service - KDOT Construction and Maintenance Interface**



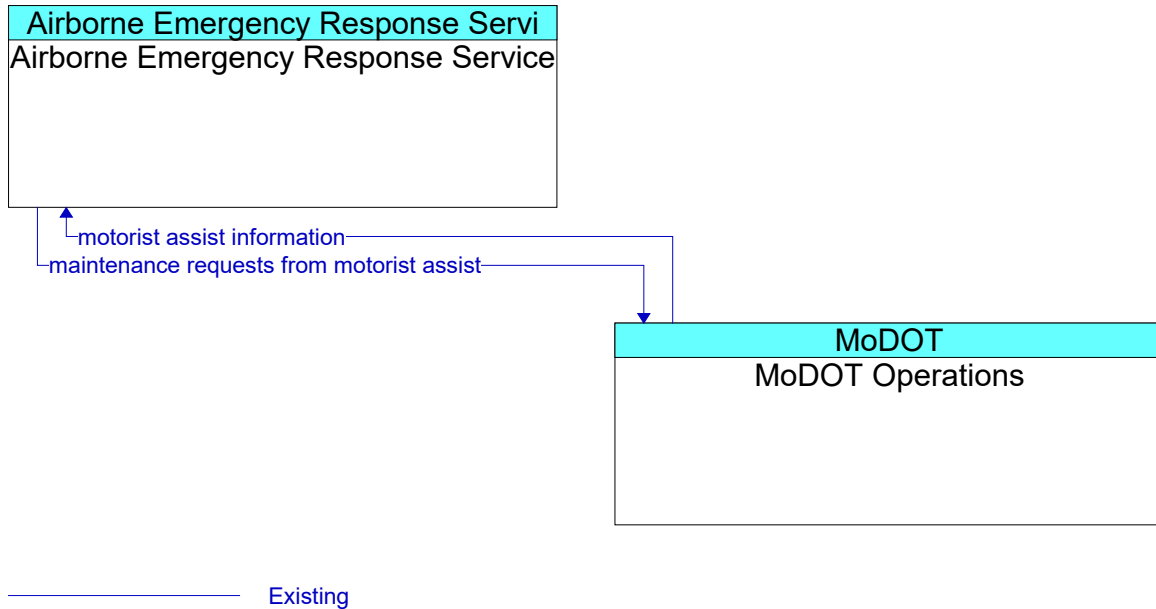
**Figure 10: Airborne Emergency Response Service - KDOT District Maintenance and Construction Management Systems Interface**



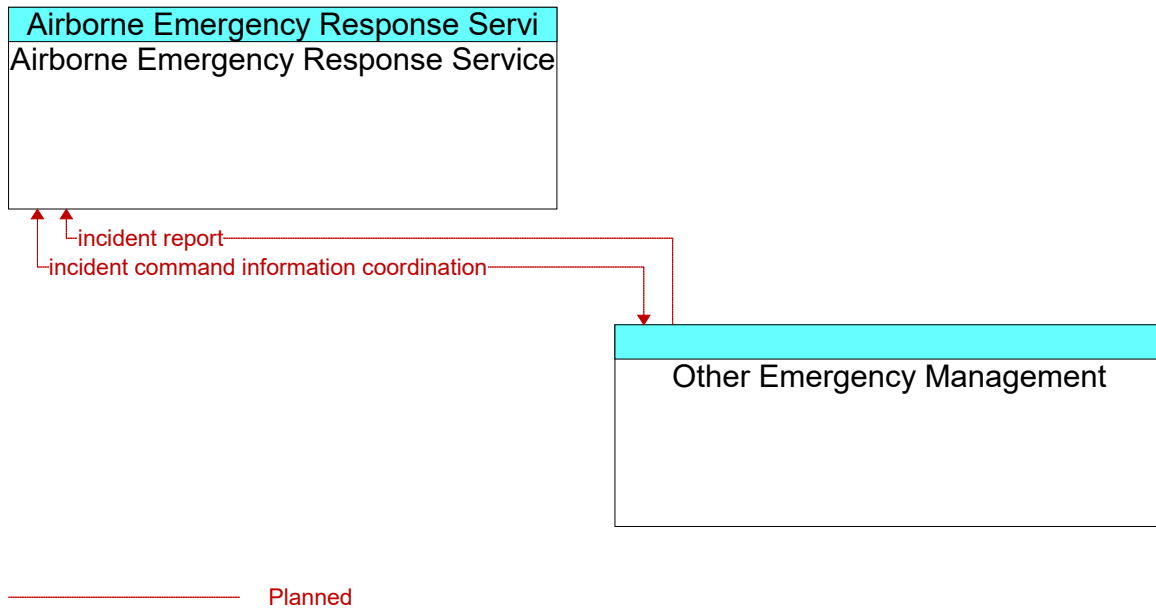
**Figure 11: Airborne Emergency Response Service - KTA Operations Center Interface**



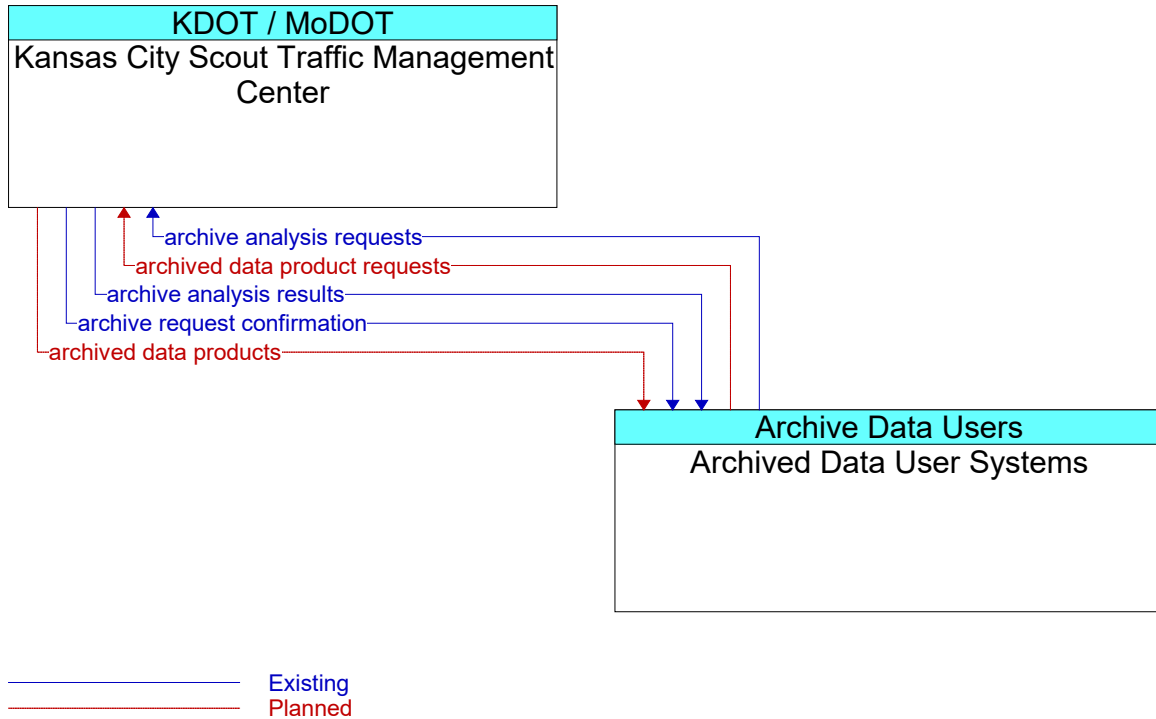
**Figure 12: Airborne Emergency Response Service - Missouri State Highway Patrol Dispatch Interface**



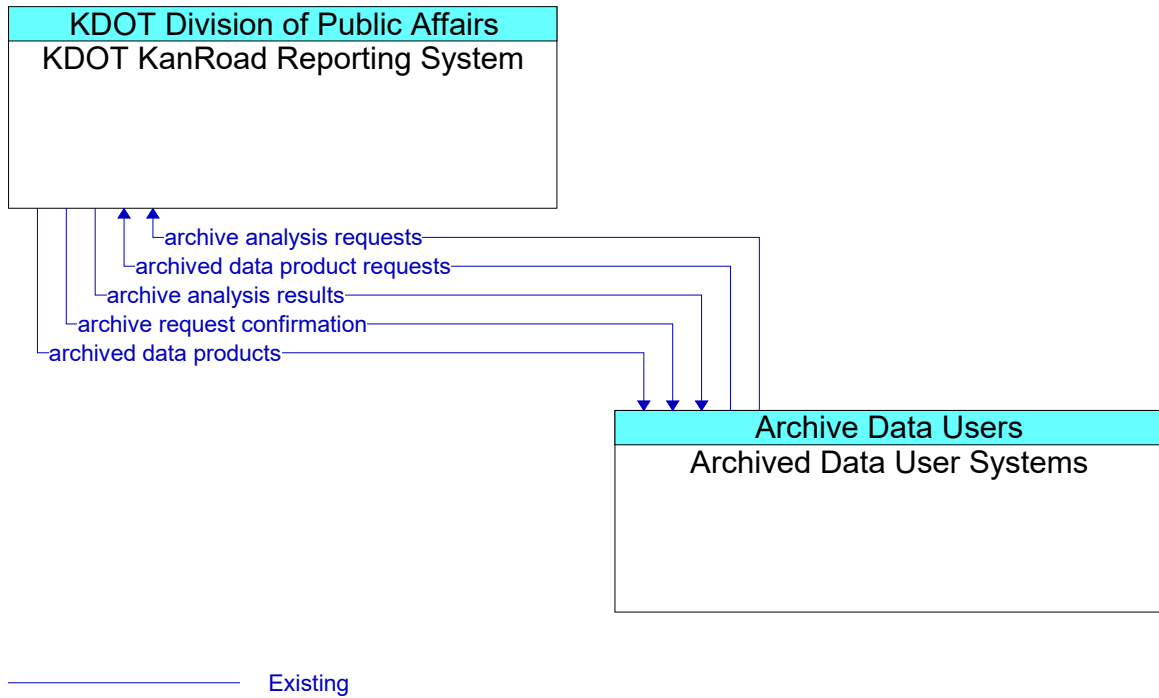
**Figure 13: Airborne Emergency Response Service - MoDOT Operations Interface**



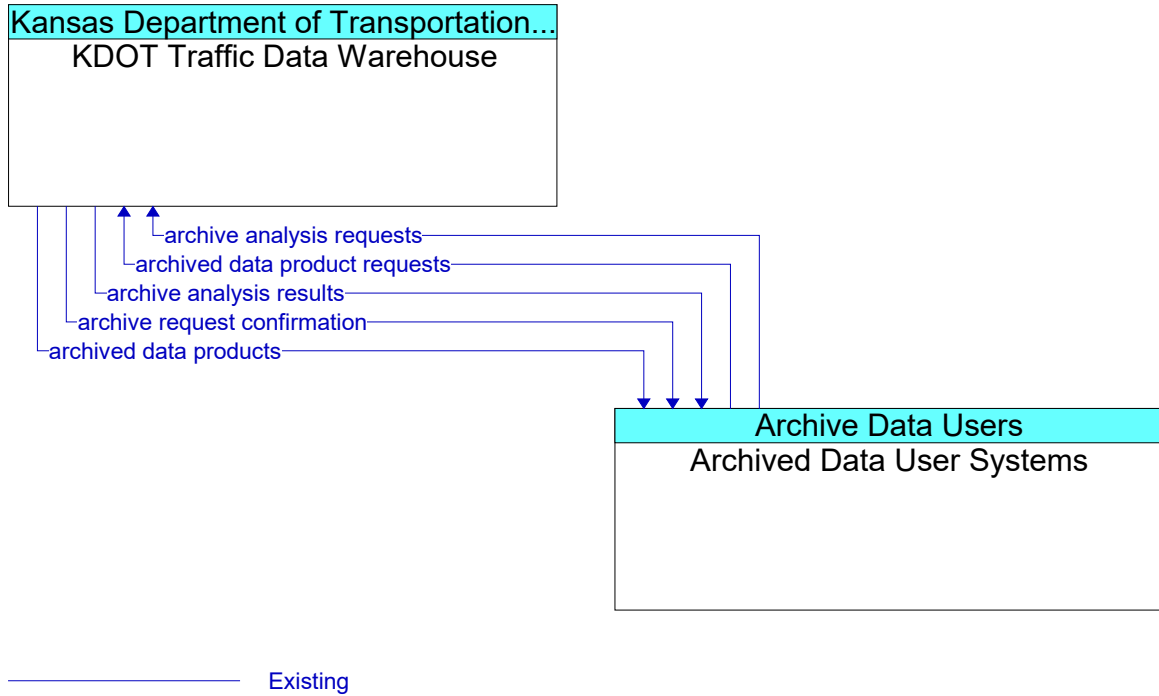
**Figure 14: Airborne Emergency Response Service - Other Emergency Management Interface**



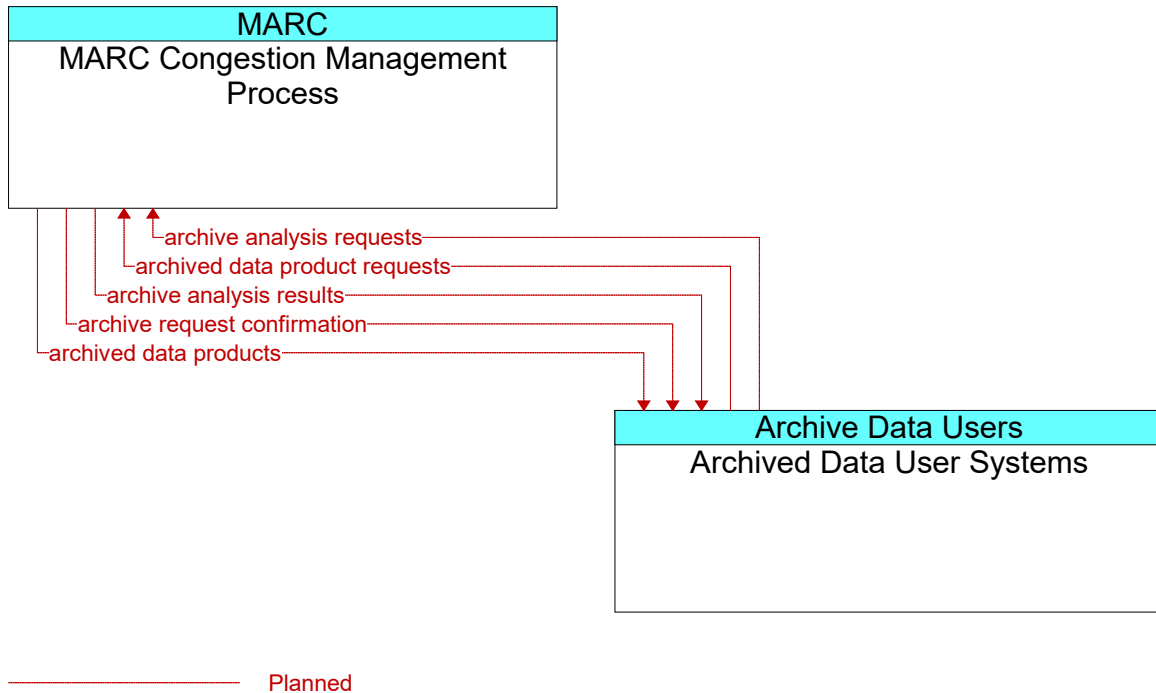
**Figure 15: Archived Data User Systems - Kansas City Scout Traffic Management Center Interface**



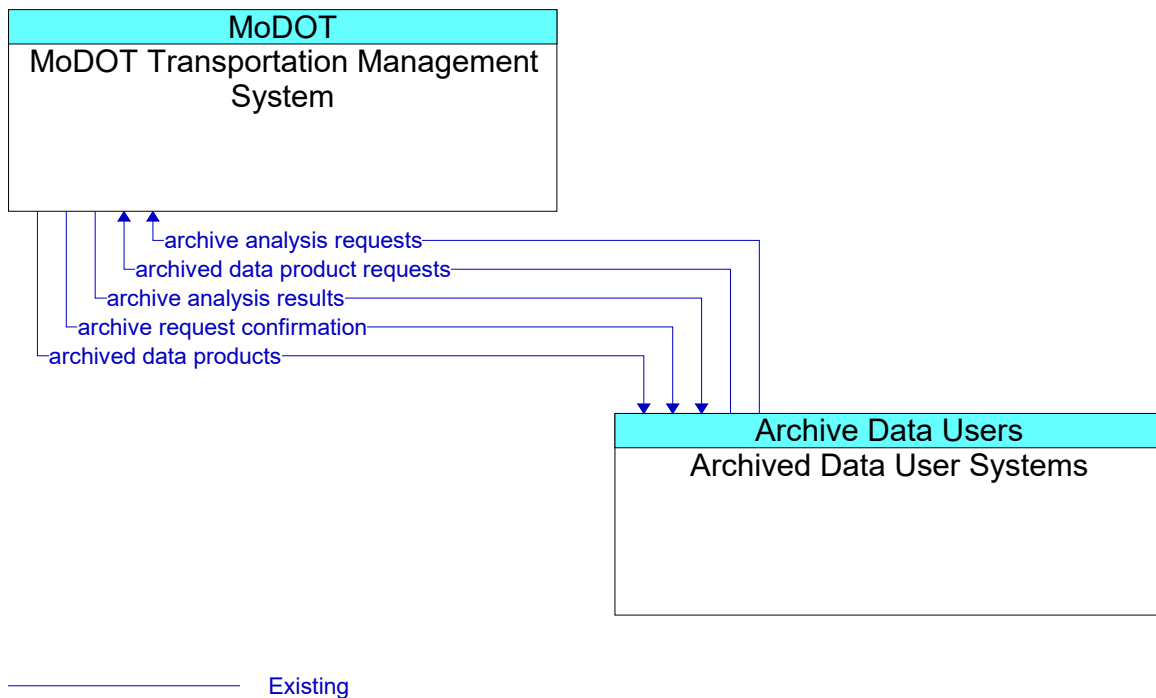
**Figure 16: Archived Data User Systems - KDOT KanRoad Reporting System Interface**



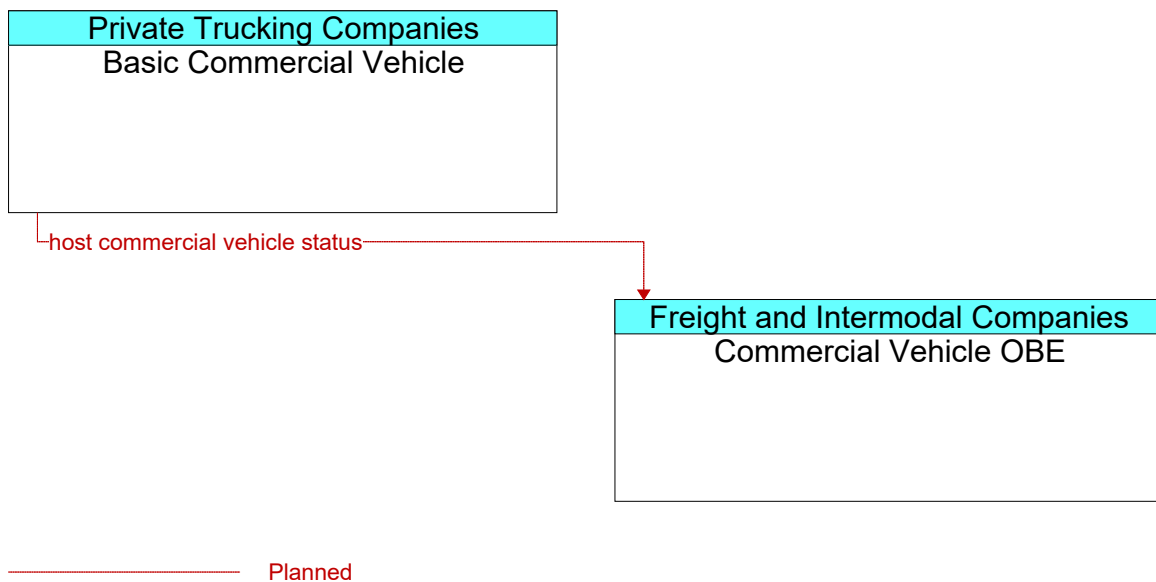
**Figure 17: Archived Data User Systems - KDOT Traffic Data Warehouse Interface**



**Figure 18: Archived Data User Systems - MARC Congestion Management Process Interface**

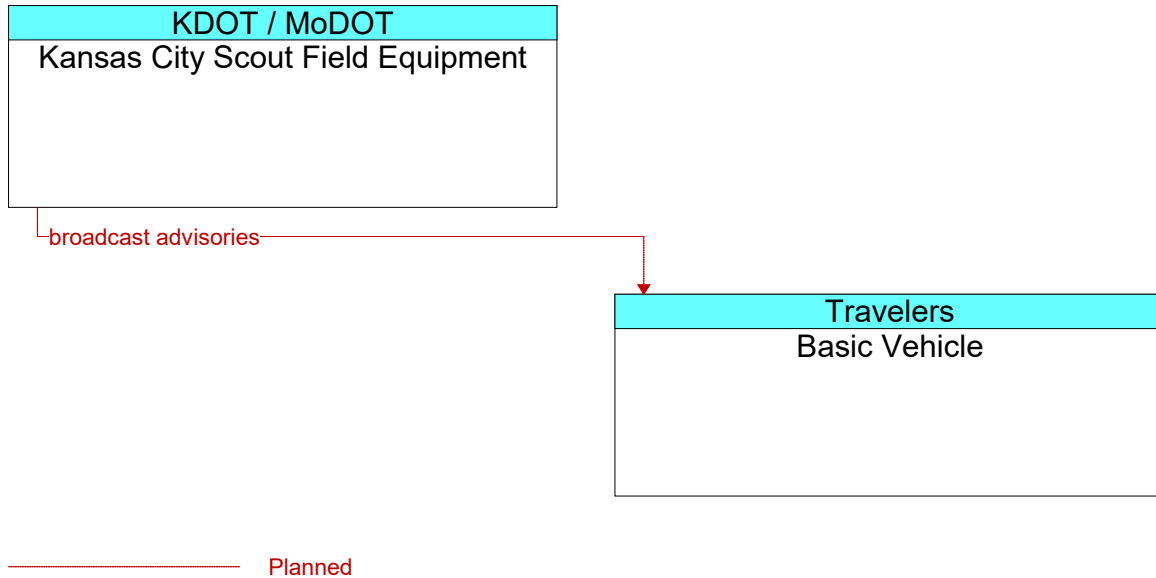


**Figure 19: Archived Data User Systems - MoDOT Transportation Management System Interface**

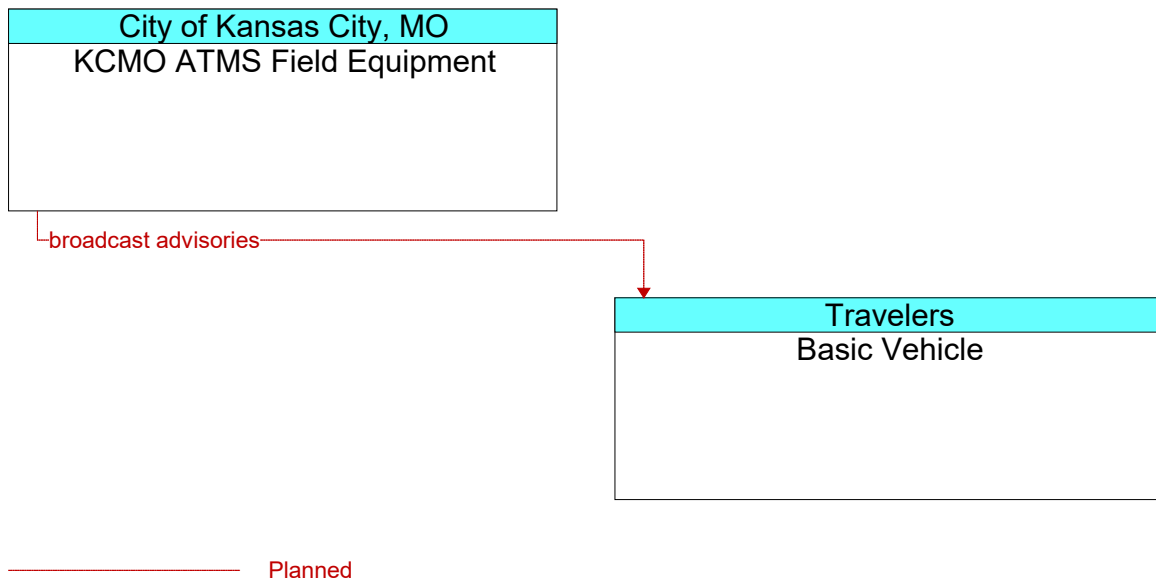


**Figure 20: Basic Commercial Vehicle - Commercial Vehicle OBE Interface**

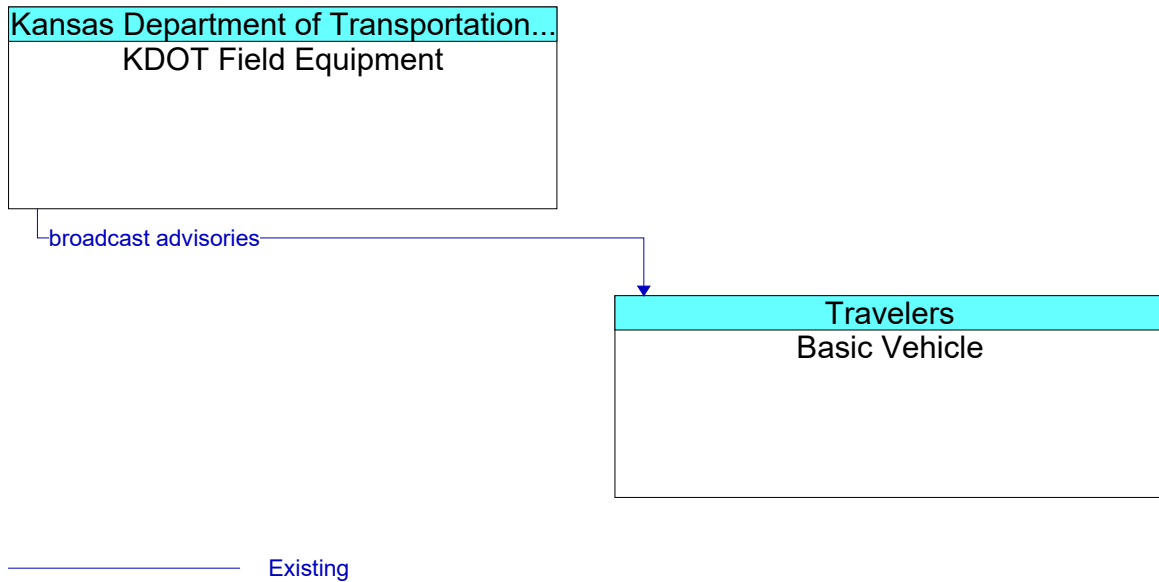




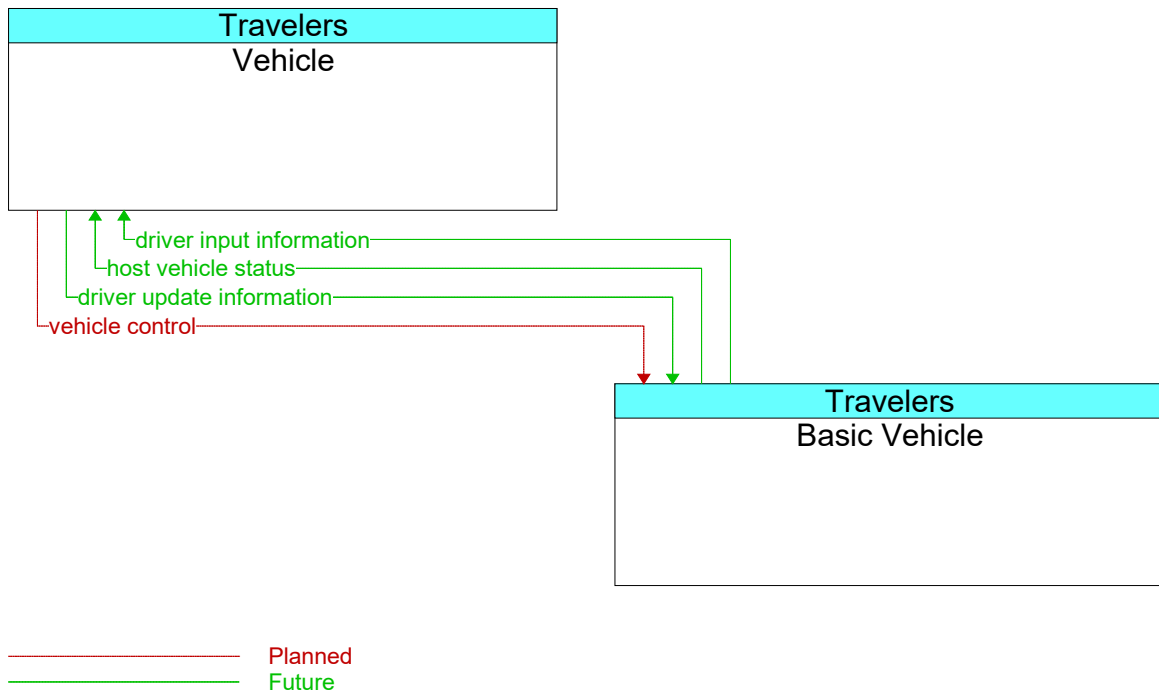
**Figure 21: Basic Vehicle - Kansas City Scout Field Equipment Interface**



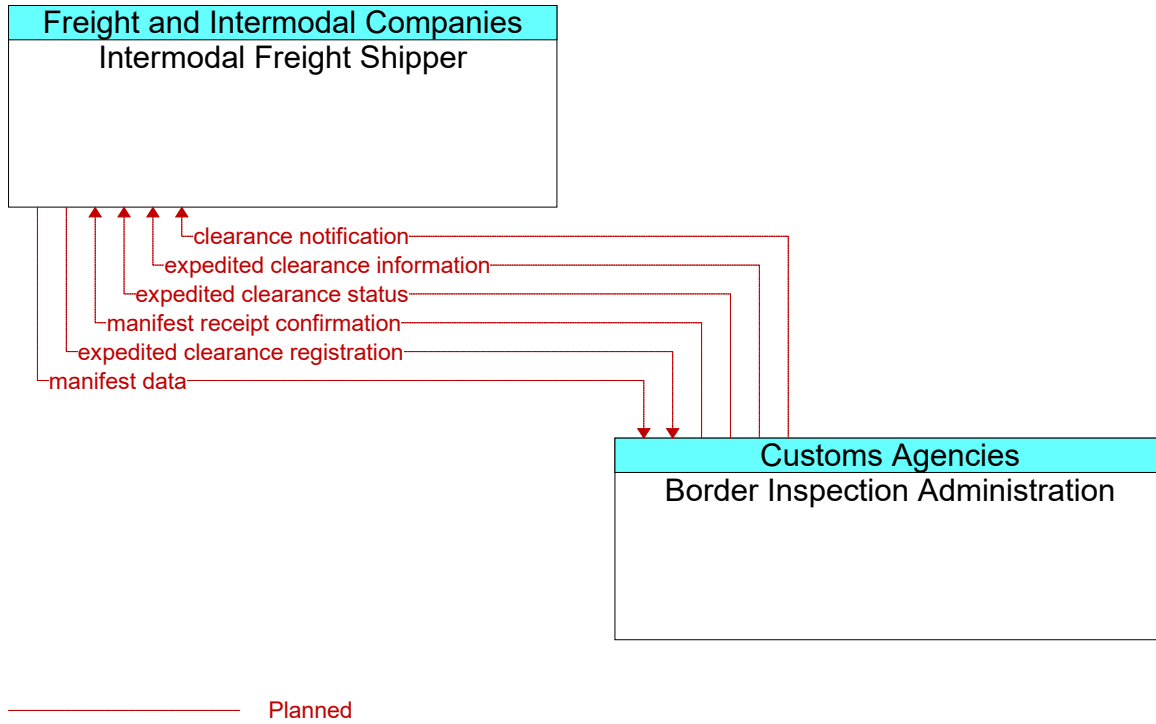
**Figure 22: Basic Vehicle - KCMO ATMS Field Equipment Interface**



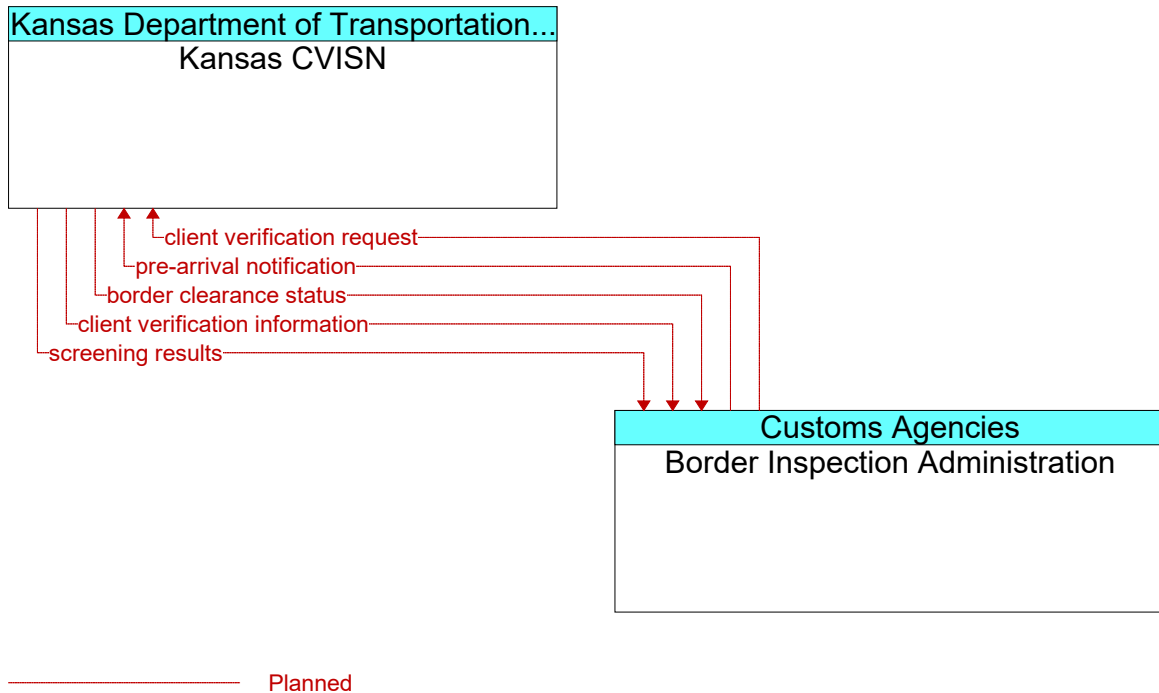
**Figure 23: Basic Vehicle - KDOT Field Equipment Interface**



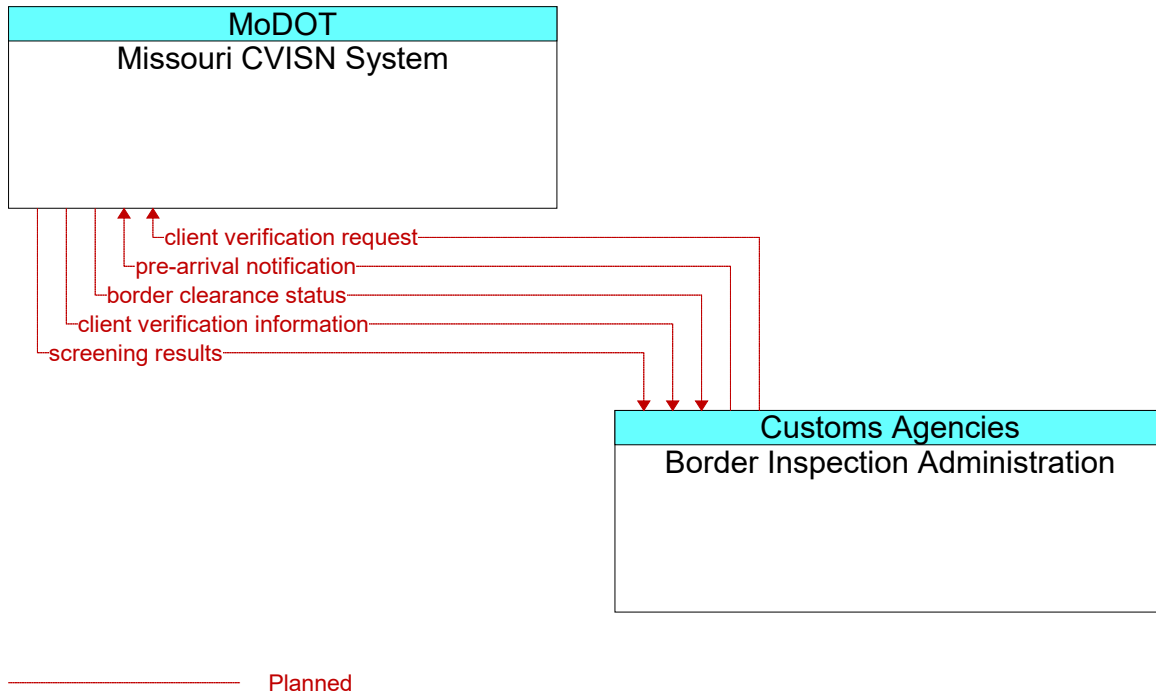
**Figure 24: Basic Vehicle - Vehicle Interface**



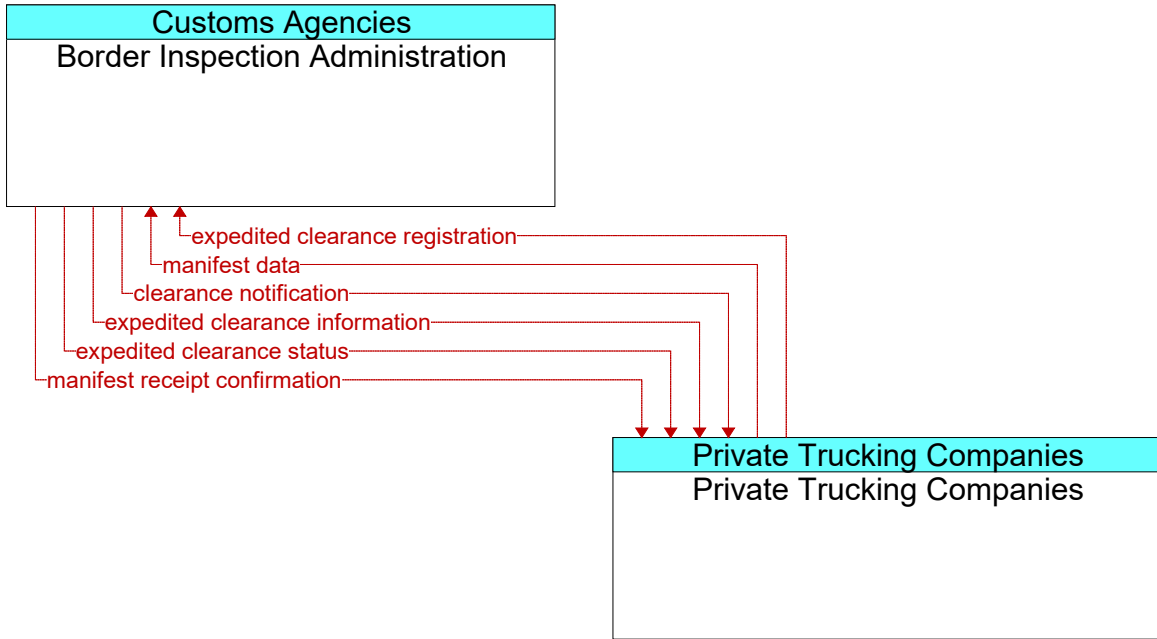
**Figure 25: Border Inspection Administration - Intermodal Freight Shipper Interface**



**Figure 26: Border Inspection Administration - Kansas CVISN Interface**

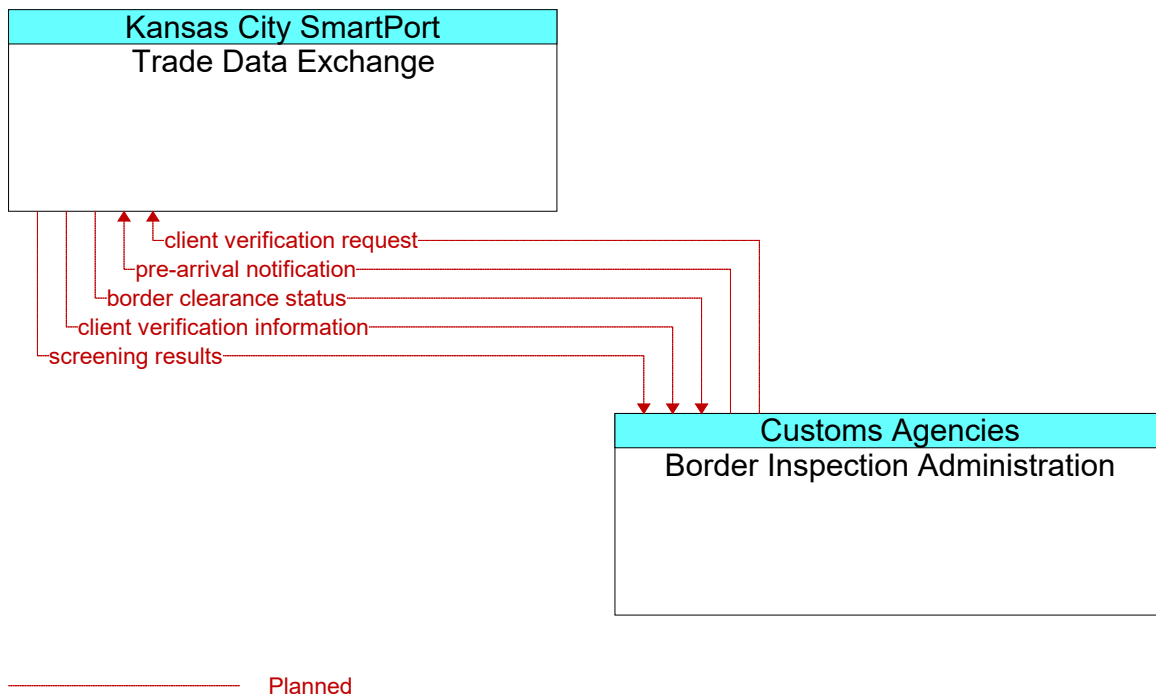


**Figure 27: Border Inspection Administration - Missouri CVISN System Interface**

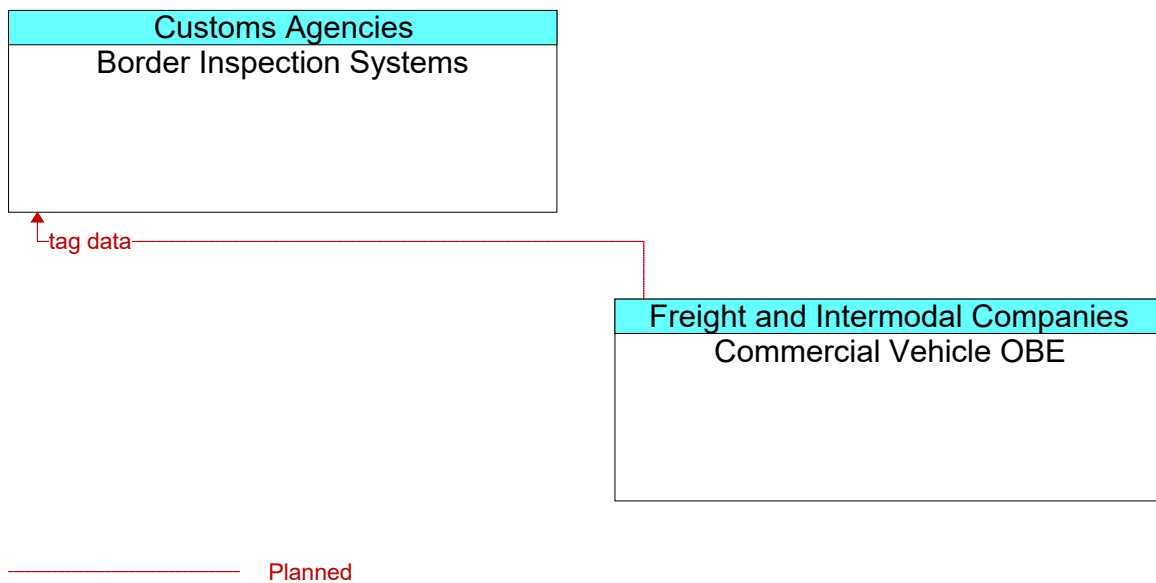


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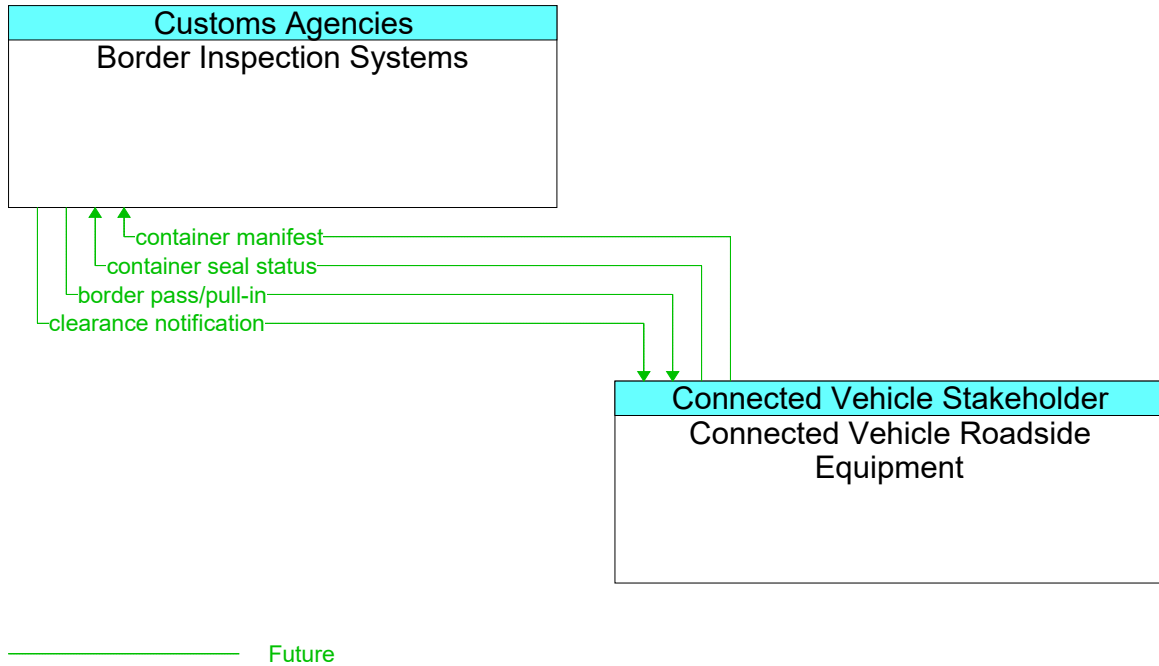
**Figure 28: Border Inspection Administration - Private Trucking Companies Interface**



**Figure 29: Border Inspection Administration - Trade Data Exchange Interface**



**Figure 30: Border Inspection Systems - Commercial Vehicle OBE Interface**



**Figure 31: Border Inspection Systems - Connected Vehicle Roadside Equipment Interface**



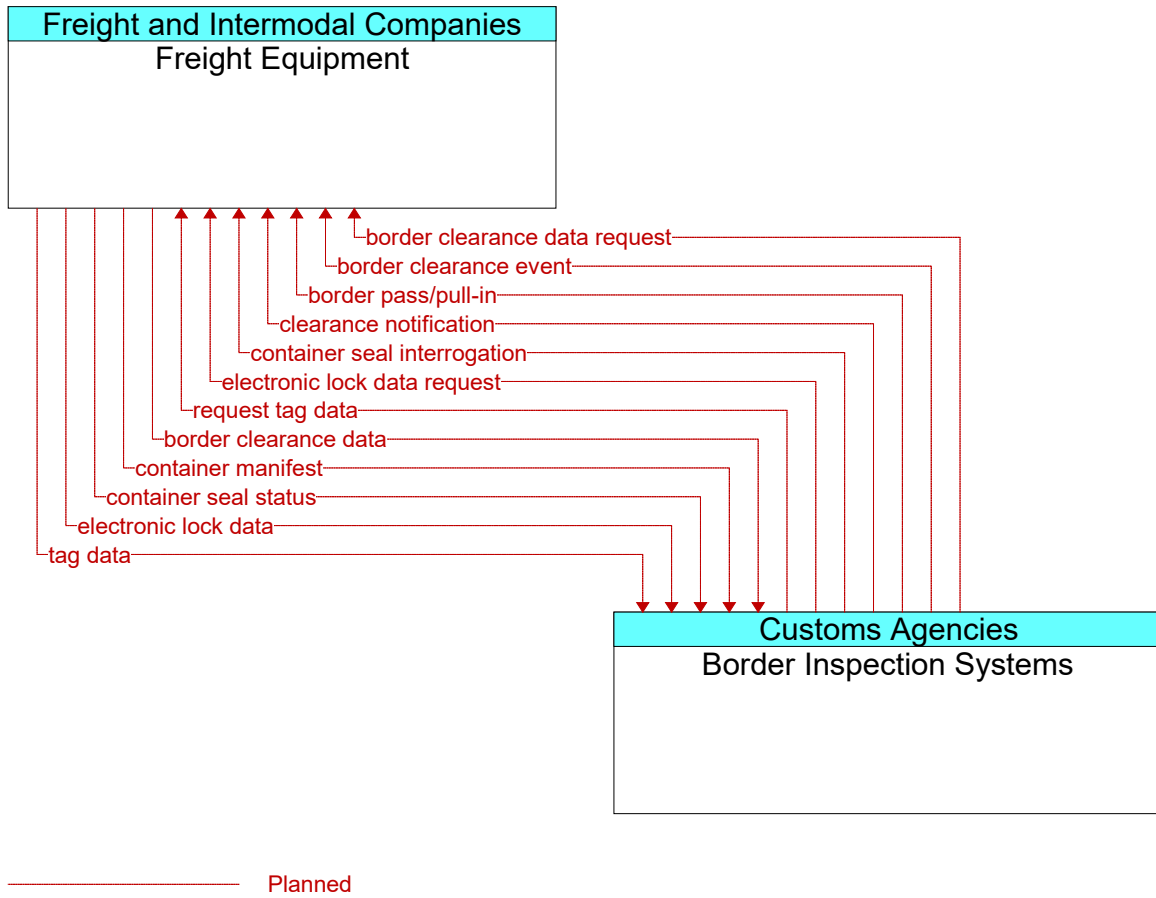
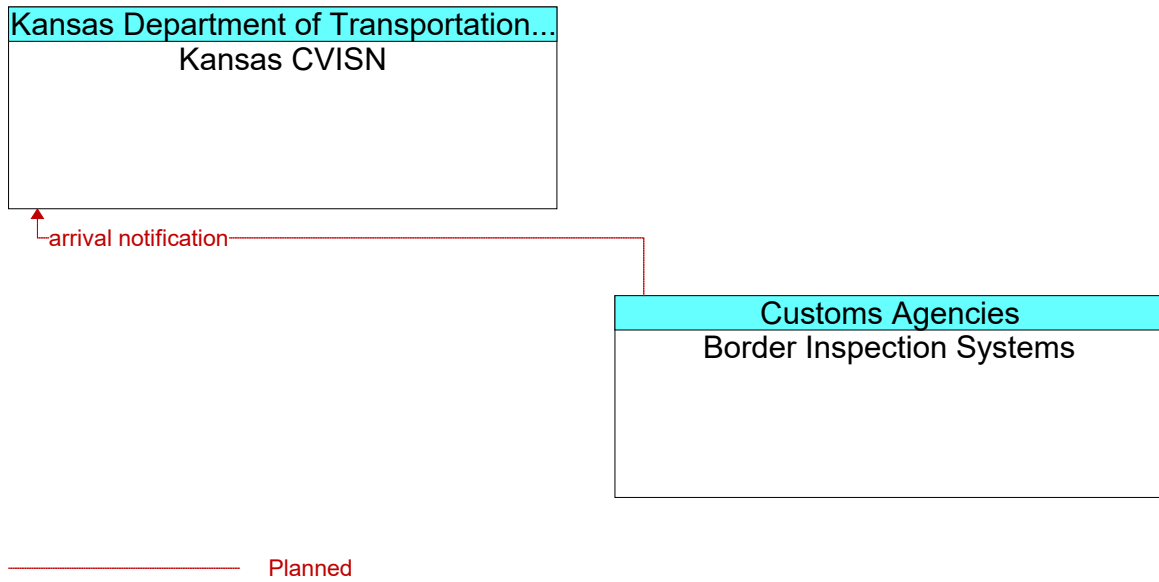
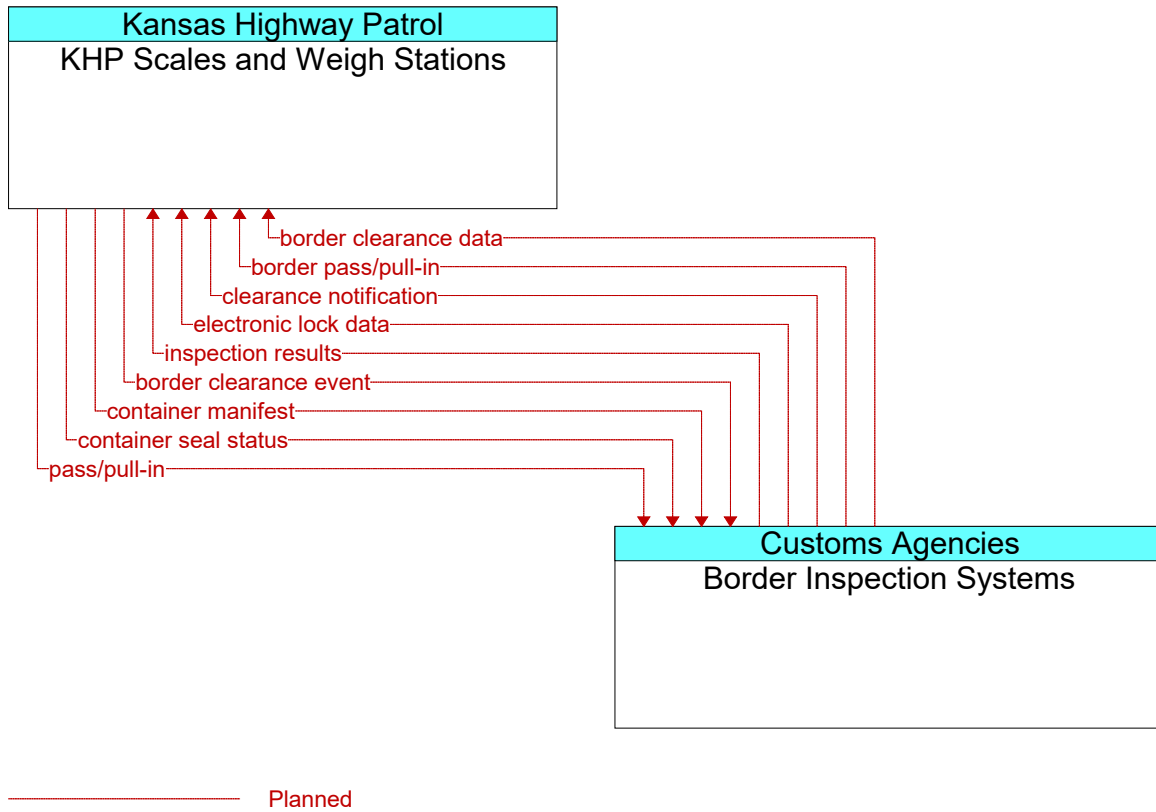


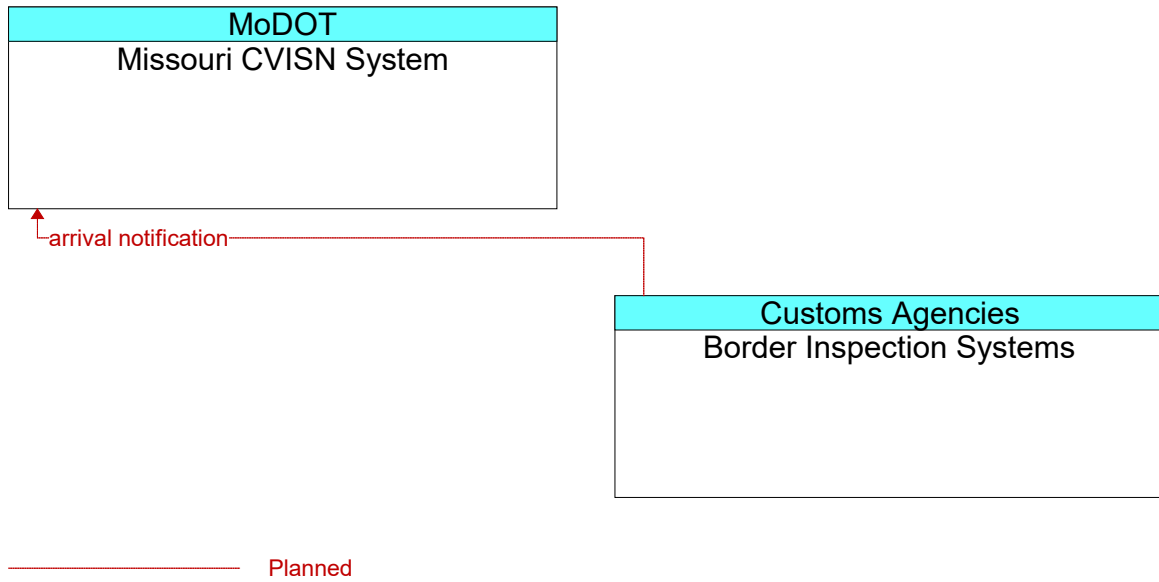
Figure 32: Border Inspection Systems - Freight Equipment Interface



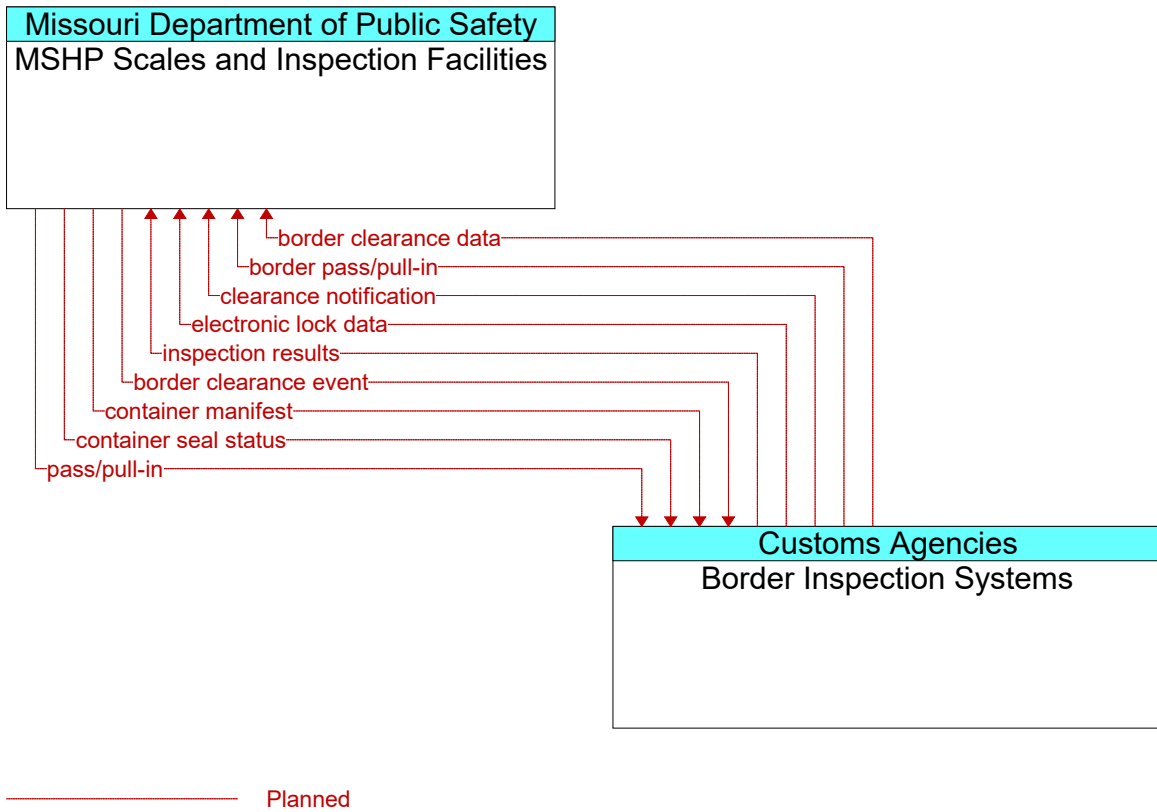
**Figure 33: Border Inspection Systems - Kansas CVISN Interface**



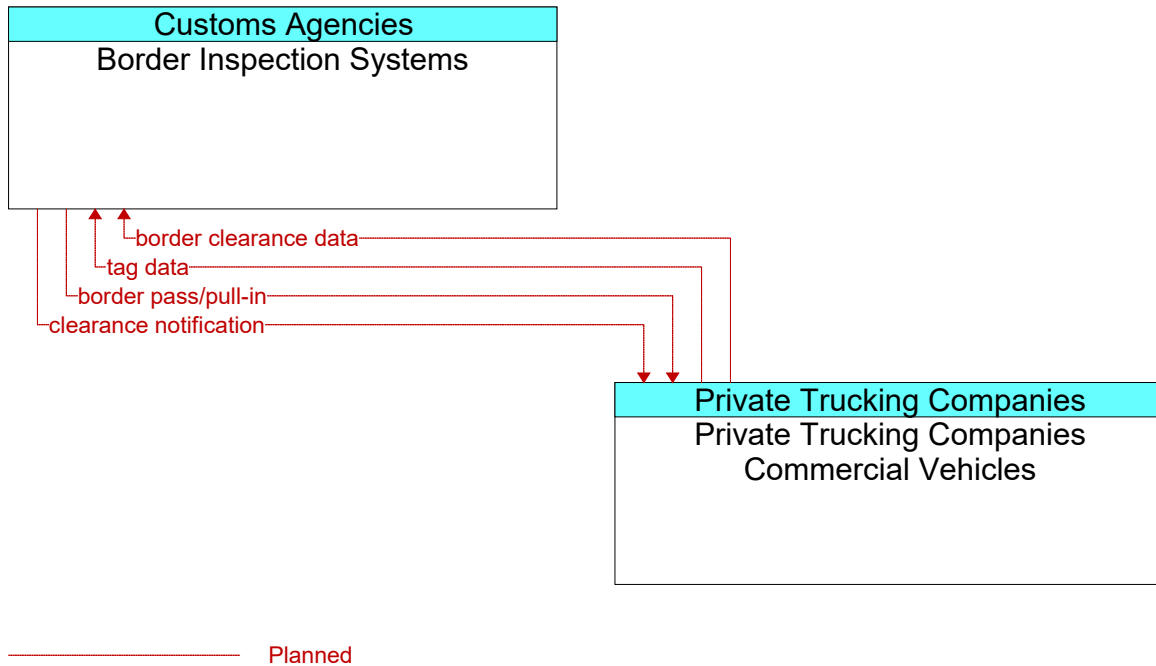
**Figure 34: Border Inspection Systems - KHP Scales and Weigh Stations Interface**



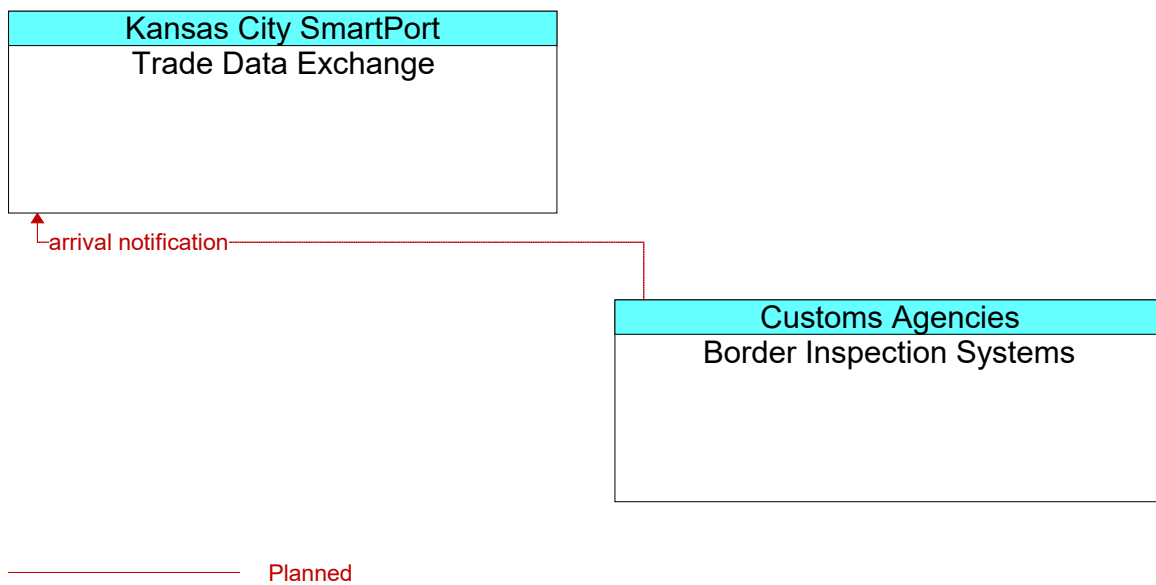
**Figure 35: Border Inspection Systems - Missouri CVISN System Interface**



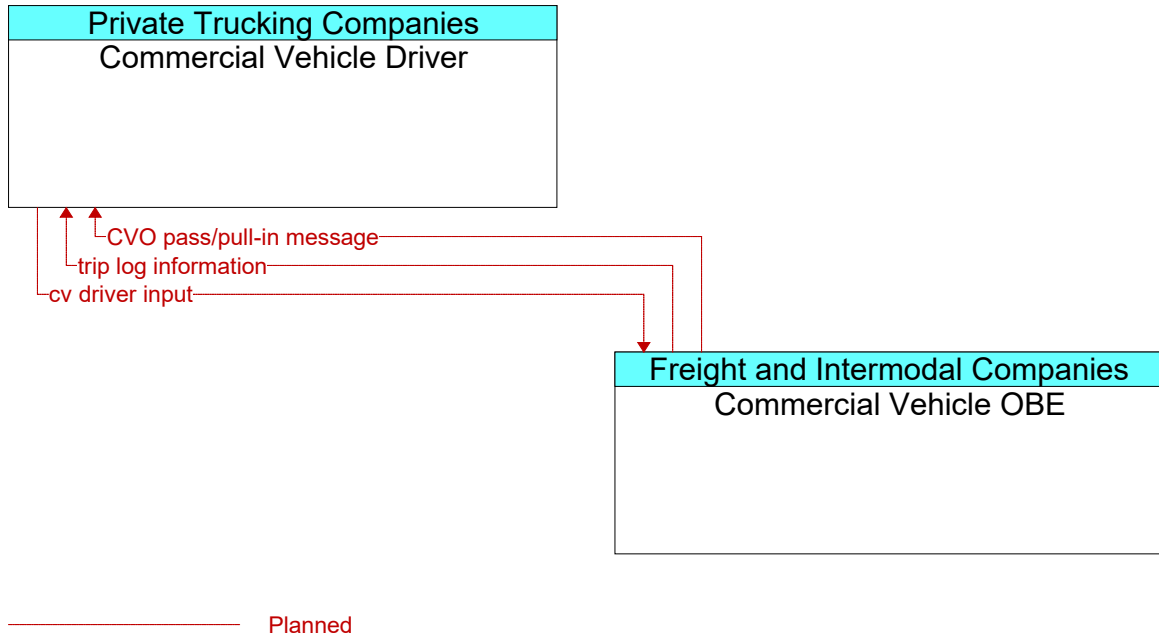
**Figure 36: Border Inspection Systems - MSHP Scales and Inspection Facilities Interface**



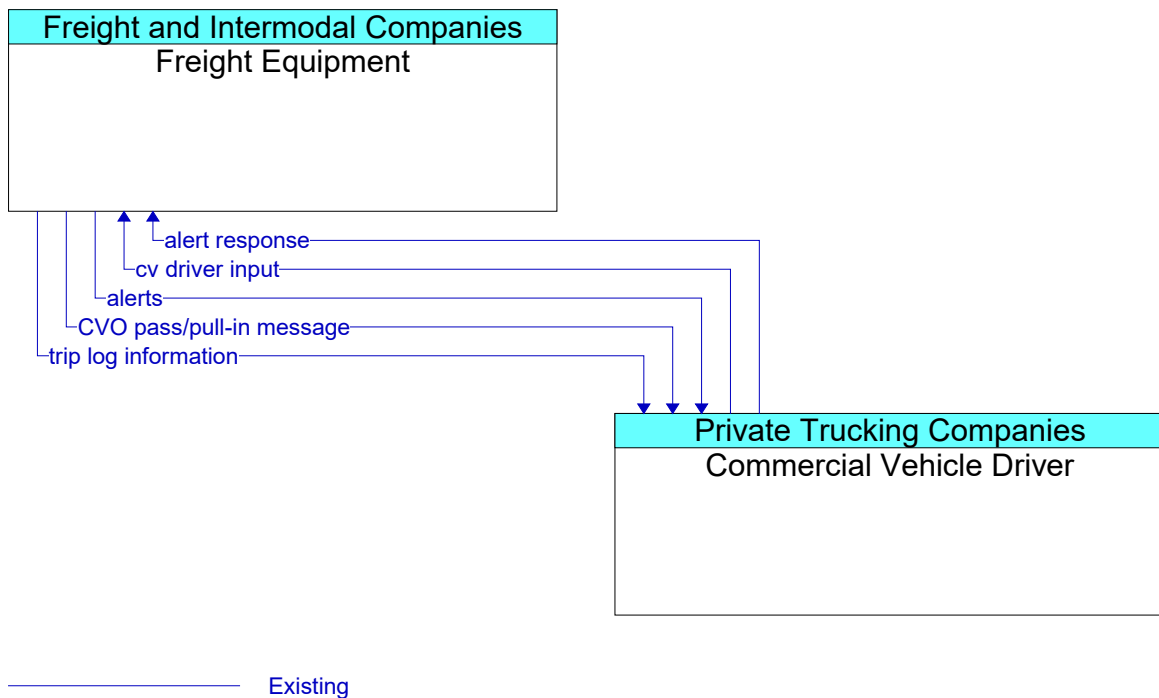
**Figure 37: Border Inspection Systems - Private Trucking Companies Commercial Vehicles Interface**



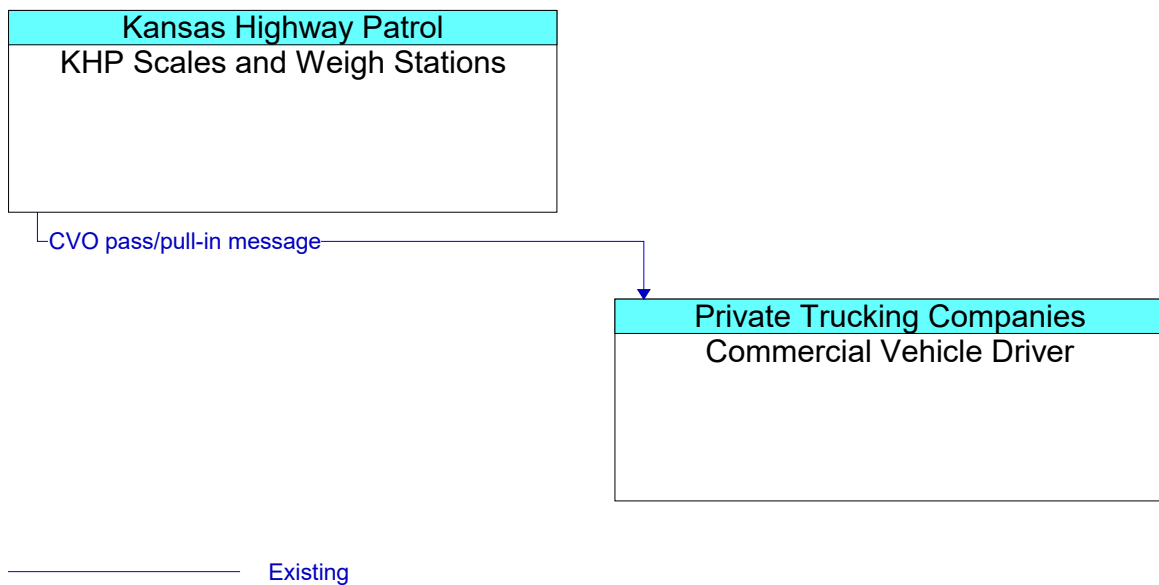
**Figure 38: Border Inspection Systems - Trade Data Exchange Interface**



**Figure 39: Commercial Vehicle Driver - Commercial Vehicle OBE Interface**

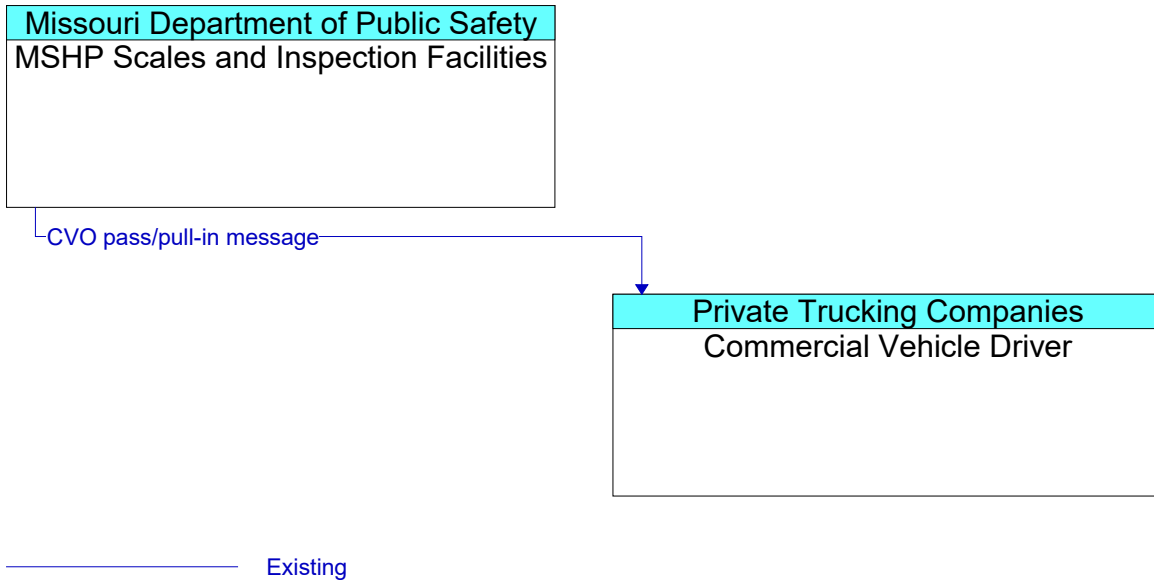


**Figure 40: Commercial Vehicle Driver - Freight Equipment Interface**

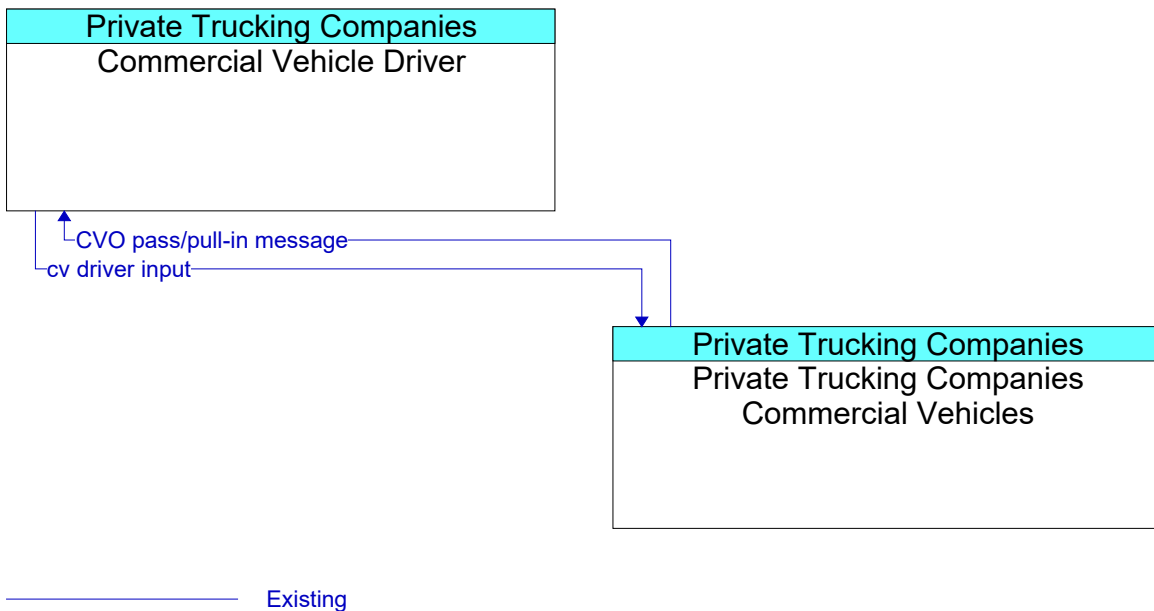


**Figure 41: Commercial Vehicle Driver - KHP Scales and Weigh Stations Interface**

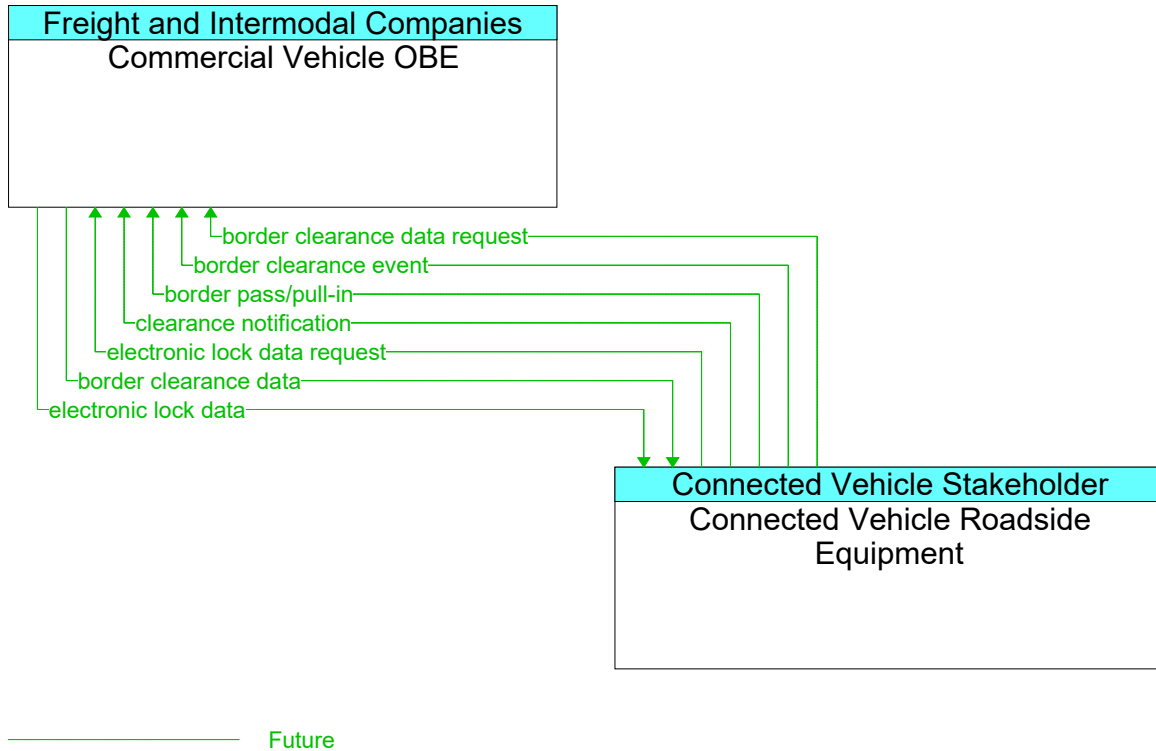




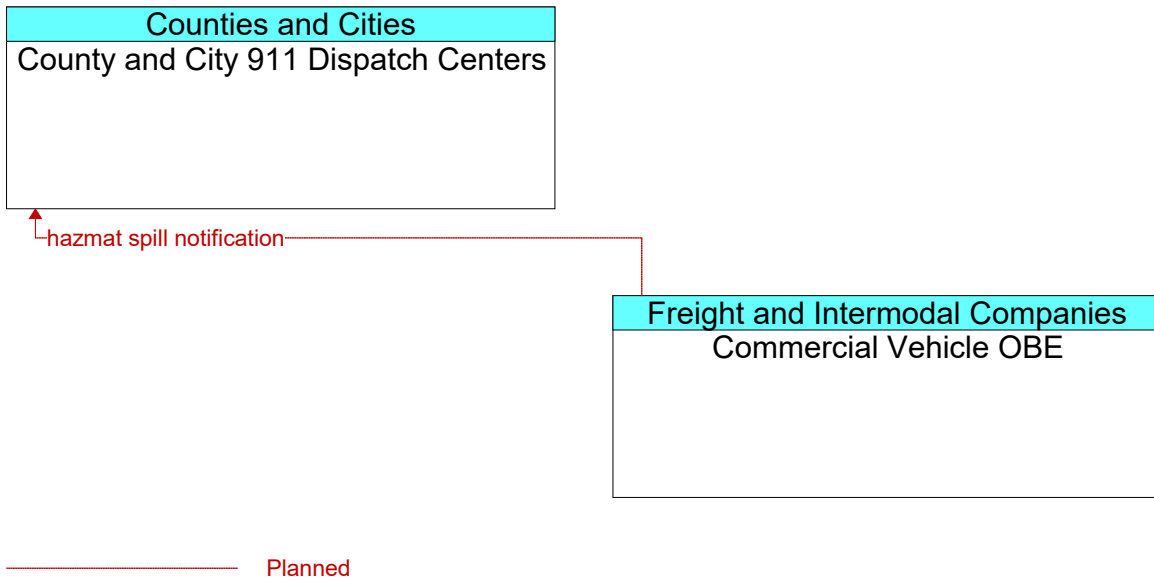
**Figure 42: Commercial Vehicle Driver - MSHP Scales and Inspection Facilities Interface**



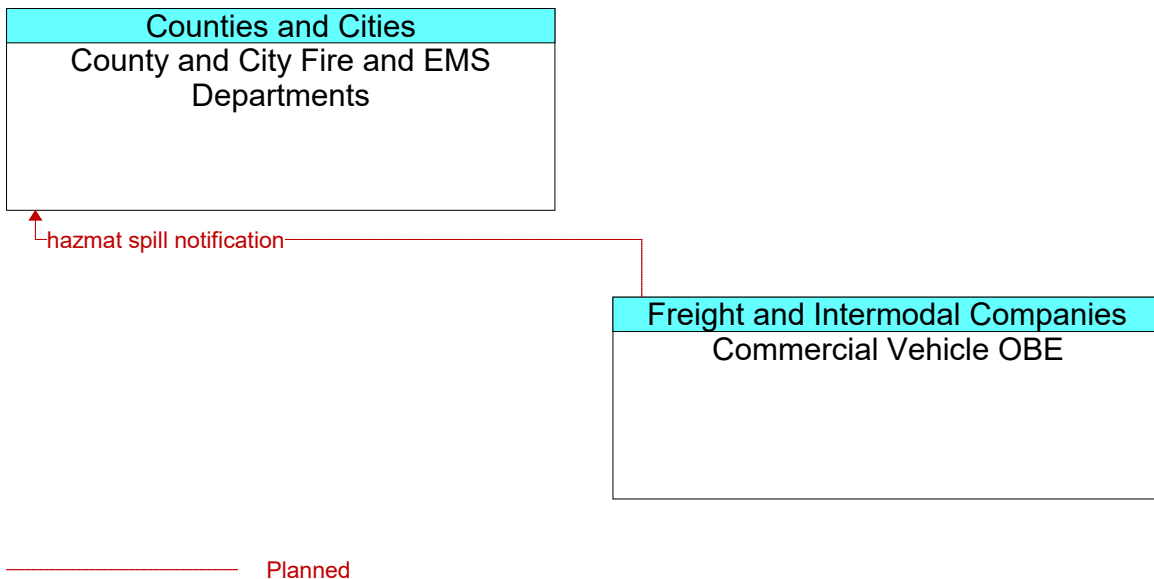
**Figure 43: Commercial Vehicle Driver - Private Trucking Companies Commercial Vehicles Interface**



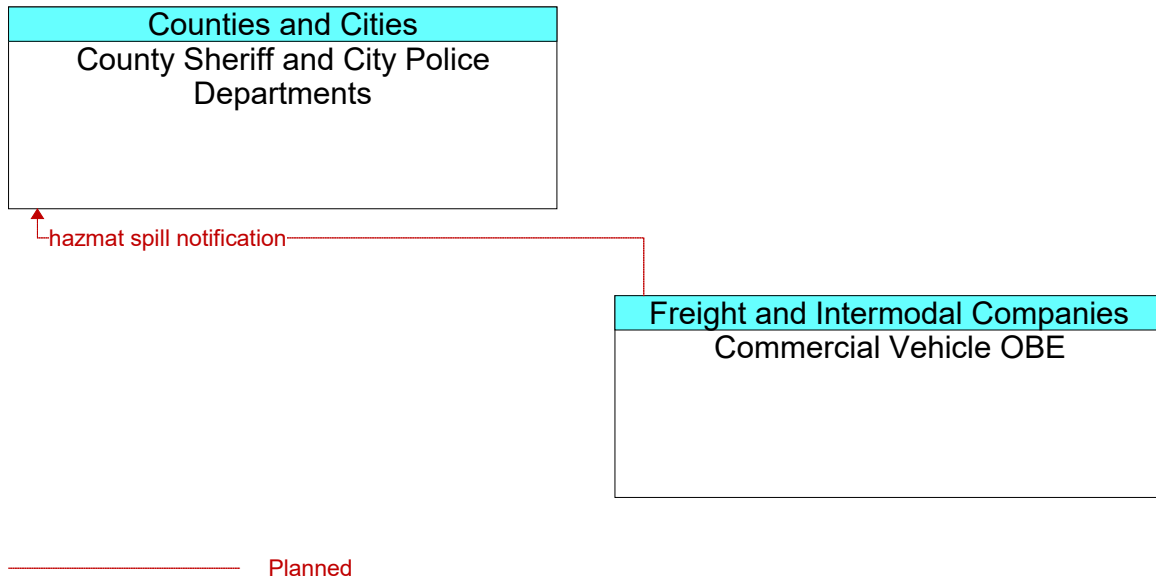
**Figure 44: Commercial Vehicle OBE - Connected Vehicle Roadside Equipment Interface**



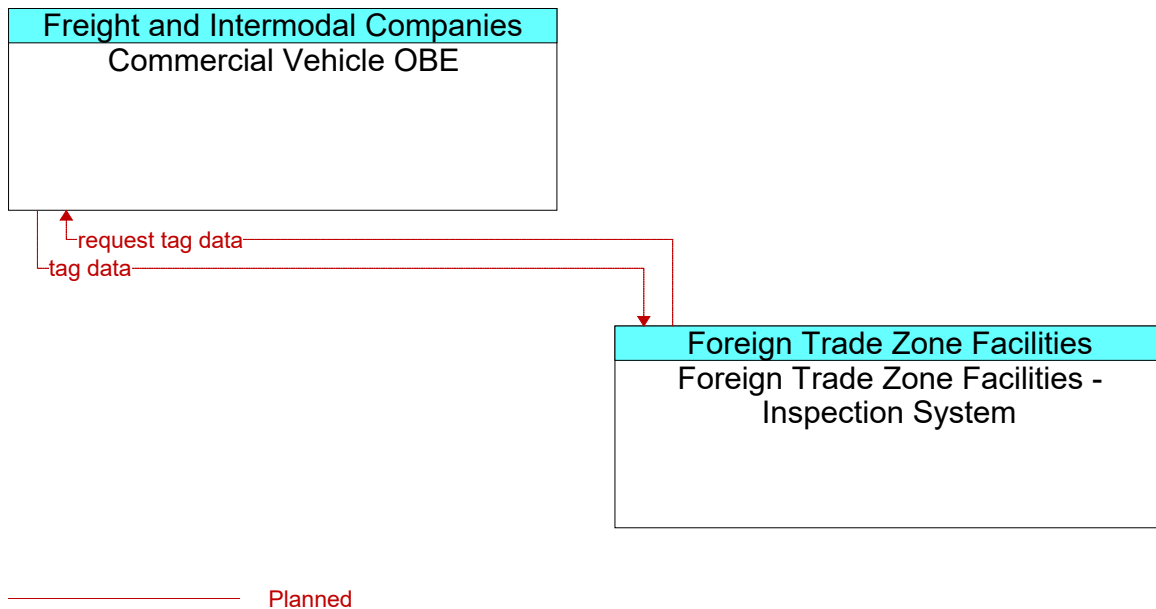
**Figure 45: Commercial Vehicle OBE - County and City 911 Dispatch Centers Interface**



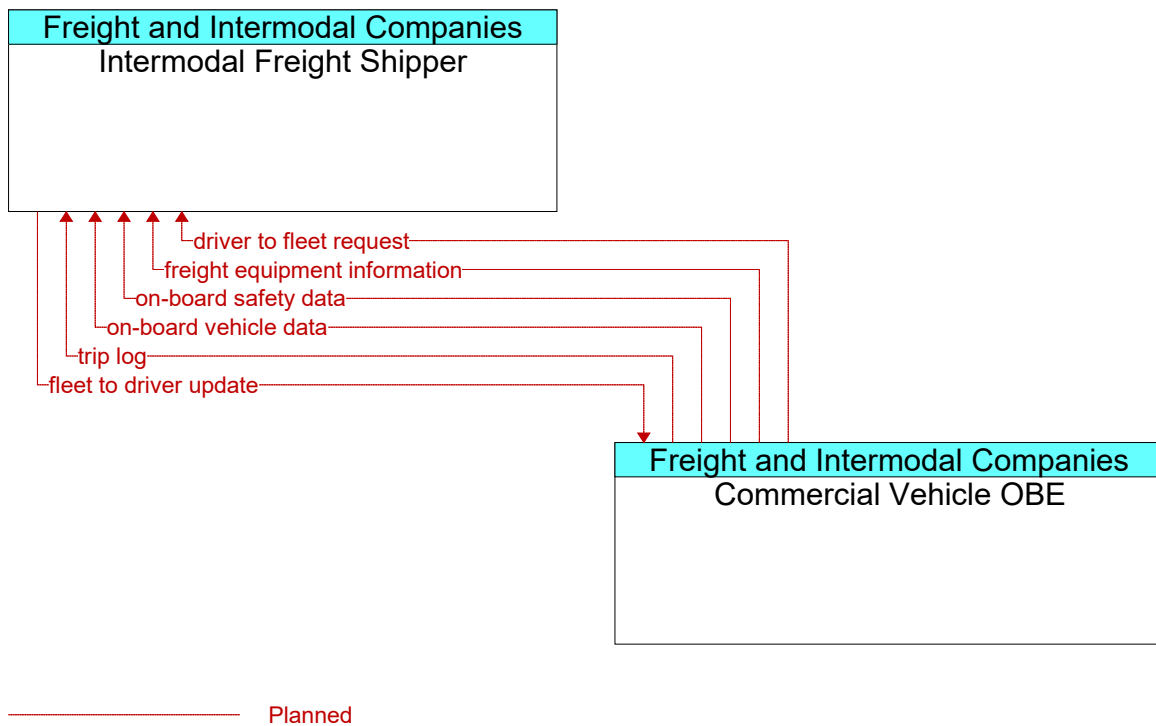
**Figure 46: Commercial Vehicle OBE - County and City Fire and EMS Departments Interface**



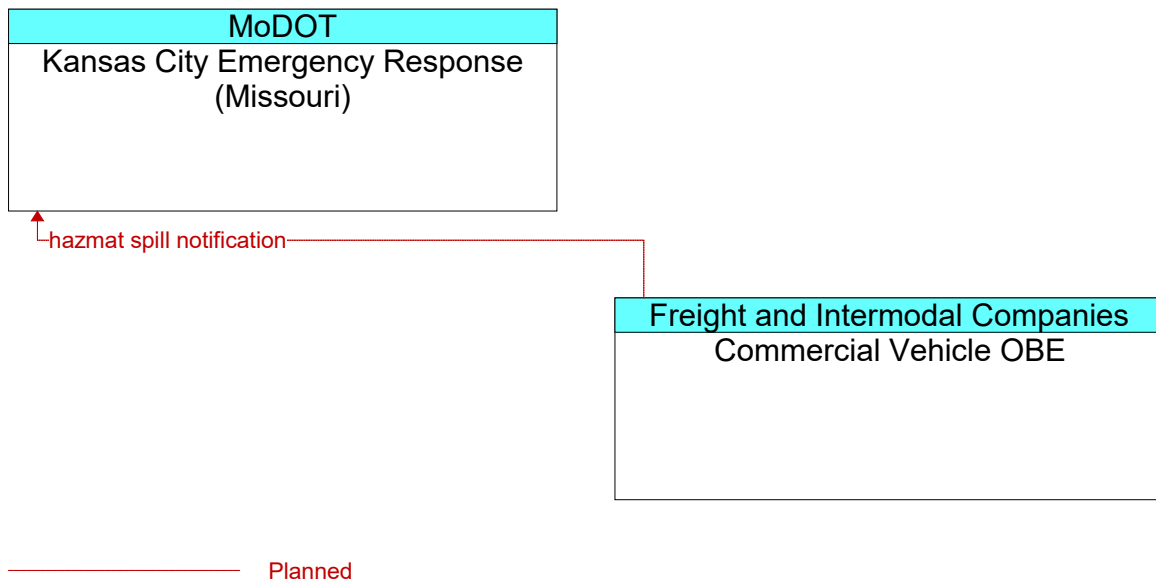
**Figure 47: Commercial Vehicle OBE - County Sheriff and City Police Departments Interface**



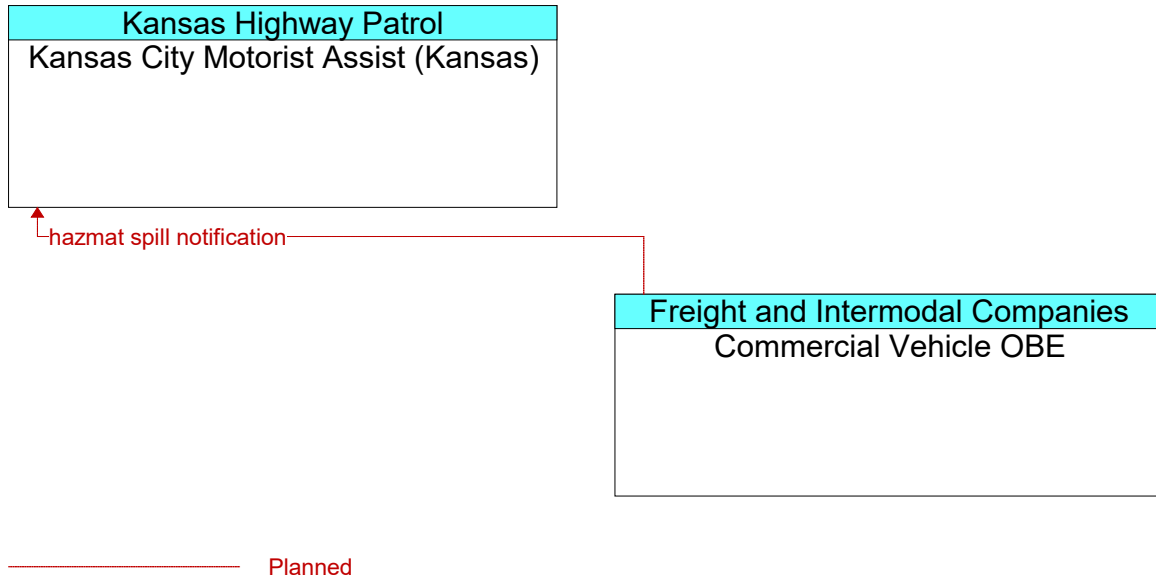
**Figure 48: Commercial Vehicle OBE - Foreign Trade Zone Facilities - Inspection System Interface**



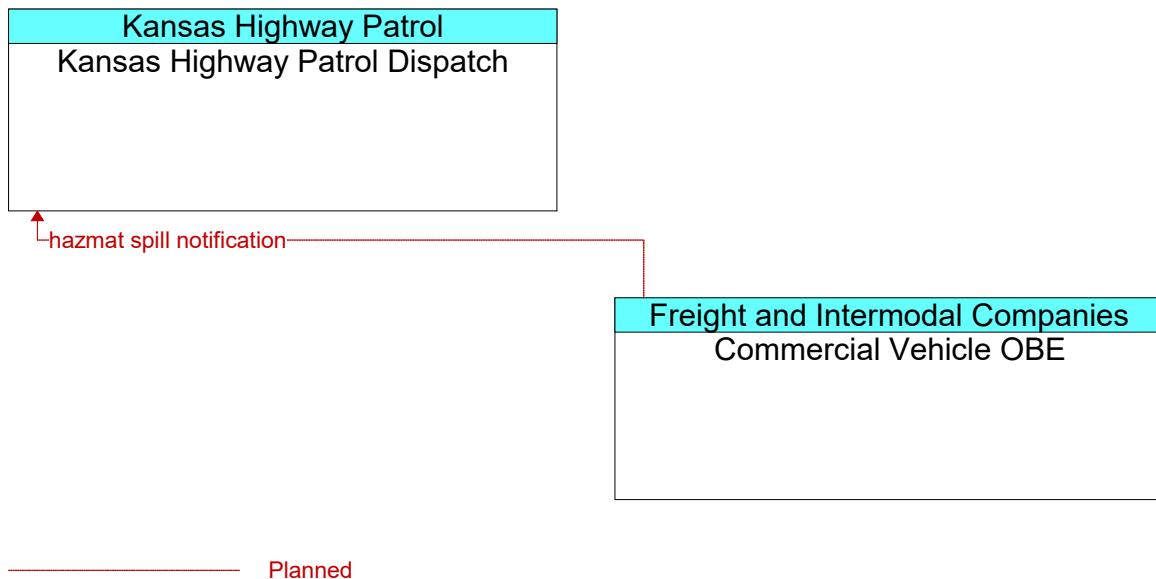
**Figure 49: Commercial Vehicle OBE - Intermodal Freight Shipper Interface**



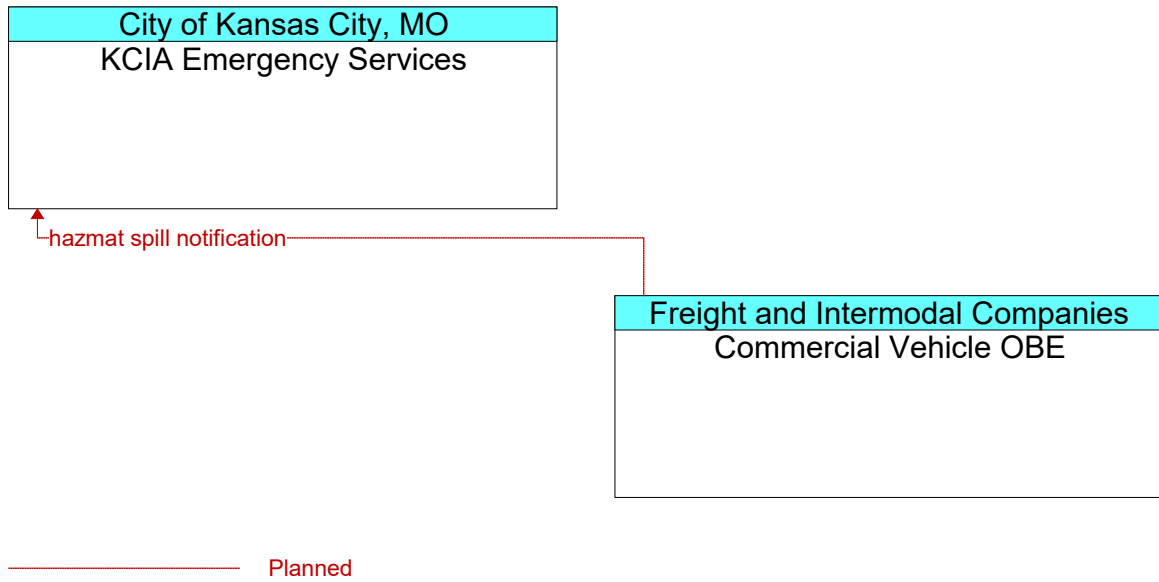
**Figure 50: Commercial Vehicle OBE - Kansas City Emergency Response (Missouri) Interface**



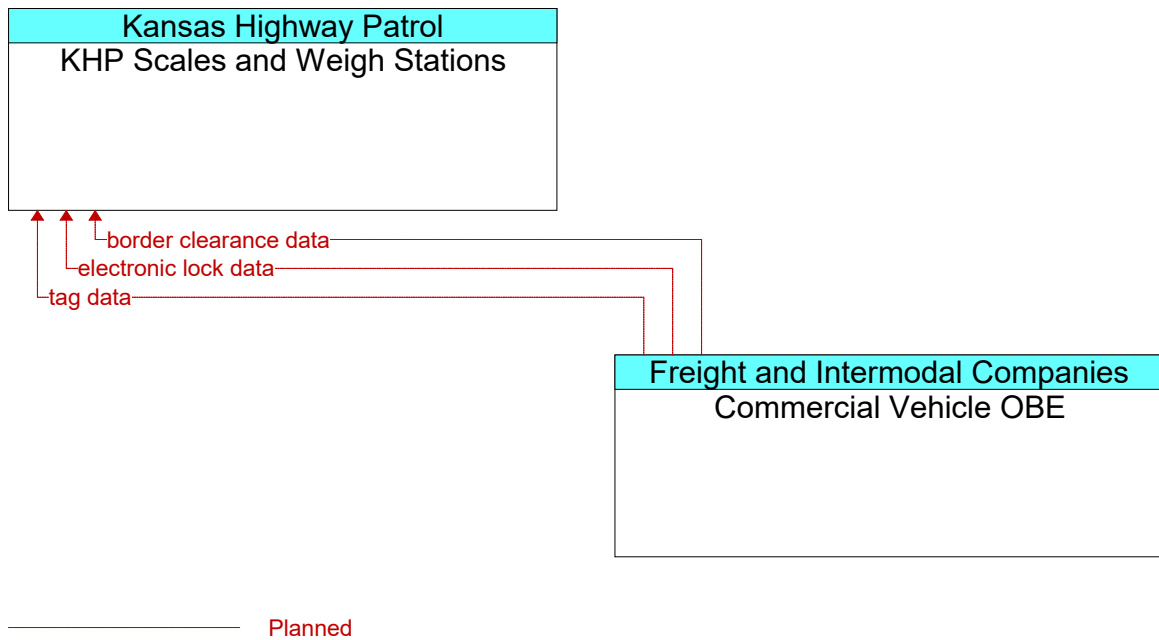
**Figure 51: Commercial Vehicle OBE - Kansas City Motorist Assist (Kansas) Interface**



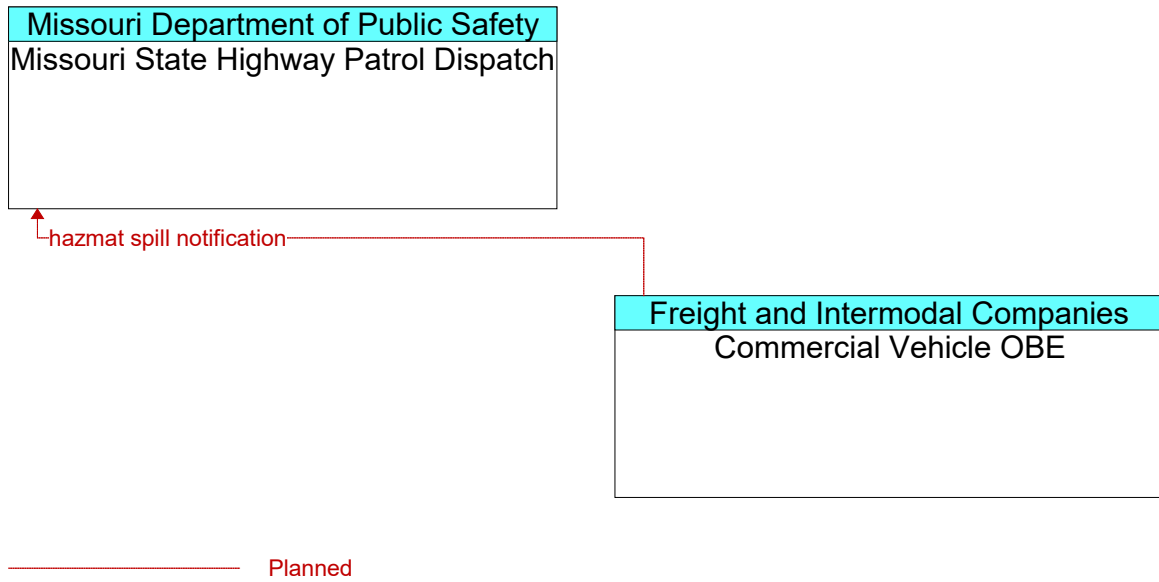
**Figure 52: Commercial Vehicle OBE - Kansas Highway Patrol Dispatch Interface**



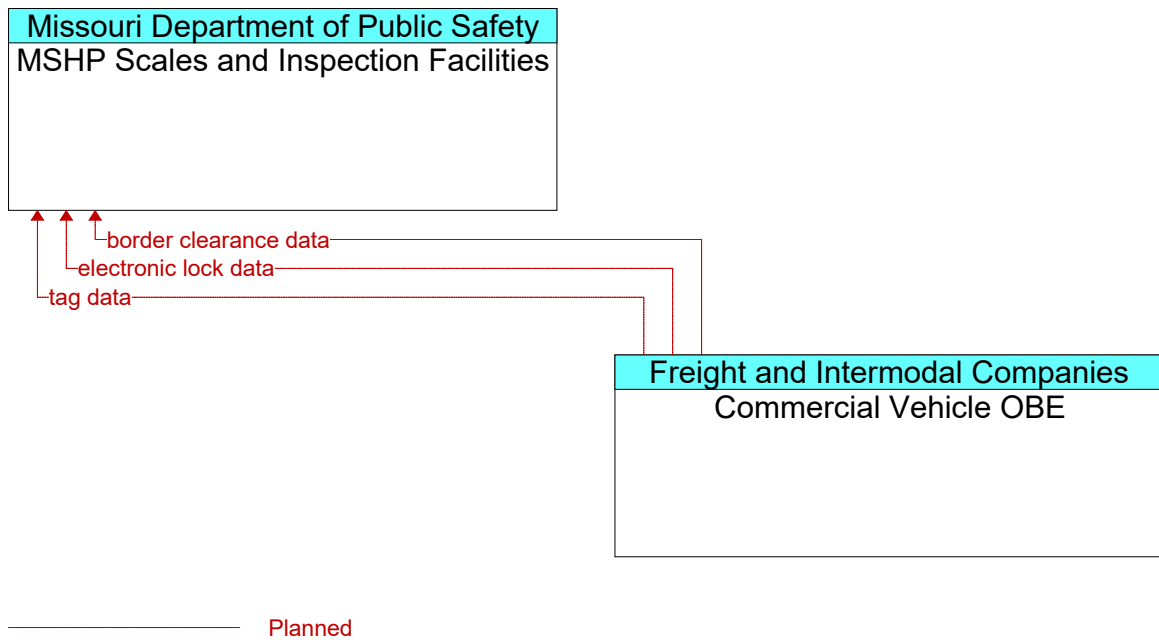
**Figure 53: Commercial Vehicle OBE - KCIA Emergency Services Interface**



**Figure 54: Commercial Vehicle OBE - KHP Scales and Weigh Stations Interface**

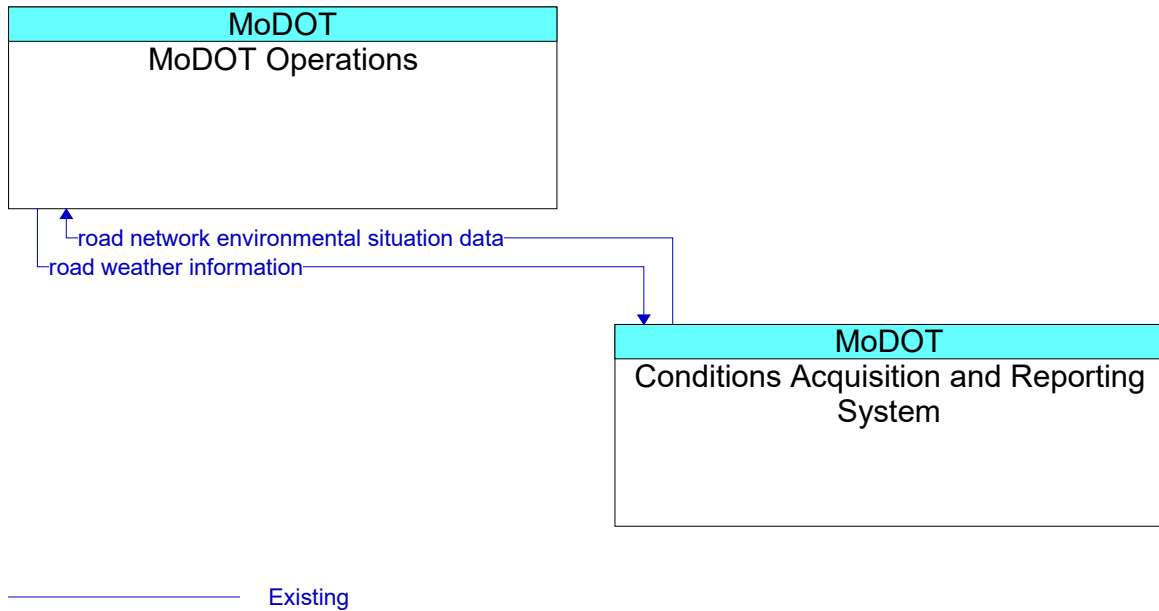


**Figure 55: Commercial Vehicle OBE - Missouri State Highway Patrol Dispatch Interface**

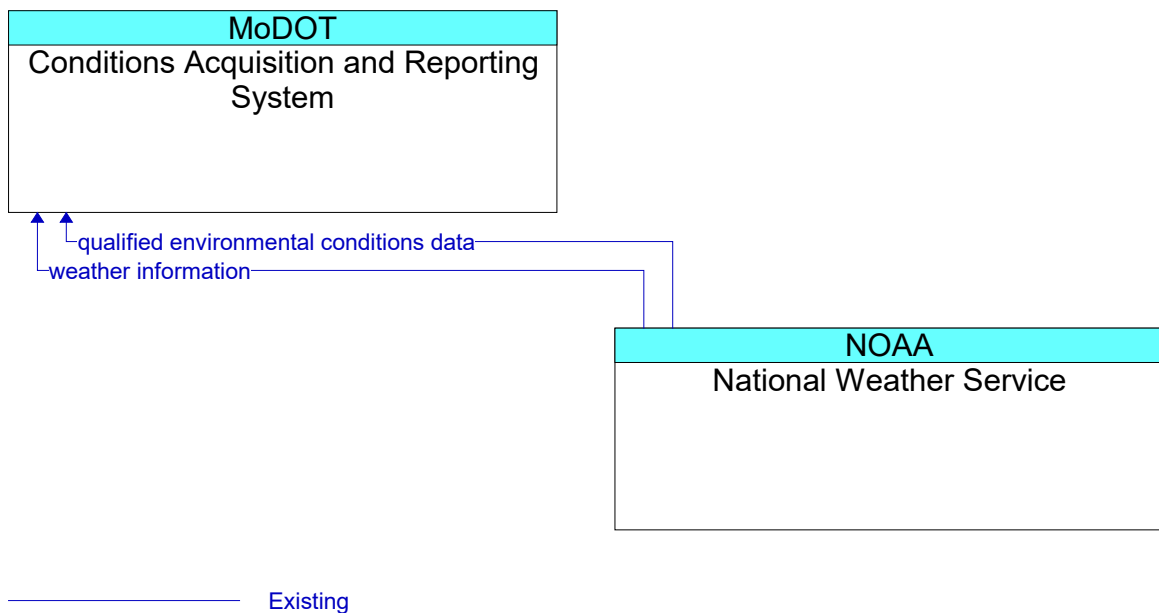


**Figure 56: Commercial Vehicle OBE - MSHP Scales and Inspection Facilities Interface**

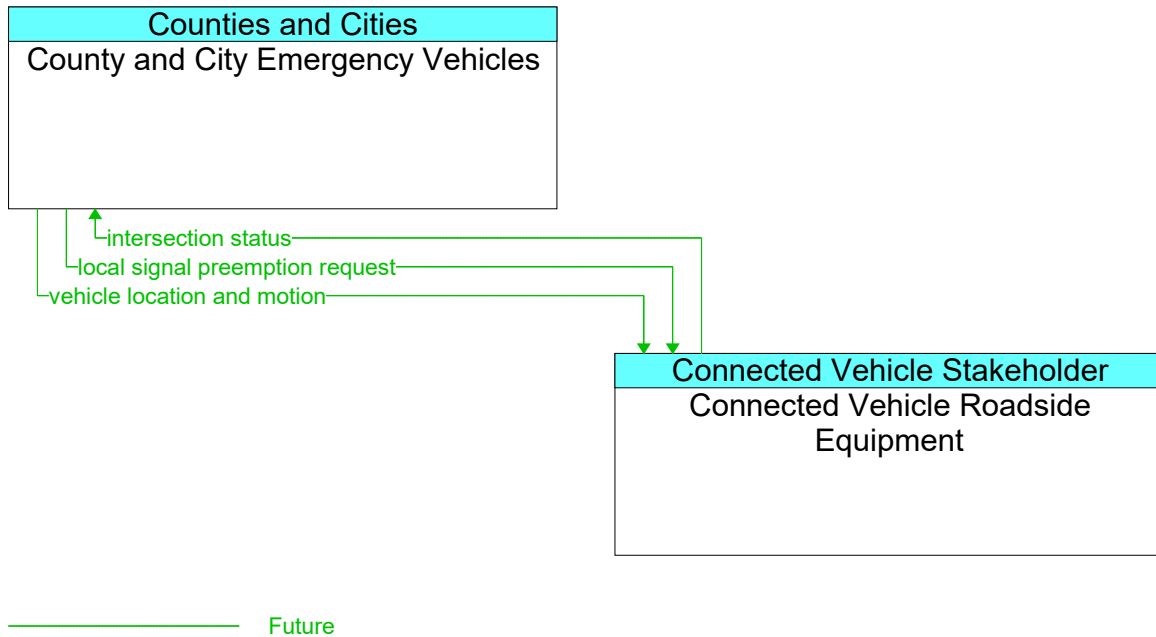




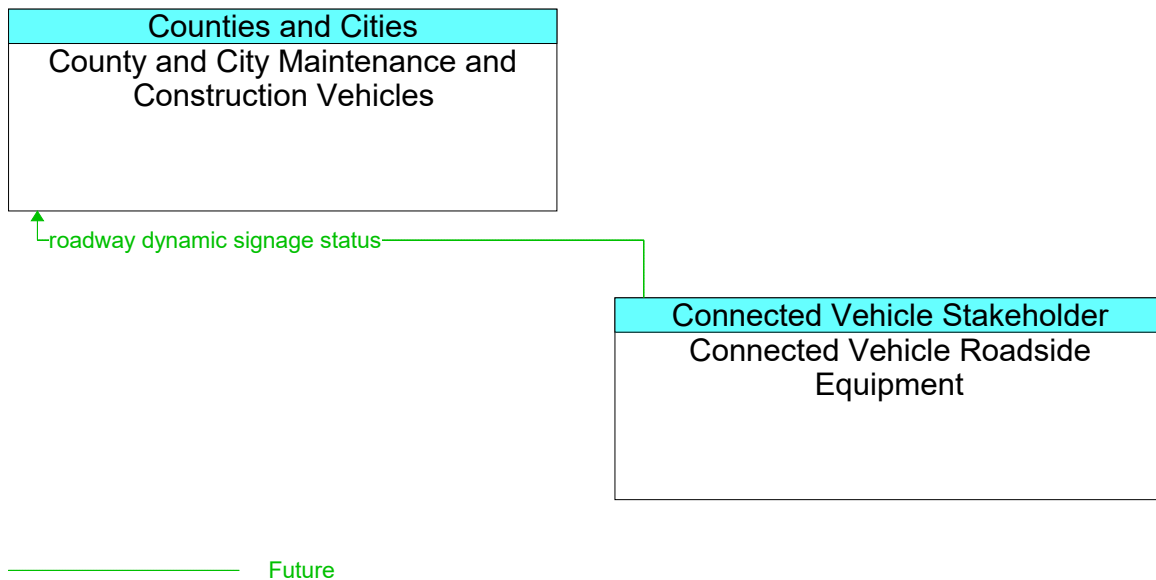
**Figure 57: Conditions Acquisition and Reporting System - MoDOT Operations Interface**



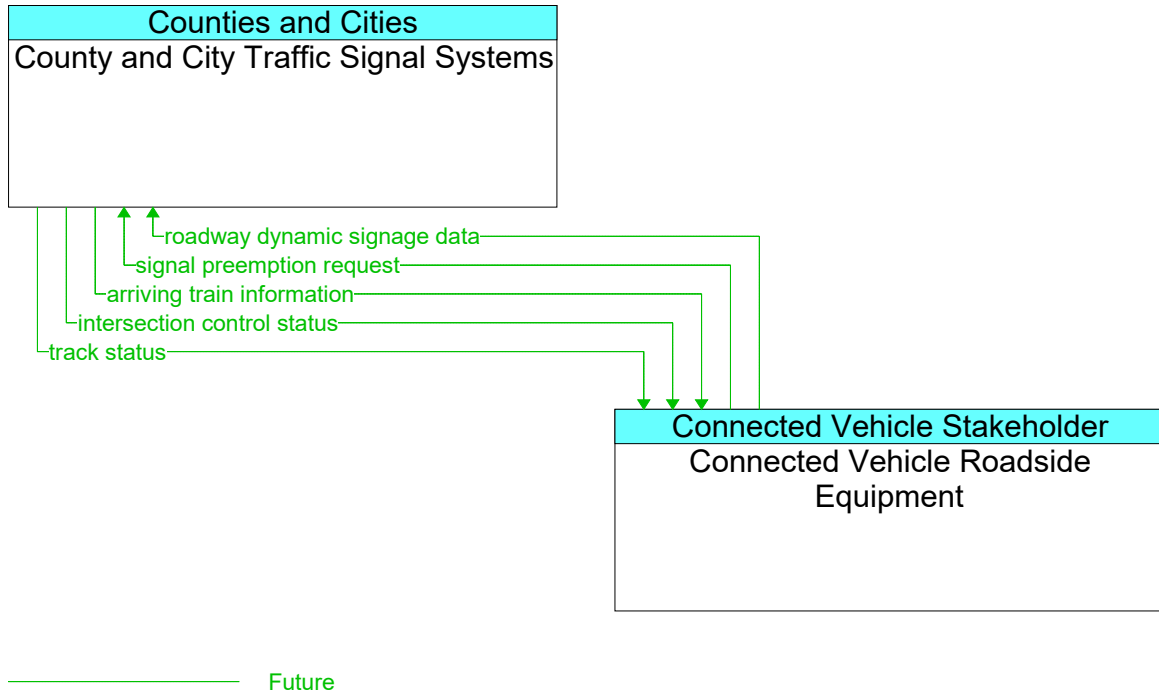
**Figure 58: Conditions Acquisition and Reporting System - National Weather Service Interface**



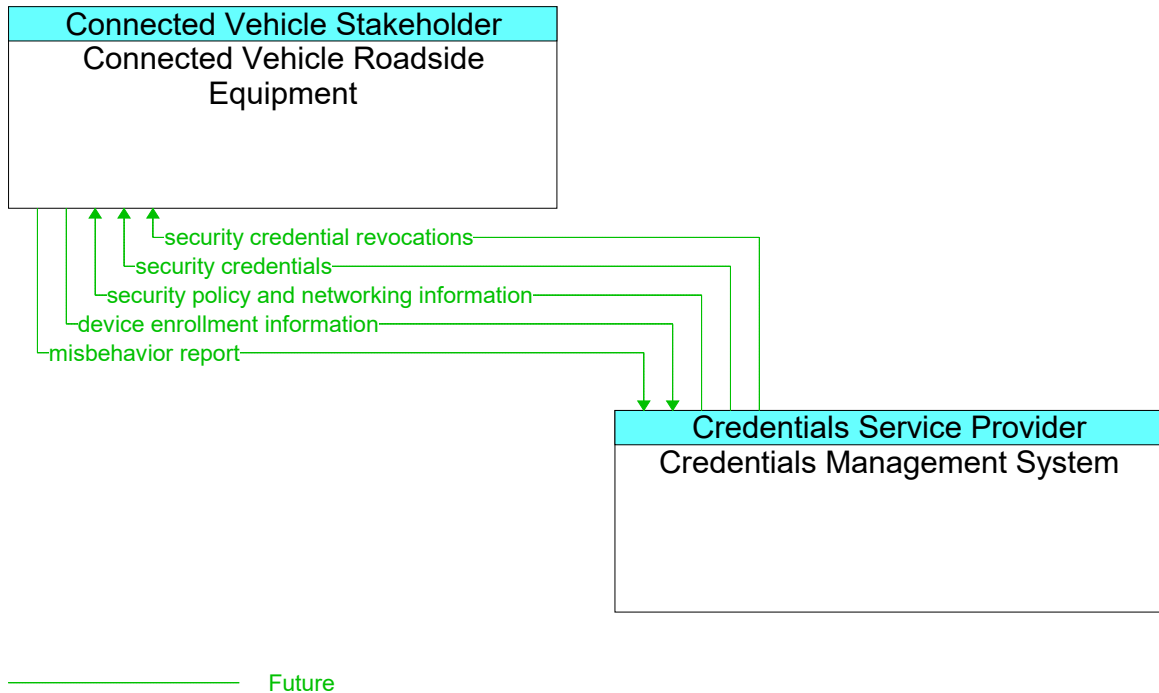
**Figure 59: Connected Vehicle Roadside Equipment - County and City Emergency Vehicles Interface**



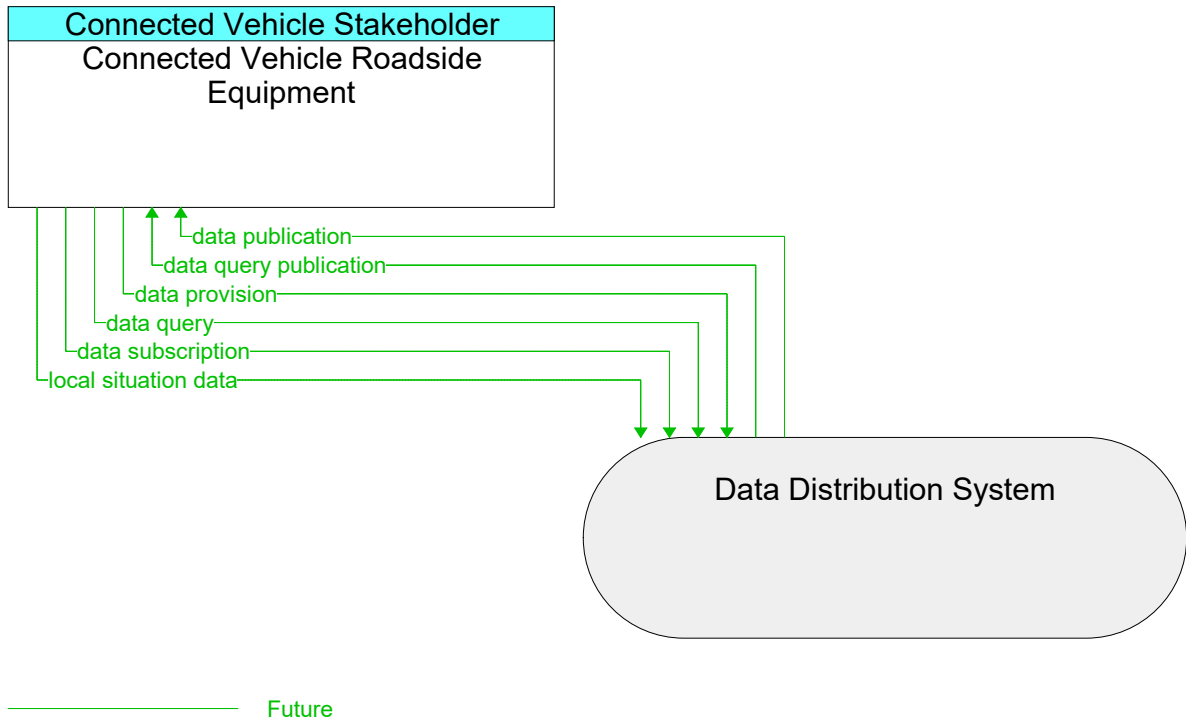
**Figure 60: Connected Vehicle Roadside Equipment - County and City Maintenance and Construction Vehicles Interface**



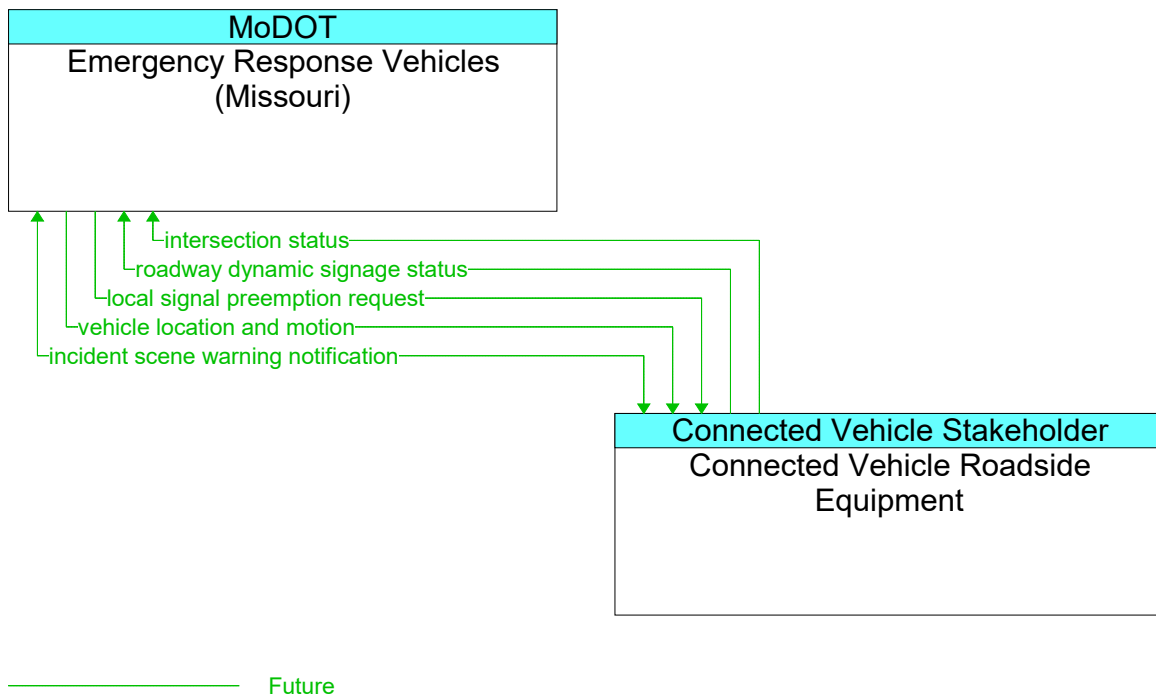
**Figure 61: Connected Vehicle Roadside Equipment - County and City Traffic Signal Systems Interface**



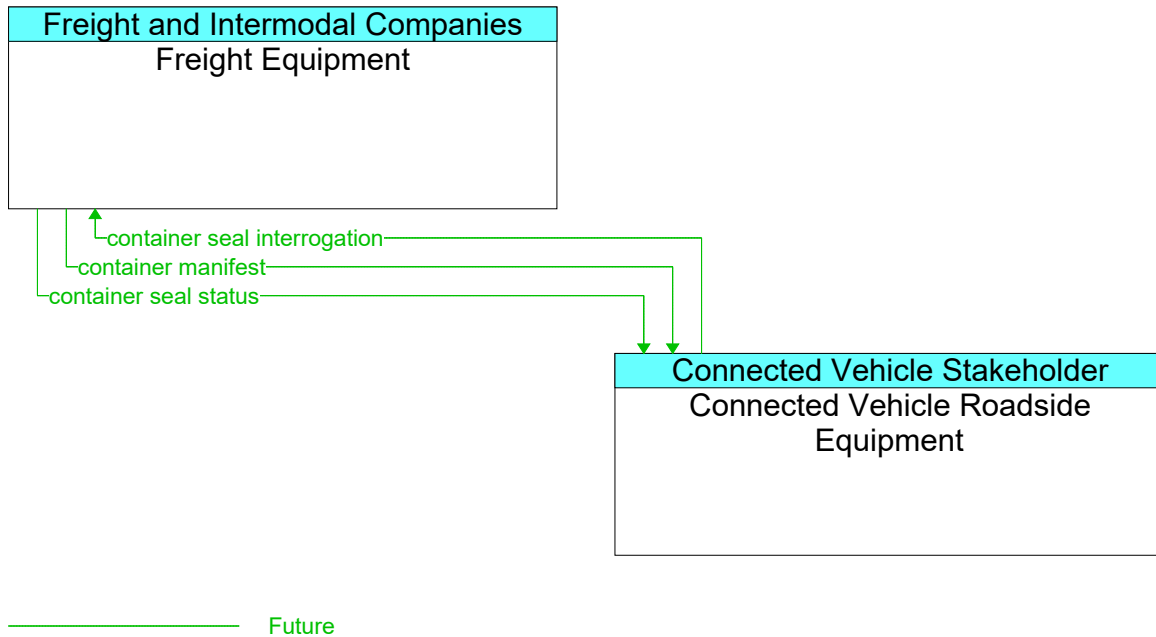
**Figure 62: Connected Vehicle Roadside Equipment - Credentials Management System Interface**



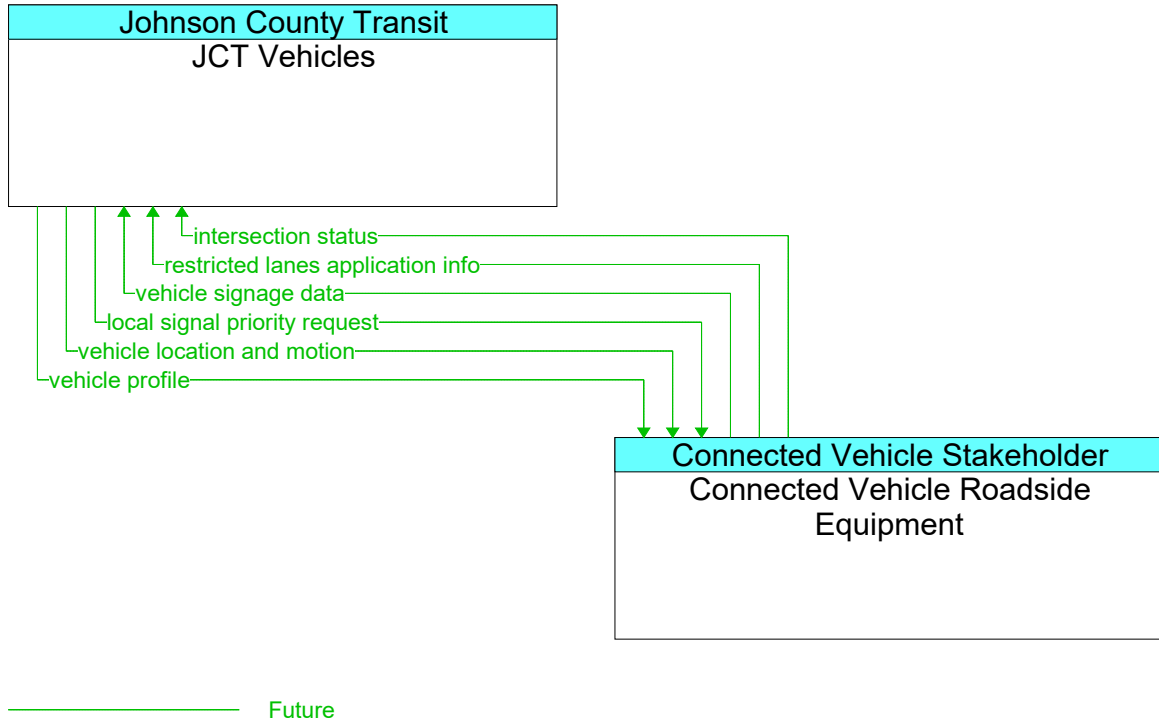
**Figure 63: Connected Vehicle Roadside Equipment - Data Distribution System Interface**



**Figure 64: Connected Vehicle Roadside Equipment - Emergency Response Vehicles (Missouri) Interface**

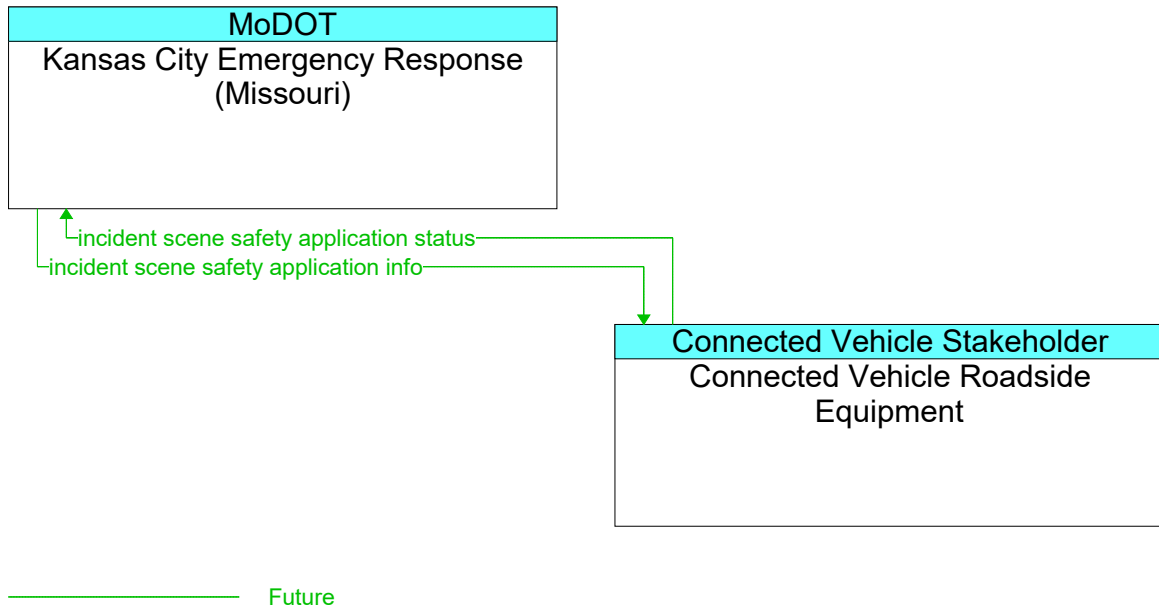


**Figure 65: Connected Vehicle Roadside Equipment - Freight Equipment Interface**

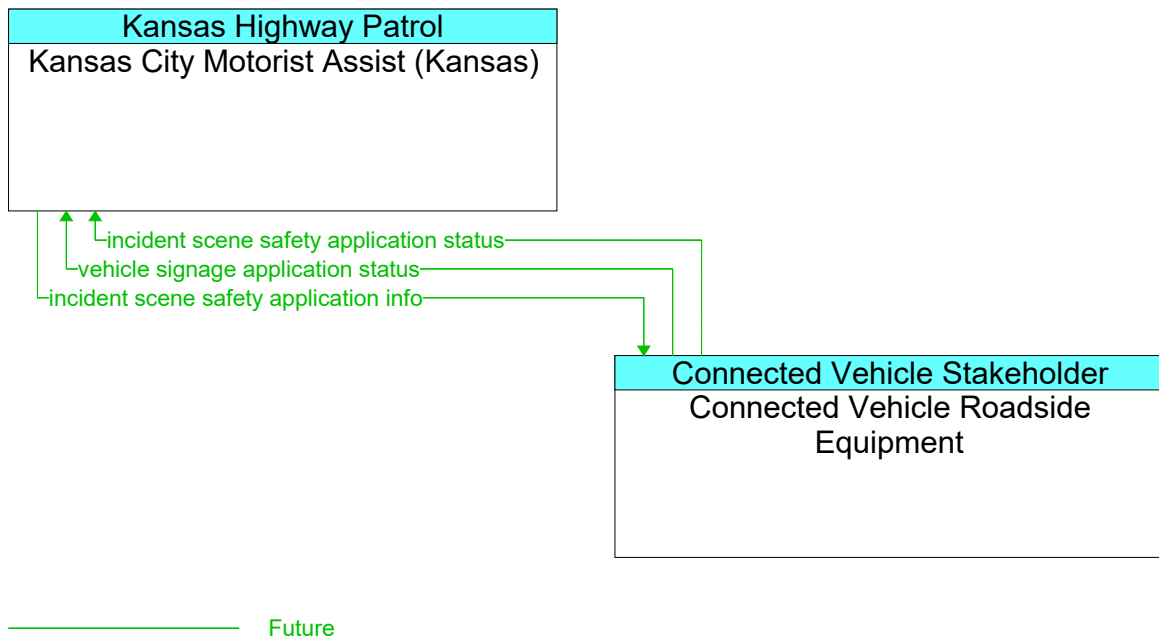


**Figure 66: Connected Vehicle Roadside Equipment - JCT Vehicles Interface**

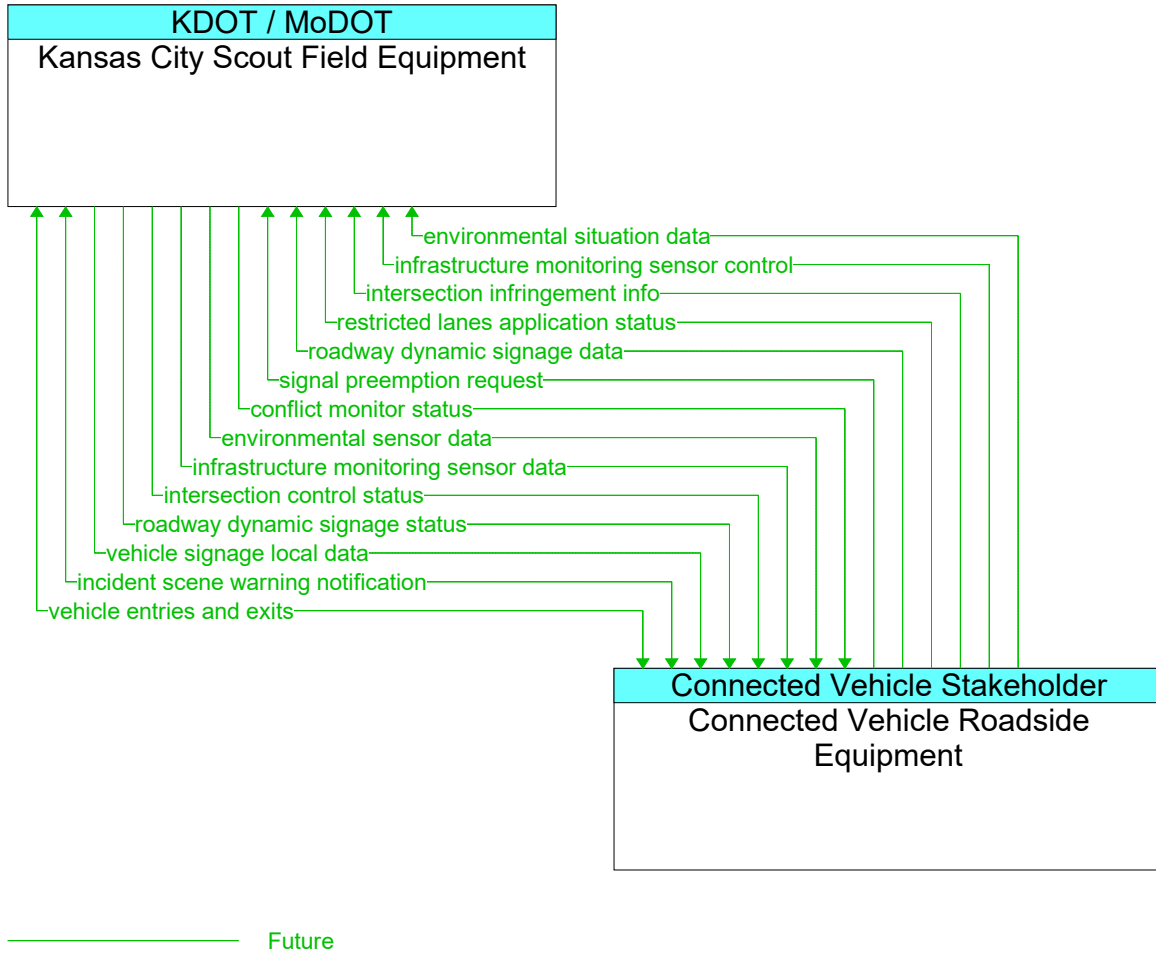




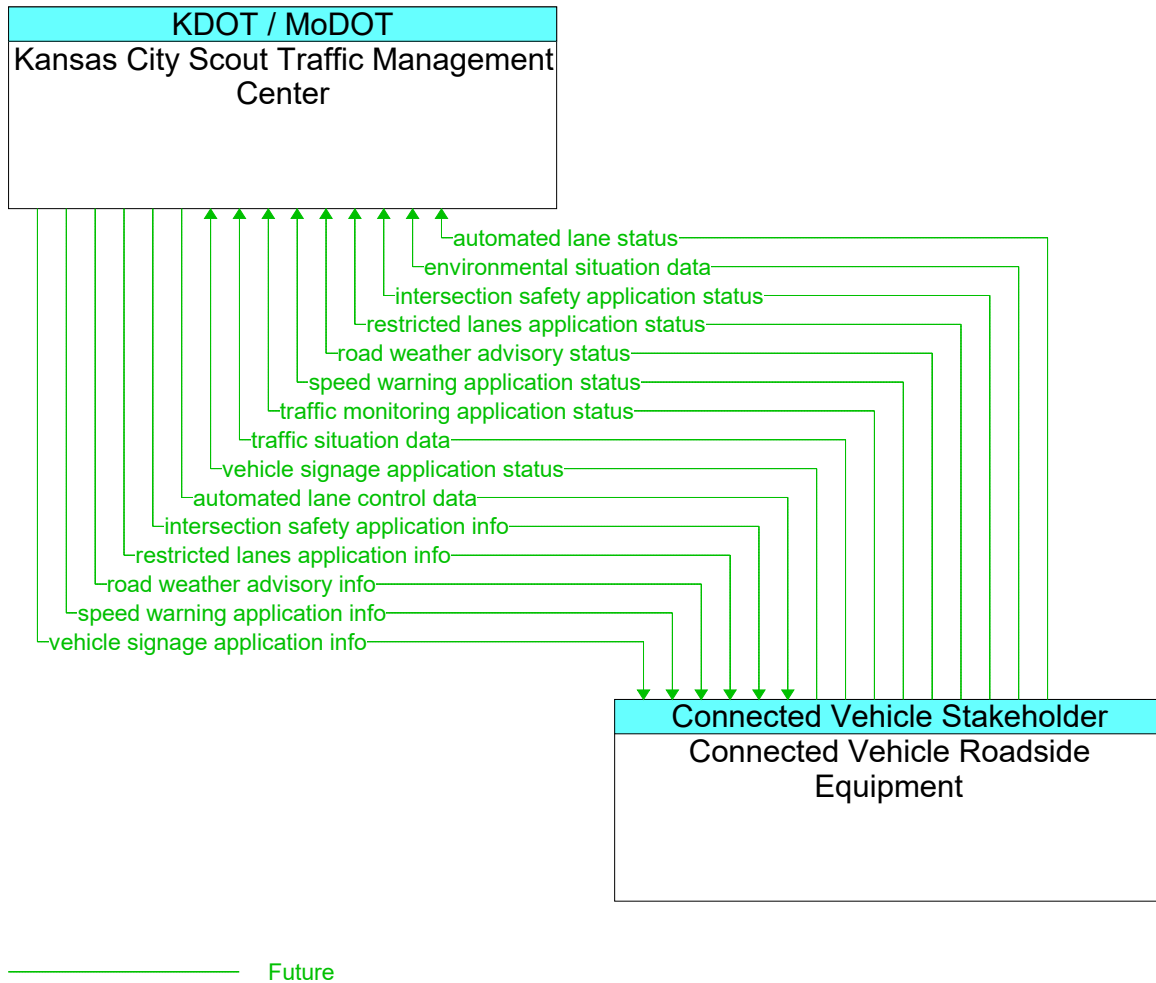
**Figure 67: Connected Vehicle Roadside Equipment - Kansas City Emergency Response (Missouri) Interface**



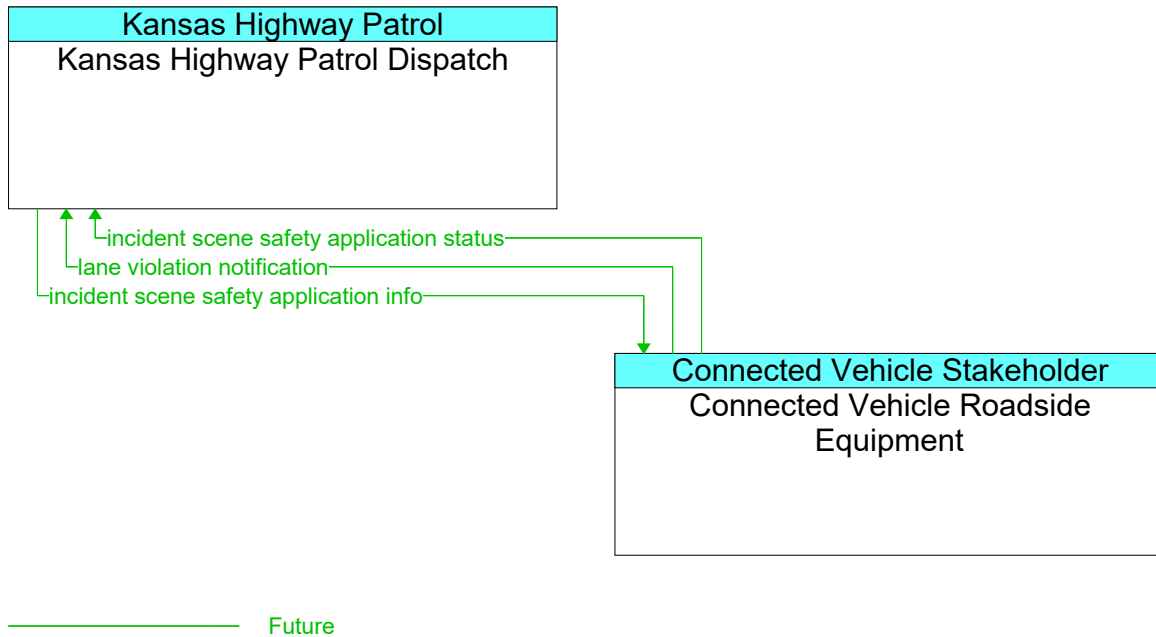
**Figure 68: Connected Vehicle Roadside Equipment - Kansas City Motorist Assist (Kansas) Interface**



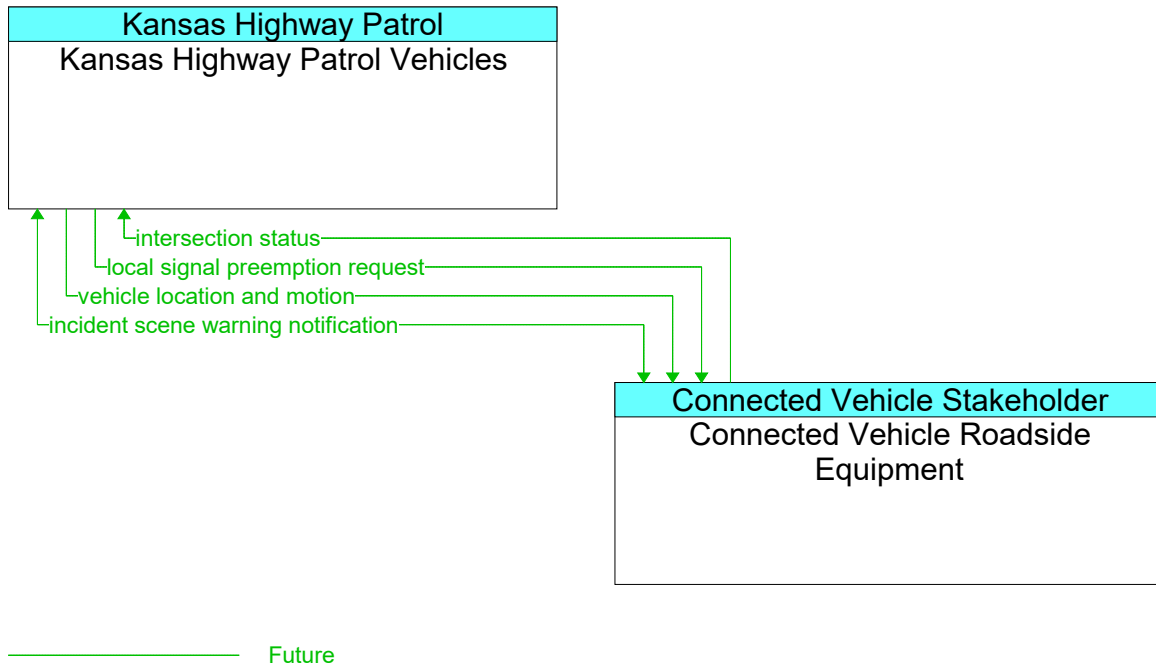
**Figure 69: Connected Vehicle Roadside Equipment - Kansas City Scout Field Equipment Interface**



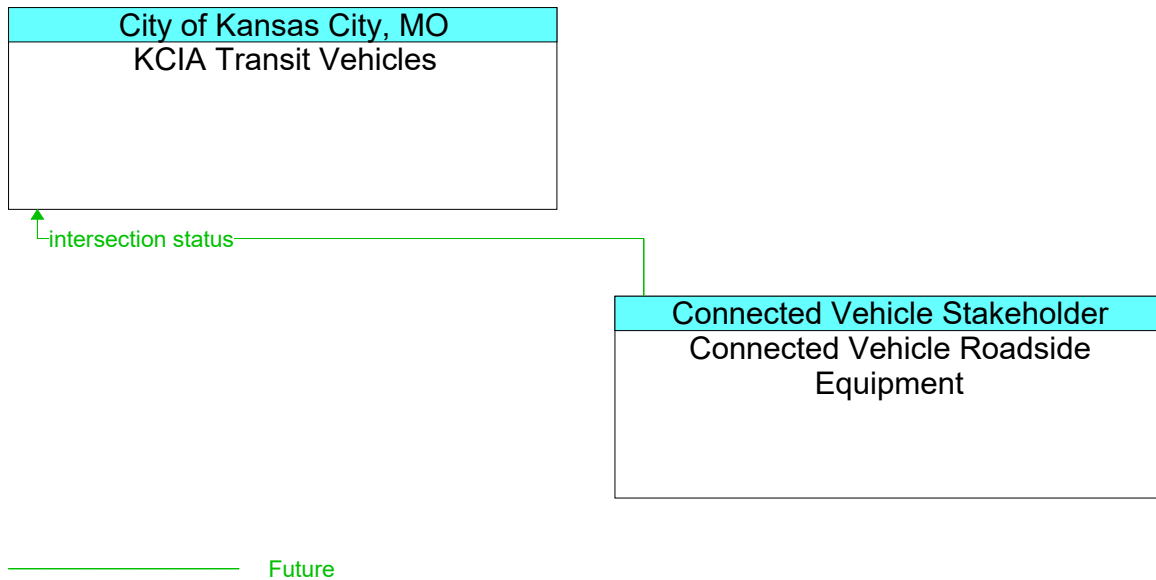
**Figure 70: Connected Vehicle Roadside Equipment - Kansas City Scout Traffic Management Center Interface**



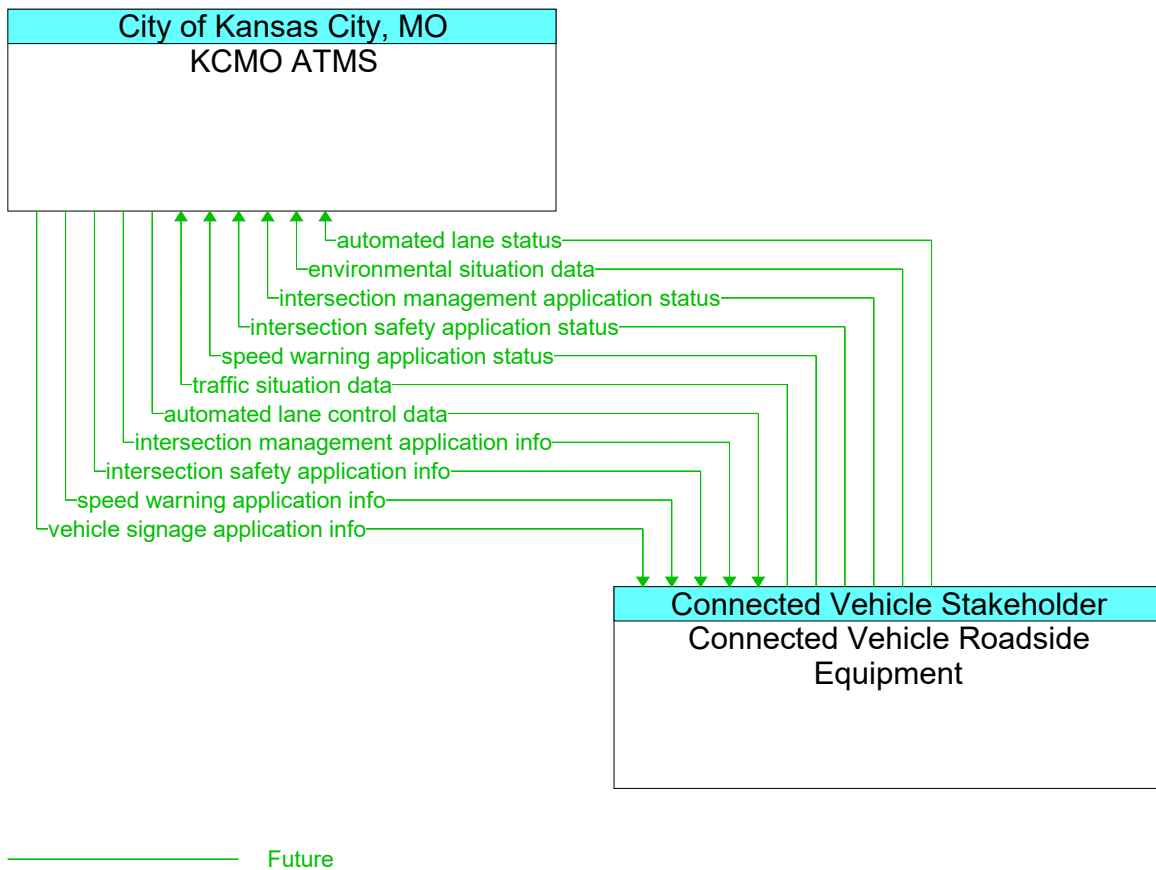
**Figure 71: Connected Vehicle Roadside Equipment - Kansas Highway Patrol Dispatch Interface**



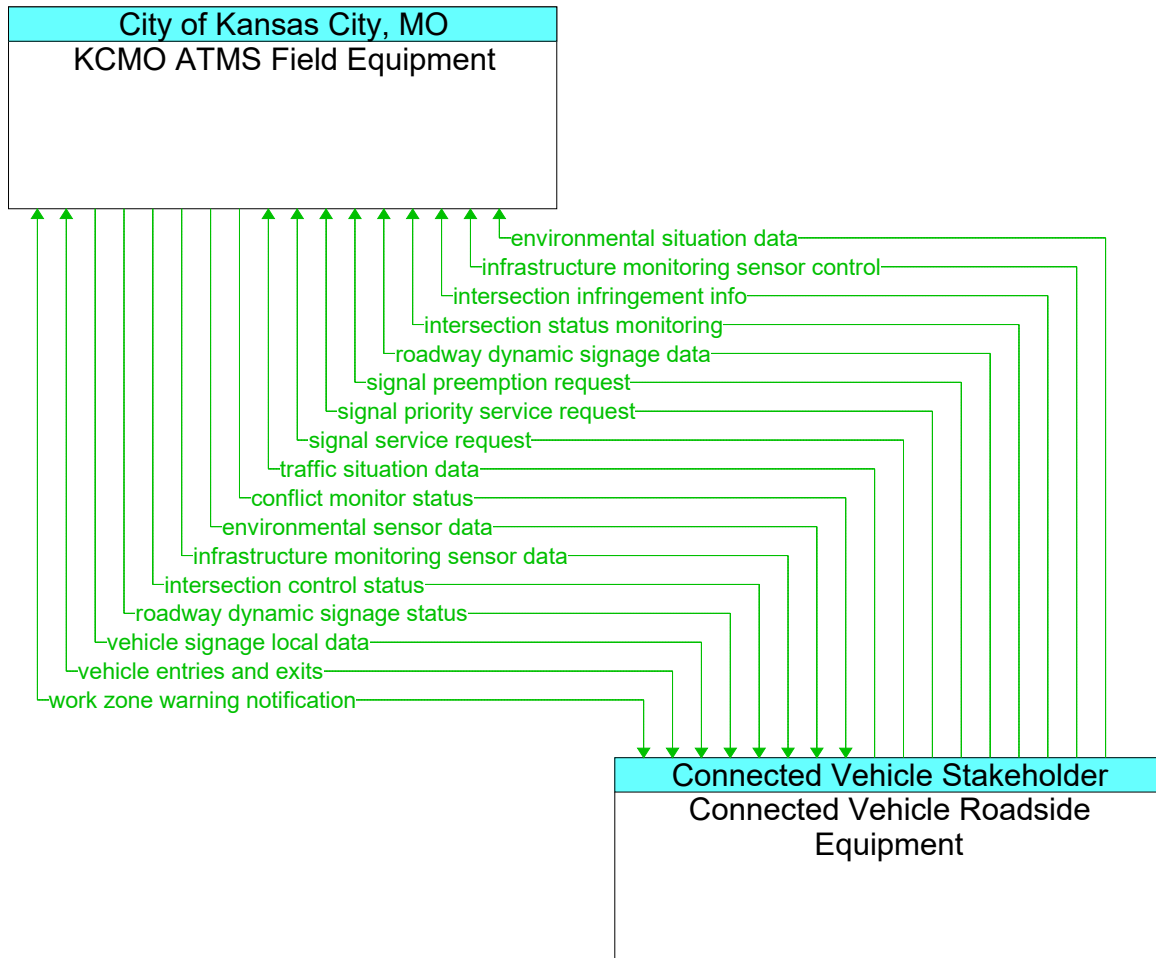
**Figure 72: Connected Vehicle Roadside Equipment - Kansas Highway Patrol Vehicles Interface**



**Figure 73: Connected Vehicle Roadside Equipment - KCIA Transit Vehicles Interface**

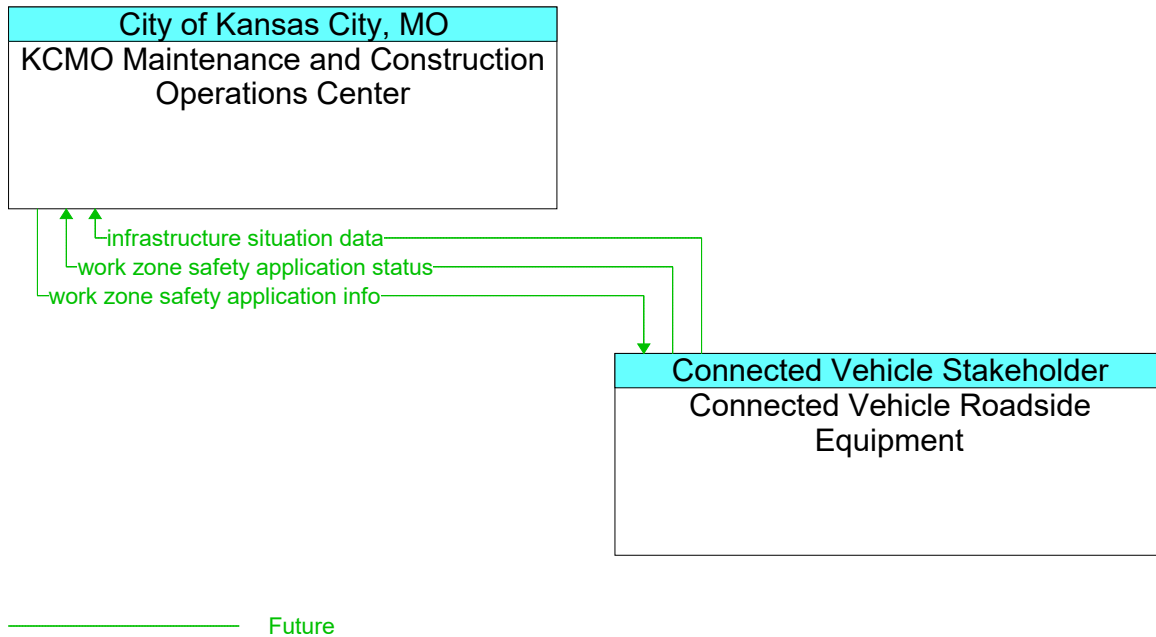


**Figure 74: Connected Vehicle Roadside Equipment - KCMO ATMS Interface**



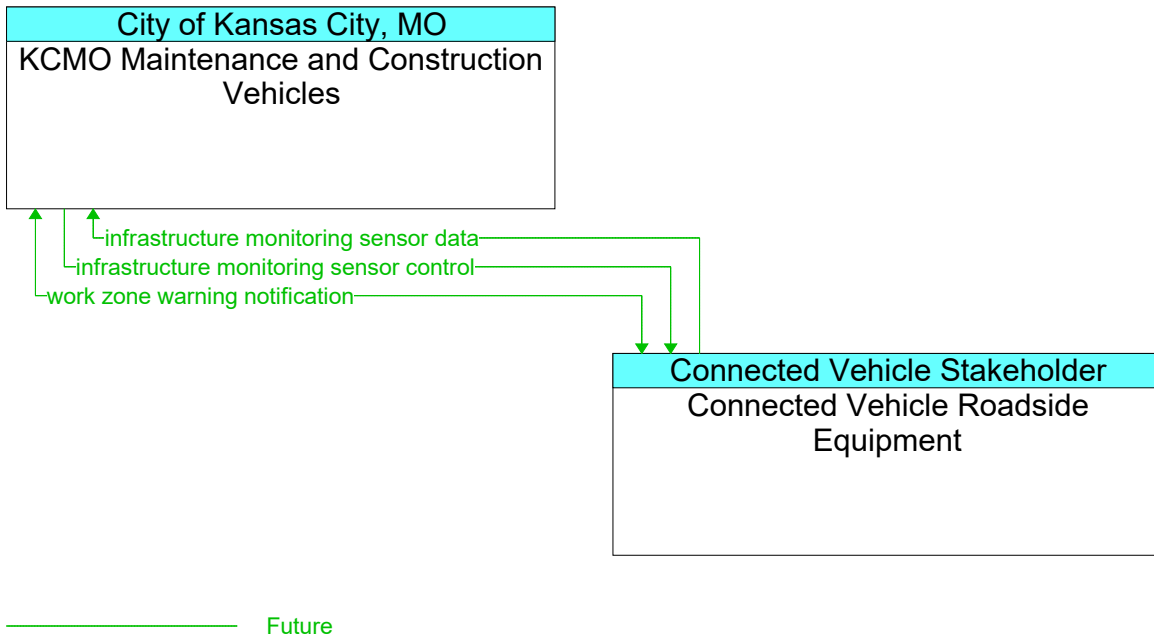
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**Figure 75: Connected Vehicle Roadside Equipment - KCMO ATMS Field Equipment Interface**

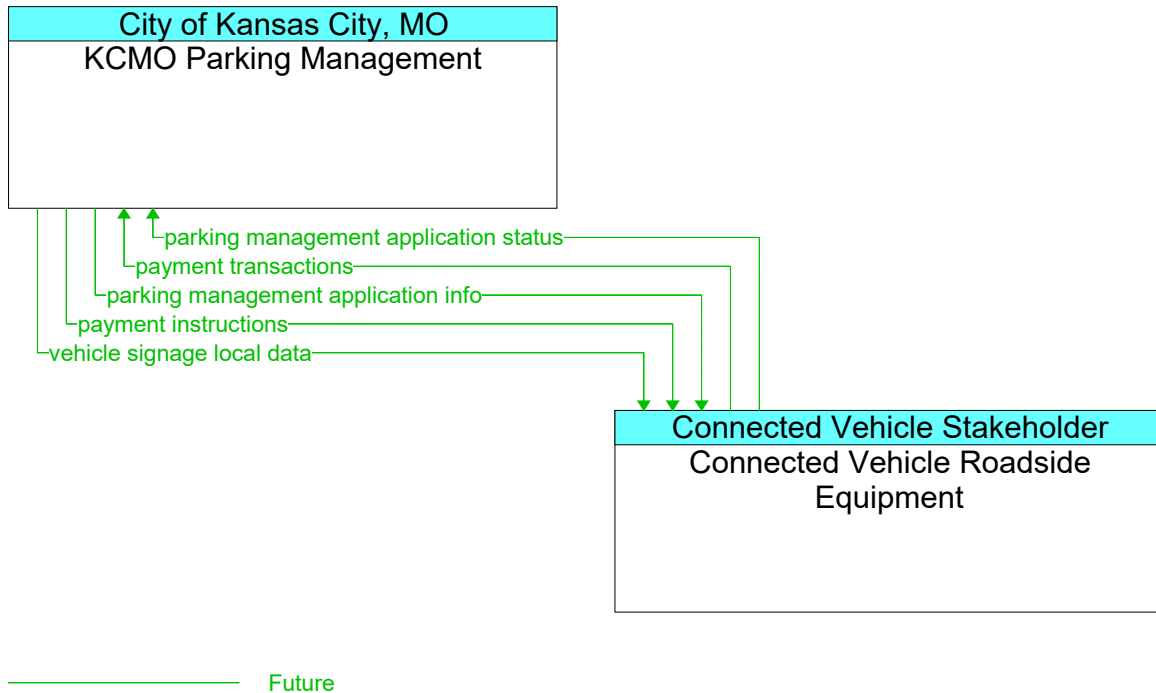


**Figure 76: Connected Vehicle Roadside Equipment - KCMO Maintenance and Construction Operations Center Interface**

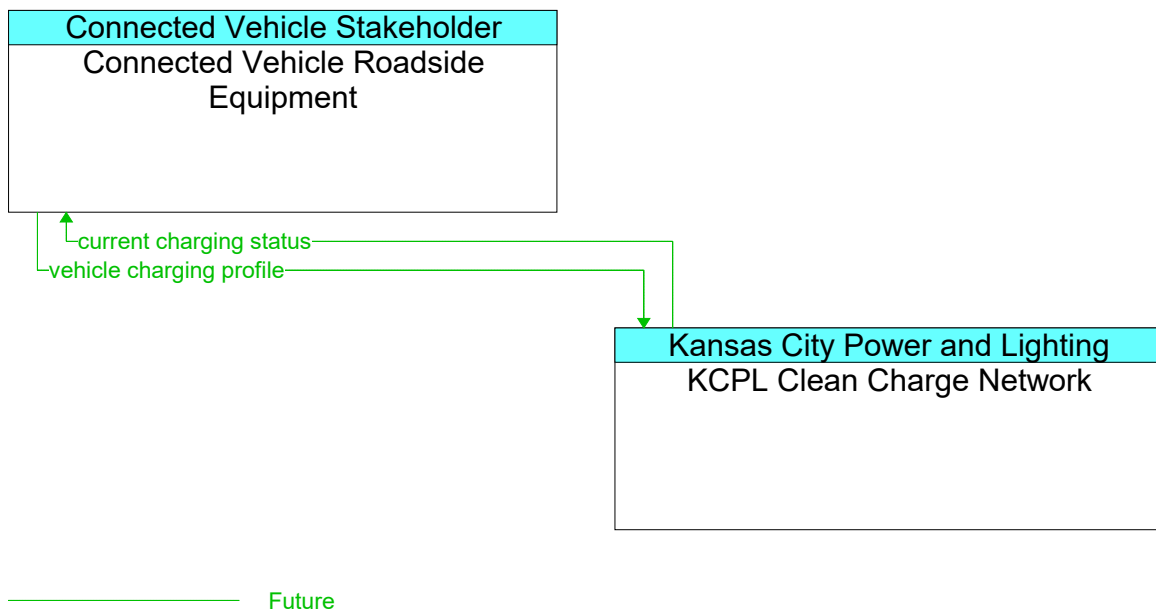




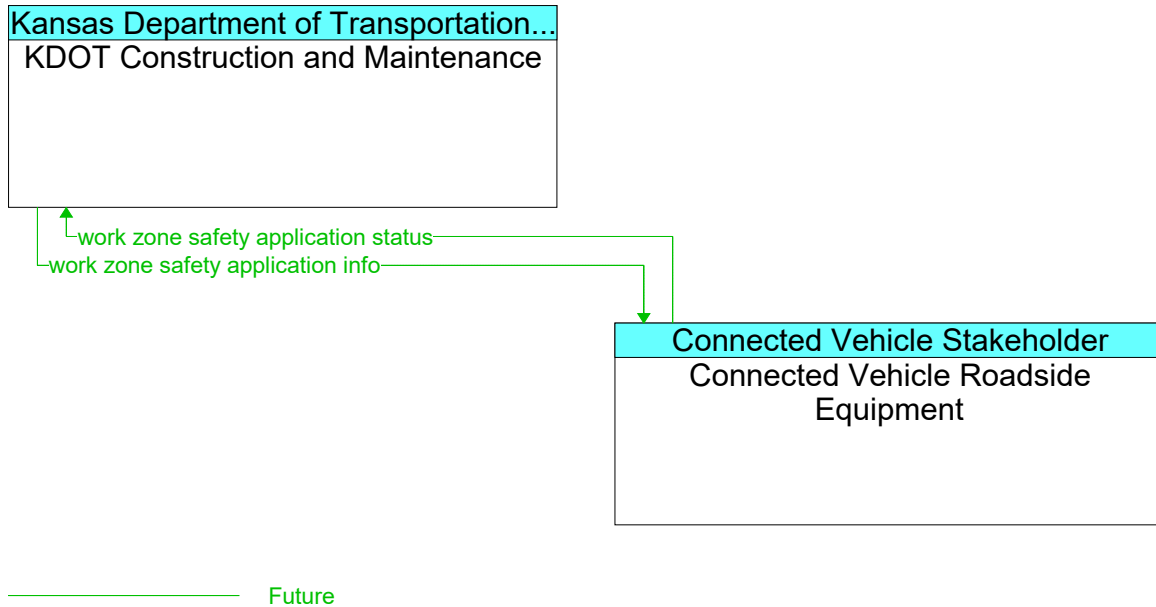
**Figure 77: Connected Vehicle Roadside Equipment - KCMO Maintenance and Construction Vehicles Interface**



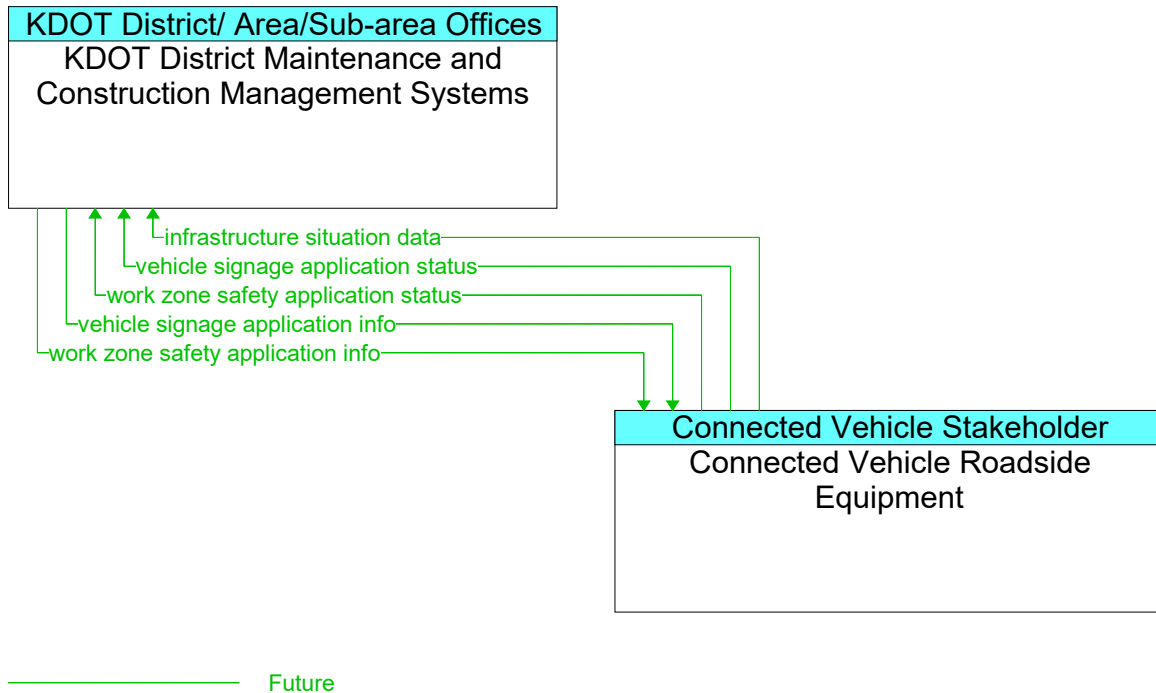
**Figure 78: Connected Vehicle Roadside Equipment - KCMO Parking Management Interface**



**Figure 79: Connected Vehicle Roadside Equipment - KCPL Clean Charge Network Interface**



**Figure 80: Connected Vehicle Roadside Equipment - KDOT Construction and Maintenance Interface**



**Figure 81: Connected Vehicle Roadside Equipment - KDOT District Maintenance and Construction Management Systems Interface**

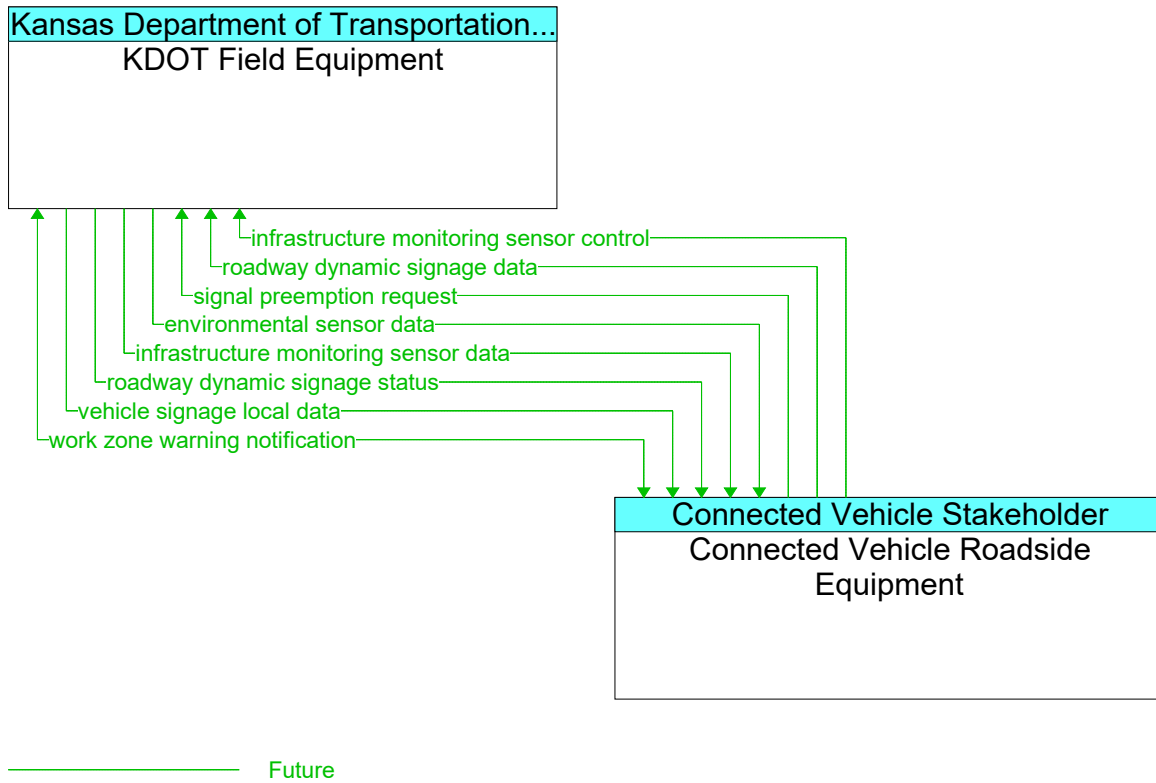
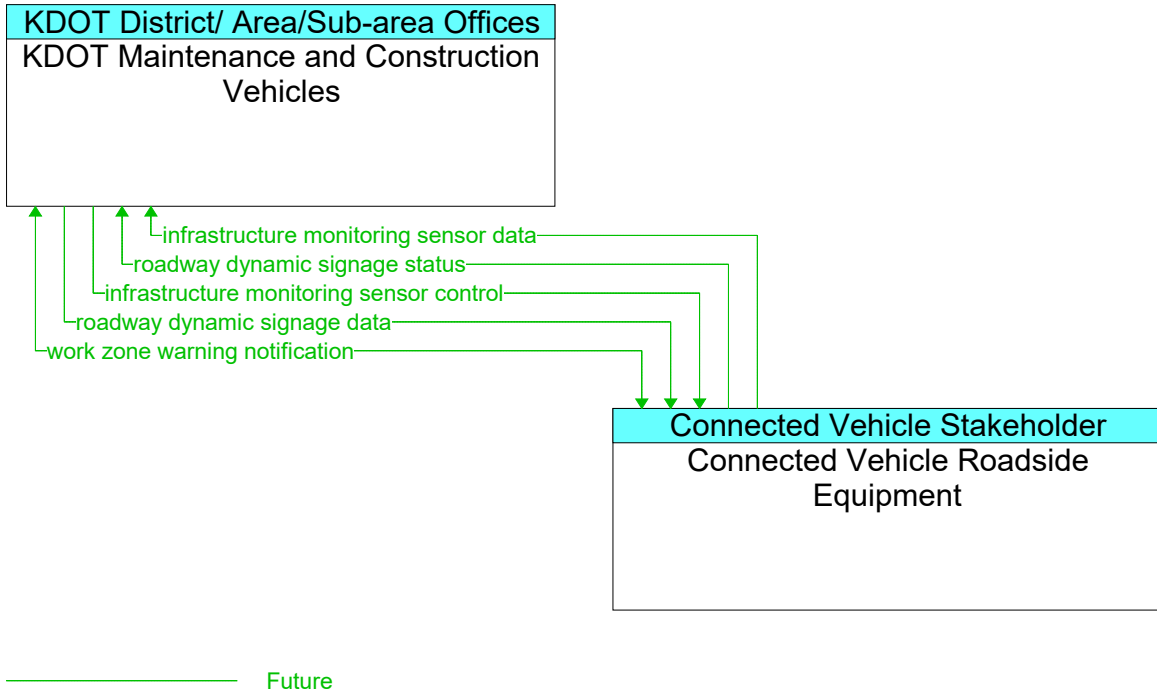
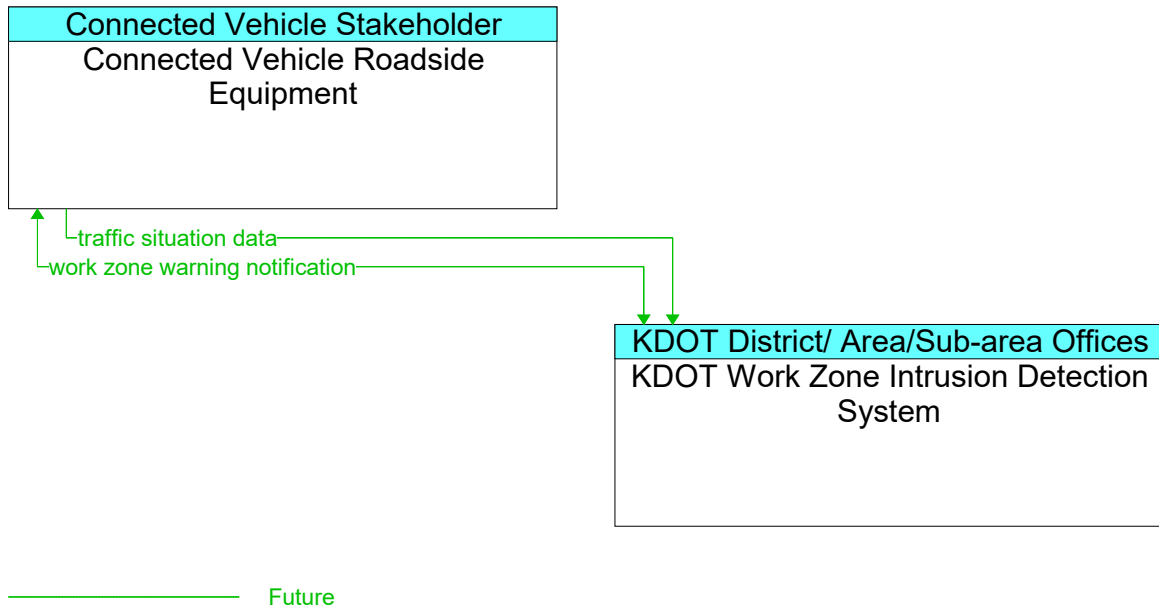


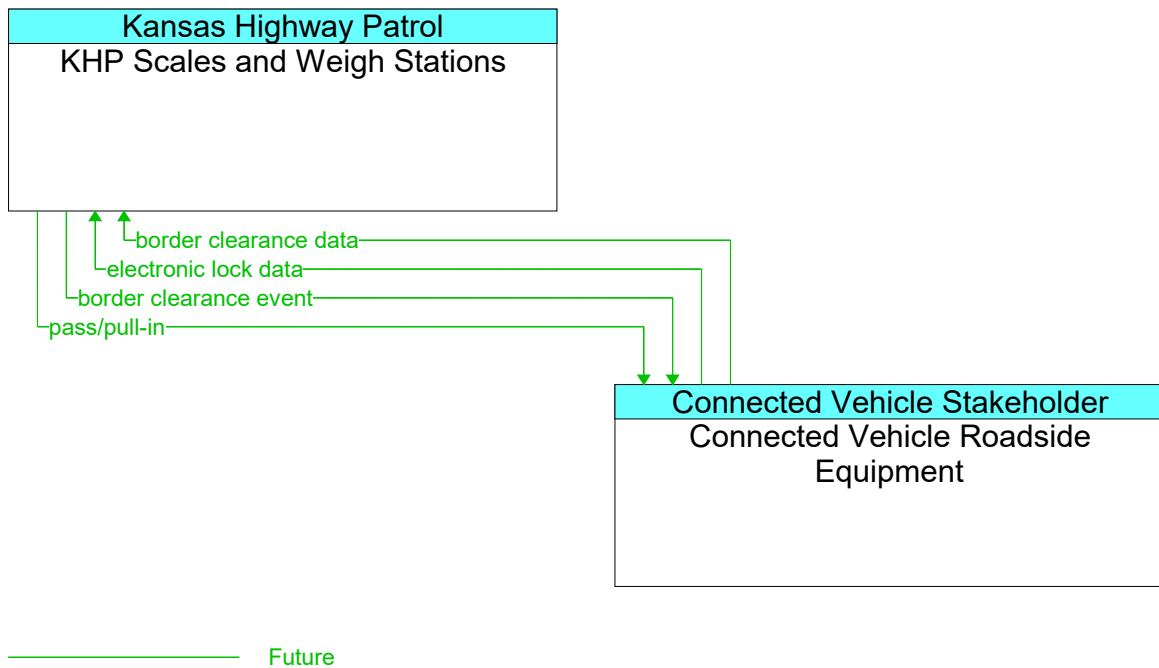
Figure 82: Connected Vehicle Roadside Equipment - KDOT Field Equipment Interface



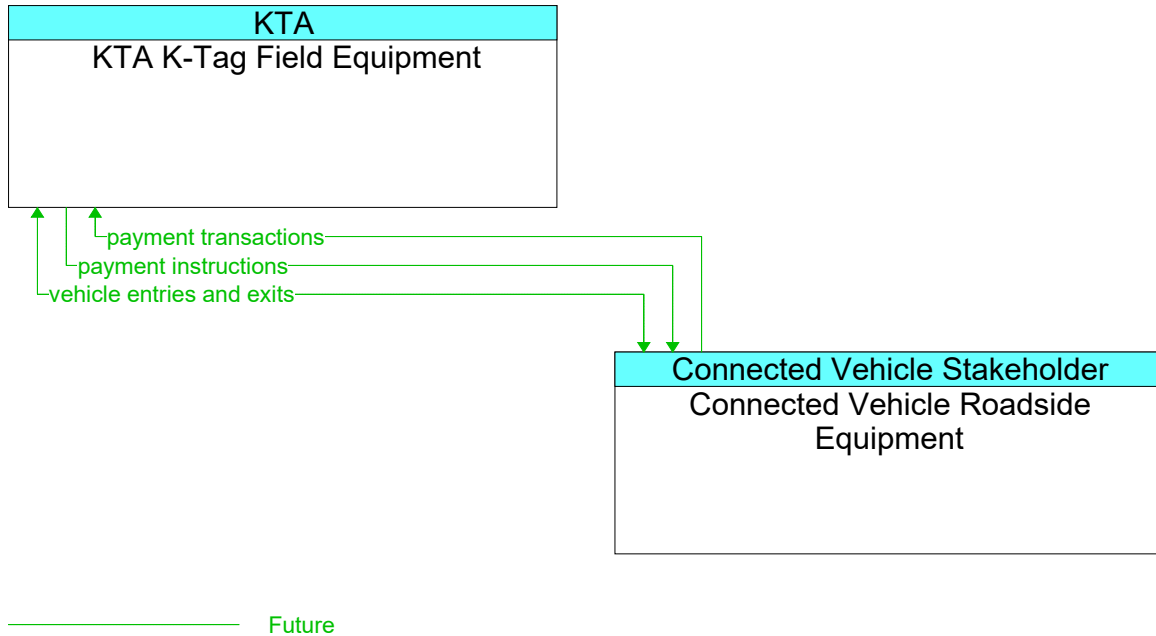
**Figure 83: Connected Vehicle Roadside Equipment - KDOT Maintenance and Construction Vehicles Interface**



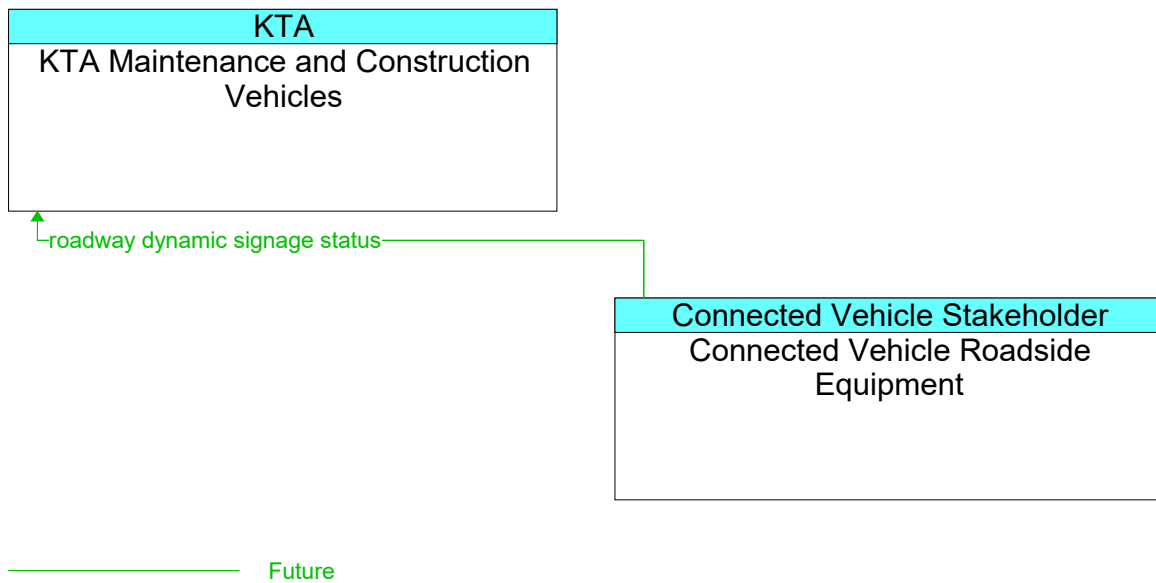
**Figure 84: Connected Vehicle Roadside Equipment - KDOT Work Zone Intrusion Detection System Interface**



**Figure 85: Connected Vehicle Roadside Equipment - KHP Scales and Weigh Stations Interface**

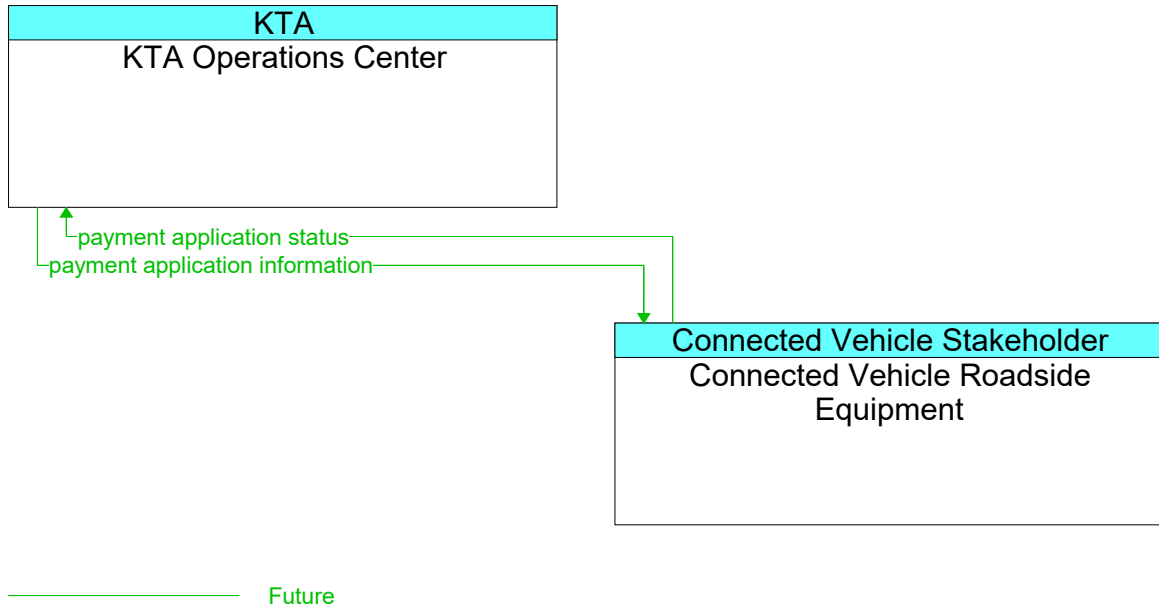


**Figure 86: Connected Vehicle Roadside Equipment - KTA K-Tag Field Equipment Interface**

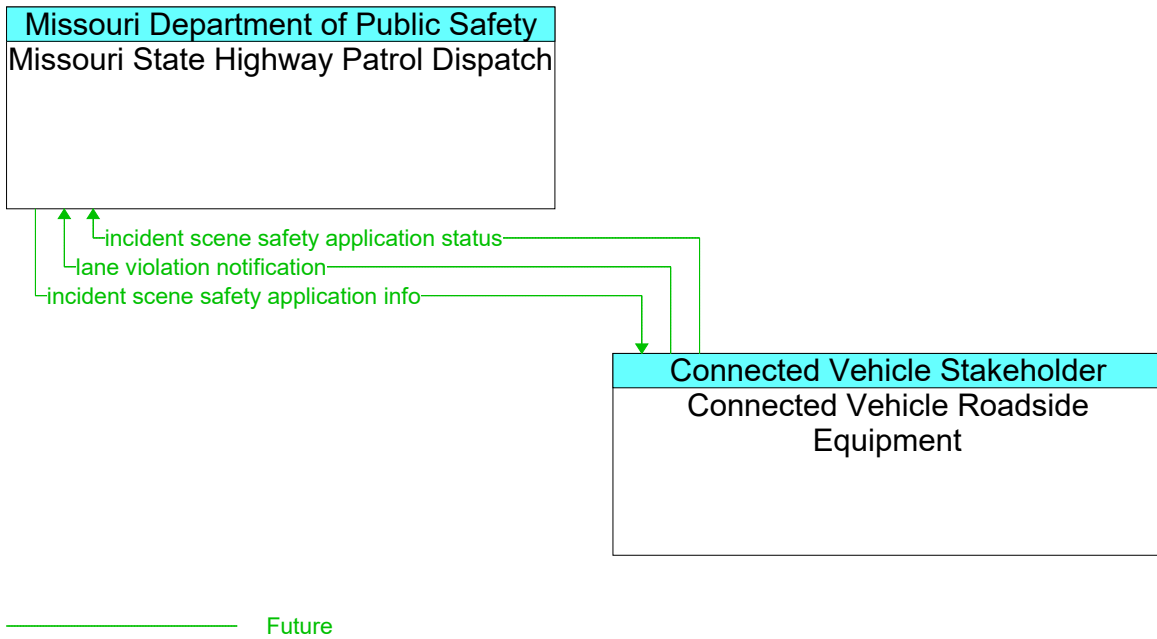


**Figure 87: Connected Vehicle Roadside Equipment - KTA Maintenance and Construction Vehicles Interface**

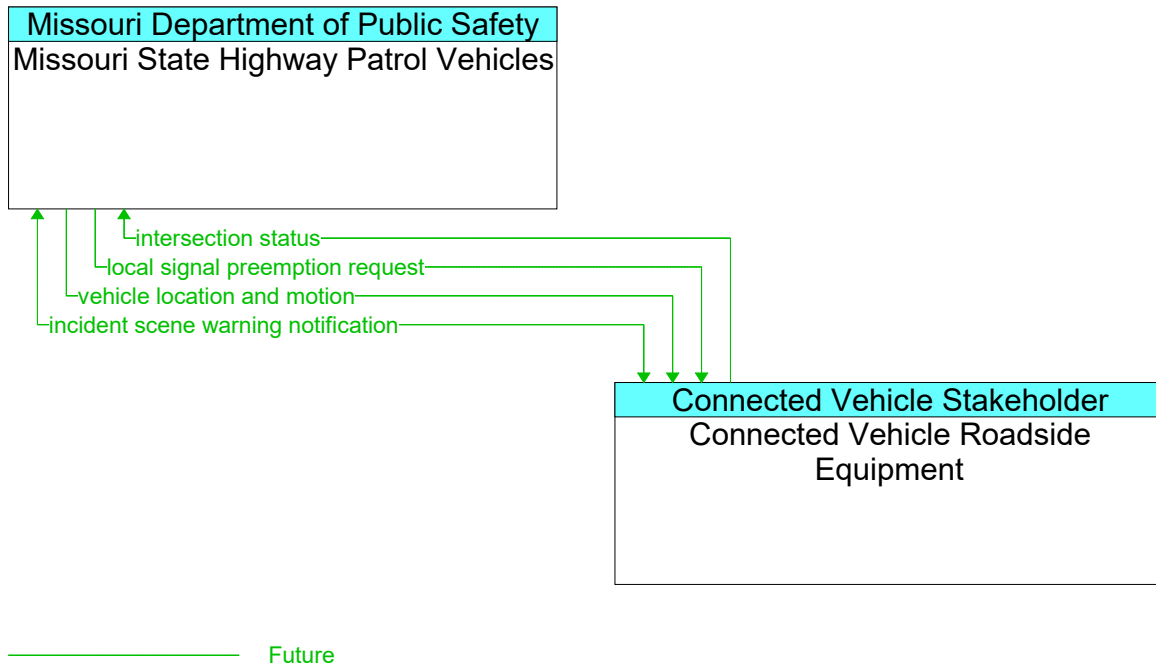




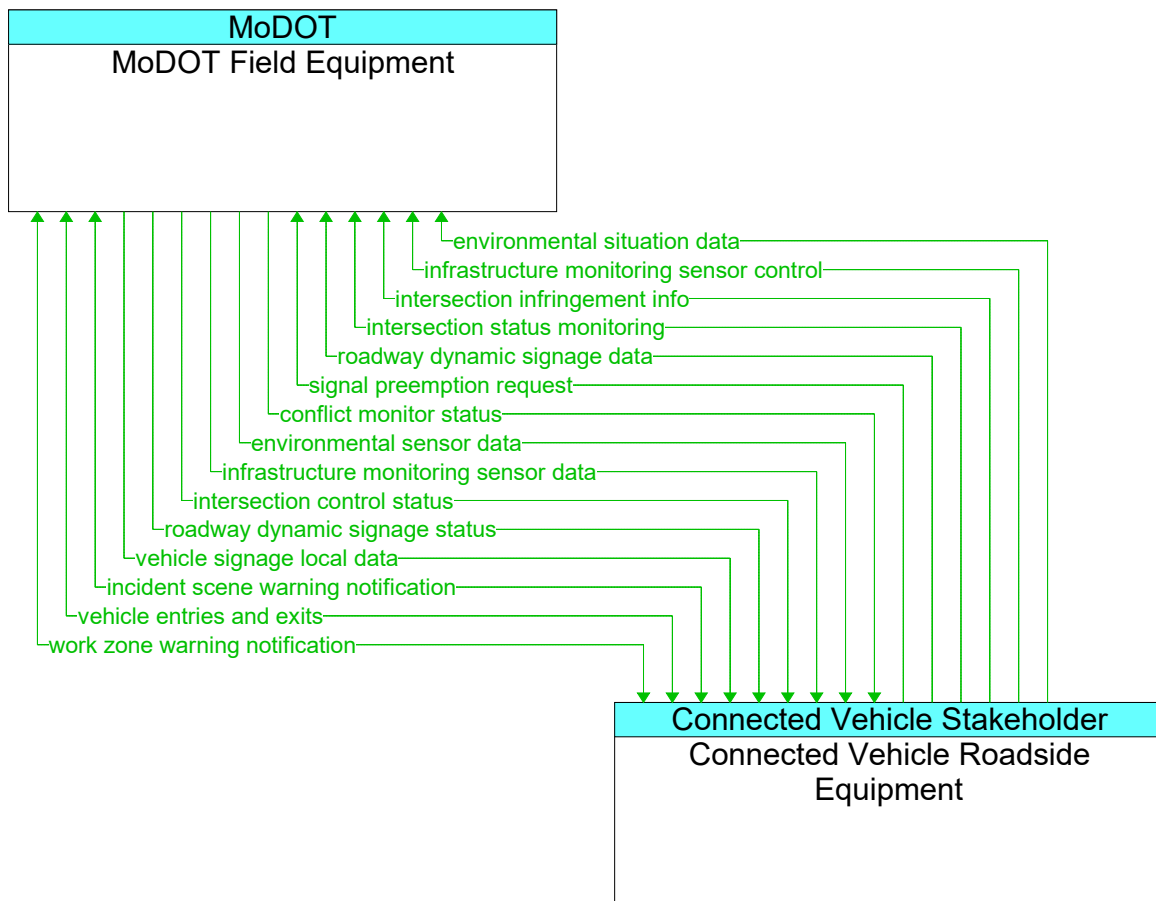
**Figure 88: Connected Vehicle Roadside Equipment - KTA Operations Center Interface**



**Figure 89: Connected Vehicle Roadside Equipment - Missouri State Highway Patrol Dispatch Interface**

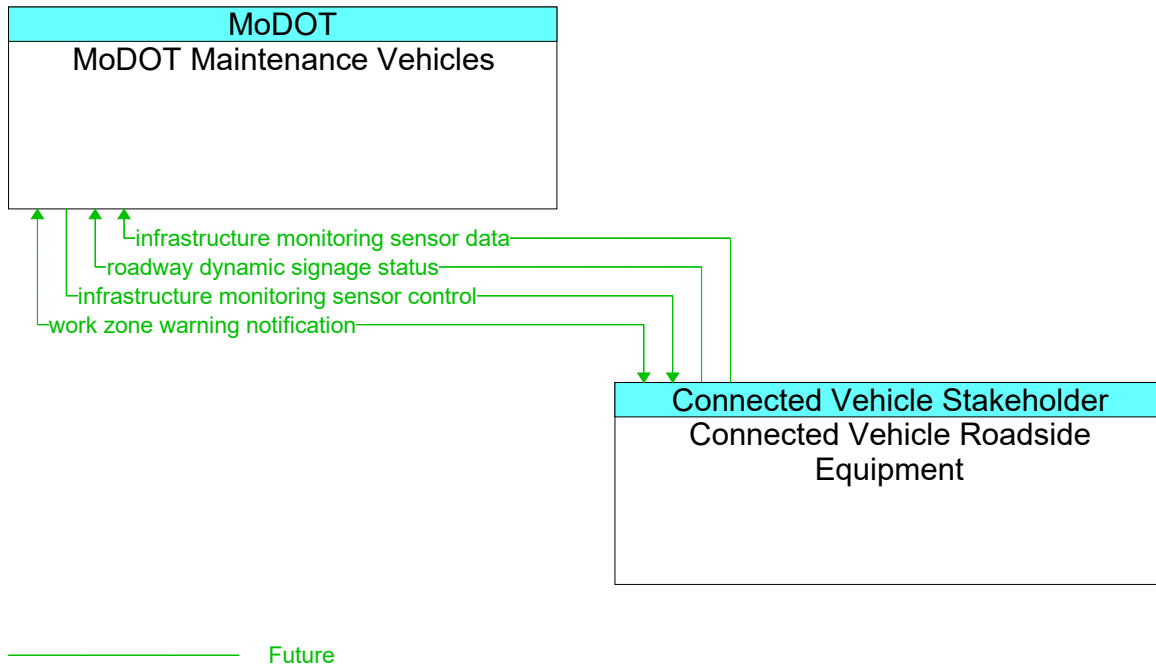


**Figure 90: Connected Vehicle Roadside Equipment - Missouri State Highway Patrol Vehicles Interface**

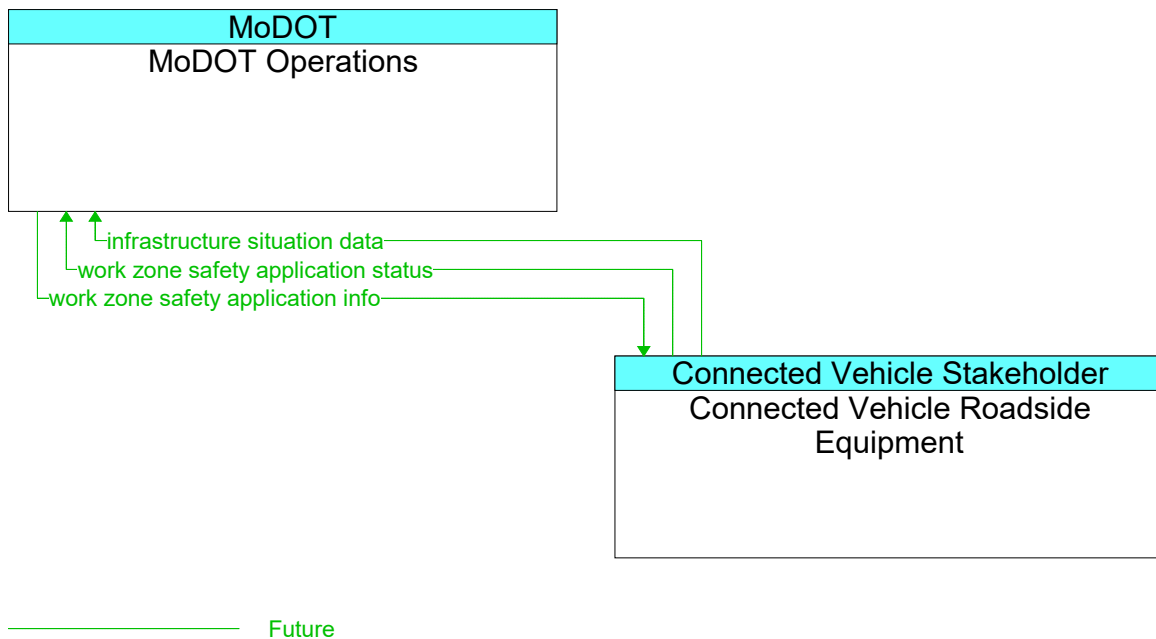


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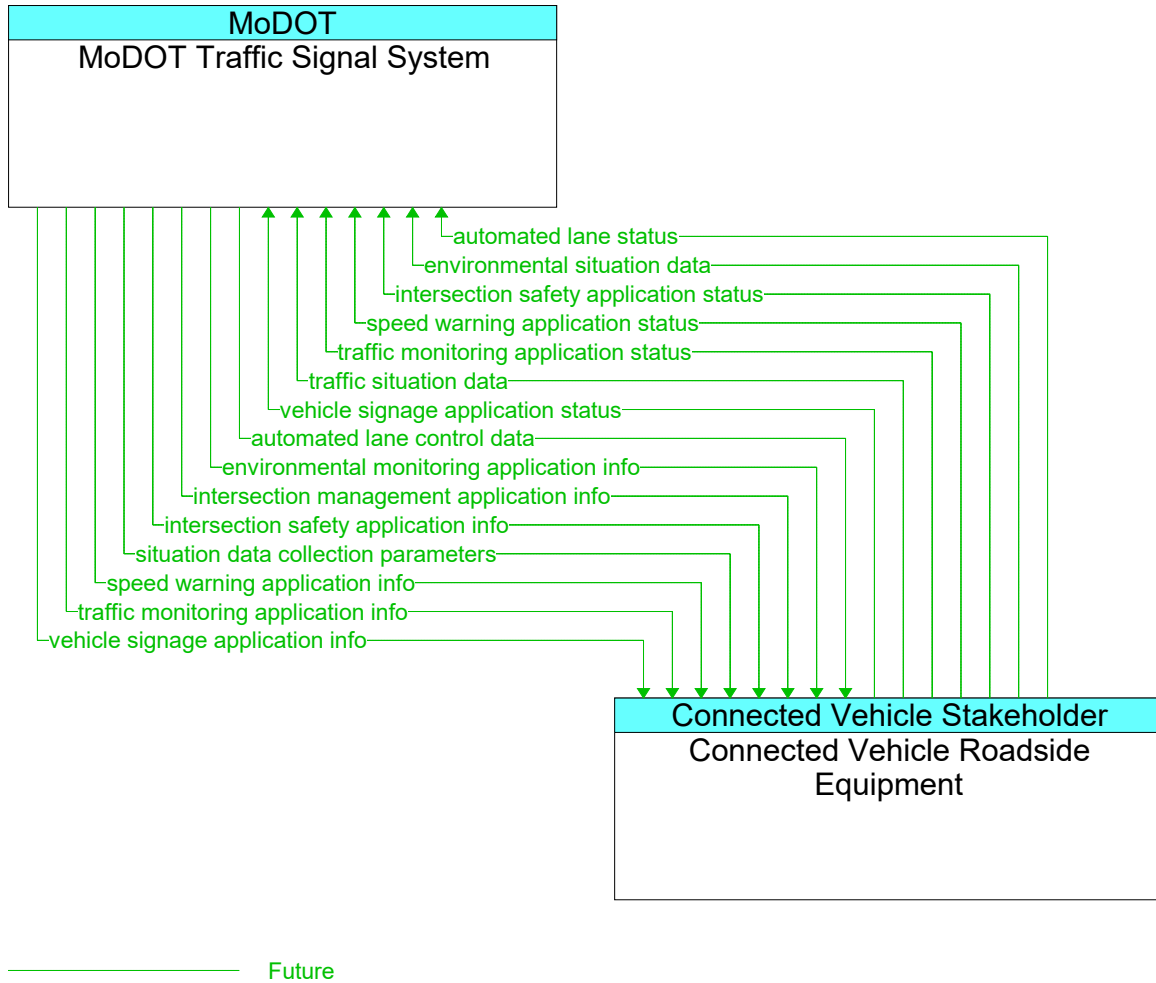
**Figure 91: Connected Vehicle Roadside Equipment - MoDOT Field Equipment Interface**



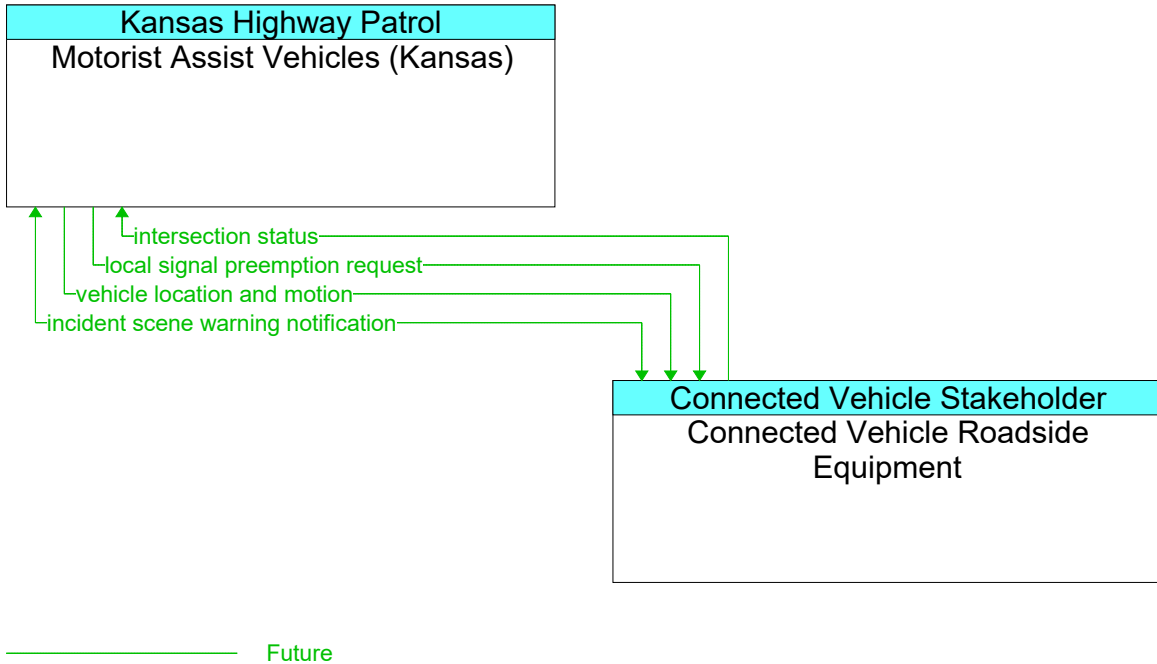
**Figure 92: Connected Vehicle Roadside Equipment - MoDOT Maintenance Vehicles Interface**



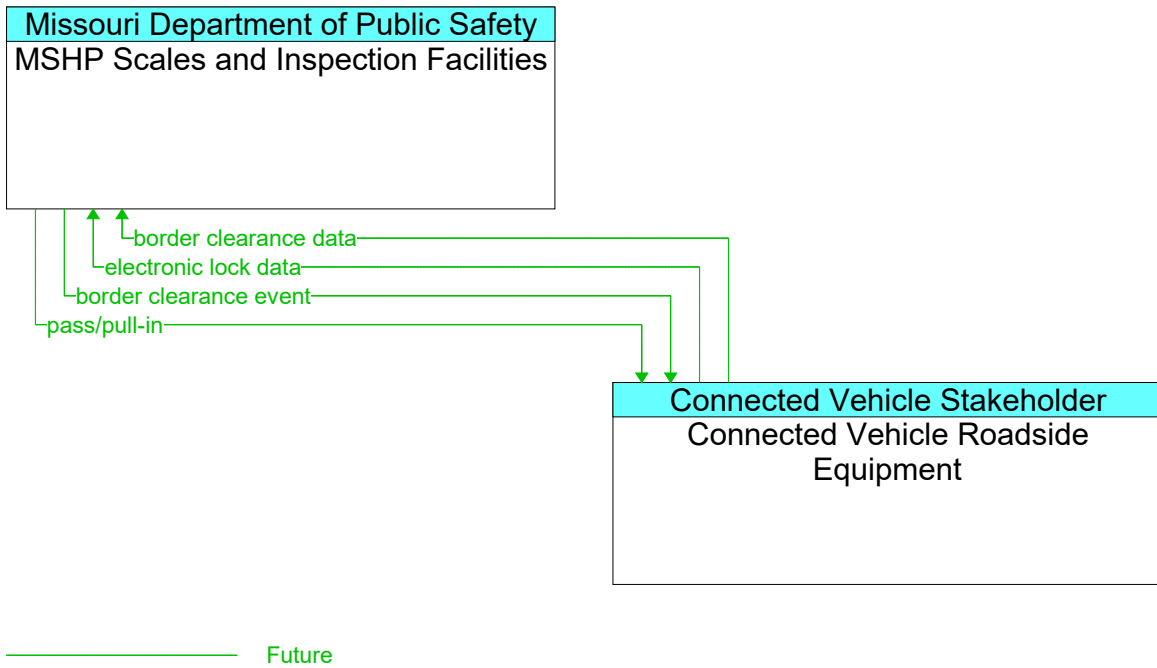
**Figure 93: Connected Vehicle Roadside Equipment - MoDOT Operations Interface**



**Figure 94: Connected Vehicle Roadside Equipment - MoDOT Traffic Signal System Interface**

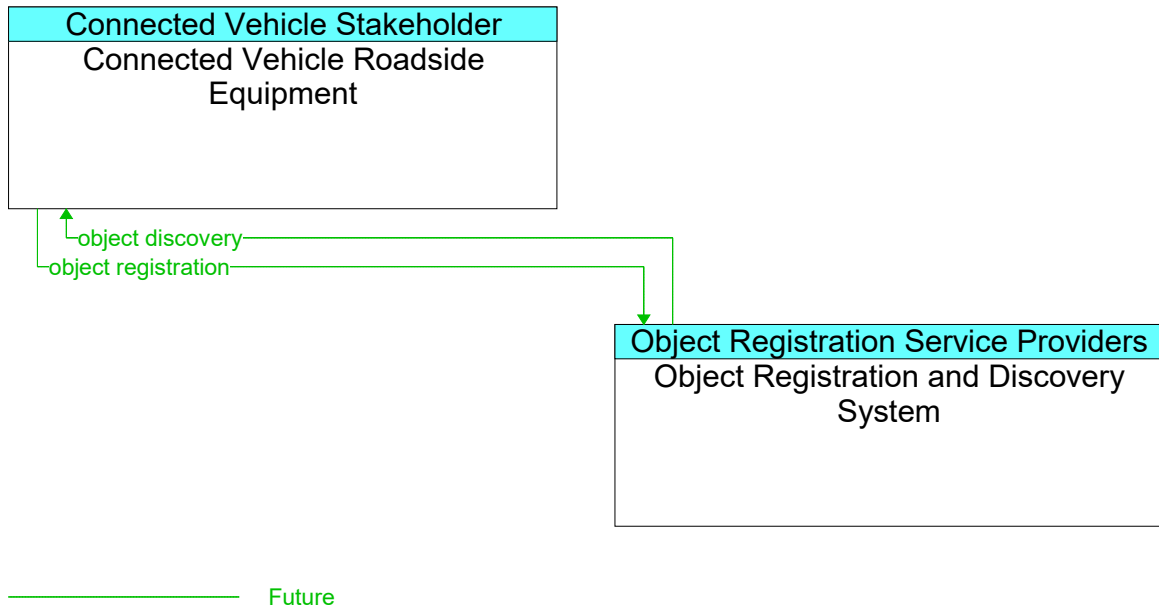


**Figure 95: Connected Vehicle Roadside Equipment - Motorist Assist Vehicles (Kansas) Interface**



**Figure 96: Connected Vehicle Roadside Equipment - MSHP Scales and Inspection Facilities Interface**





**Figure 97: Connected Vehicle Roadside Equipment - Object Registration and Discovery System Interface**

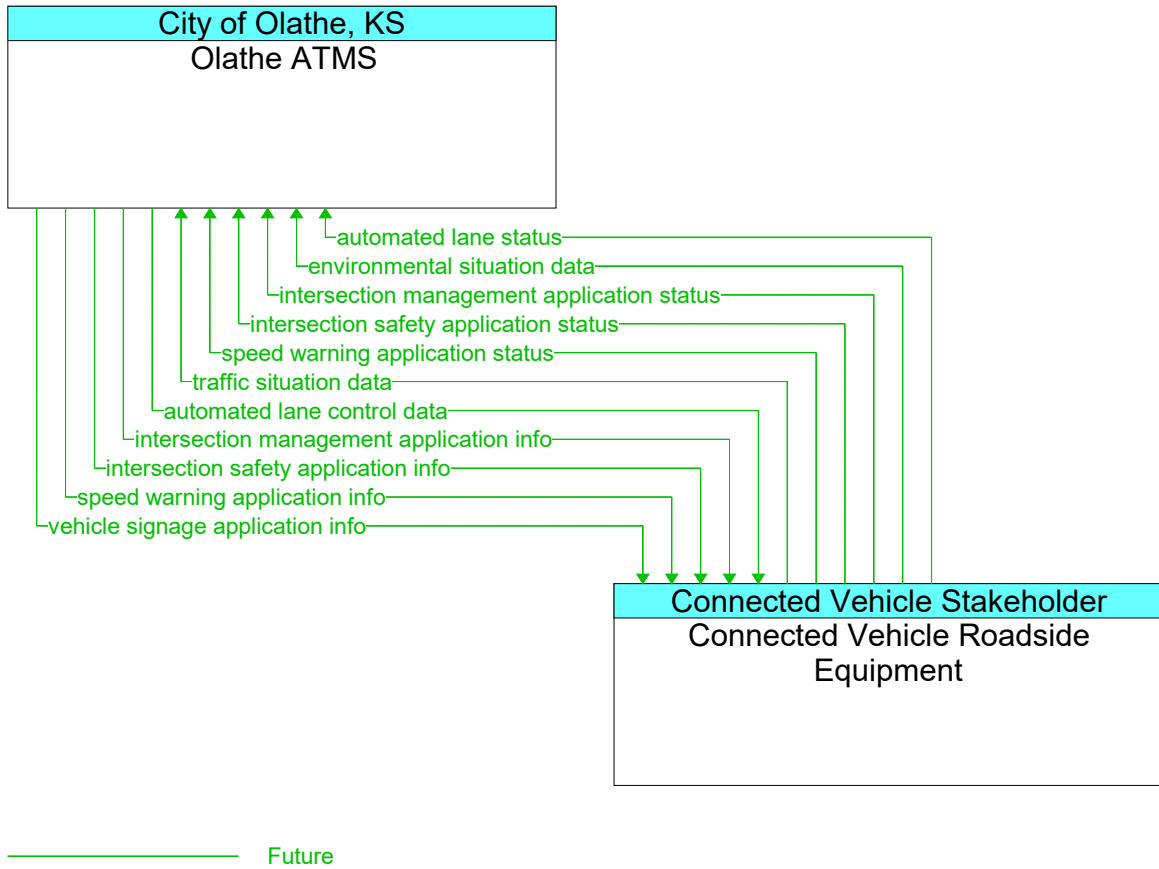
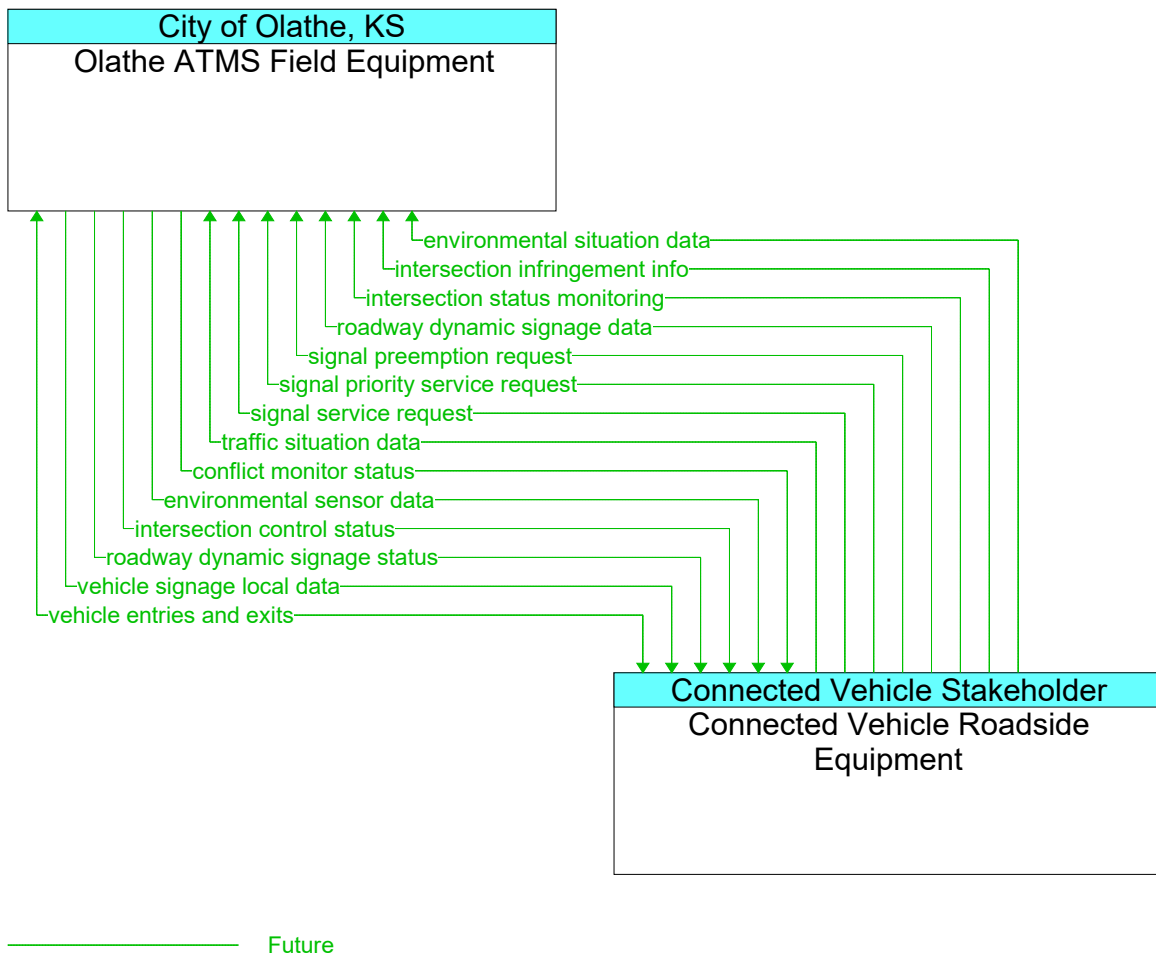
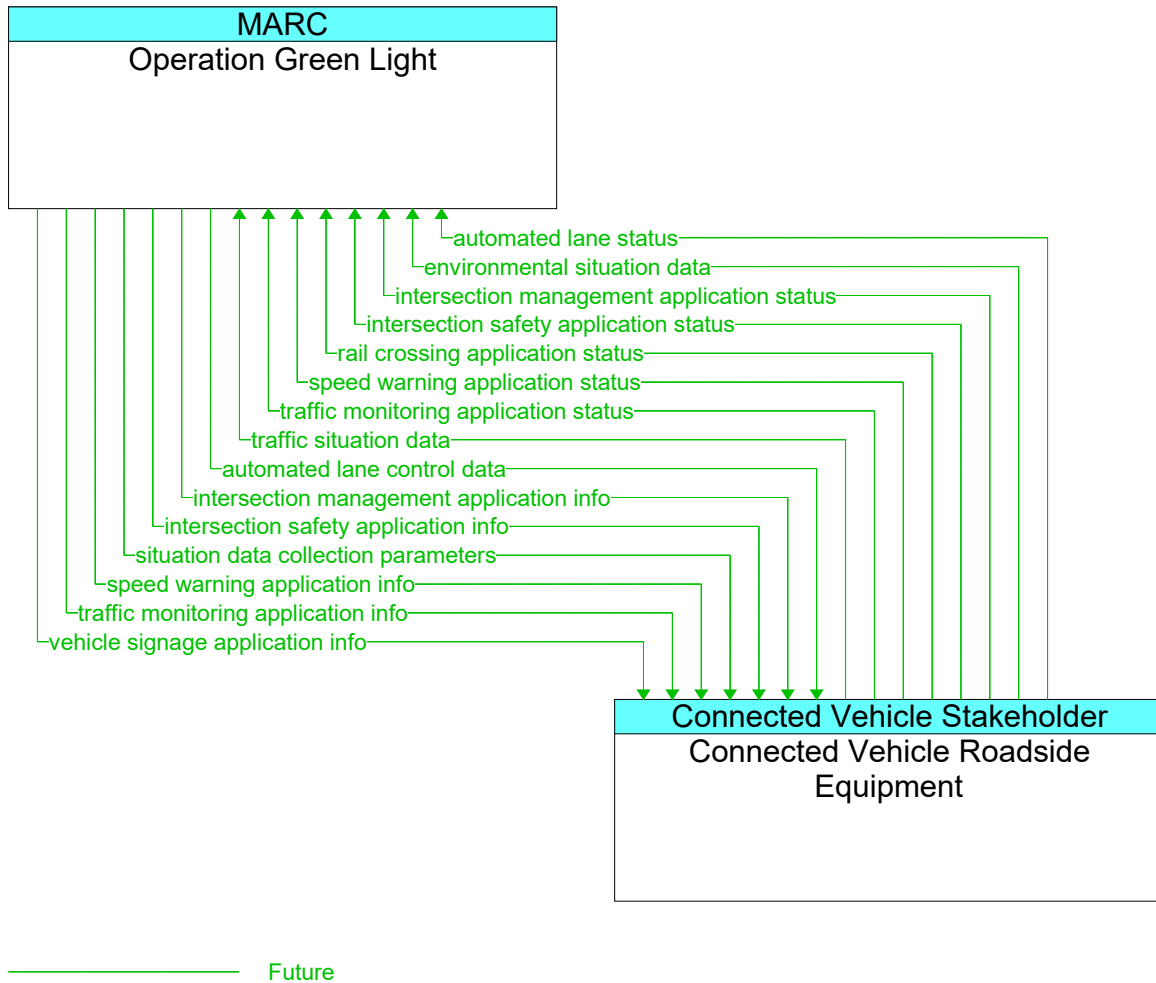


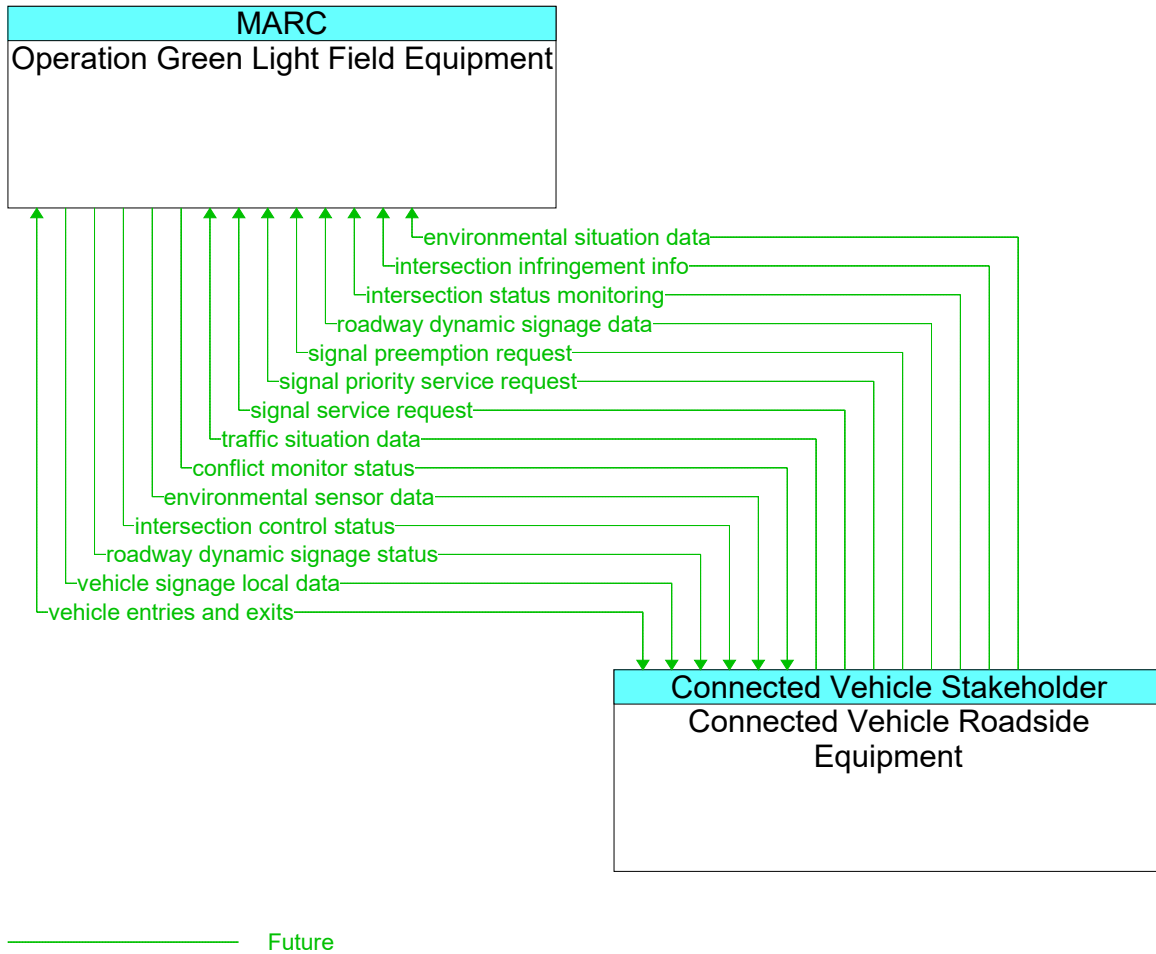
Figure 98: Connected Vehicle Roadside Equipment - Olathe ATMS Interface



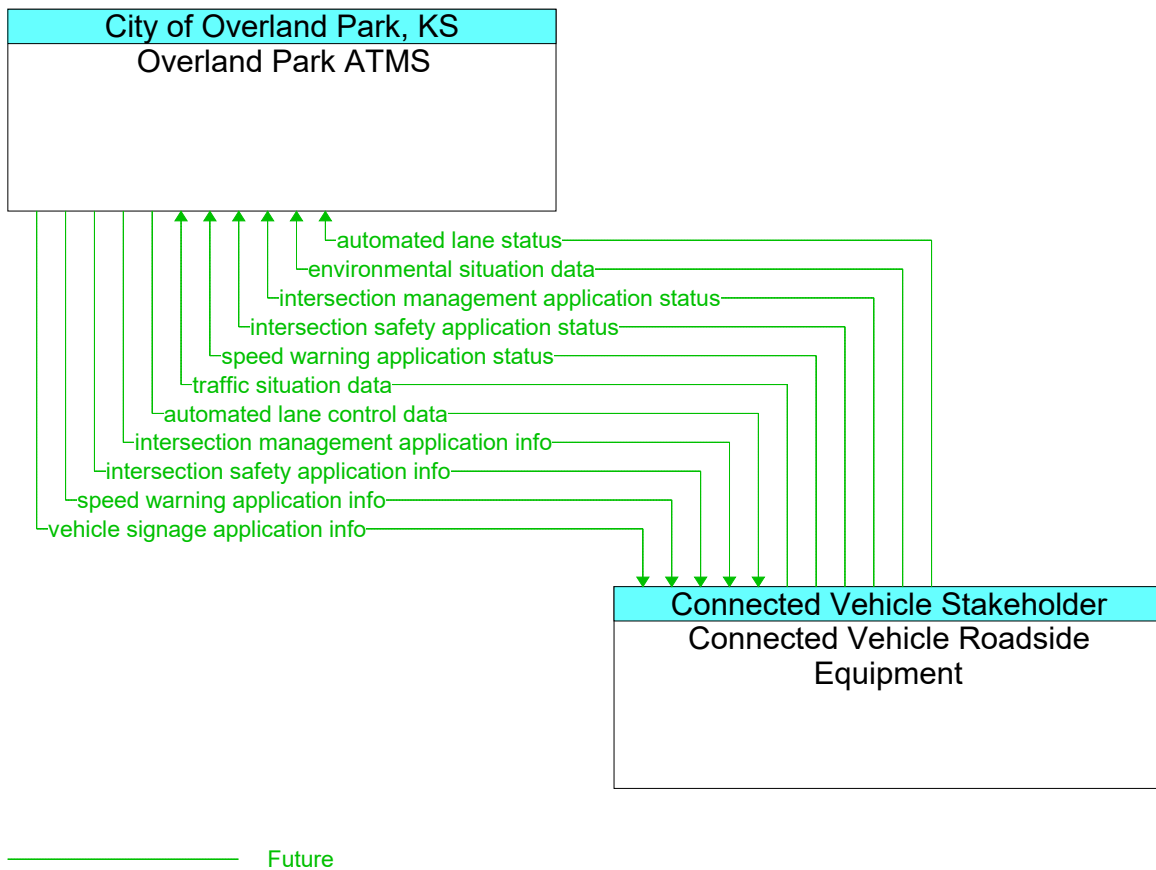
**Figure 99: Connected Vehicle Roadside Equipment - Olathe ATMS Field Equipment Interface**



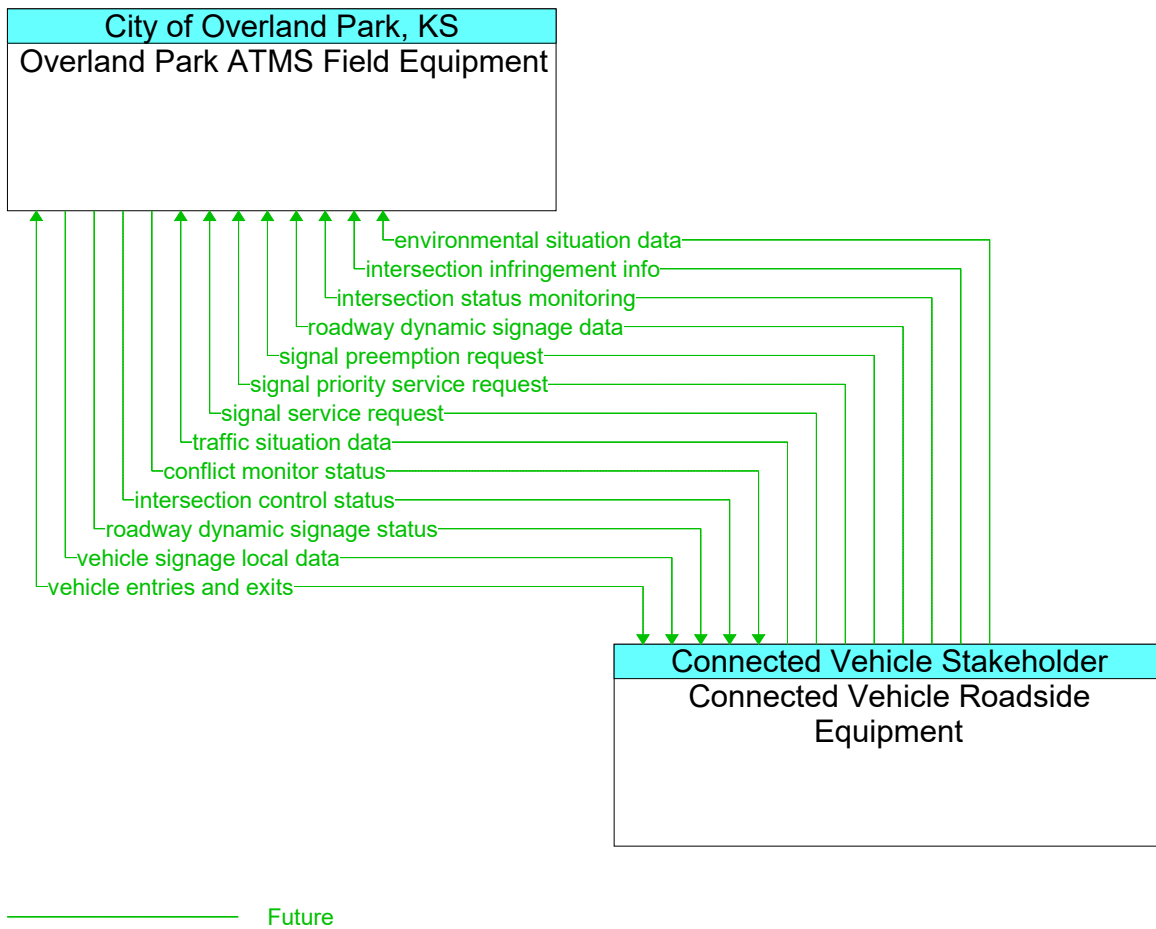
**Figure 100: Connected Vehicle Roadside Equipment - Operation Green Light Interface**



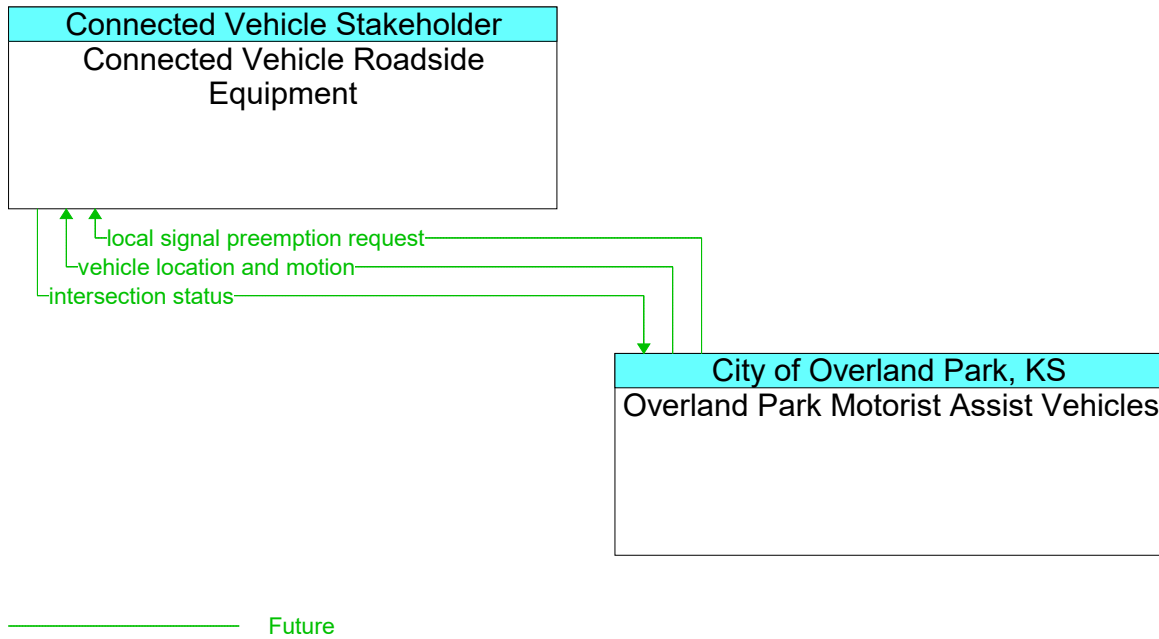
**Figure 101: Connected Vehicle Roadside Equipment - Operation Green Light Field Equipment Interface**



**Figure 102: Connected Vehicle Roadside Equipment - Overland Park ATMS Interface**

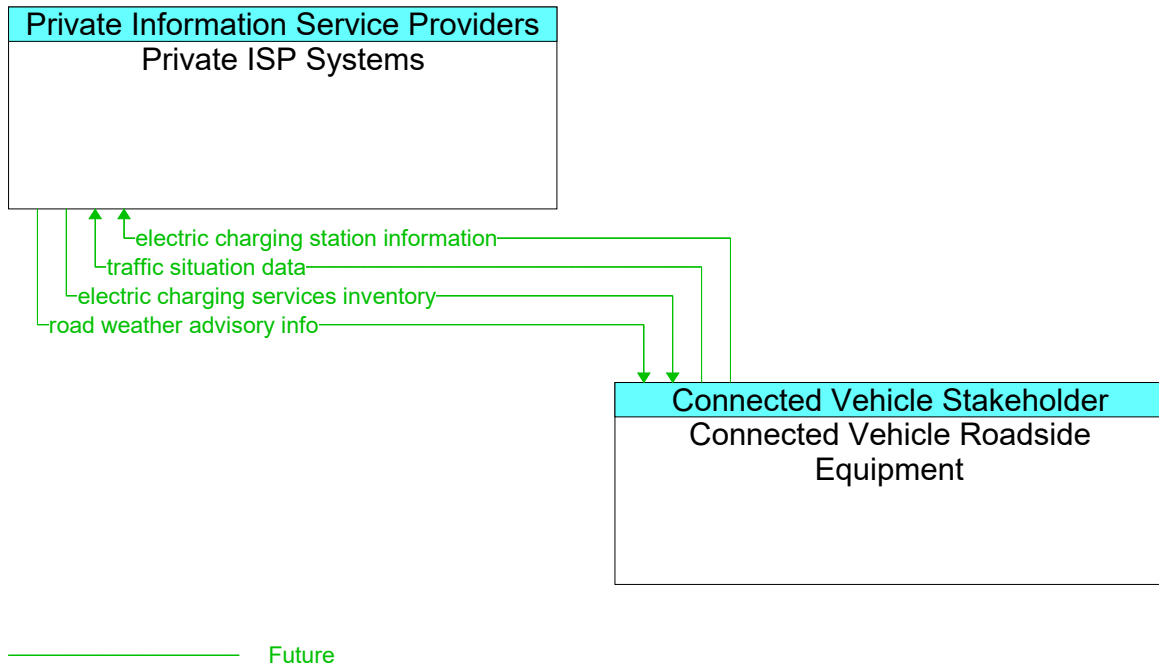


**Figure 103: Connected Vehicle Roadside Equipment - Overland Park ATMS Field Equipment Interface**

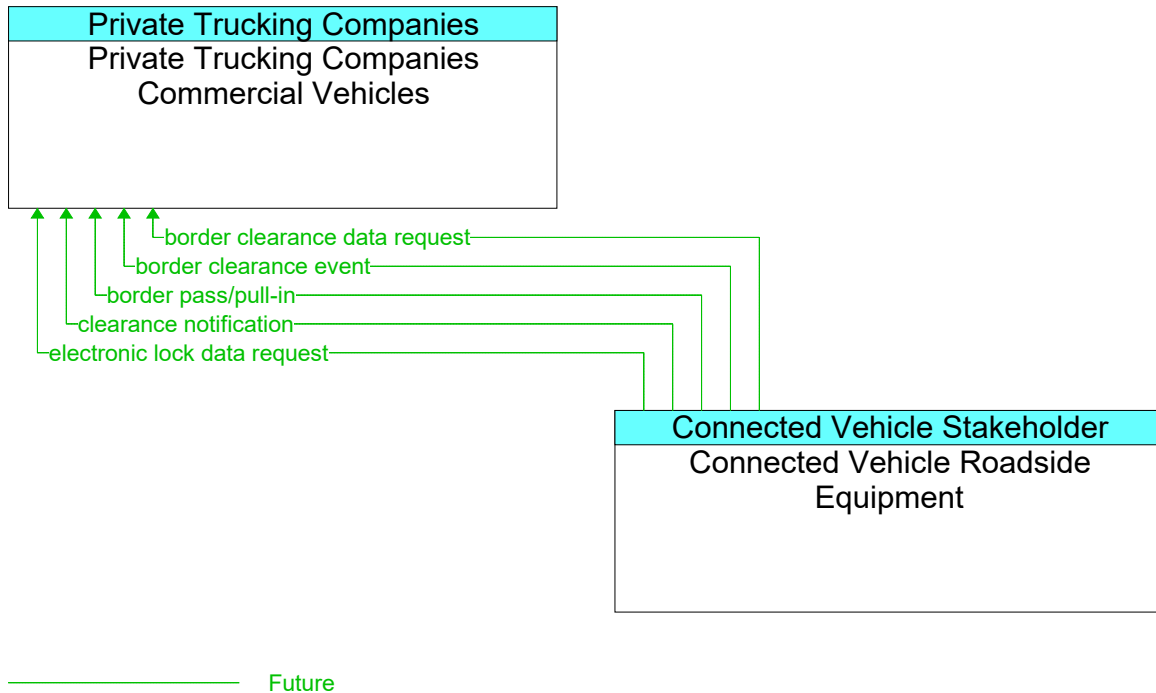


**Figure 104: Connected Vehicle Roadside Equipment - Overland Park Motorist Assist Vehicles Interface**

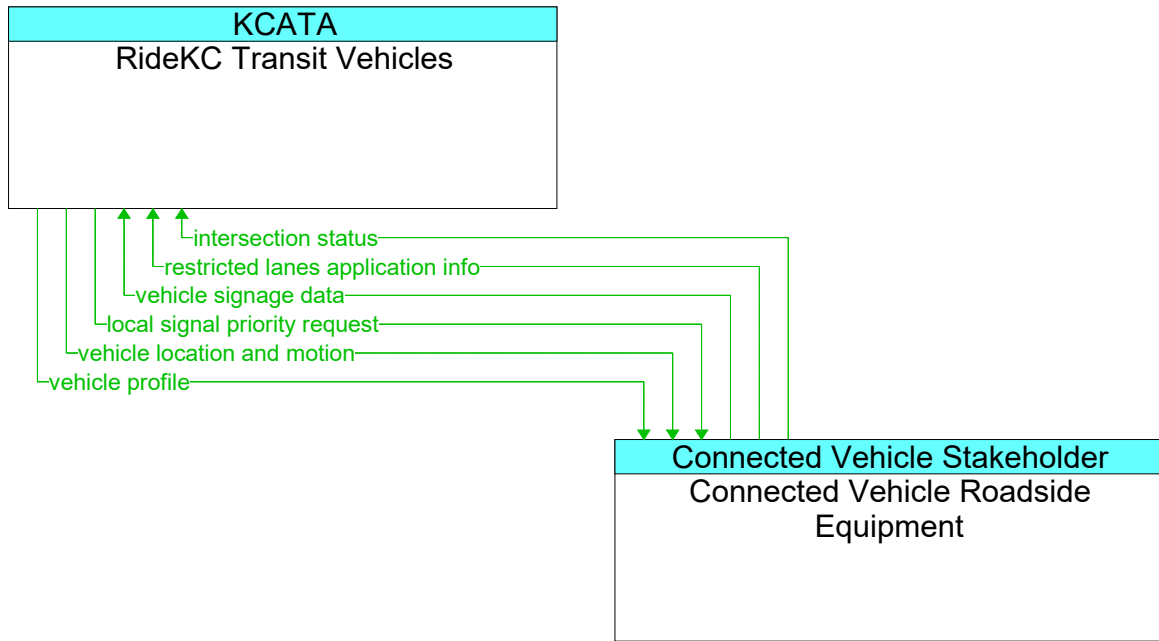




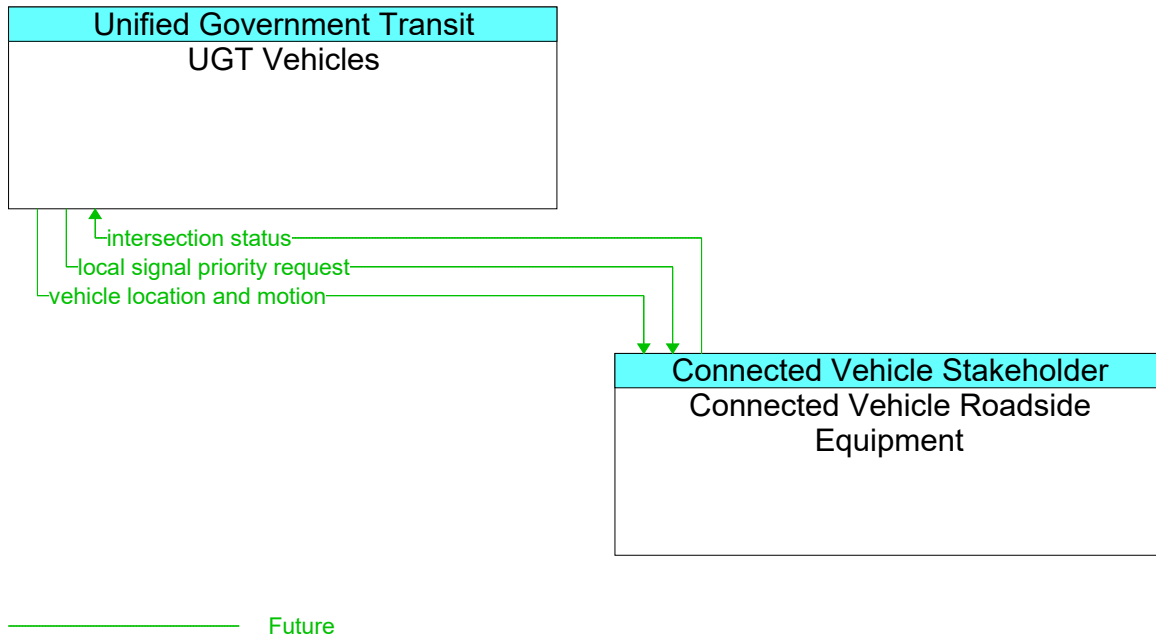
**Figure 105: Connected Vehicle Roadside Equipment - Private ISP Systems Interface**



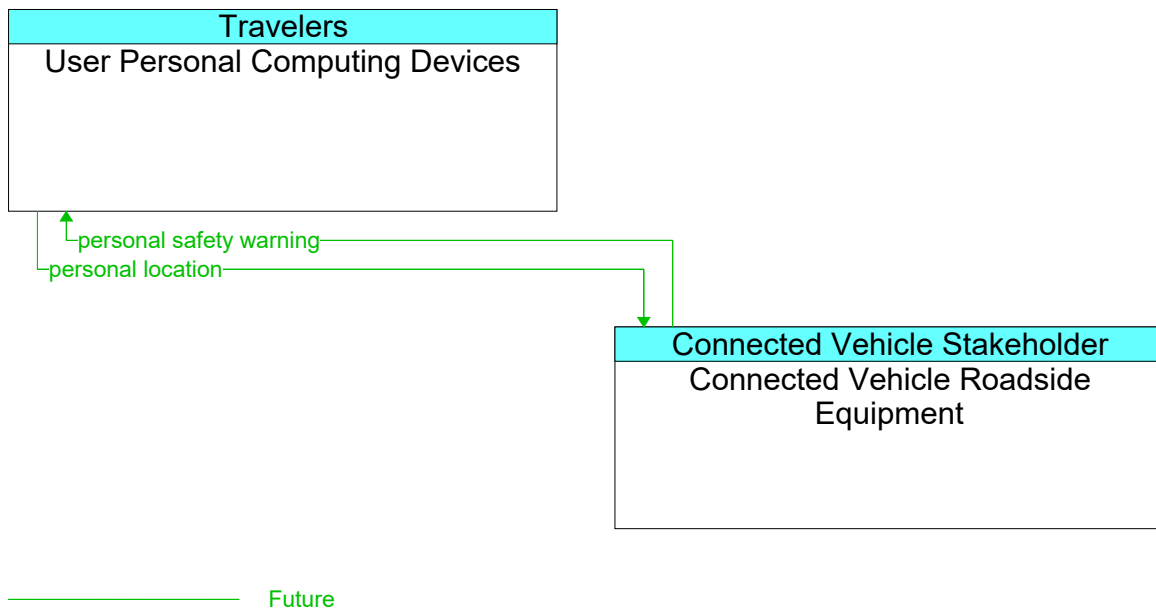
**Figure 106: Connected Vehicle Roadside Equipment - Private Trucking Companies Commercial Vehicles Interface**



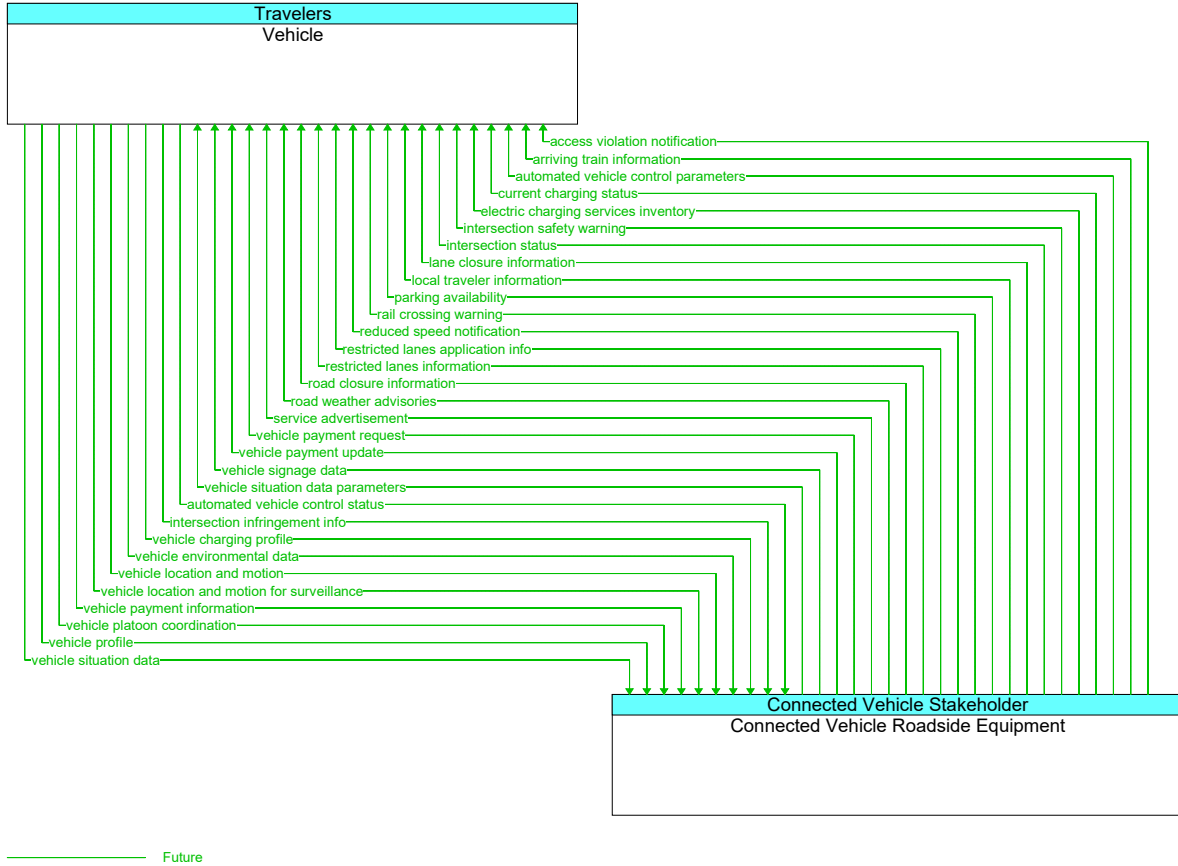
**Figure 107: Connected Vehicle Roadside Equipment - RideKC Transit Vehicles Interface**



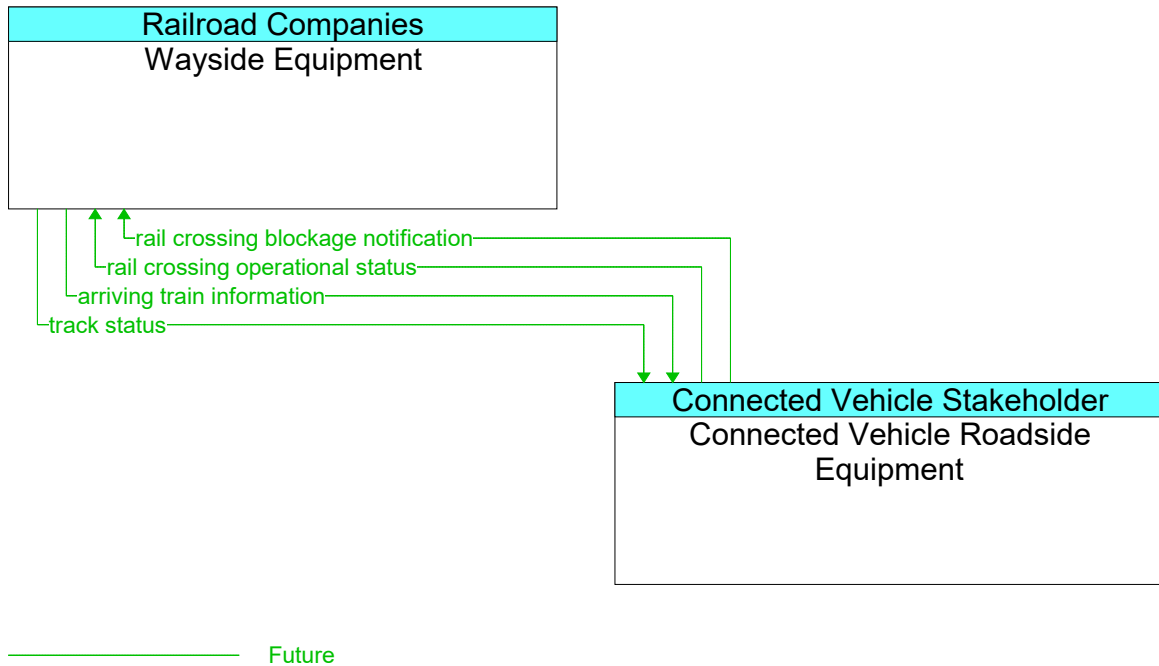
**Figure 108: Connected Vehicle Roadside Equipment - UGT Vehicles Interface**



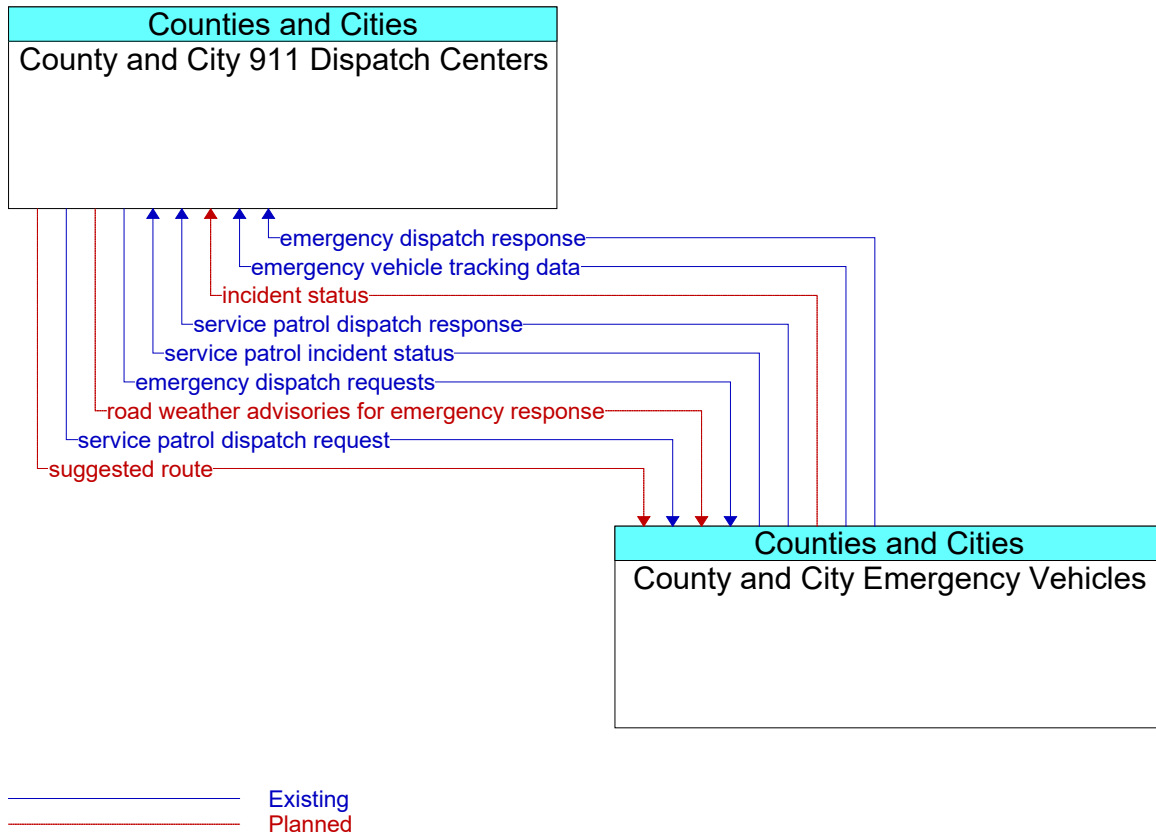
**Figure 109: Connected Vehicle Roadside Equipment - User Personal Computing Devices Interface**



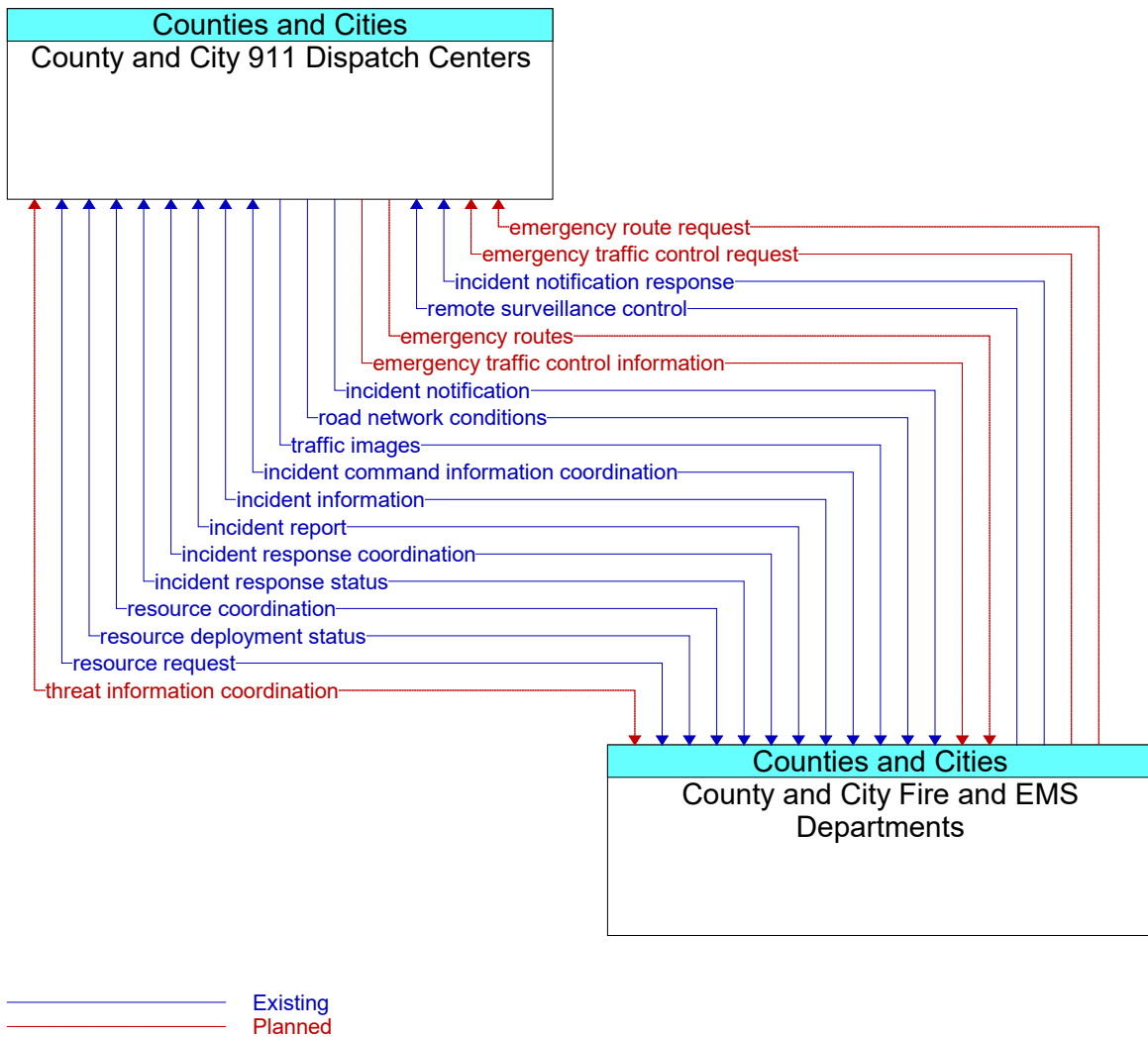
**Figure 110: Connected Vehicle Roadside Equipment - Vehicle Interface**



**Figure 111: Connected Vehicle Roadside Equipment - Wayside Equipment Interface**

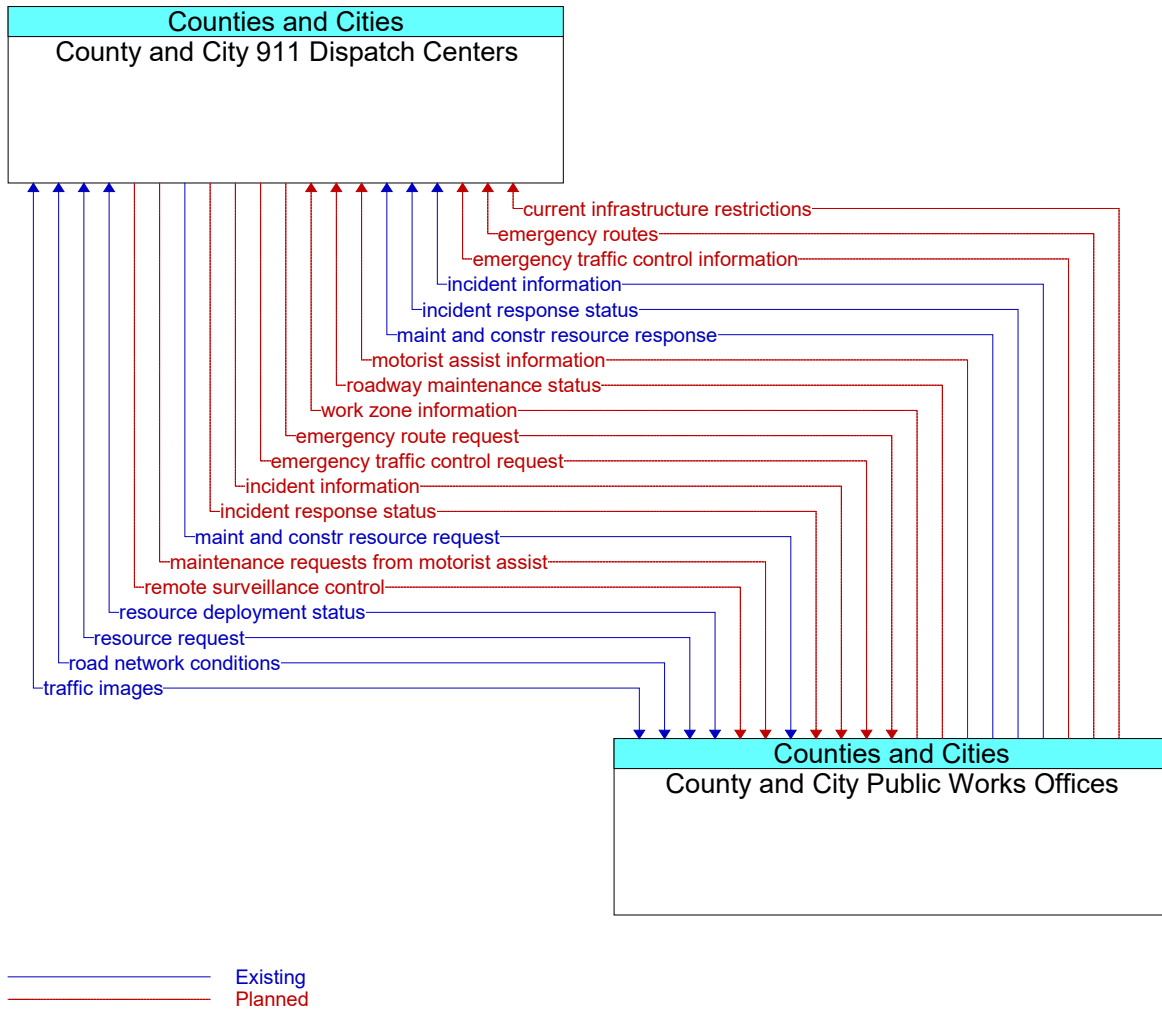


**Figure 112: County and City 911 Dispatch Centers - County and City Emergency Vehicles Interface**

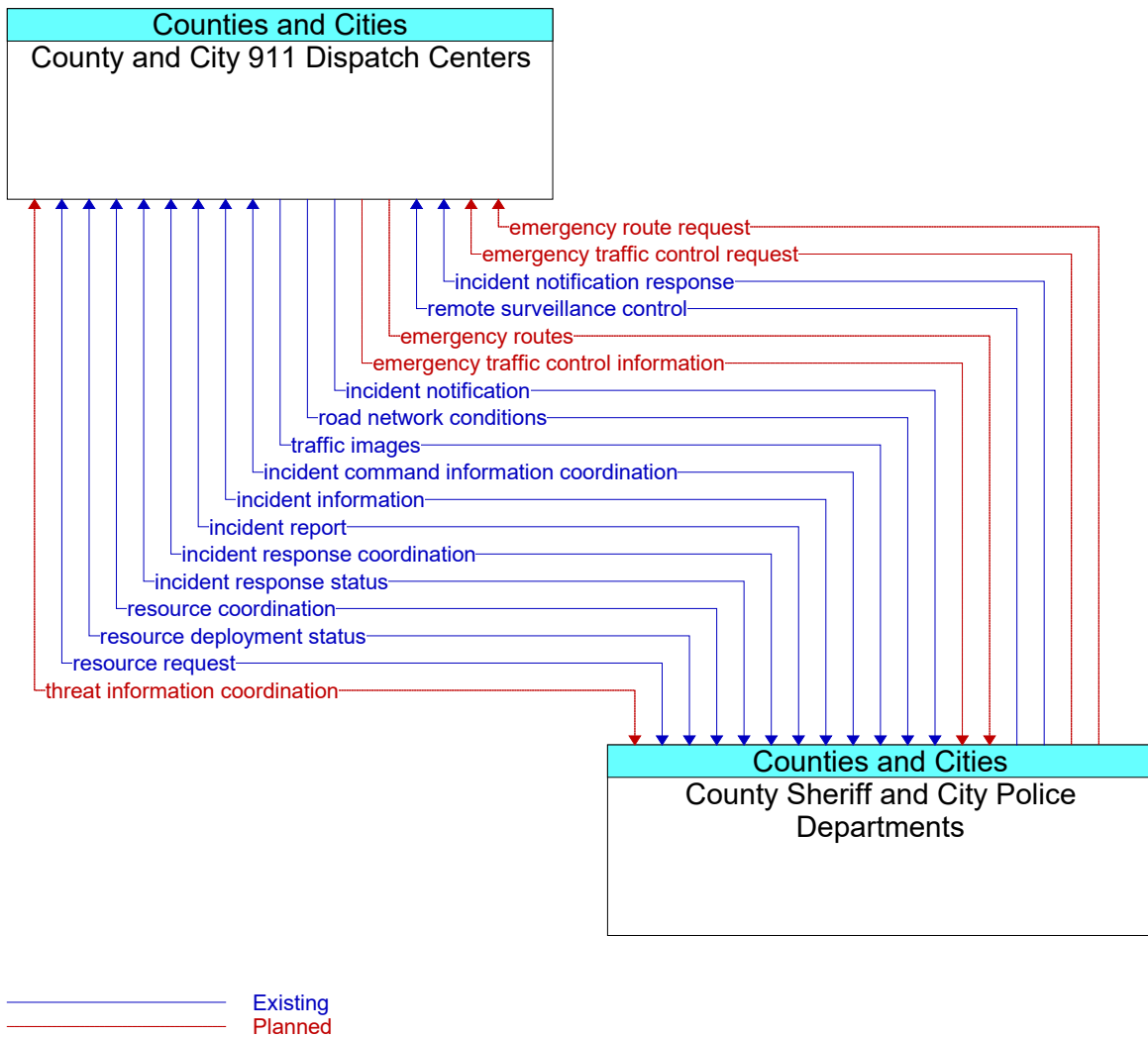


**Figure 113: County and City 911 Dispatch Centers - County and City Fire and EMS Departments Interface**

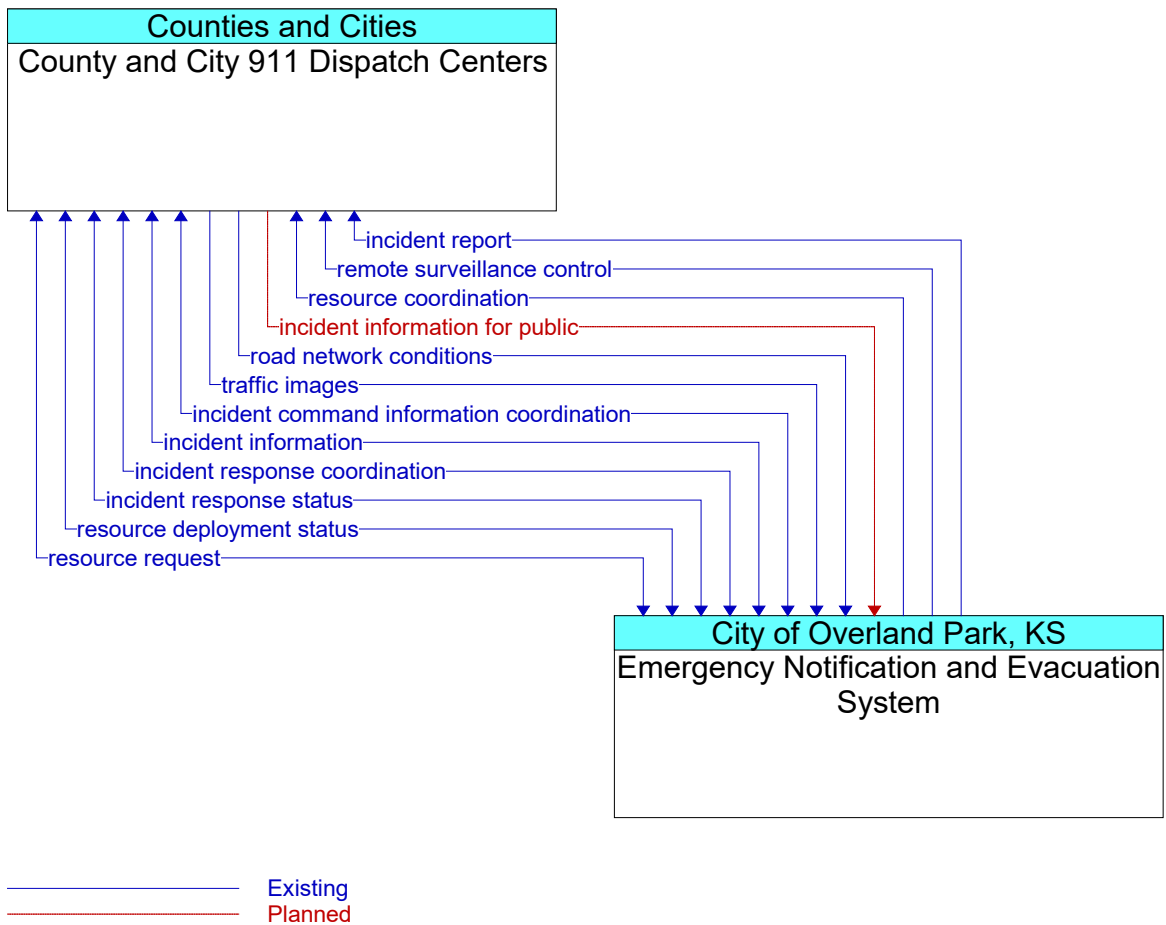




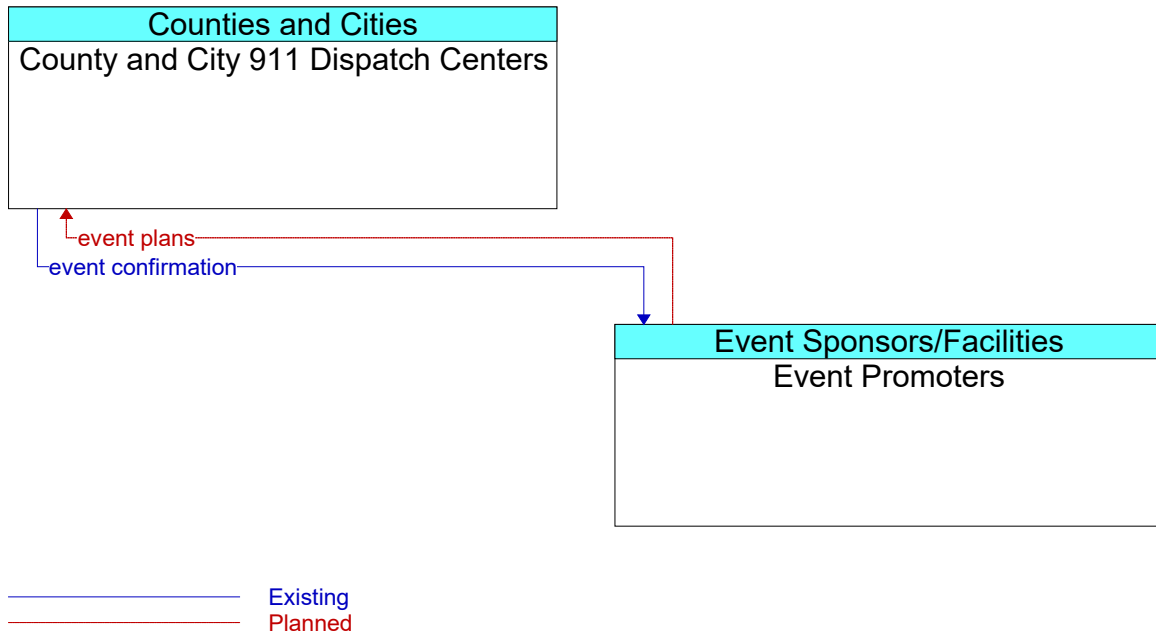
**Figure 114: County and City 911 Dispatch Centers - County and City Public Works Offices Interface**



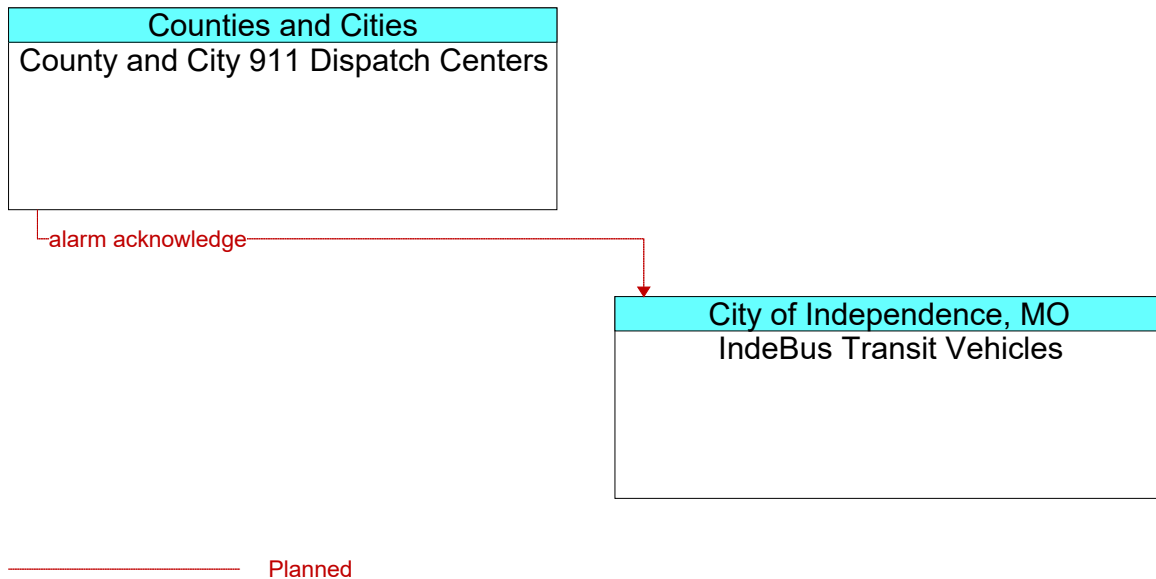
**Figure 115: County and City 911 Dispatch Centers - County Sheriff and City Police Departments Interface**



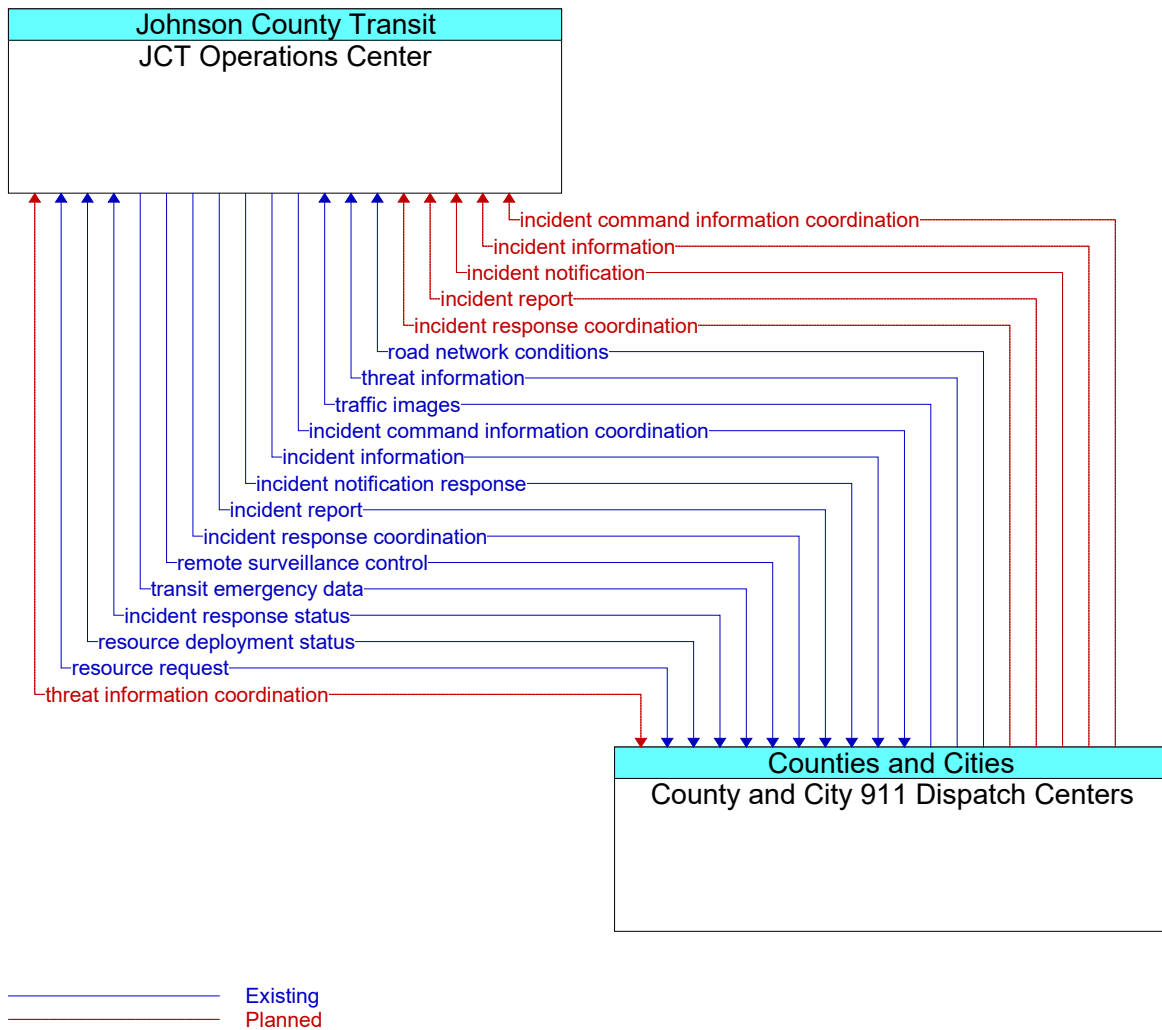
**Figure 116: County and City 911 Dispatch Centers - Emergency Notification and Evacuation System Interface**



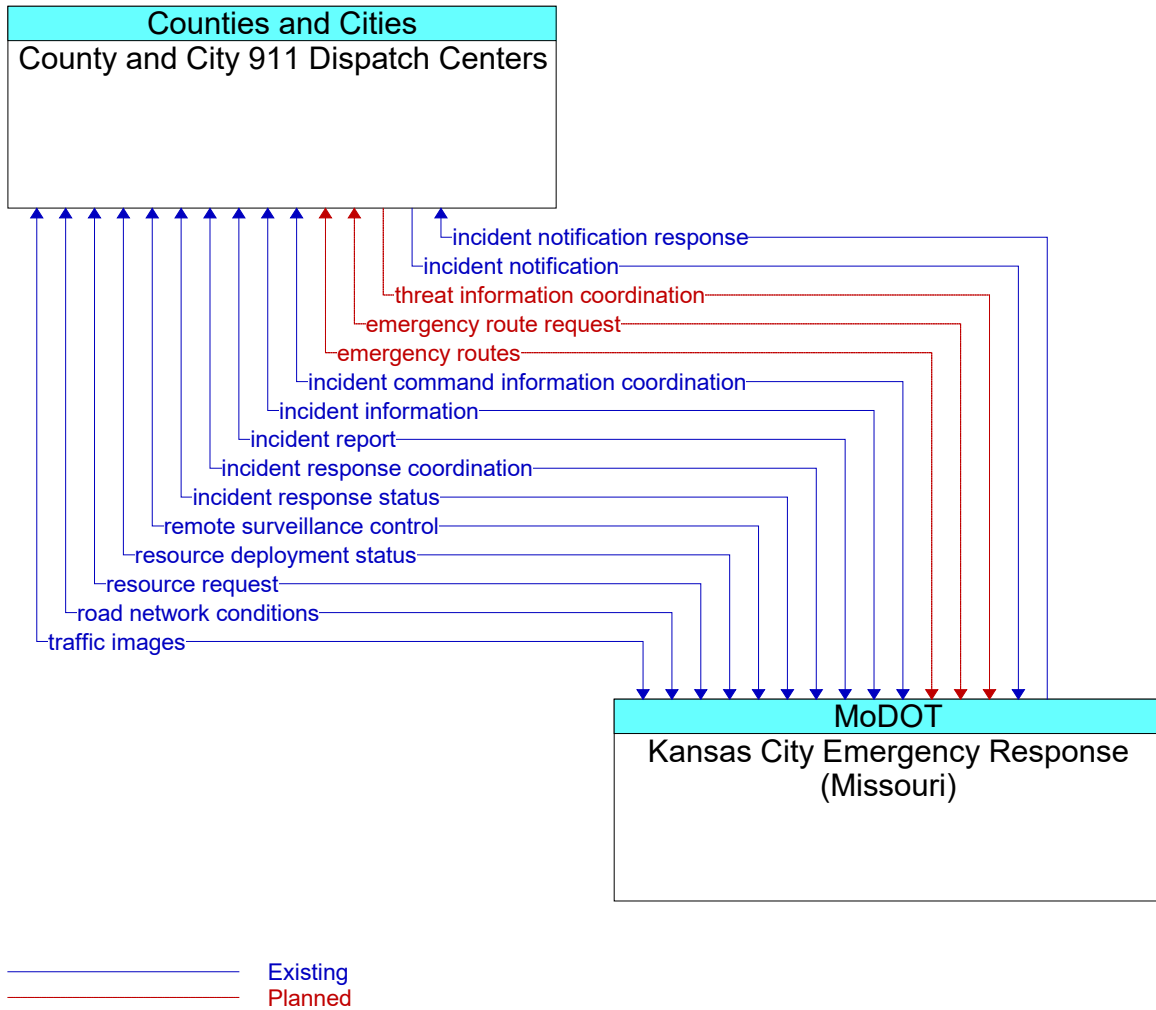
**Figure 117: County and City 911 Dispatch Centers - Event Promoters Interface**



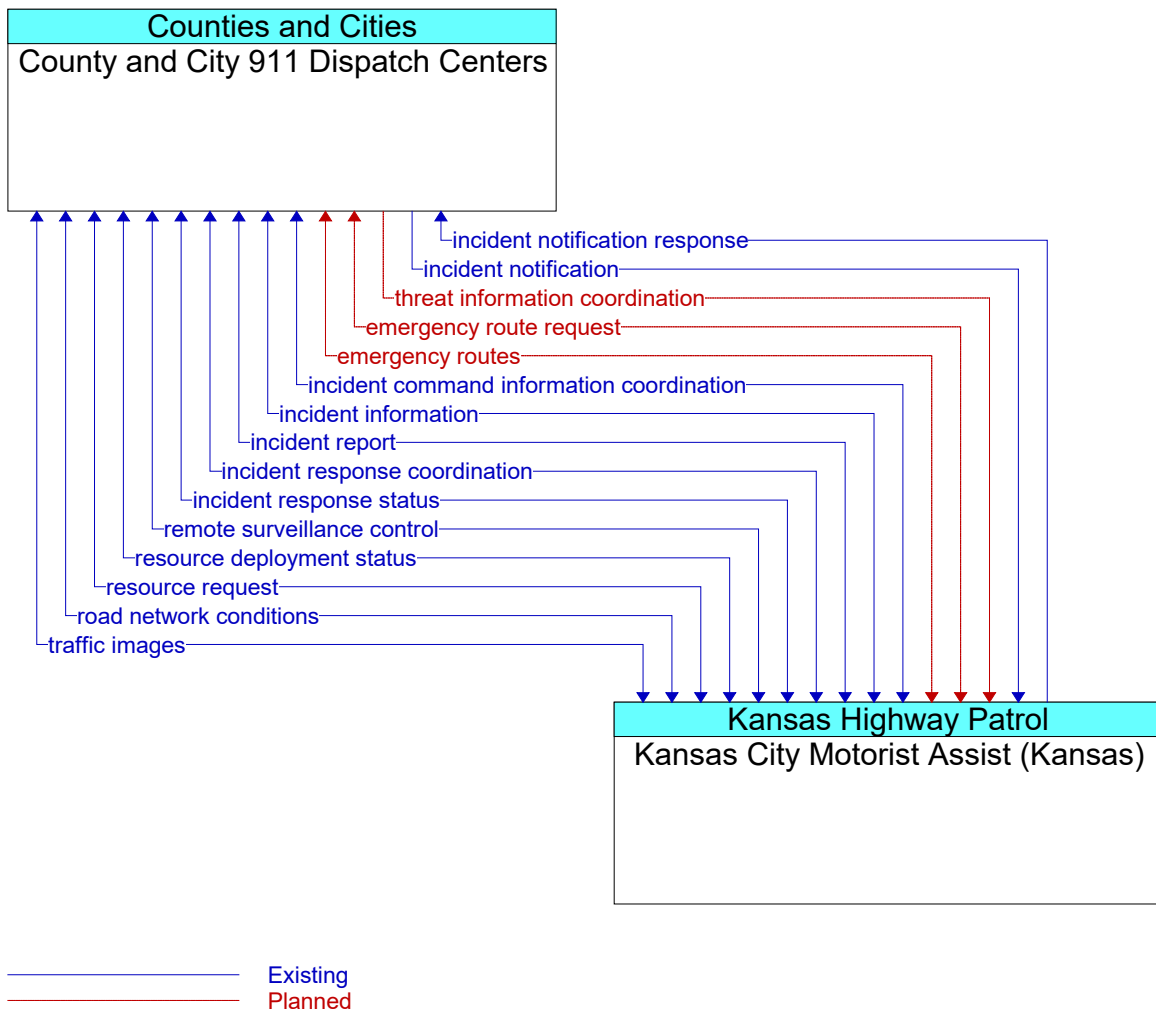
**Figure 118: County and City 911 Dispatch Centers - IndeBus Transit Vehicles Interface**



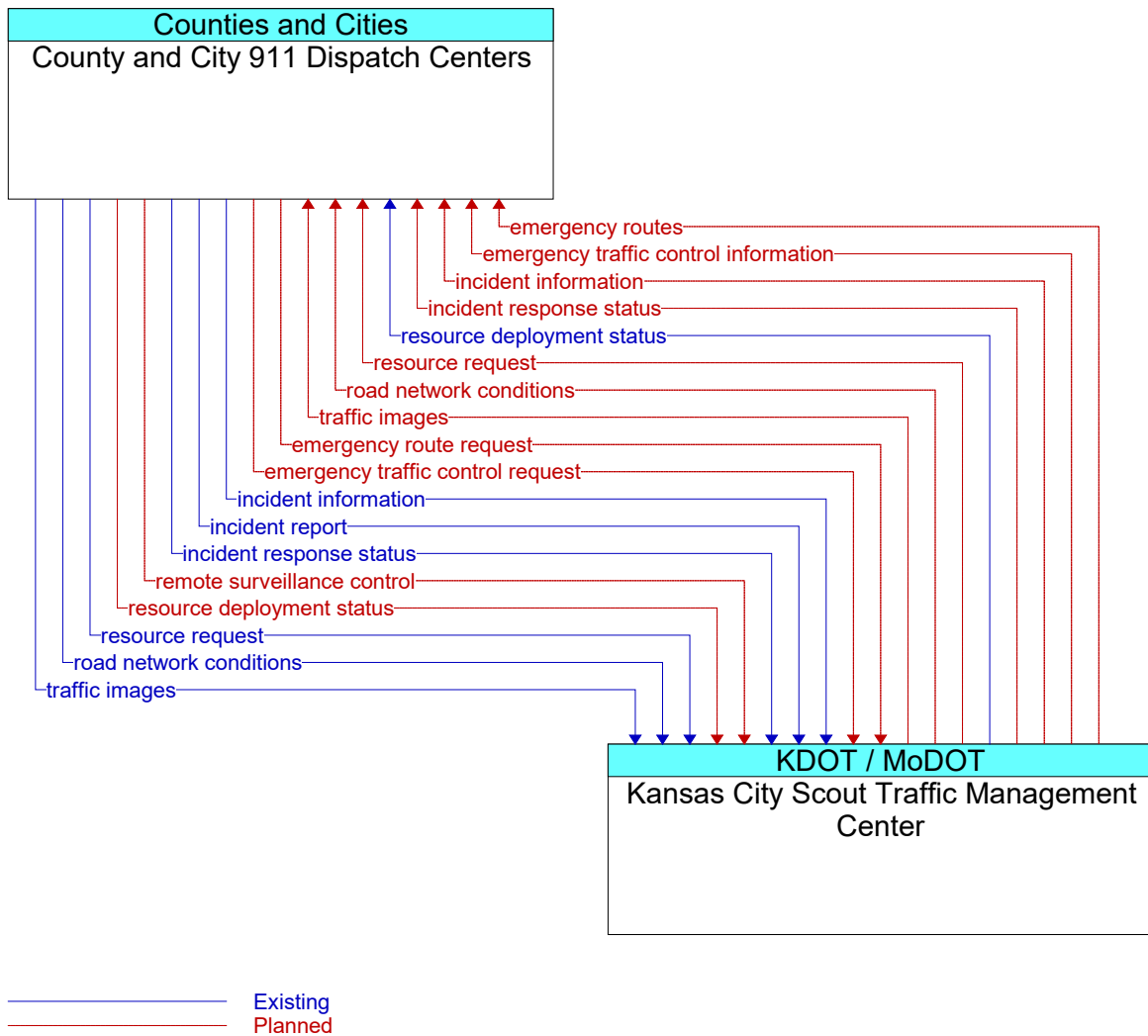
**Figure 119: County and City 911 Dispatch Centers - JCT Operations Center Interface**



**Figure 120: County and City 911 Dispatch Centers - Kansas City Emergency Response (Missouri) Interface**

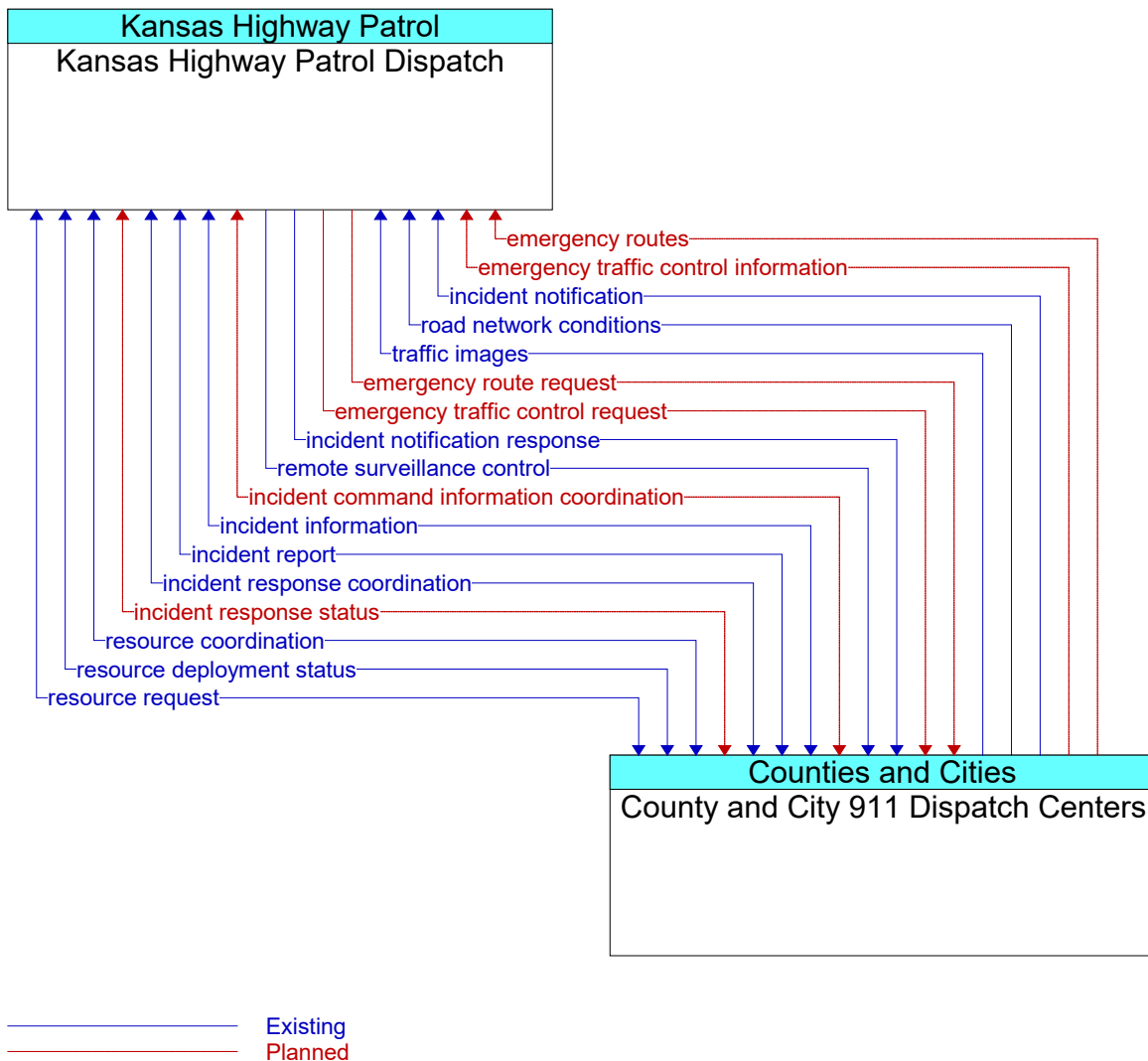


**Figure 121: County and City 911 Dispatch Centers - Kansas City Motorist Assist (Kansas) Interface**

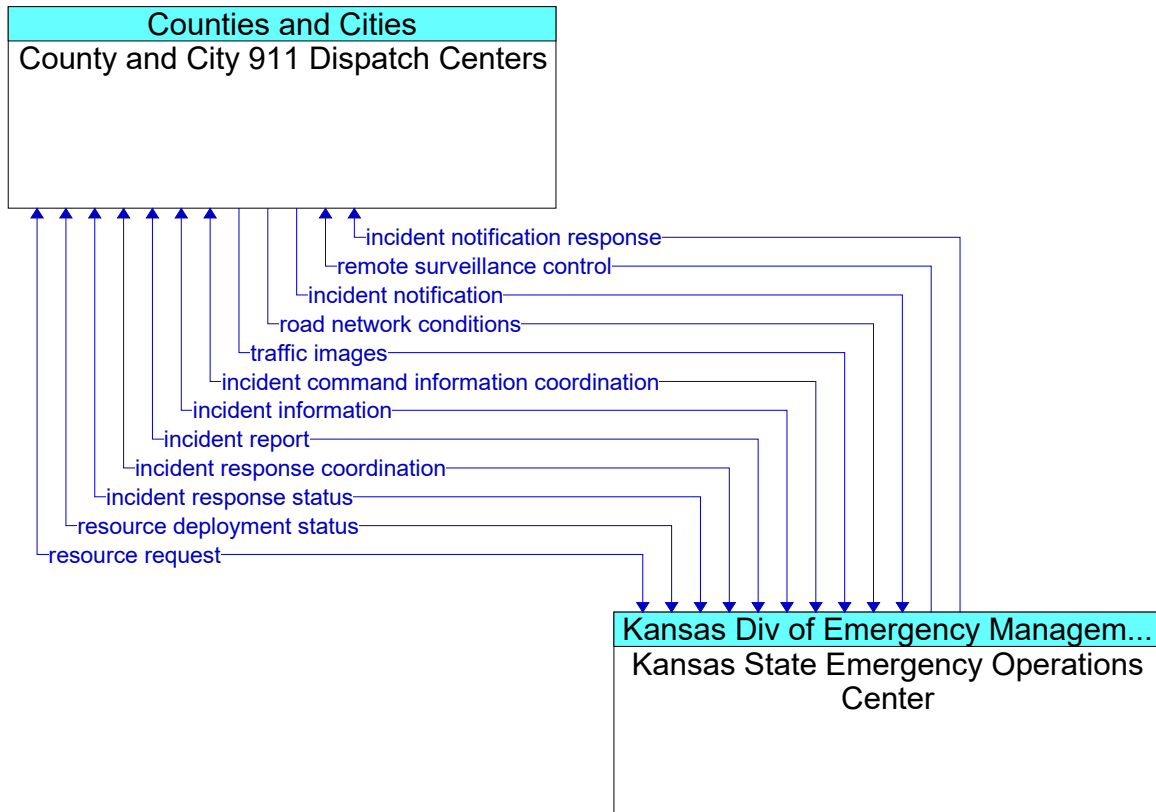


**Figure 122: County and City 911 Dispatch Centers - Kansas City Scout Traffic Management Center Interface**



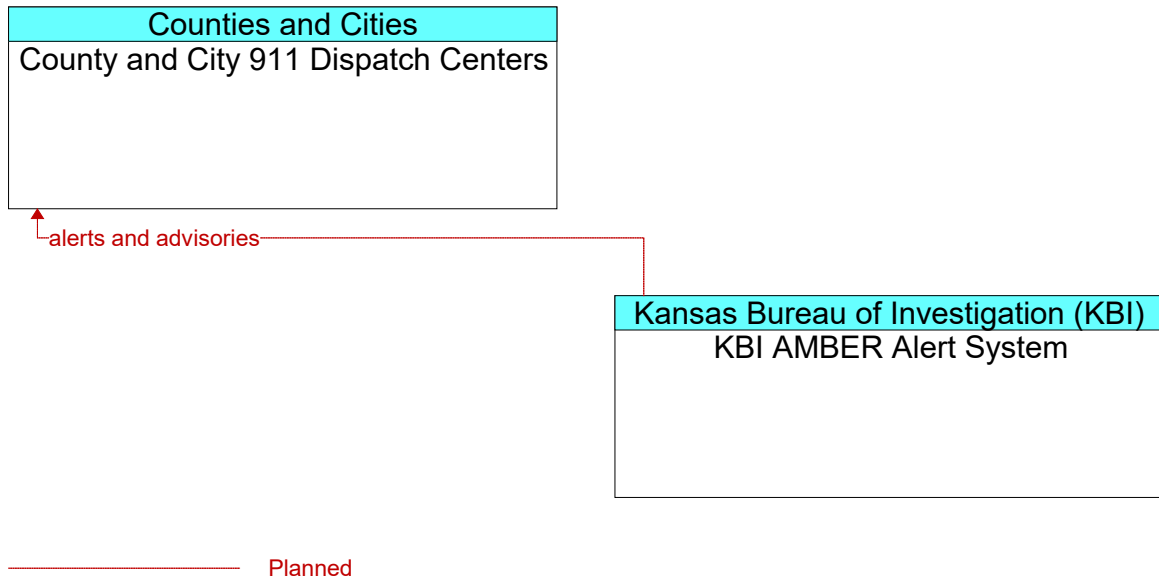


**Figure 123: County and City 911 Dispatch Centers - Kansas Highway Patrol Dispatch Interface**

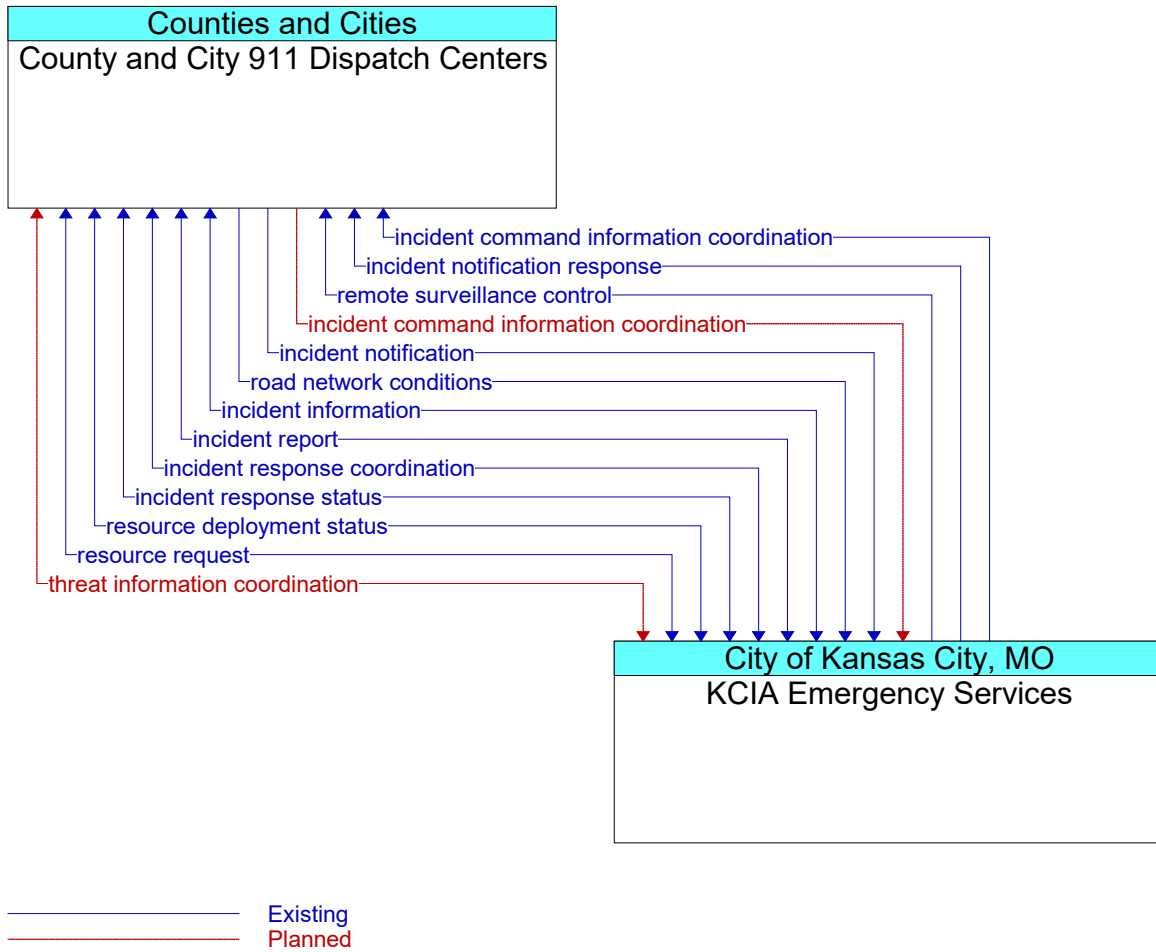


Existing

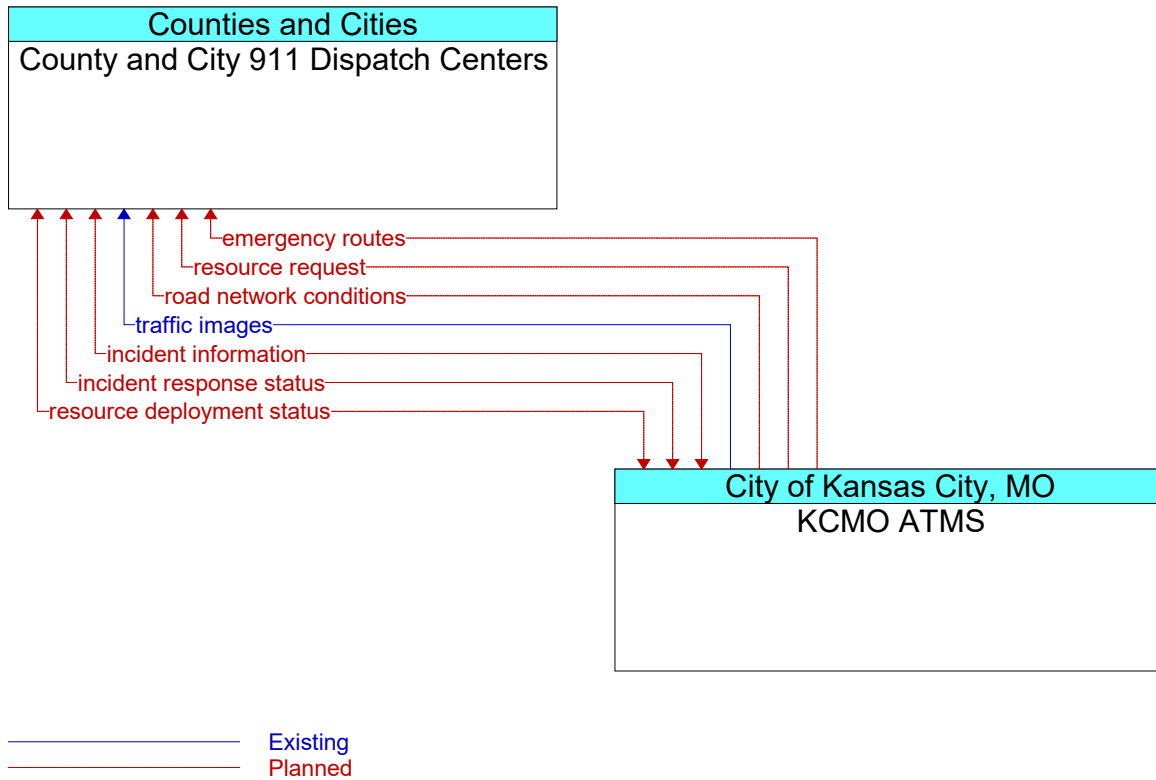
**Figure 124: County and City 911 Dispatch Centers - Kansas State Emergency Operations Center Interface**



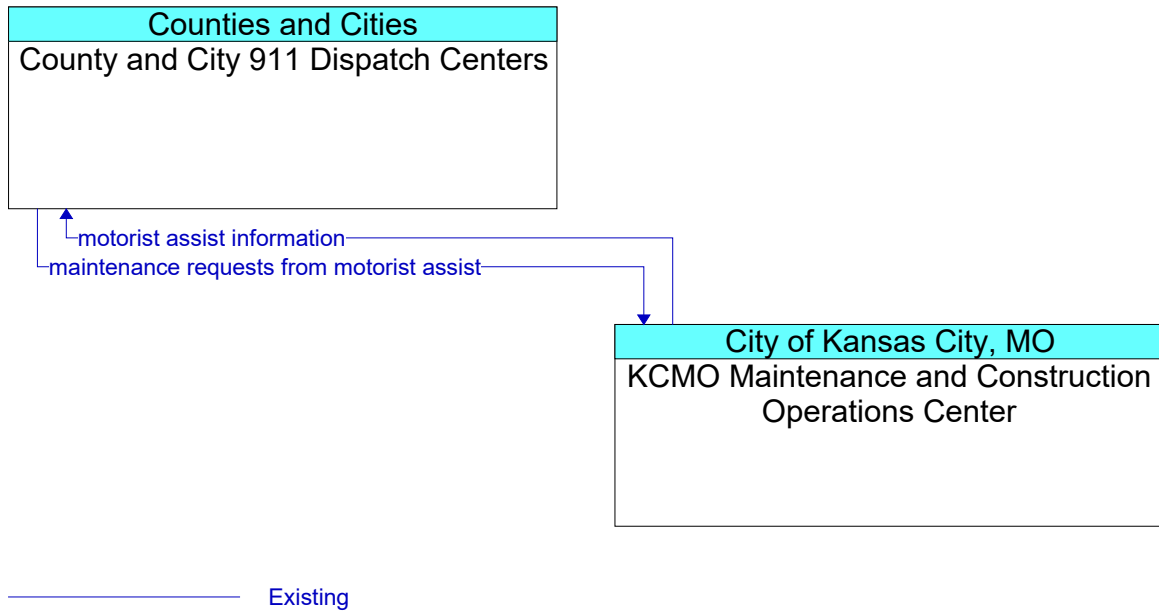
**Figure 125: County and City 911 Dispatch Centers - KBI AMBER Alert System Interface**



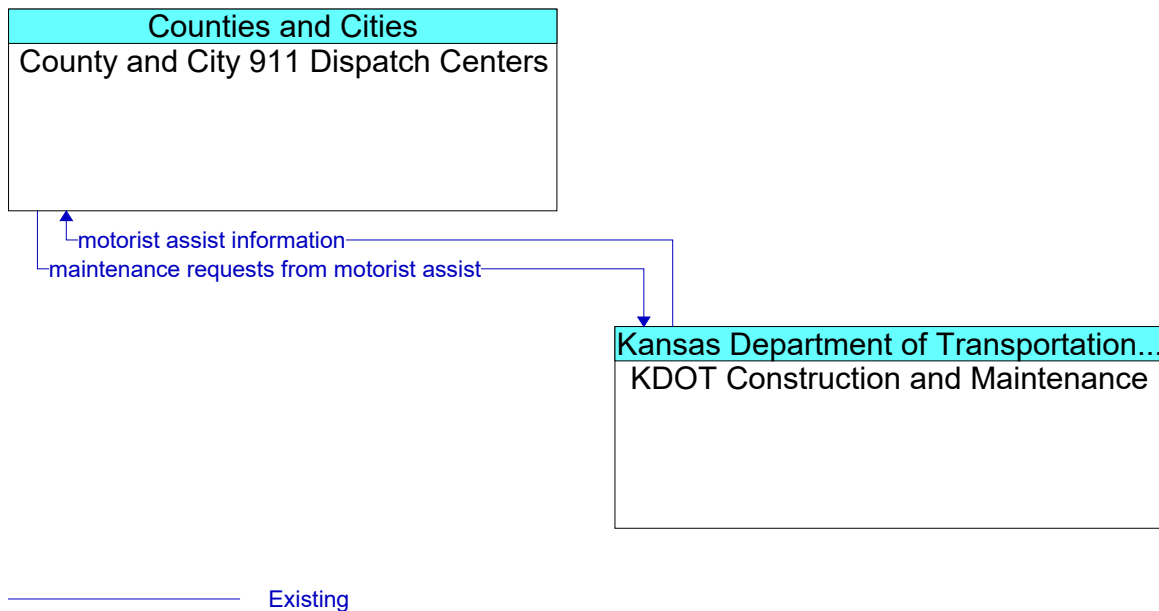
**Figure 126: County and City 911 Dispatch Centers - KCIA Emergency Services Interface**



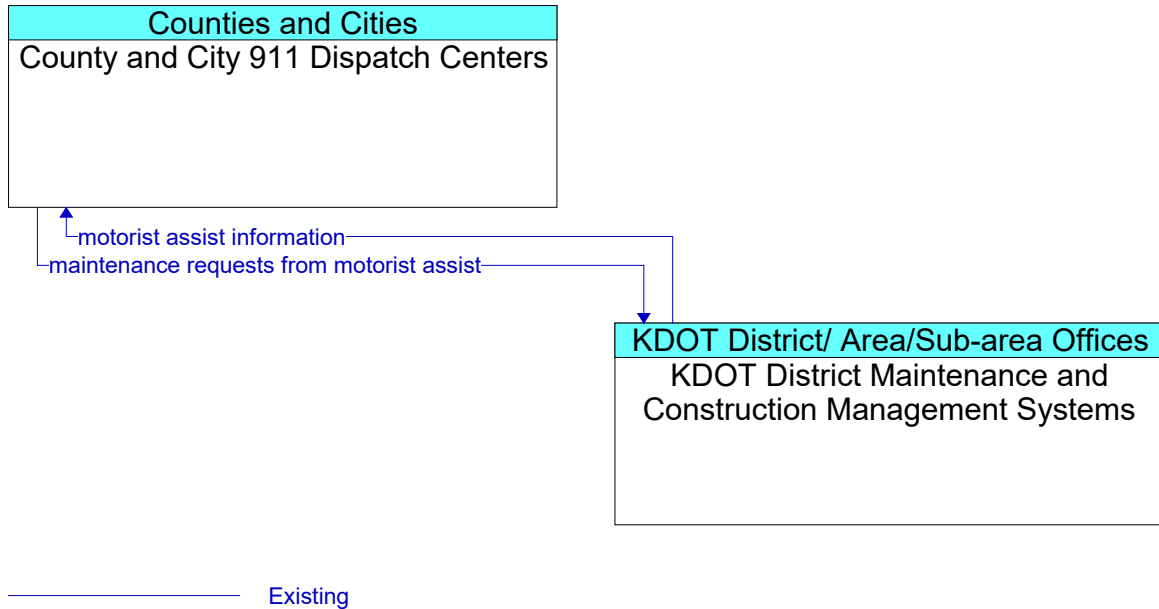
**Figure 127: County and City 911 Dispatch Centers - KCMO ATMS Interface**



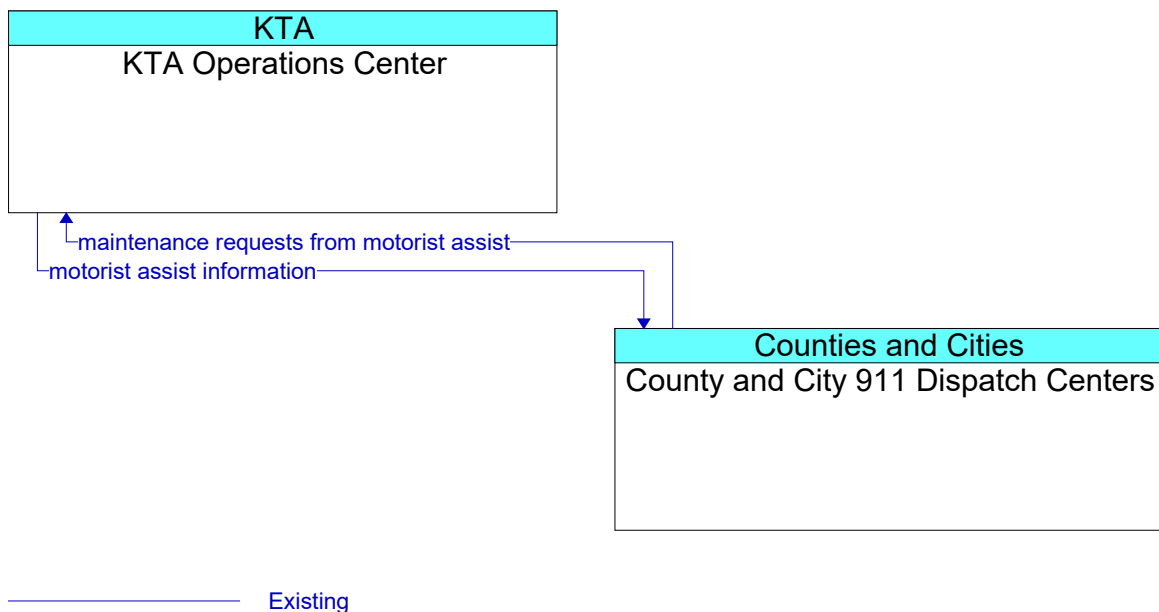
**Figure 128: County and City 911 Dispatch Centers - KCMO Maintenance and Construction Operations Center Interface**



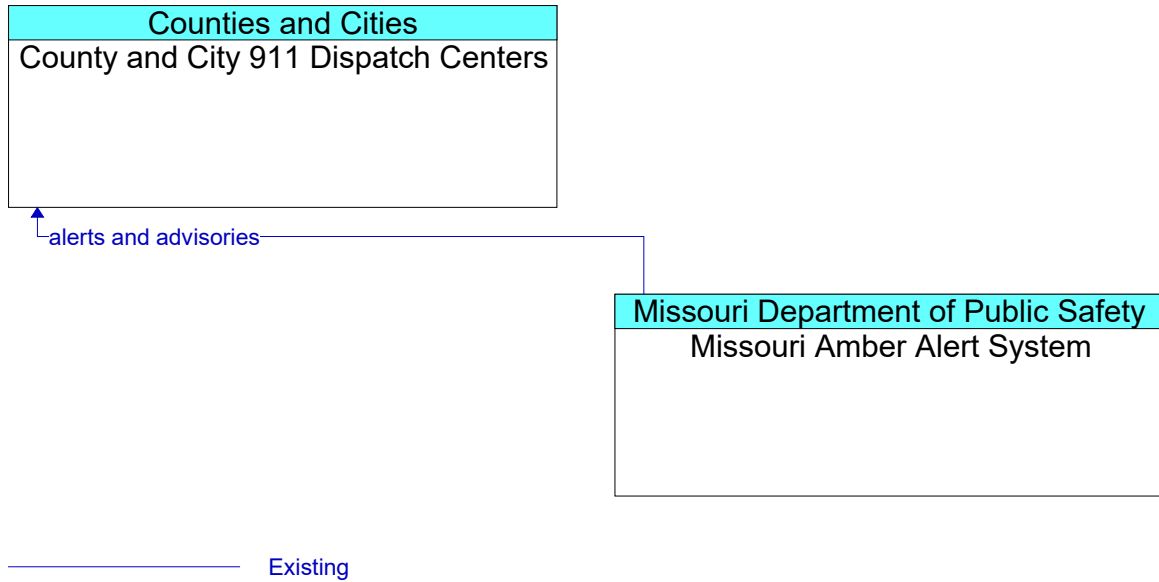
**Figure 129: County and City 911 Dispatch Centers - KDOT Construction and Maintenance Interface**



**Figure 130: County and City 911 Dispatch Centers - KDOT District Maintenance and Construction Management Systems Interface**

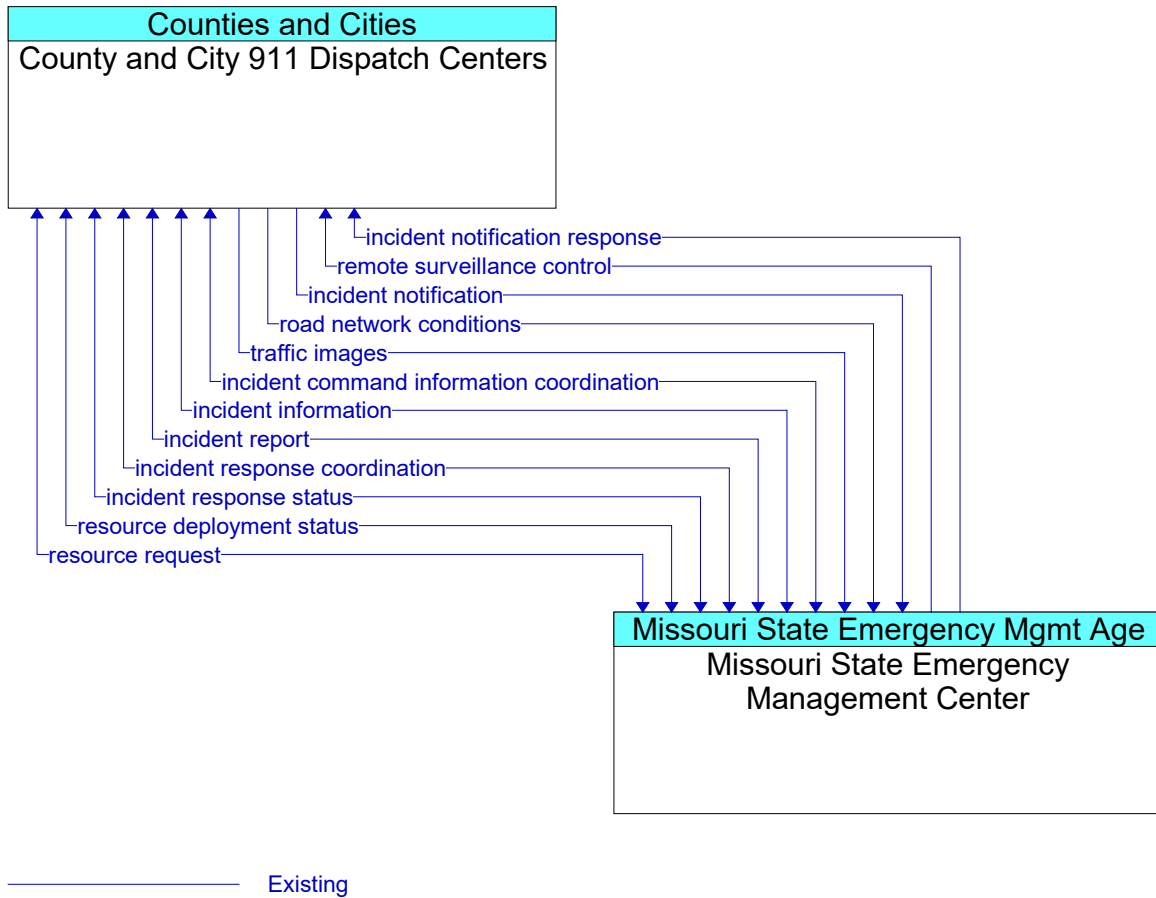


**Figure 131: County and City 911 Dispatch Centers - KTA Operations Center Interface**

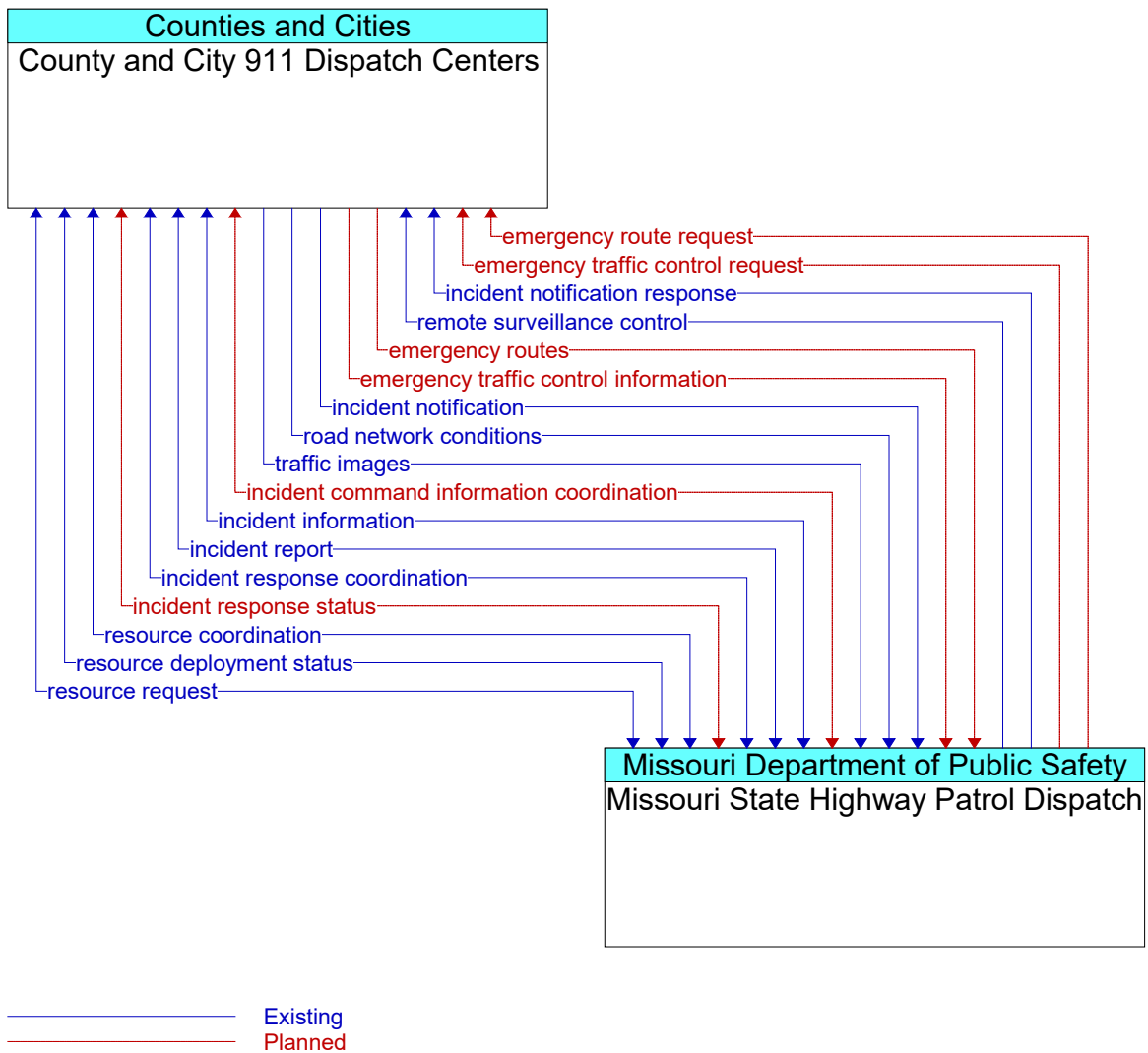


**Figure 132: County and City 911 Dispatch Centers - Missouri Amber Alert System Interface**

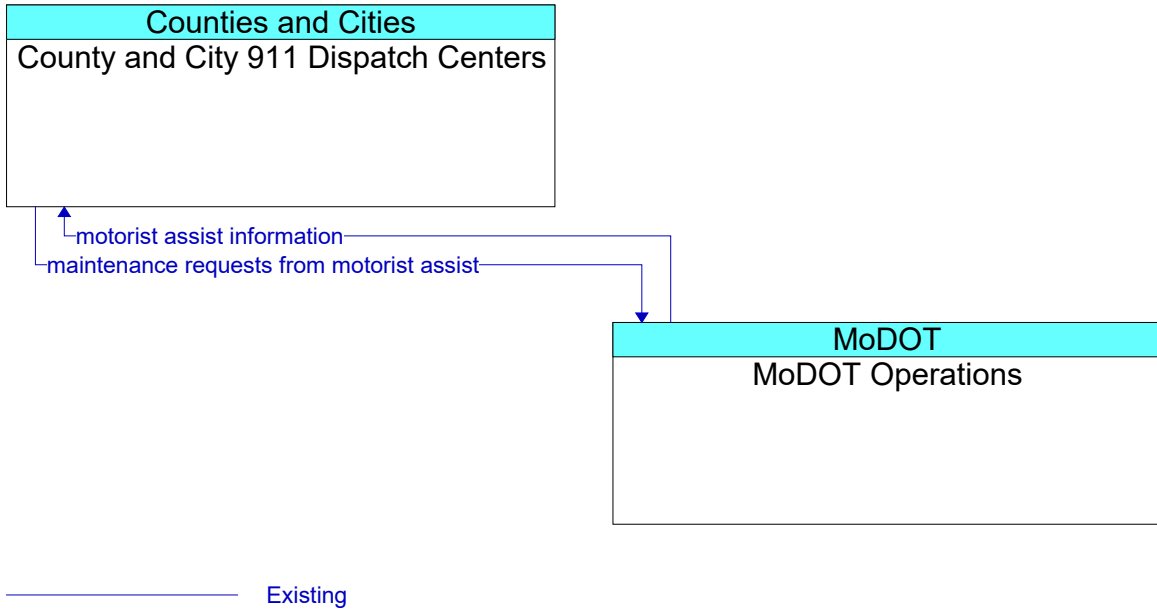




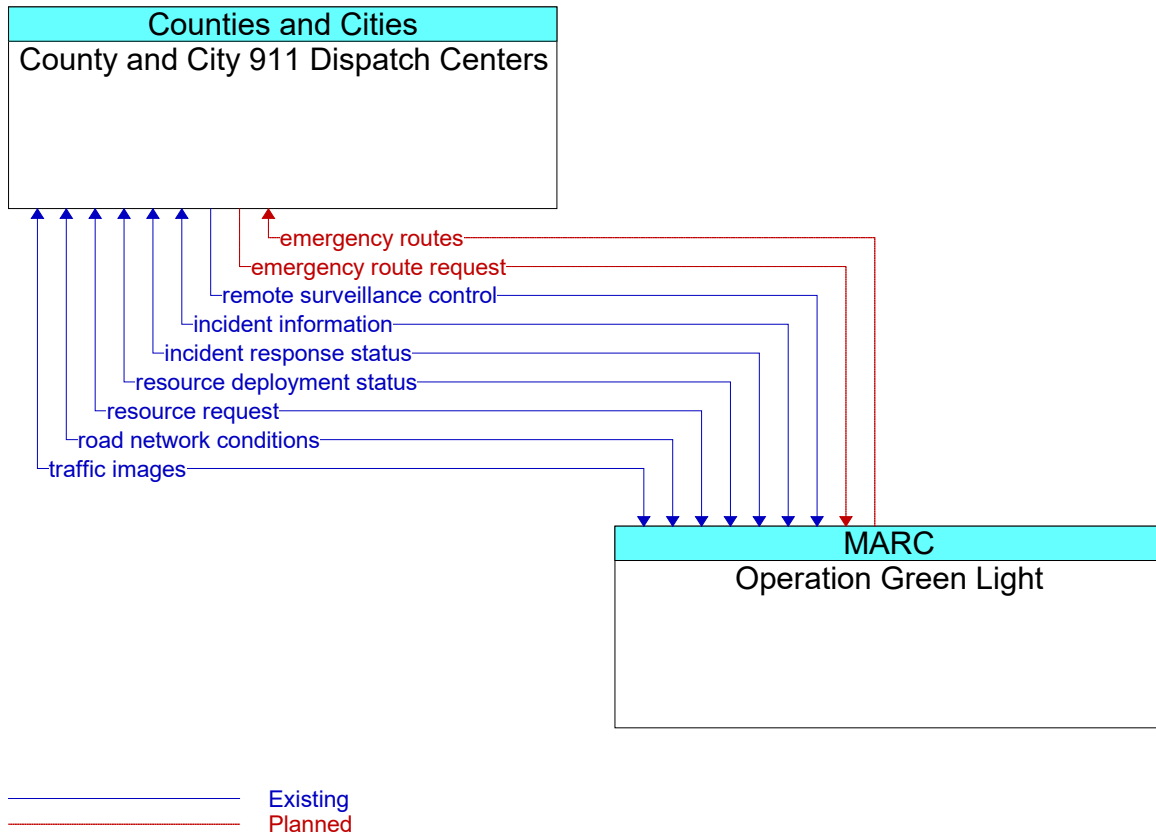
**Figure 133: County and City 911 Dispatch Centers - Missouri State Emergency Management Center Interface**



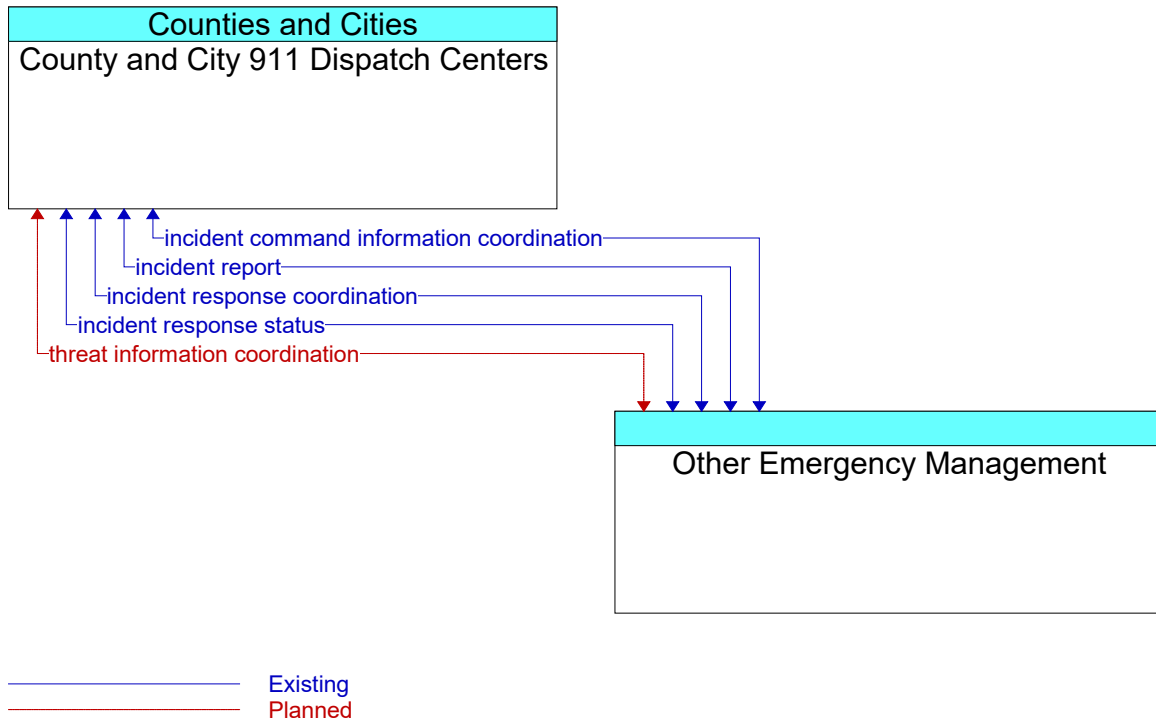
**Figure 134: County and City 911 Dispatch Centers - Missouri State Highway Patrol Dispatch Interface**



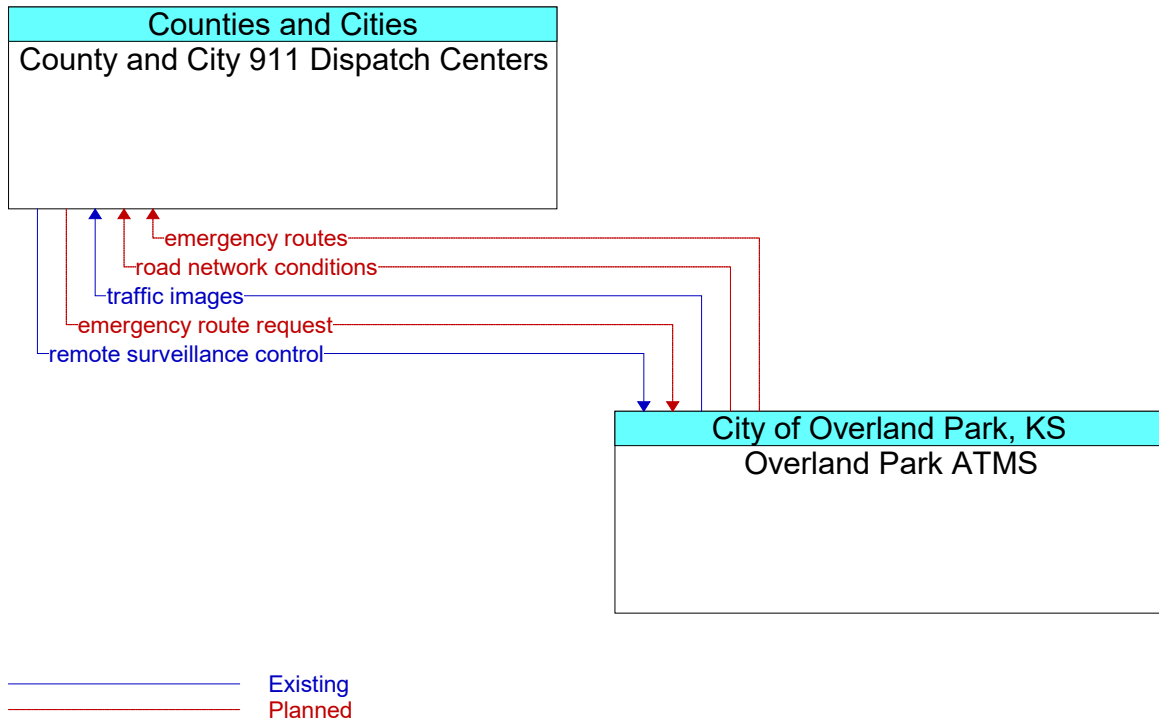
**Figure 135: County and City 911 Dispatch Centers - MoDOT Operations Interface**



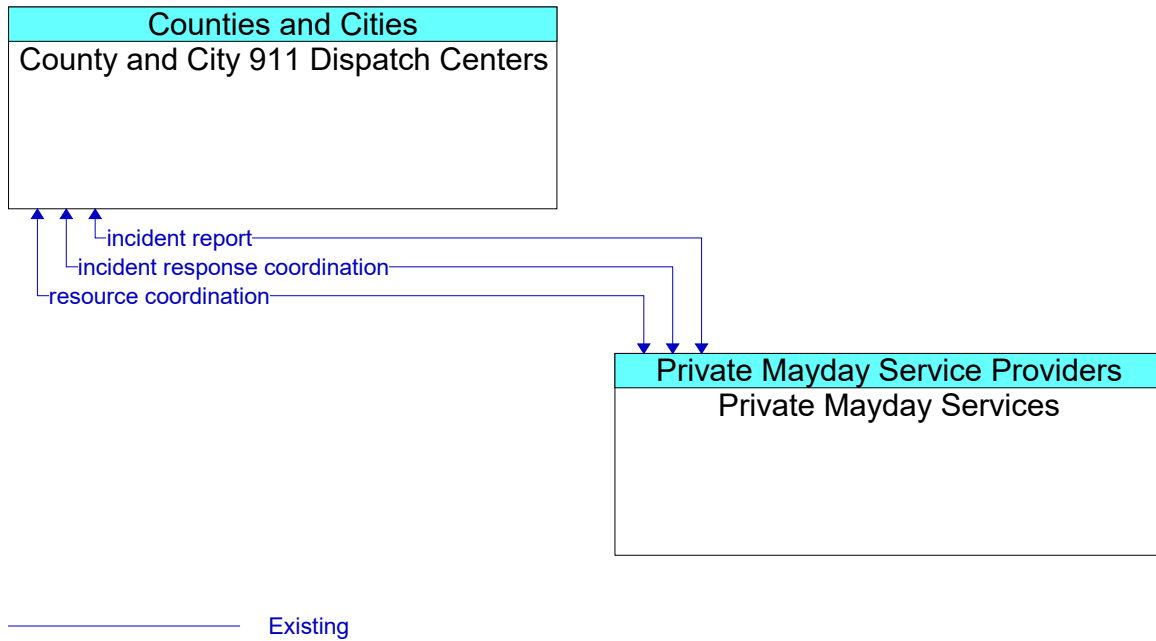
**Figure 136: County and City 911 Dispatch Centers - Operation Green Light Interface**



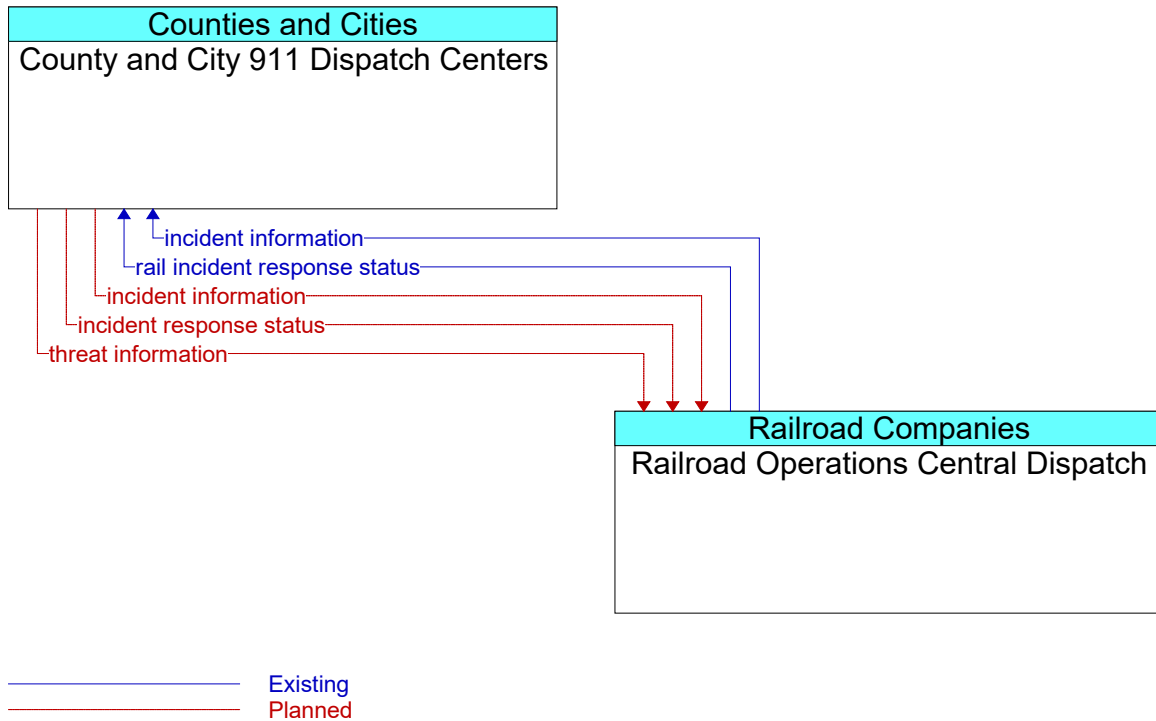
**Figure 137: County and City 911 Dispatch Centers - Other Emergency Management Interface**



**Figure 138: County and City 911 Dispatch Centers - Overland Park ATMS Interface**

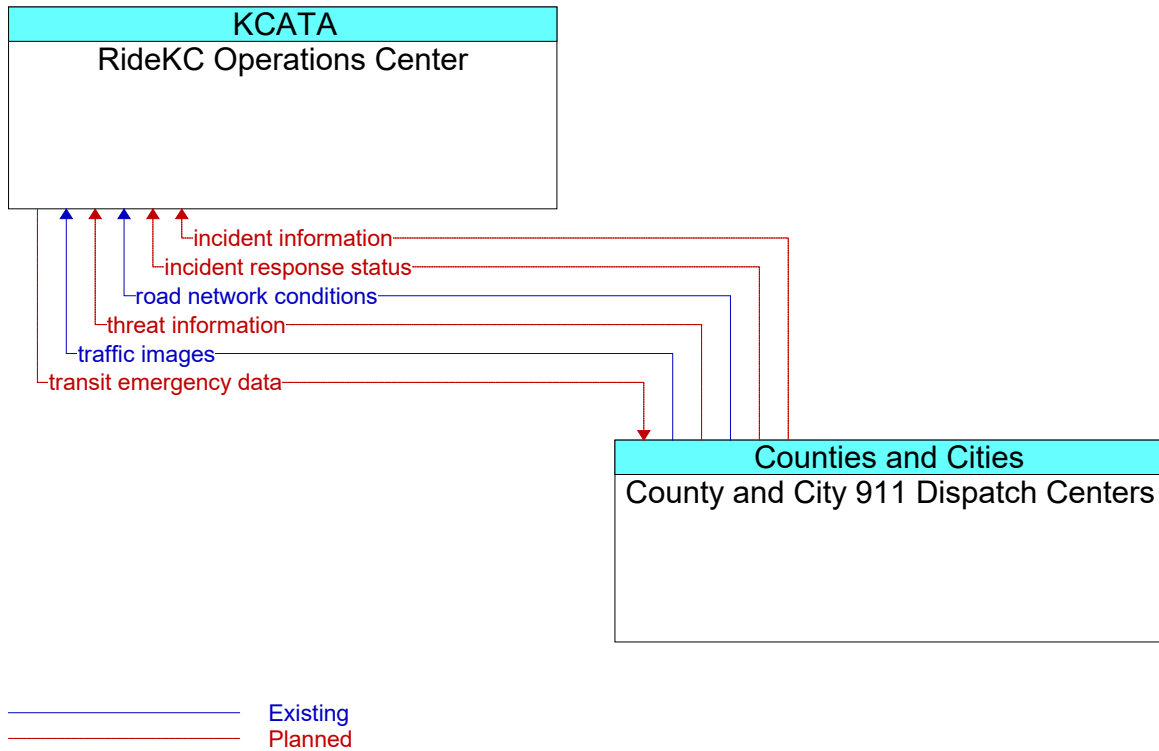


**Figure 139: County and City 911 Dispatch Centers - Private Mayday Services Interface**

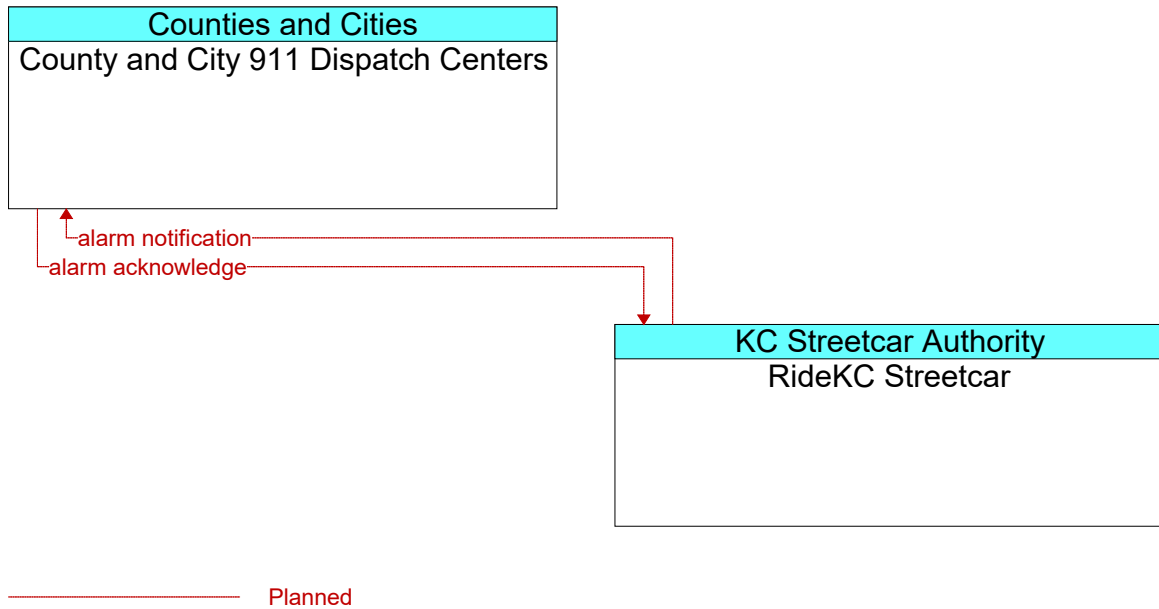


**Figure 140: County and City 911 Dispatch Centers - Railroad Operations Central Dispatch Interface**

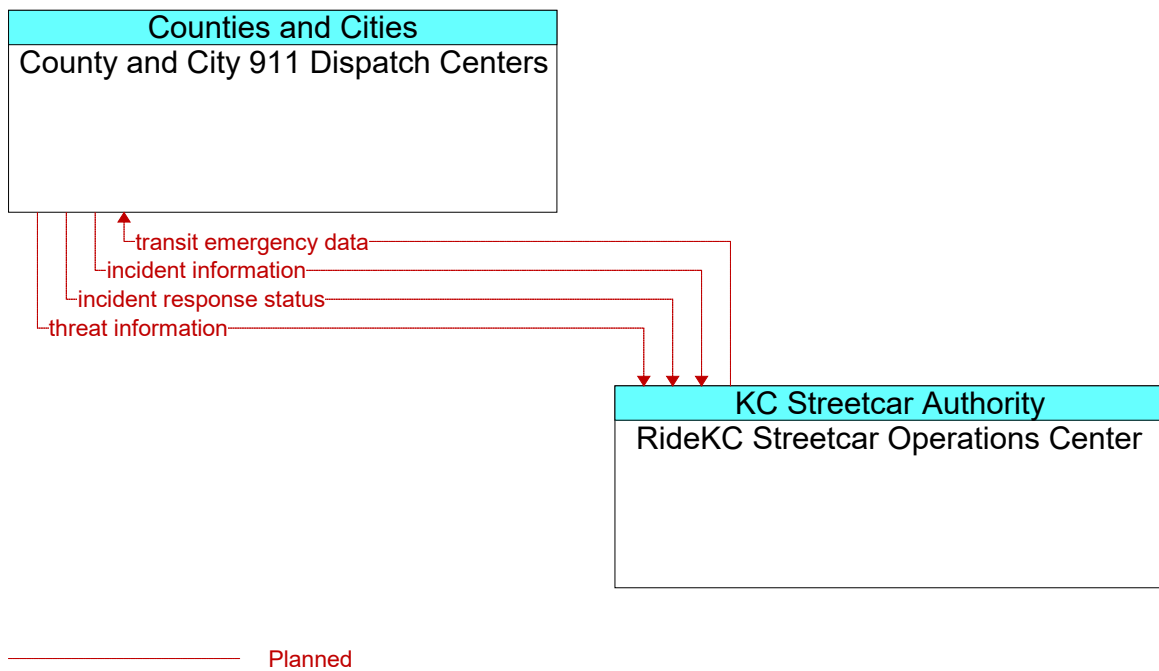




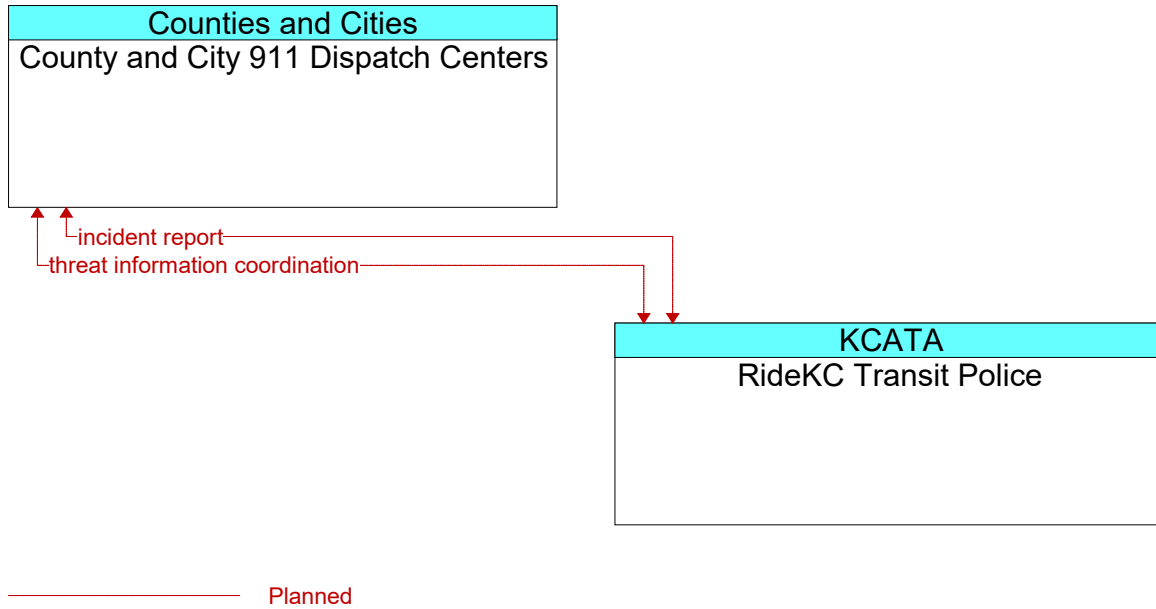
**Figure 141: County and City 911 Dispatch Centers - RideKC Operations Center Interface**



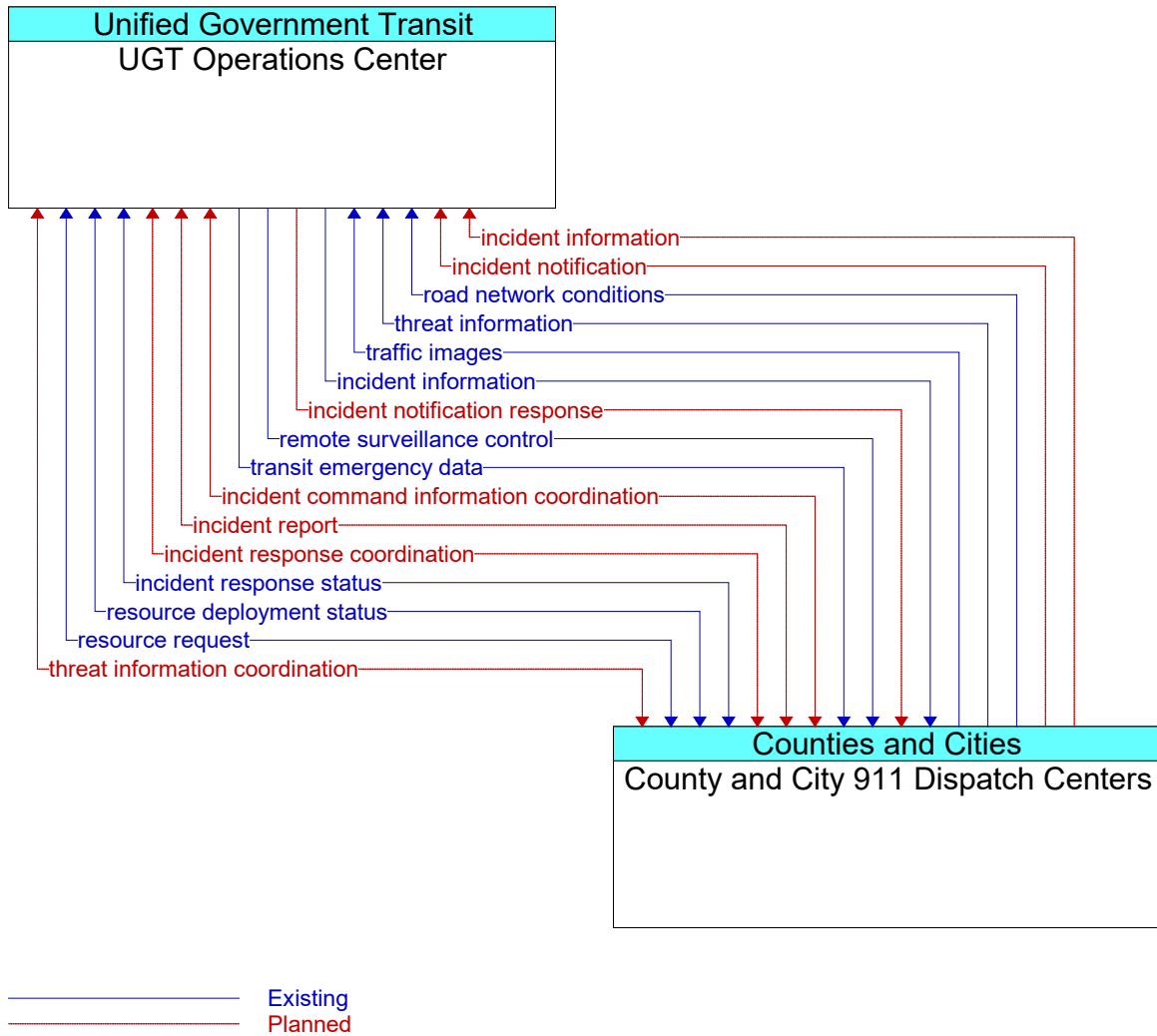
**Figure 142: County and City 911 Dispatch Centers - RideKC Streetcar Interface**



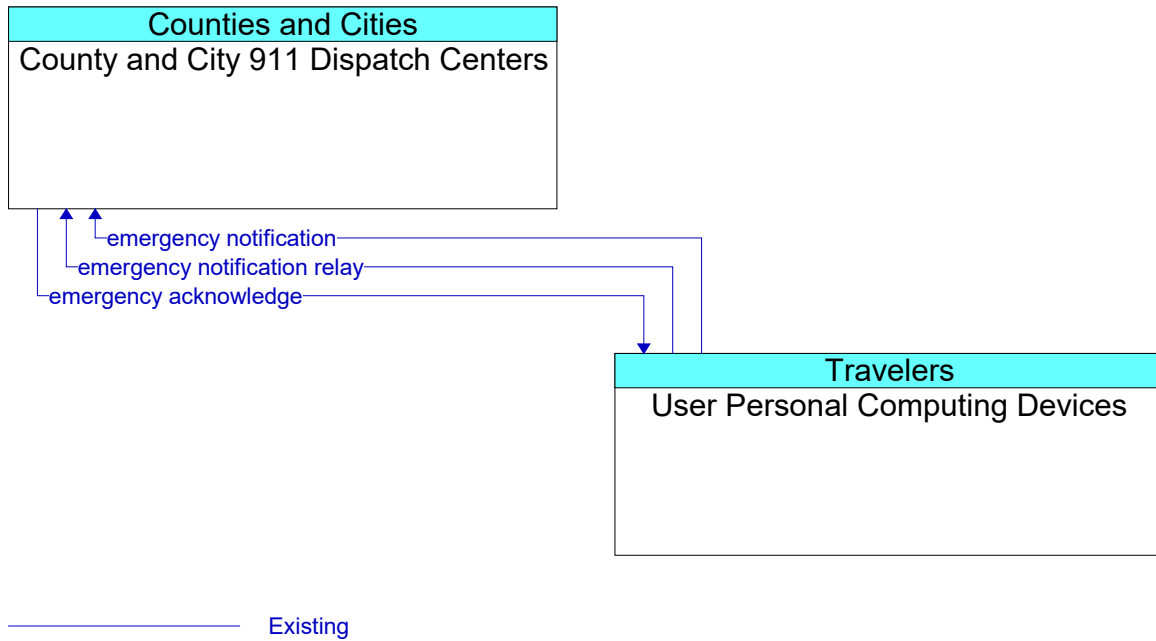
**Figure 143: County and City 911 Dispatch Centers - RideKC Streetcar Operations Center Interface**



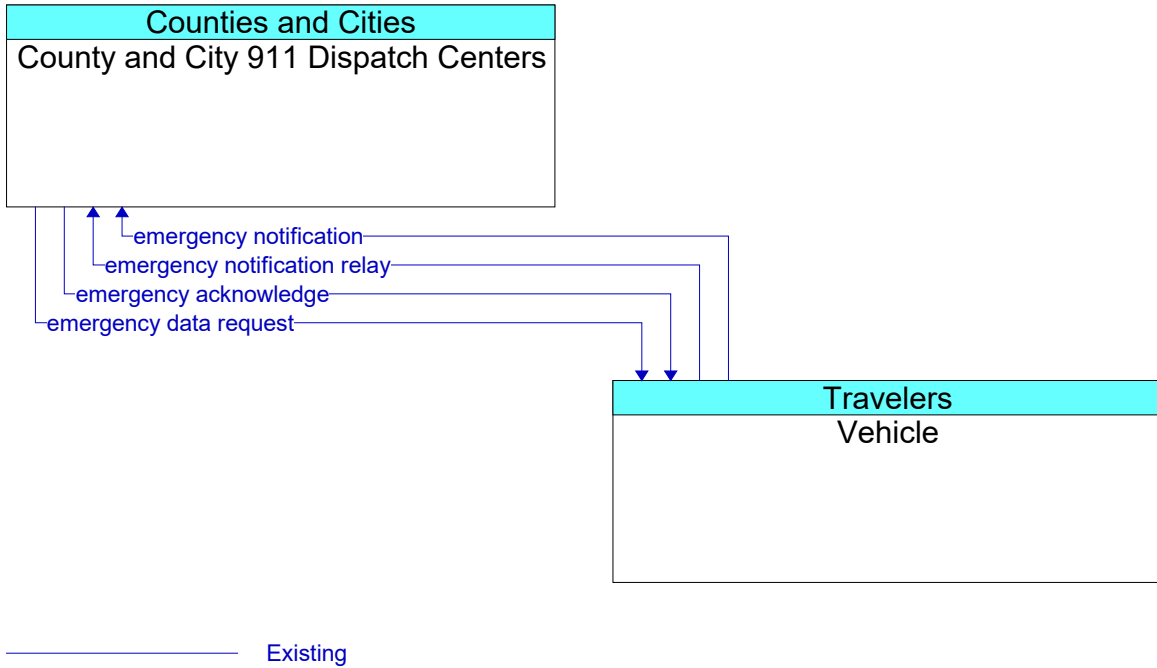
**Figure 144: County and City 911 Dispatch Centers - RideKC Transit Police Interface**



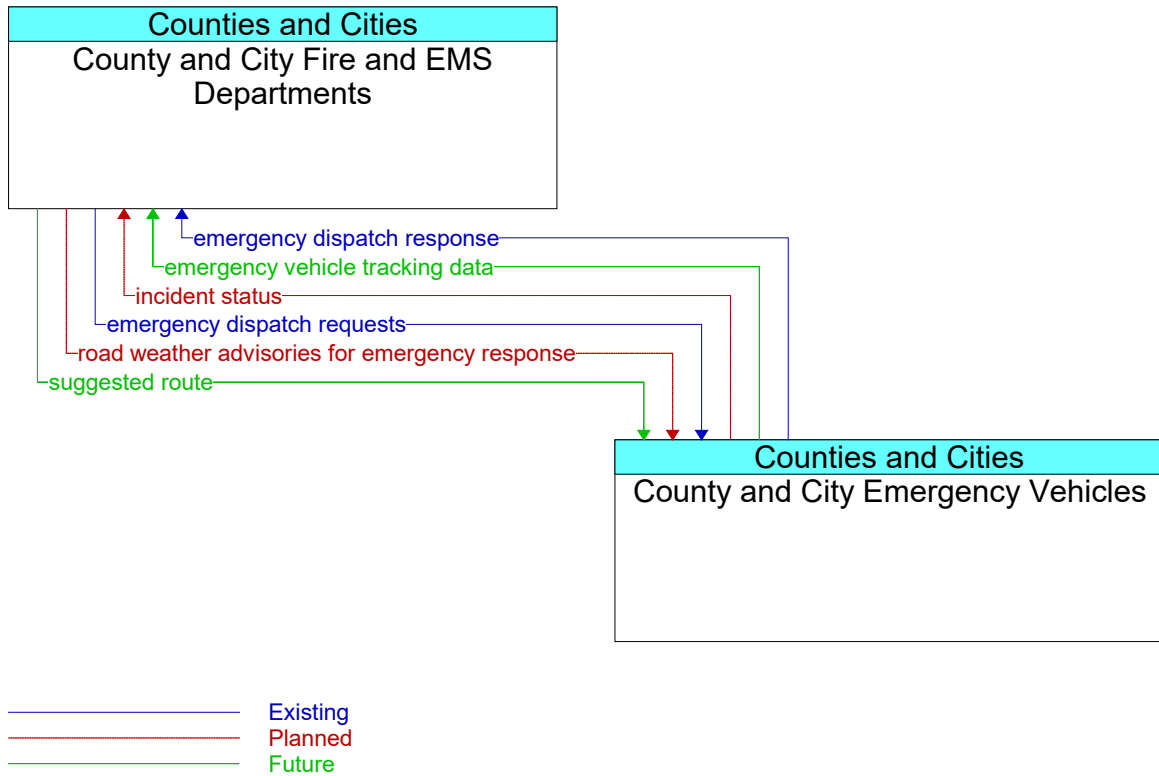
**Figure 145: County and City 911 Dispatch Centers - UGT Operations Center Interface**



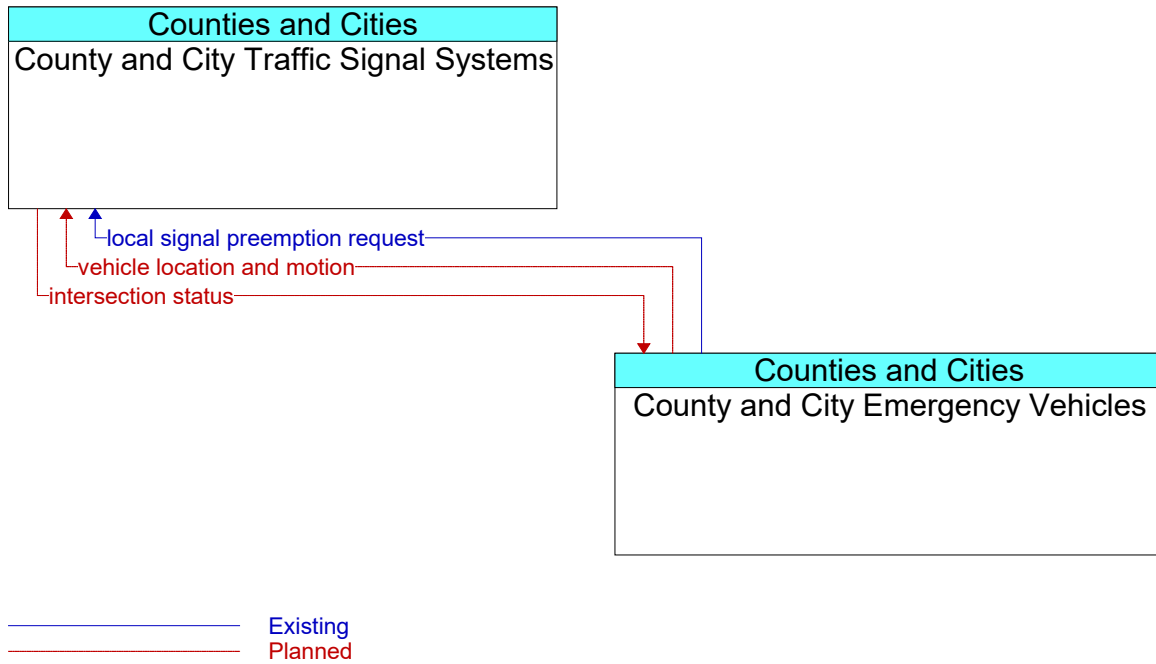
**Figure 146: County and City 911 Dispatch Centers - User Personal Computing Devices Interface**



**Figure 147: County and City 911 Dispatch Centers - Vehicle Interface**

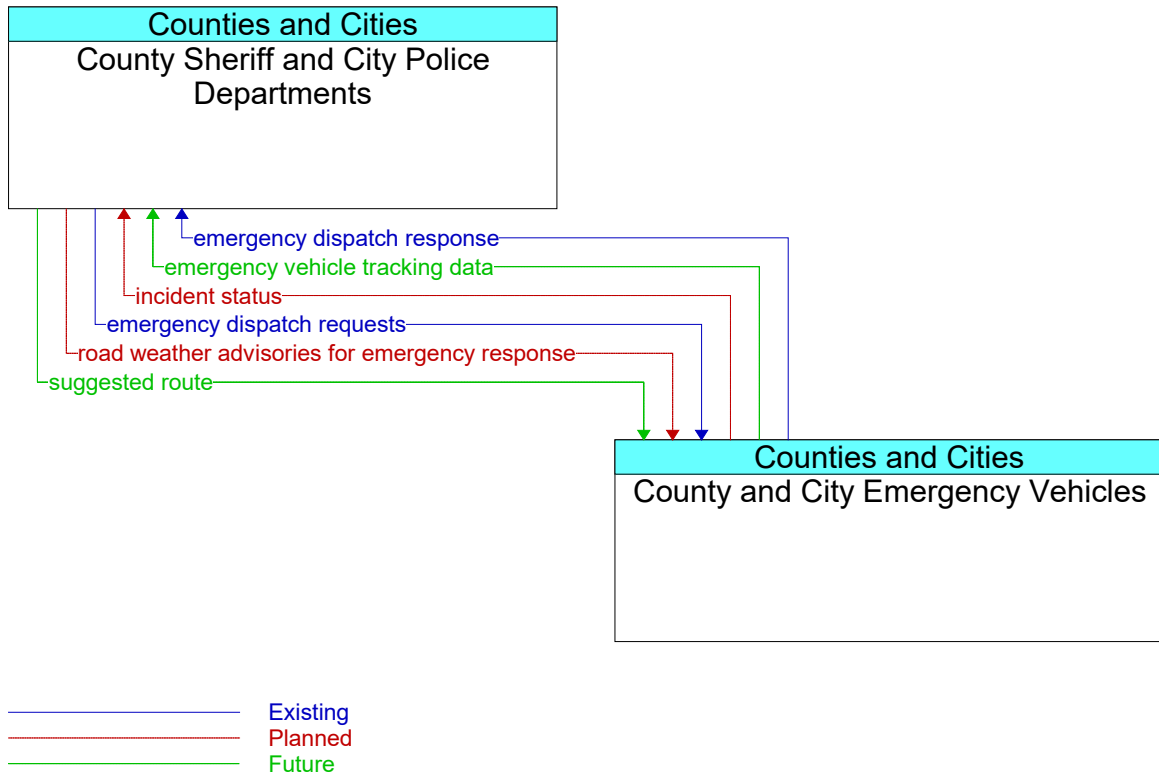


**Figure 148: County and City Emergency Vehicles - County and City Fire and EMS Departments Interface**

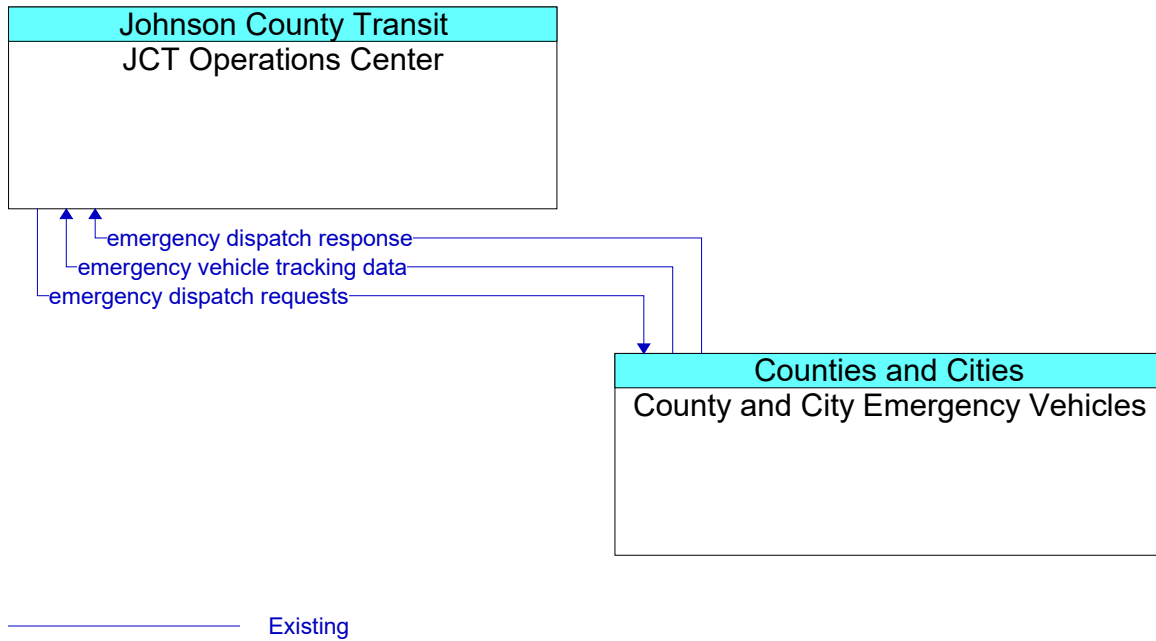


**Figure 149: County and City Emergency Vehicles - County and City Traffic Signal Systems Interface**

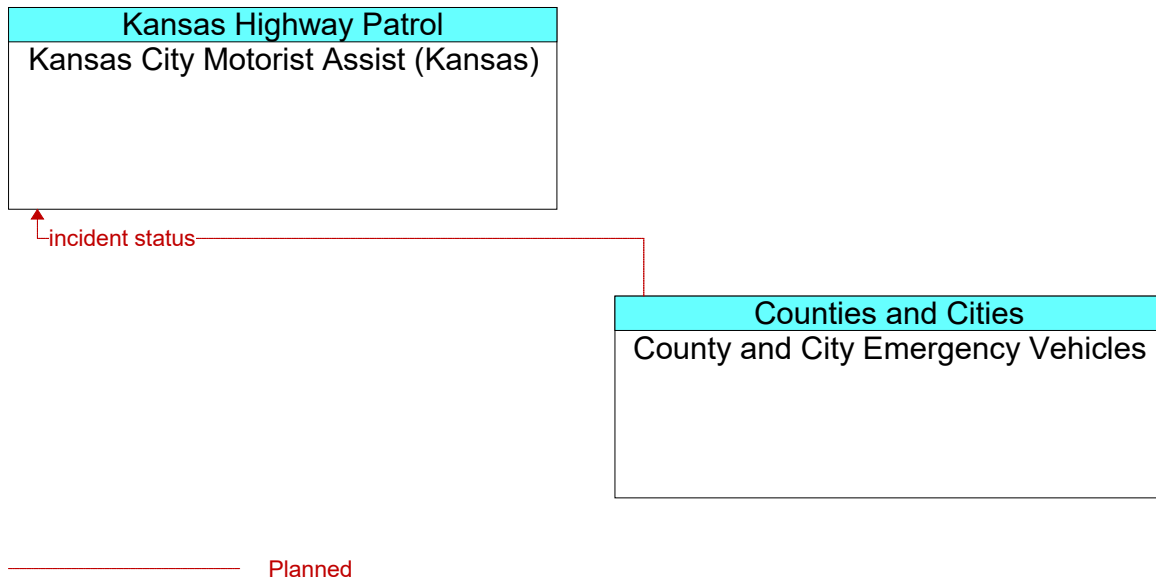




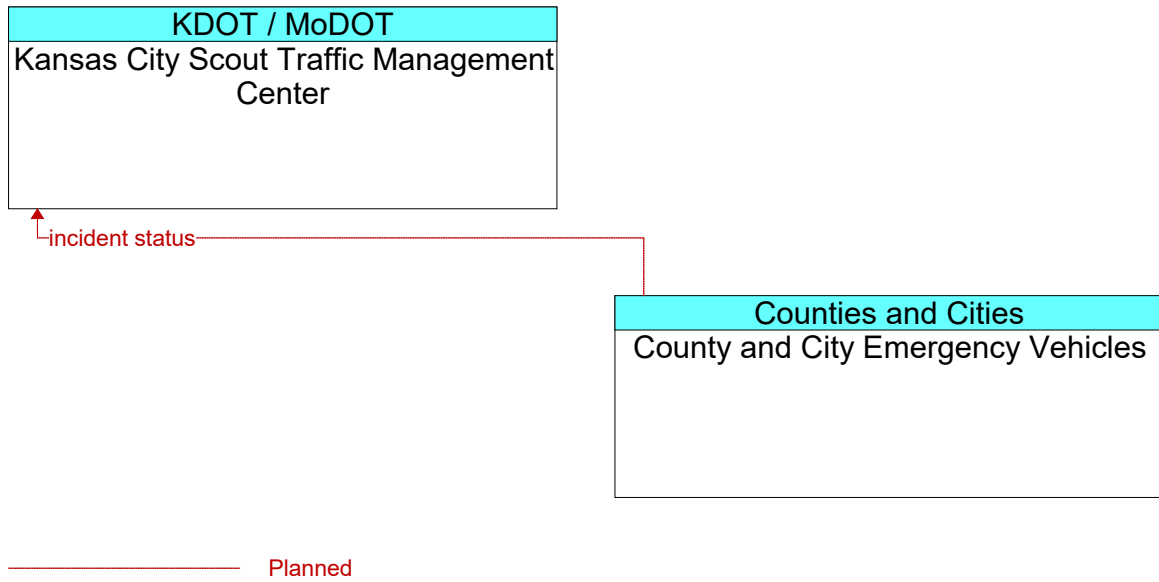
**Figure 150: County and City Emergency Vehicles - County Sheriff and City Police Departments Interface**



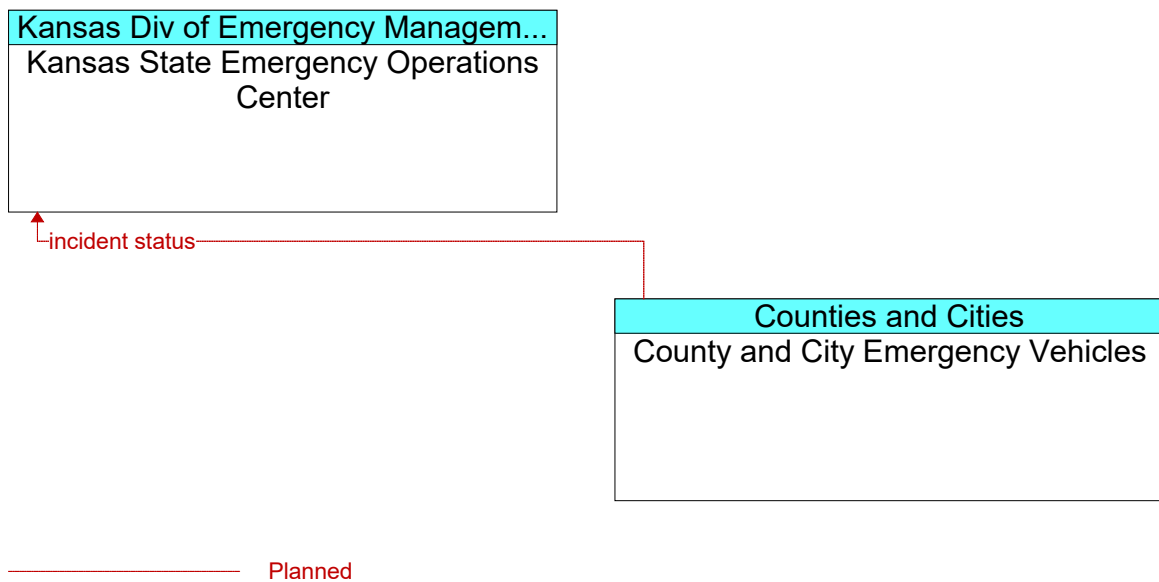
**Figure 151: County and City Emergency Vehicles - JCT Operations Center Interface**



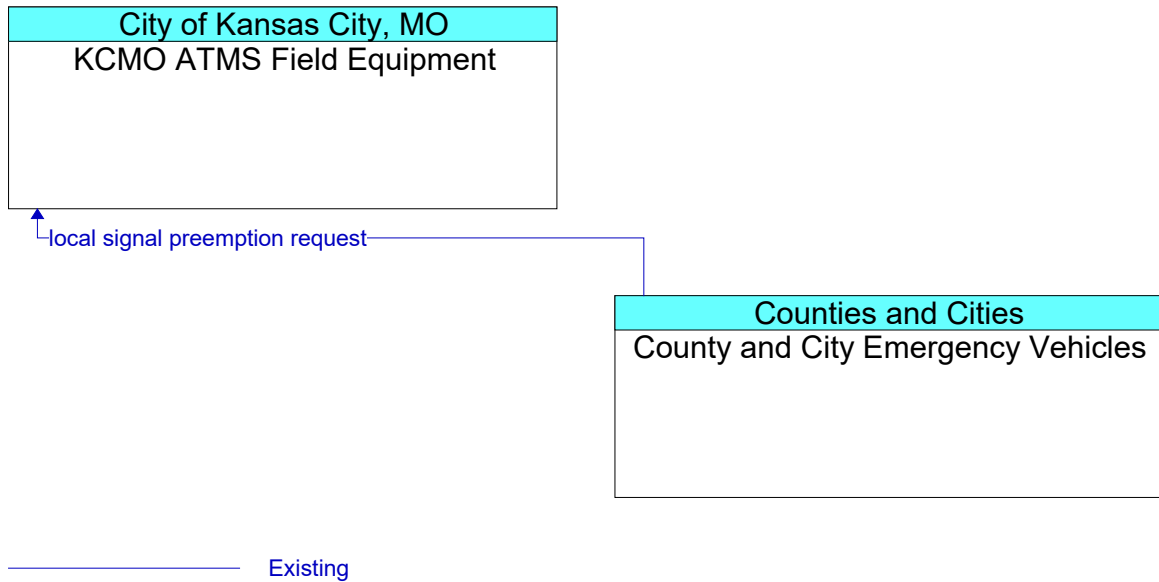
**Figure 152: County and City Emergency Vehicles - Kansas City Motorist Assist (Kansas) Interface**



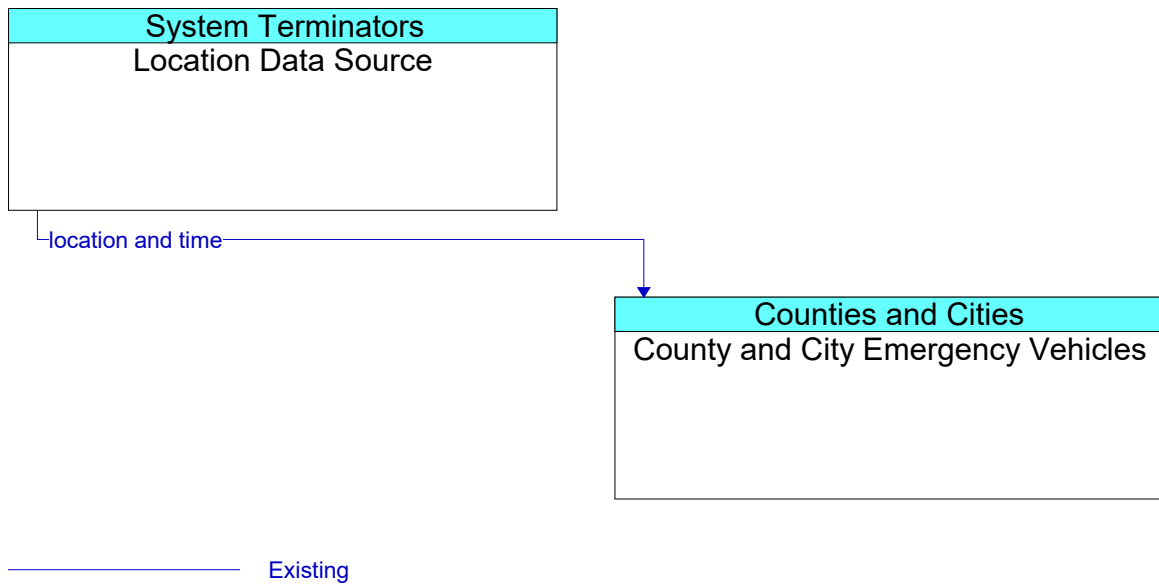
**Figure 153: County and City Emergency Vehicles - Kansas City Scout Traffic Management Center Interface**



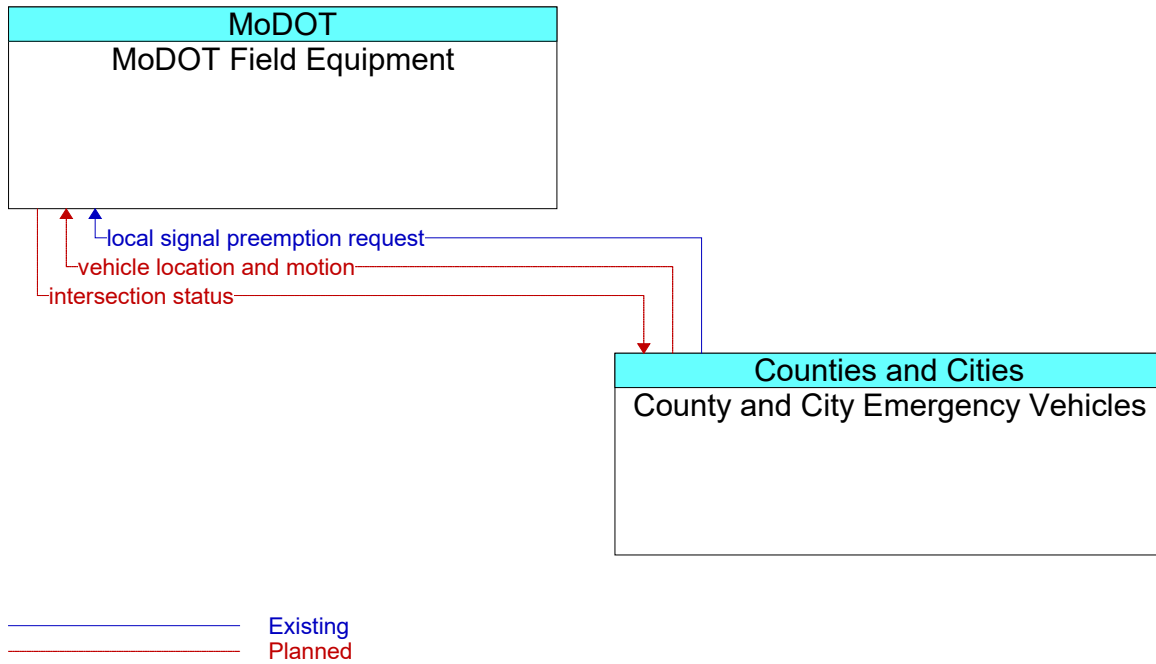
**Figure 154: County and City Emergency Vehicles - Kansas State Emergency Operations Center Interface**



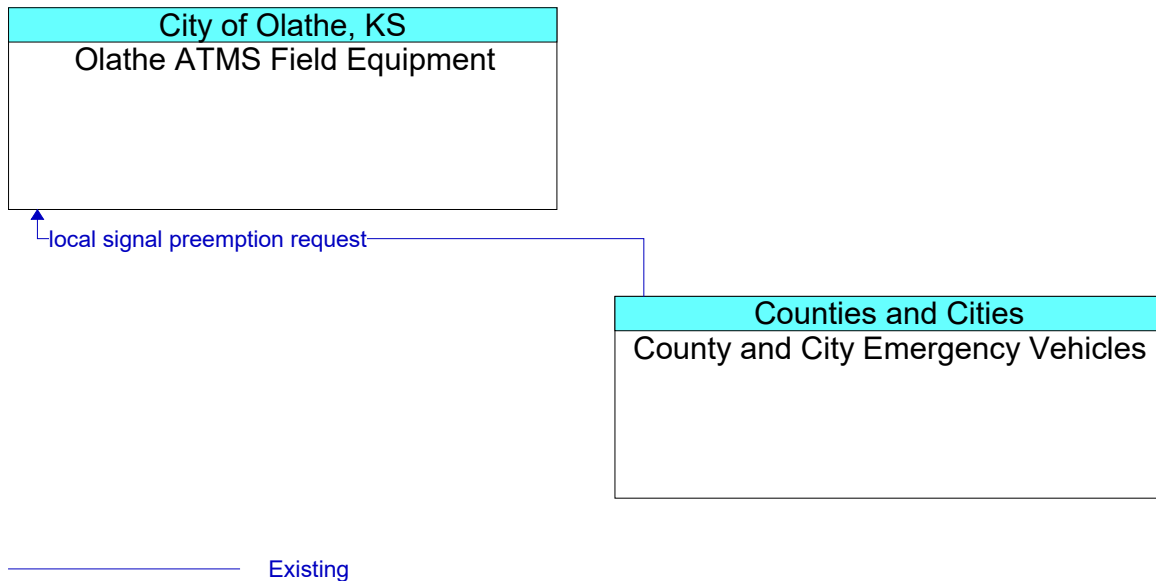
**Figure 155: County and City Emergency Vehicles - KCMO ATMS Field Equipment Interface**



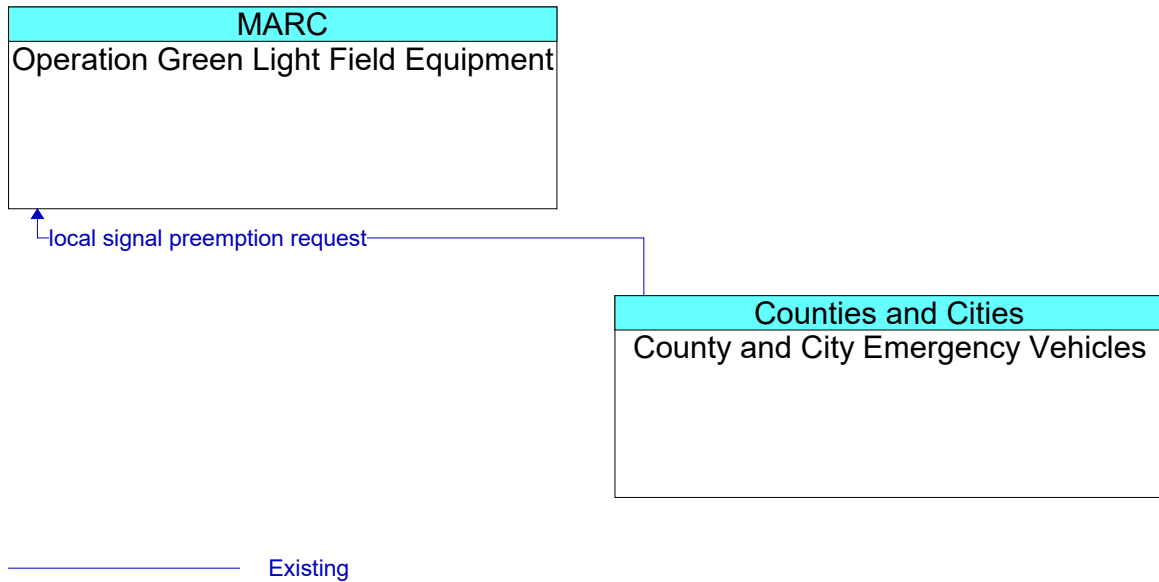
**Figure 156: County and City Emergency Vehicles - Location Data Source Interface**



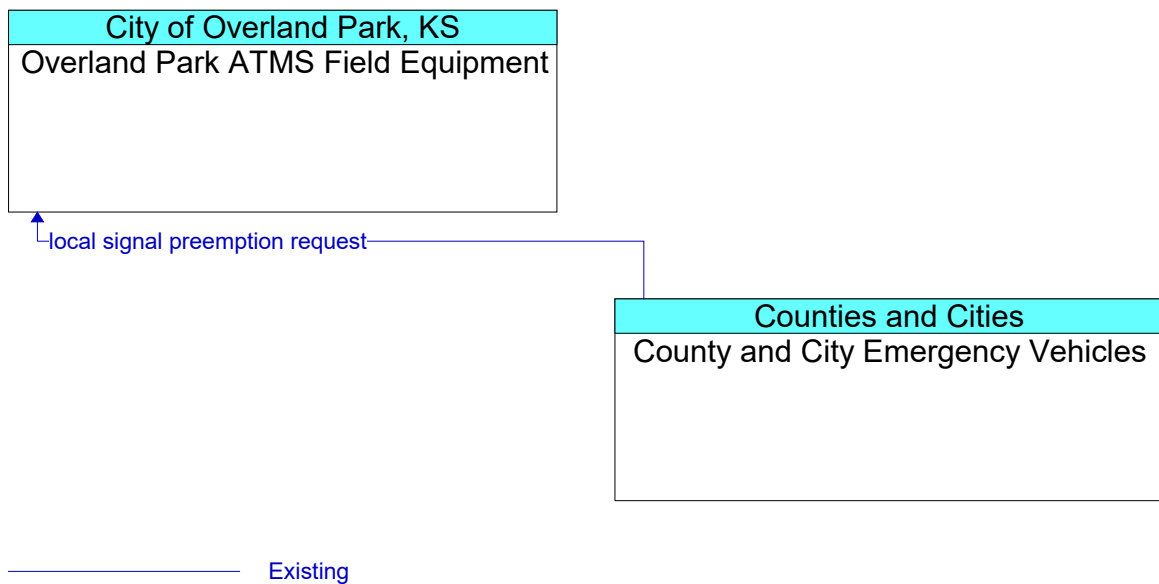
**Figure 157: County and City Emergency Vehicles - MoDOT Field Equipment Interface**



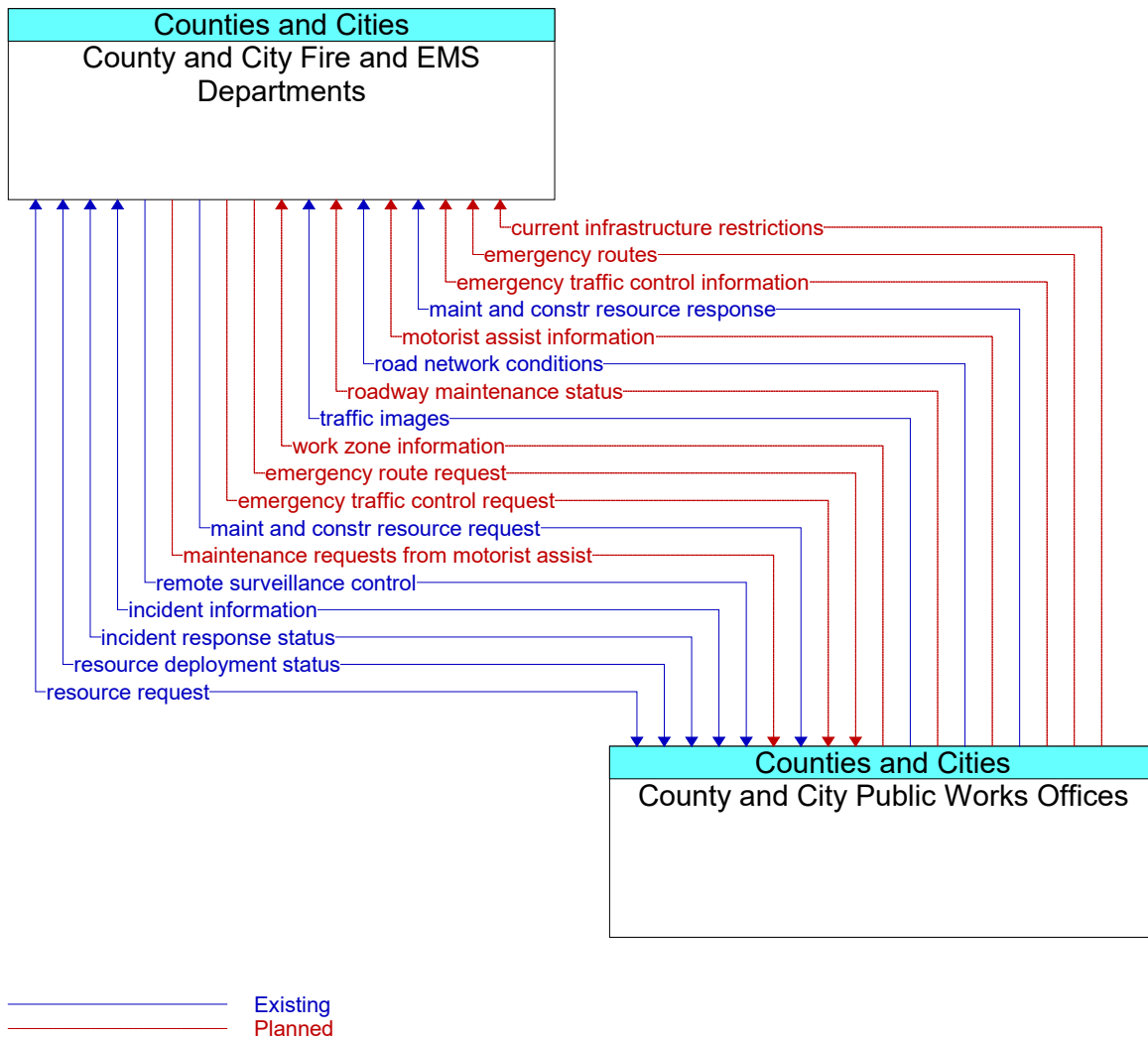
**Figure 158: County and City Emergency Vehicles - Olathe ATMS Field Equipment Interface**



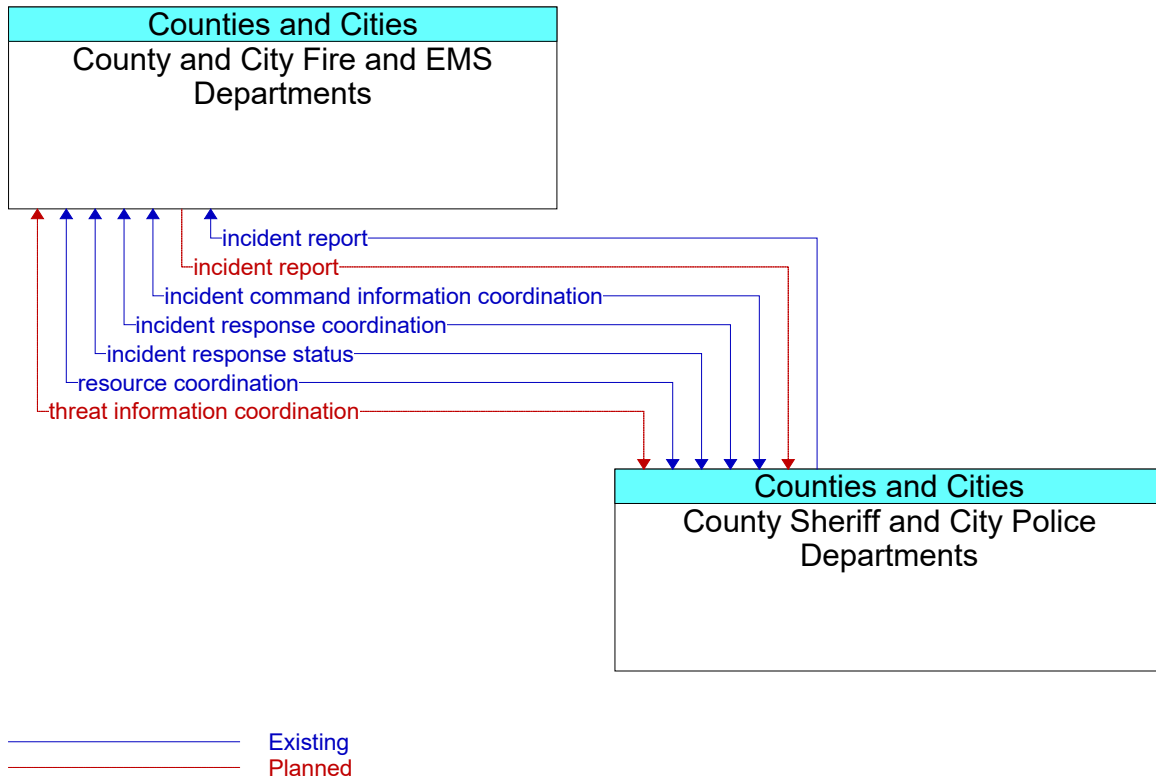
**Figure 159: County and City Emergency Vehicles - Operation Green Light Field Equipment Interface**



**Figure 160: County and City Emergency Vehicles - Overland Park ATMS Field Equipment Interface**

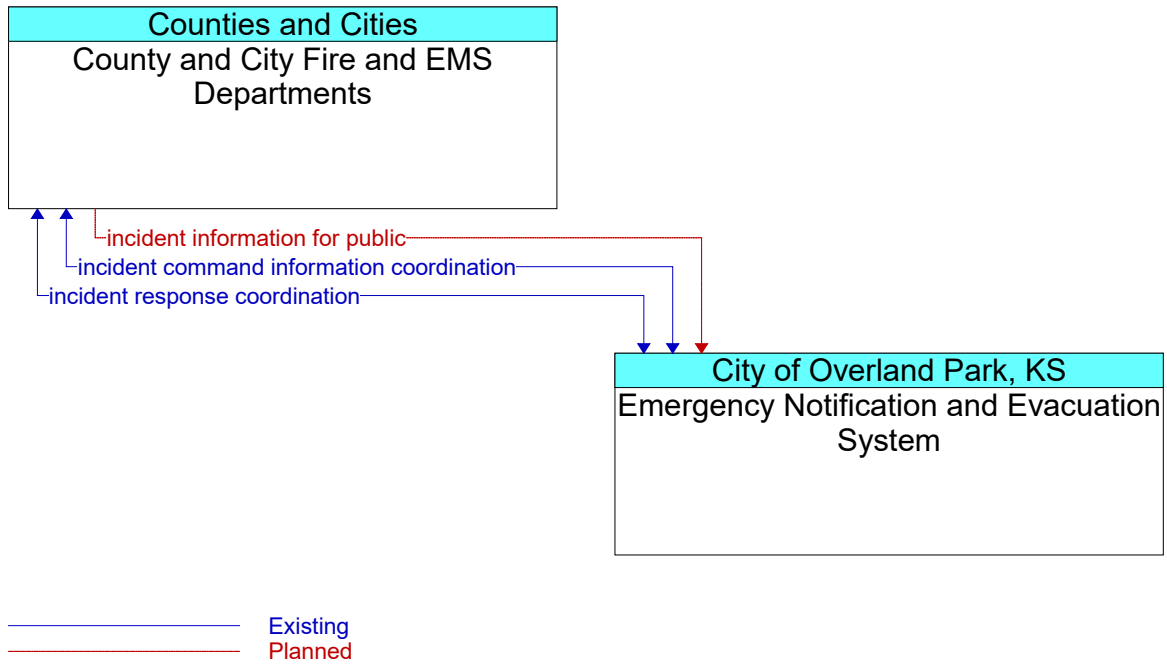


**Figure 161: County and City Fire and EMS Departments - County and City Public Works Offices Interface**

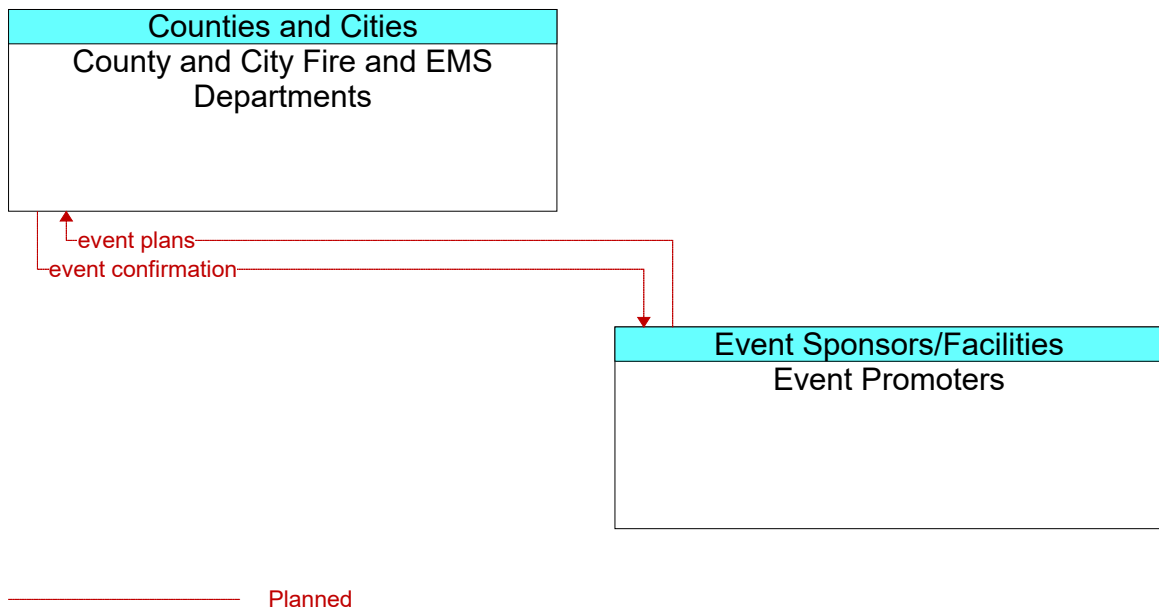


**Figure 162: County and City Fire and EMS Departments - County Sheriff and City Police Departments Interface**

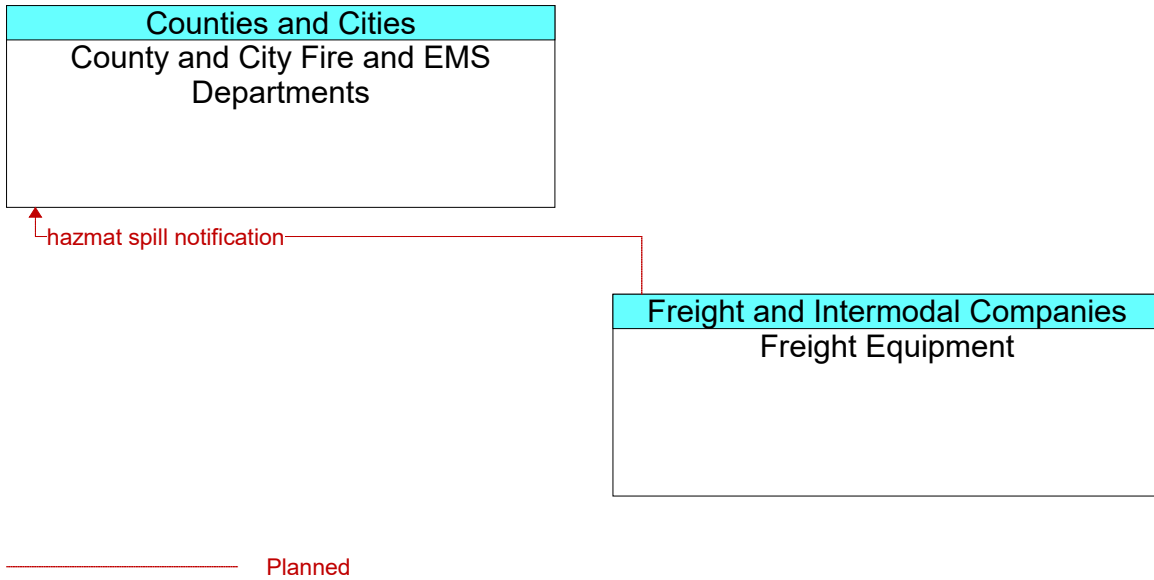




**Figure 163: County and City Fire and EMS Departments - Emergency Notification and Evacuation System Interface**



**Figure 164: County and City Fire and EMS Departments - Event Promoters Interface**



**Figure 165: County and City Fire and EMS Departments - Freight Equipment Interface**

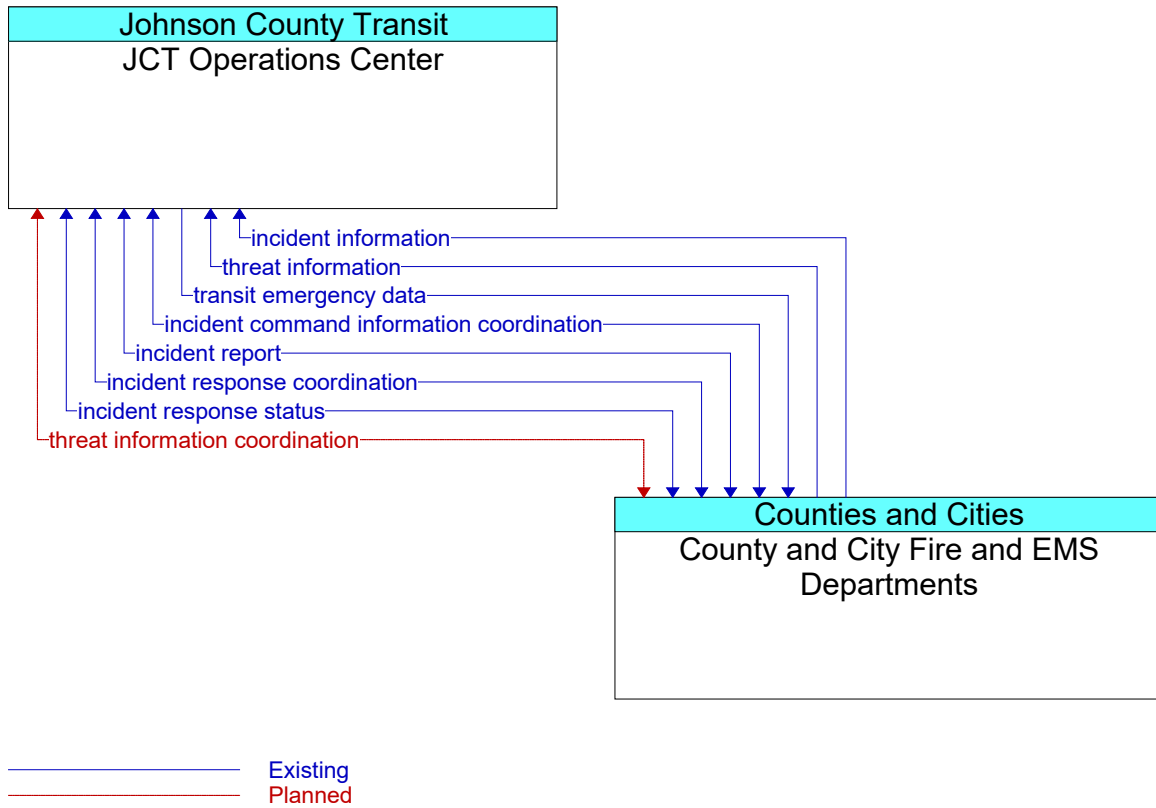
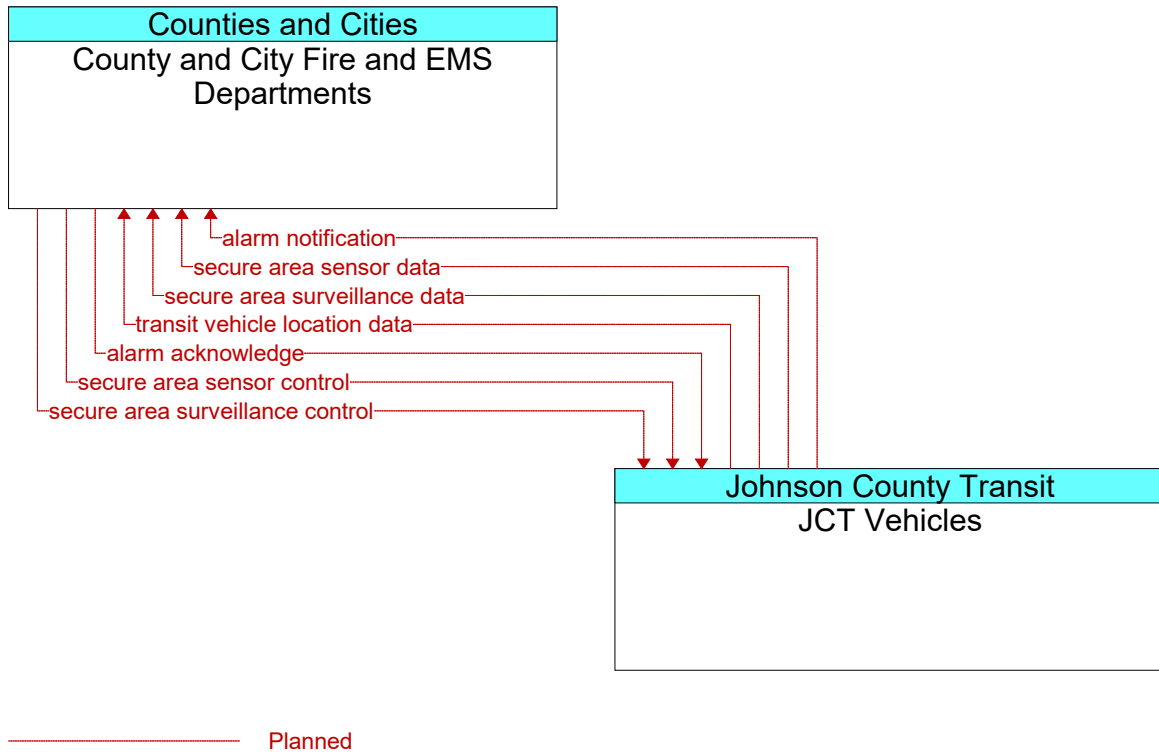
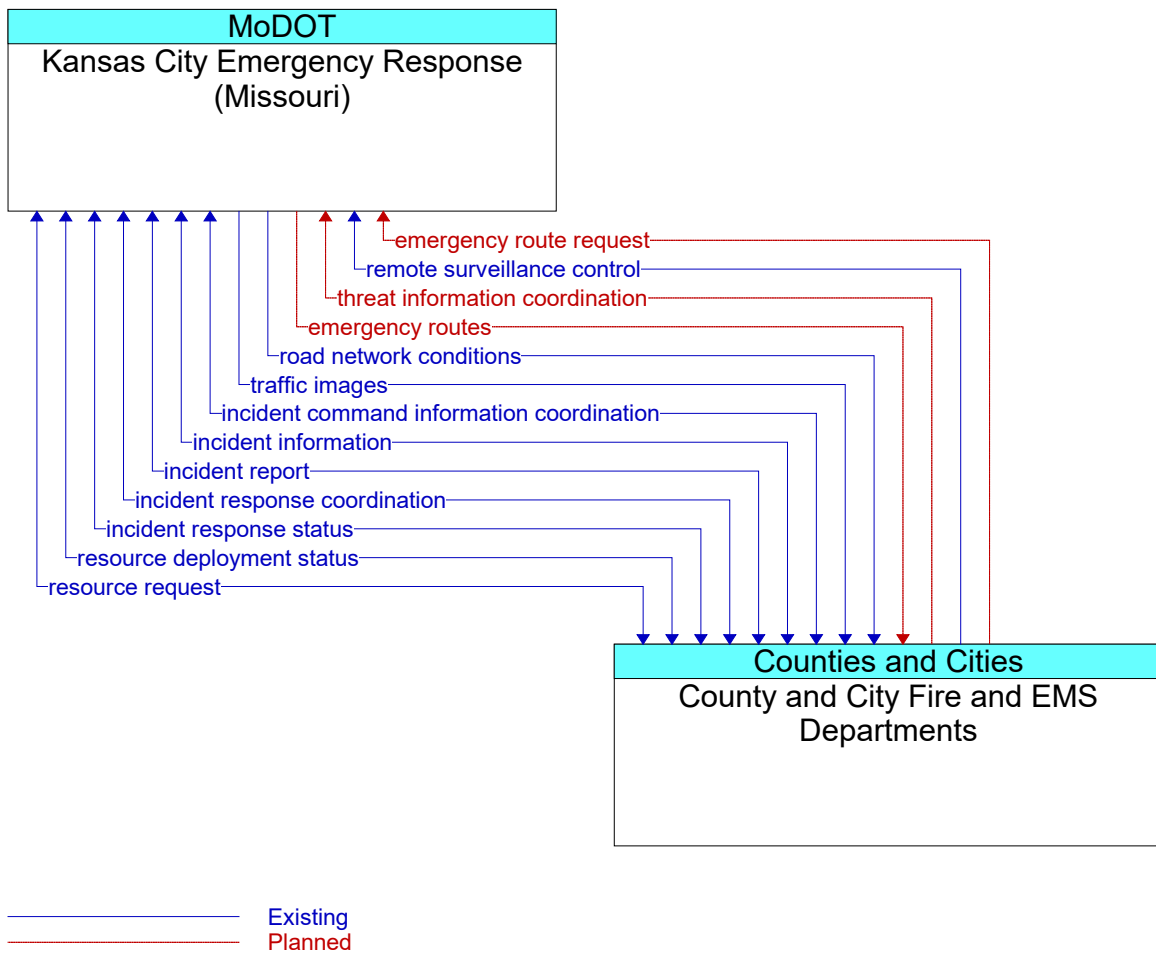


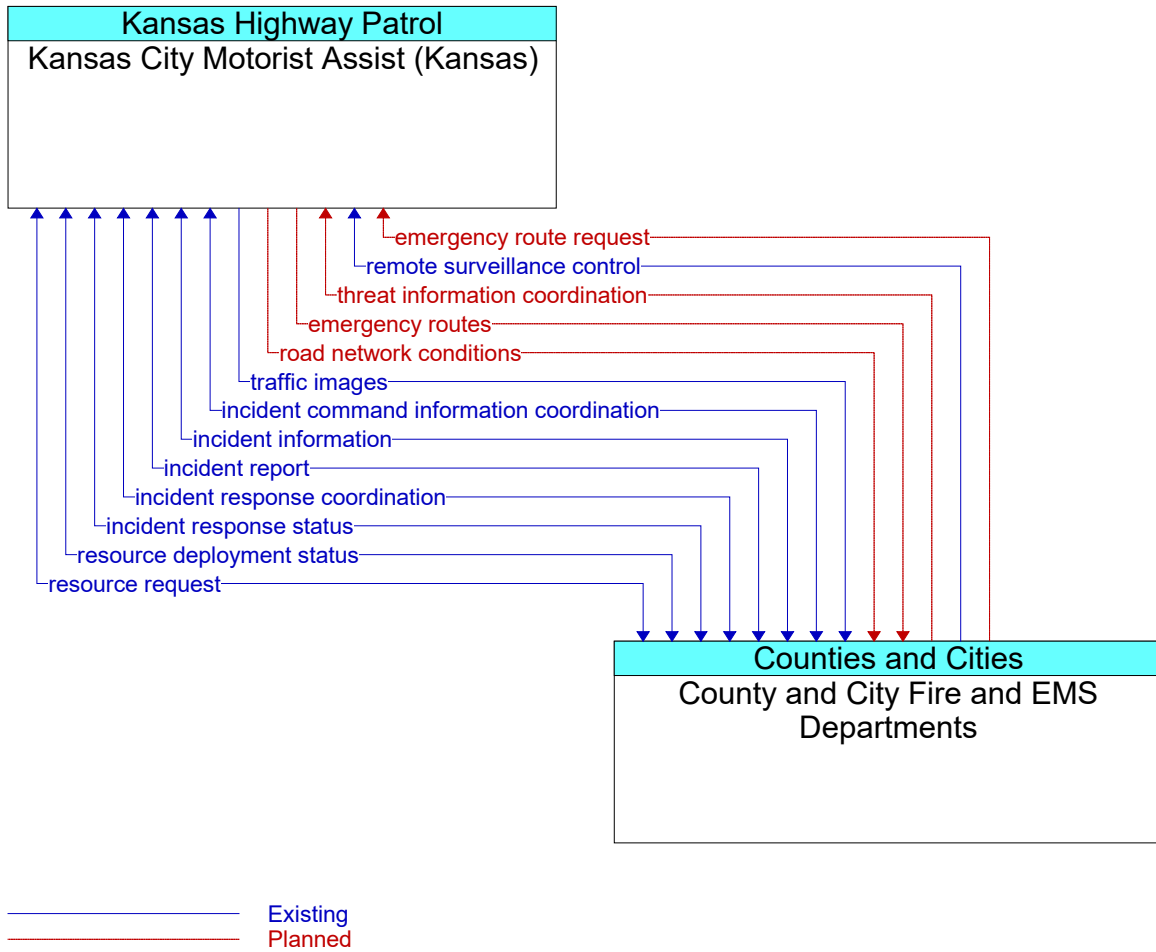
Figure 166: County and City Fire and EMS Departments - JCT Operations Center Interface



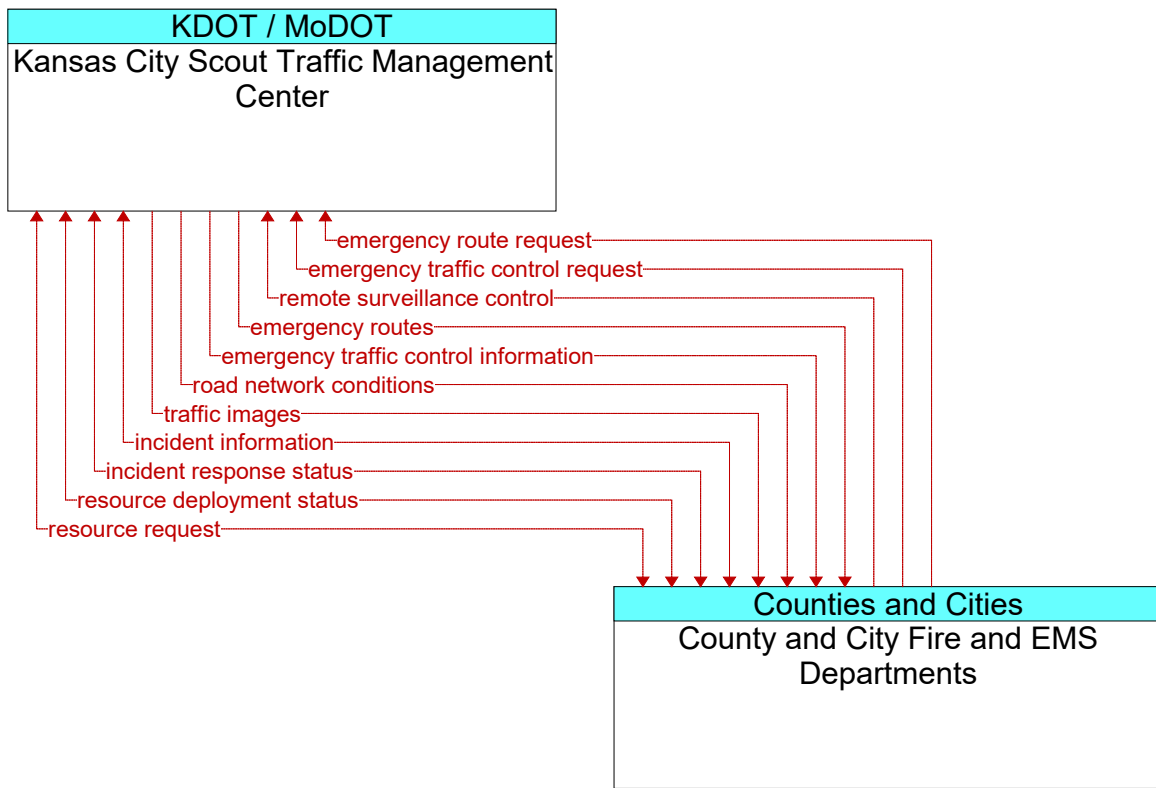
**Figure 167: County and City Fire and EMS Departments - JCT Vehicles Interface**



**Figure 168: County and City Fire and EMS Departments - Kansas City Emergency Response (Missouri) Interface**

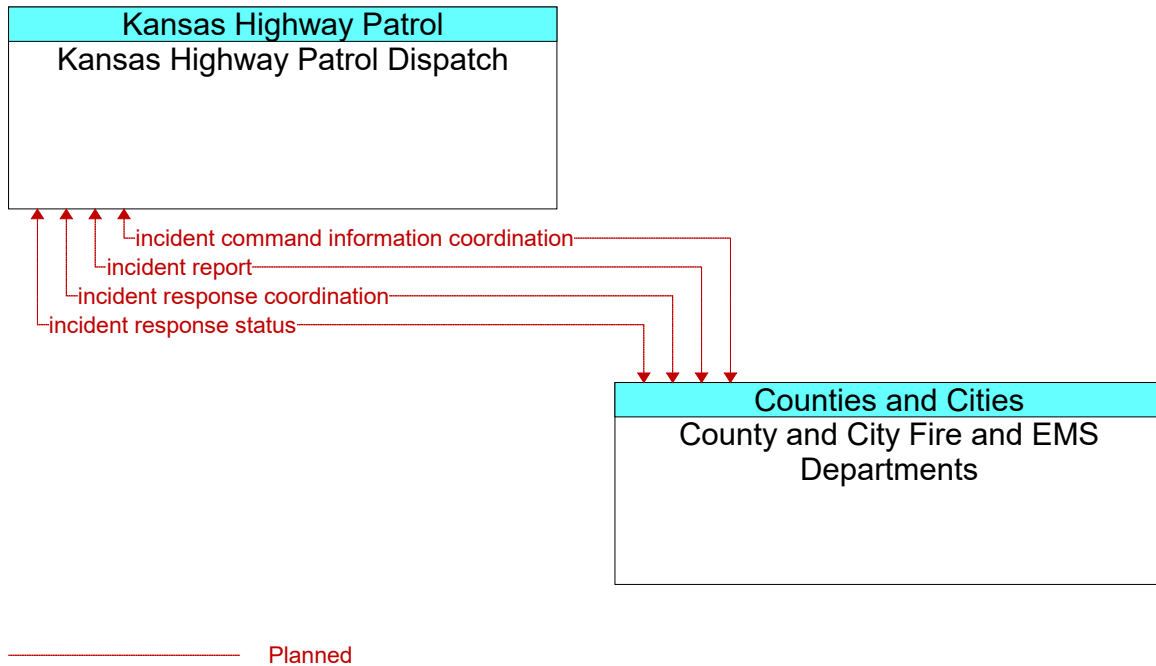


**Figure 169: County and City Fire and EMS Departments - Kansas City Motorist Assist (Kansas) Interface**



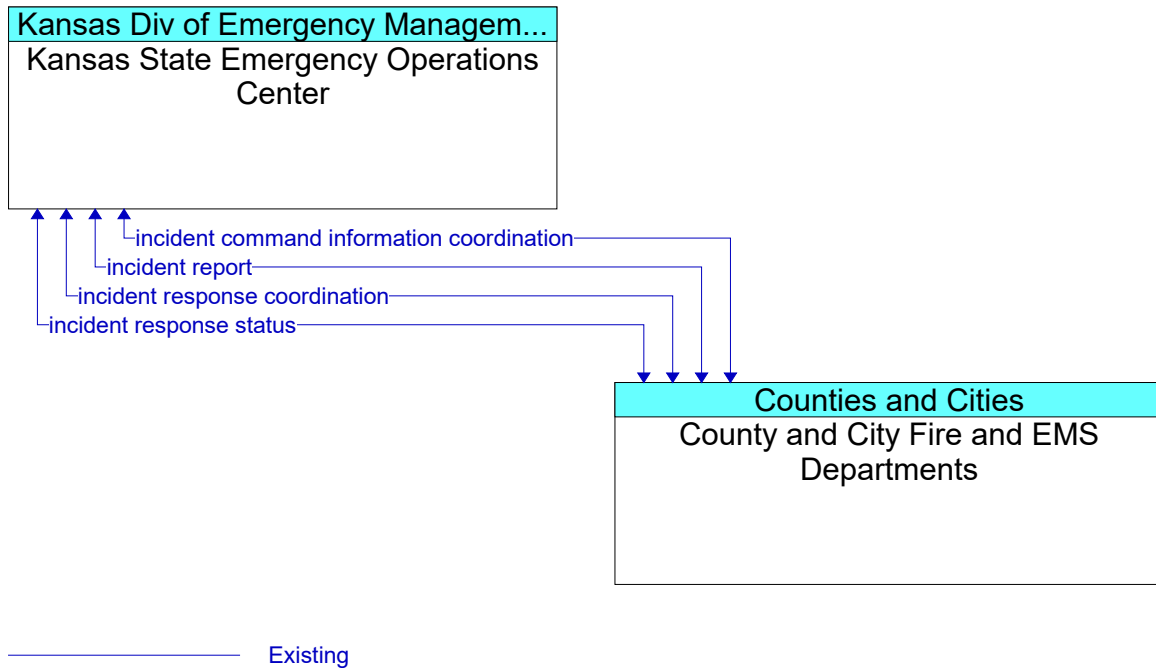
Planned

**Figure 170: County and City Fire and EMS Departments - Kansas City Scout Traffic Management Center Interface**

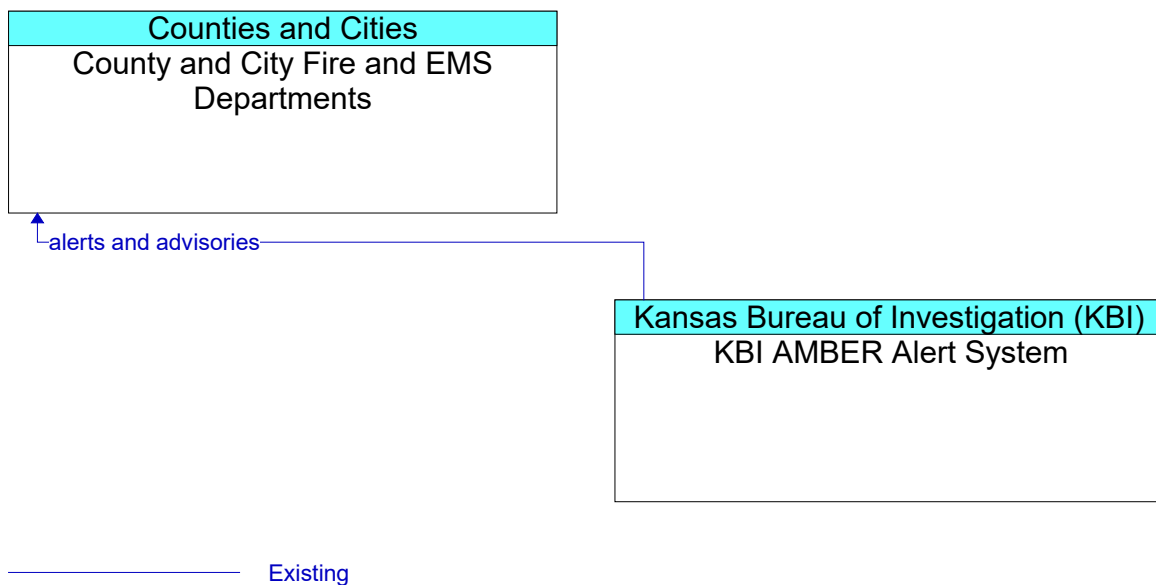


**Figure 171: County and City Fire and EMS Departments - Kansas Highway Patrol Dispatch Interface**

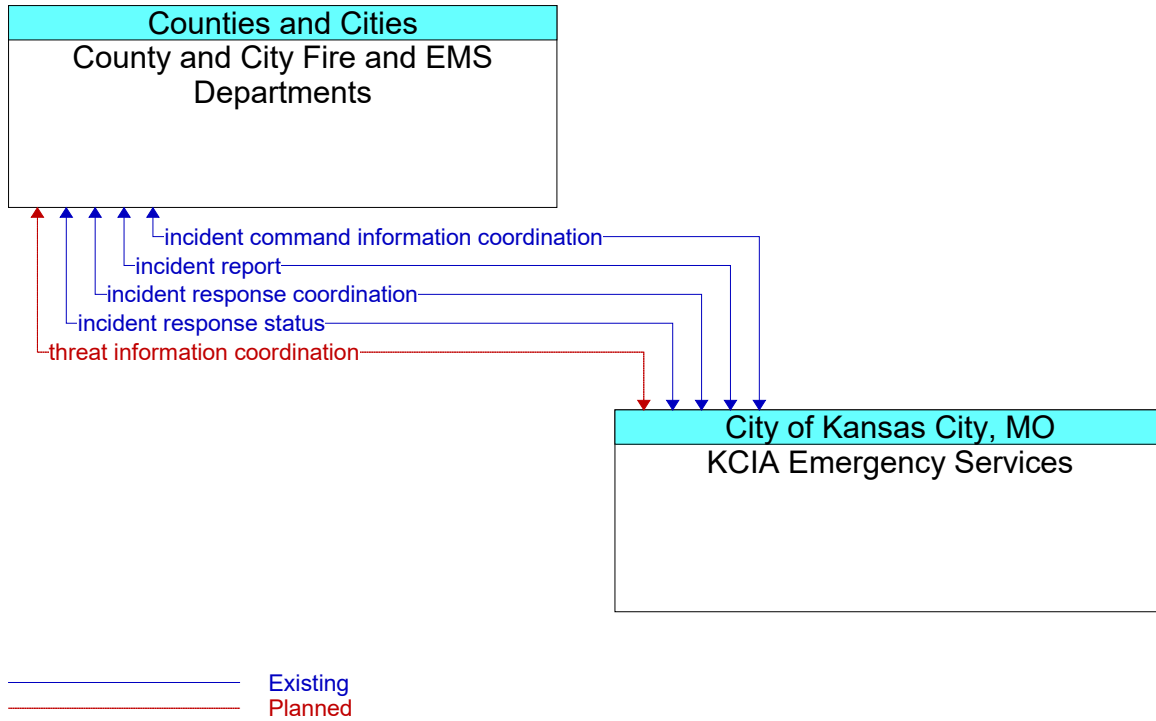




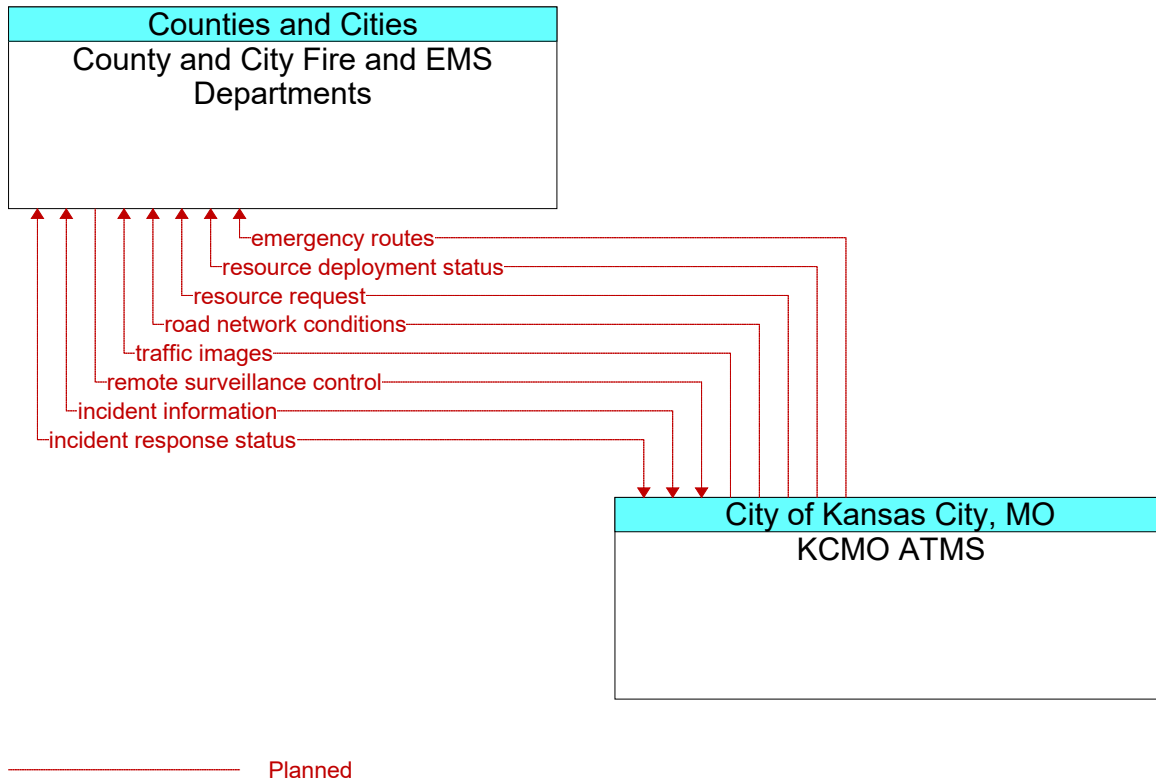
**Figure 172: County and City Fire and EMS Departments - Kansas State Emergency Operations Center Interface**



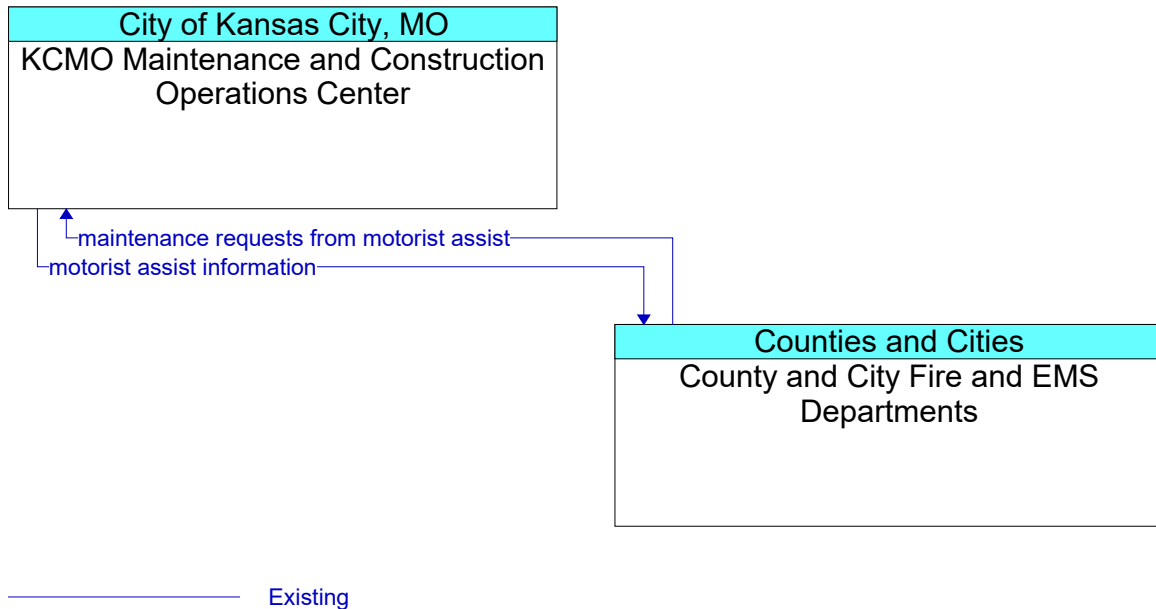
**Figure 173: County and City Fire and EMS Departments - KBI AMBER Alert System Interface**



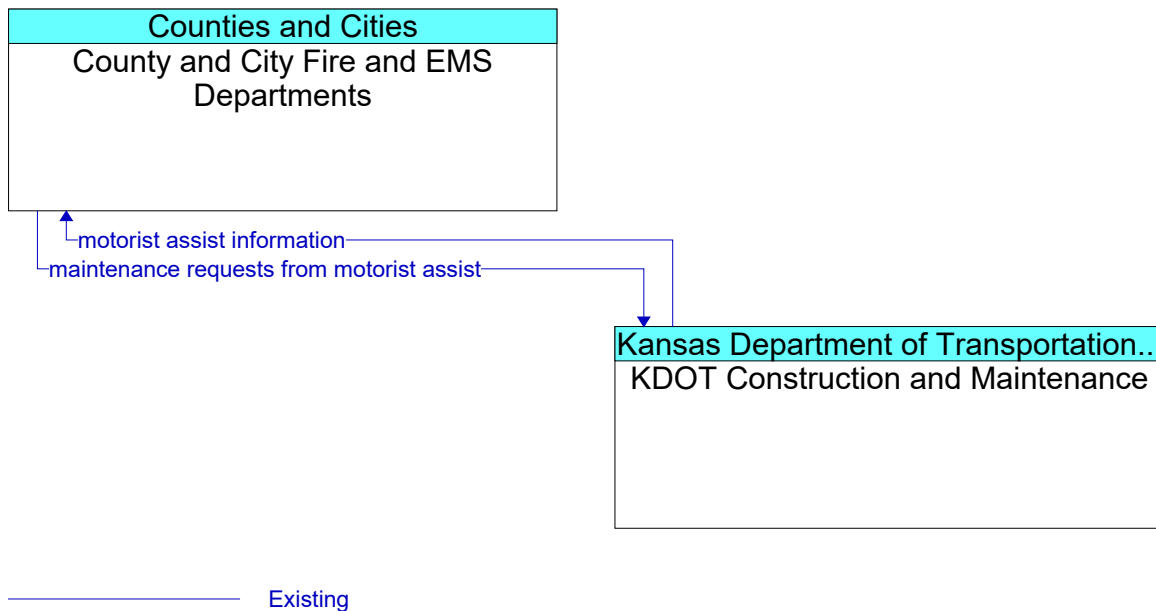
**Figure 174: County and City Fire and EMS Departments - KCIA Emergency Services Interface**



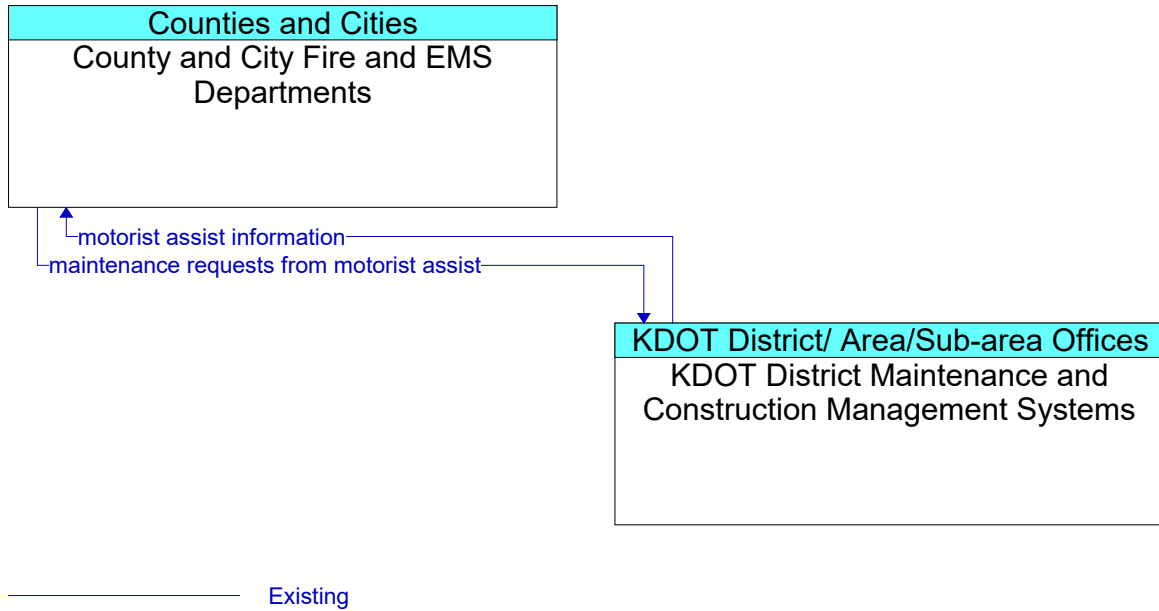
**Figure 175: County and City Fire and EMS Departments - KCMO ATMS Interface**



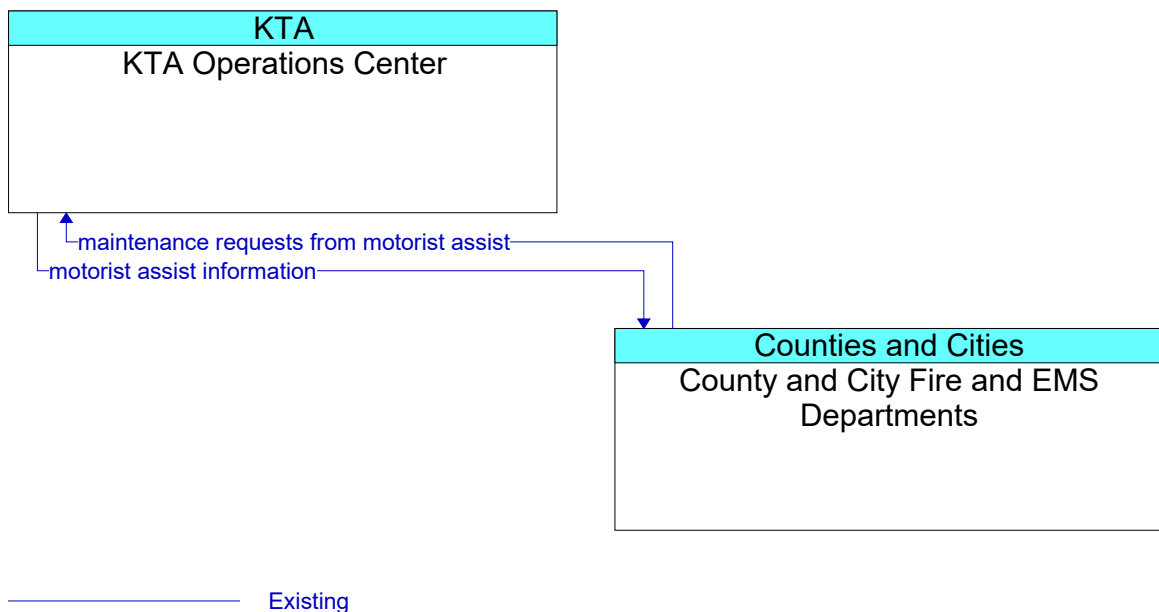
**Figure 176: County and City Fire and EMS Departments - KCMO Maintenance and Construction Operations Center Interface**



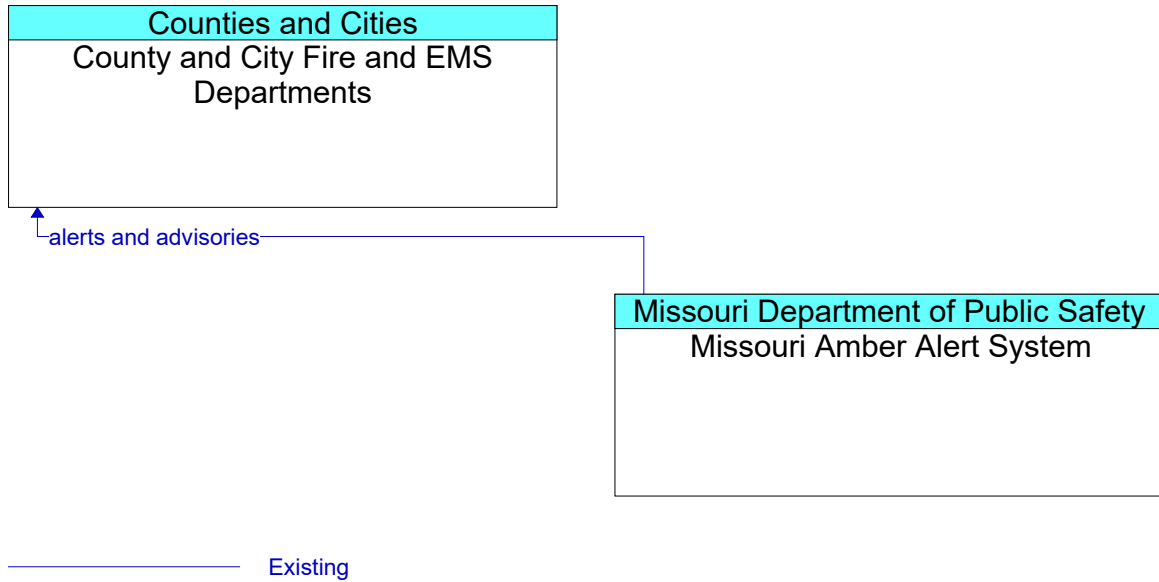
**Figure 177: County and City Fire and EMS Departments - KDOT Construction and Maintenance Interface**



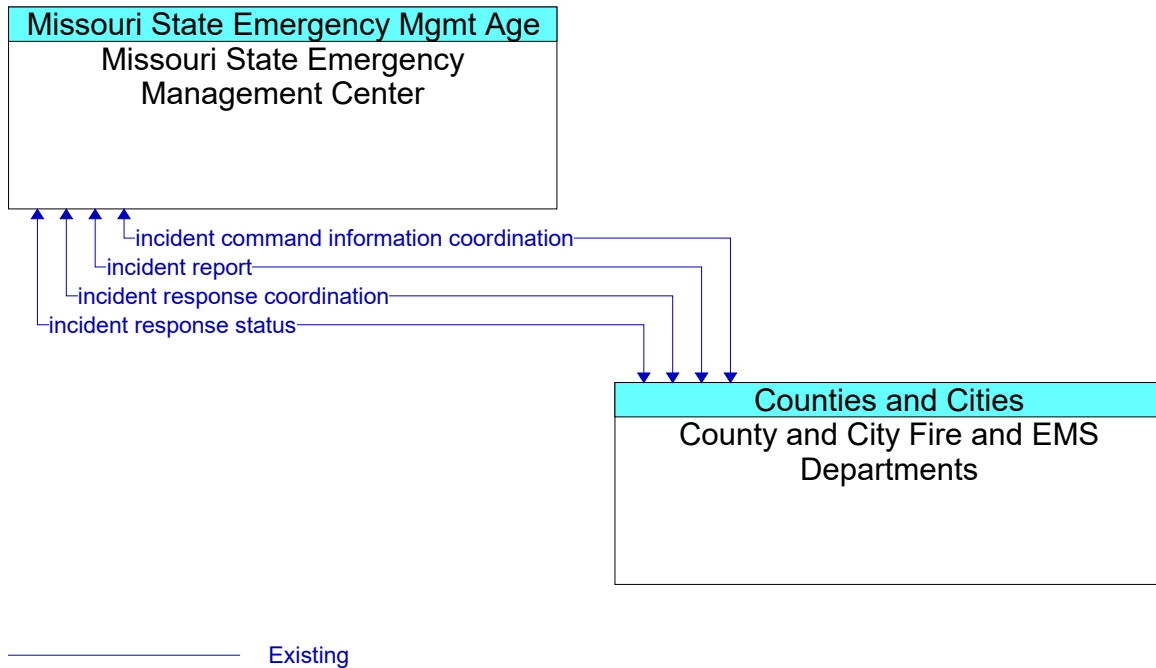
**Figure 178: County and City Fire and EMS Departments - KDOT District Maintenance and Construction Management Systems Interface**



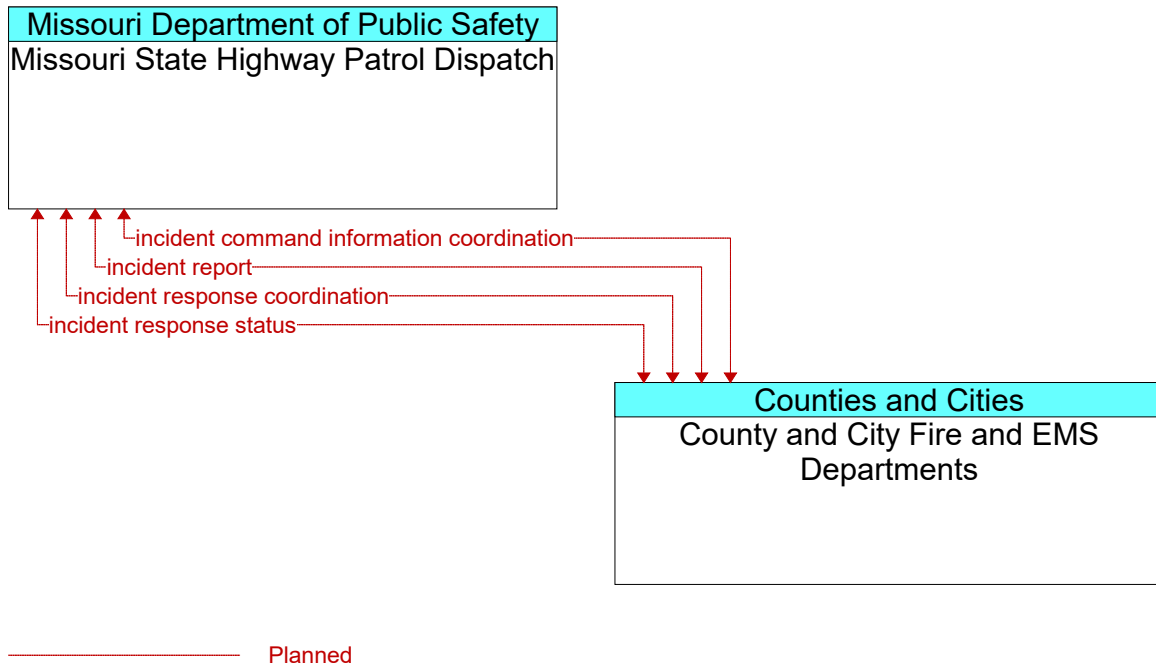
**Figure 179: County and City Fire and EMS Departments - KTA Operations Center Interface**



**Figure 180: County and City Fire and EMS Departments - Missouri Amber Alert System Interface**

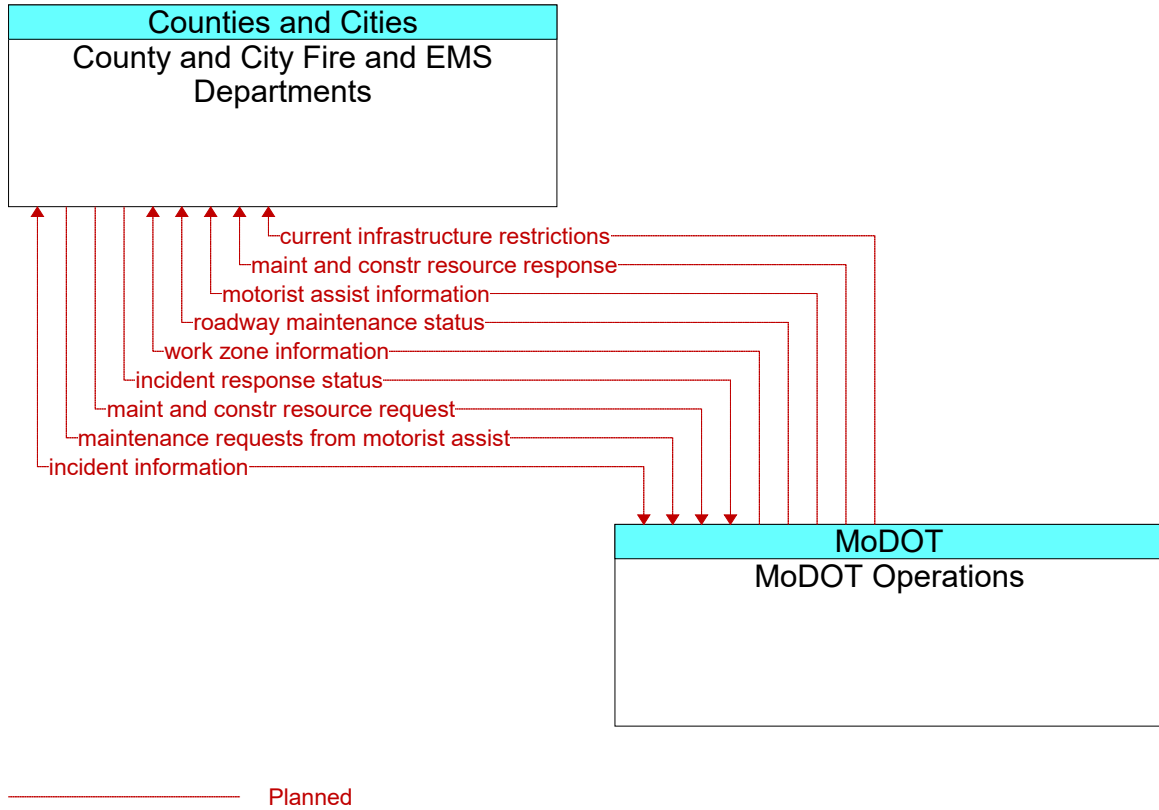


**Figure 181: County and City Fire and EMS Departments - Missouri State Emergency Management Center Interface**

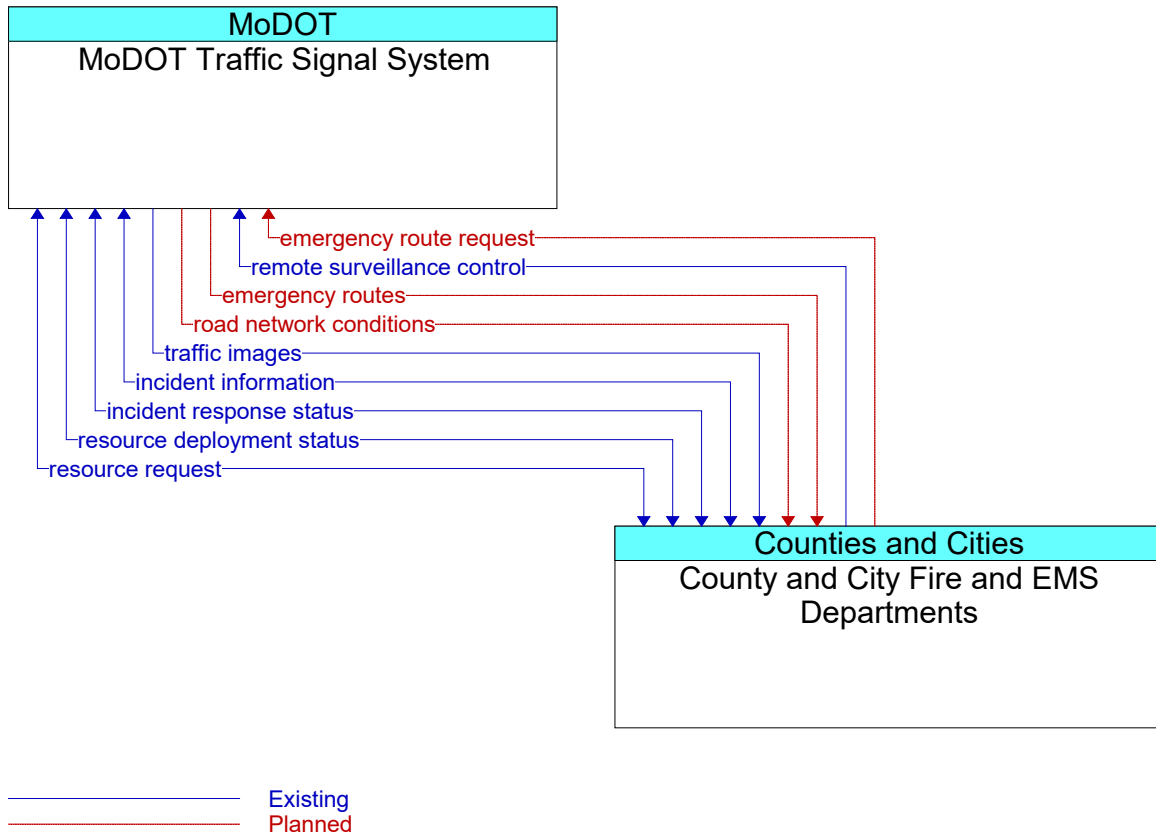


**Figure 182: County and City Fire and EMS Departments - Missouri State Highway Patrol Dispatch Interface**

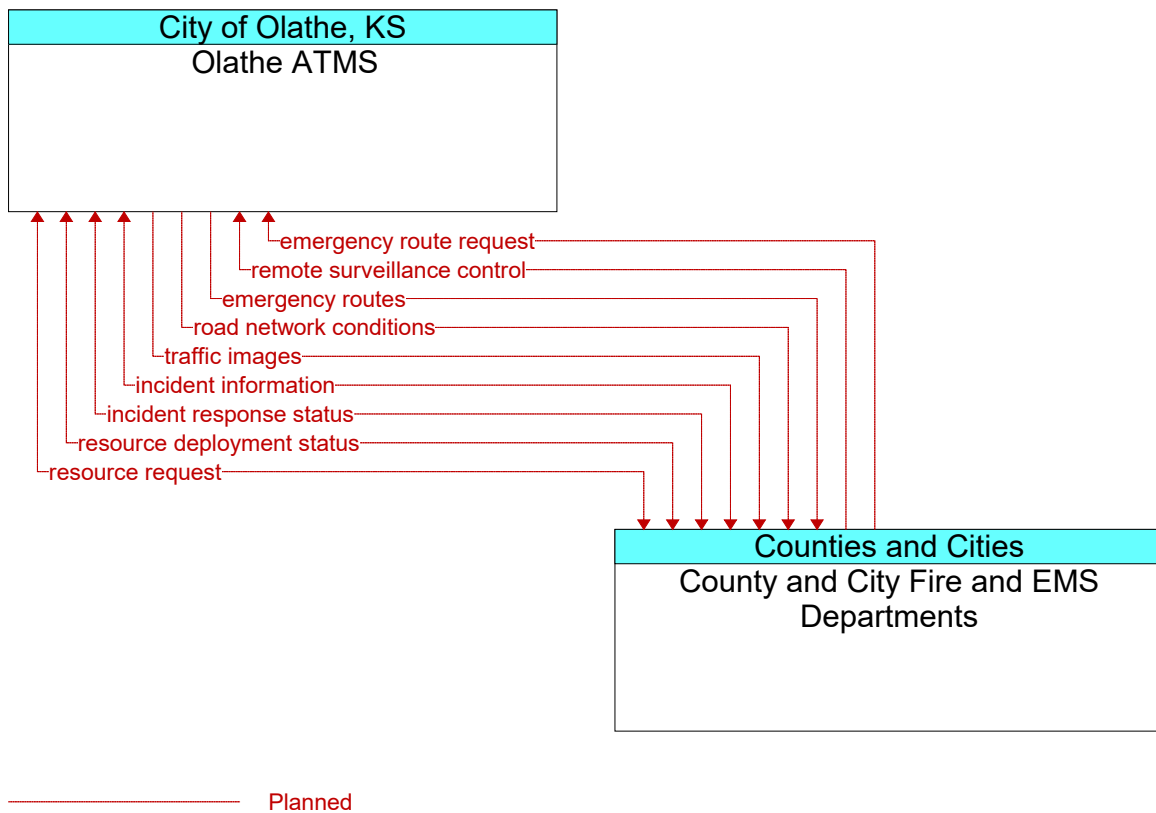




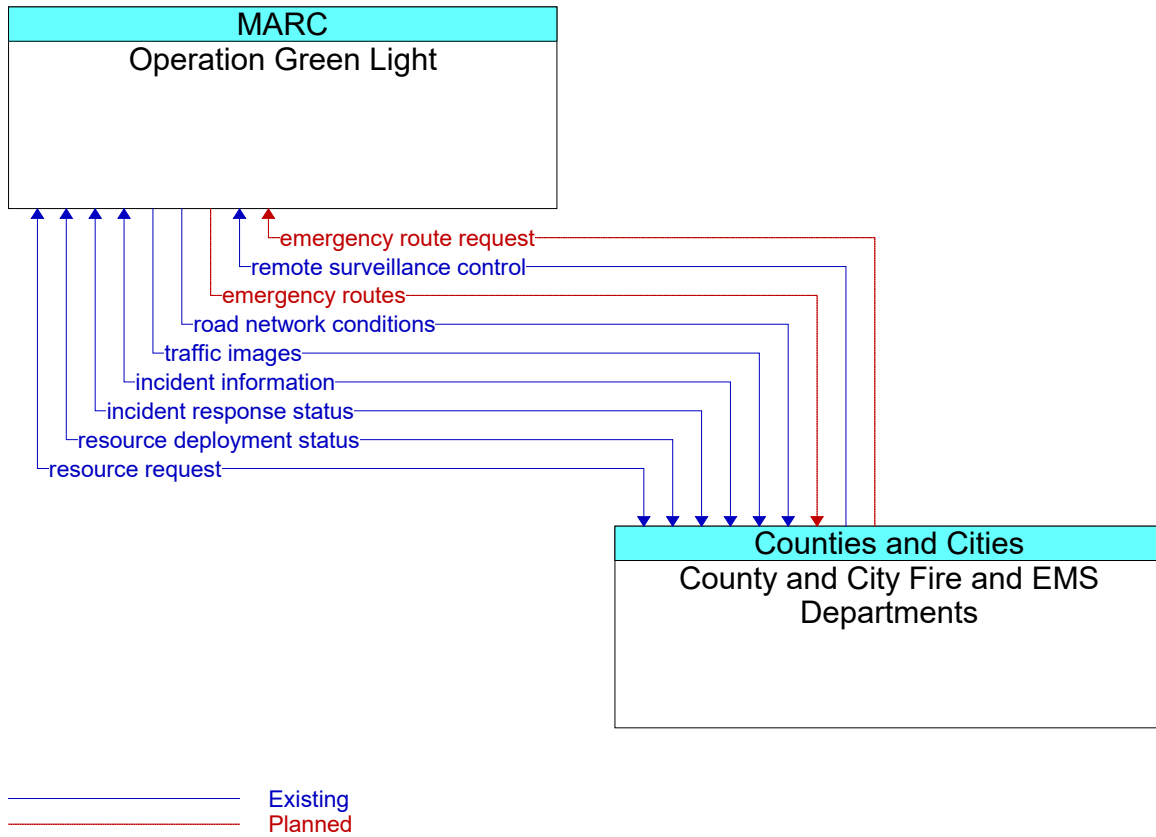
**Figure 183: County and City Fire and EMS Departments - MoDOT Operations Interface**



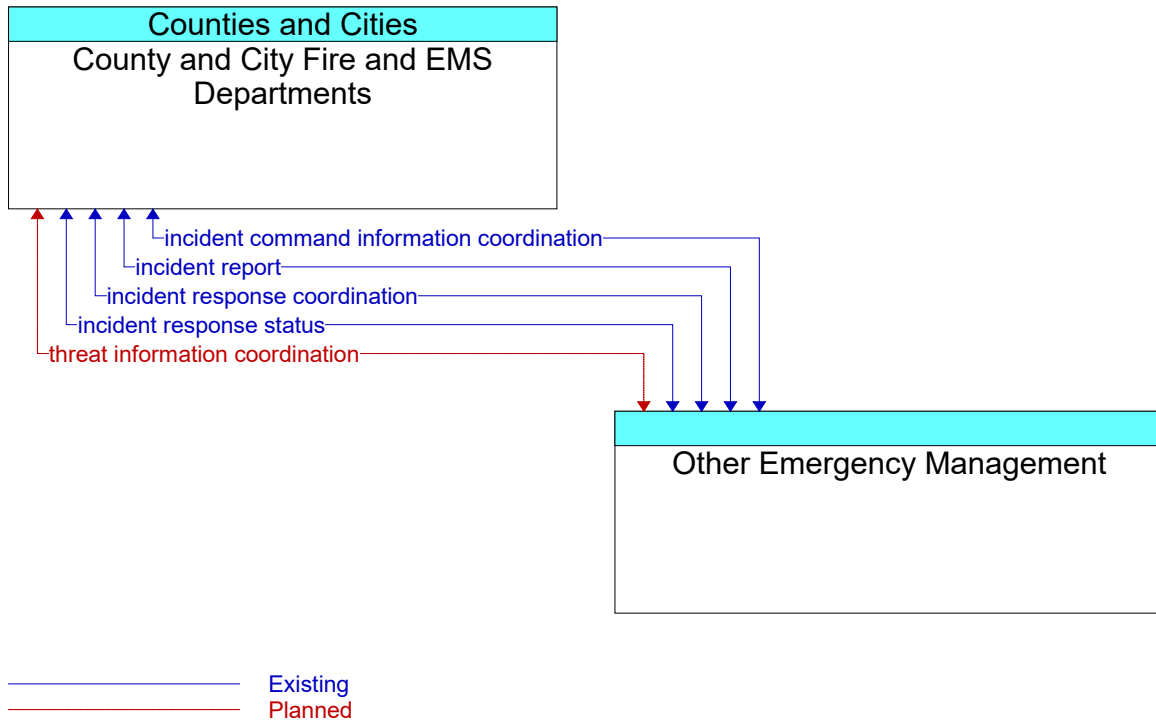
**Figure 184: County and City Fire and EMS Departments - MoDOT Traffic Signal System Interface**



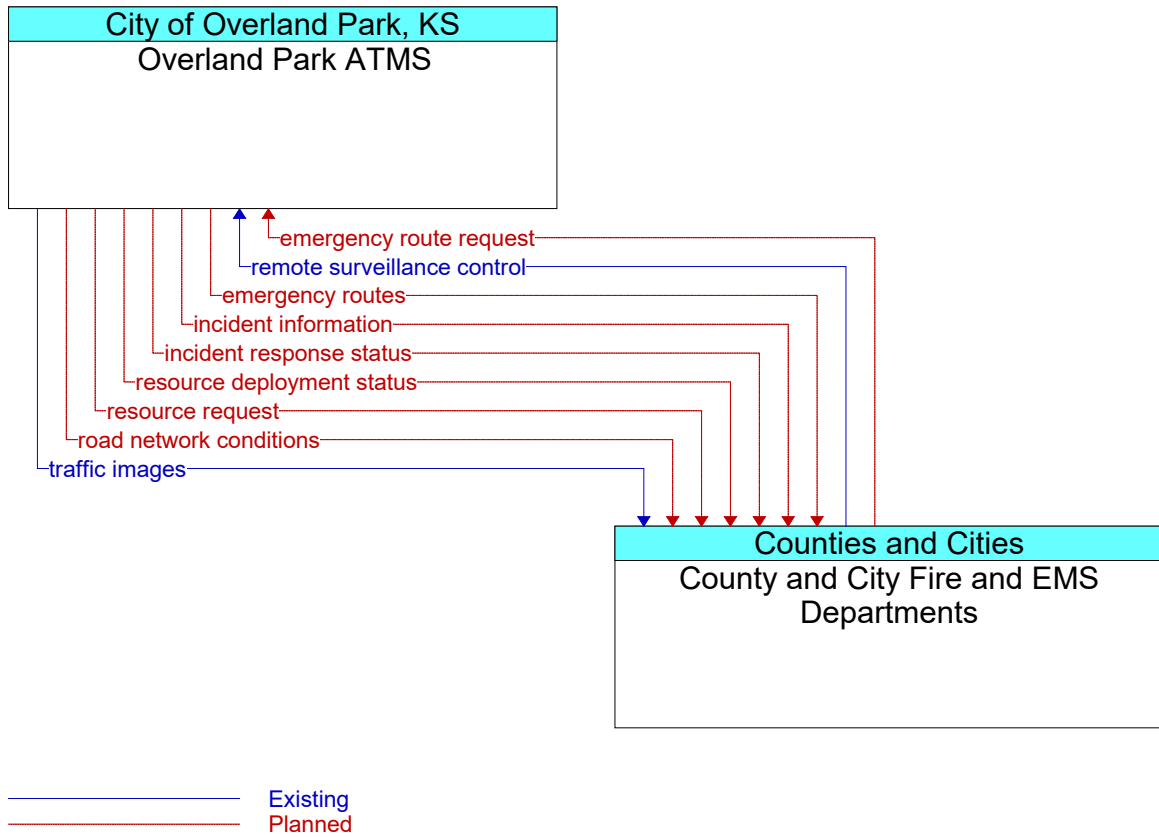
**Figure 185: County and City Fire and EMS Departments - Olathe ATMS Interface**



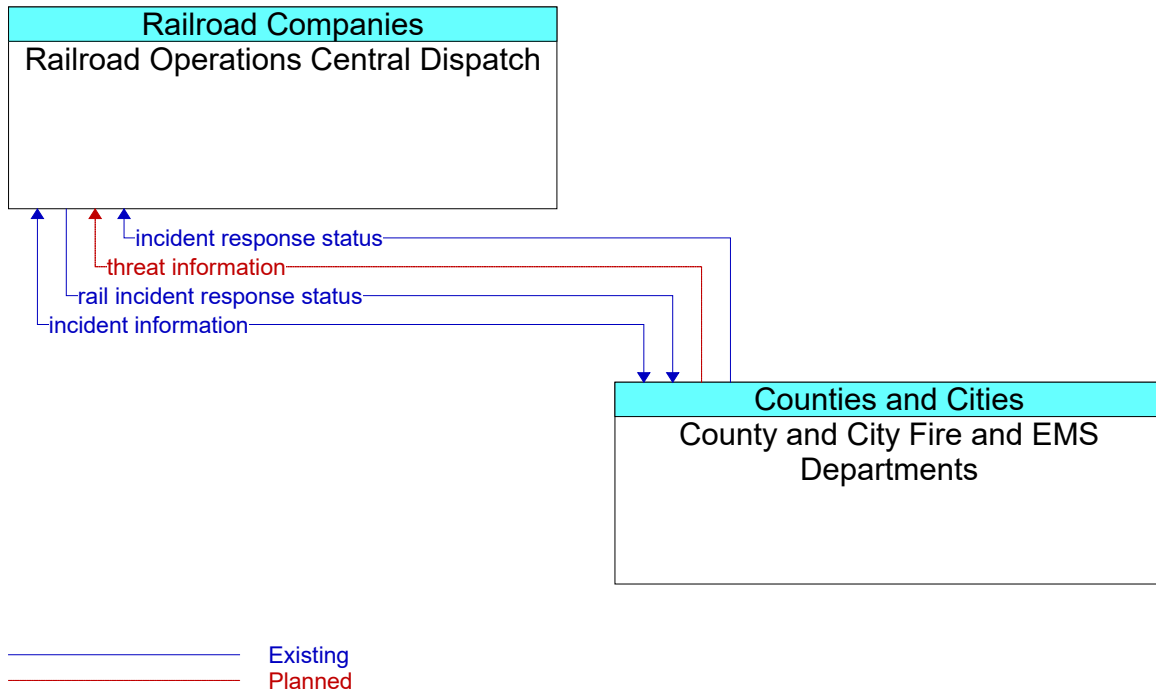
**Figure 186: County and City Fire and EMS Departments - Operation Green Light Interface**



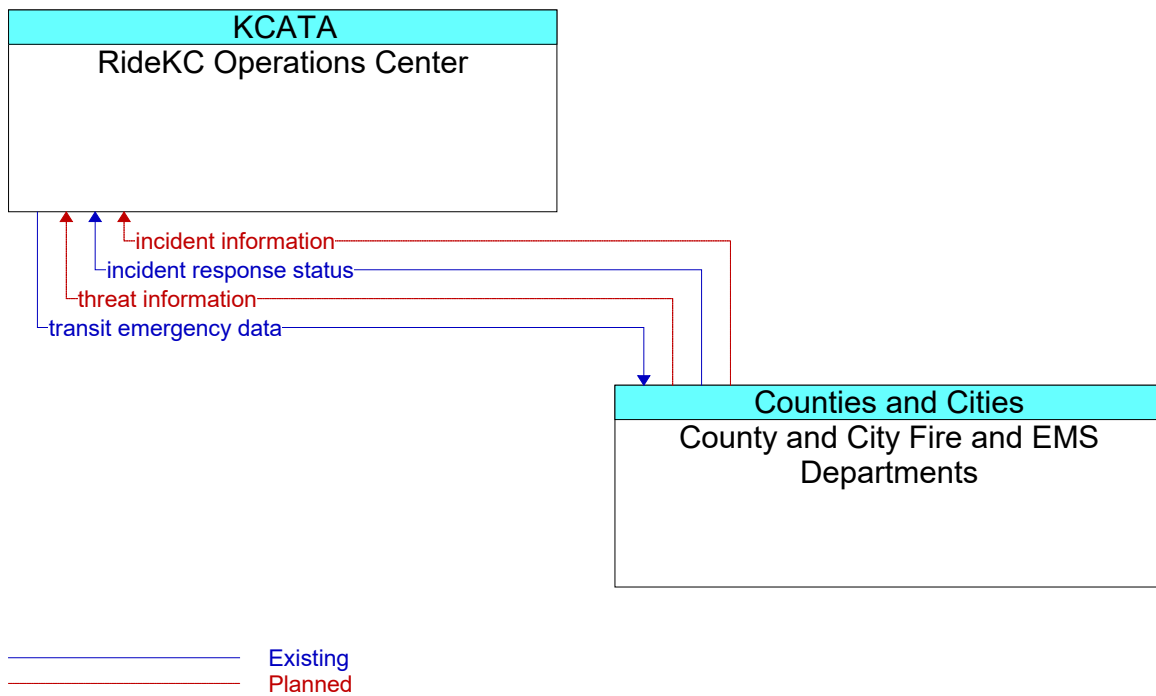
**Figure 187: County and City Fire and EMS Departments - Other Emergency Management Interface**



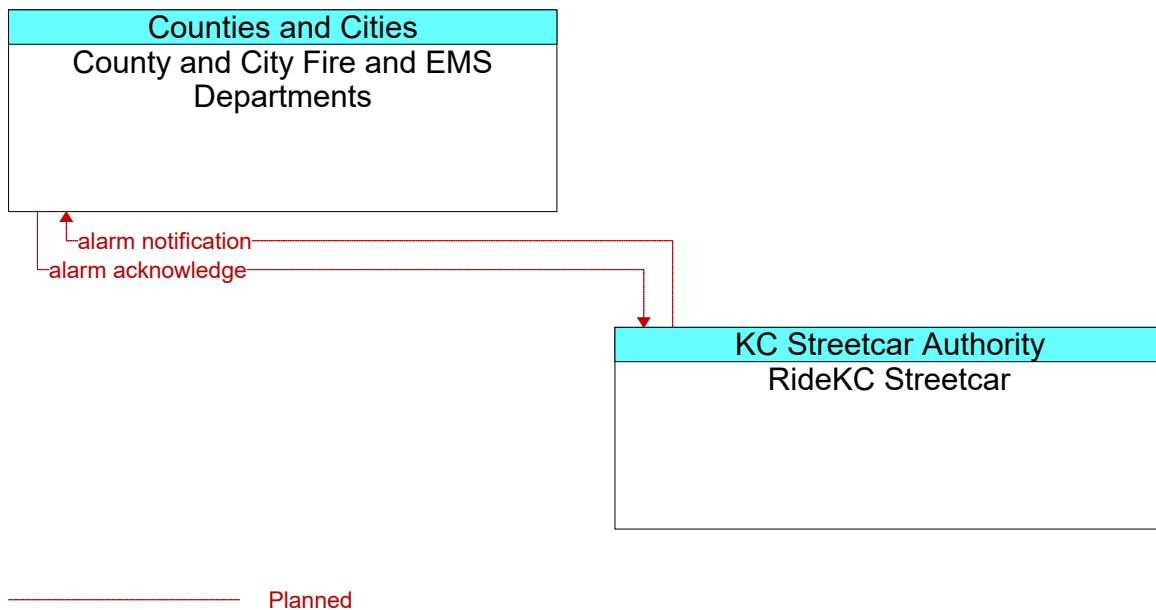
**Figure 188: County and City Fire and EMS Departments - Overland Park ATMS Interface**



**Figure 189: County and City Fire and EMS Departments - Railroad Operations Central Dispatch Interface**

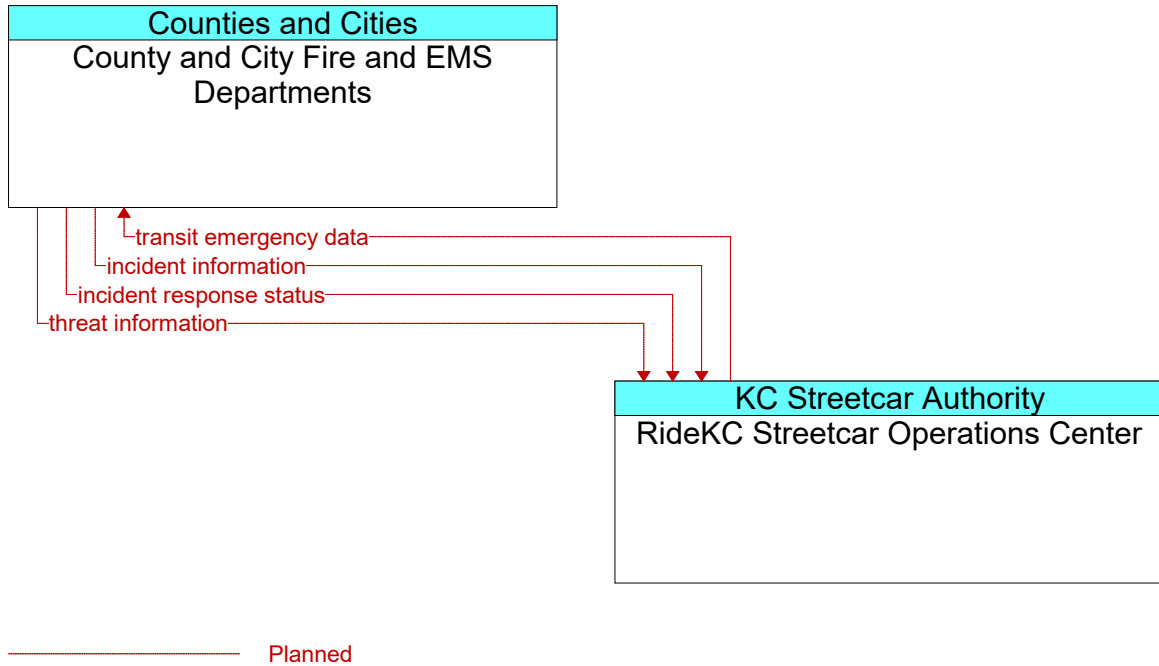


**Figure 190: County and City Fire and EMS Departments - RideKC Operations Center Interface**

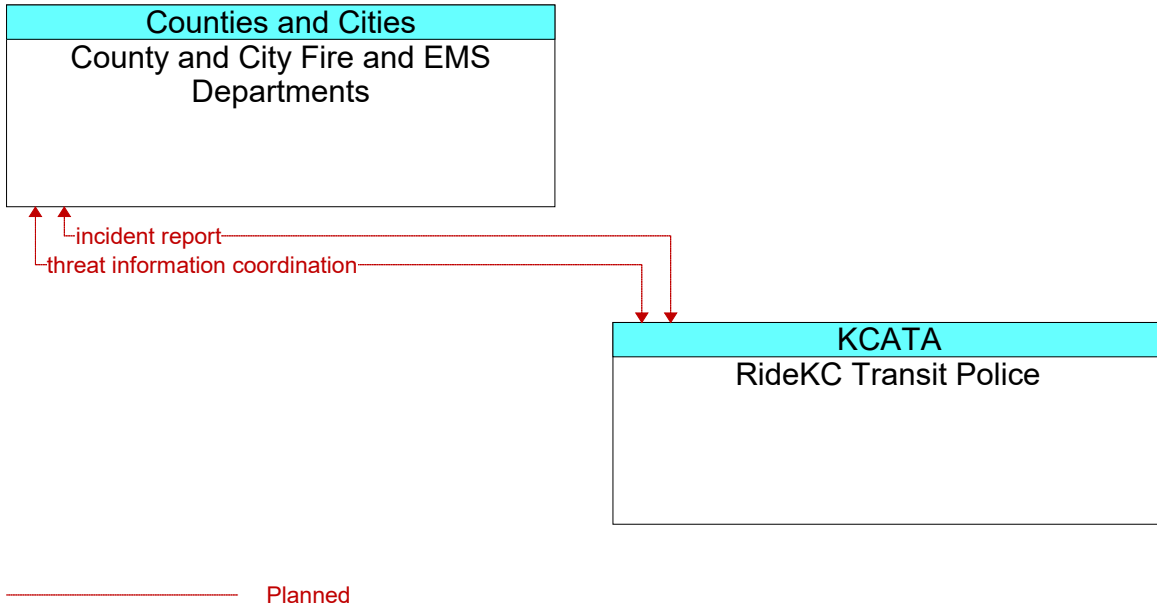


**Figure 191: County and City Fire and EMS Departments - RideKC Streetcar Interface**

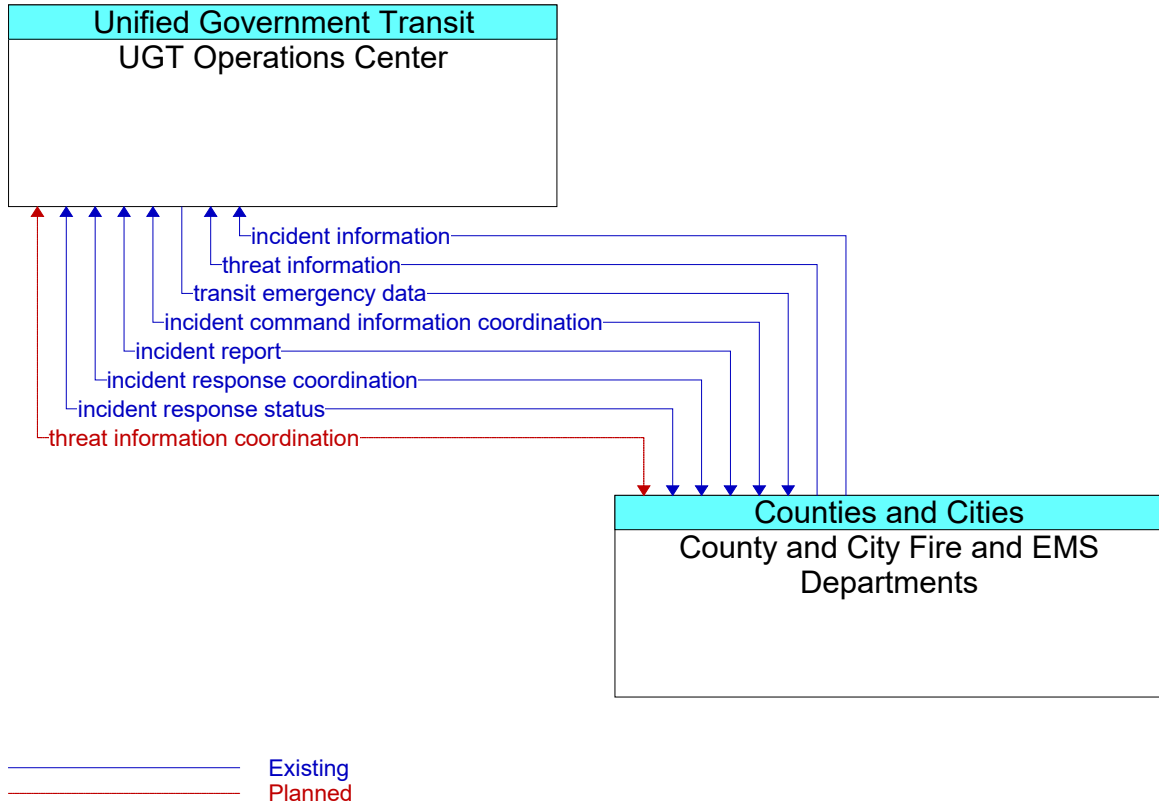




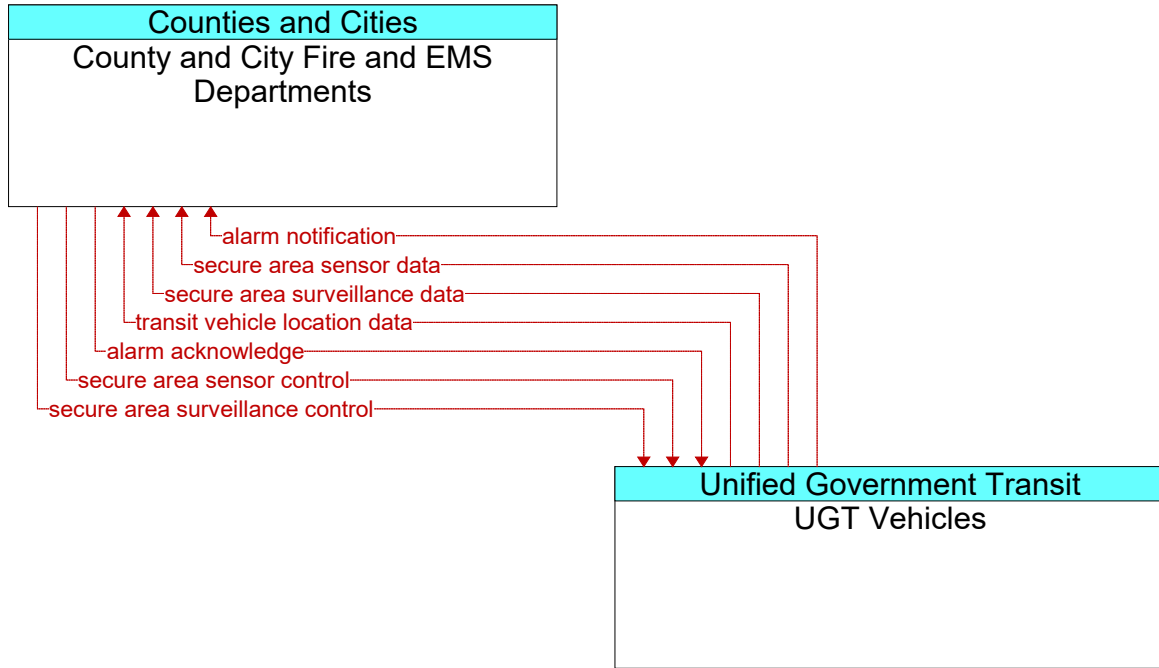
**Figure 192: County and City Fire and EMS Departments - RideKC Streetcar Operations Center Interface**



**Figure 193: County and City Fire and EMS Departments - RideKC Transit Police Interface**

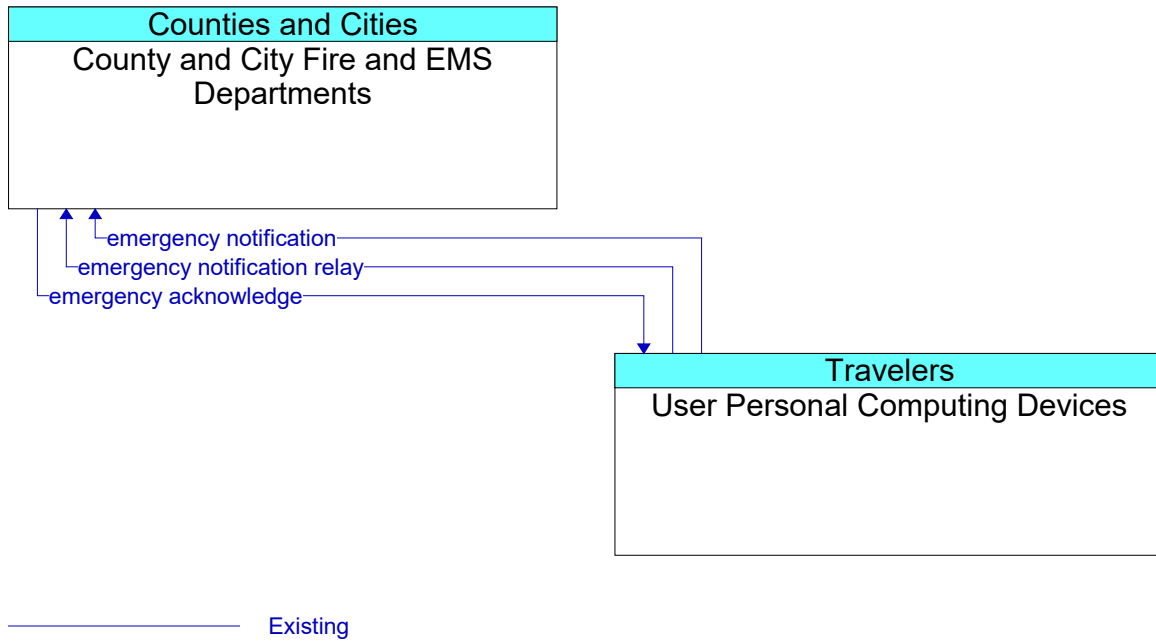


**Figure 194: County and City Fire and EMS Departments - UGT Operations Center Interface**

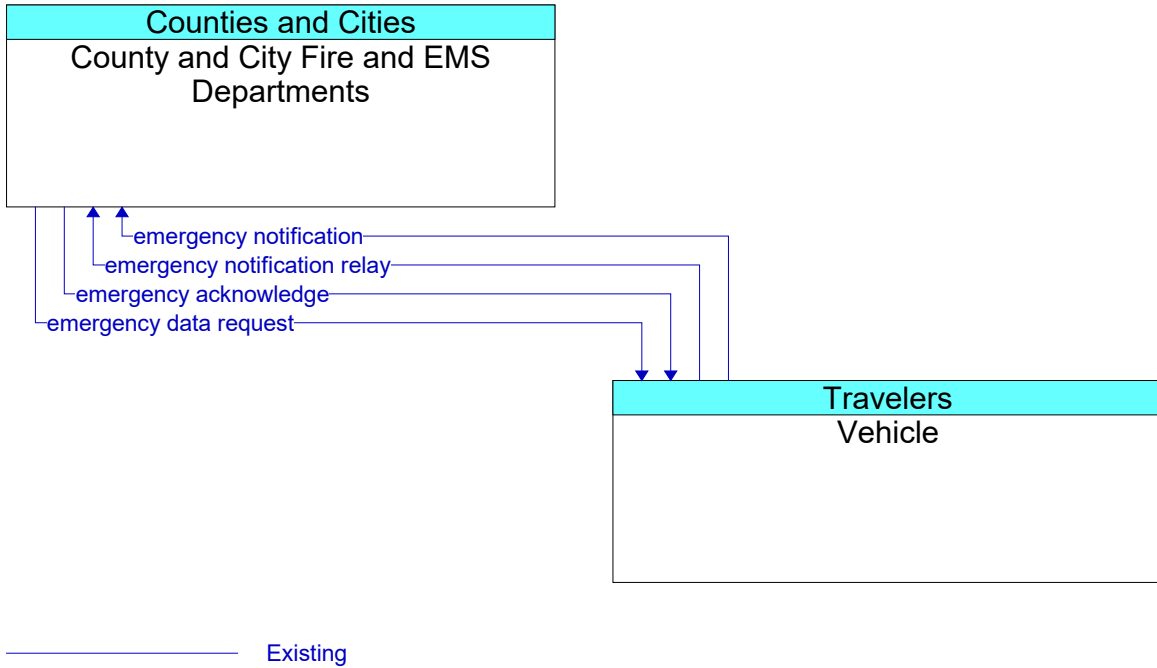


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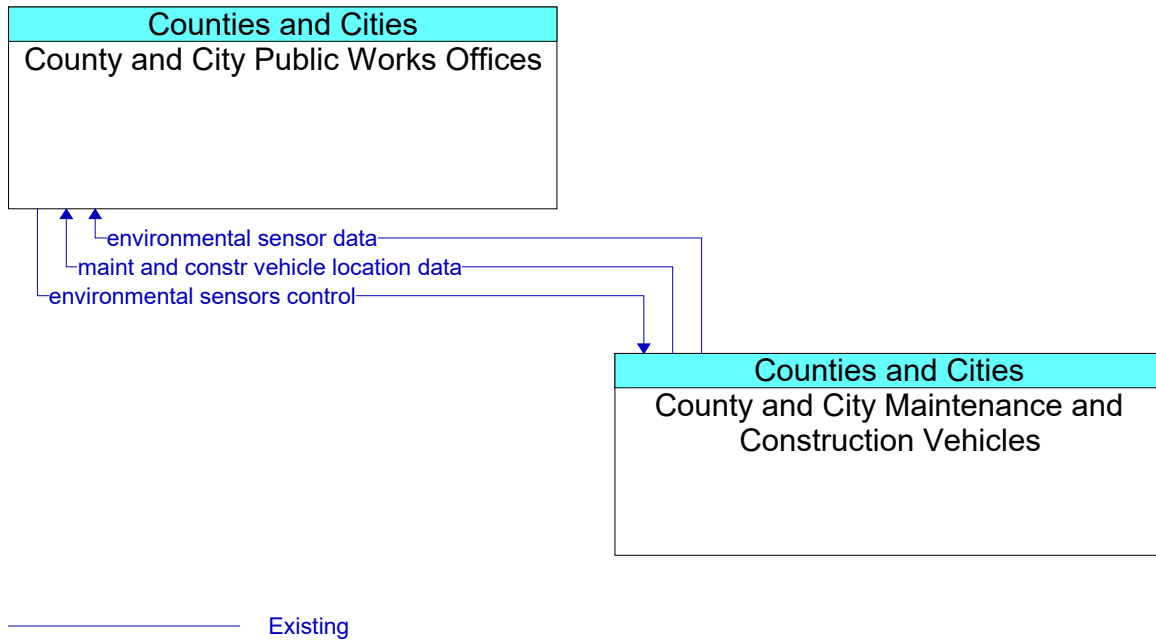
**Figure 195: County and City Fire and EMS Departments - UGT Vehicles Interface**



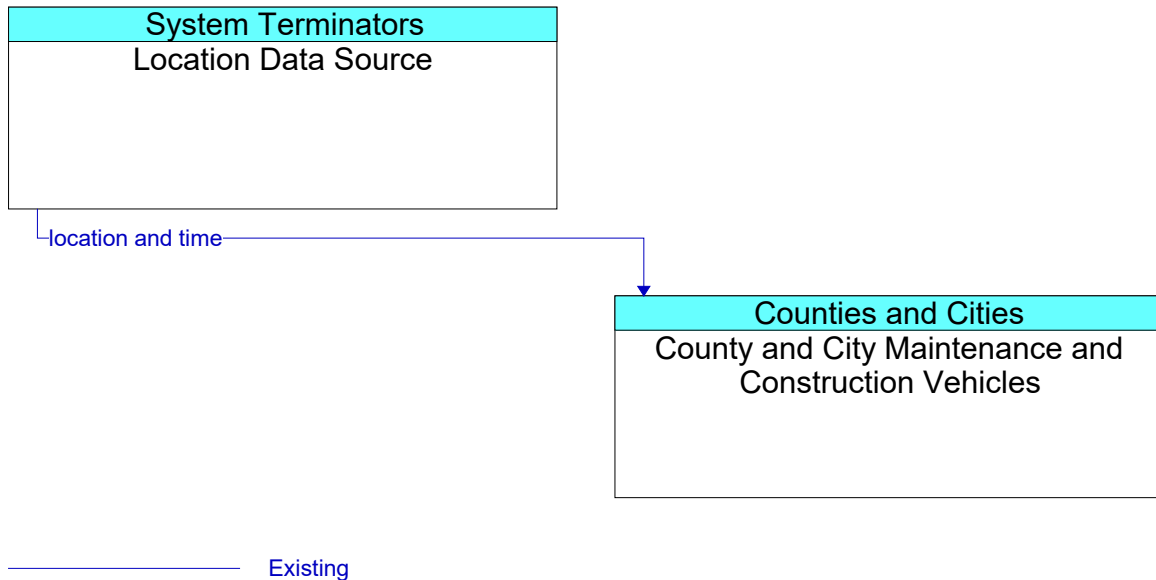
**Figure 196: County and City Fire and EMS Departments - User Personal Computing Devices Interface**



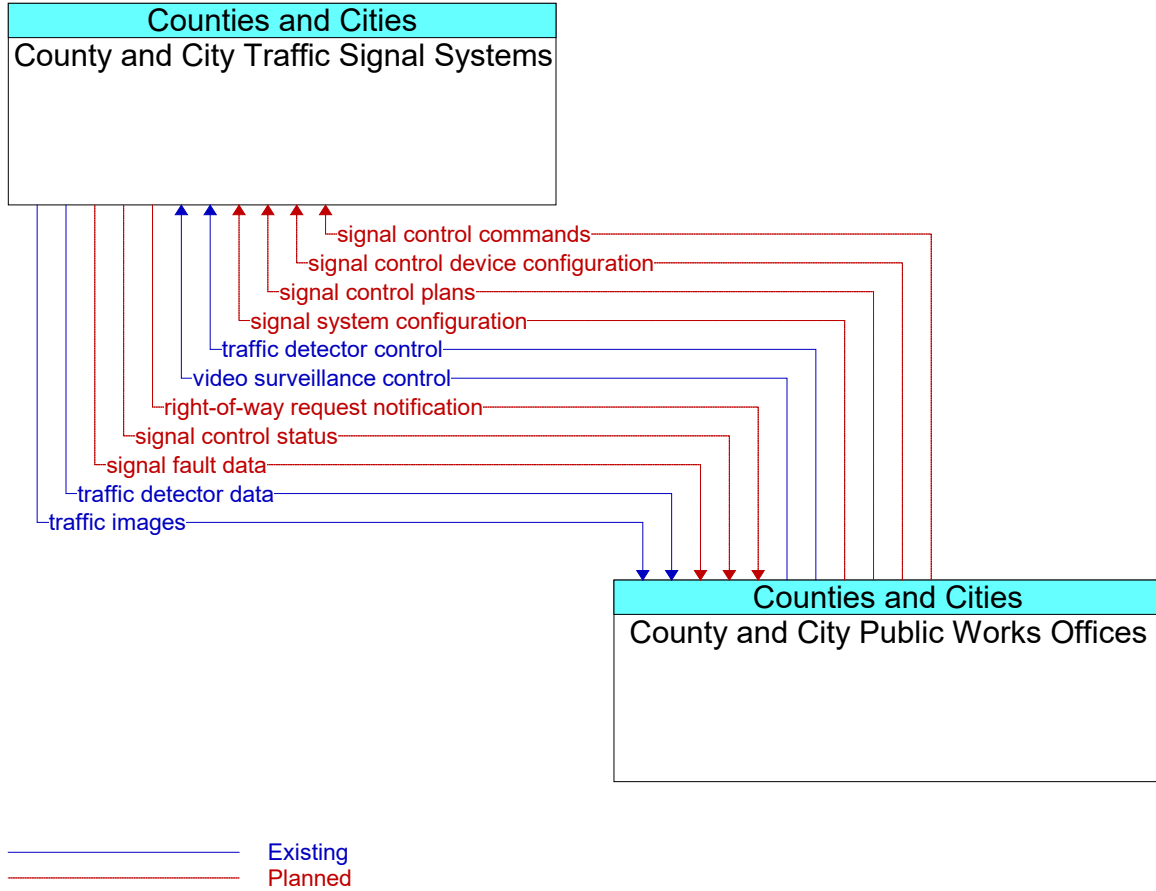
**Figure 197: County and City Fire and EMS Departments - Vehicle Interface**



**Figure 198: County and City Maintenance and Construction Vehicles - County and City Public Works Offices Interface**

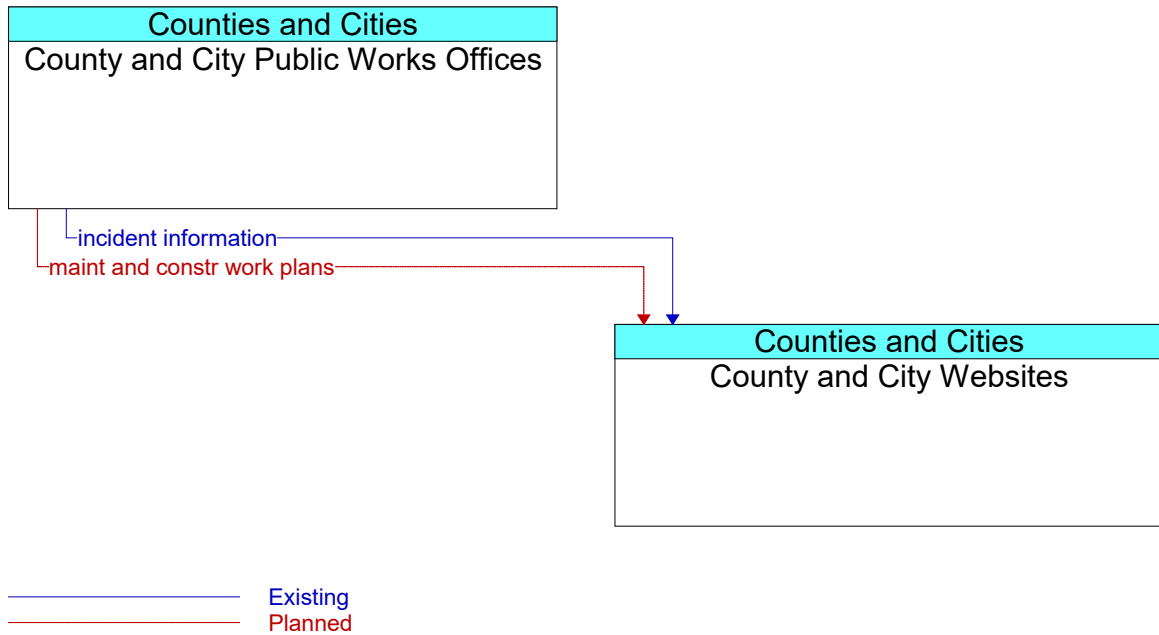


**Figure 199: County and City Maintenance and Construction Vehicles - Location Data Source Interface**

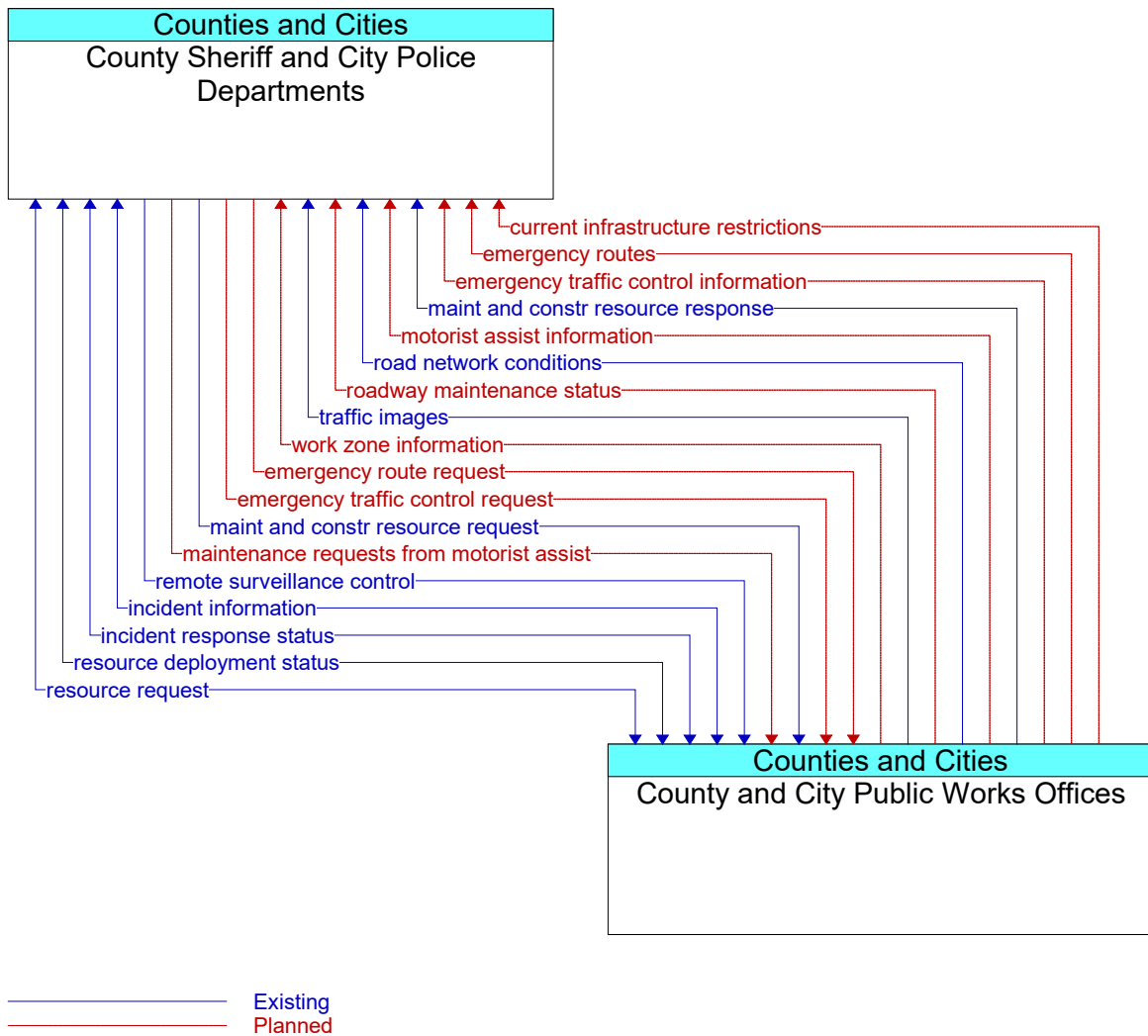


**Figure 200: County and City Public Works Offices - County and City Traffic Signal Systems Interface**

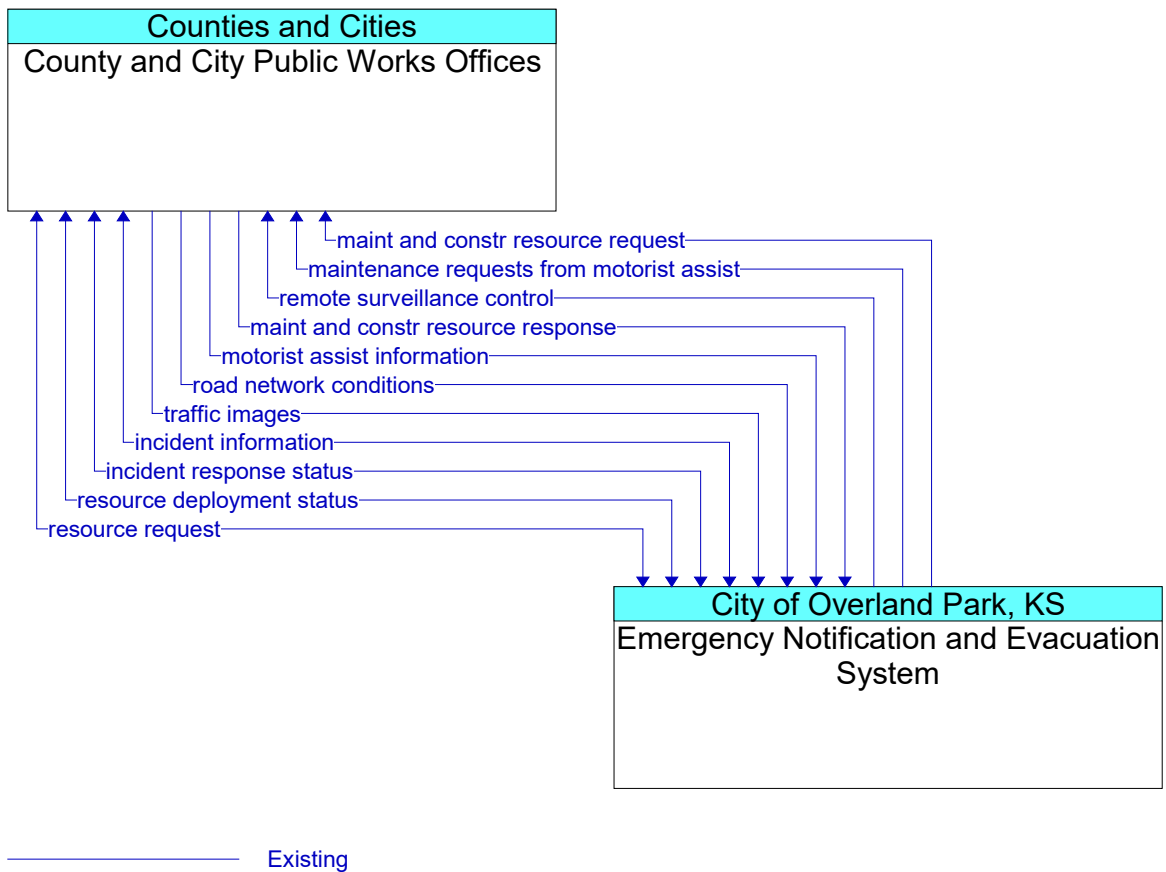




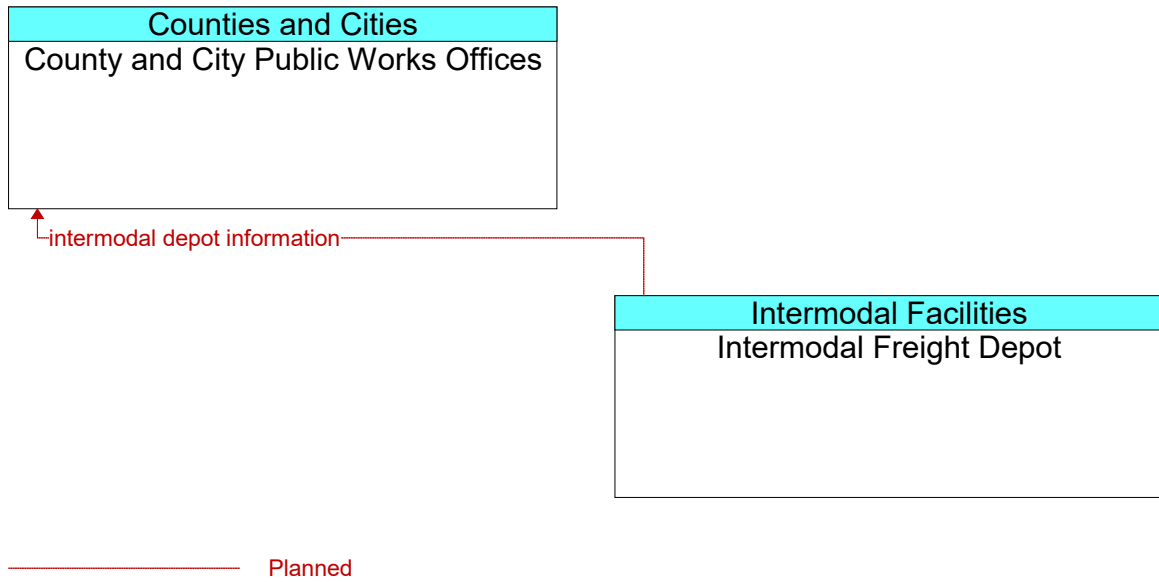
**Figure 201: County and City Public Works Offices - County and City Websites Interface**



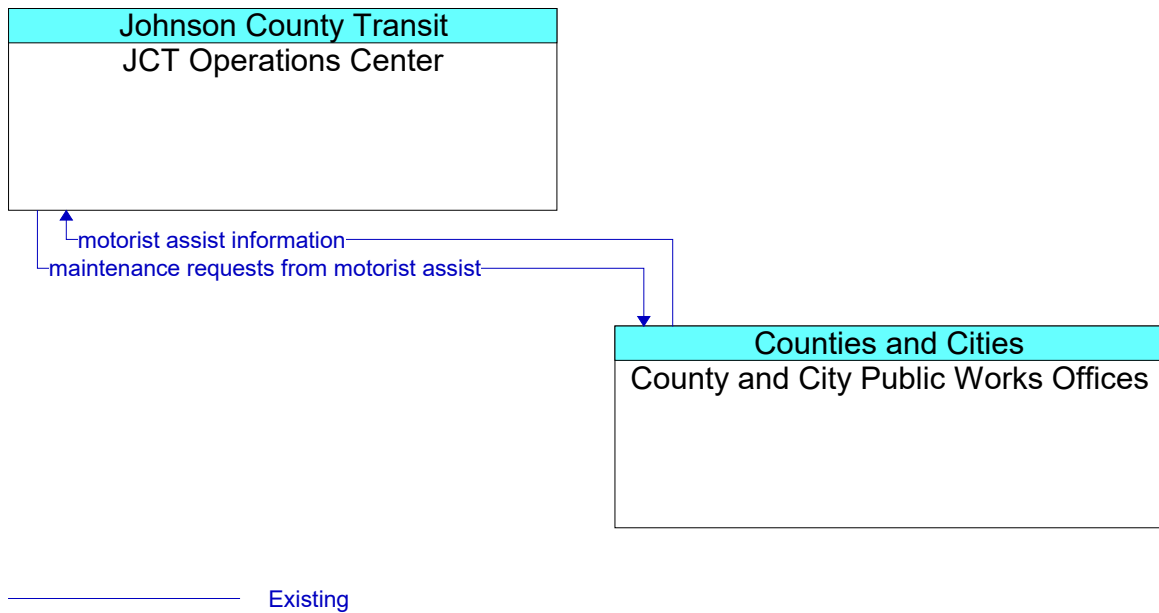
**Figure 202: County and City Public Works Offices - County Sheriff and City Police Departments Interface**



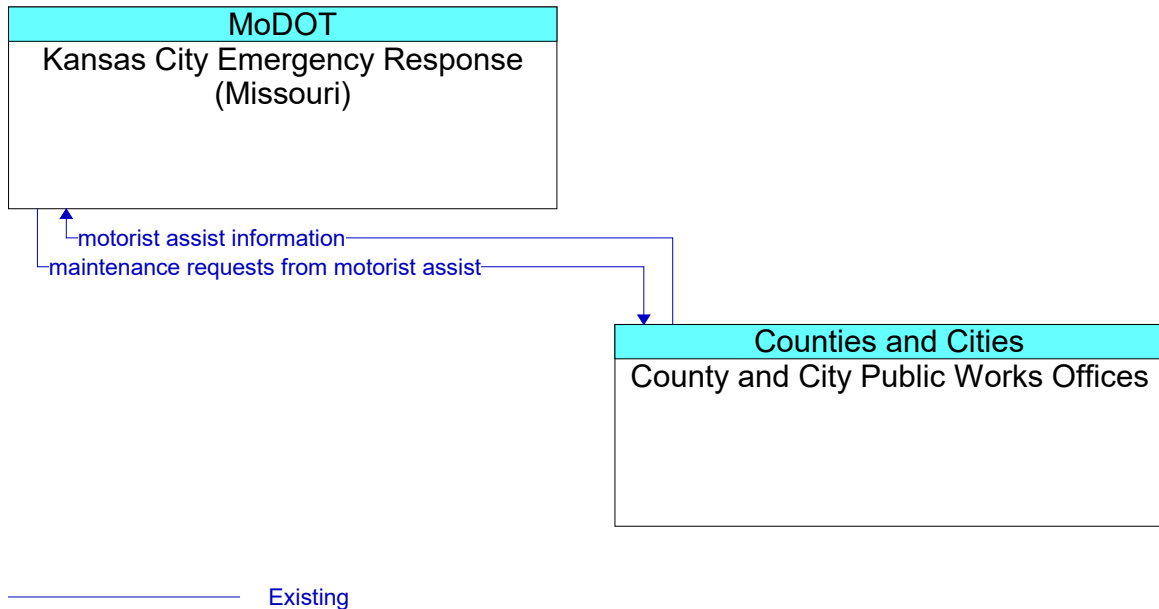
**Figure 203: County and City Public Works Offices - Emergency Notification and Evacuation System Interface**



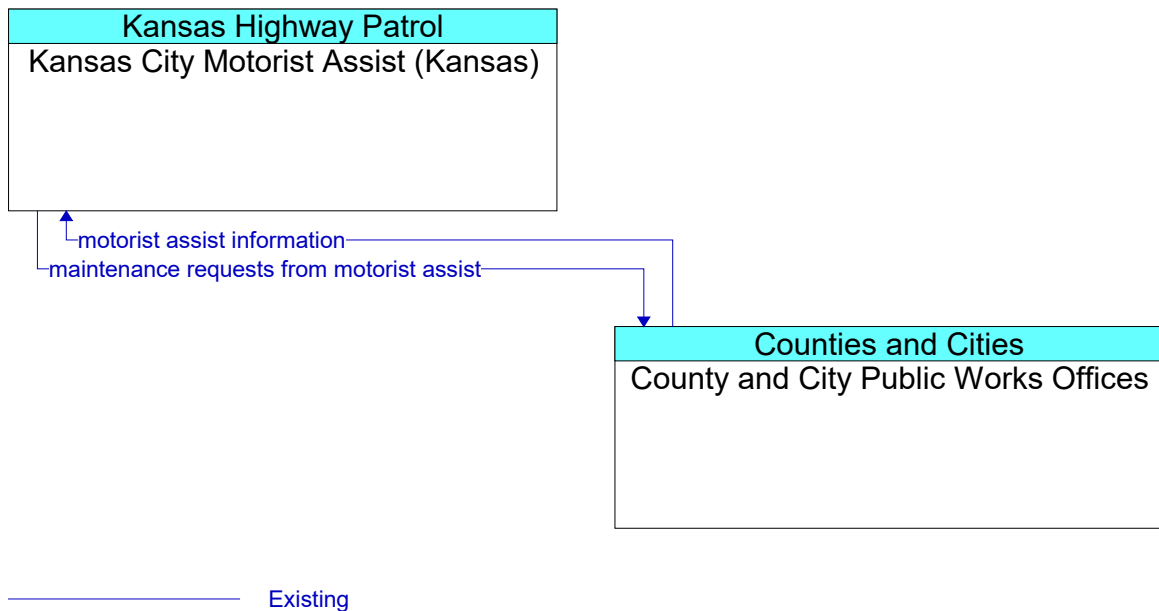
**Figure 204: County and City Public Works Offices - Intermodal Freight Depot Interface**



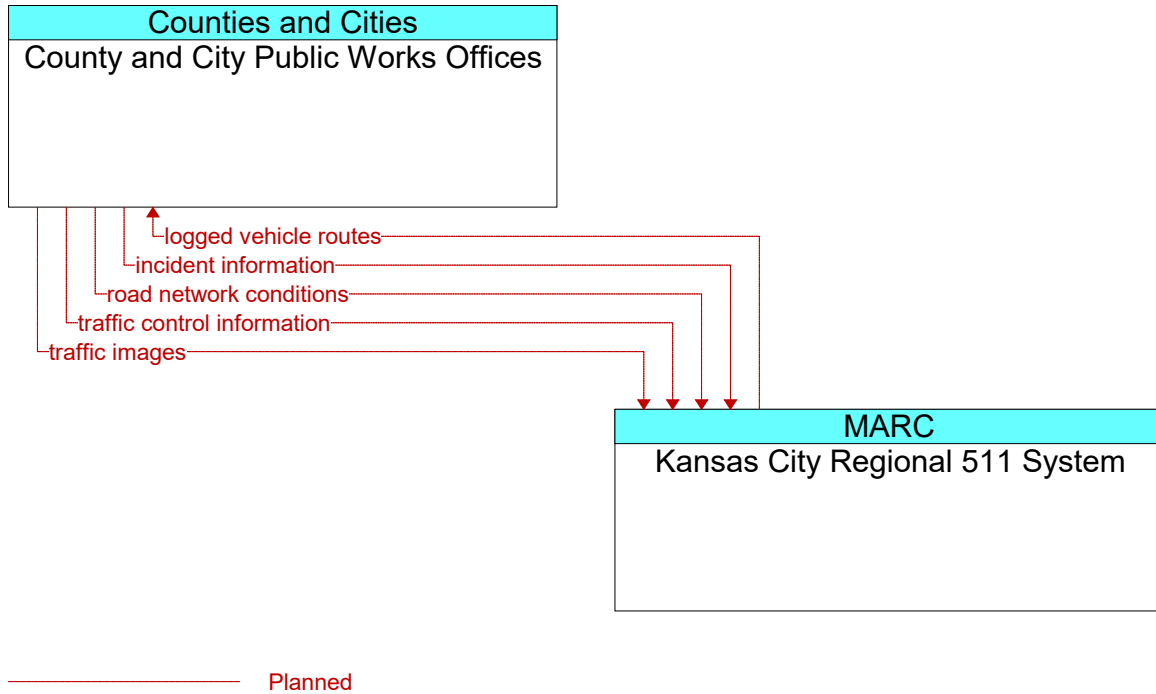
**Figure 205: County and City Public Works Offices - JCT Operations Center Interface**



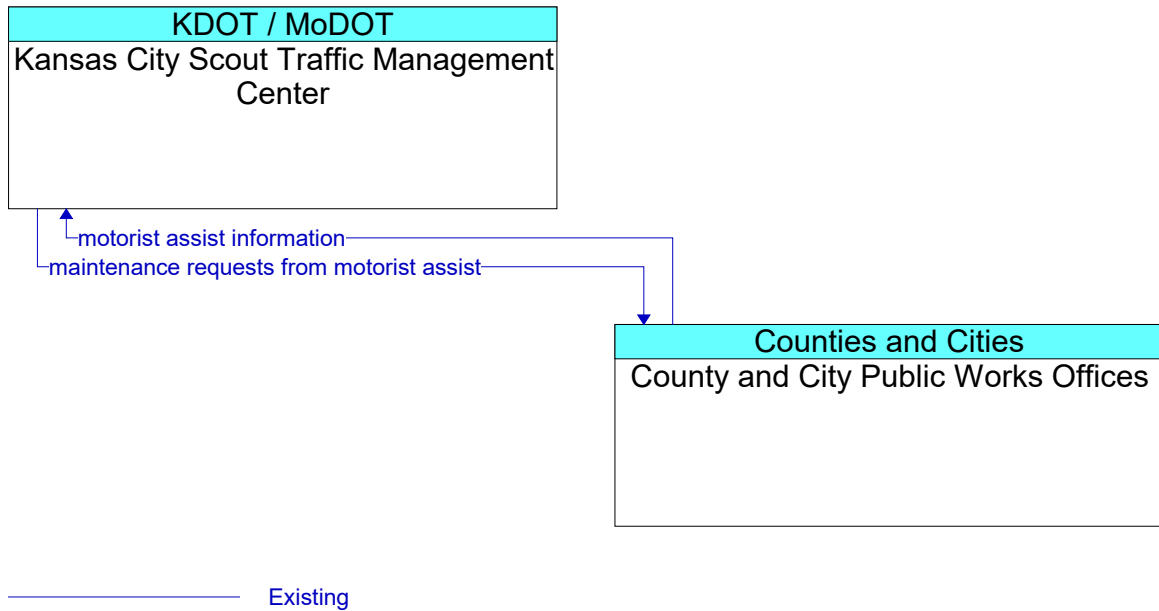
**Figure 206: County and City Public Works Offices - Kansas City Emergency Response (Missouri) Interface**



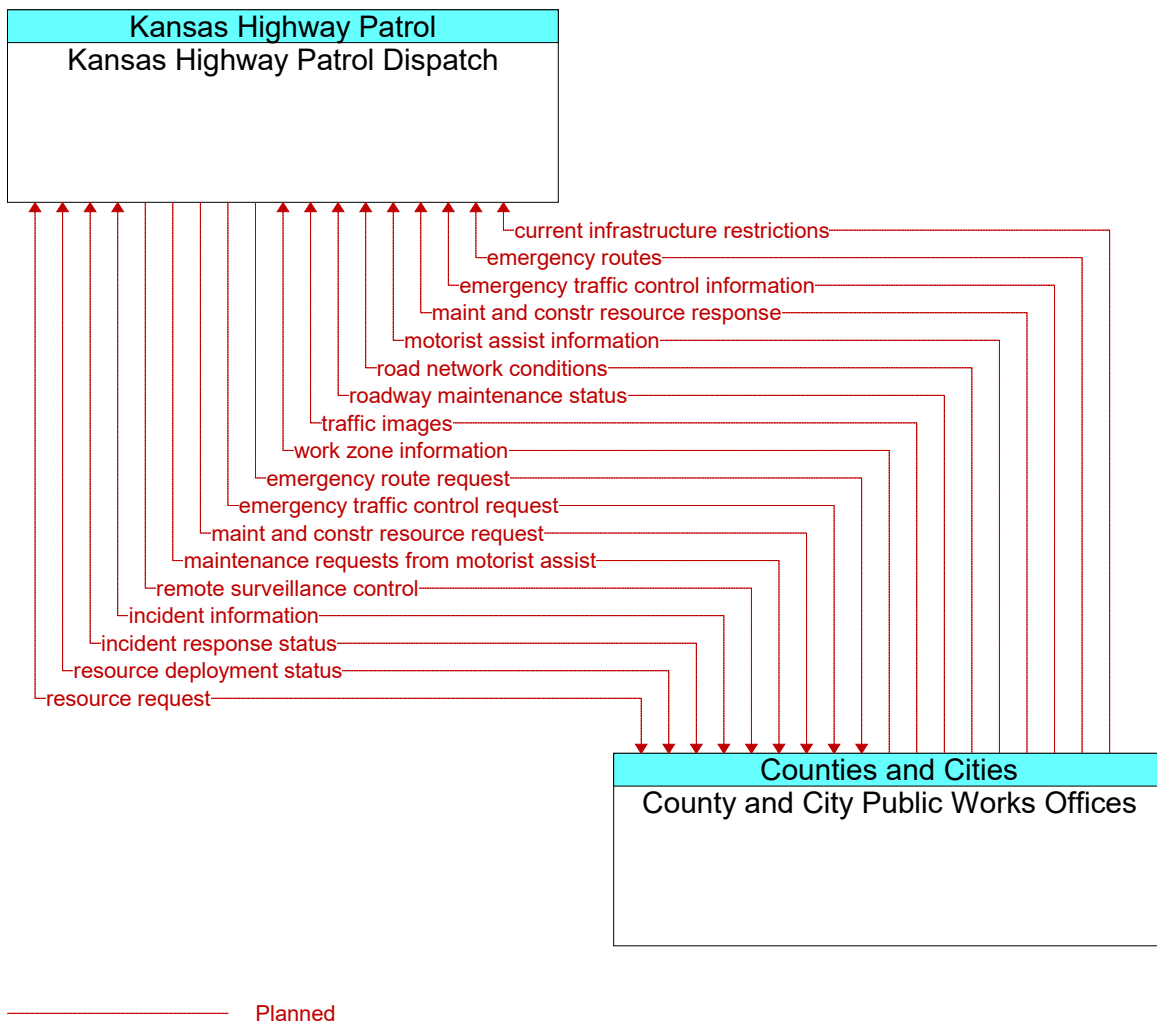
**Figure 207: County and City Public Works Offices - Kansas City Motorist Assist (Kansas) Interface**



**Figure 208: County and City Public Works Offices - Kansas City Regional 511 System Interface**

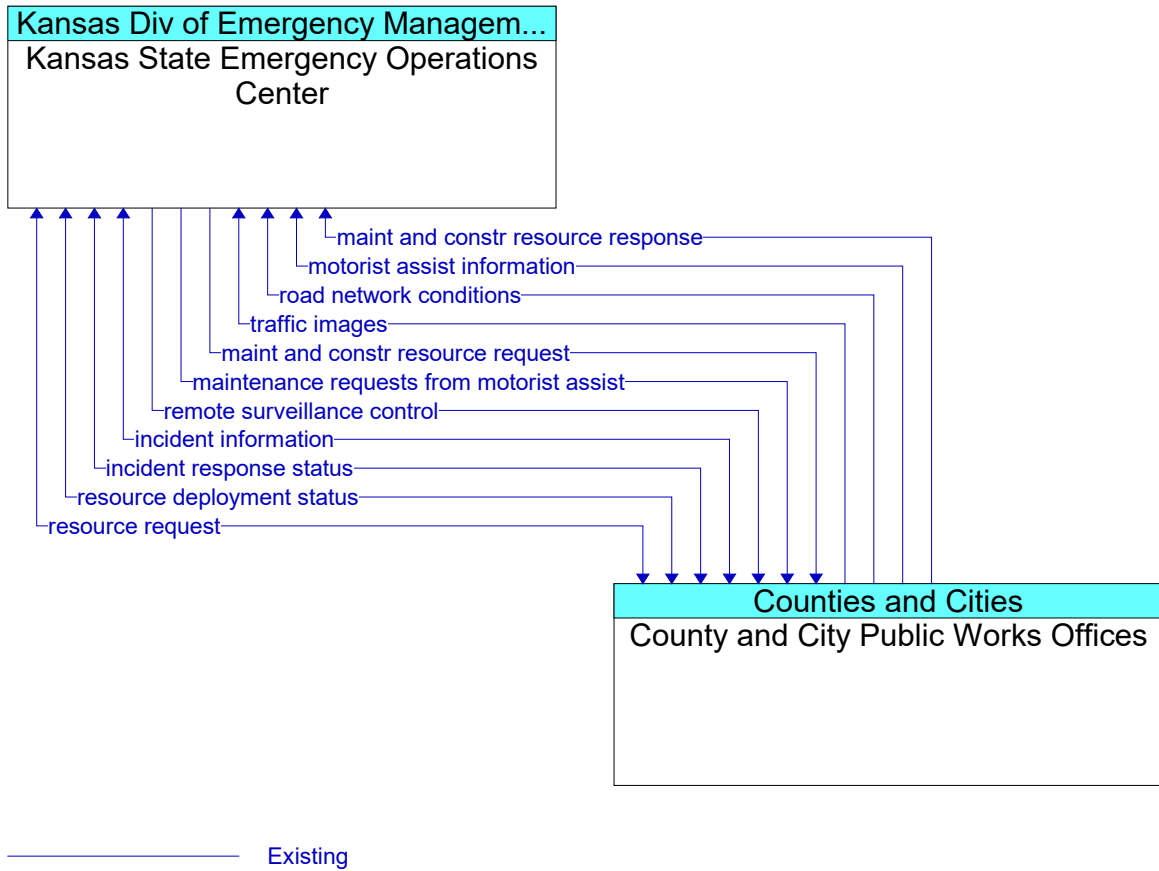


**Figure 209: County and City Public Works Offices - Kansas City Scout Traffic Management Center Interface**

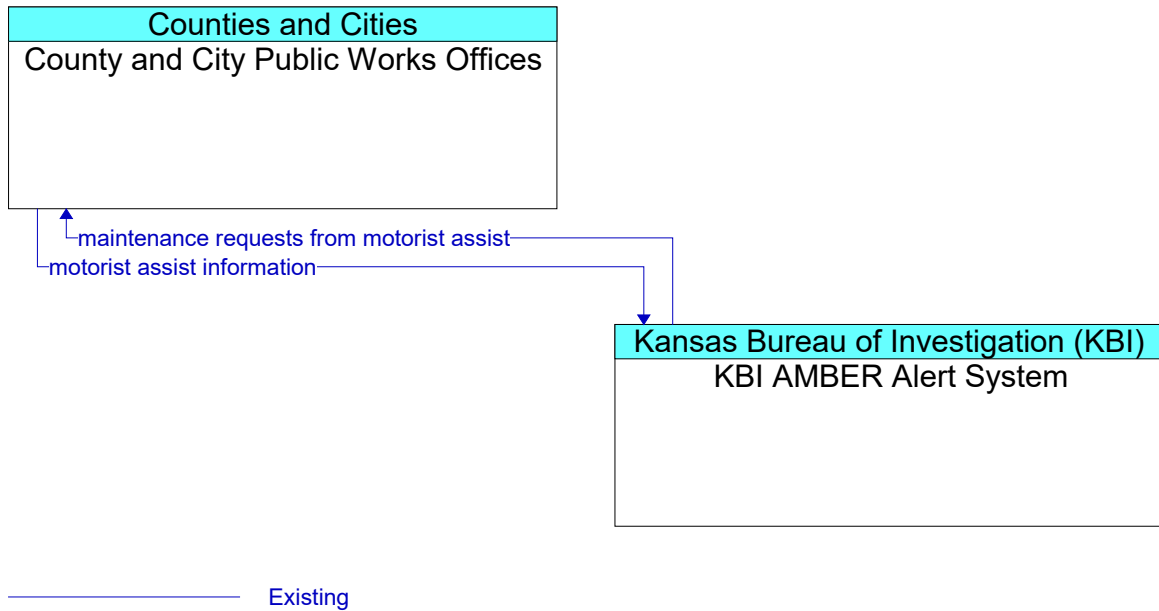


**Figure 210: County and City Public Works Offices - Kansas Highway Patrol Dispatch Interface**

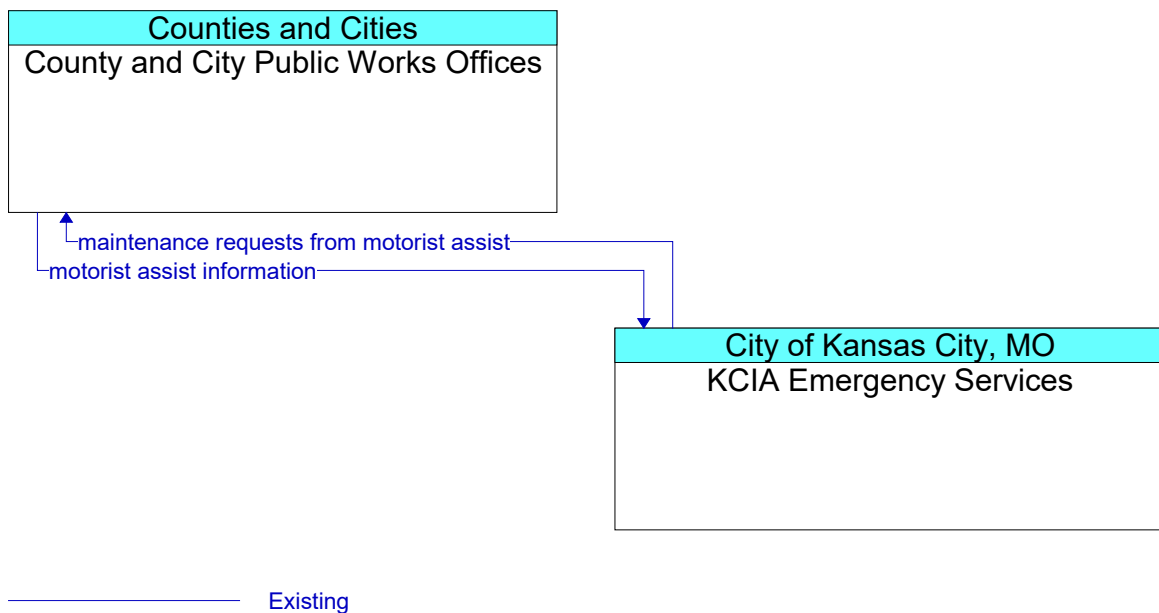




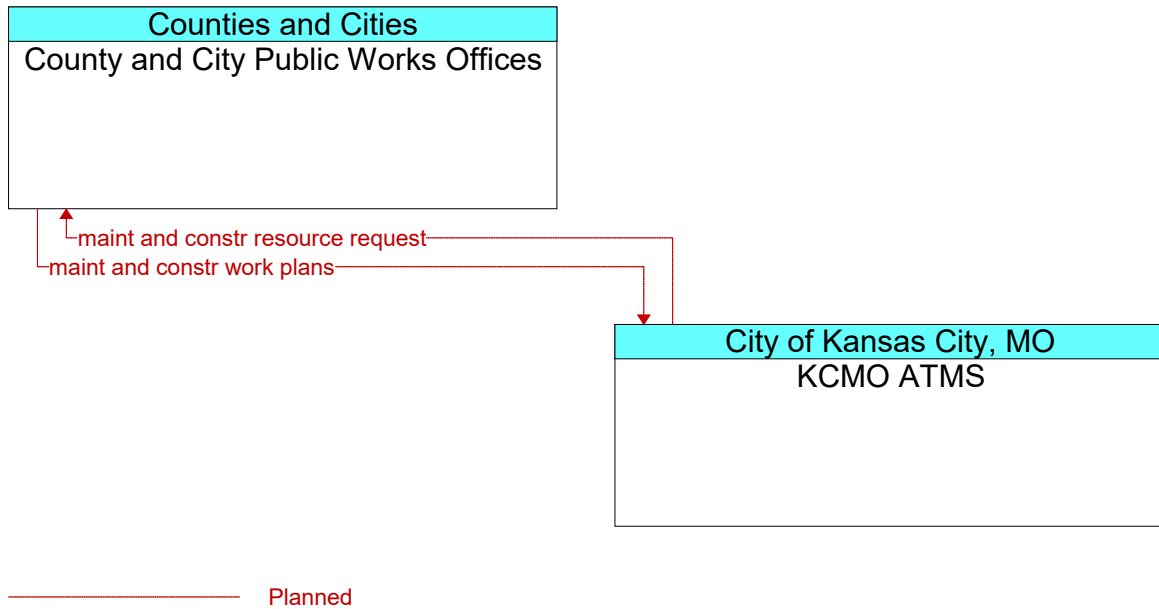
**Figure 211: County and City Public Works Offices - Kansas State Emergency Operations Center Interface**



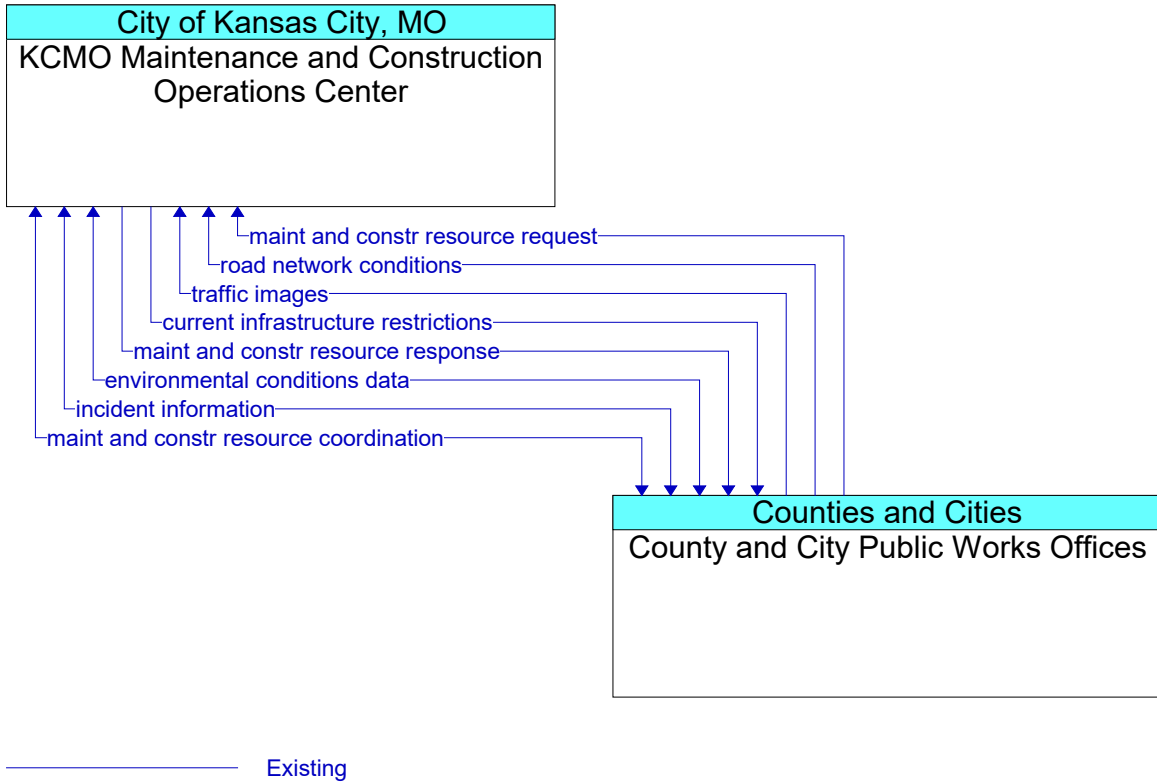
**Figure 212: County and City Public Works Offices - KBI AMBER Alert System Interface**



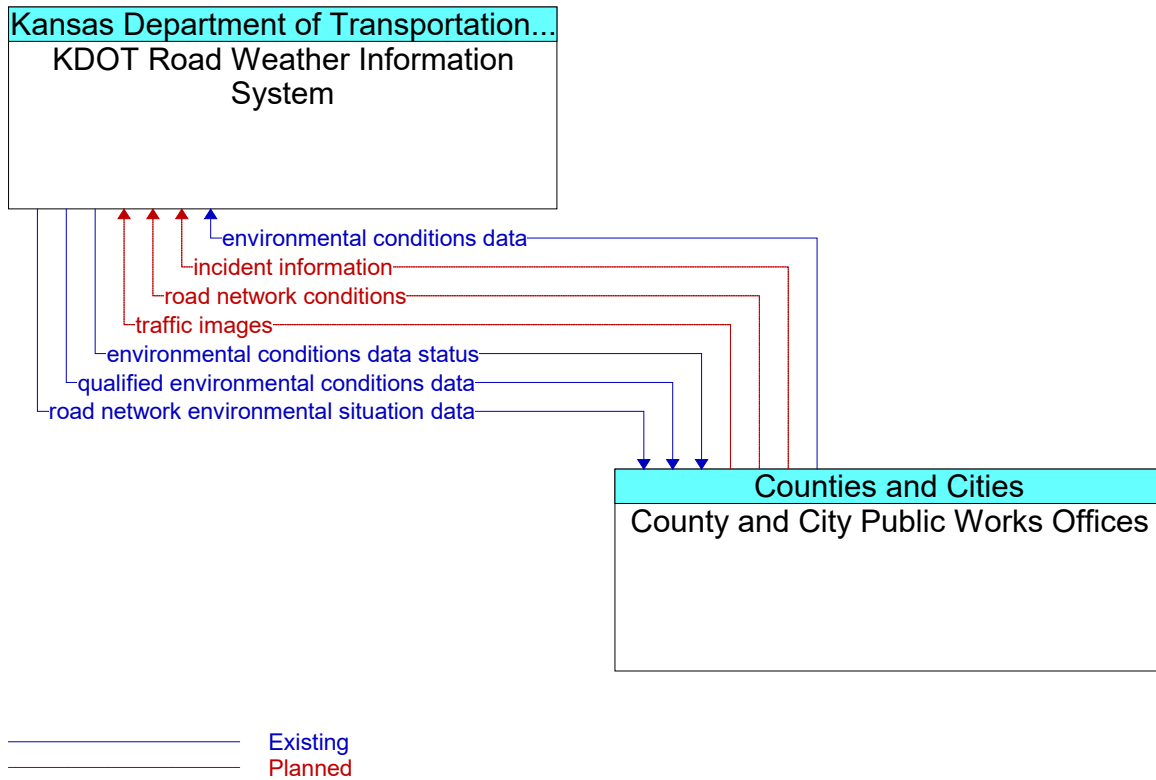
**Figure 213: County and City Public Works Offices - KCIA Emergency Services Interface**



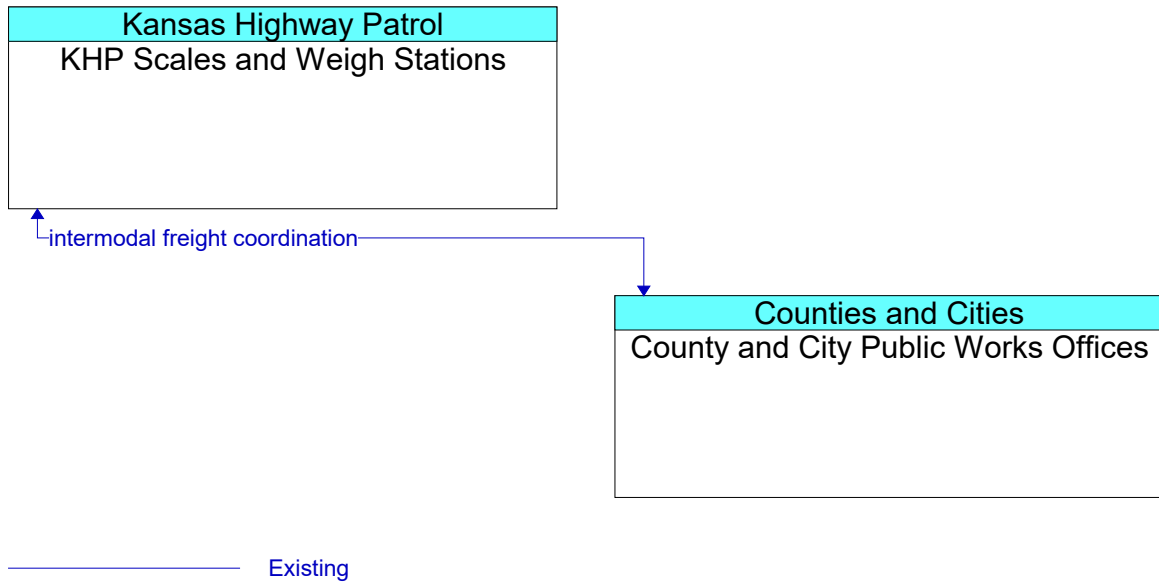
**Figure 214: County and City Public Works Offices - KCMO ATMS Interface**



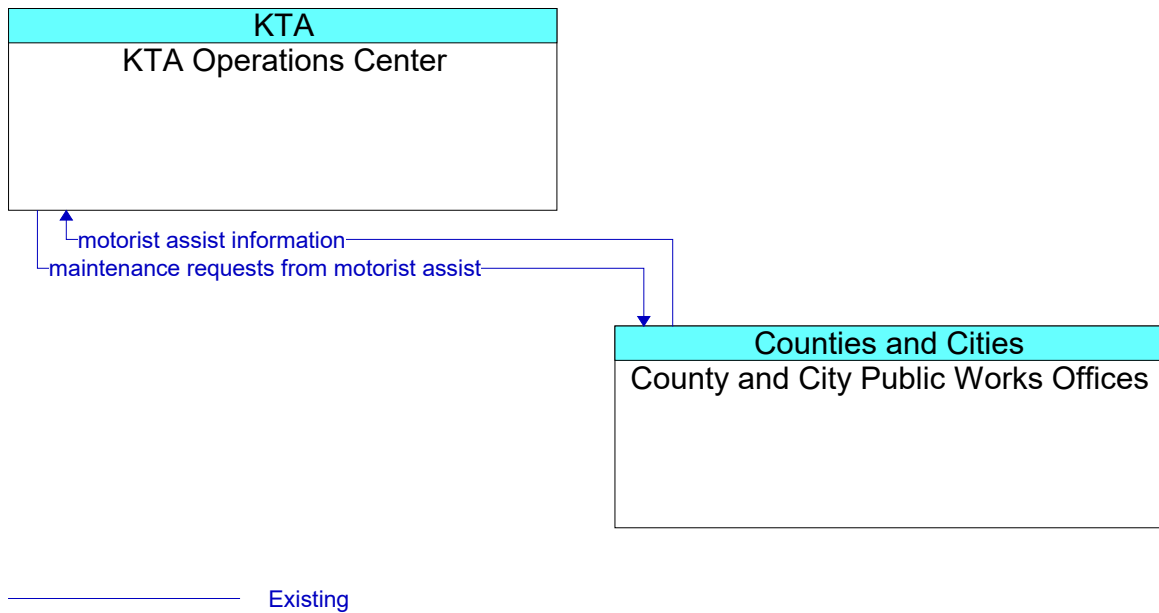
**Figure 215: County and City Public Works Offices - KCMO Maintenance and Construction Operations Center Interface**



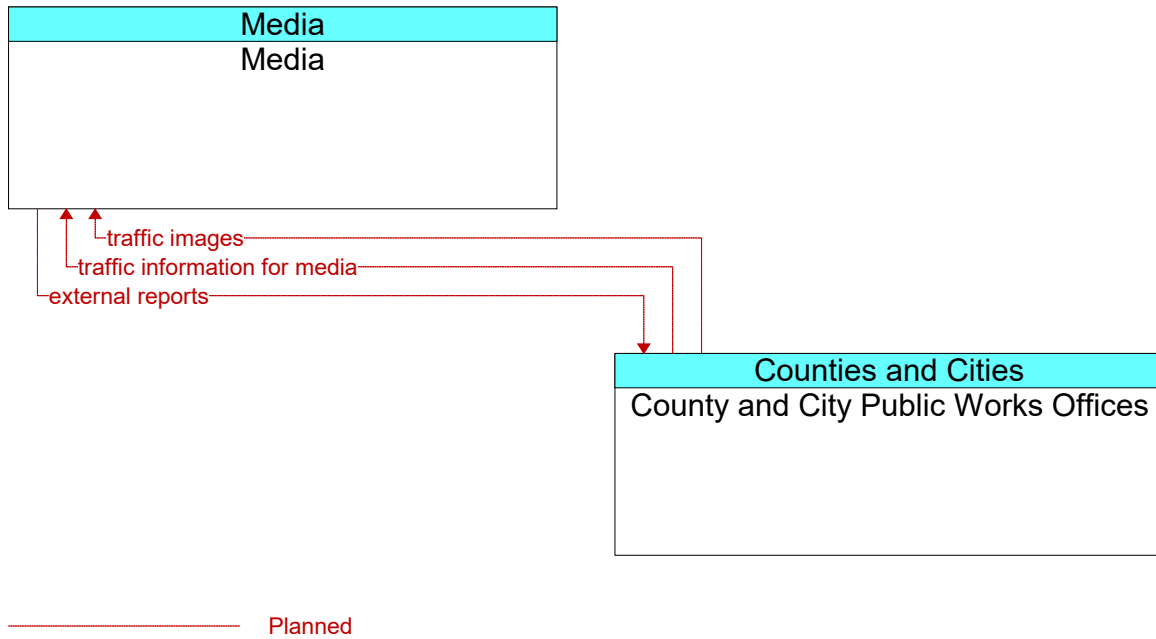
**Figure 216: County and City Public Works Offices - KDOT Road Weather Information System Interface**



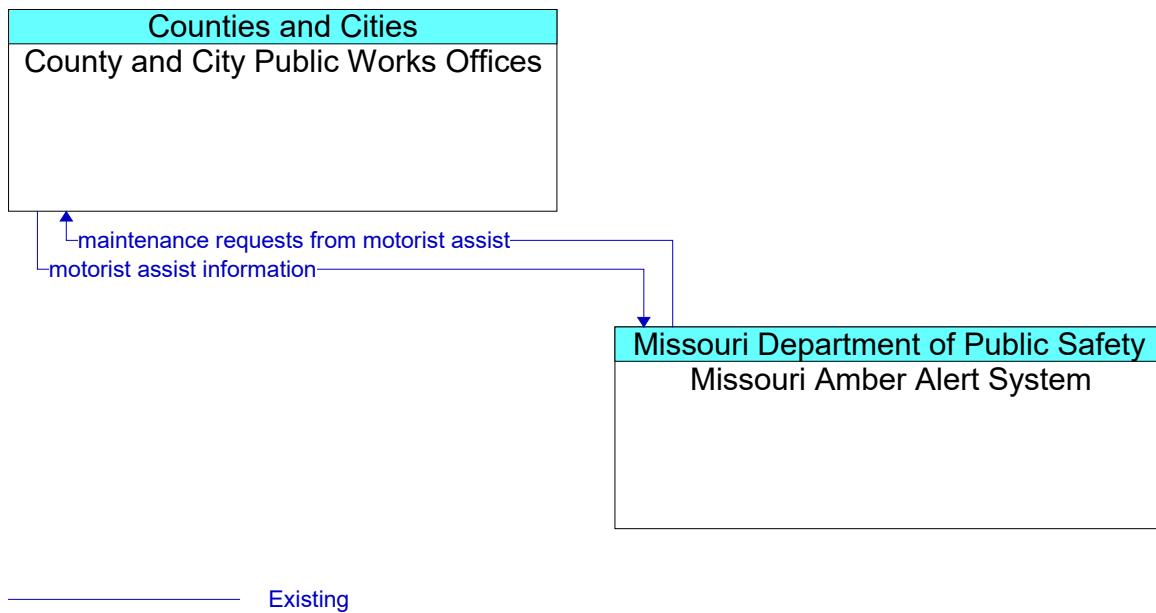
**Figure 217: County and City Public Works Offices - KHP Scales and Weigh Stations Interface**



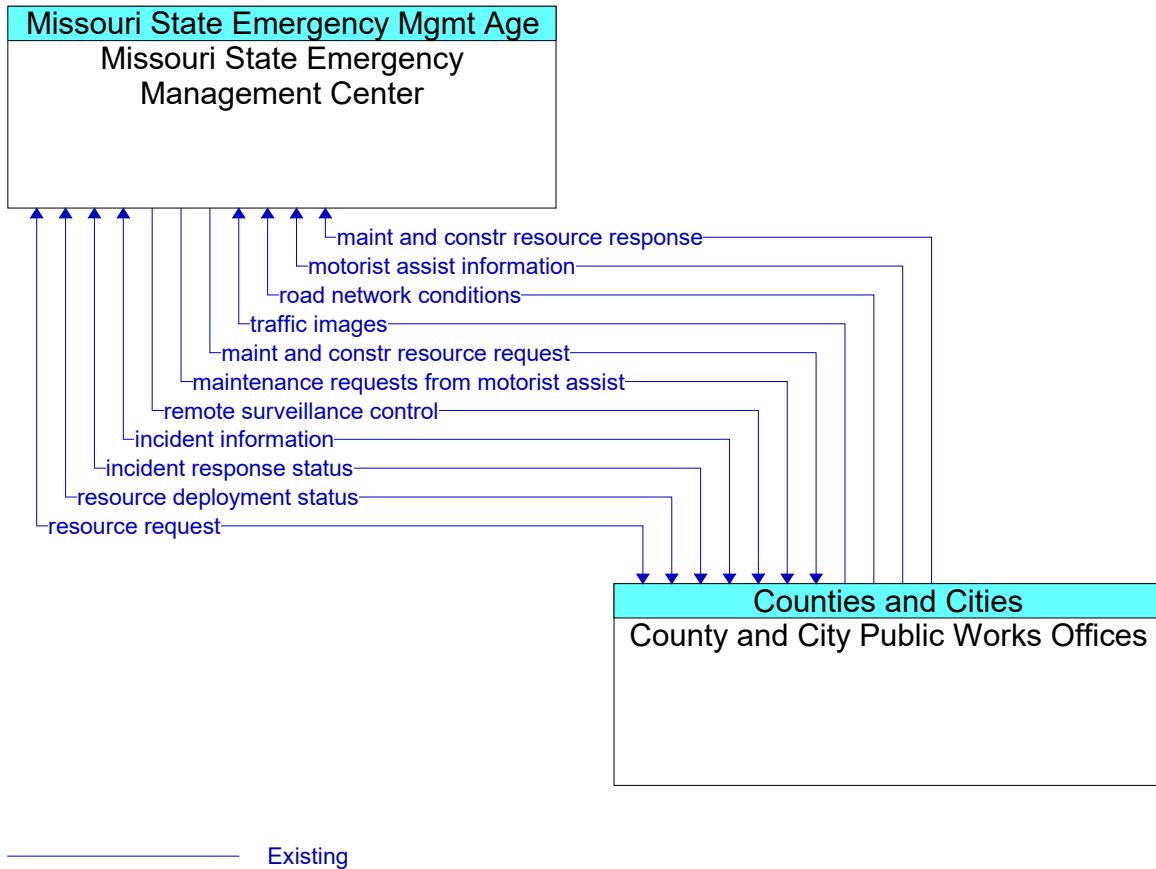
**Figure 218: County and City Public Works Offices - KTA Operations Center Interface**



**Figure 219: County and City Public Works Offices - Media Interface**

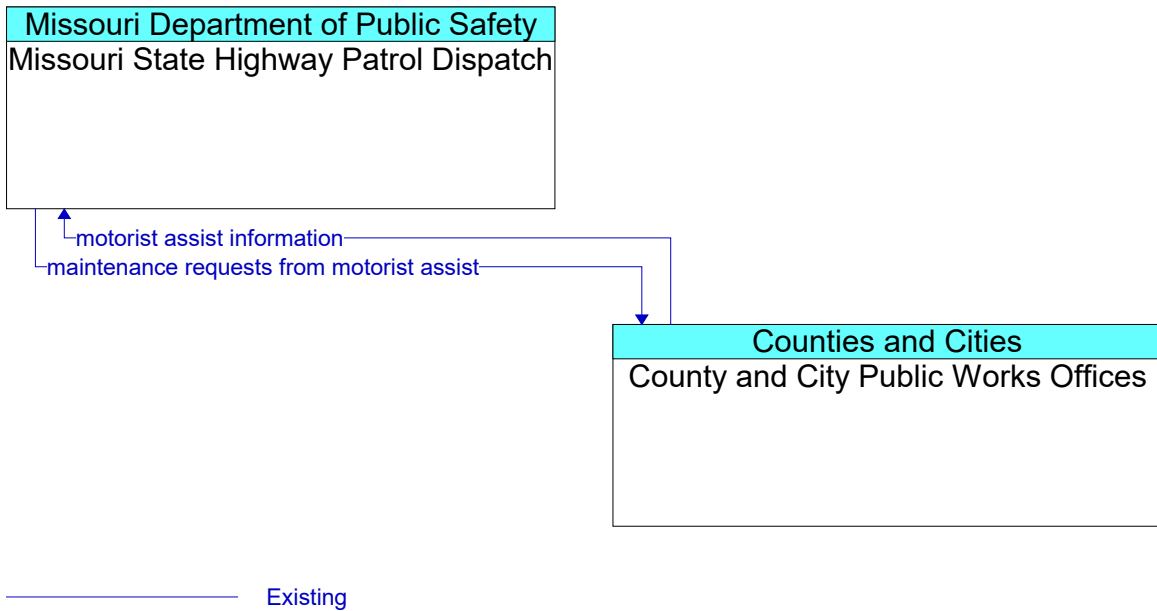


**Figure 220: County and City Public Works Offices - Missouri Amber Alert System Interface**

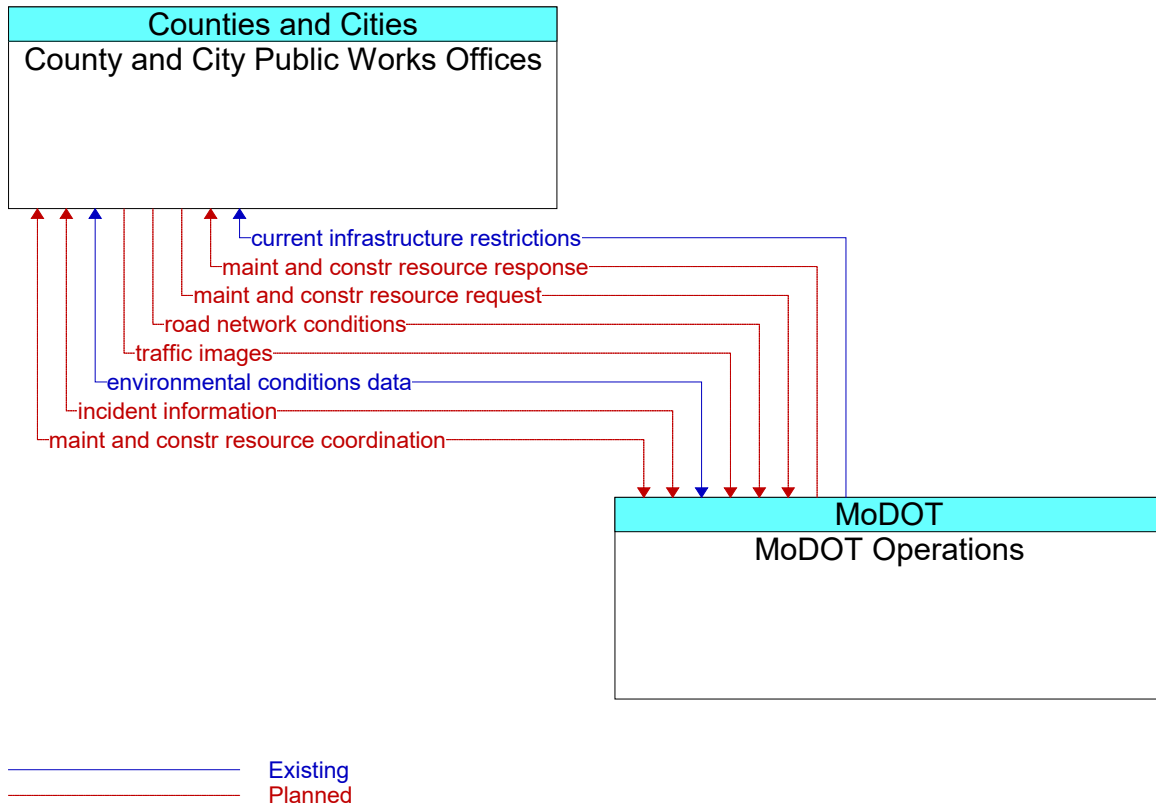


**Figure 221: County and City Public Works Offices - Missouri State Emergency Management Center Interface**

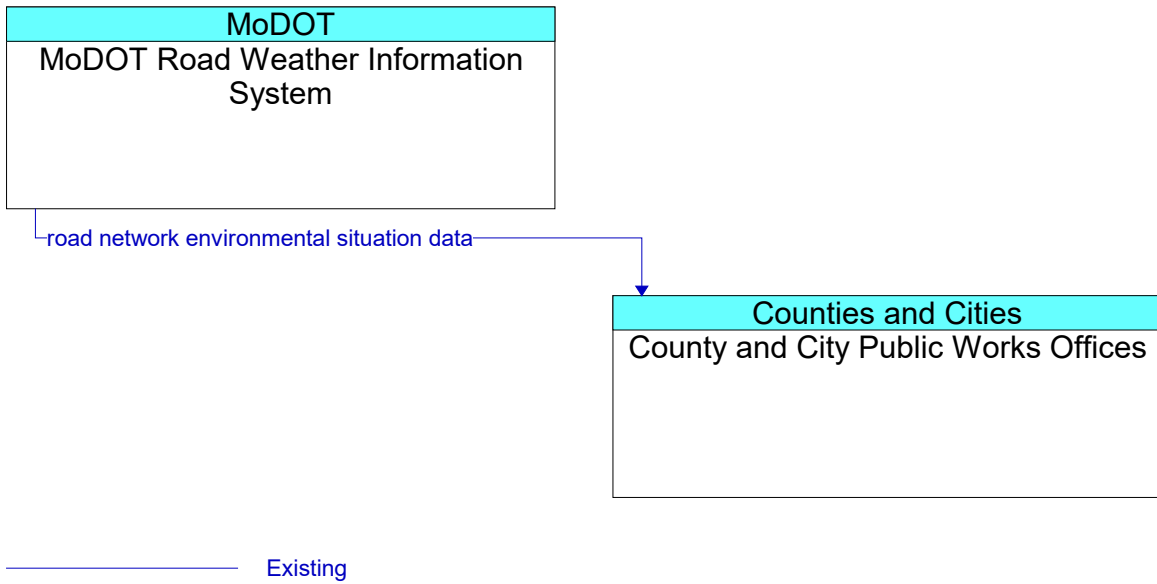




**Figure 222: County and City Public Works Offices - Missouri State Highway Patrol Dispatch Interface**



**Figure 223: County and City Public Works Offices - MoDOT Operations Interface**



**Figure 224: County and City Public Works Offices - MoDOT Road Weather Information System Interface**

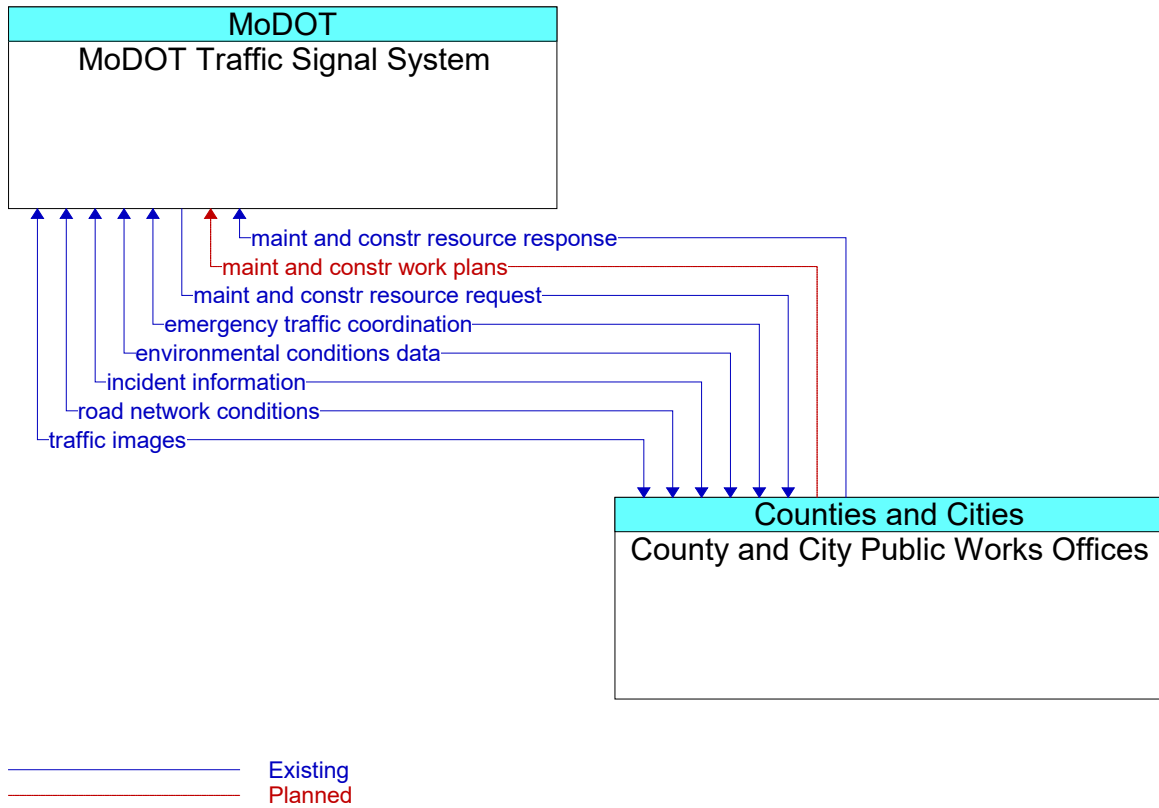
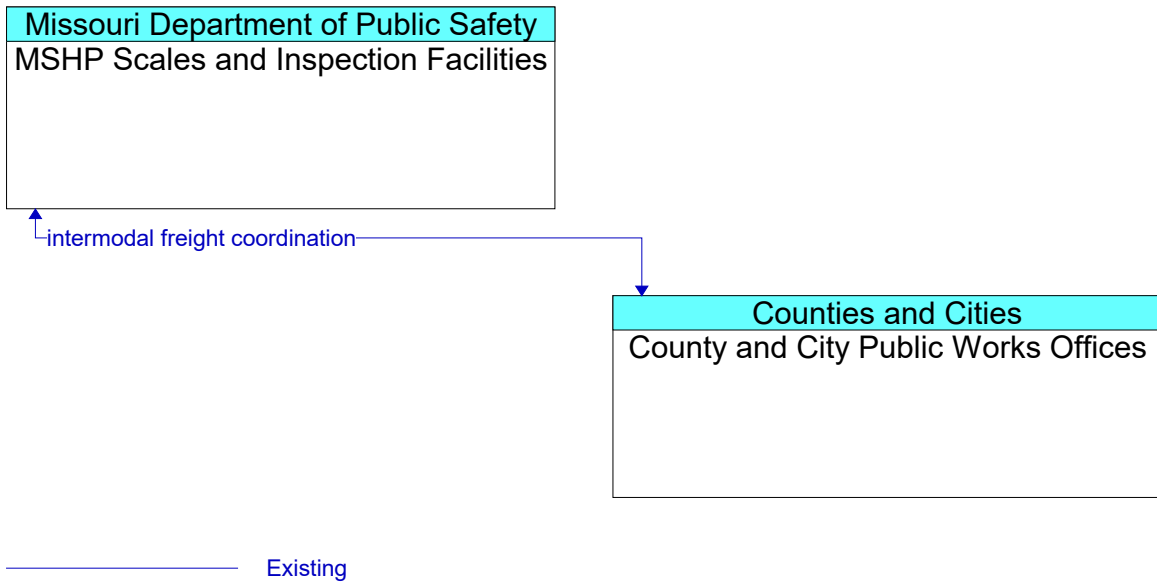
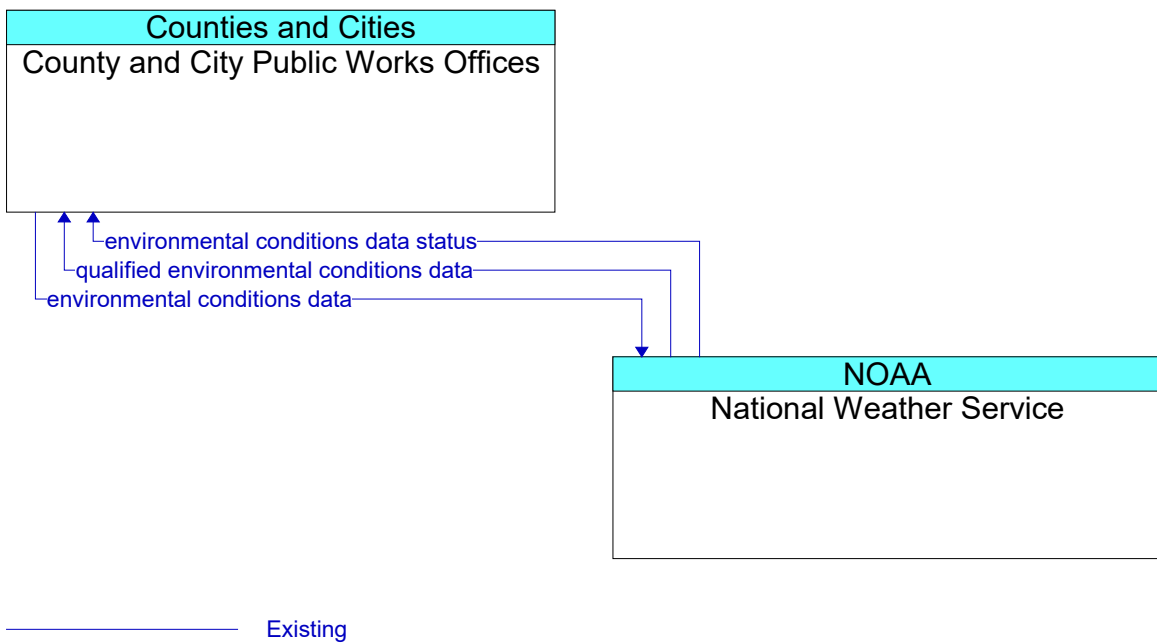


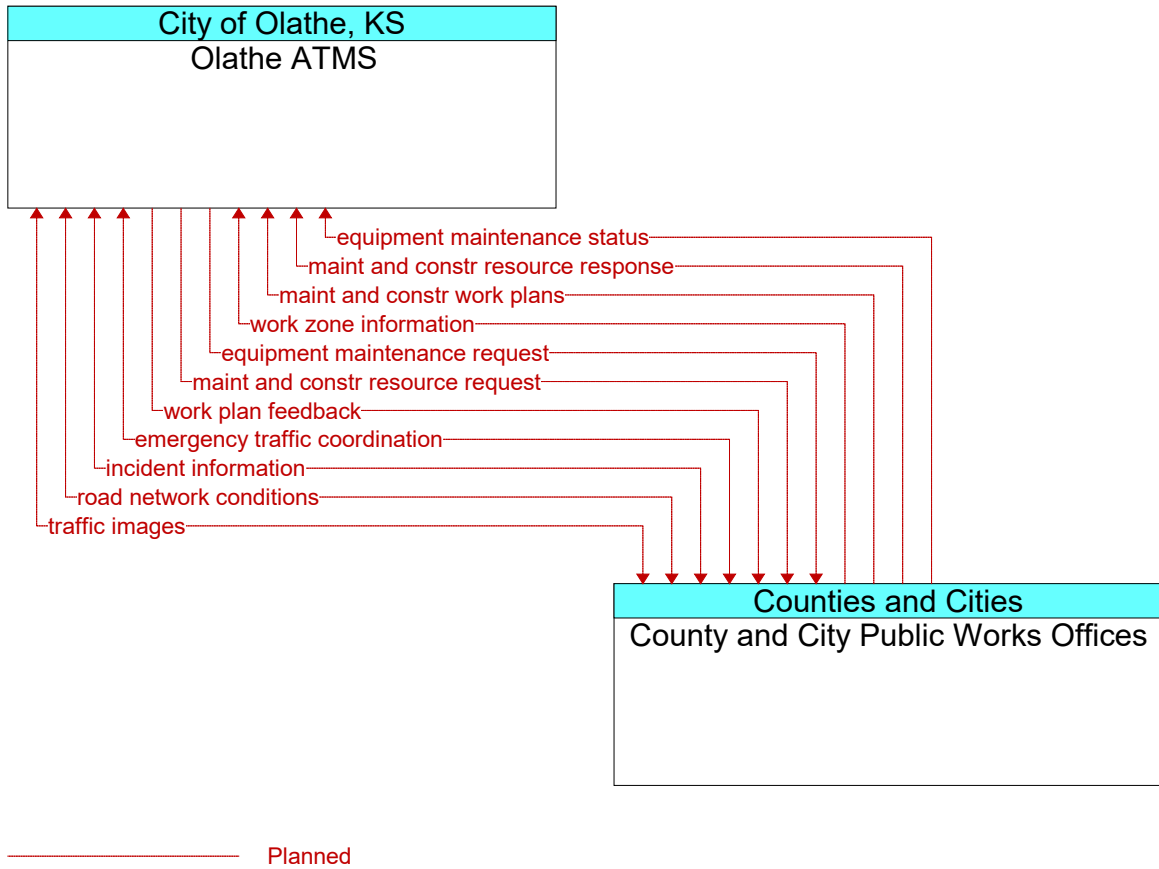
Figure 225: County and City Public Works Offices - MoDOT Traffic Signal System Interface



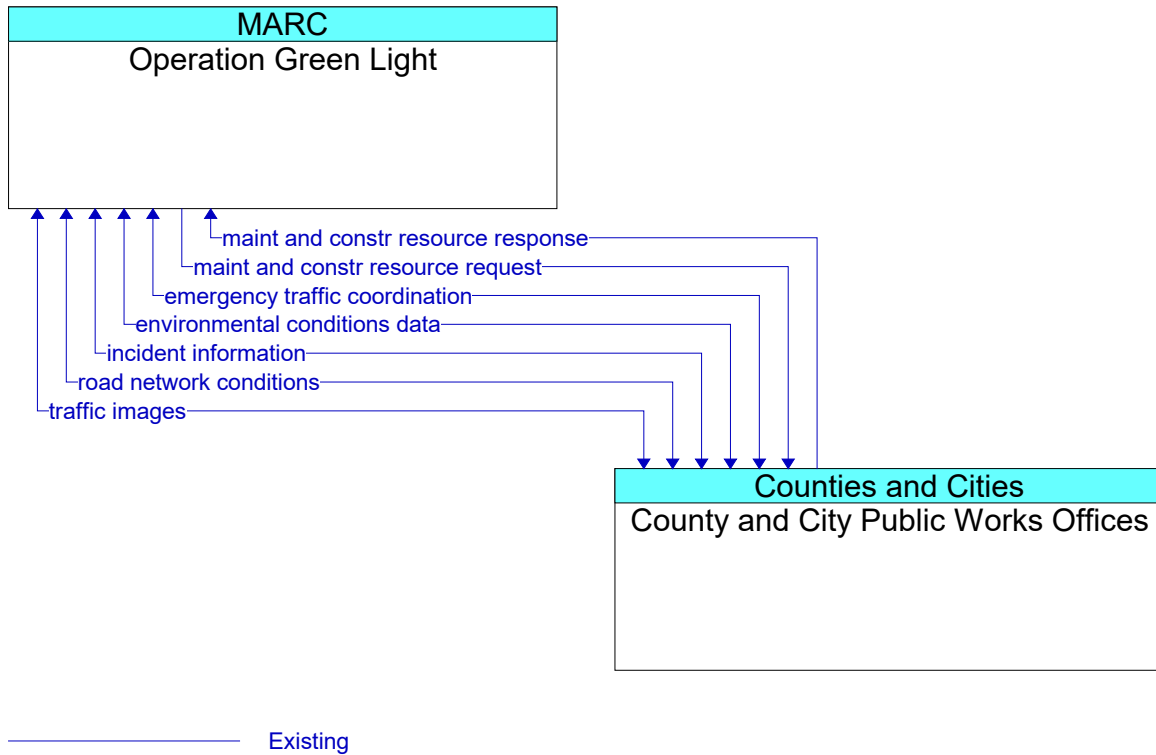
**Figure 226: County and City Public Works Offices - MSHP Scales and Inspection Facilities Interface**



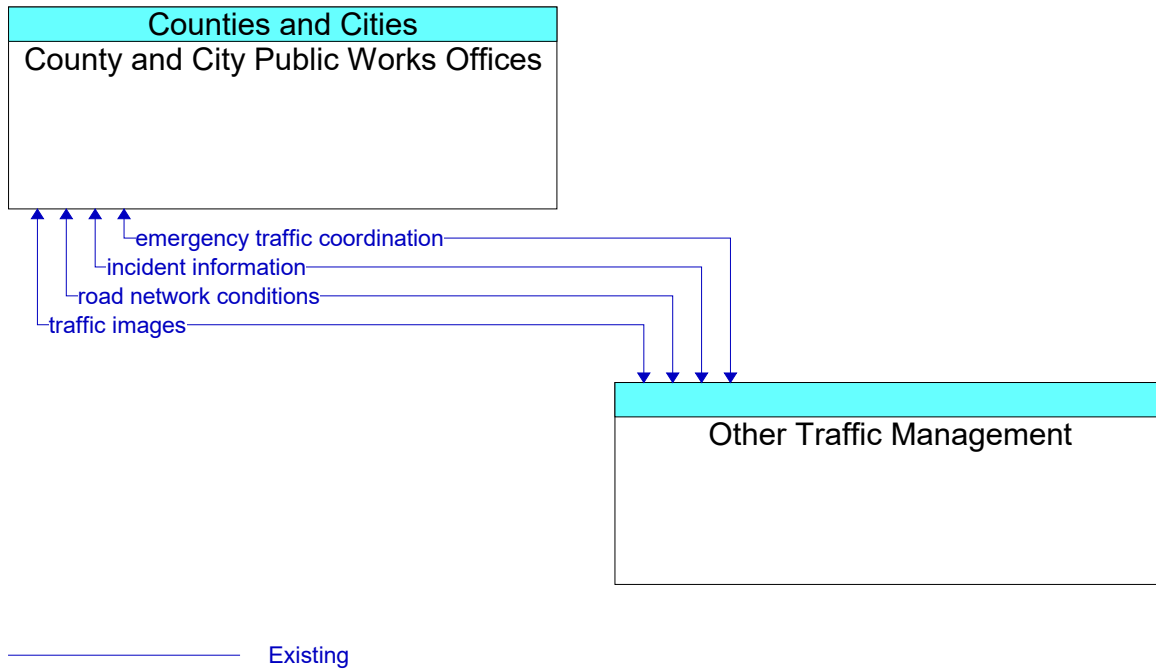
**Figure 227: County and City Public Works Offices - National Weather Service Interface**



**Figure 228: County and City Public Works Offices - Olathe ATMS Interface**

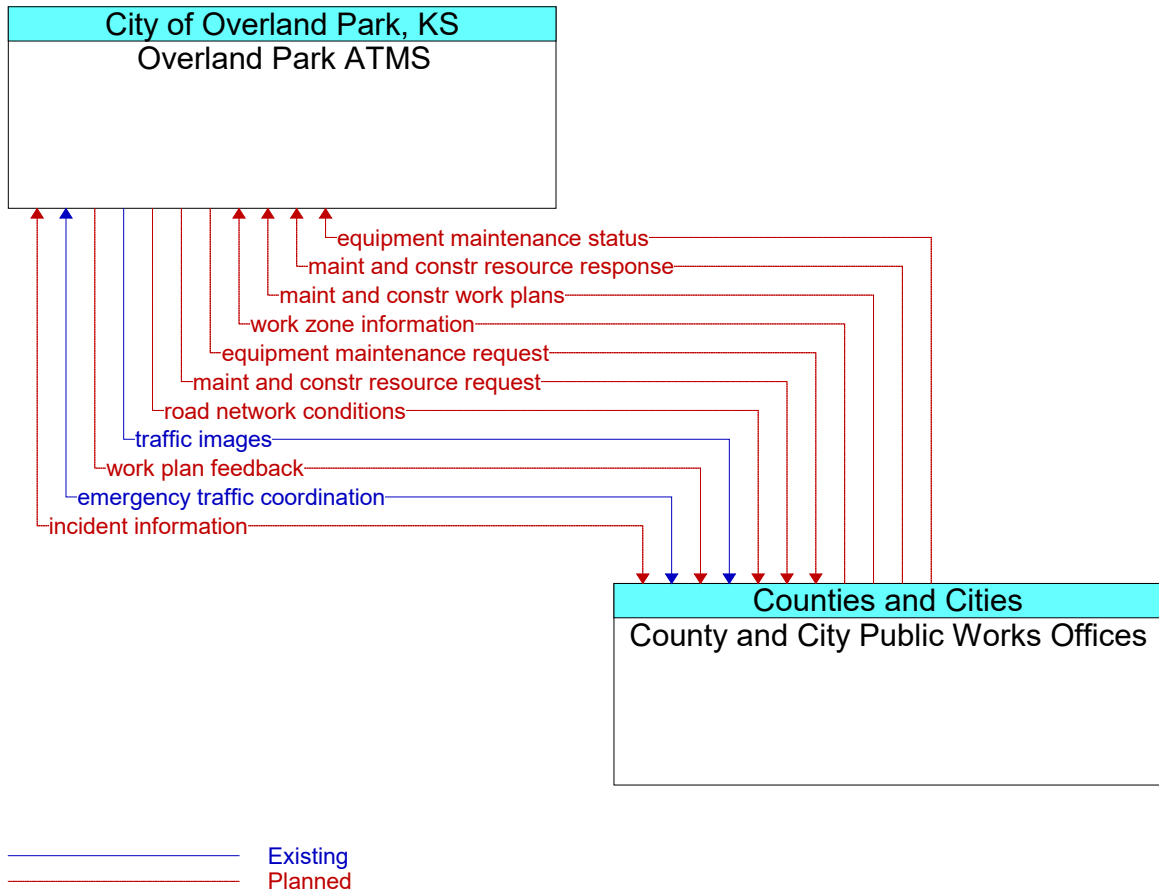


**Figure 229: County and City Public Works Offices - Operation Green Light Interface**

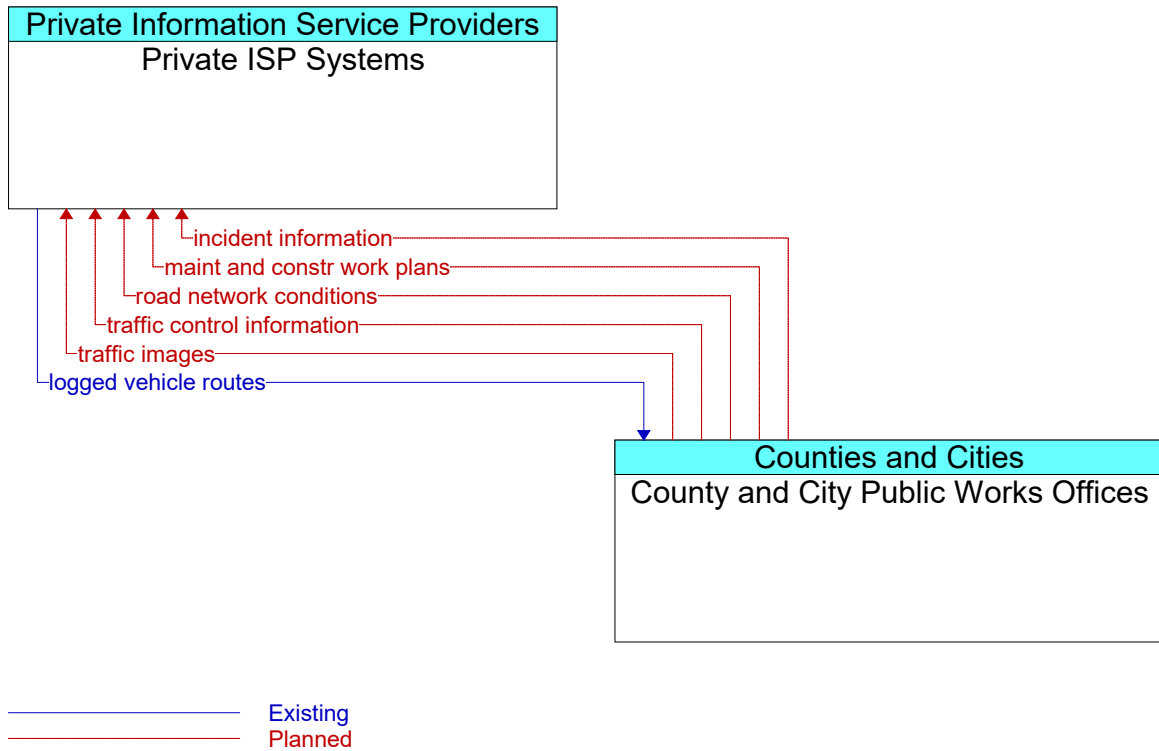


**Figure 230: County and City Public Works Offices - Other Traffic Management Interface**

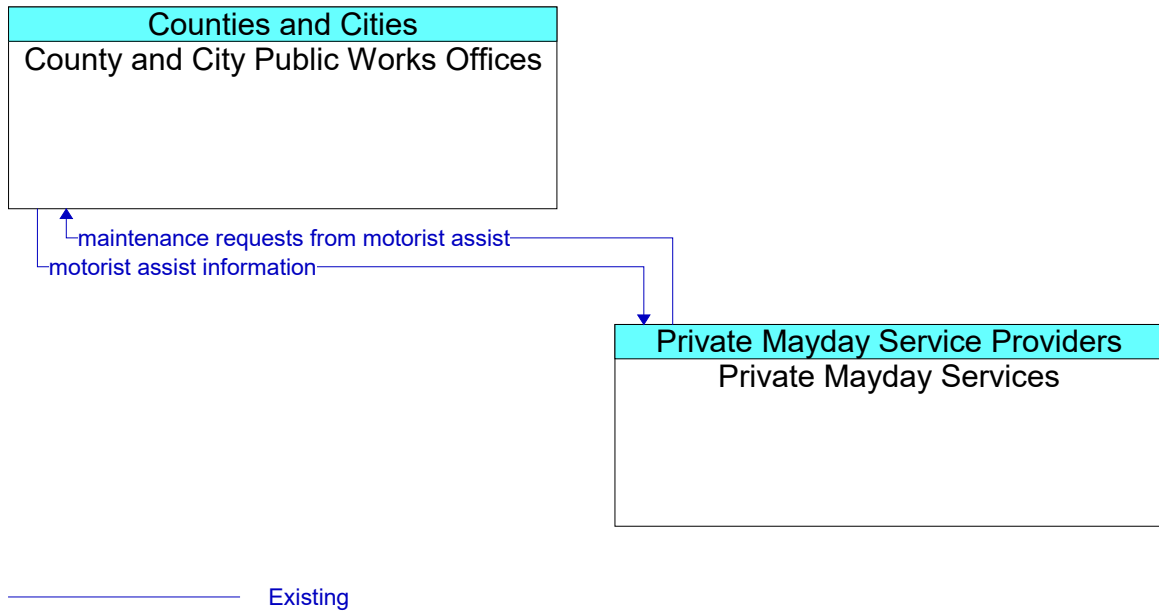




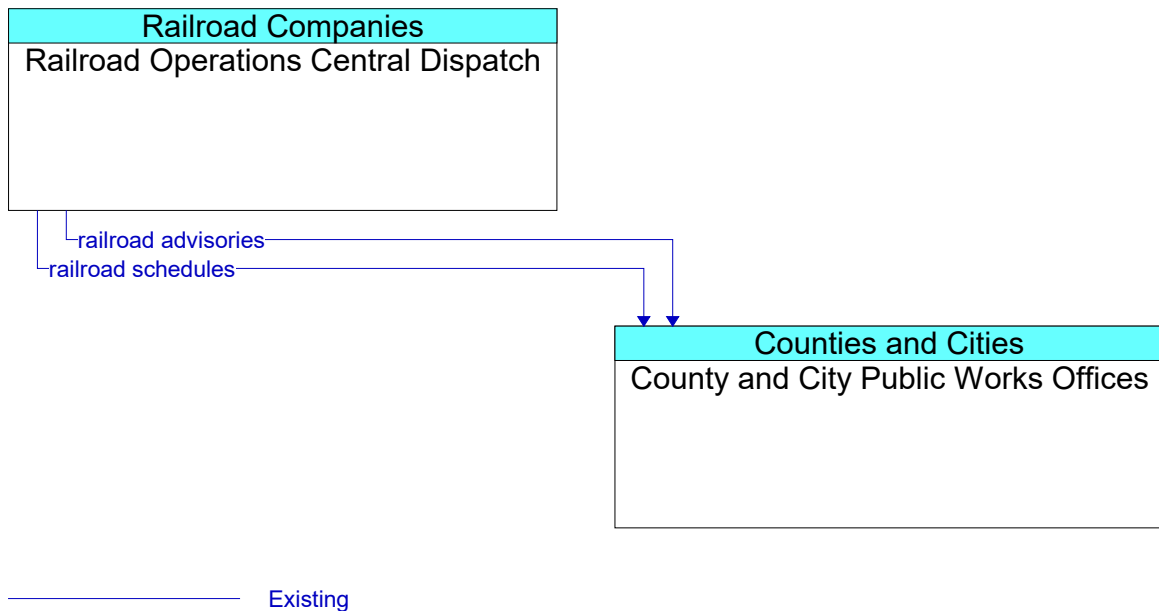
**Figure 231: County and City Public Works Offices - Overland Park ATMS Interface**



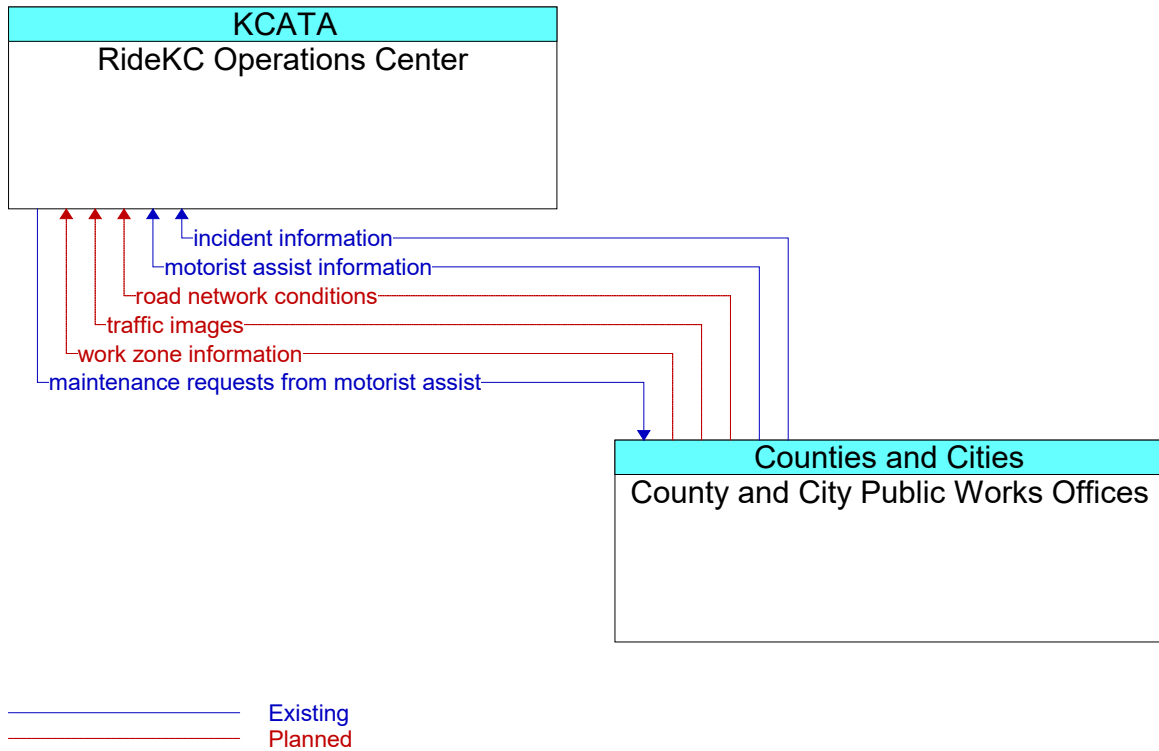
**Figure 232: County and City Public Works Offices - Private ISP Systems Interface**



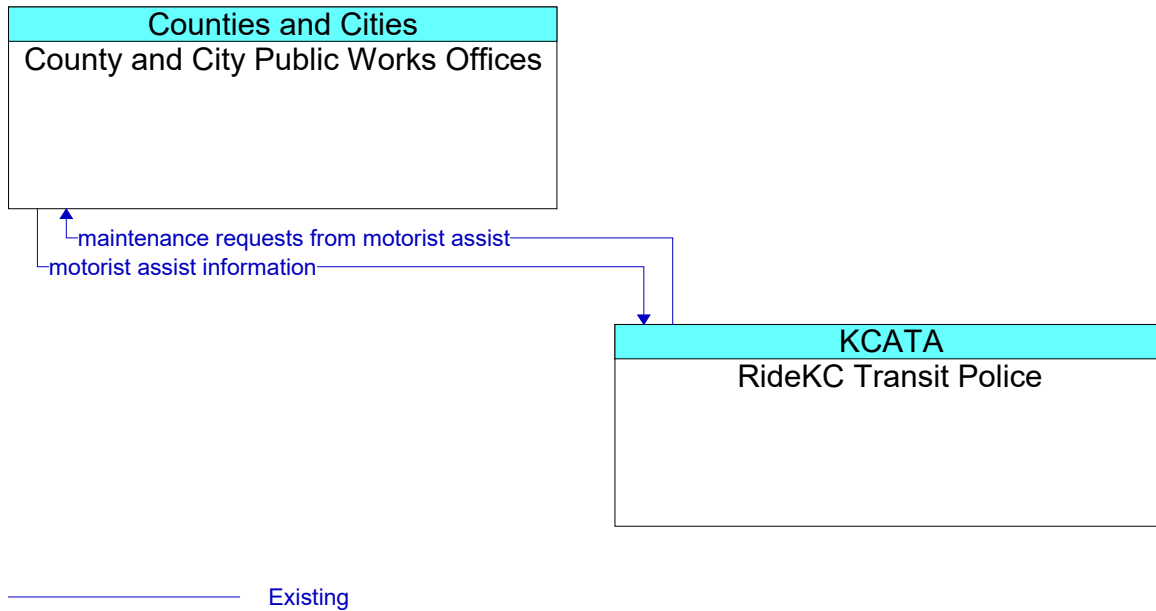
**Figure 233: County and City Public Works Offices - Private Mayday Services Interface**



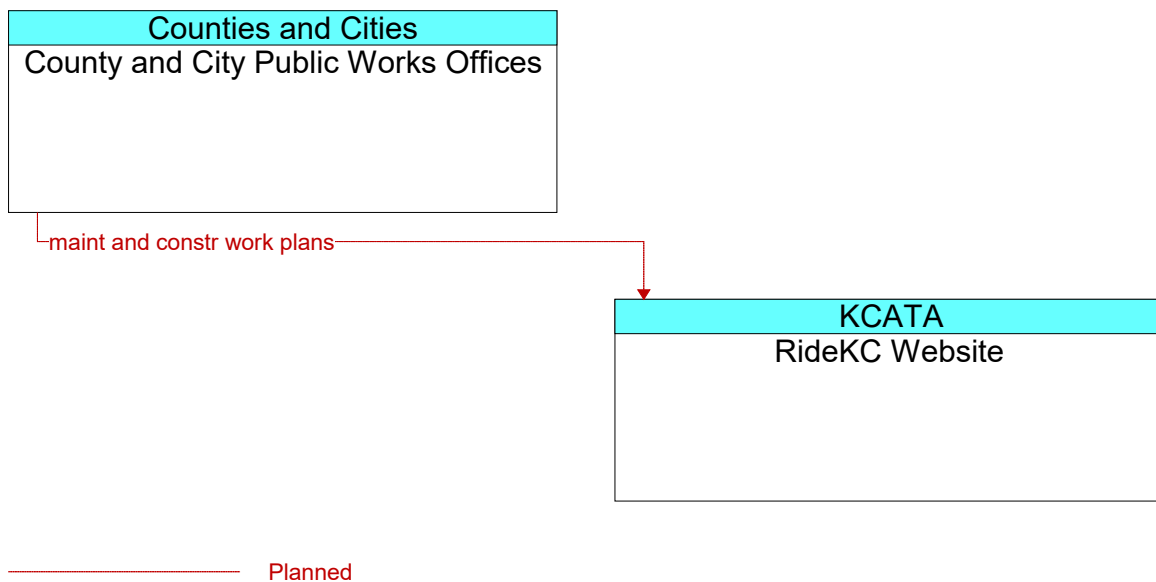
**Figure 234: County and City Public Works Offices - Railroad Operations Central Dispatch Interface**



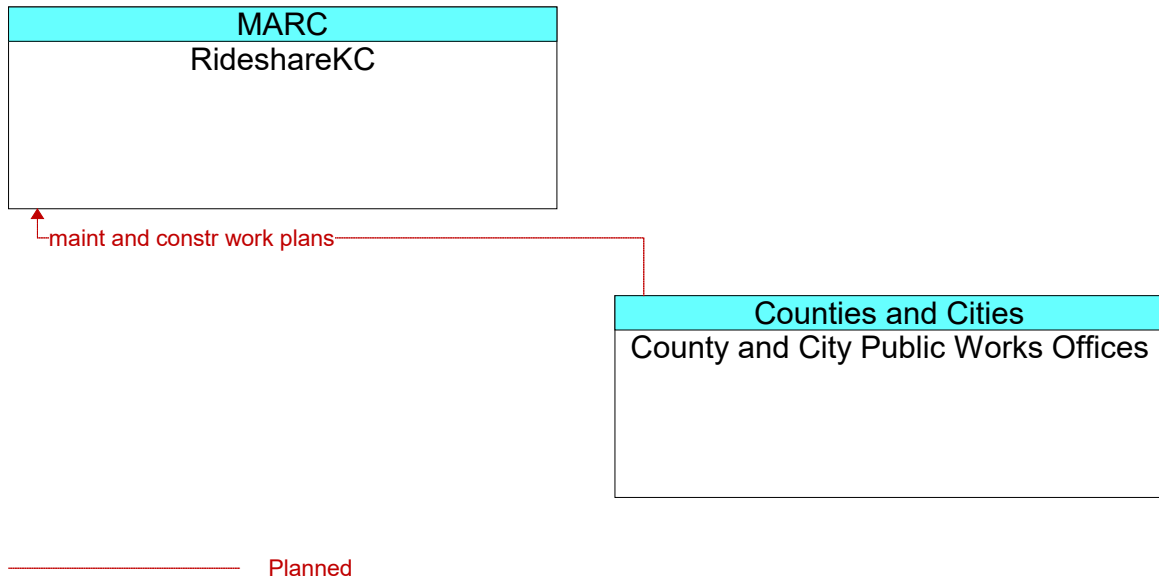
**Figure 235: County and City Public Works Offices - RideKC Operations Center Interface**



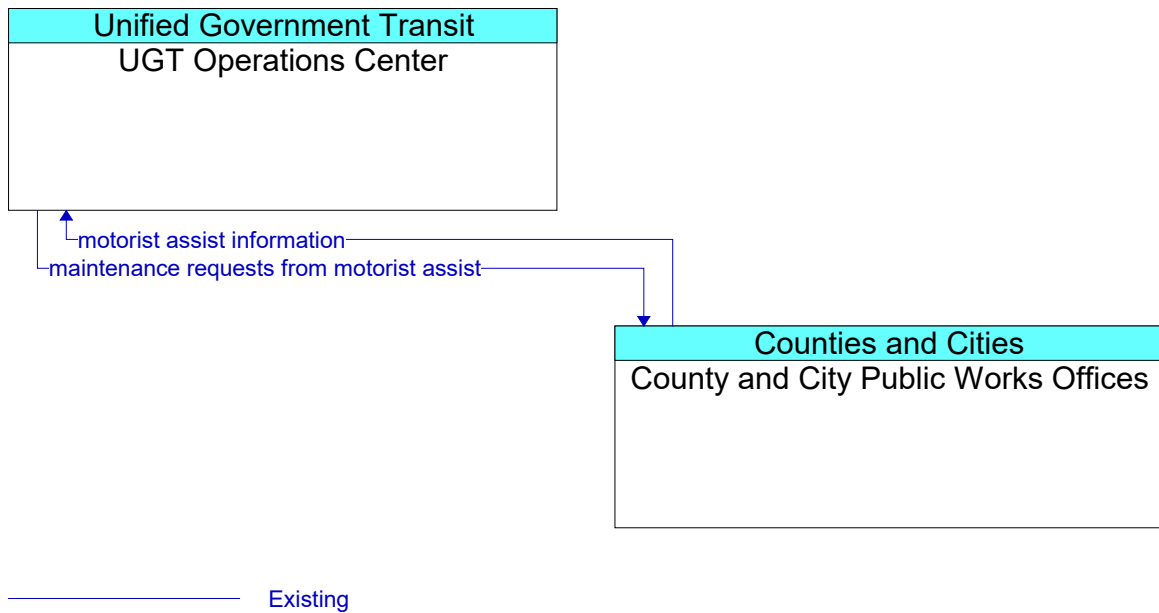
**Figure 236: County and City Public Works Offices - RideKC Transit Police Interface**



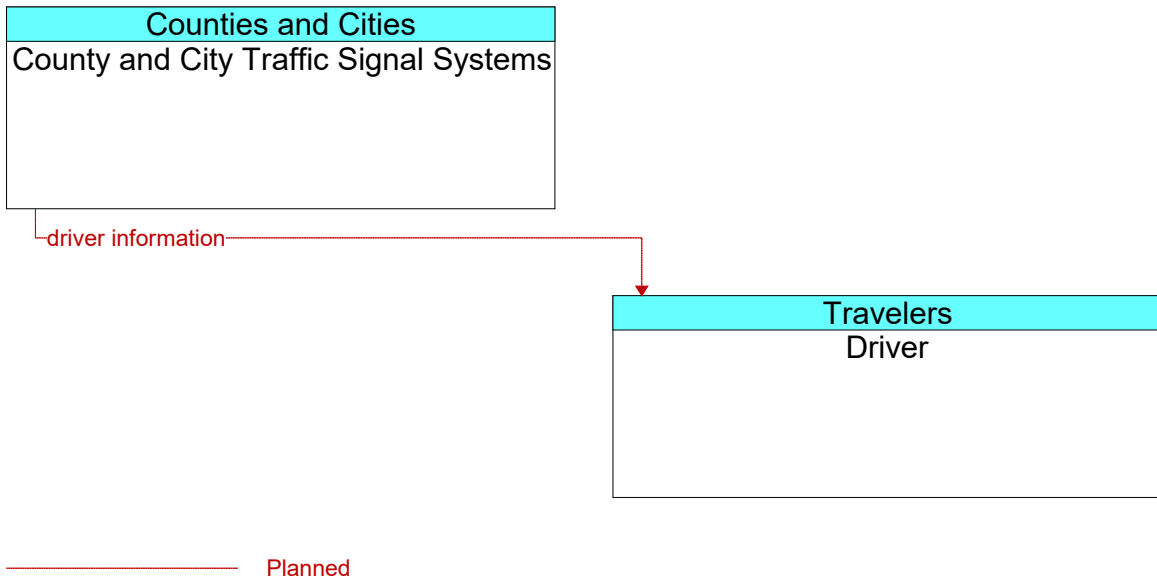
**Figure 237: County and City Public Works Offices - RideKC Website Interface**



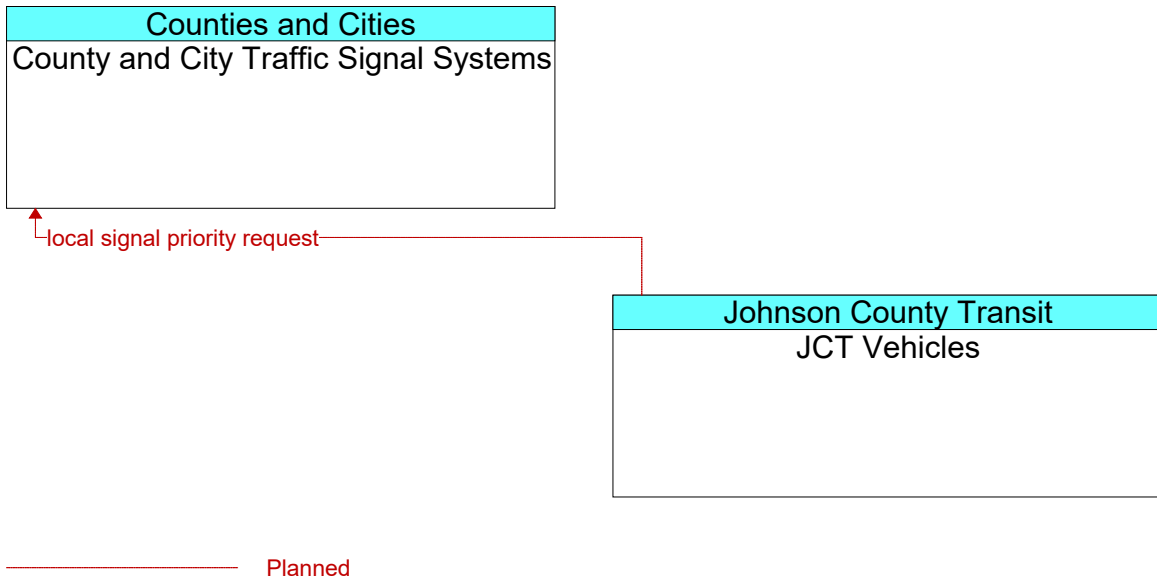
**Figure 238: County and City Public Works Offices - RideshareKC Interface**



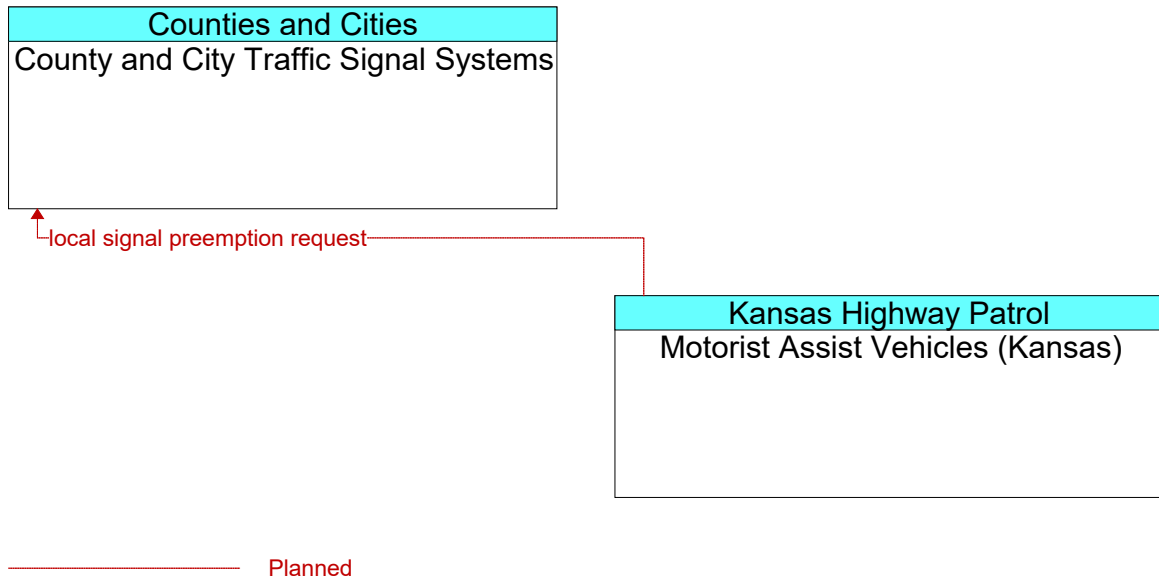
**Figure 239: County and City Public Works Offices - UGT Operations Center Interface**



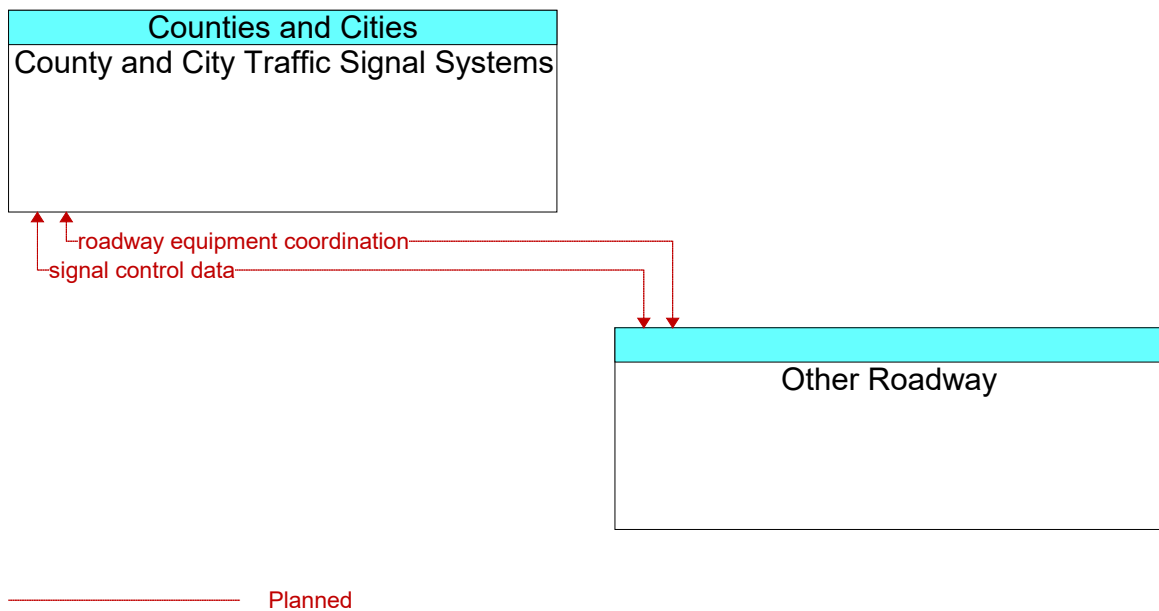
**Figure 240: County and City Traffic Signal Systems - Driver Interface**



**Figure 241: County and City Traffic Signal Systems - JCT Vehicles Interface**

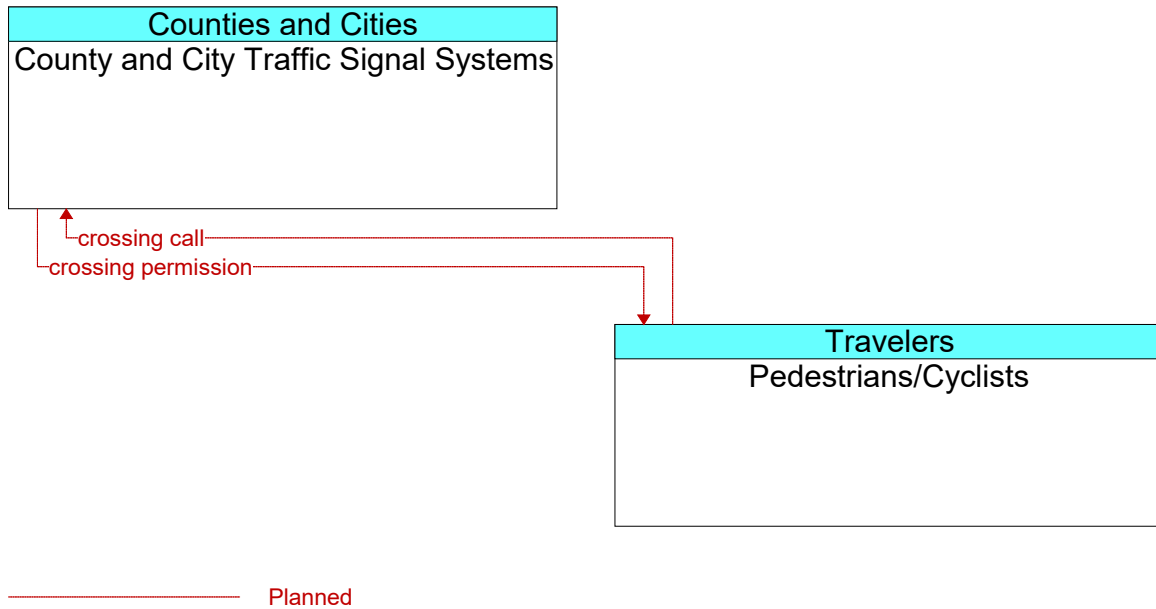


**Figure 242: County and City Traffic Signal Systems - Motorist Assist Vehicles (Kansas) Interface**

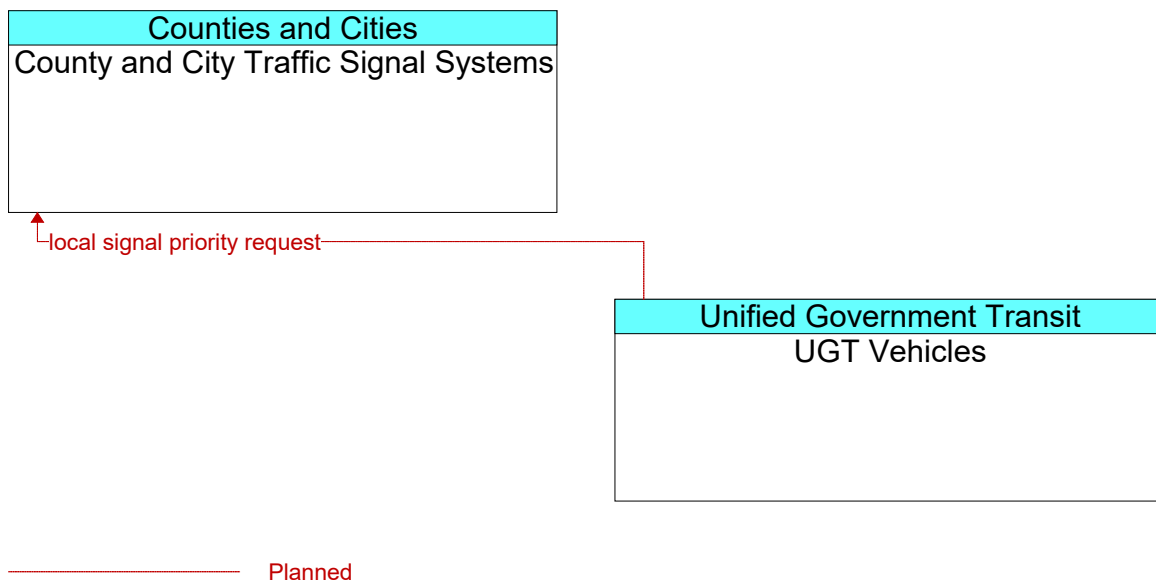


**Figure 243: County and City Traffic Signal Systems - Other Roadway Interface**

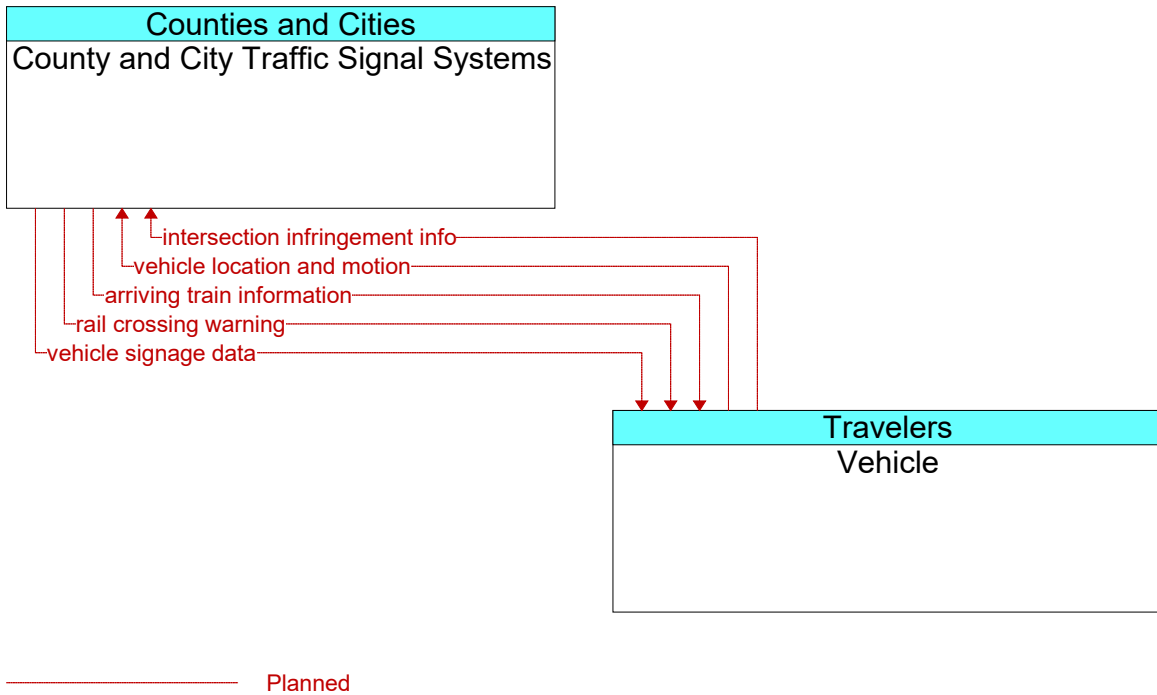




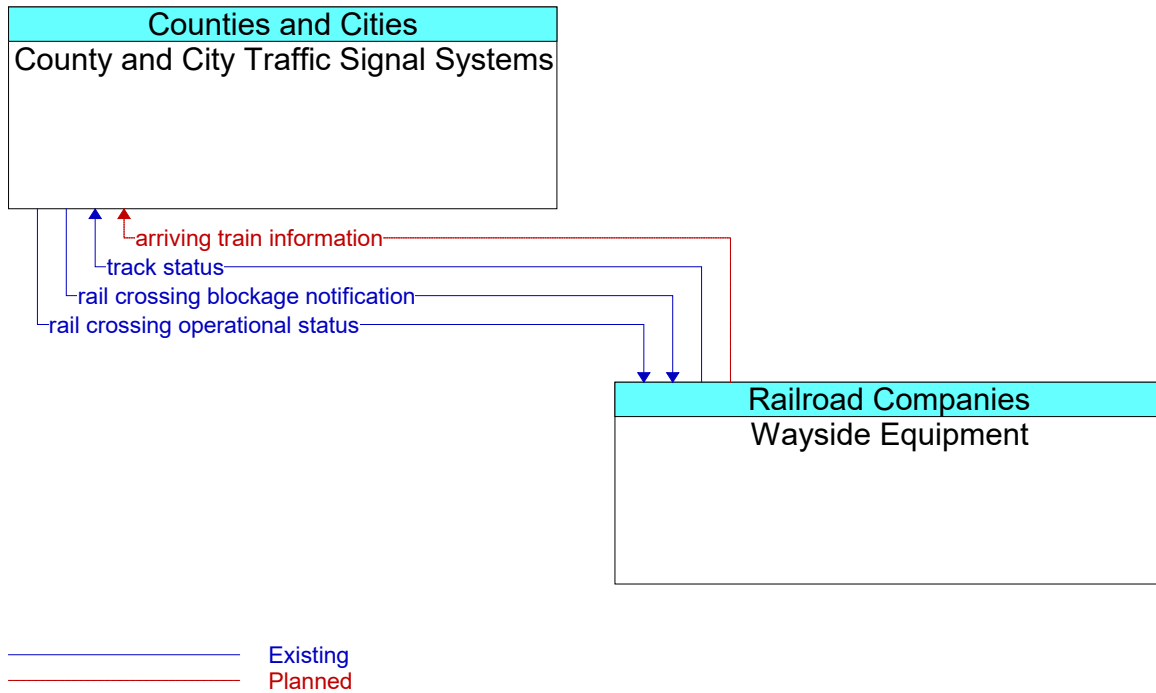
**Figure 244: County and City Traffic Signal Systems - Pedestrians/Cyclists Interface**



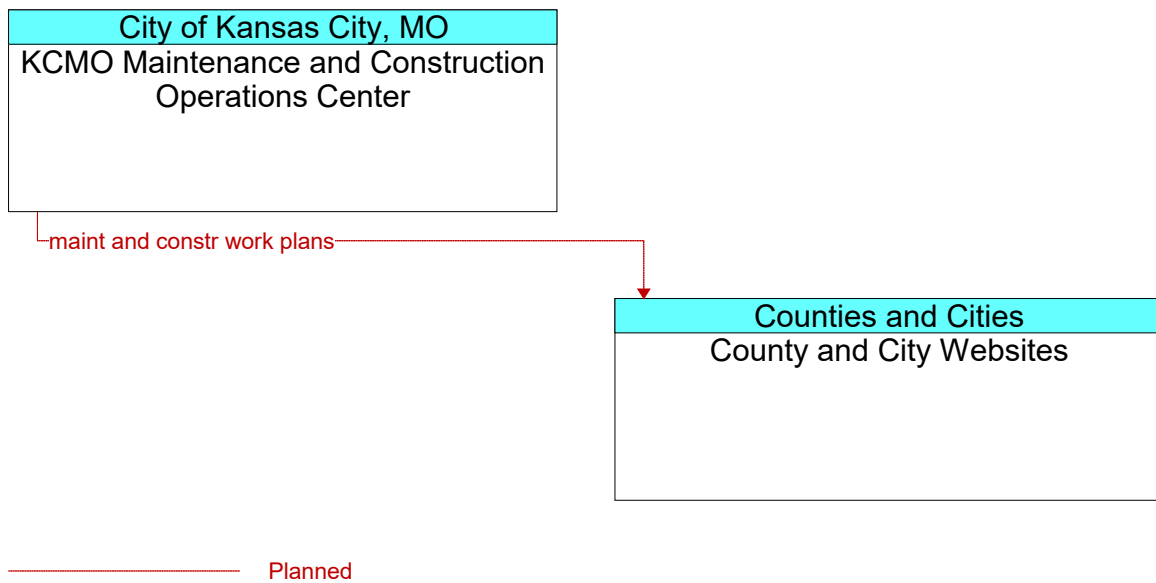
**Figure 245: County and City Traffic Signal Systems - UGT Vehicles Interface**



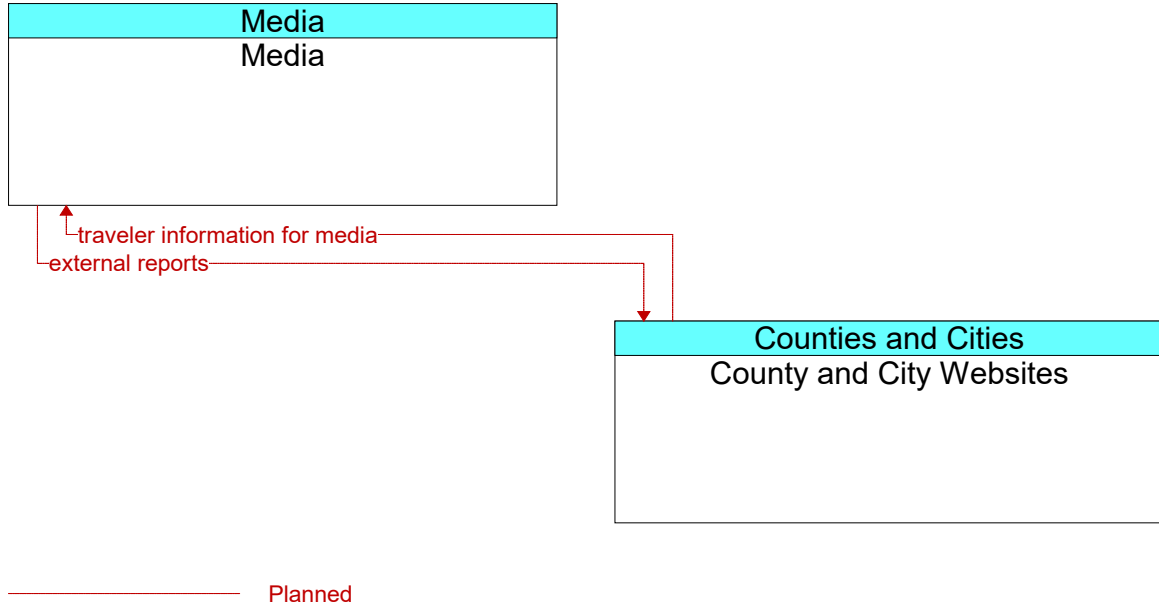
**Figure 246: County and City Traffic Signal Systems - Vehicle Interface**



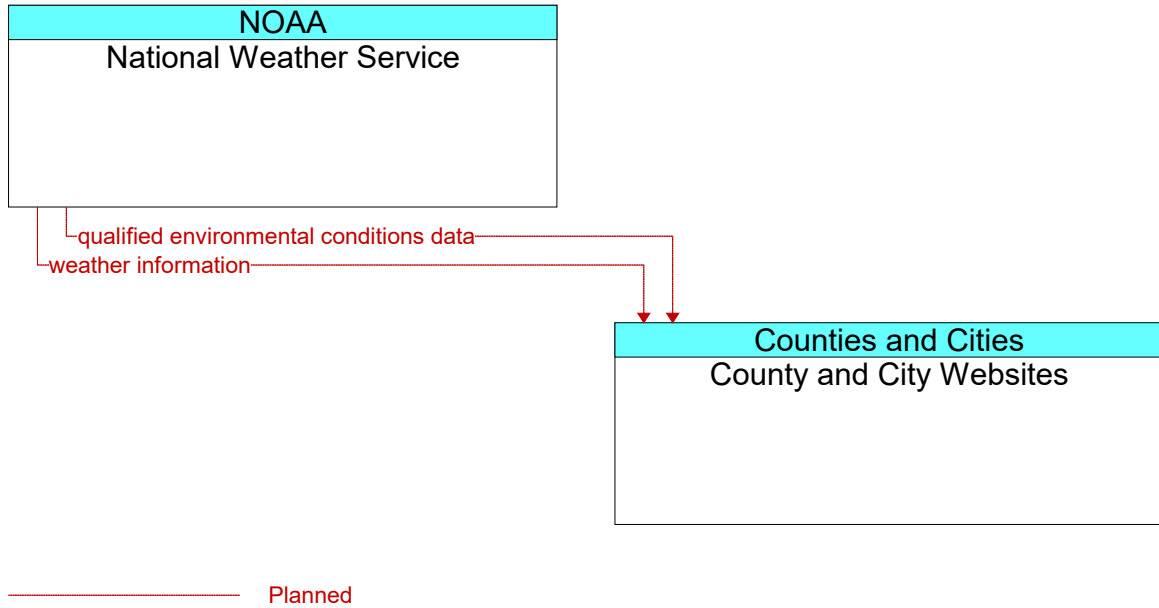
**Figure 247: County and City Traffic Signal Systems - Wayside Equipment Interface**



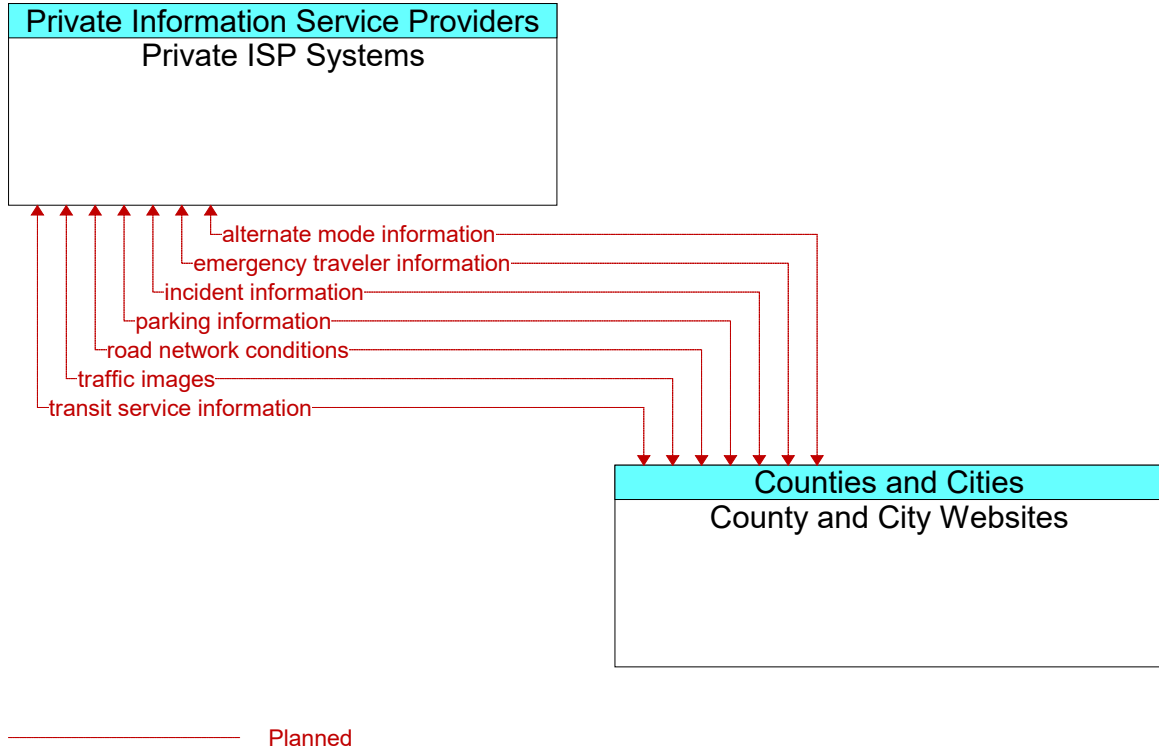
**Figure 248: County and City Websites - KCMO Maintenance and Construction Operations Center Interface**



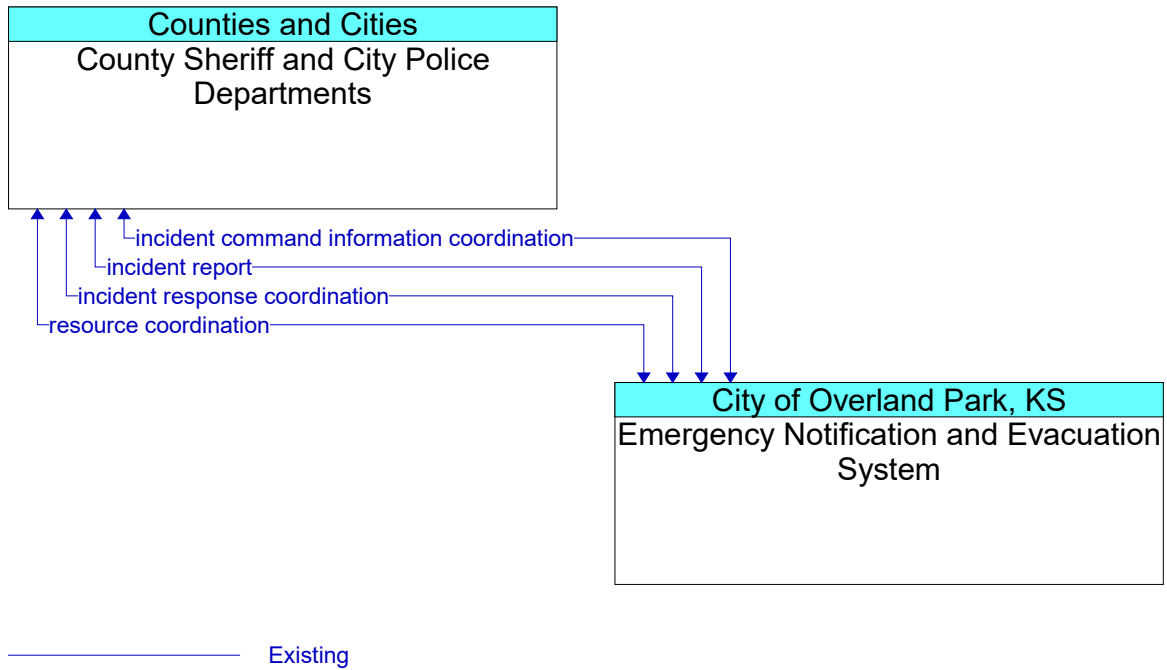
**Figure 249: County and City Websites - Media Interface**



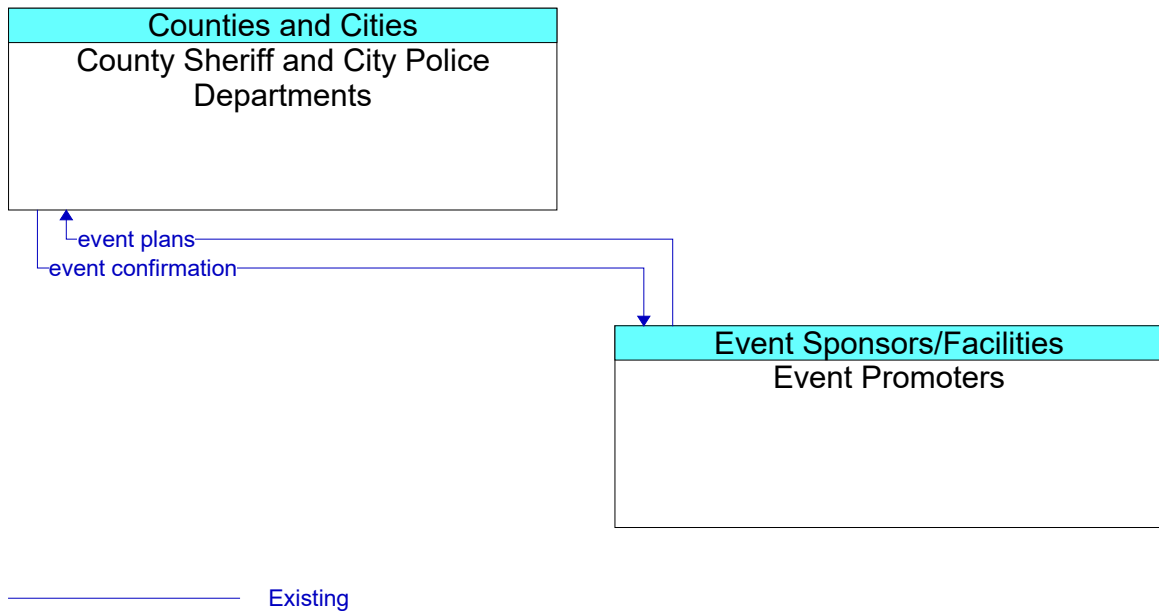
**Figure 250: County and City Websites - National Weather Service Interface**



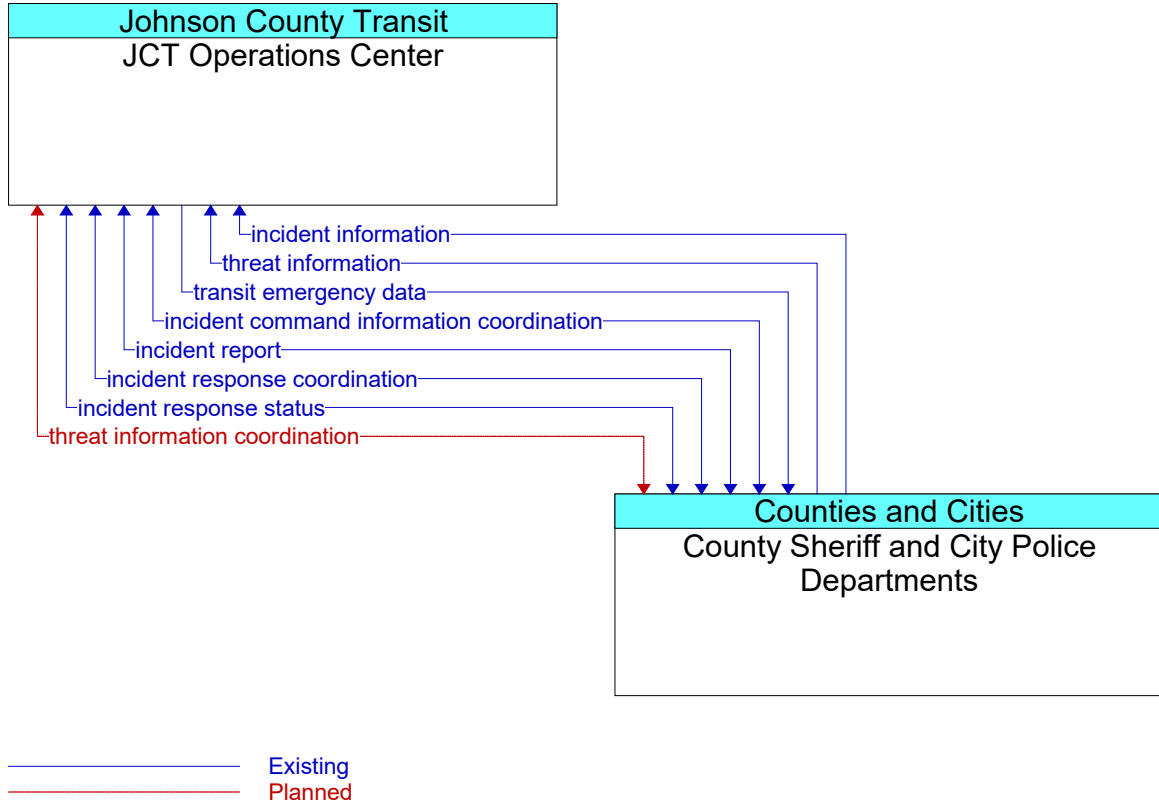
**Figure 251: County and City Websites - Private ISP Systems Interface**



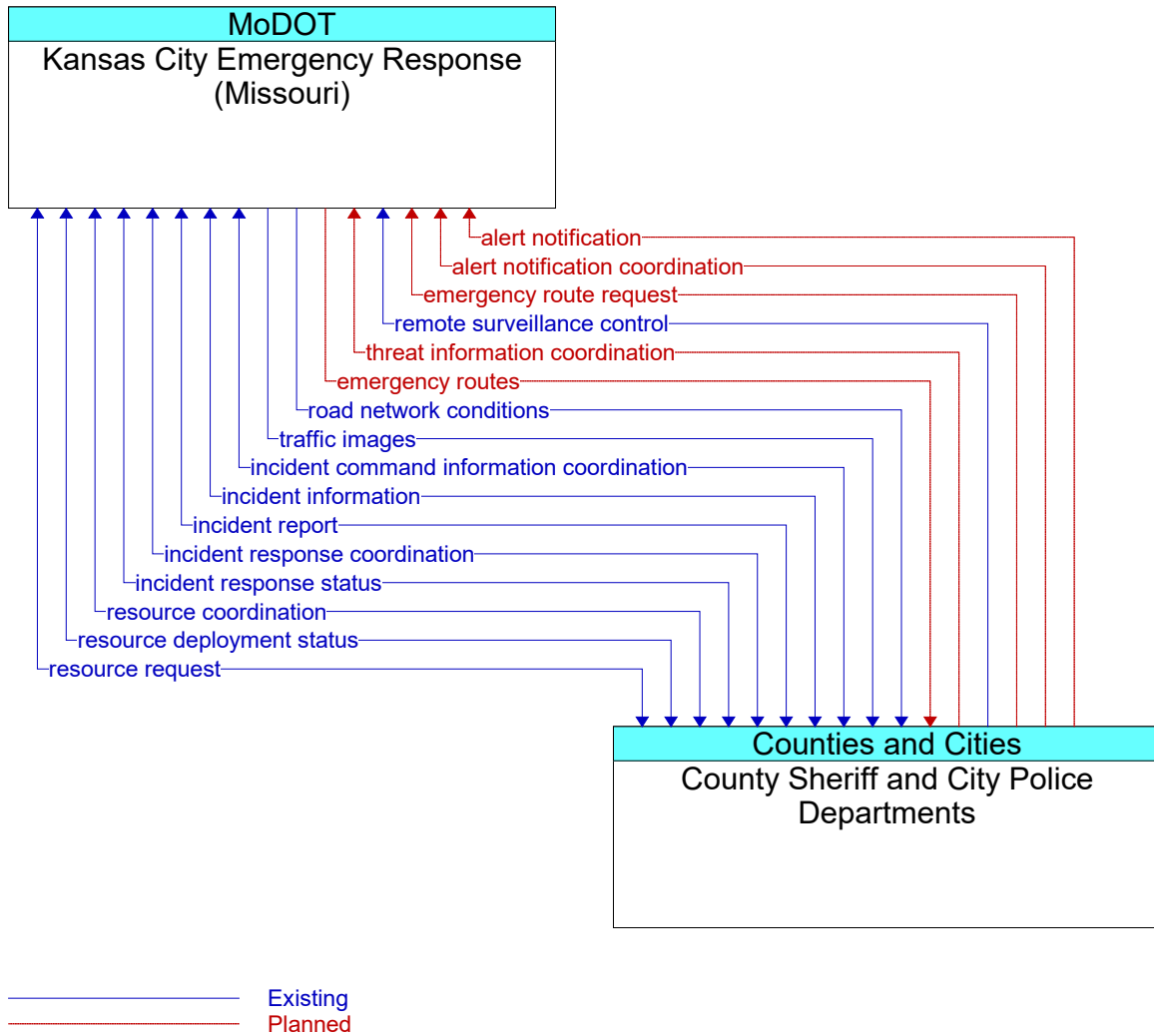
**Figure 252: County Sheriff and City Police Departments - Emergency Notification and Evacuation System Interface**



**Figure 253: County Sheriff and City Police Departments - Event Promoters Interface**

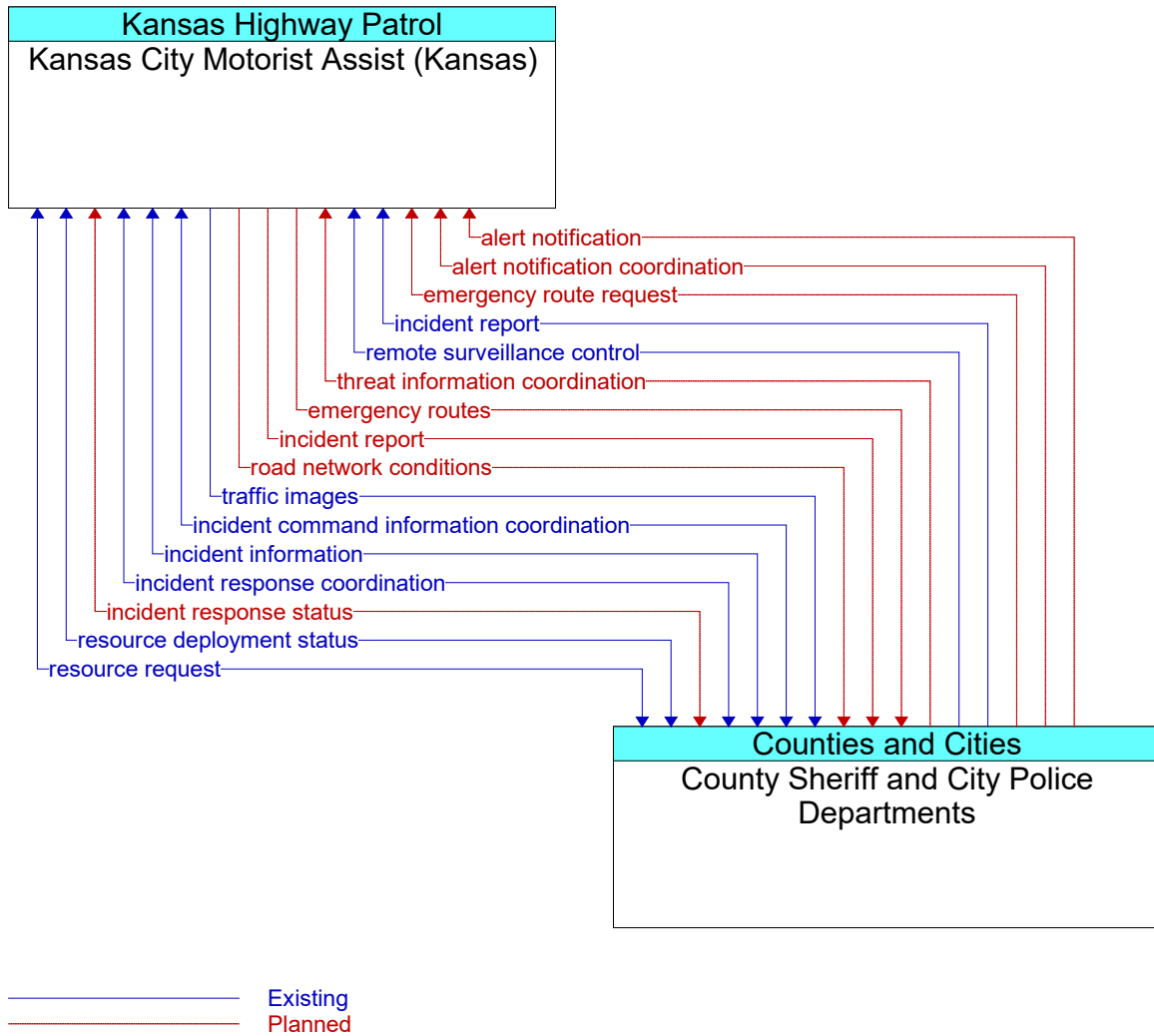


**Figure 254: County Sheriff and City Police Departments - JCT Operations Center Interface**

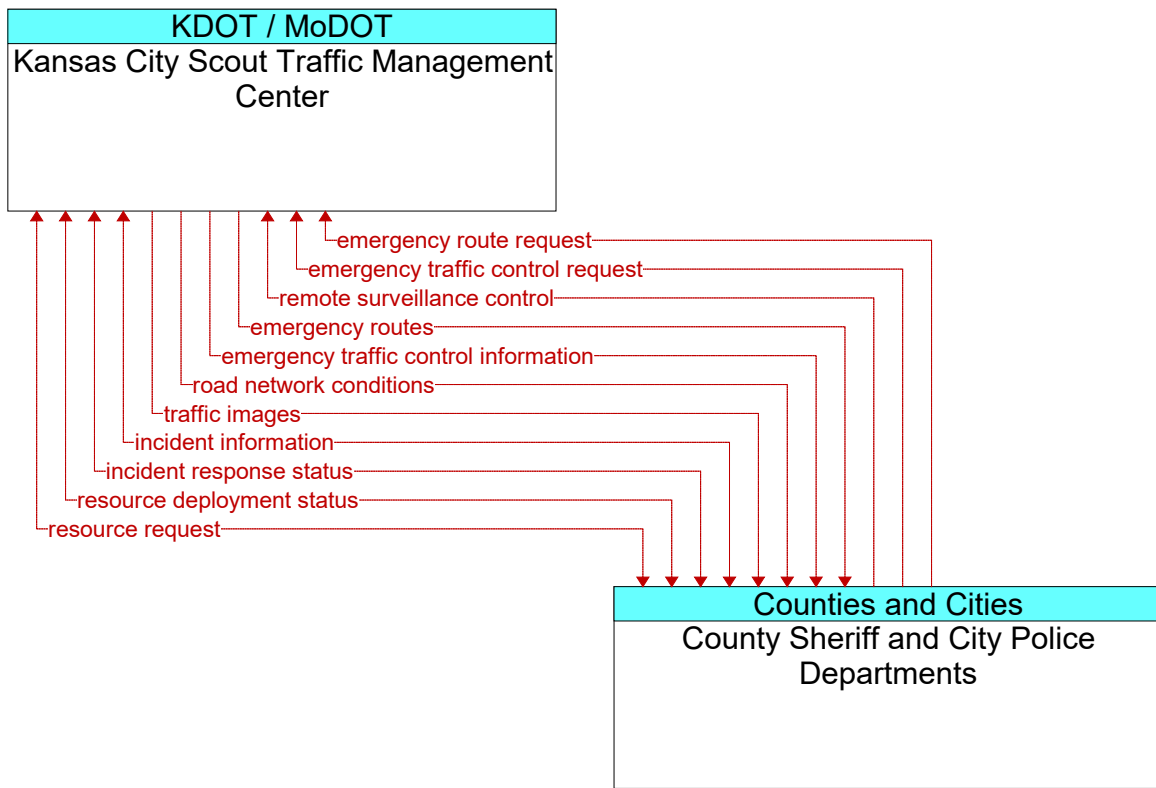


**Figure 255: County Sheriff and City Police Departments - Kansas City Emergency Response (Missouri) Interface**



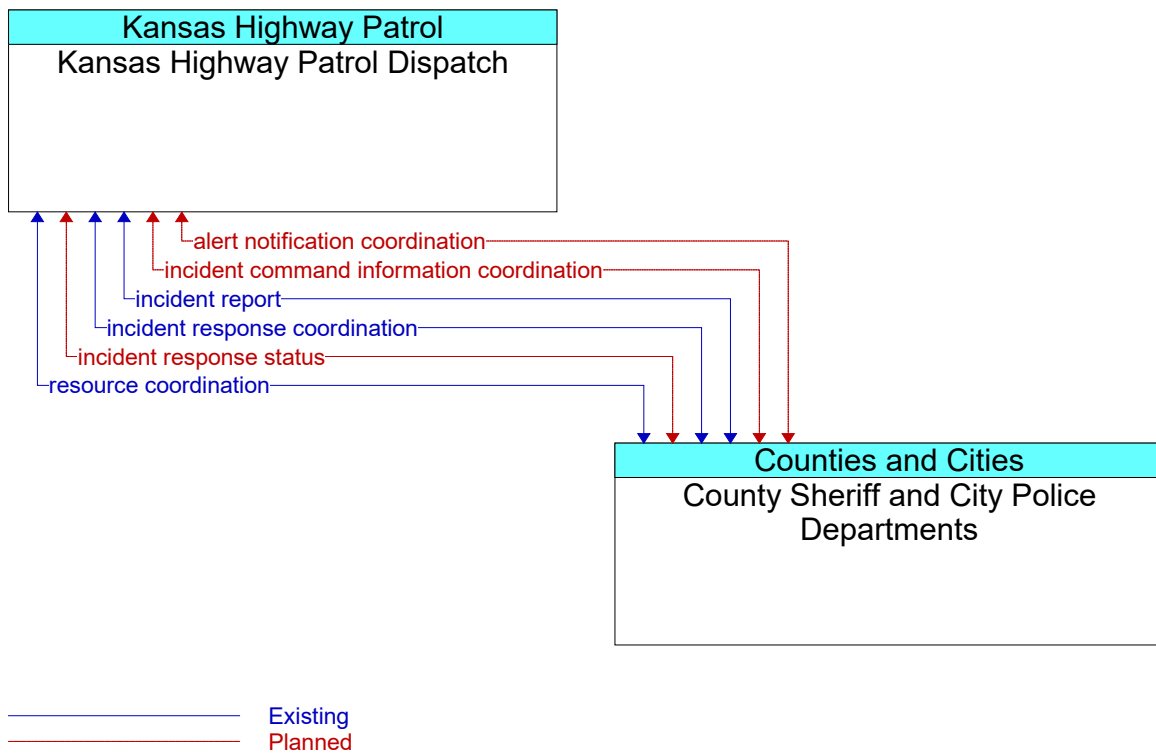


**Figure 256: County Sheriff and City Police Departments - Kansas City Motorist Assist (Kansas) Interface**

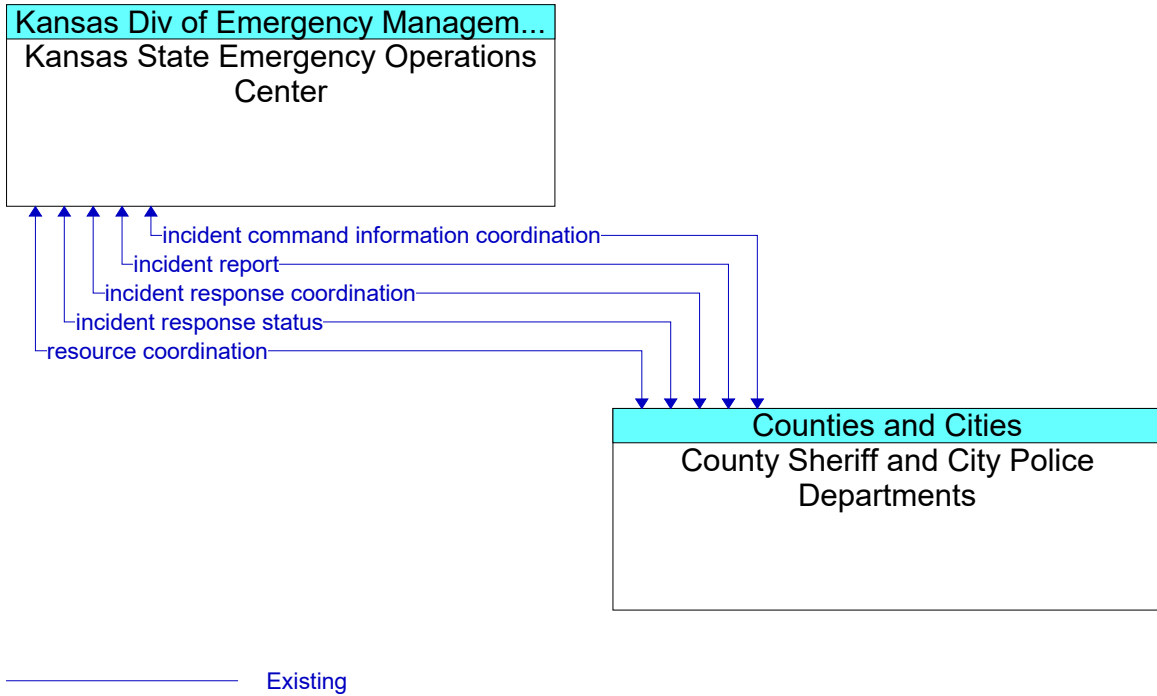


Planned

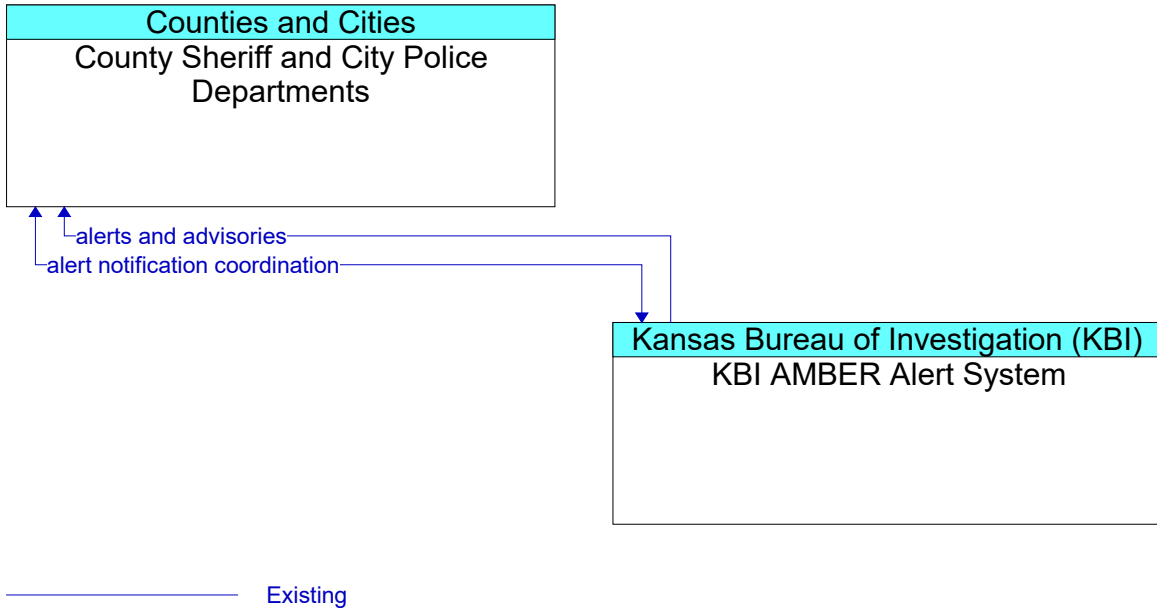
**Figure 257: County Sheriff and City Police Departments - Kansas City Scout Traffic Management Center Interface**



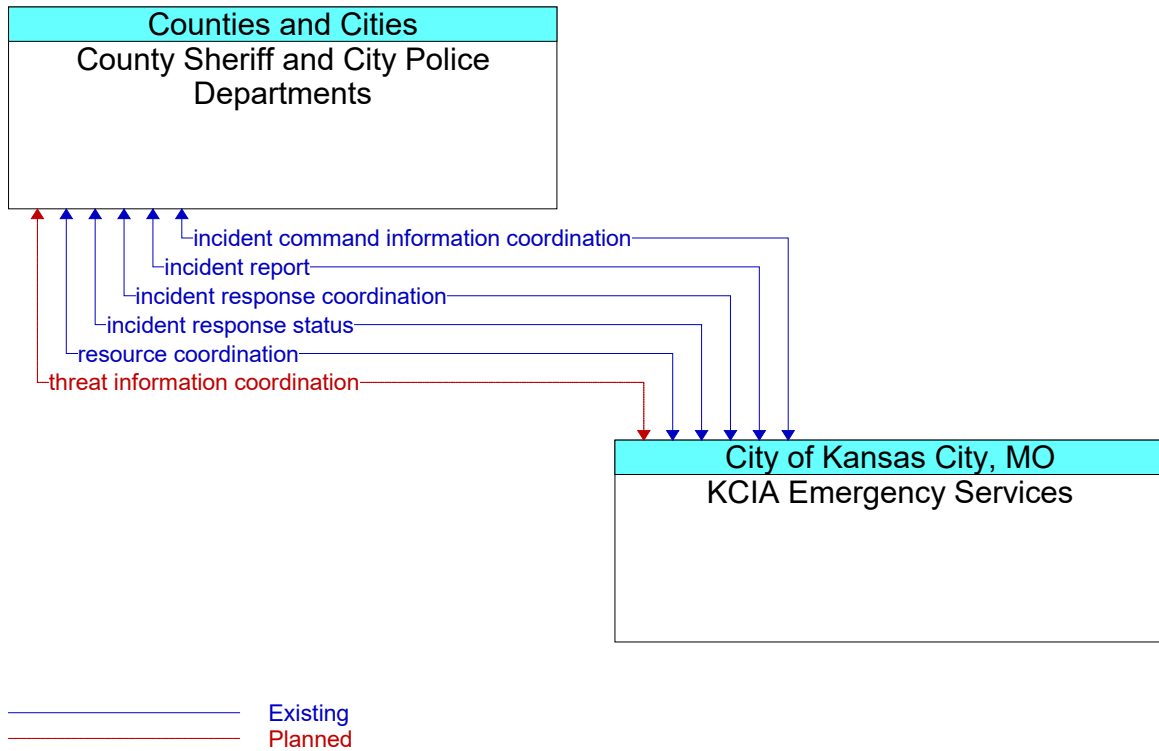
**Figure 258: County Sheriff and City Police Departments - Kansas Highway Patrol Dispatch Interface**



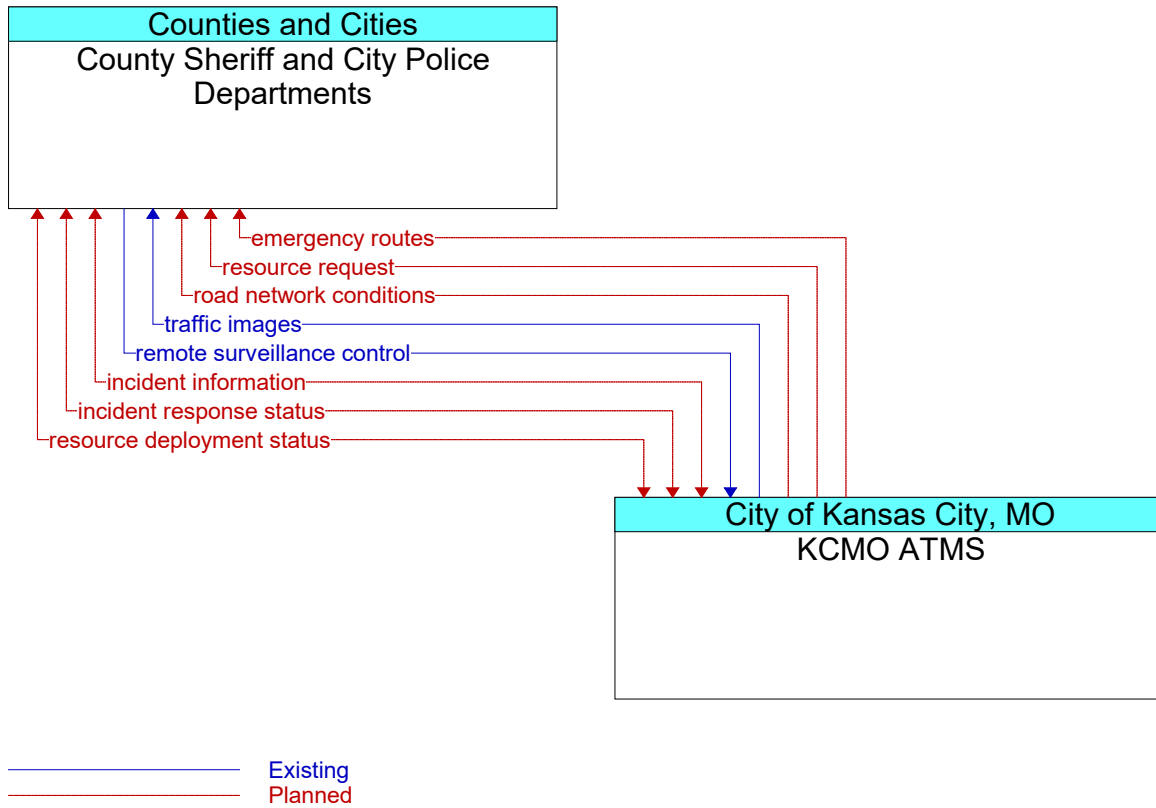
**Figure 259: County Sheriff and City Police Departments - Kansas State Emergency Operations Center Interface**



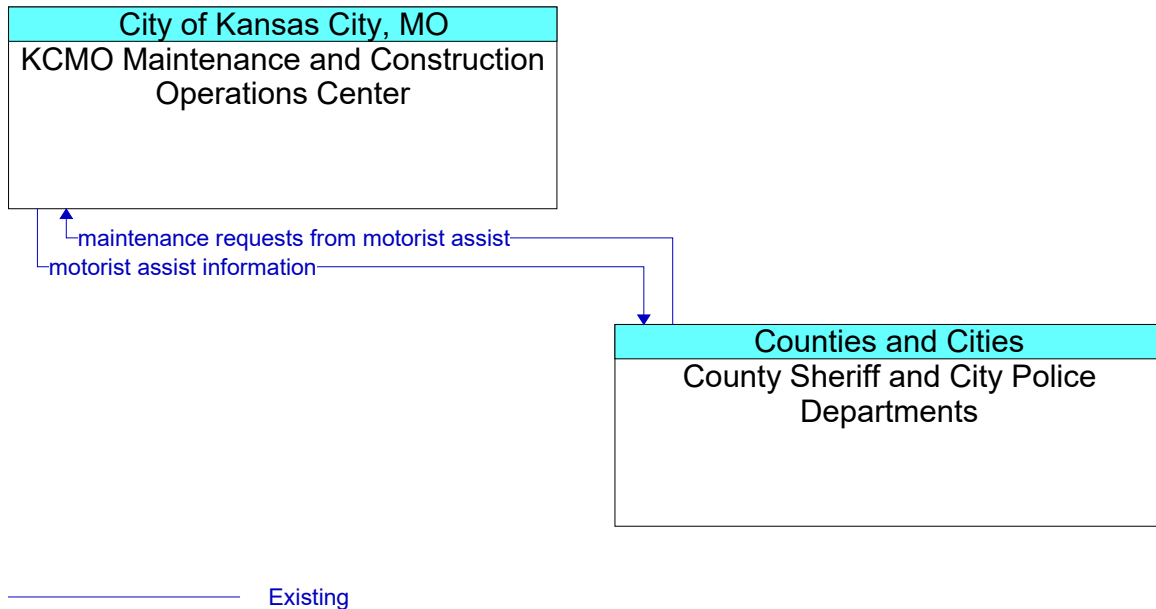
**Figure 260: County Sheriff and City Police Departments - KBI AMBER Alert System Interface**



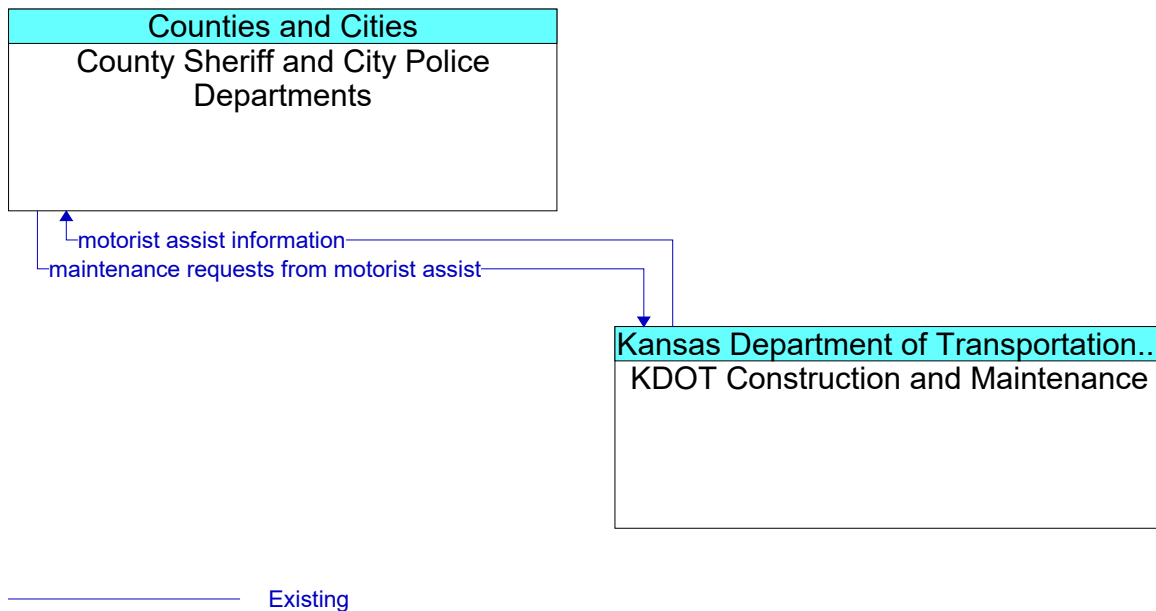
**Figure 261: County Sheriff and City Police Departments - KCIA Emergency Services Interface**



**Figure 262: County Sheriff and City Police Departments - KCMO ATMS Interface**

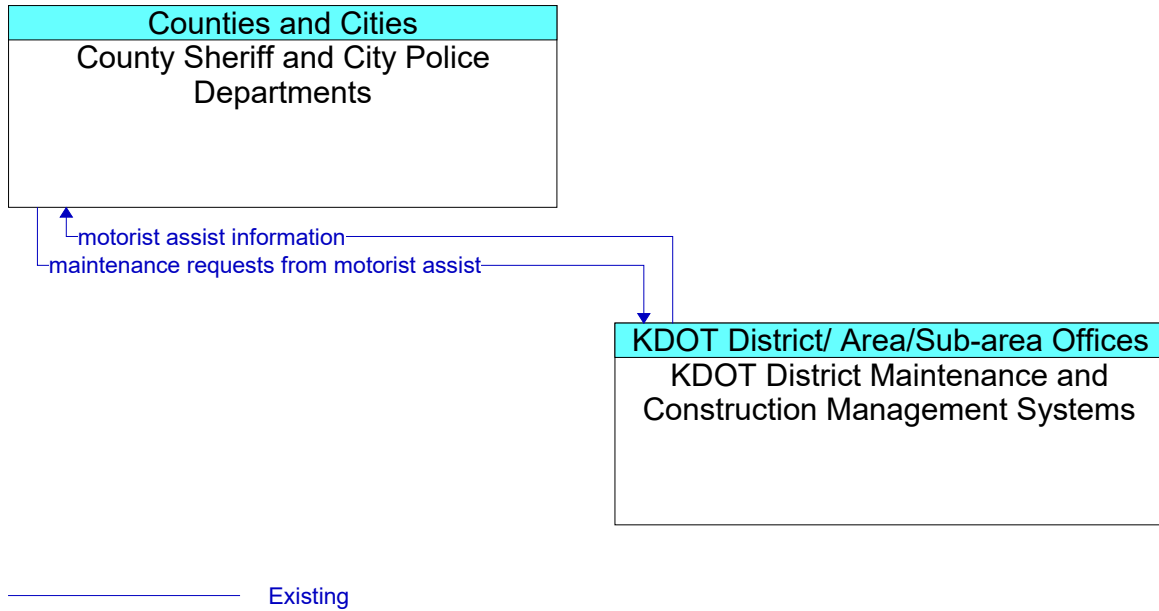


**Figure 263: County Sheriff and City Police Departments - KCMO Maintenance and Construction Operations Center Interface**

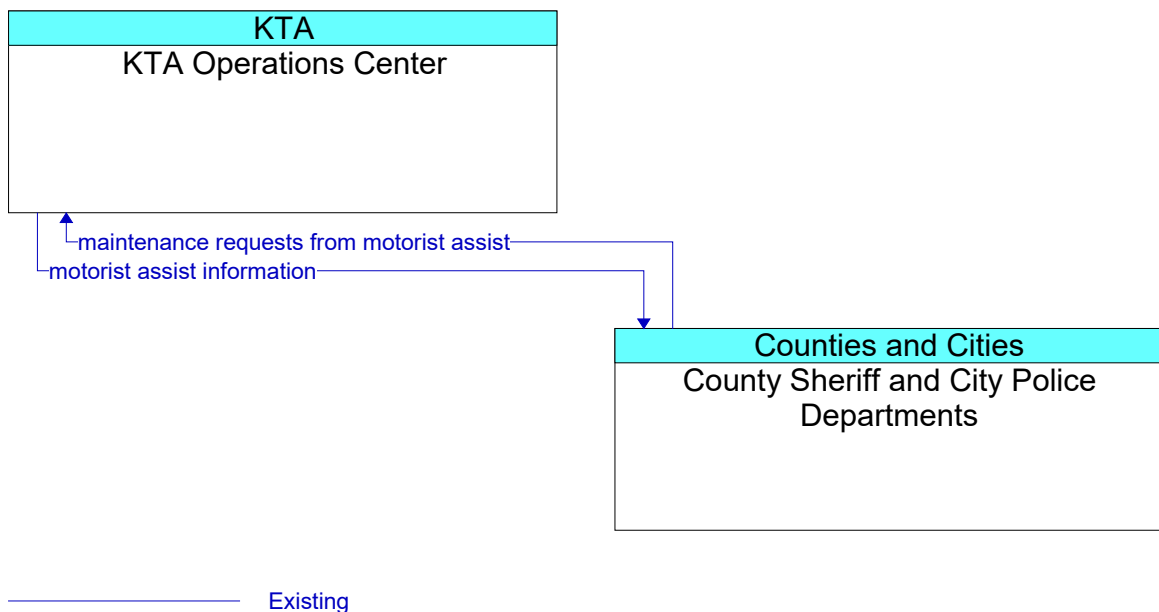


**Figure 264: County Sheriff and City Police Departments - KDOT Construction and Maintenance Interface**

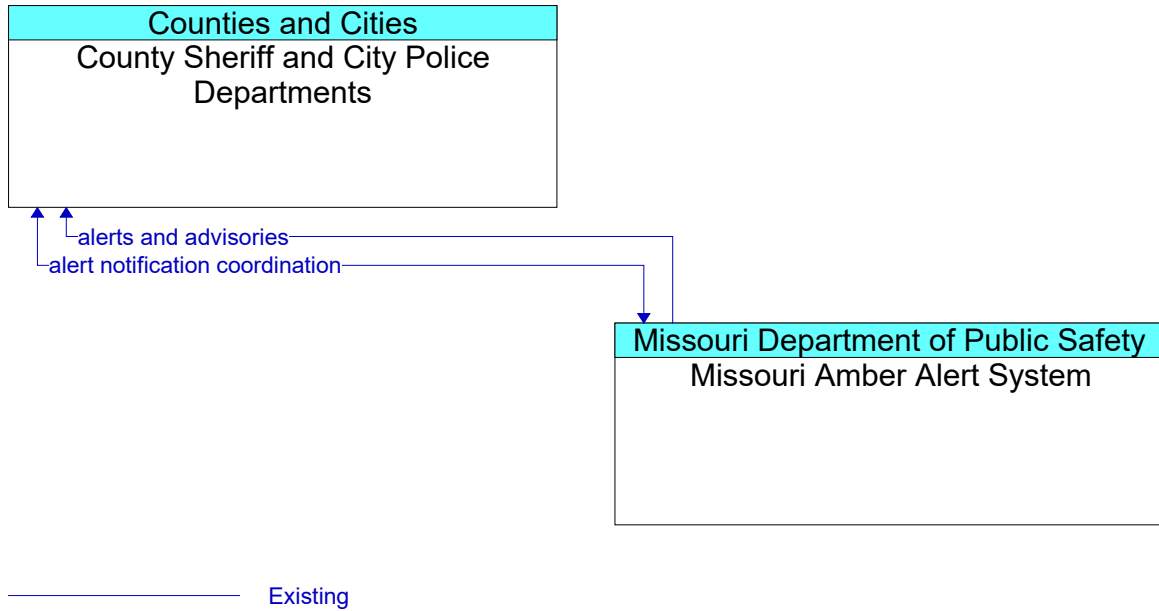




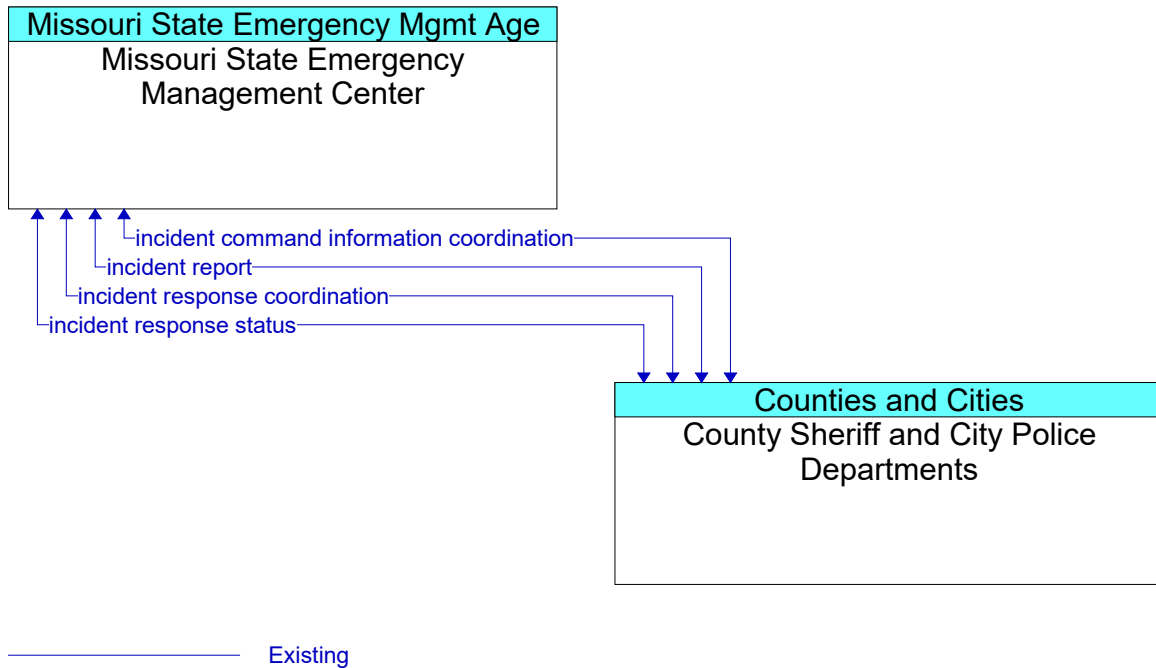
**Figure 265: County Sheriff and City Police Departments - KDOT District Maintenance and Construction Management Systems Interface**



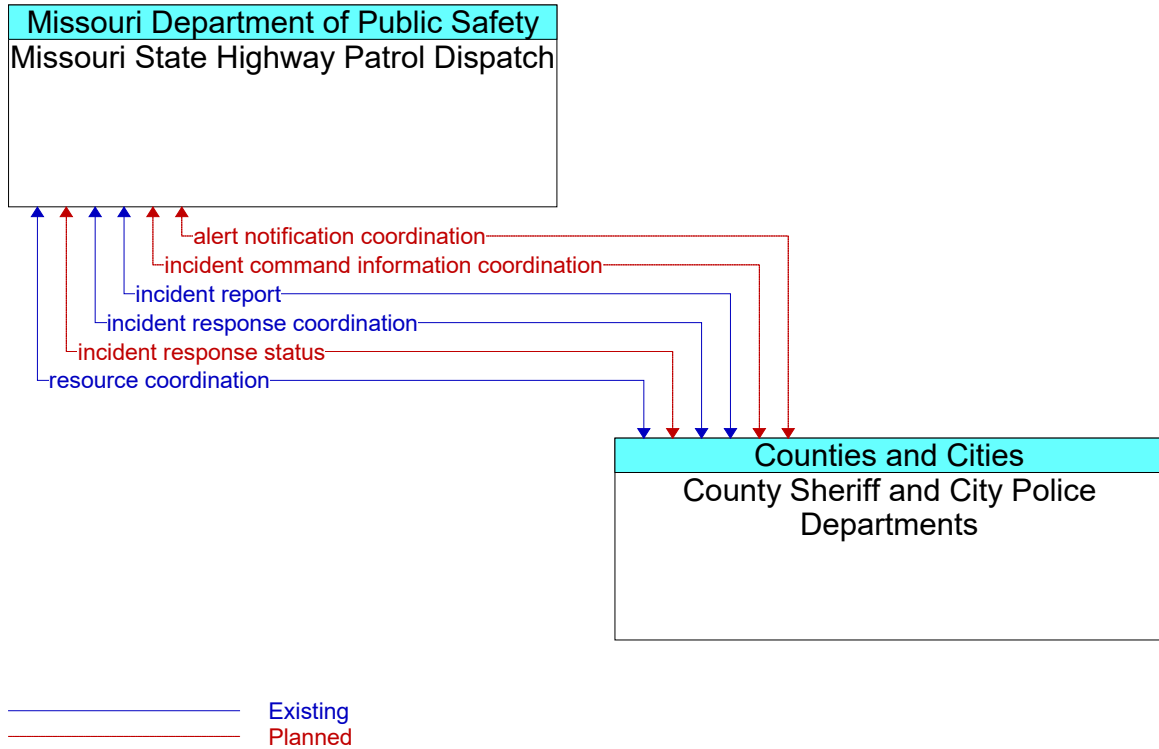
**Figure 266: County Sheriff and City Police Departments - KTA Operations Center Interface**



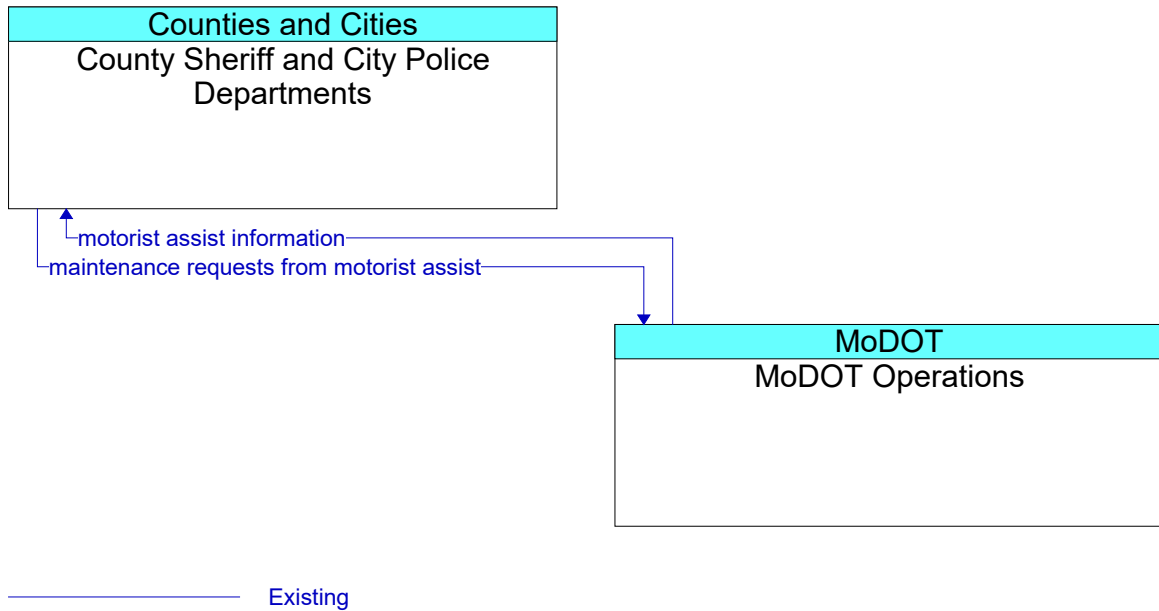
**Figure 267: County Sheriff and City Police Departments - Missouri Amber Alert System Interface**



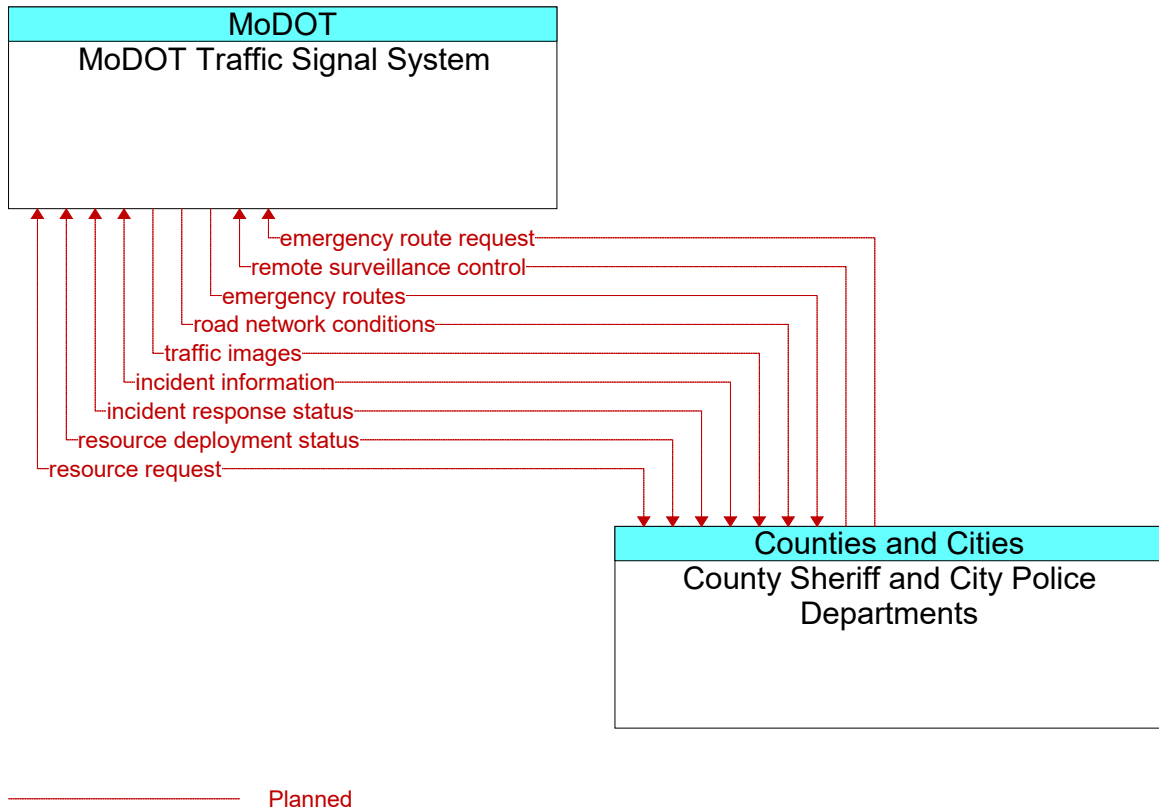
**Figure 268: County Sheriff and City Police Departments - Missouri State Emergency Management Center Interface**



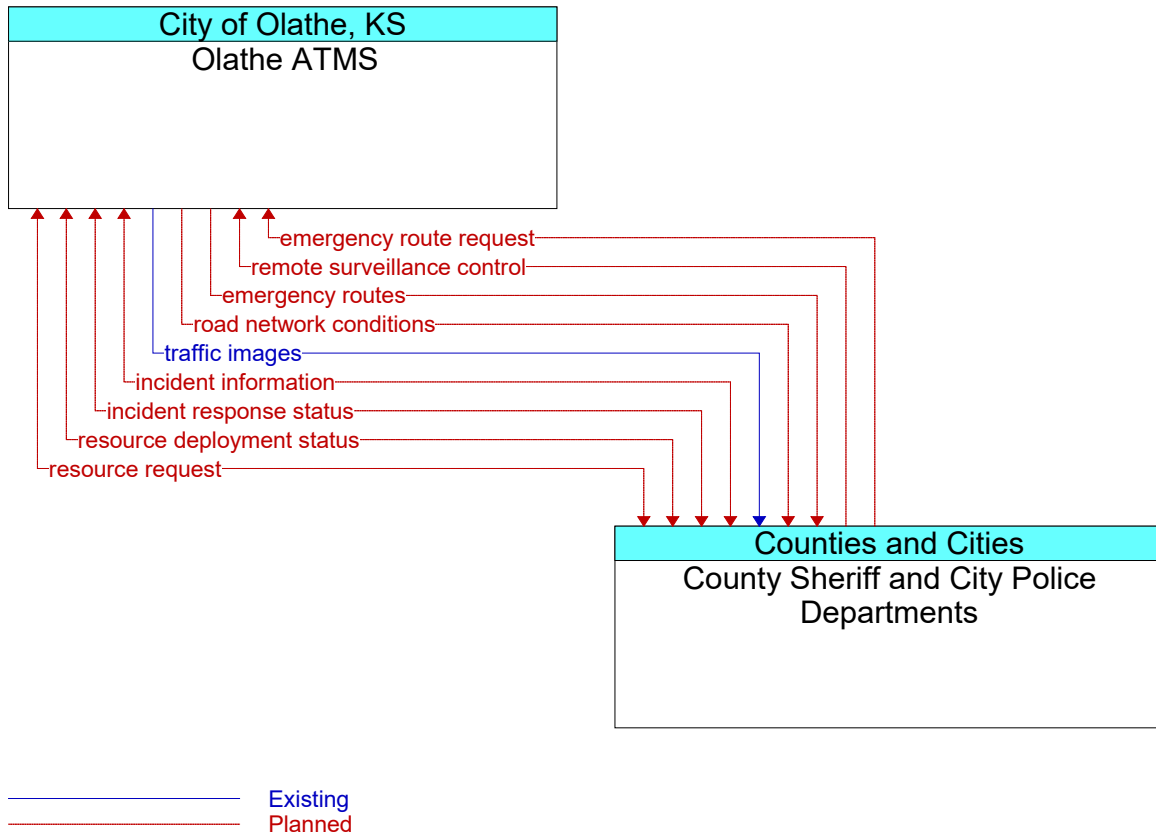
**Figure 269: County Sheriff and City Police Departments - Missouri State Highway Patrol Dispatch Interface**



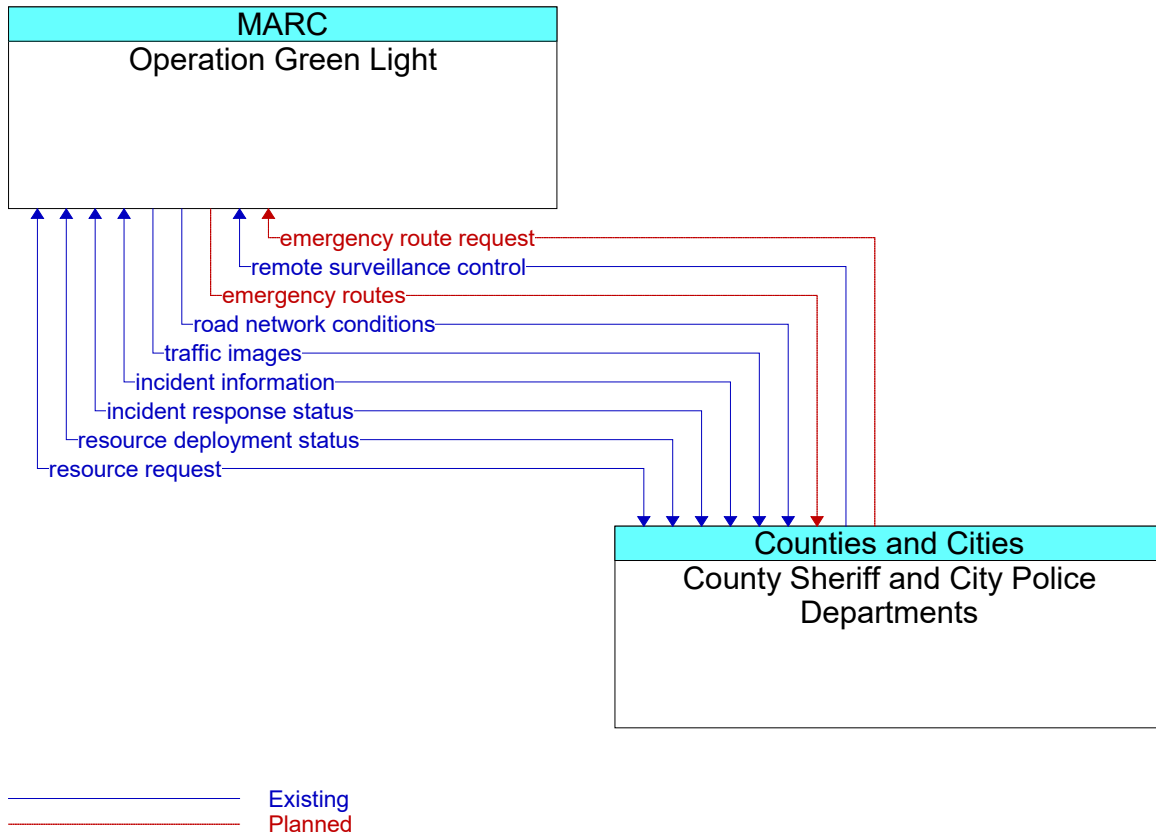
**Figure 270: County Sheriff and City Police Departments - MoDOT Operations Interface**



**Figure 271: County Sheriff and City Police Departments - MoDOT Traffic Signal System Interface**

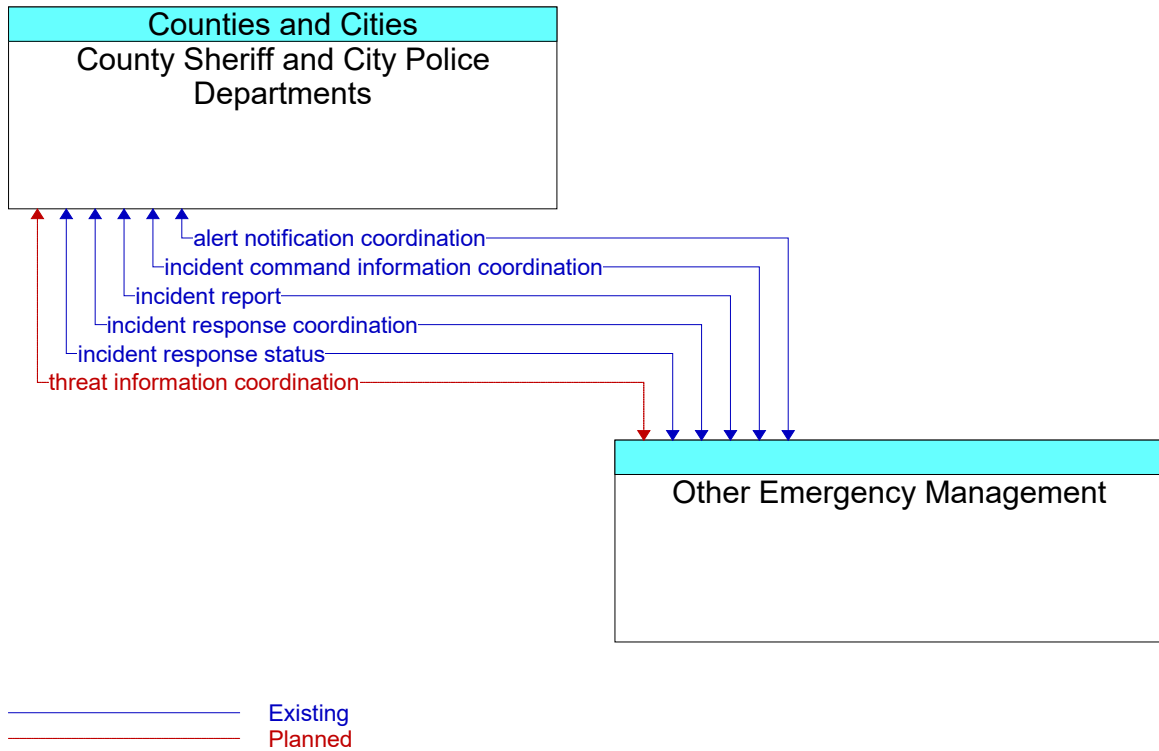


**Figure 272: County Sheriff and City Police Departments - Olathe ATMS Interface**



**Figure 273: County Sheriff and City Police Departments - Operation Green Light Interface**





**Figure 274: County Sheriff and City Police Departments - Other Emergency Management Interface**

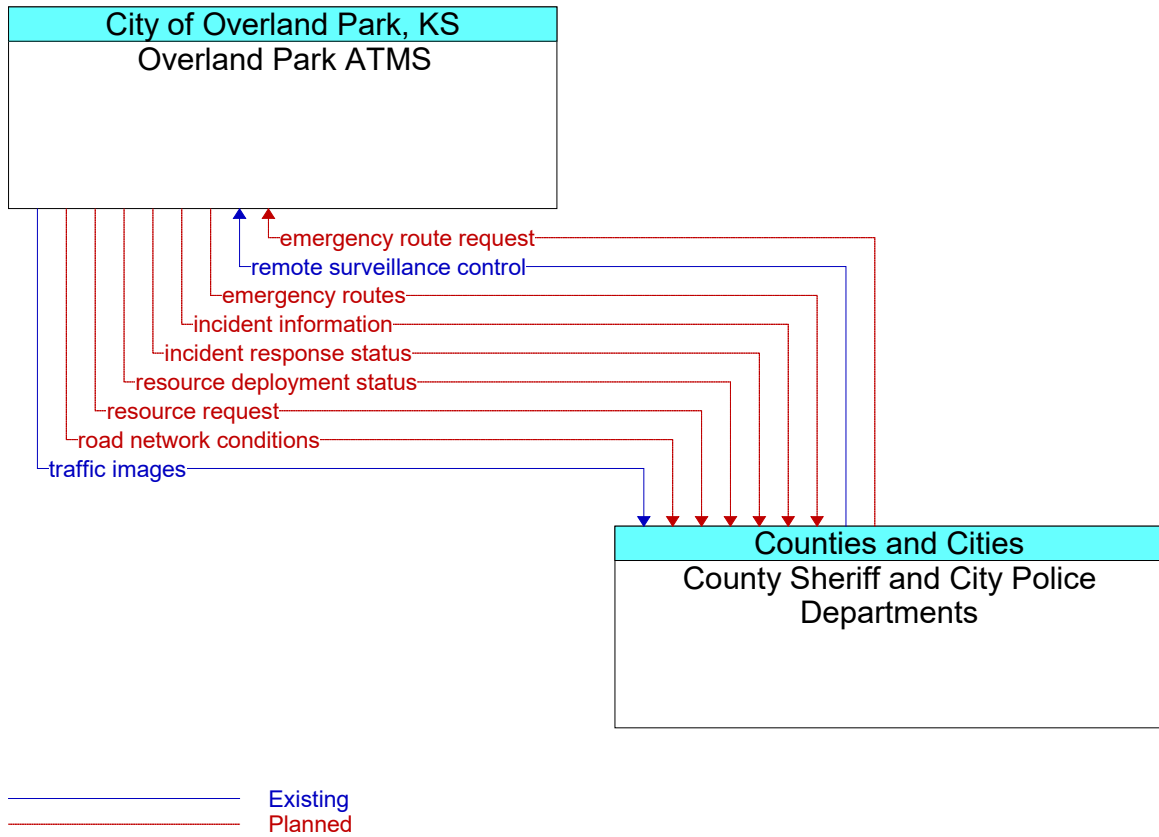
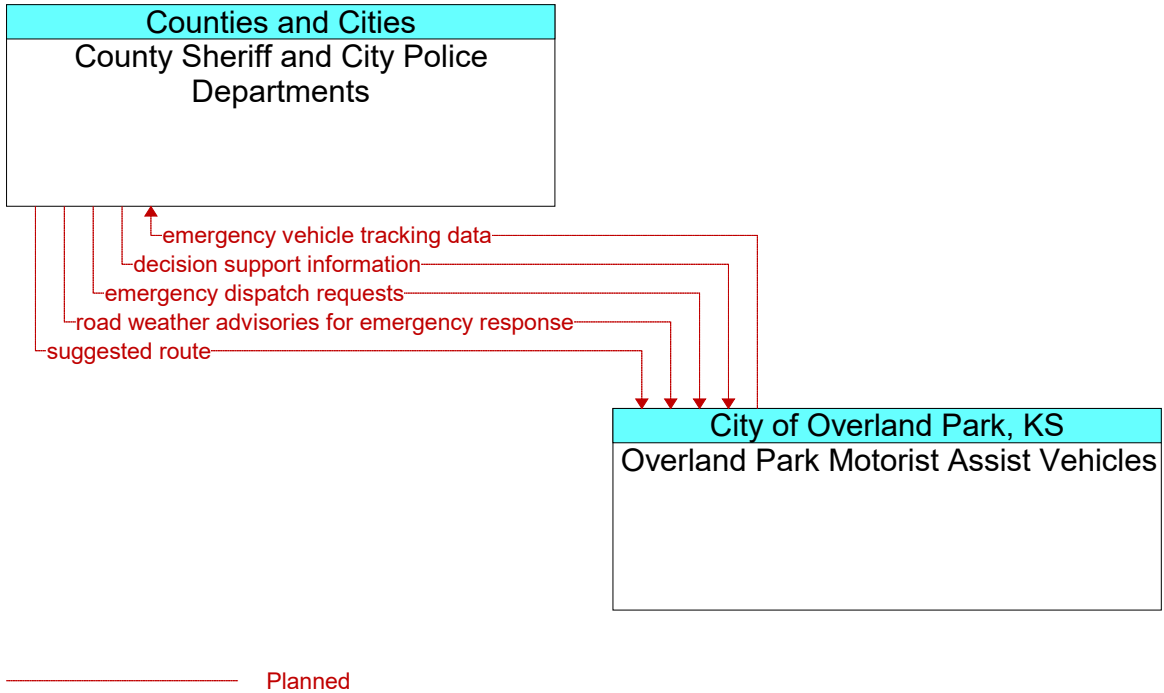
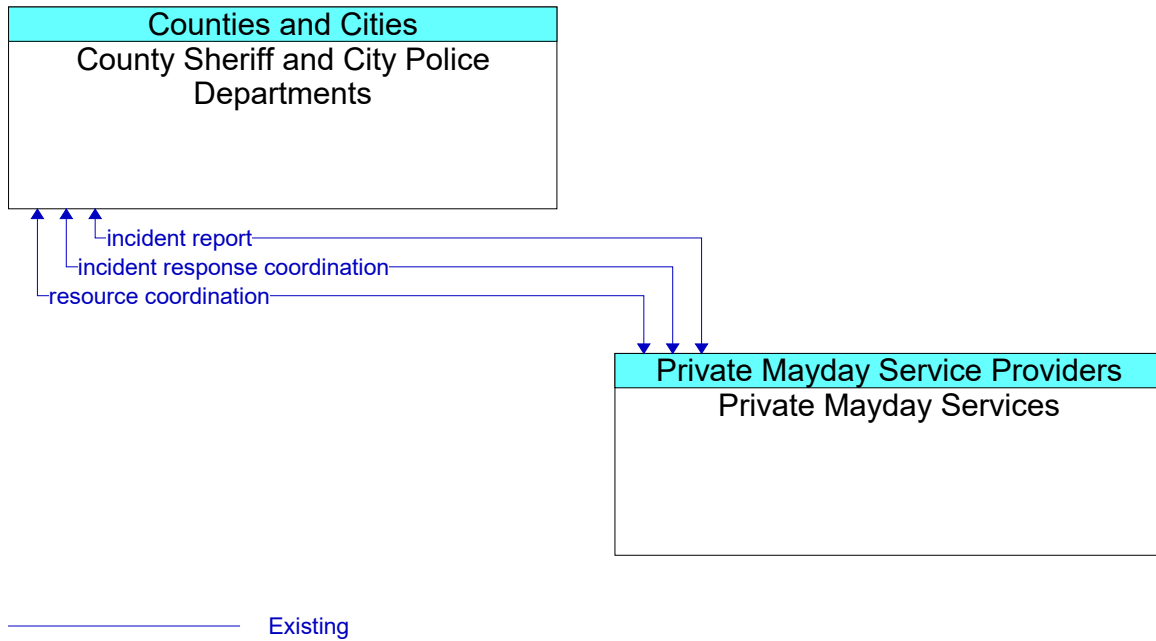


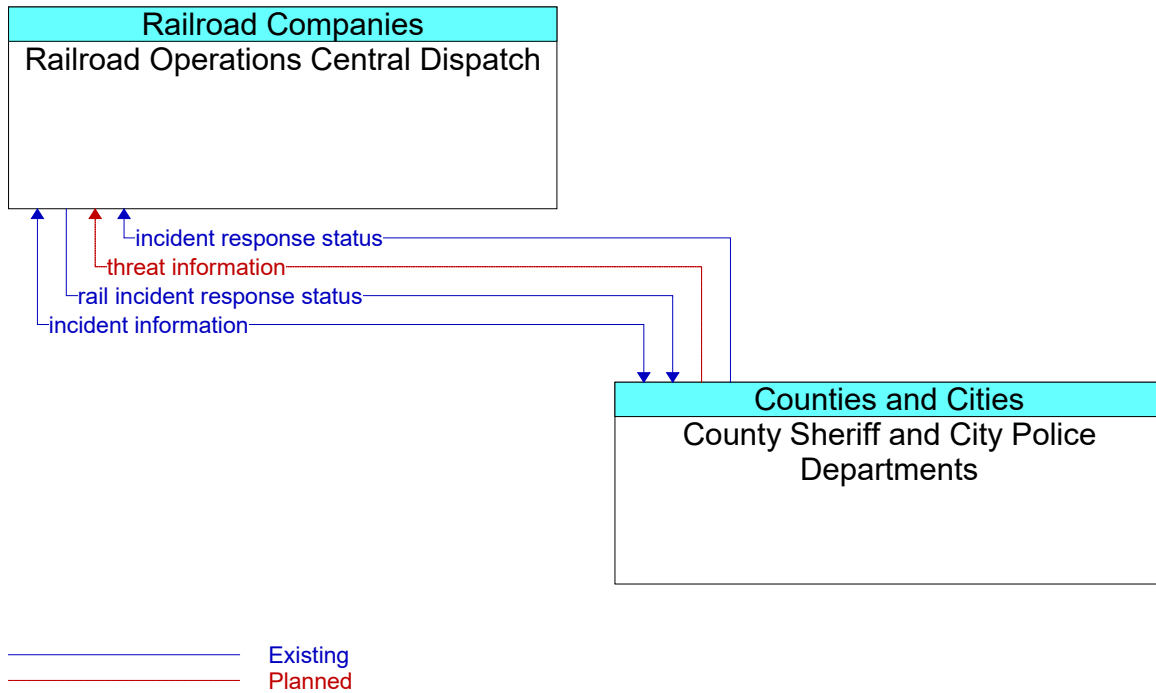
Figure 275: County Sheriff and City Police Departments - Overland Park ATMS Interface



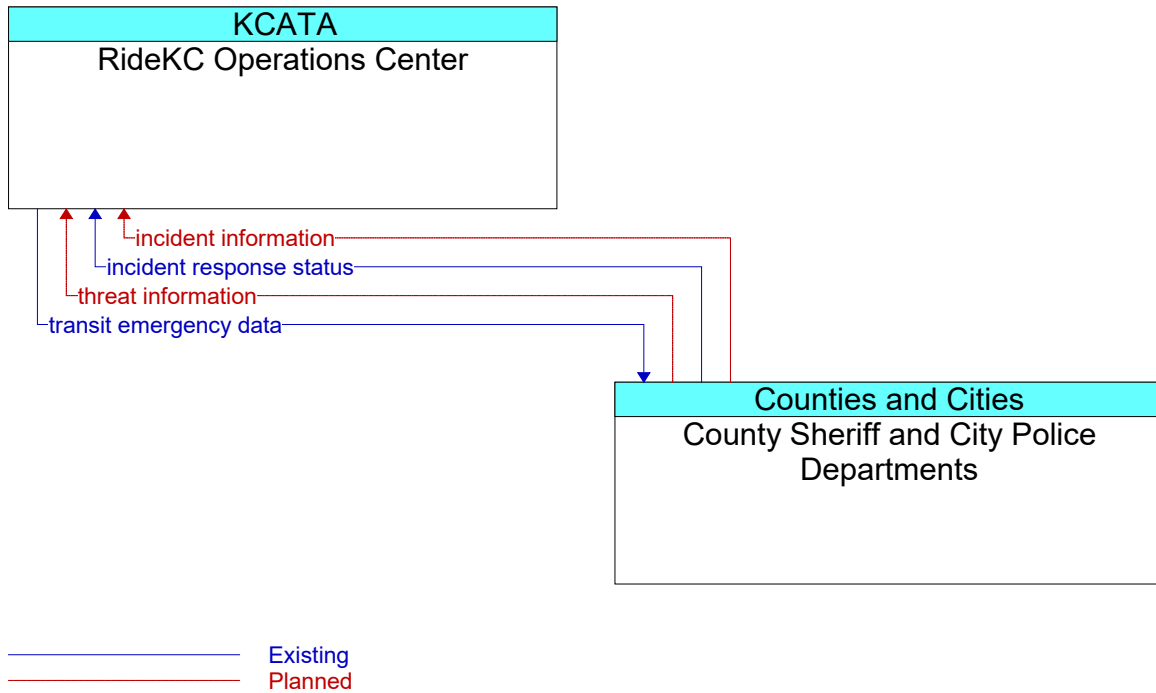
**Figure 276: County Sheriff and City Police Departments - Overland Park Motorist Assist Vehicles Interface**



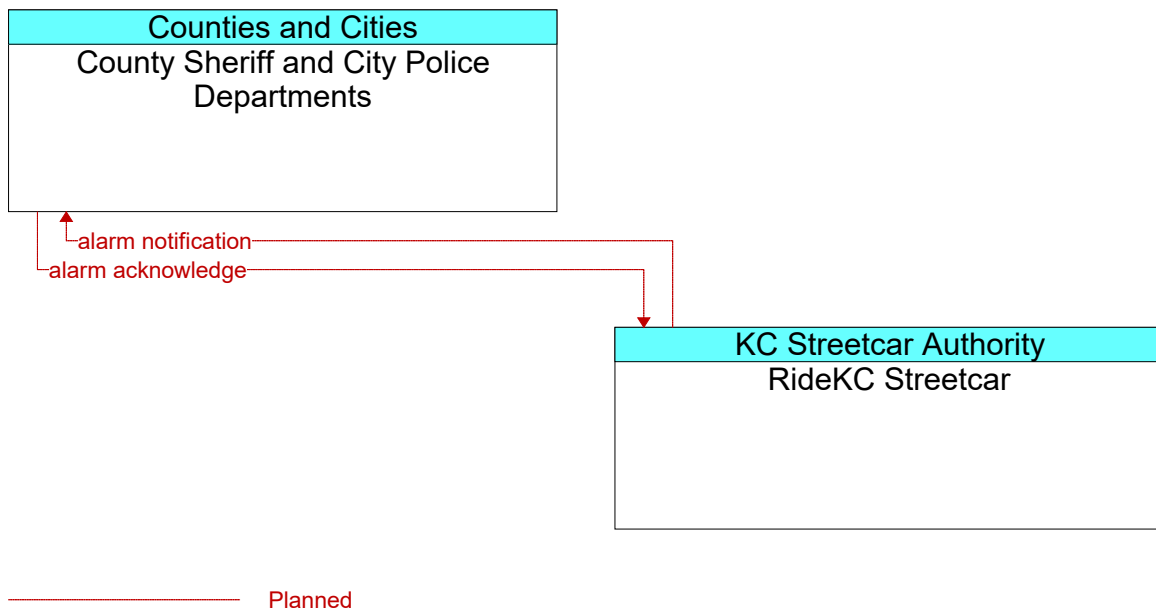
**Figure 277: County Sheriff and City Police Departments - Private Mayday Services Interface**



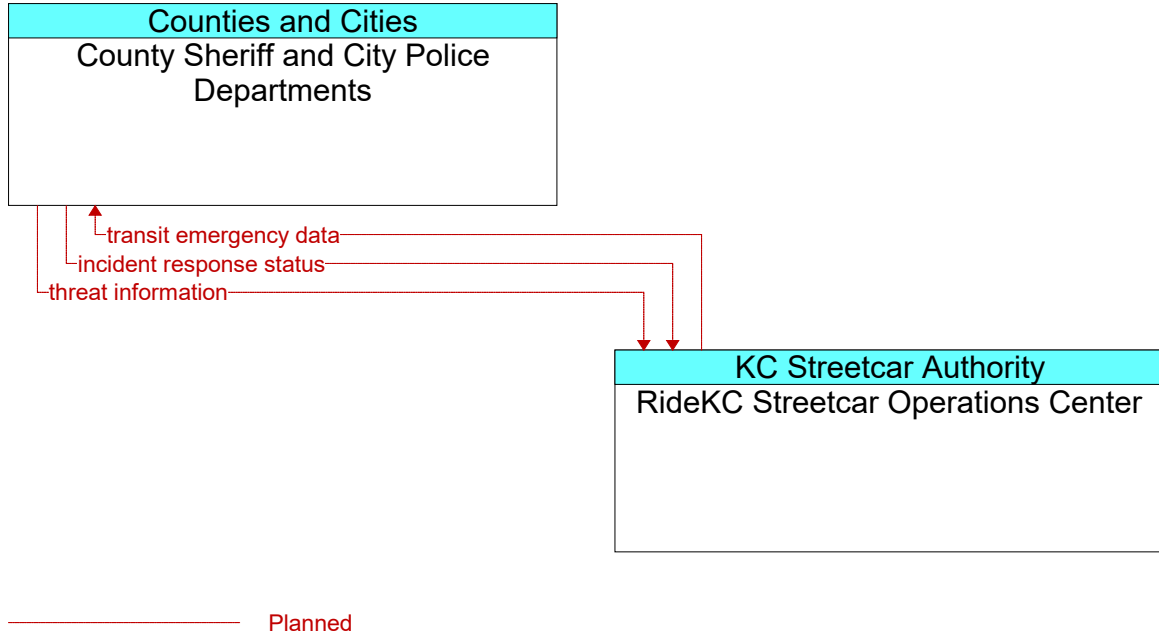
**Figure 278: County Sheriff and City Police Departments - Railroad Operations Central Dispatch Interface**



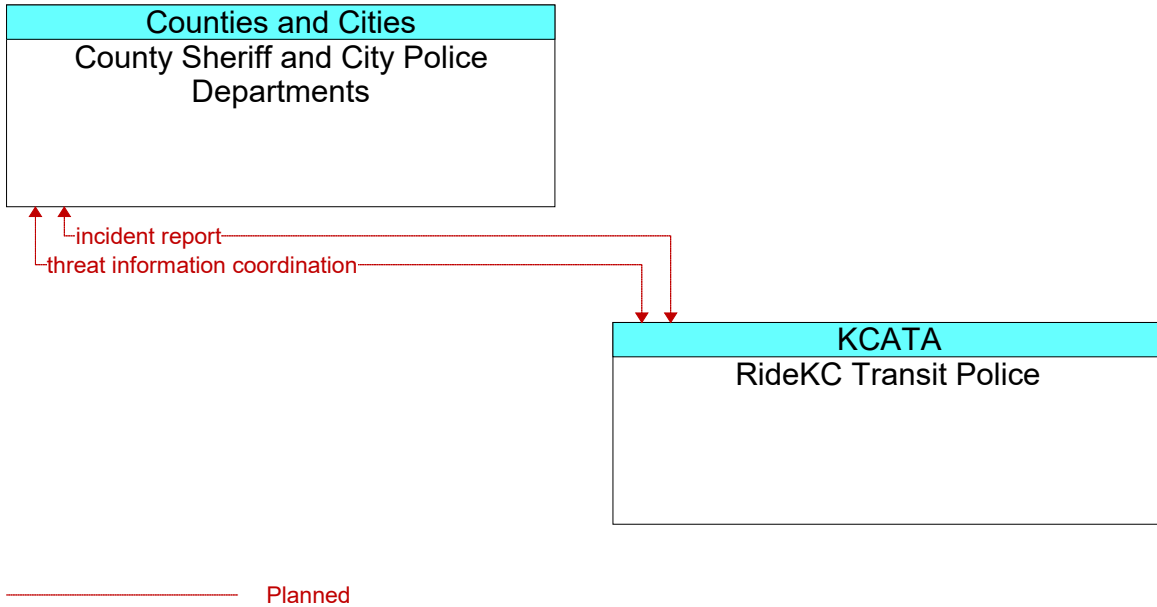
**Figure 279: County Sheriff and City Police Departments - RideKC Operations Center Interface**



**Figure 280: County Sheriff and City Police Departments - RideKC Streetcar Interface**

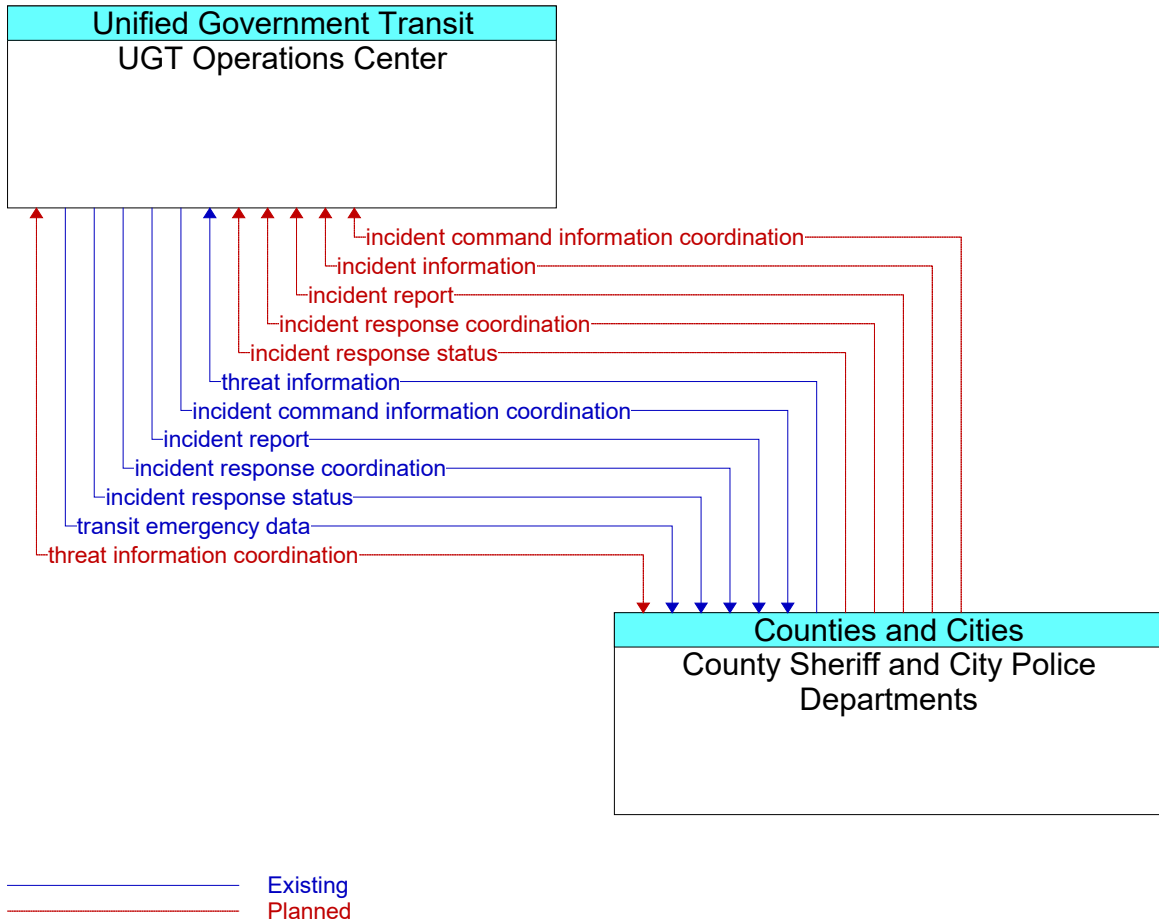


**Figure 281: County Sheriff and City Police Departments - RideKC Streetcar Operations Center Interface**

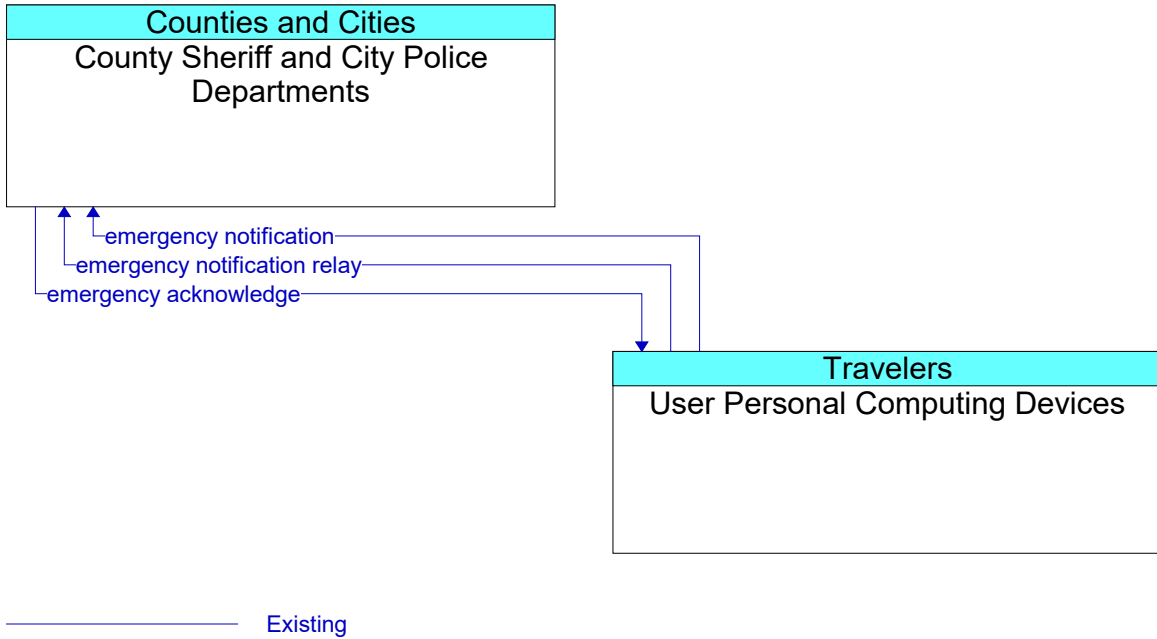


**Figure 282: County Sheriff and City Police Departments - RideKC Transit Police Interface**

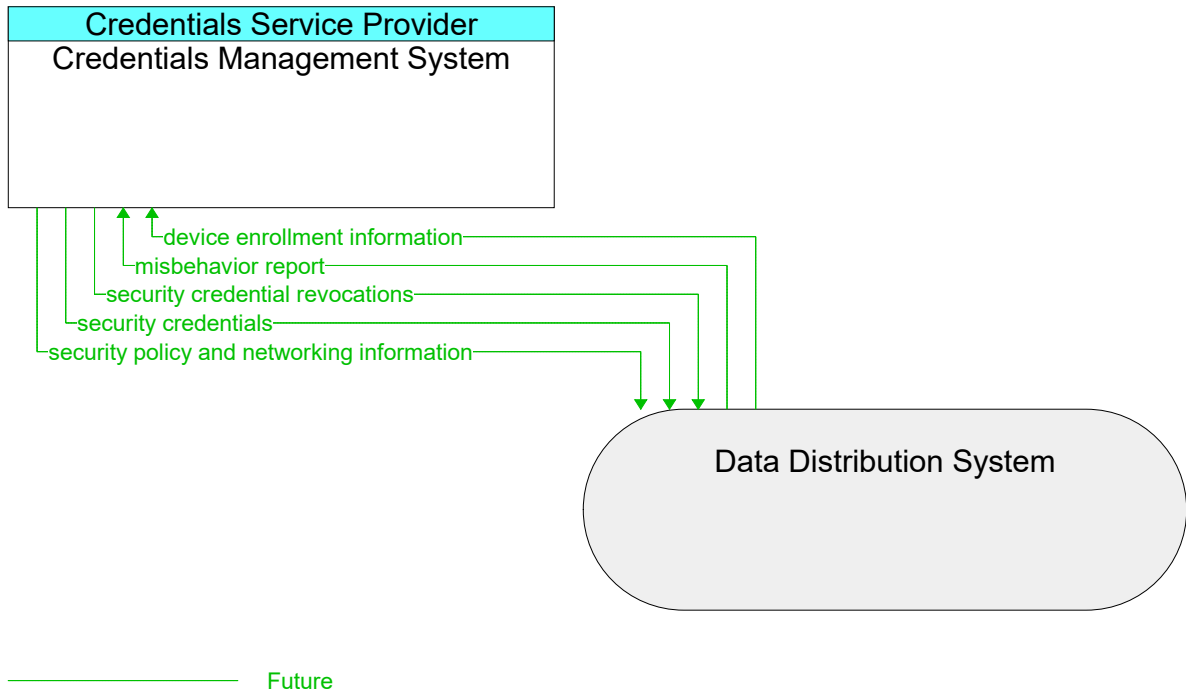




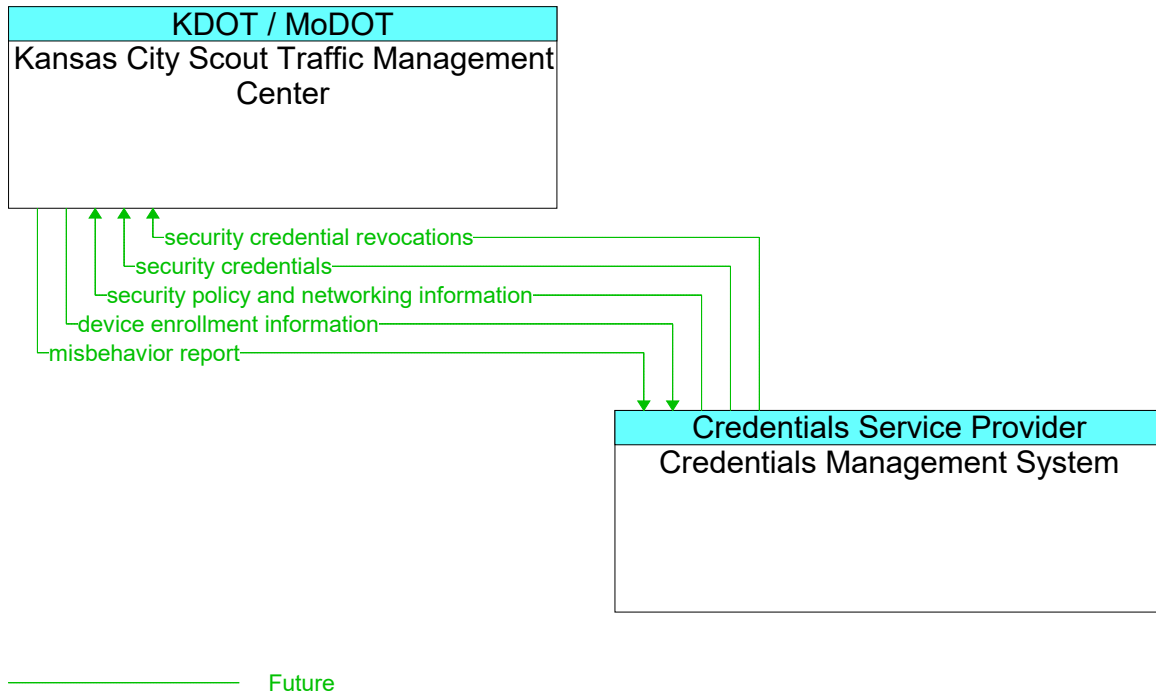
**Figure 283: County Sheriff and City Police Departments - UGT Operations Center Interface**



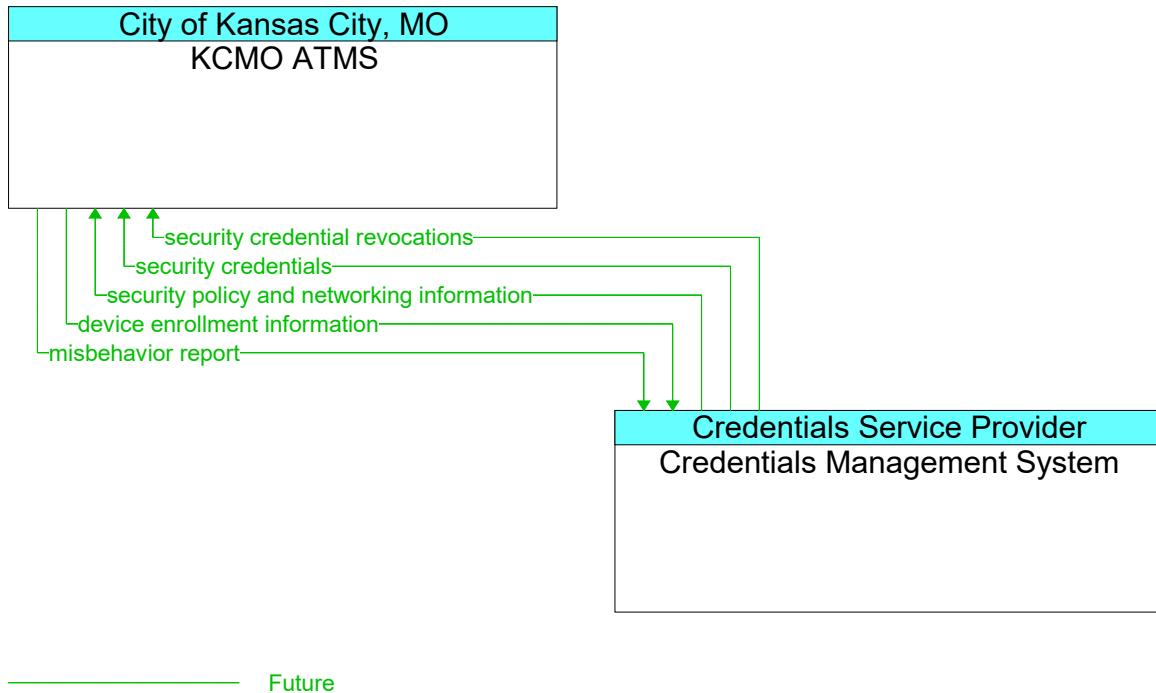
**Figure 284: County Sheriff and City Police Departments - User Personal Computing Devices Interface**



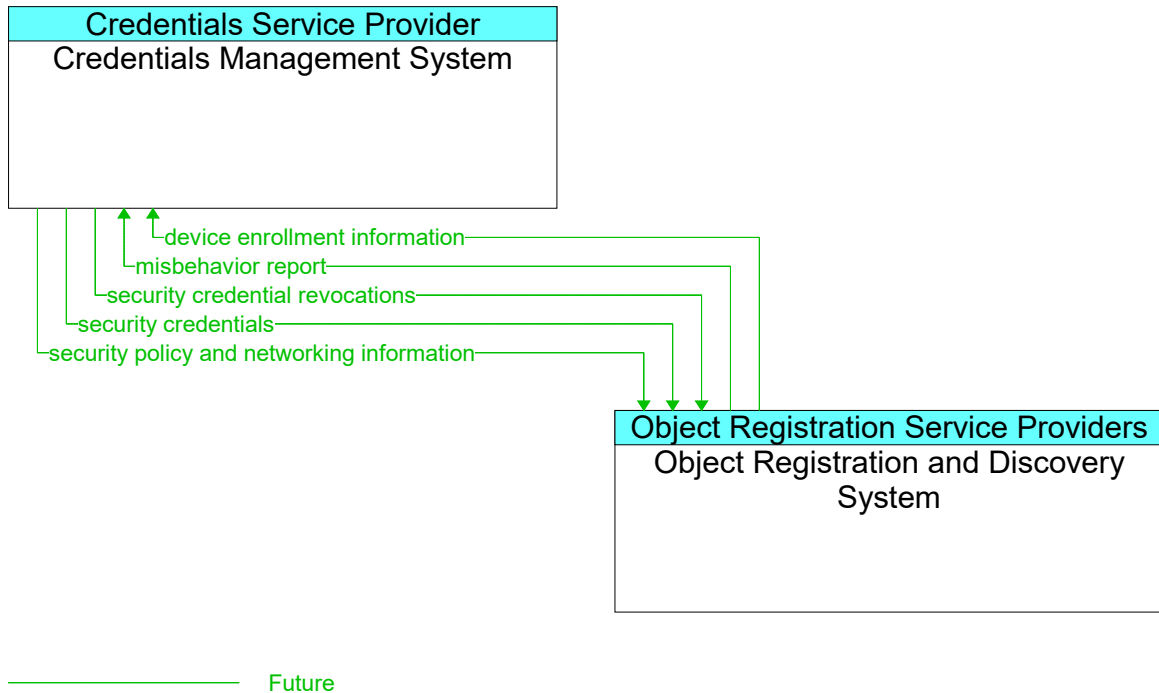
**Figure 285: Credentials Management System - Data Distribution System Interface**



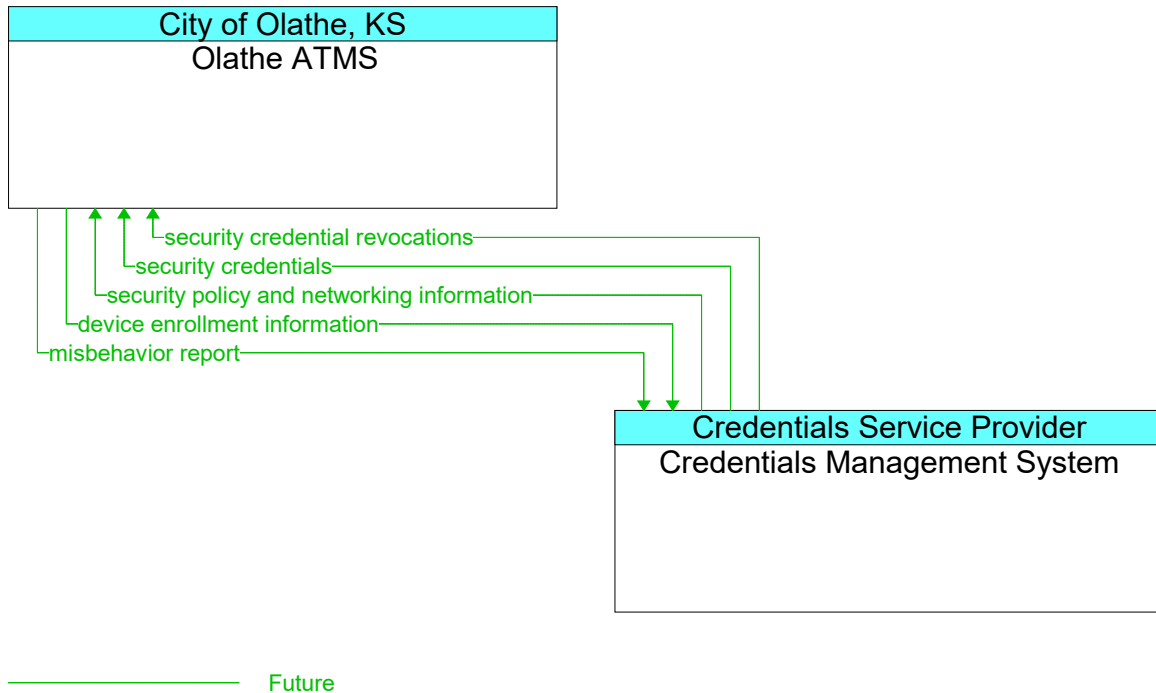
**Figure 286: Credentials Management System - Kansas City Scout Traffic Management Center Interface**



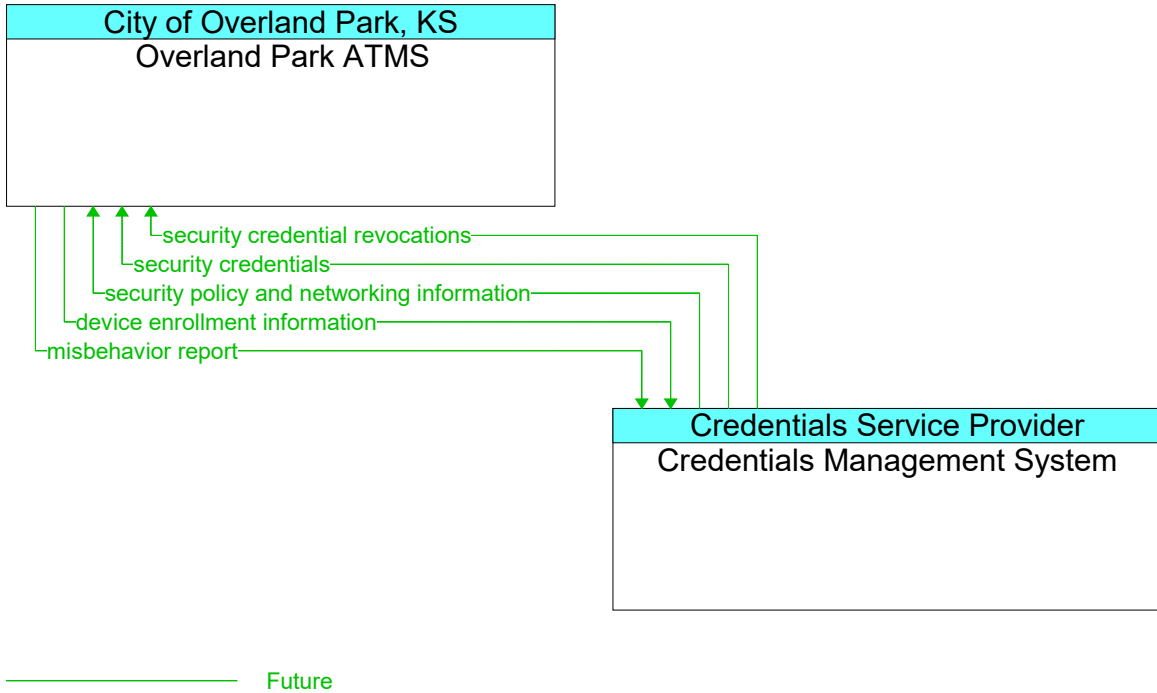
**Figure 287: Credentials Management System - KCMO ATMS Interface**



**Figure 288: Credentials Management System - Object Registration and Discovery System Interface**

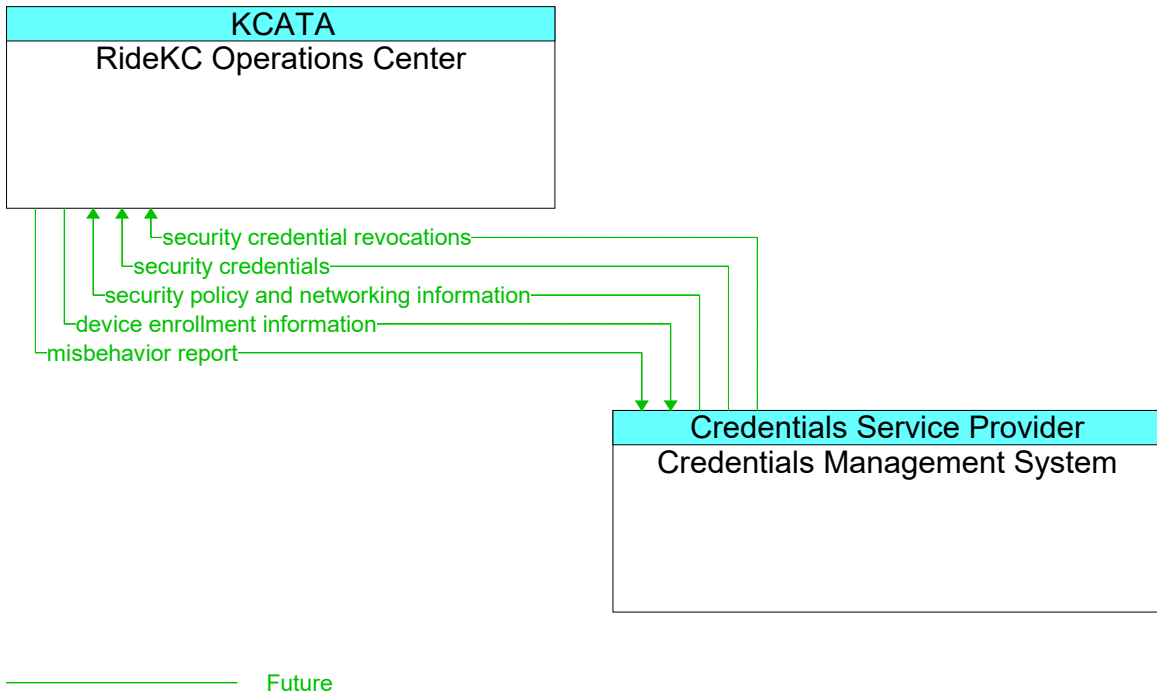


**Figure 289: Credentials Management System - Olathe ATMS Interface**

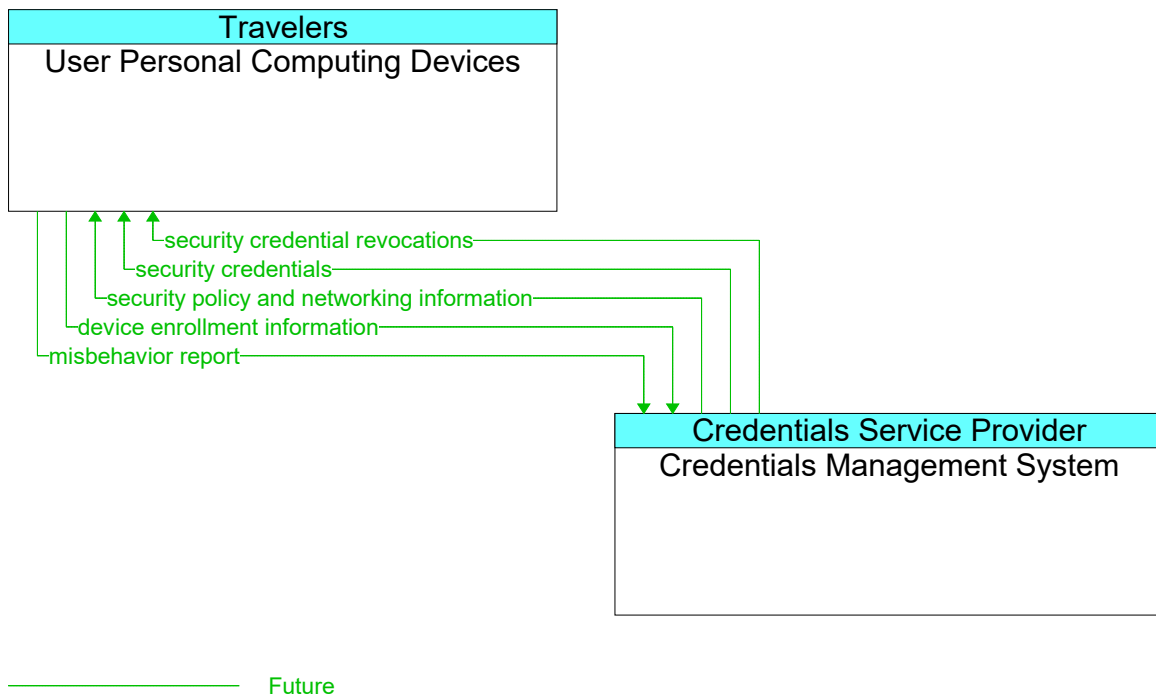


**Figure 290: Credentials Management System - Overland Park ATMS Interface**

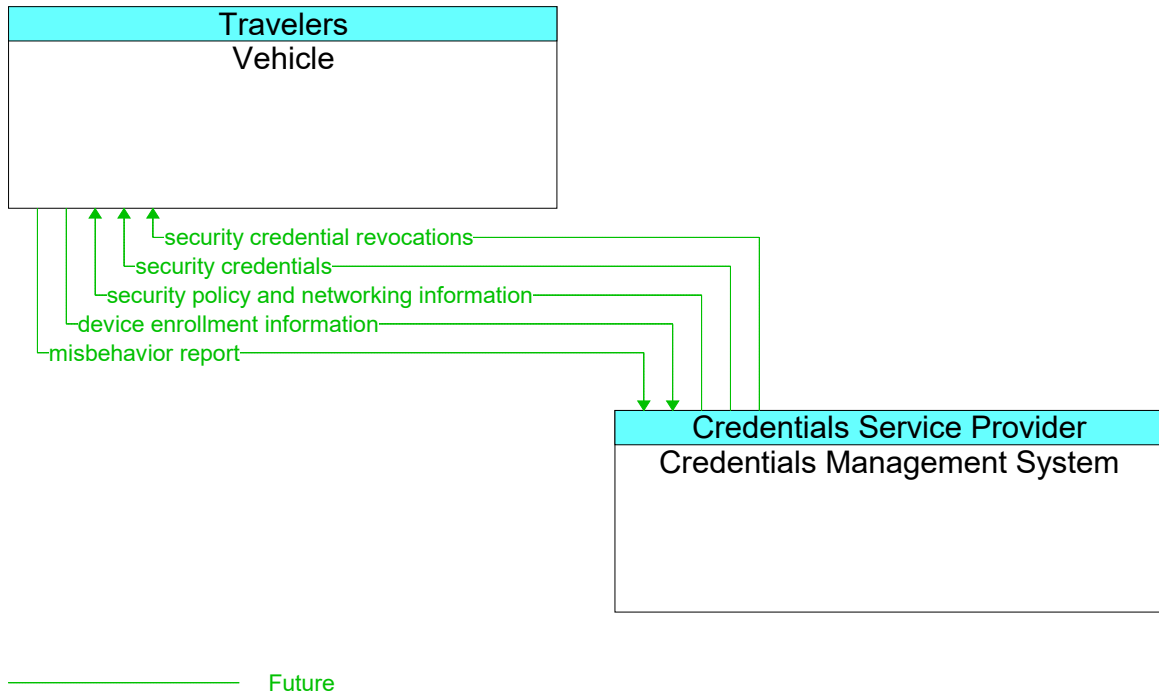




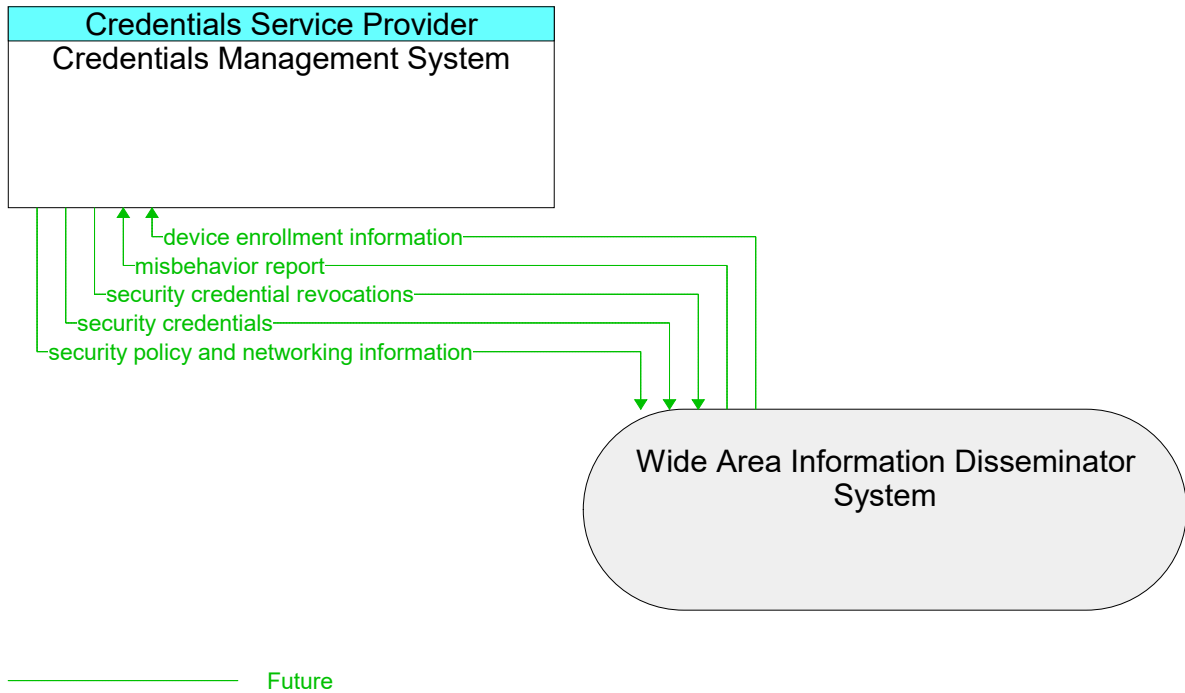
**Figure 291: Credentials Management System - RideKC Operations Center Interface**



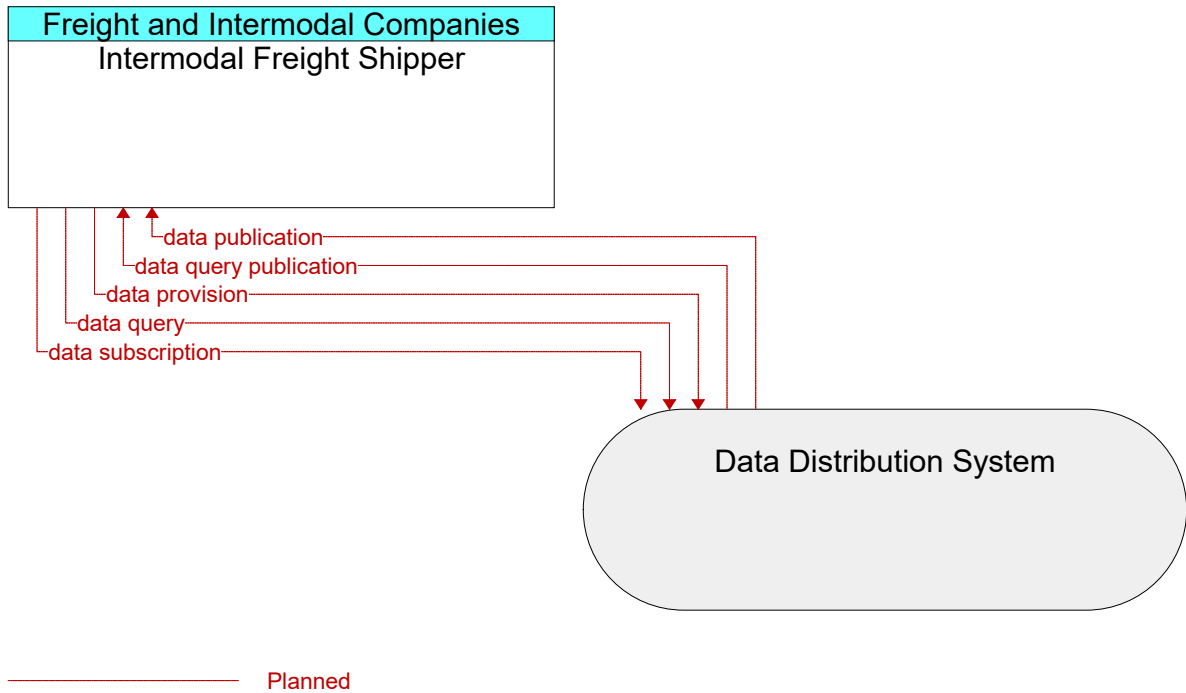
**Figure 292: Credentials Management System - User Personal Computing Devices Interface**



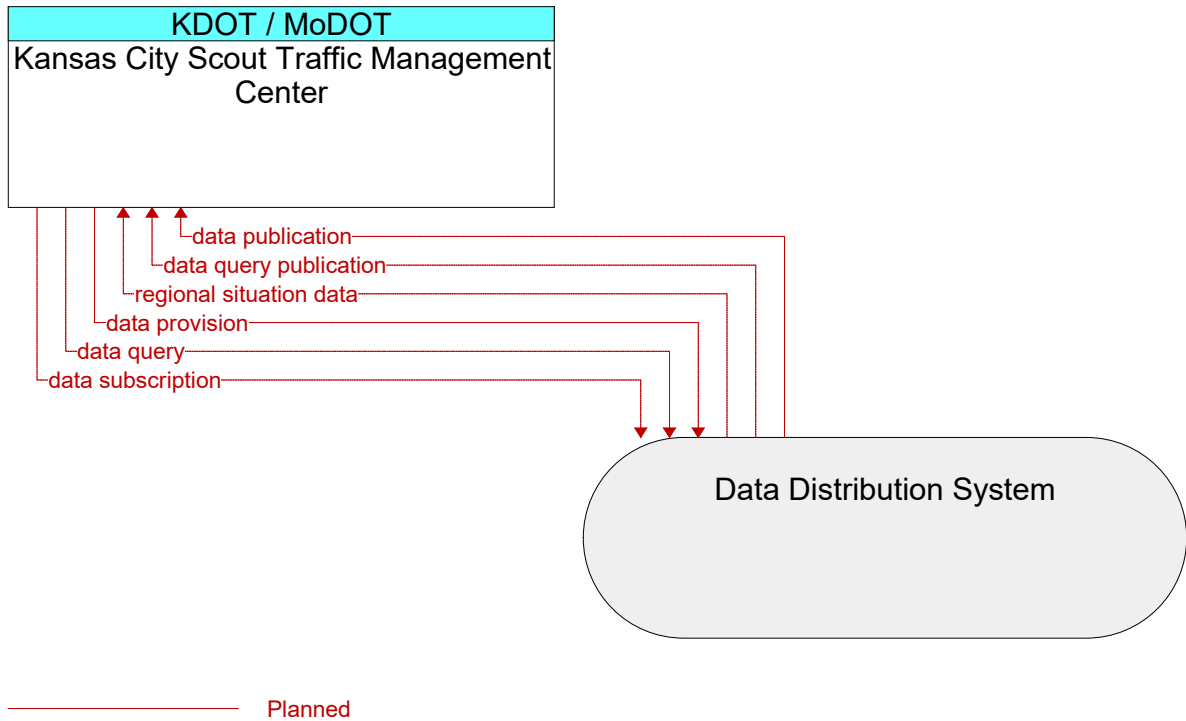
**Figure 293: Credentials Management System - Vehicle Interface**



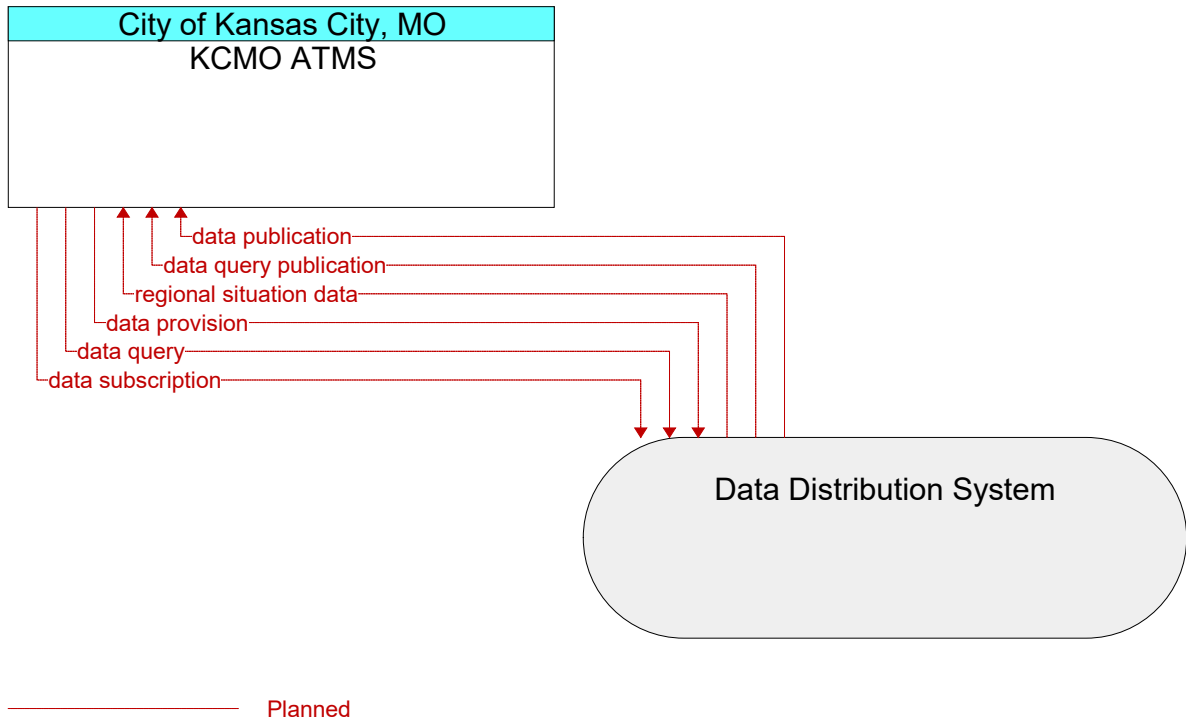
**Figure 294: Credentials Management System - Wide Area Information Disseminator System Interface**



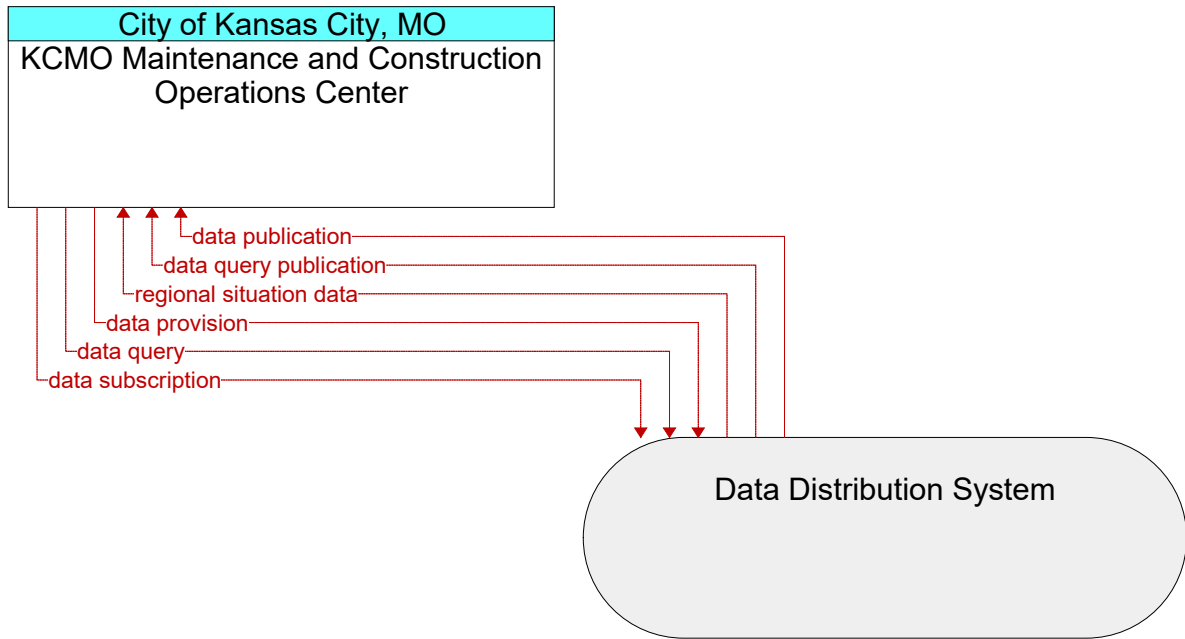
**Figure 295: Data Distribution System - Intermodal Freight Shipper Interface**



**Figure 296: Data Distribution System - Kansas City Scout Traffic Management Center Interface**



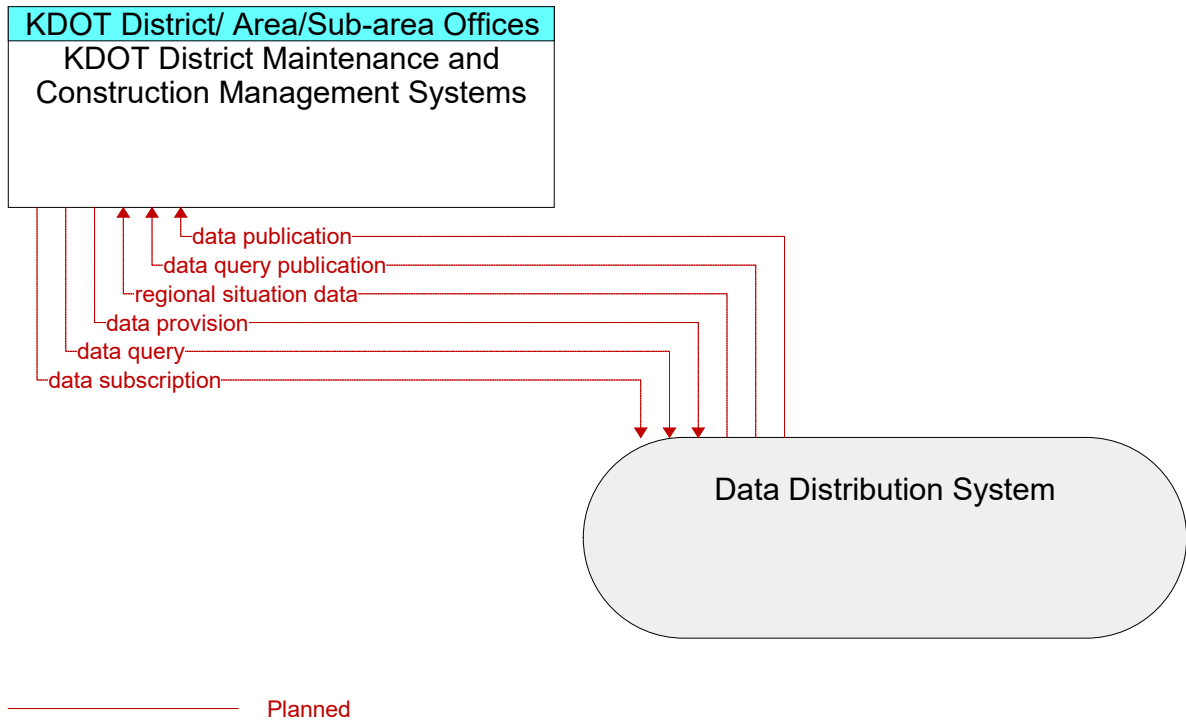
**Figure 297: Data Distribution System - KCMO ATMS Interface**



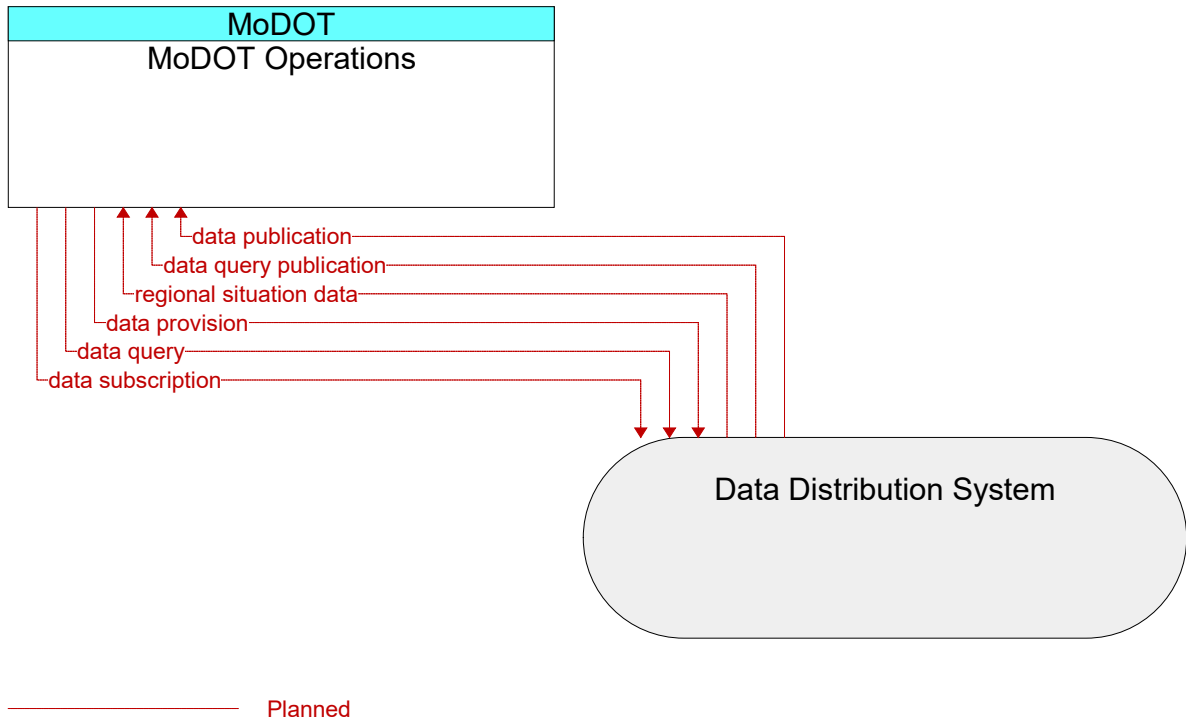
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**Figure 298: Data Distribution System - KCMO Maintenance and Construction Operations Center Interface**

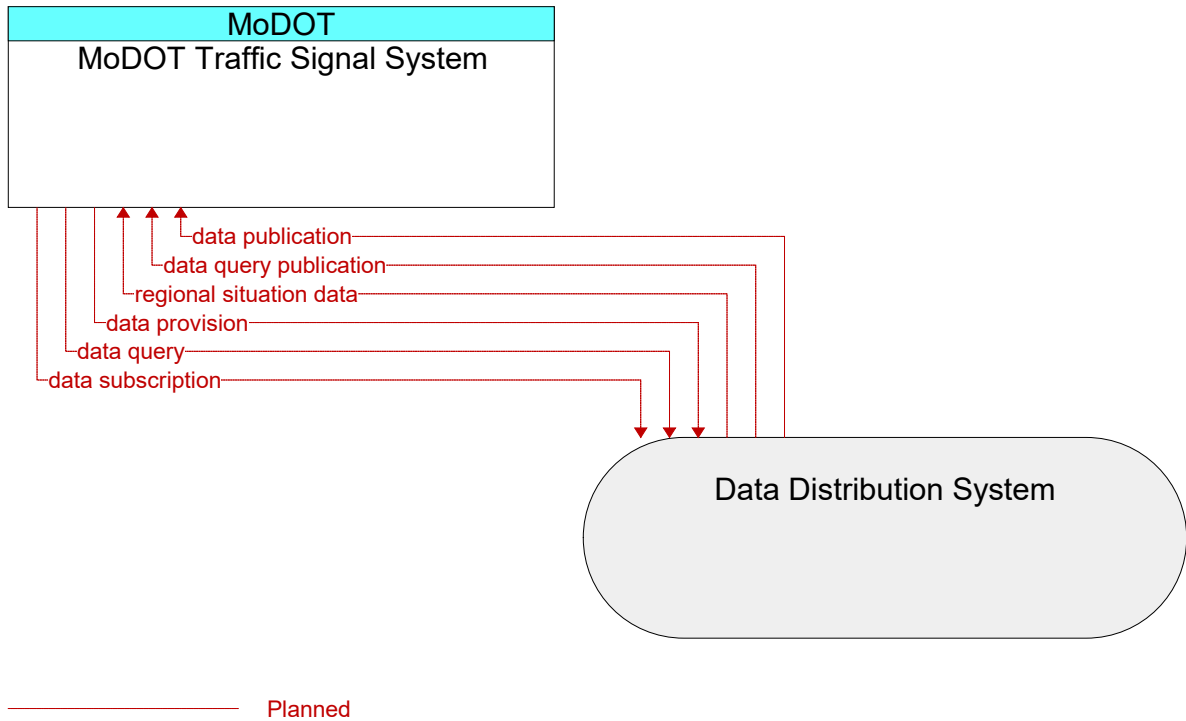




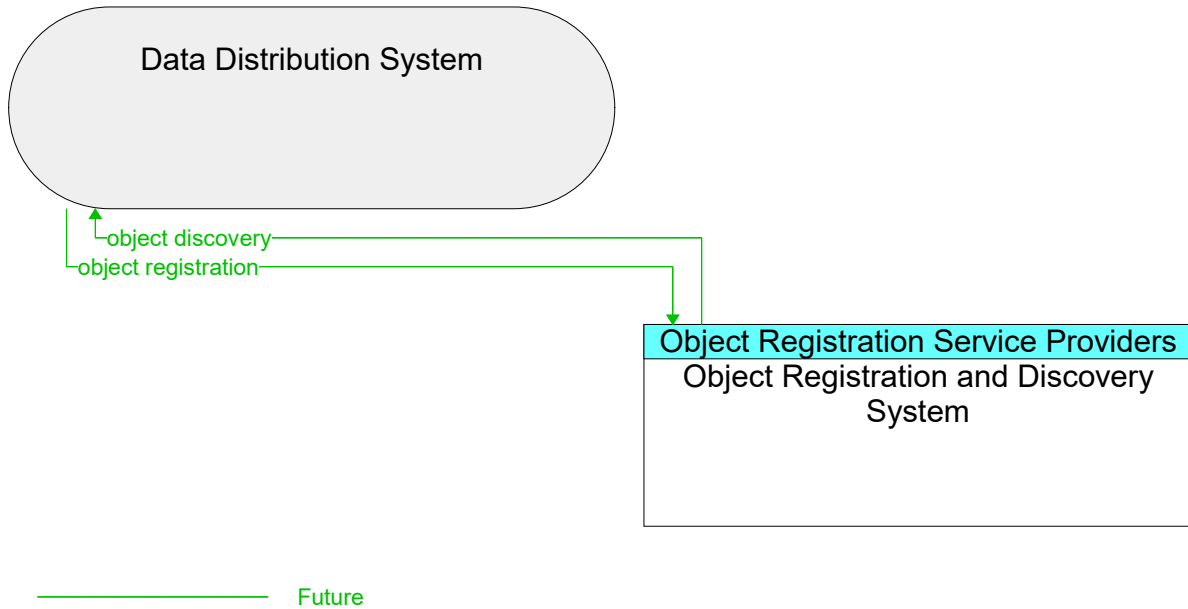
**Figure 299: Data Distribution System - KDOT District Maintenance and Construction Management Systems Interface**



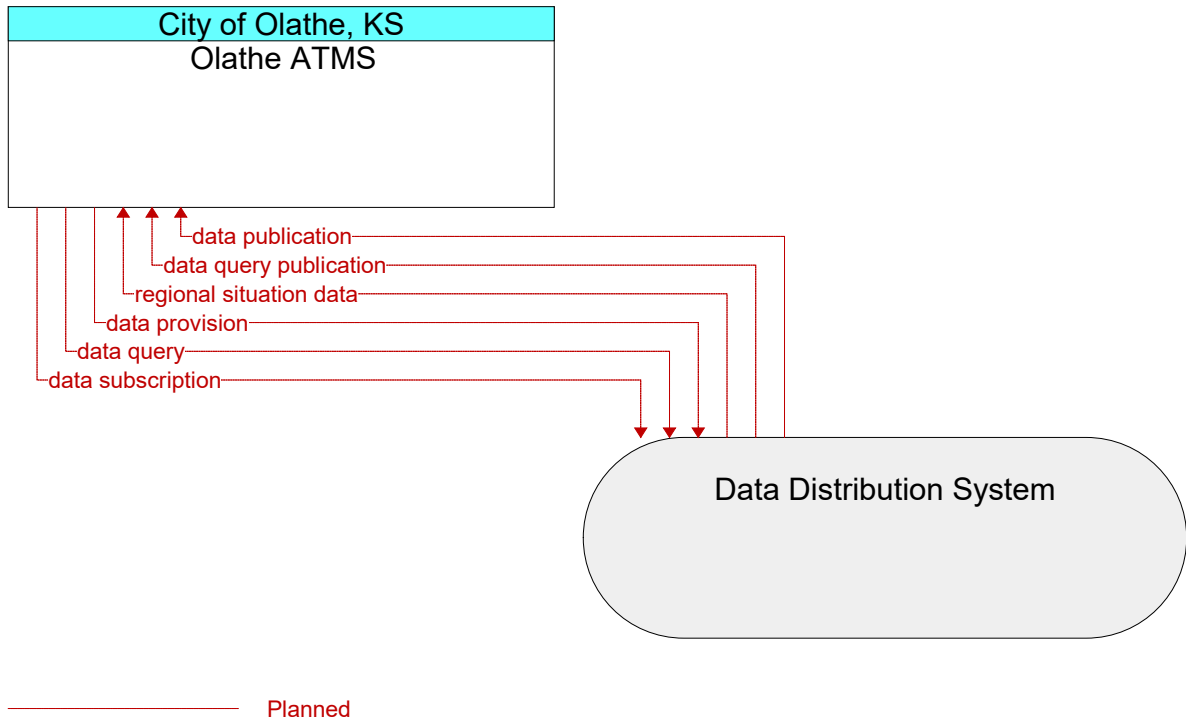
**Figure 300: Data Distribution System - MoDOT Operations Interface**



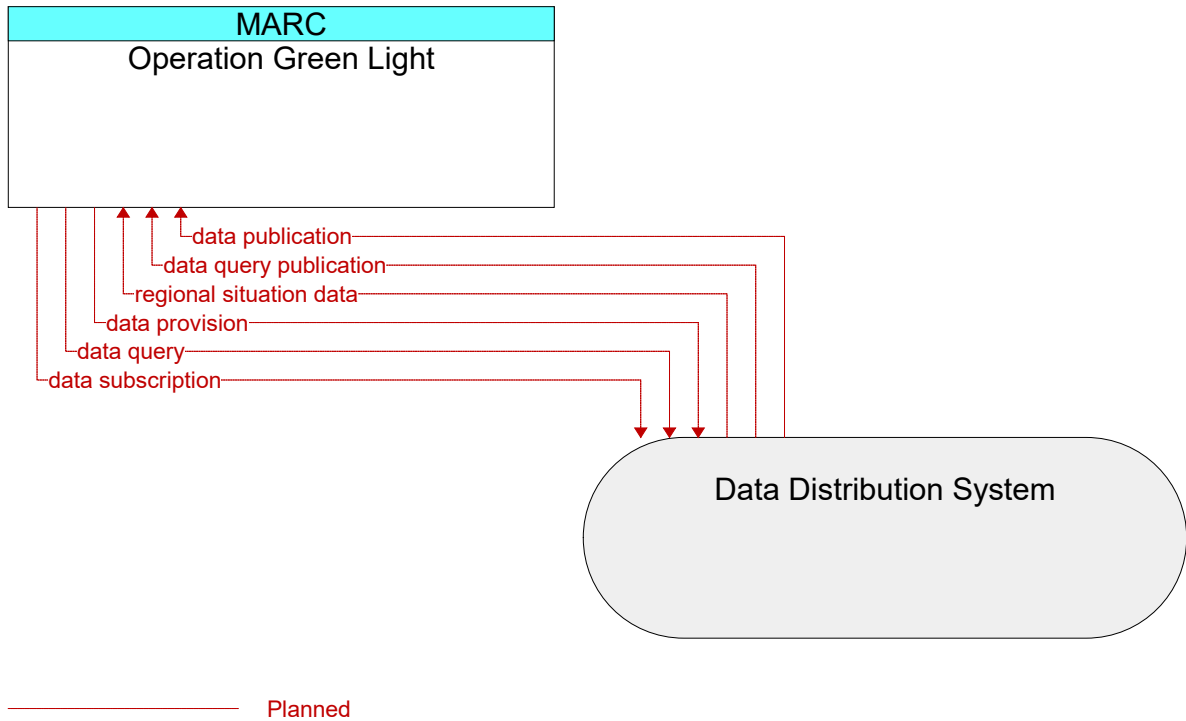
**Figure 301: Data Distribution System - MoDOT Traffic Signal System Interface**



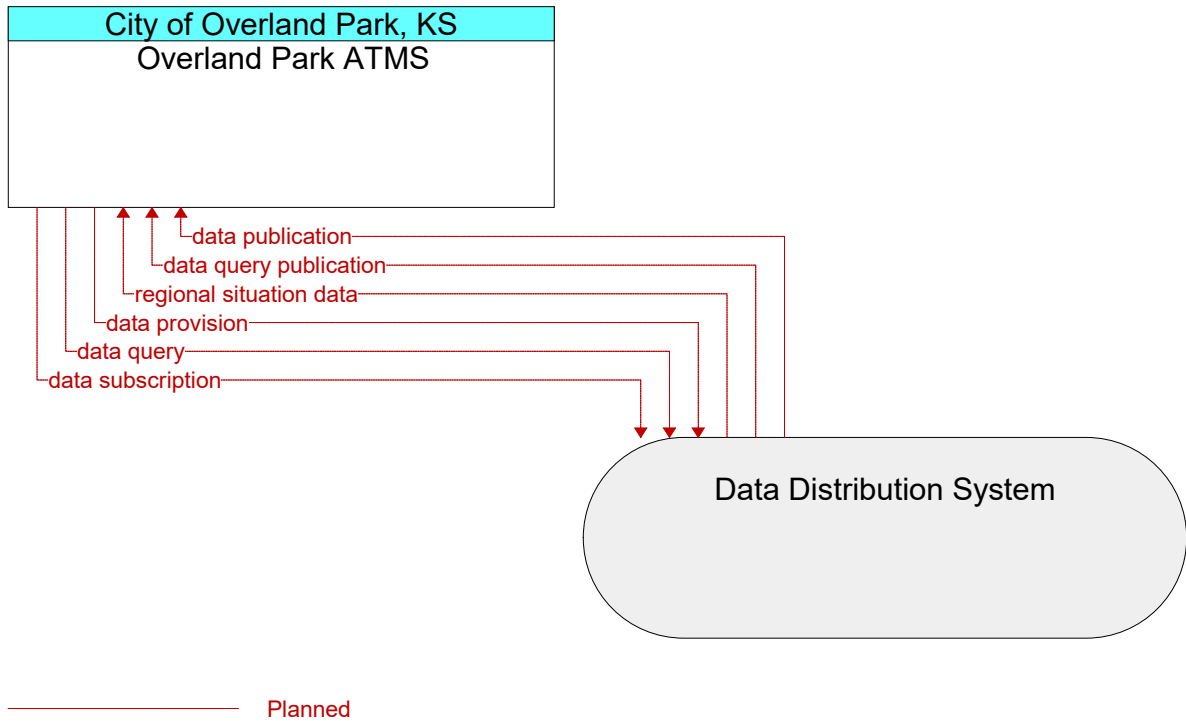
**Figure 302: Data Distribution System - Object Registration and Discovery System Interface**



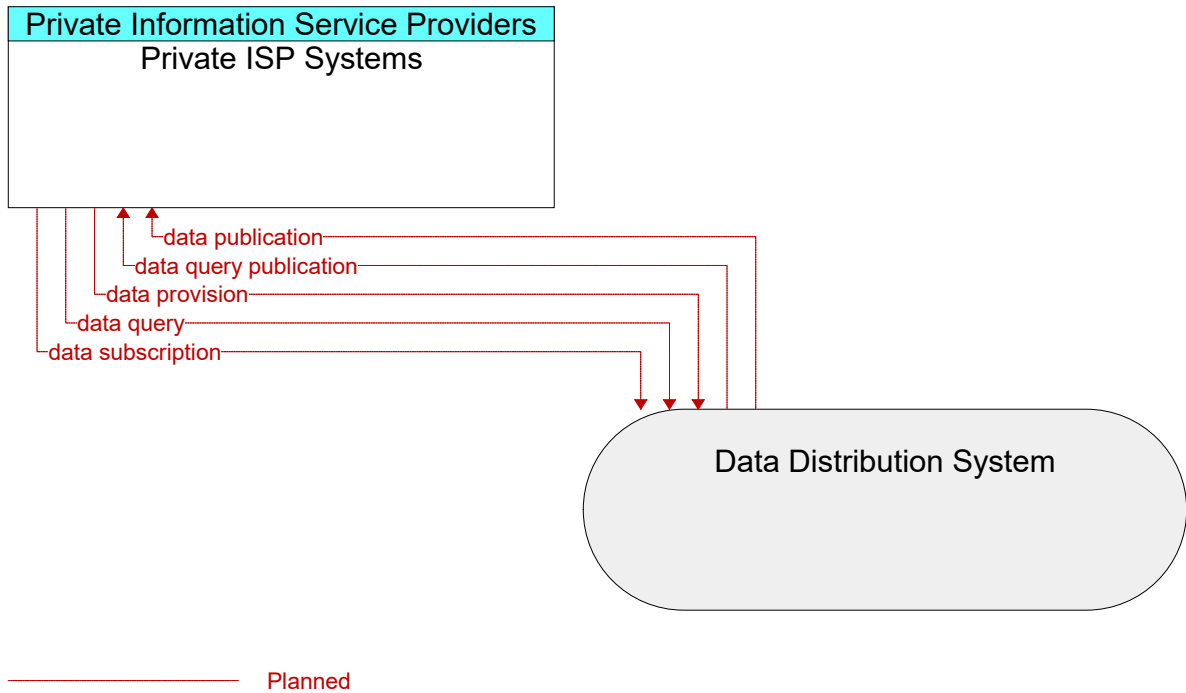
**Figure 303: Data Distribution System - Olathe ATMS Interface**



**Figure 304: Data Distribution System - Operation Green Light Interface**

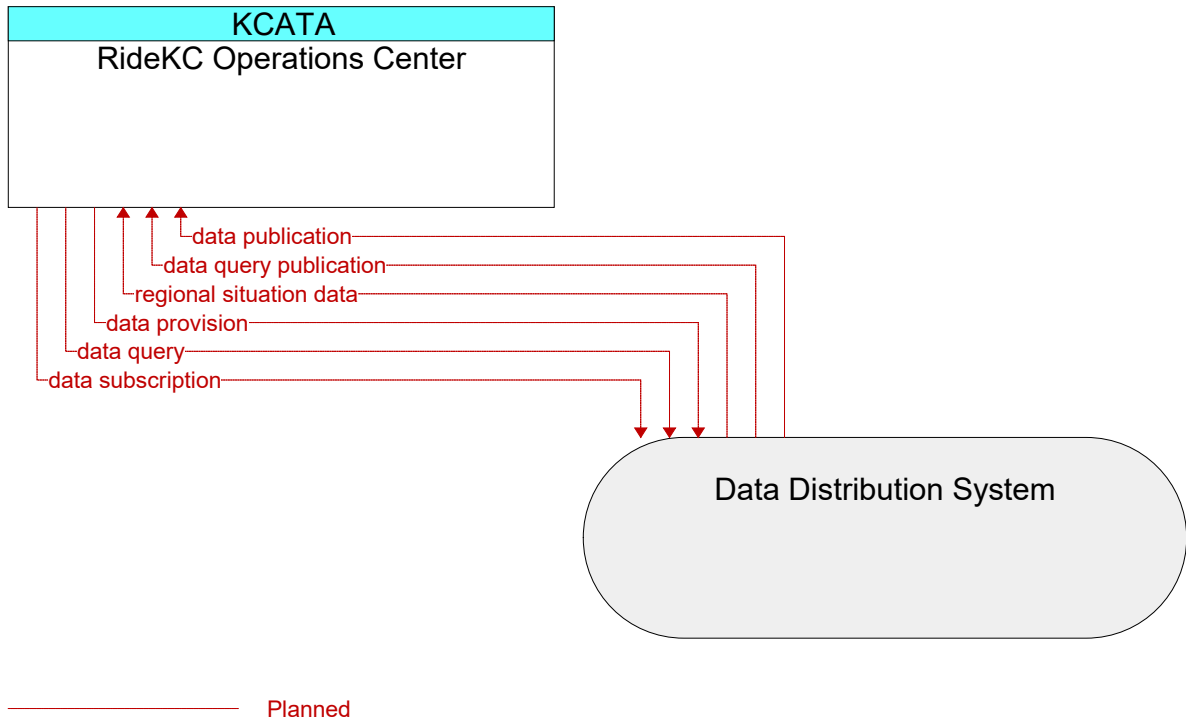


**Figure 305: Data Distribution System - Overland Park ATMS Interface**

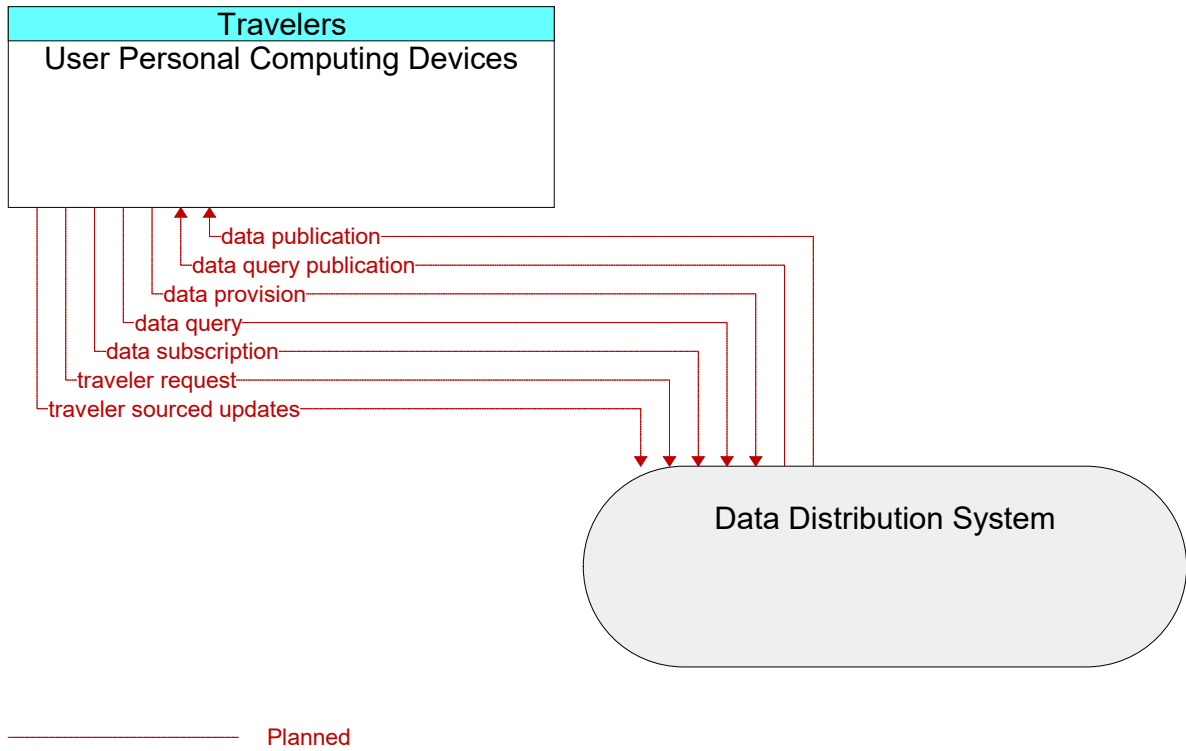


**Figure 306: Data Distribution System - Private ISP Systems Interface**





**Figure 307: Data Distribution System - RideKC Operations Center Interface**



**Figure 308: Data Distribution System - User Personal Computing Devices Interface**

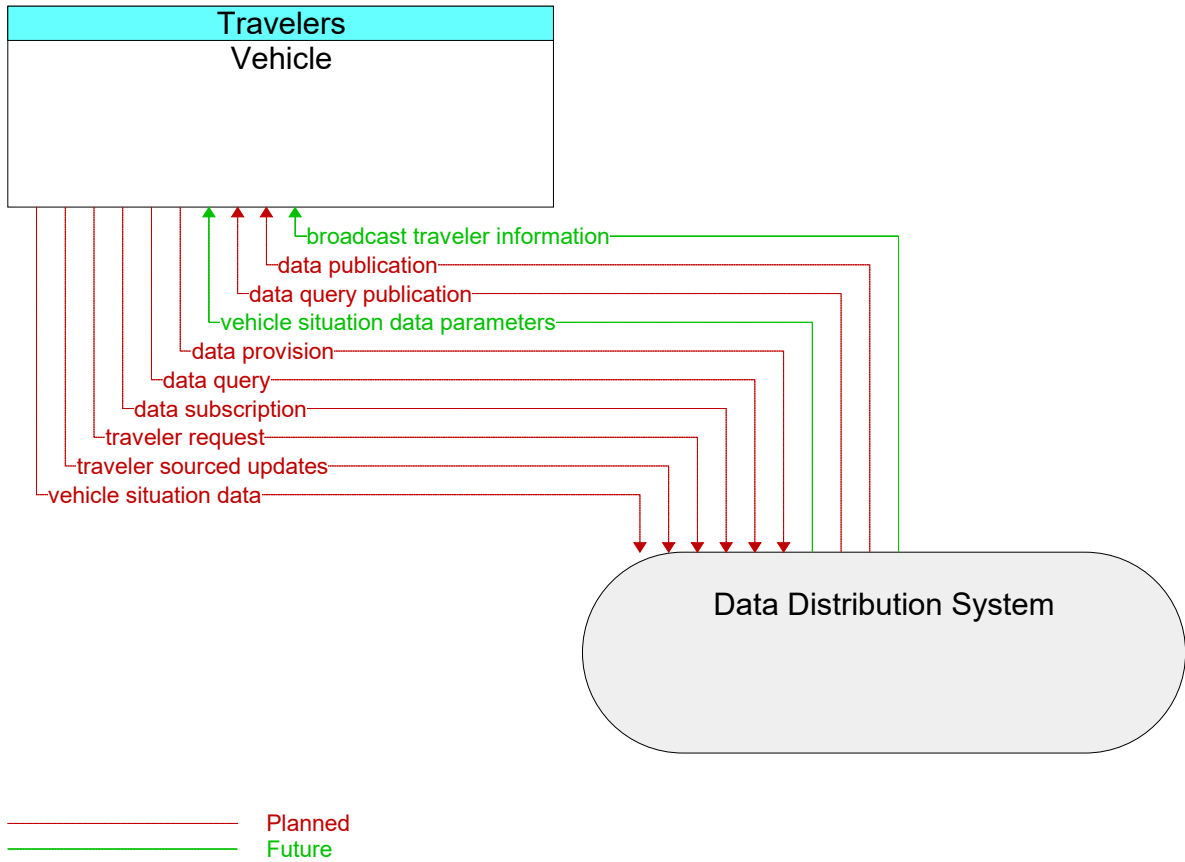
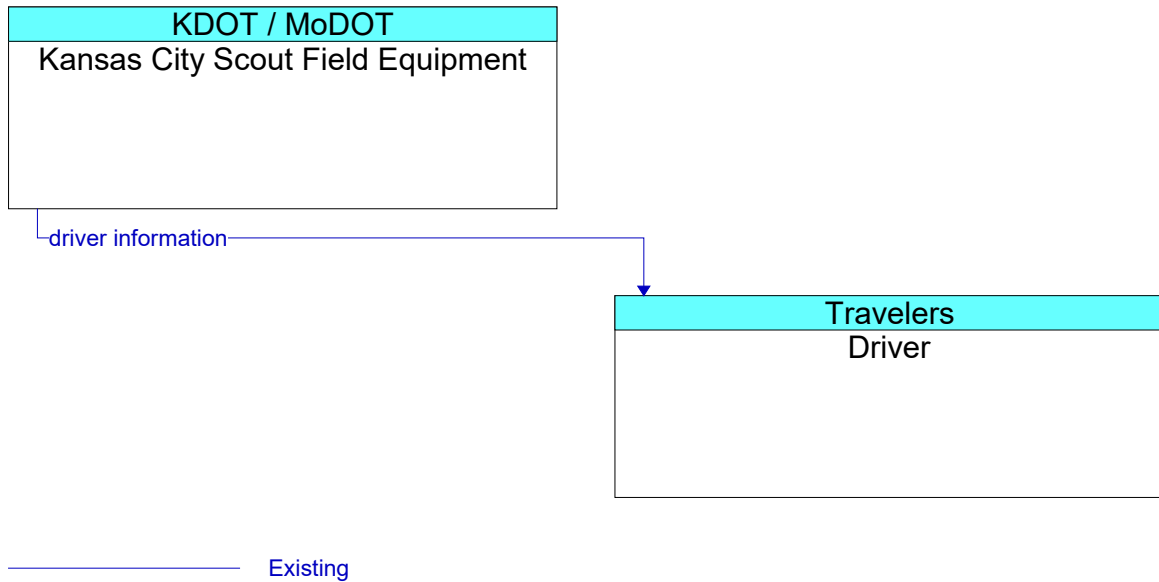
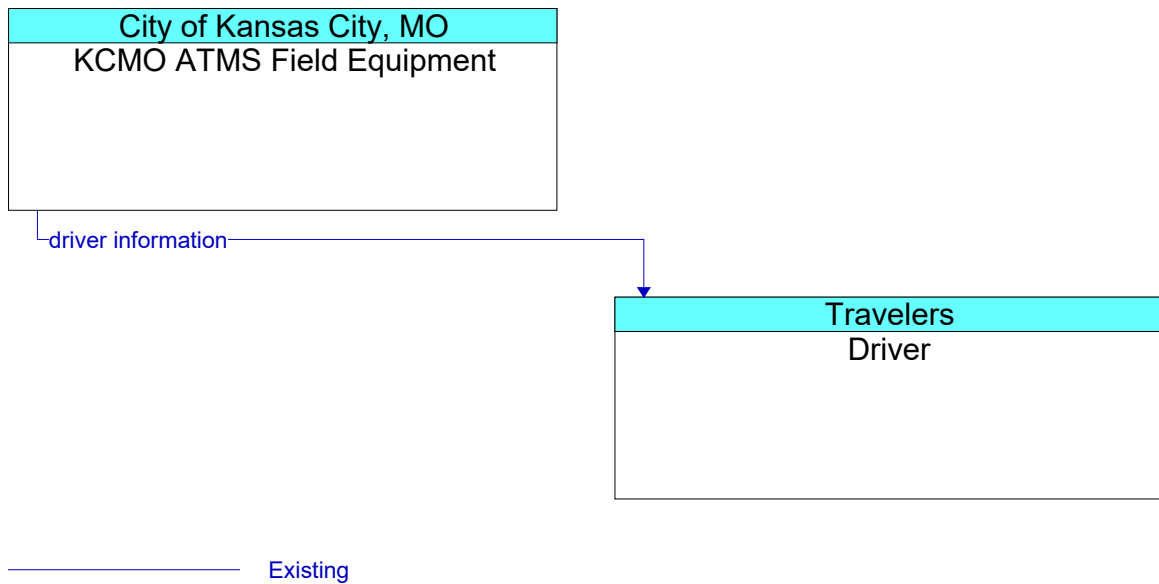


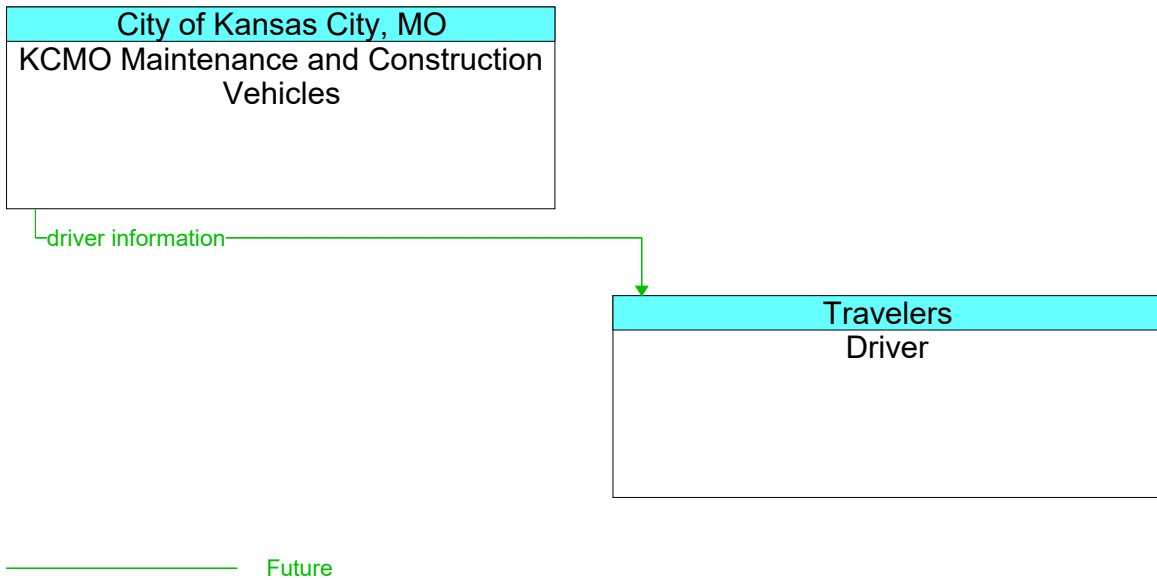
Figure 309: Data Distribution System - Vehicle Interface



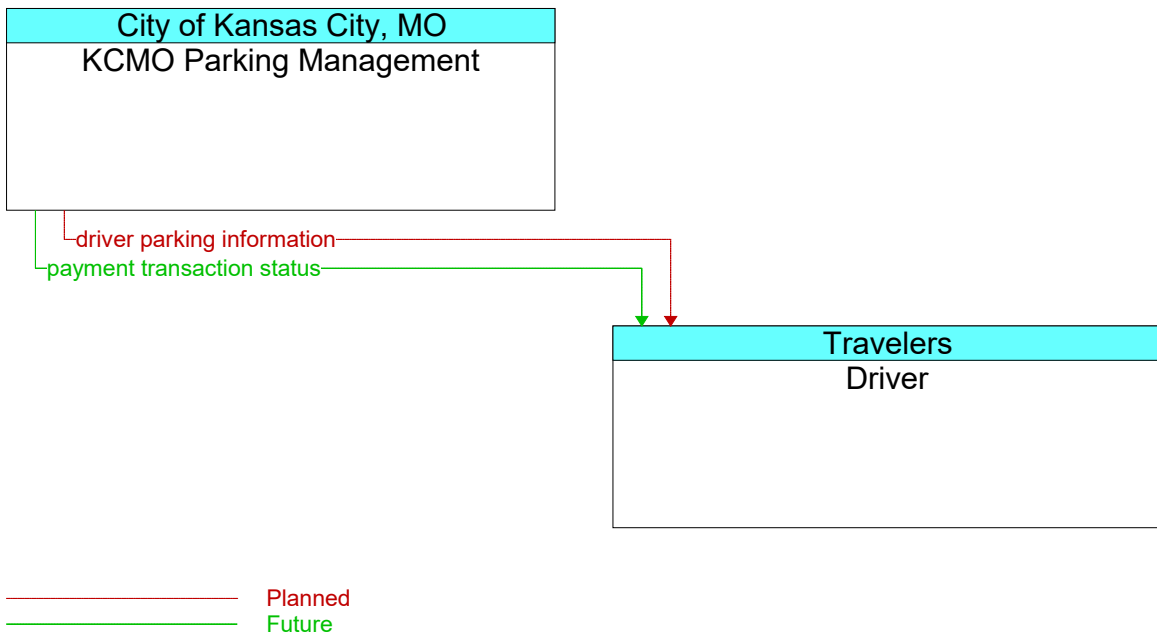
**Figure 310: Driver - Kansas City Scout Field Equipment Interface**



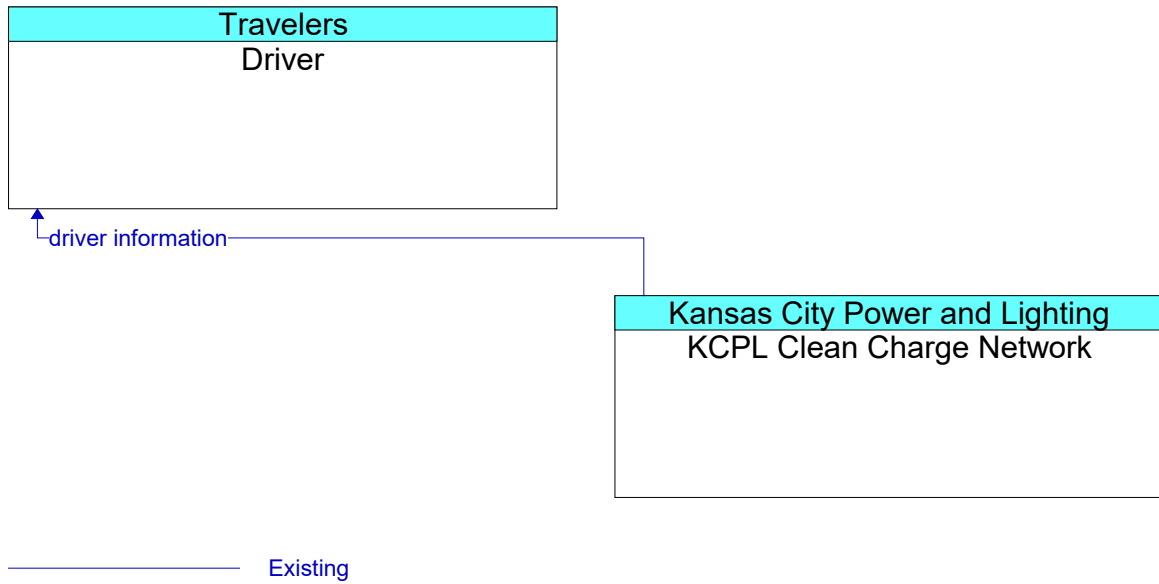
**Figure 311: Driver - KCMO ATMS Field Equipment Interface**



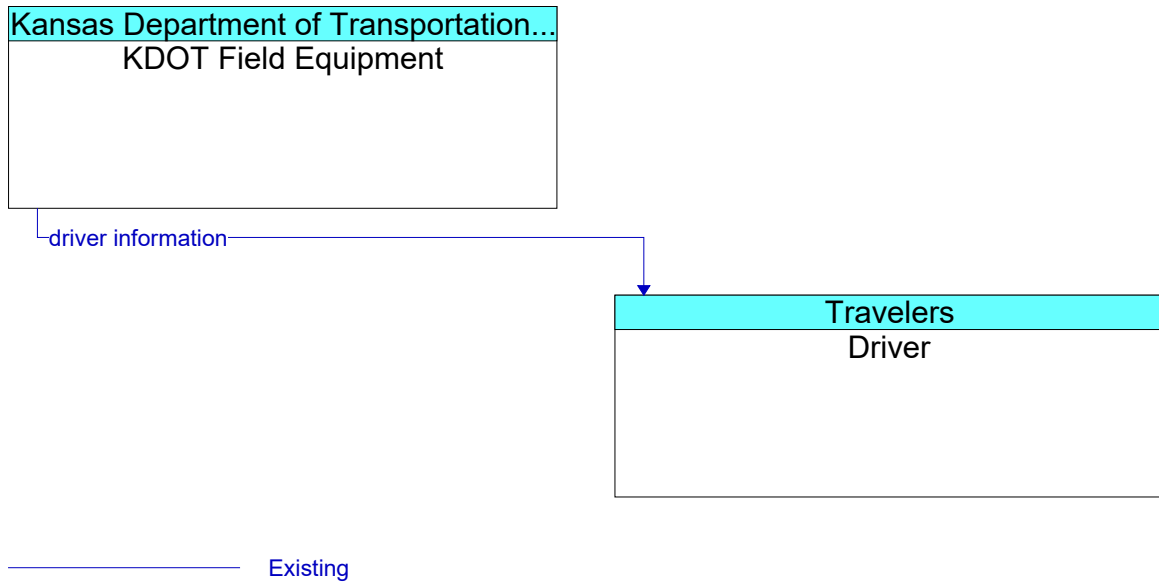
**Figure 312: Driver - KCMO Maintenance and Construction Vehicles Interface**



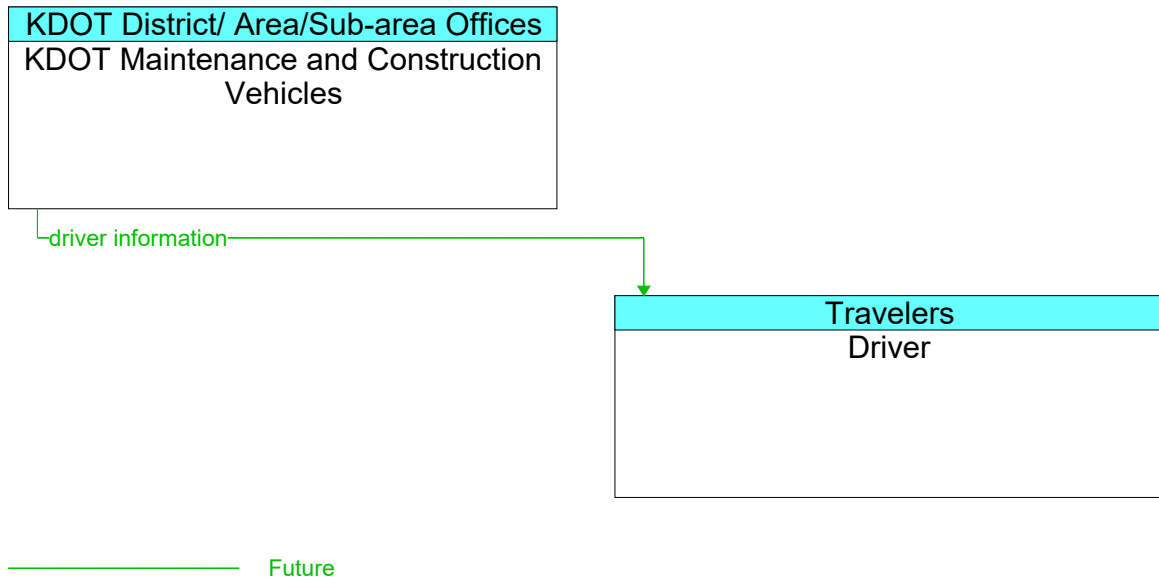
**Figure 313: Driver - KCMO Parking Management Interface**



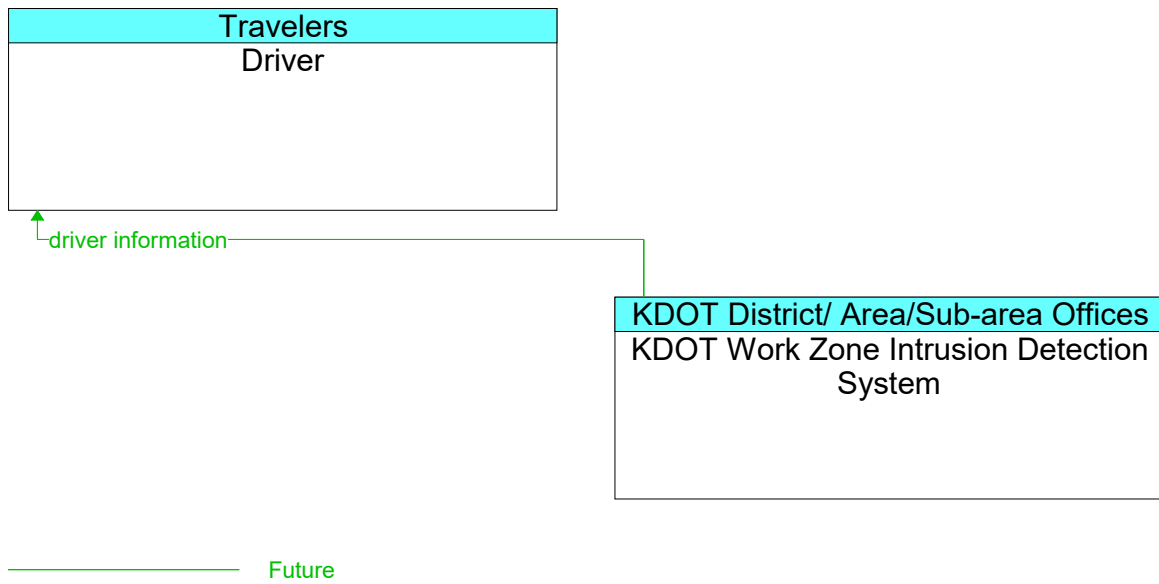
**Figure 314: Driver - KCPL Clean Charge Network Interface**



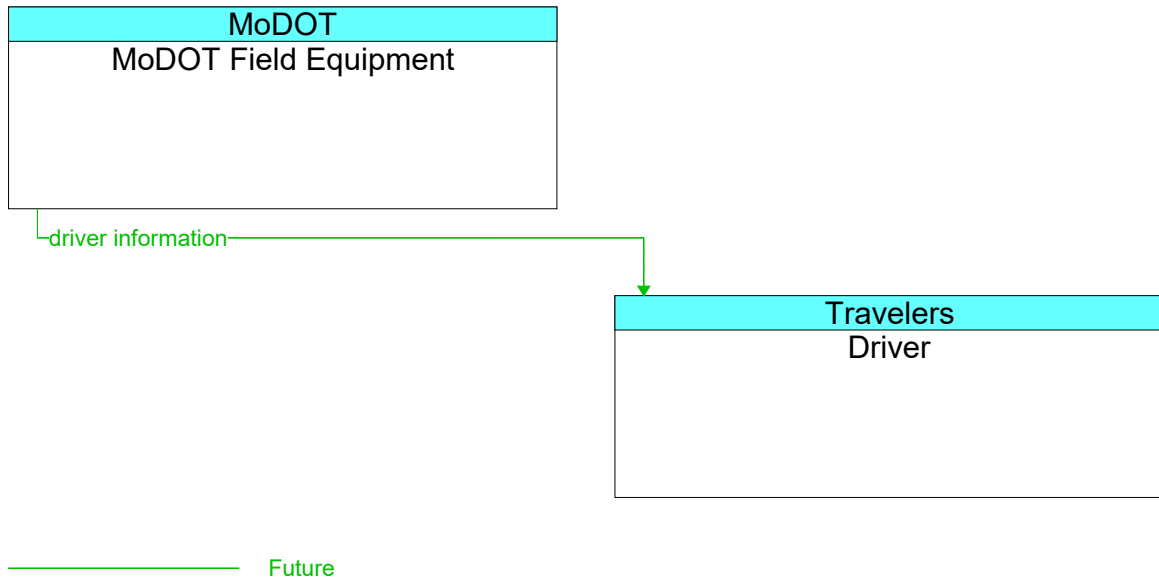
**Figure 315: Driver - KDOT Field Equipment Interface**



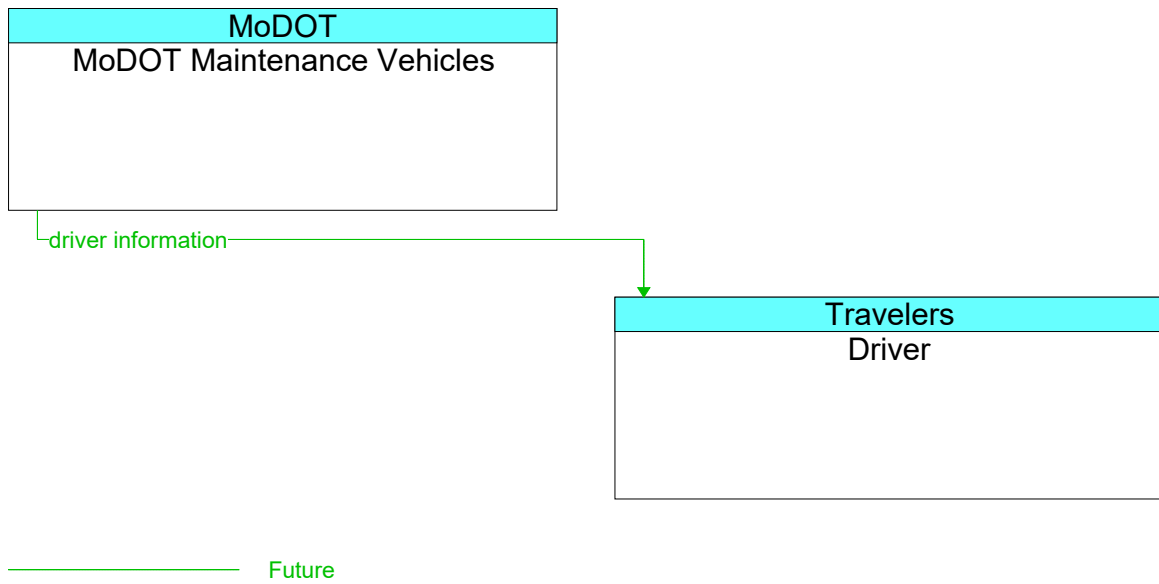
**Figure 316: Driver - KDOT Maintenance and Construction Vehicles Interface**



**Figure 317: Driver - KDOT Work Zone Intrusion Detection System Interface**

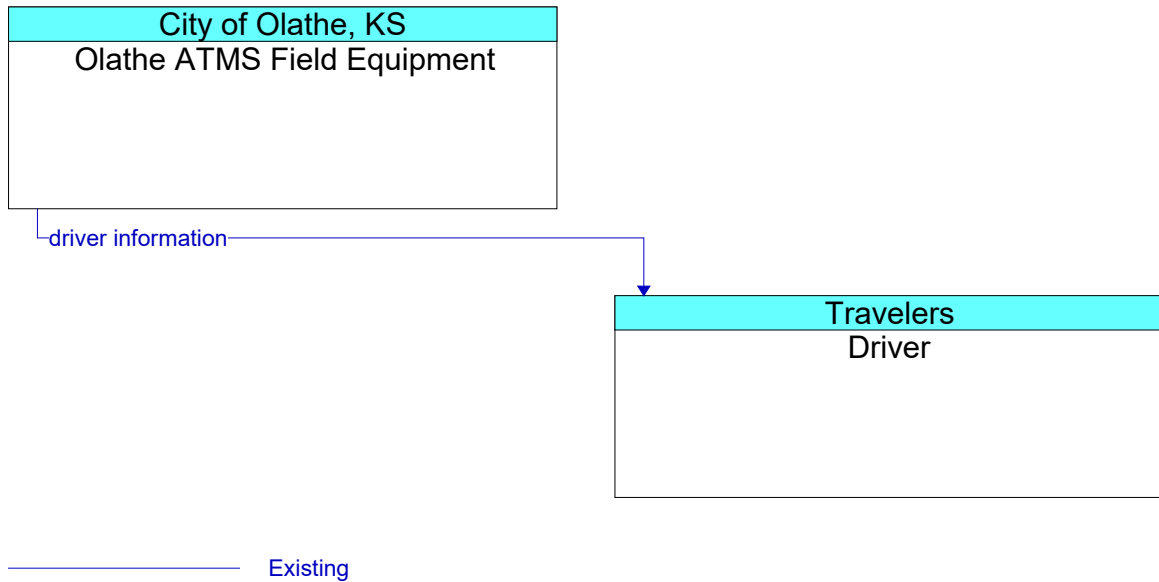


**Figure 318: Driver - MoDOT Field Equipment Interface**

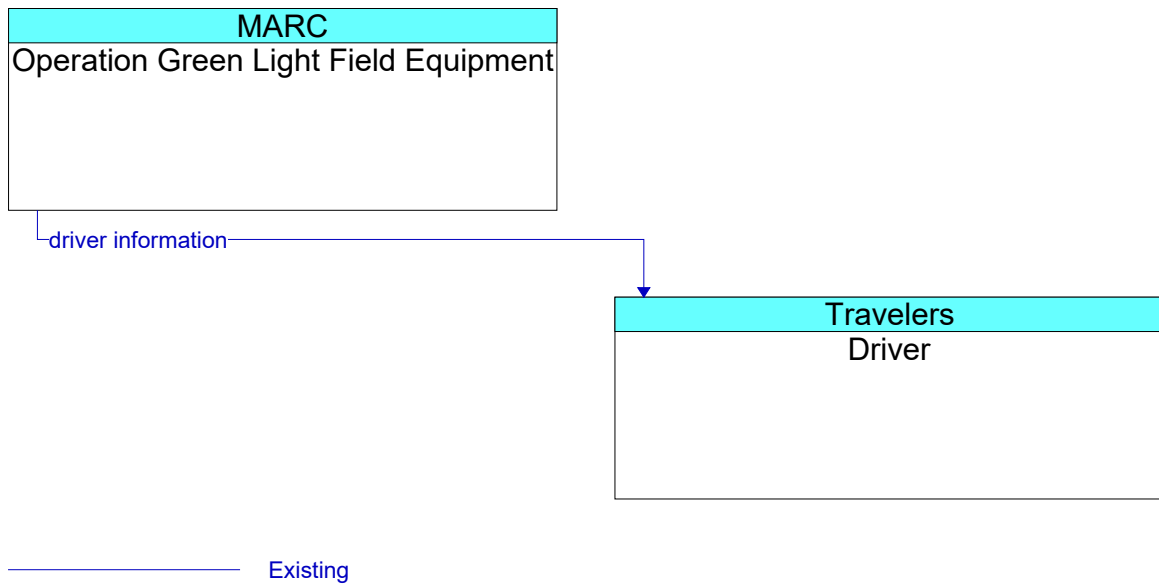


**Figure 319: Driver - MoDOT Maintenance Vehicles Interface**

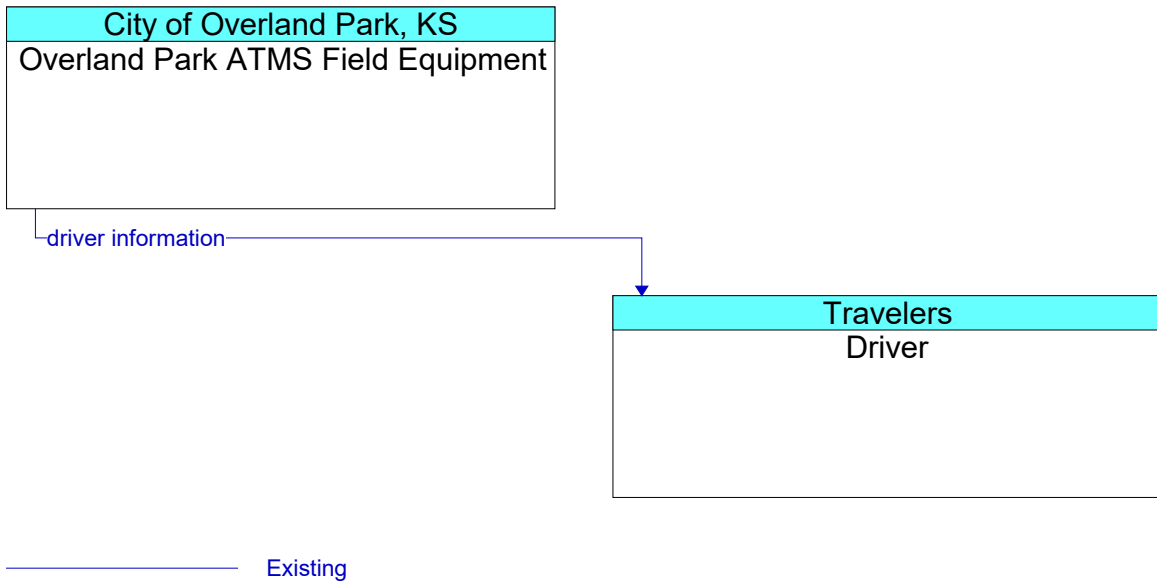




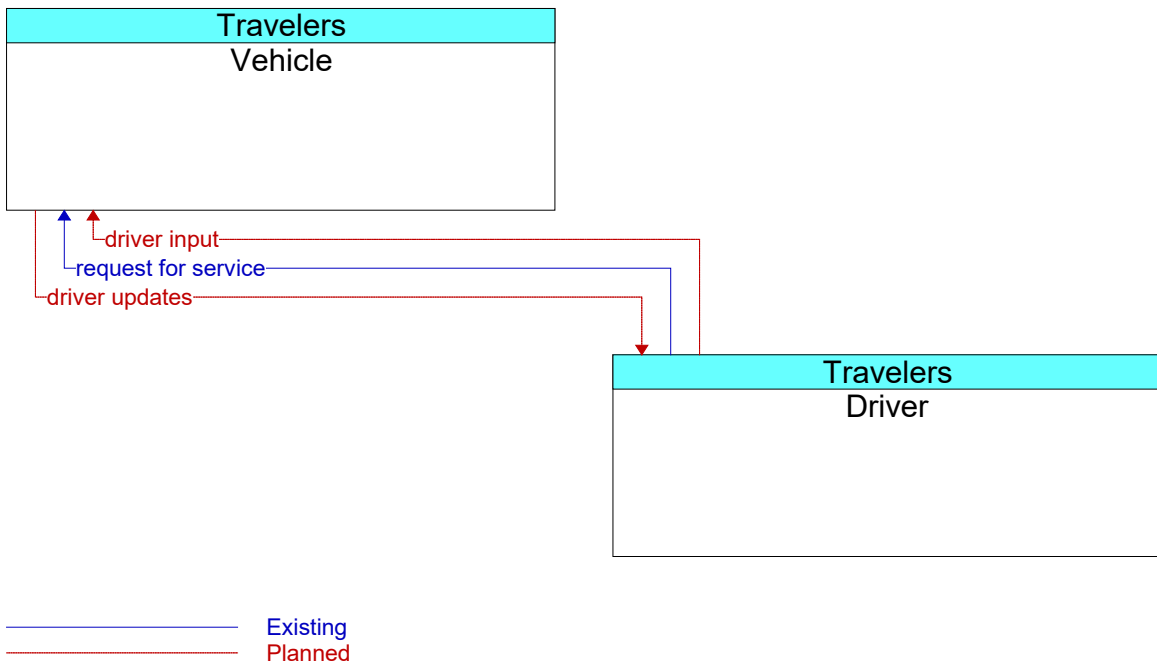
**Figure 320: Driver - Olathe ATMS Field Equipment Interface**



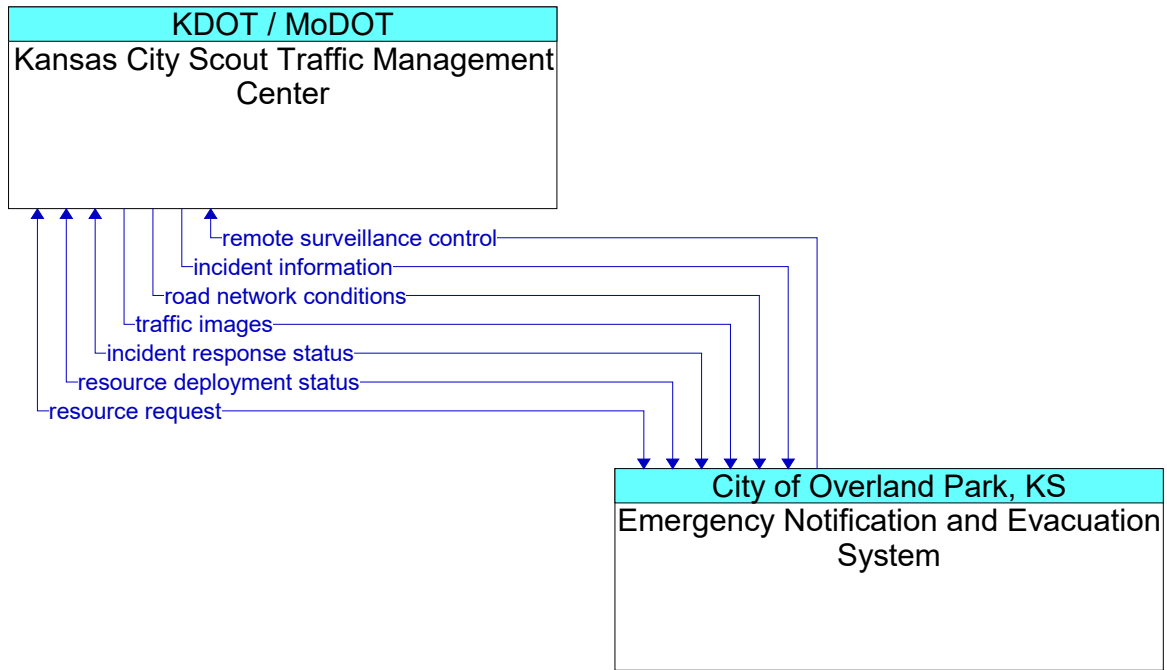
**Figure 321: Driver - Operation Green Light Field Equipment Interface**



**Figure 322: Driver - Overland Park ATMS Field Equipment Interface**

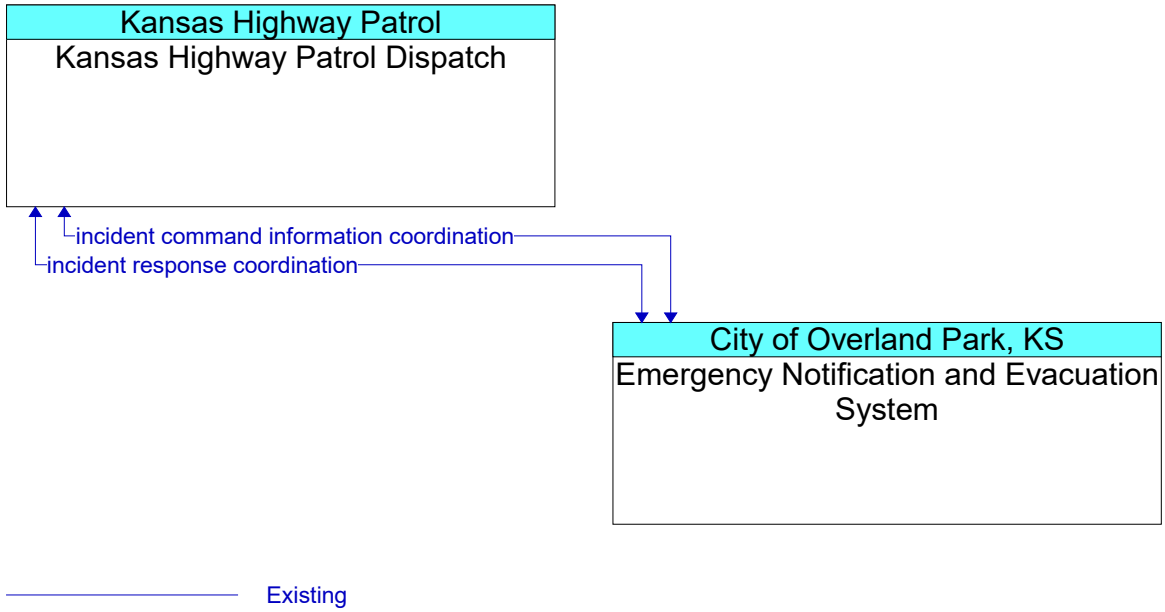


**Figure 323: Driver - Vehicle Interface**

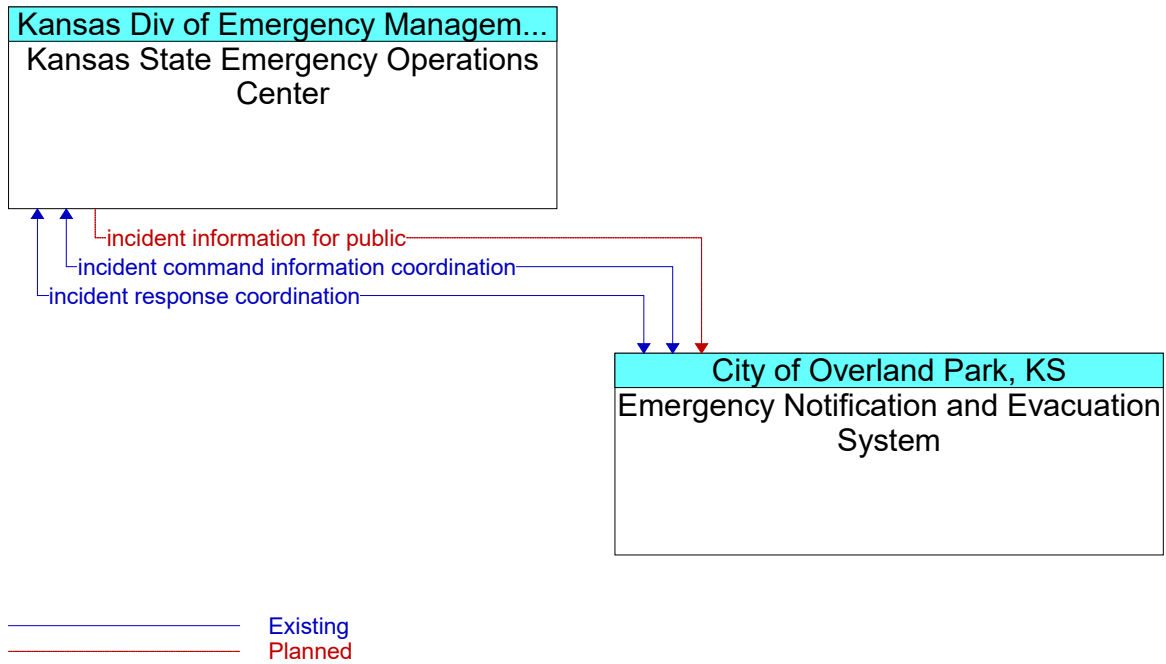


Existing

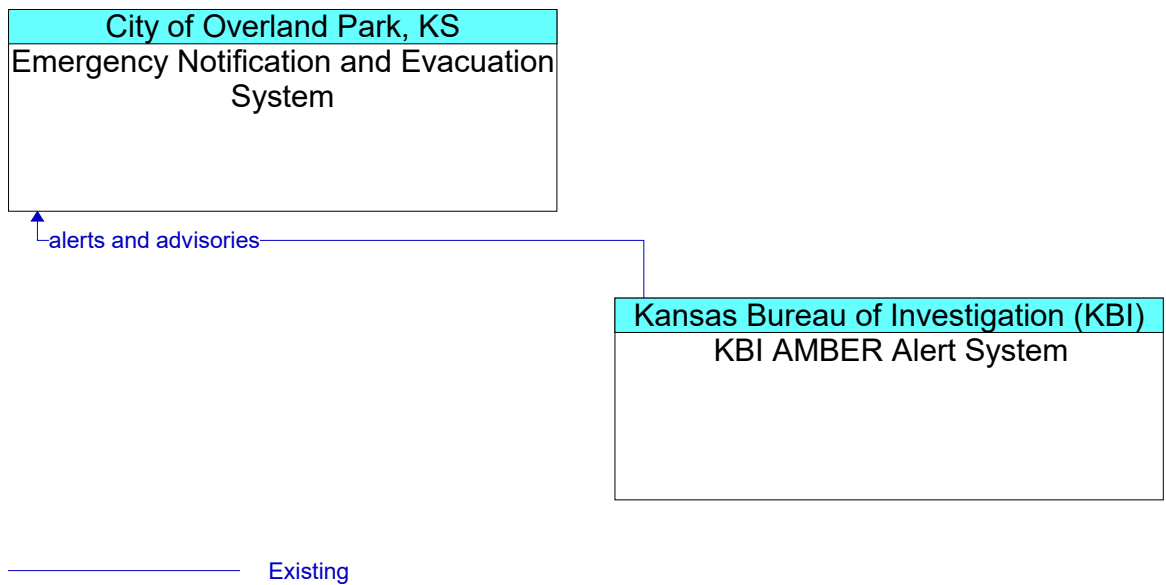
**Figure 324: Emergency Notification and Evacuation System - Kansas City Scout Traffic Management Center Interface**



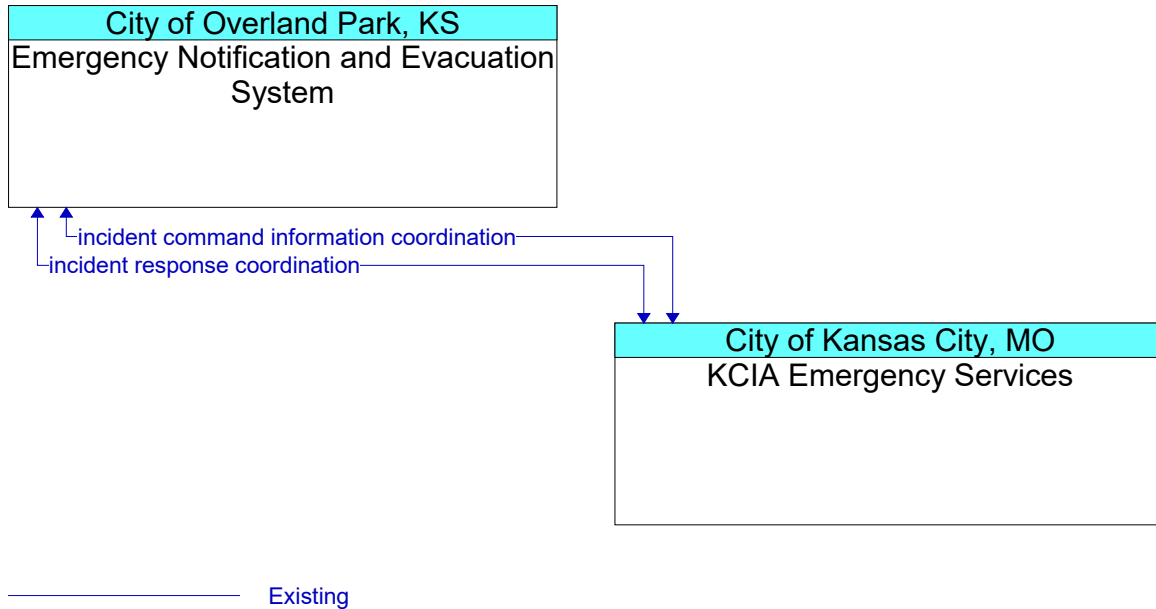
**Figure 325: Emergency Notification and Evacuation System - Kansas Highway Patrol Dispatch Interface**



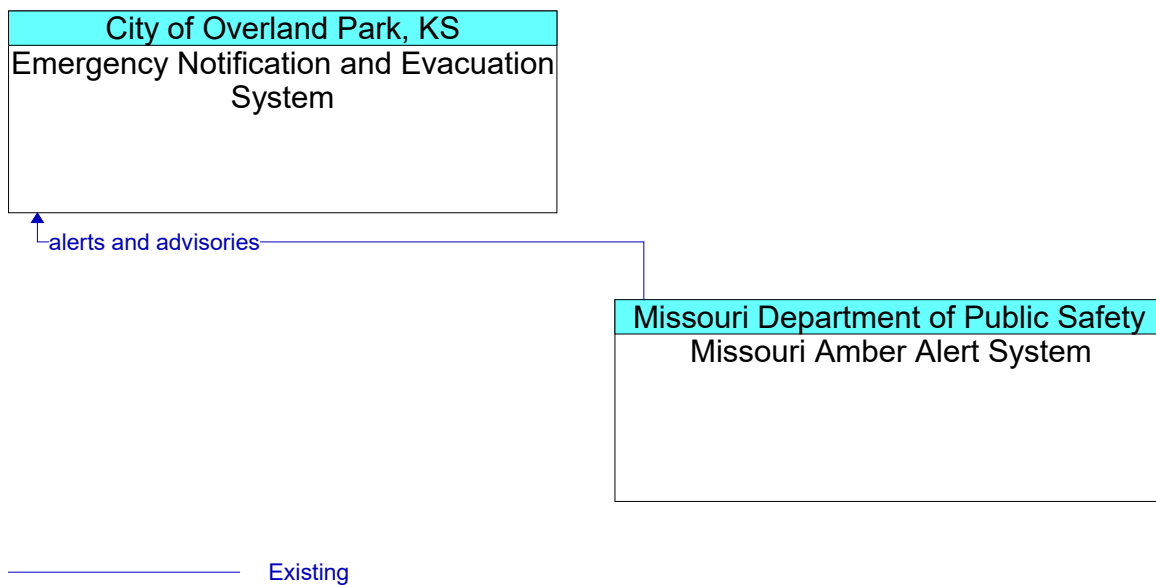
**Figure 326: Emergency Notification and Evacuation System - Kansas State Emergency Operations Center Interface**



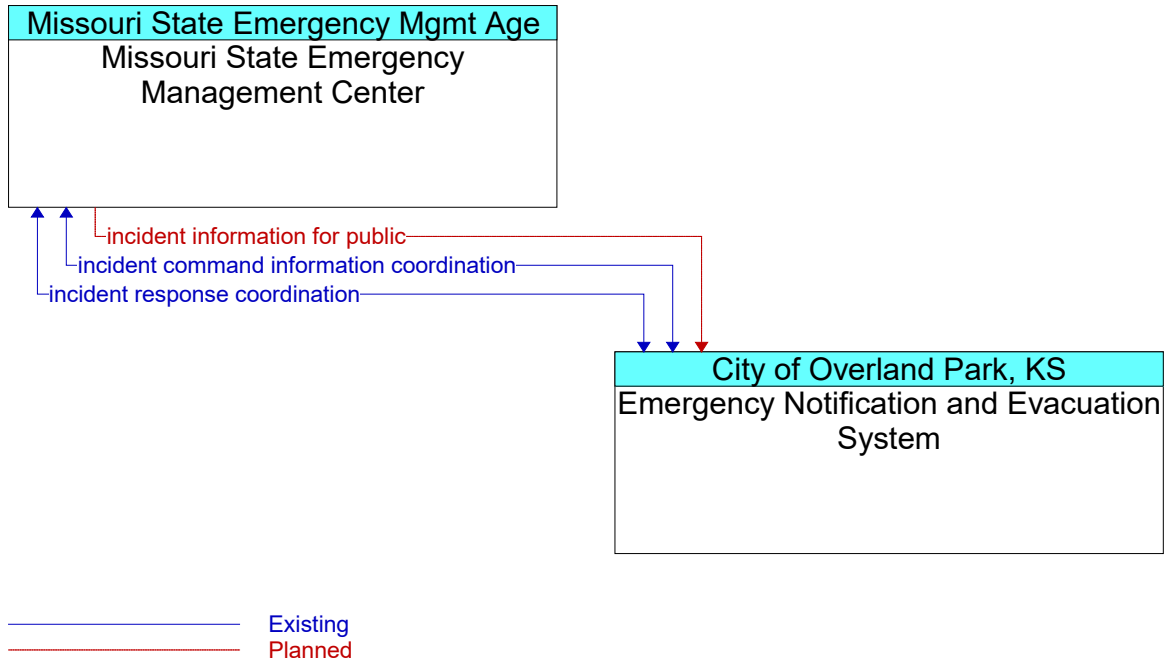
**Figure 327: Emergency Notification and Evacuation System - KBI AMBER Alert System Interface**



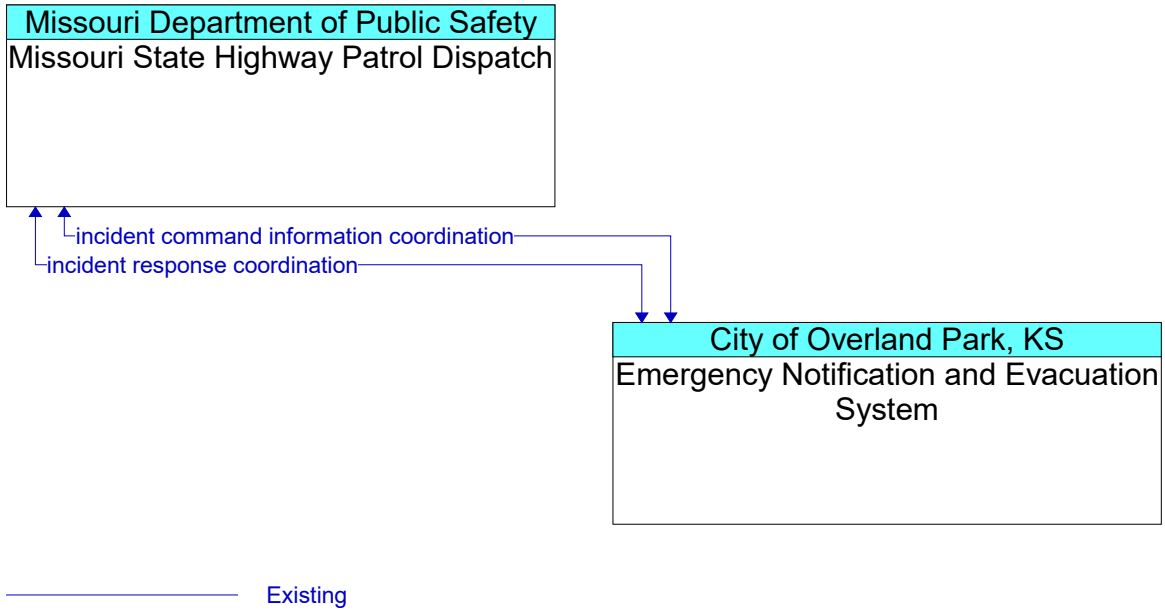
**Figure 328: Emergency Notification and Evacuation System - KCIA Emergency Services Interface**



**Figure 329: Emergency Notification and Evacuation System - Missouri Amber Alert System Interface**

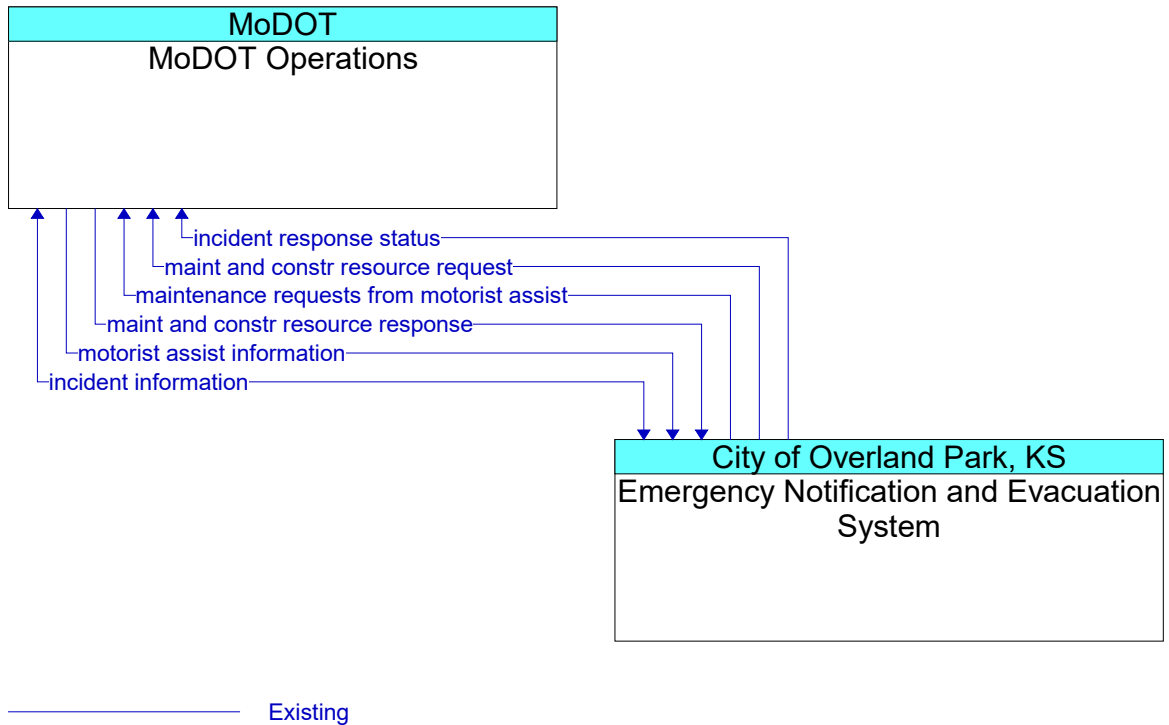


**Figure 330: Emergency Notification and Evacuation System - Missouri State Emergency Management Center Interface**

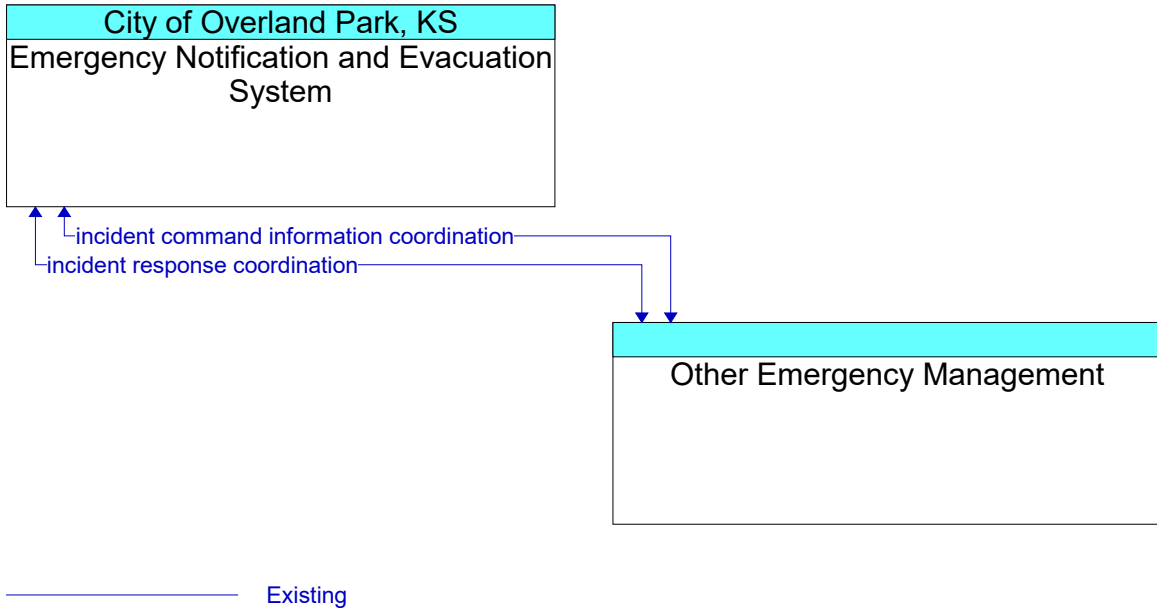


**Figure 331: Emergency Notification and Evacuation System - Missouri State Highway Patrol Dispatch Interface**

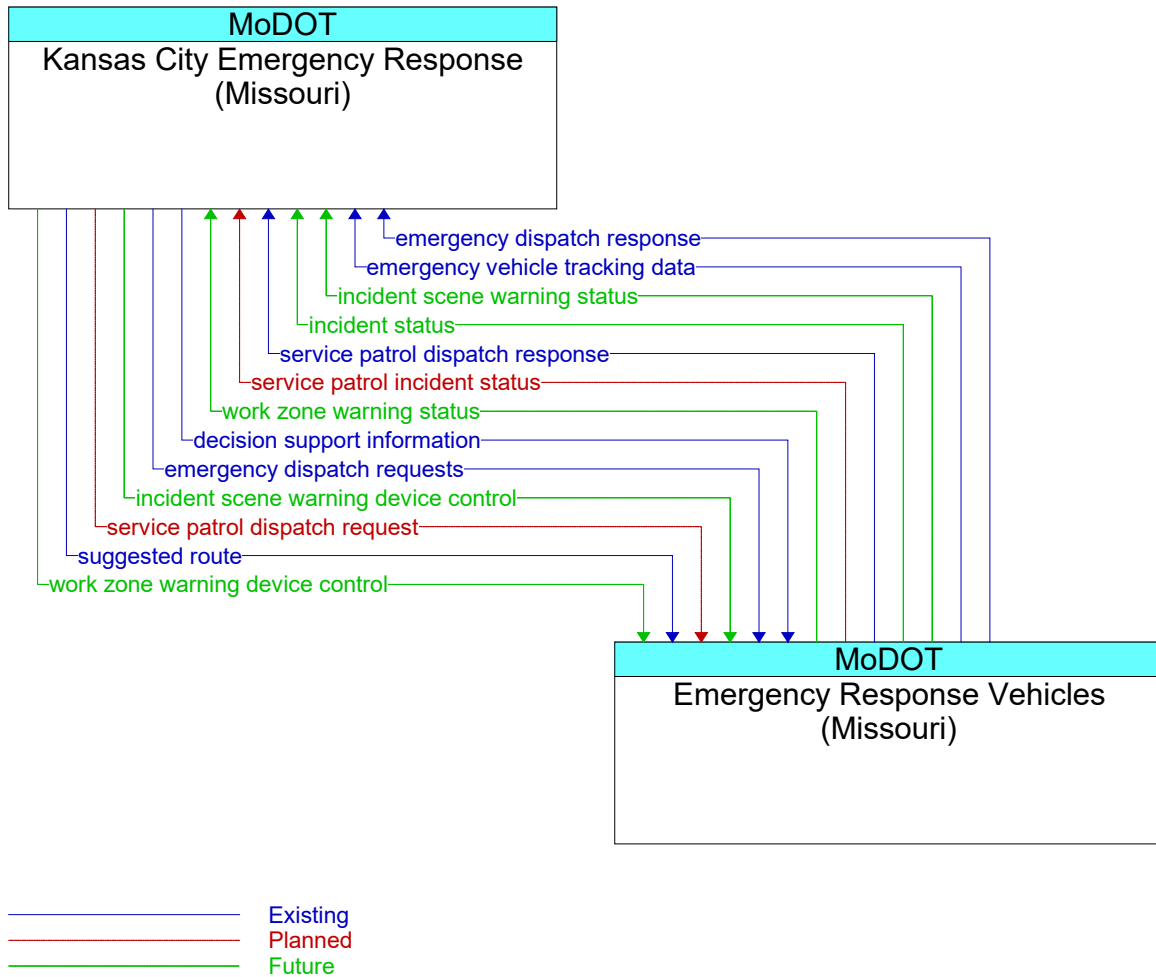




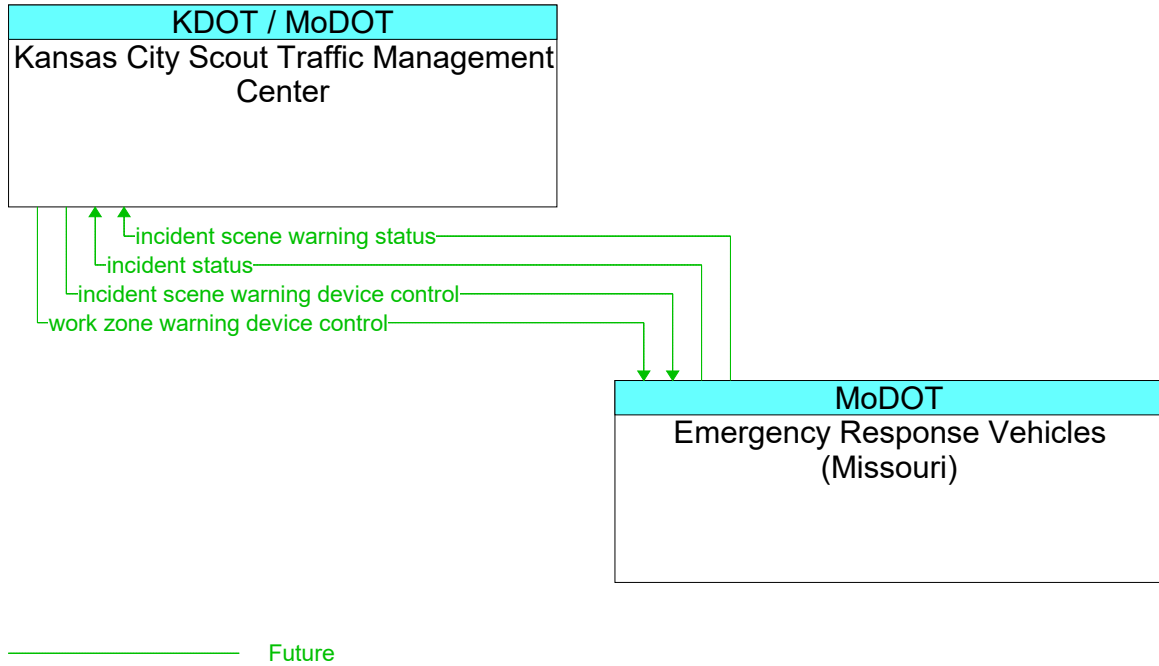
**Figure 332: Emergency Notification and Evacuation System - MoDOT Operations Interface**



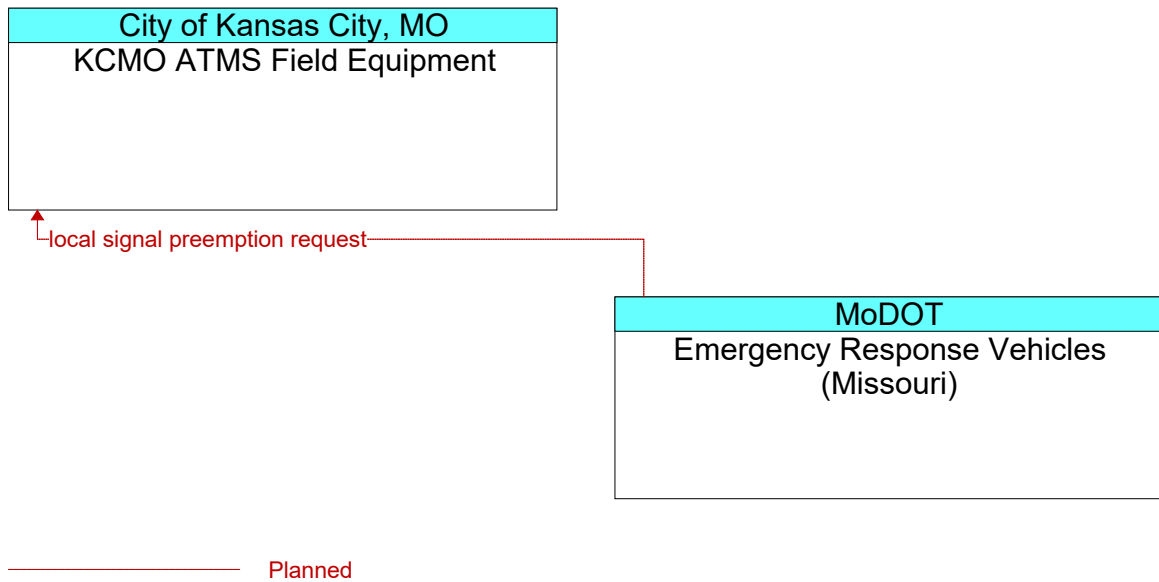
**Figure 333: Emergency Notification and Evacuation System - Other Emergency Management Interface**



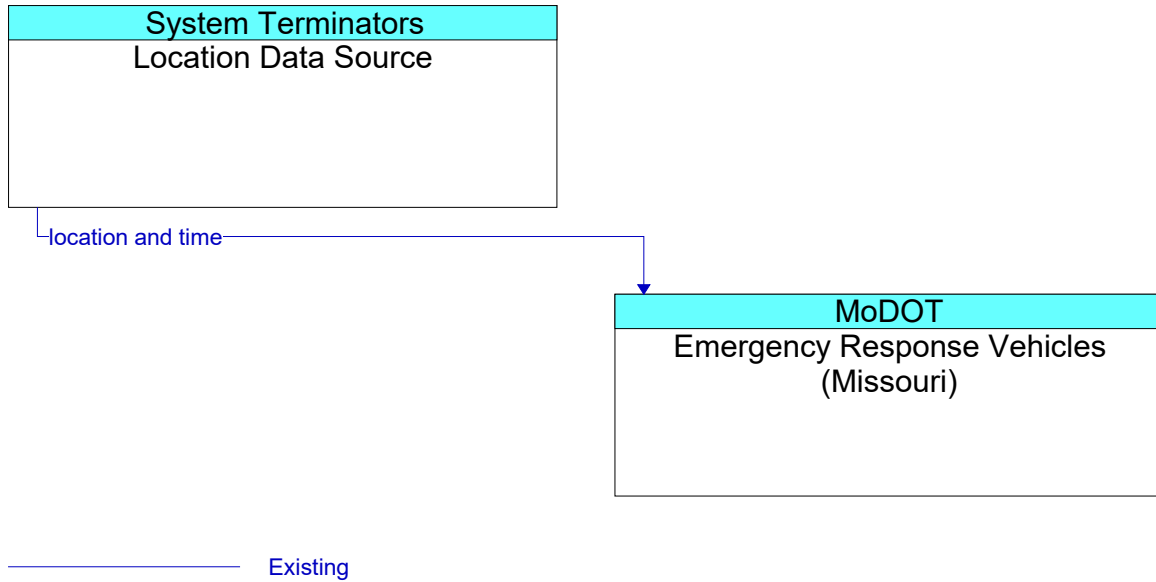
**Figure 334: Emergency Response Vehicles (Missouri) - Kansas City Emergency Response (Missouri) Interface**



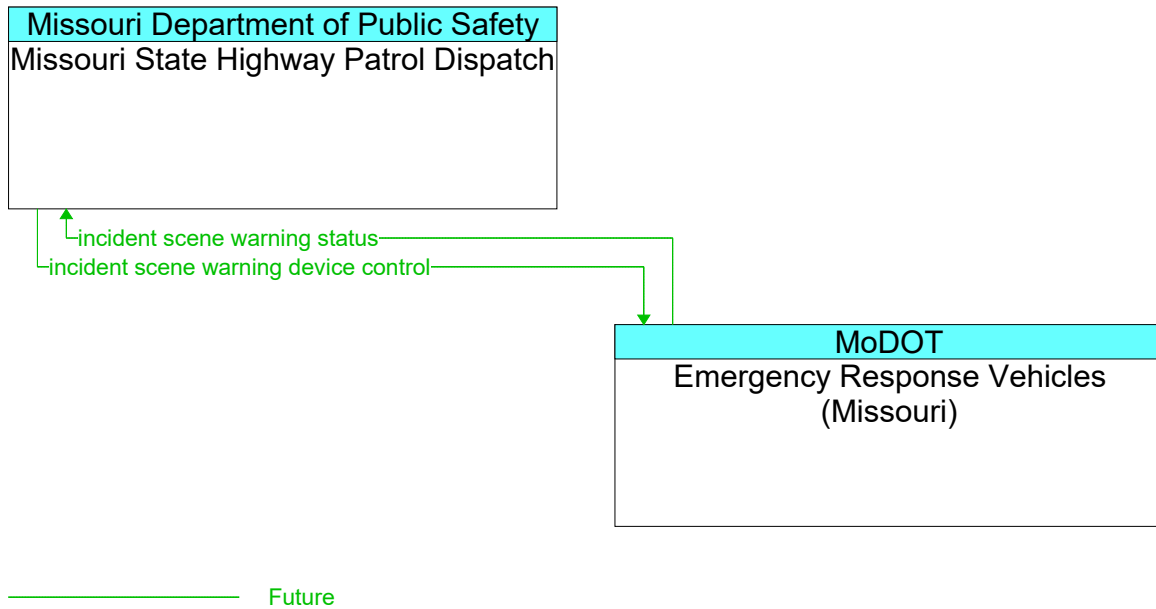
**Figure 335: Emergency Response Vehicles (Missouri) - Kansas City Scout Traffic Management Center Interface**



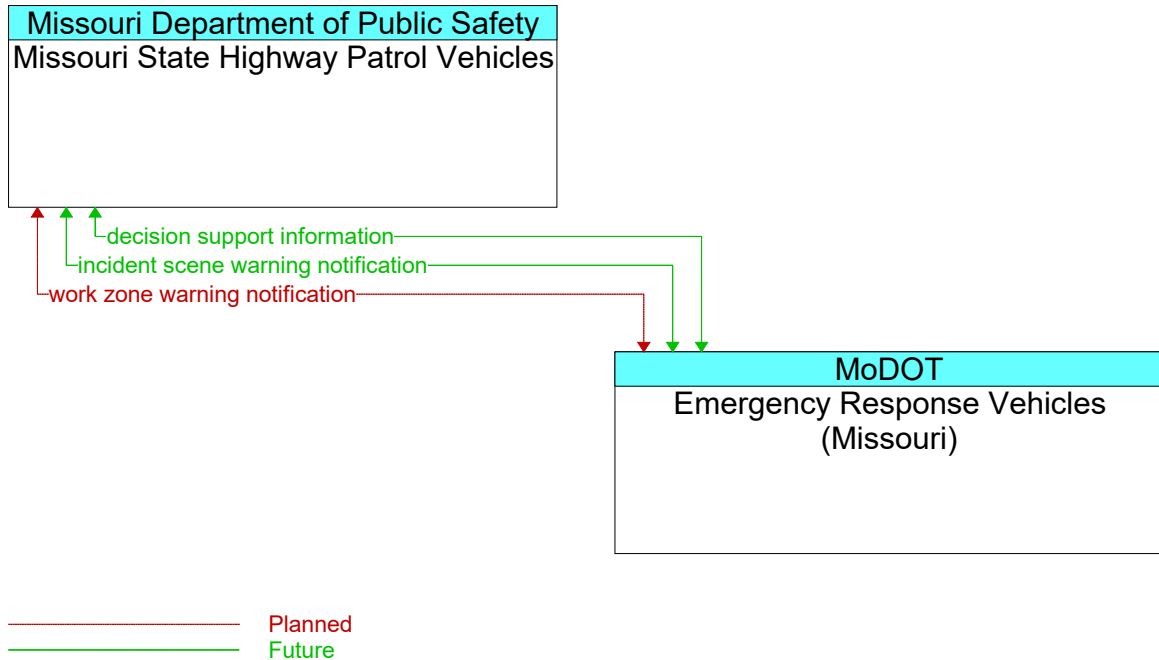
**Figure 336: Emergency Response Vehicles (Missouri) - KCMO ATMS Field Equipment Interface**



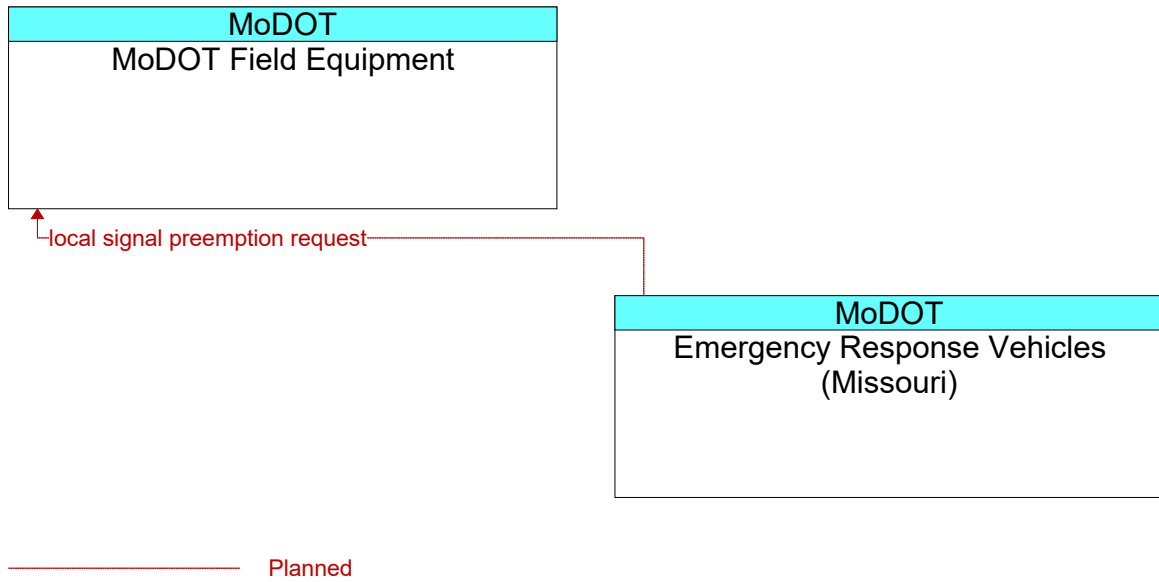
**Figure 337: Emergency Response Vehicles (Missouri) - Location Data Source Interface**



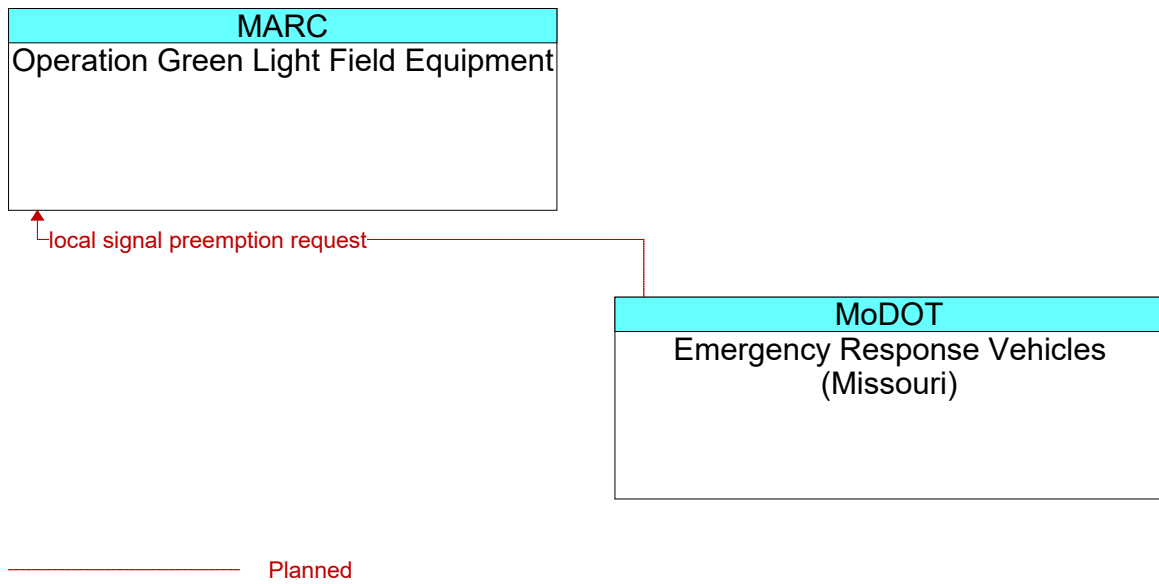
**Figure 338: Emergency Response Vehicles (Missouri) - Missouri State Highway Patrol Dispatch Interface**



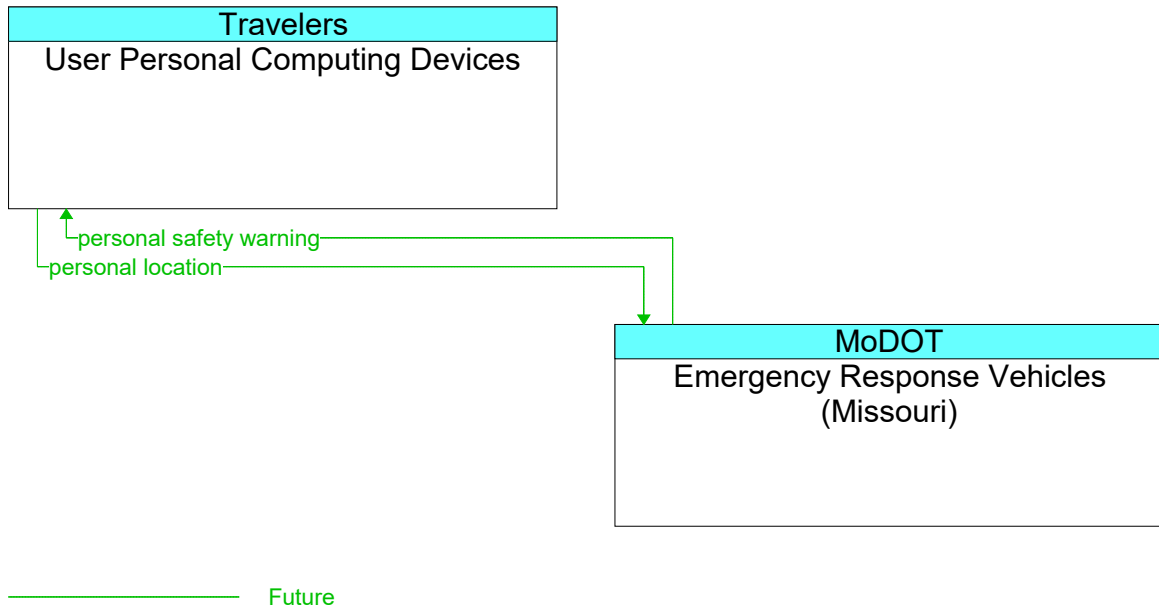
**Figure 339: Emergency Response Vehicles (Missouri) - Missouri State Highway Patrol Vehicles Interface**



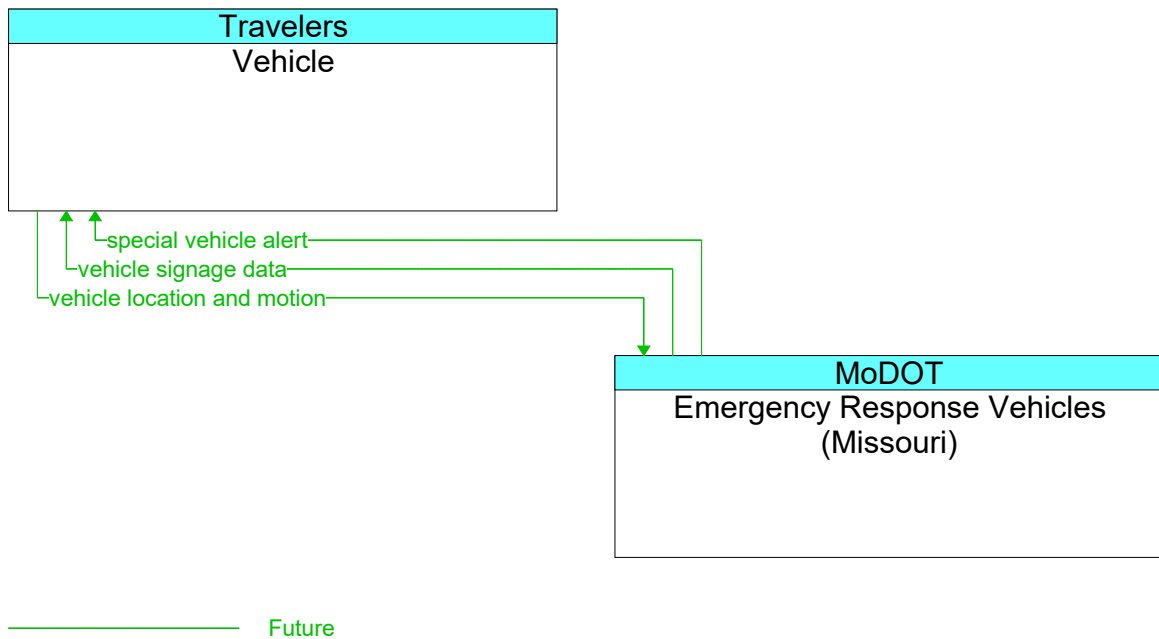
**Figure 340: Emergency Response Vehicles (Missouri) - MoDOT Field Equipment Interface**



**Figure 341: Emergency Response Vehicles (Missouri) - Operation Green Light Field Equipment Interface**

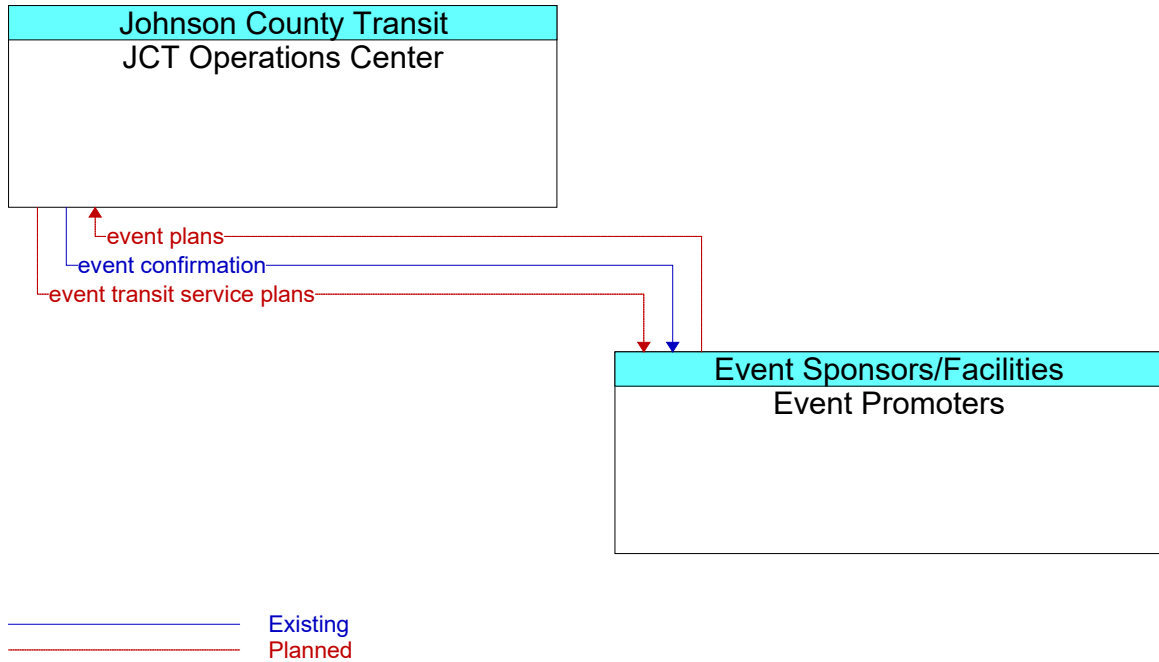


**Figure 342: Emergency Response Vehicles (Missouri) - User Personal Computing Devices Interface**

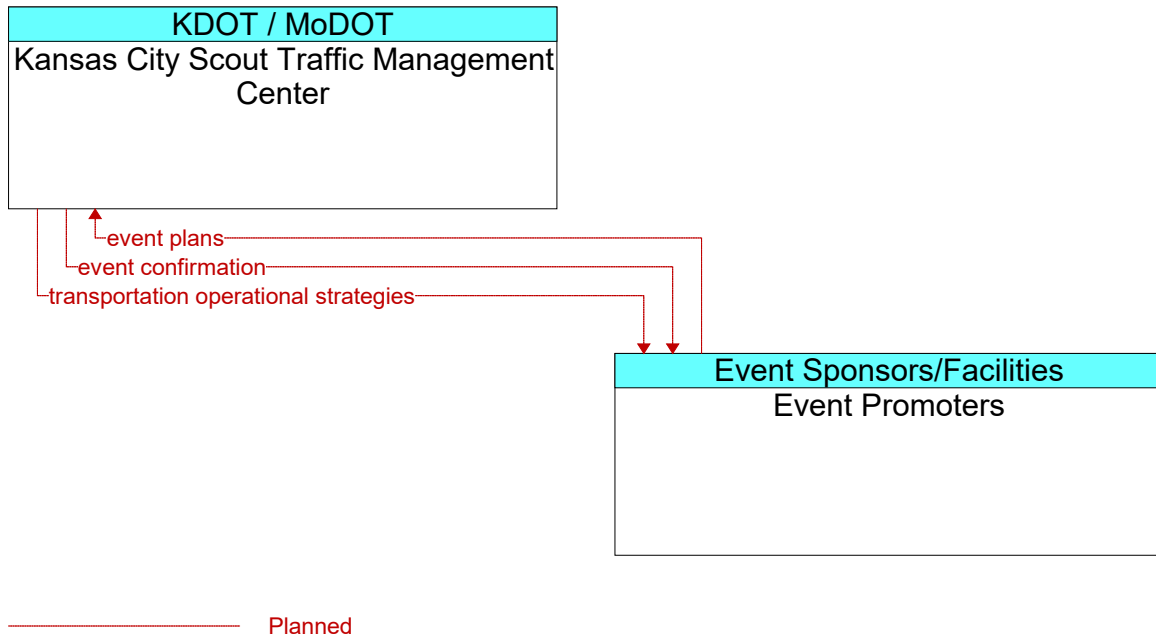


**Figure 343: Emergency Response Vehicles (Missouri) - Vehicle Interface**

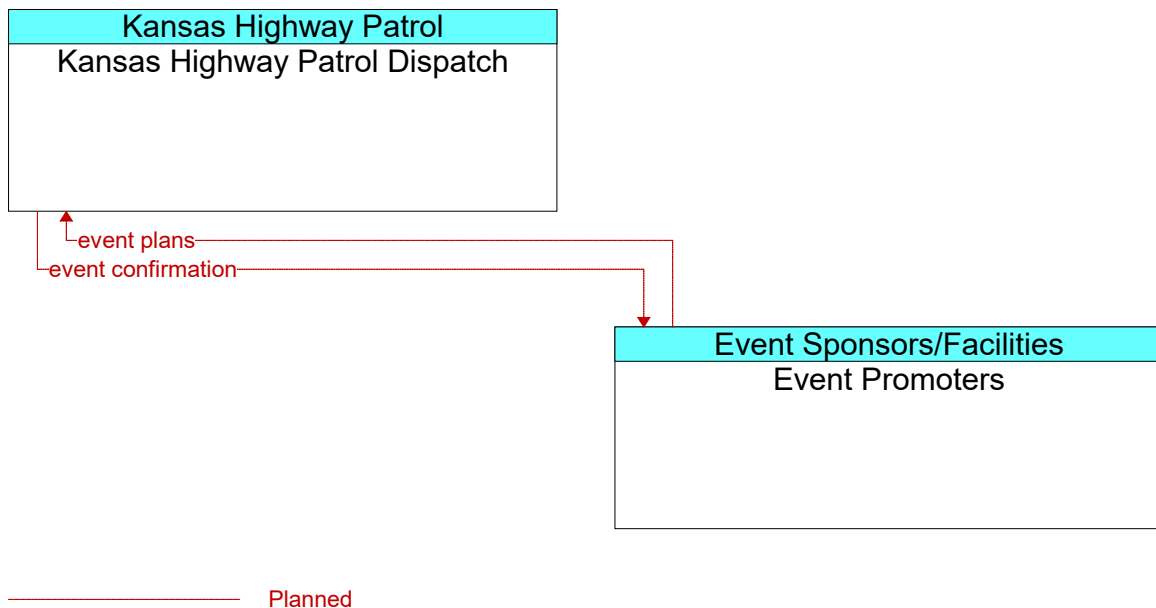




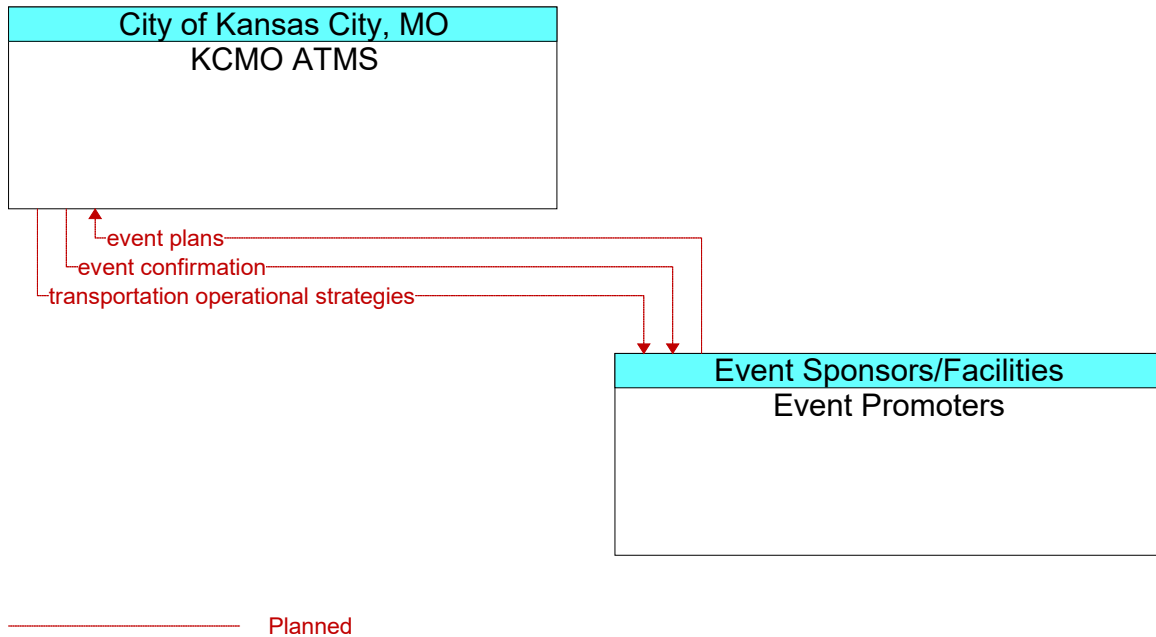
**Figure 344: Event Promoters - JCT Operations Center Interface**



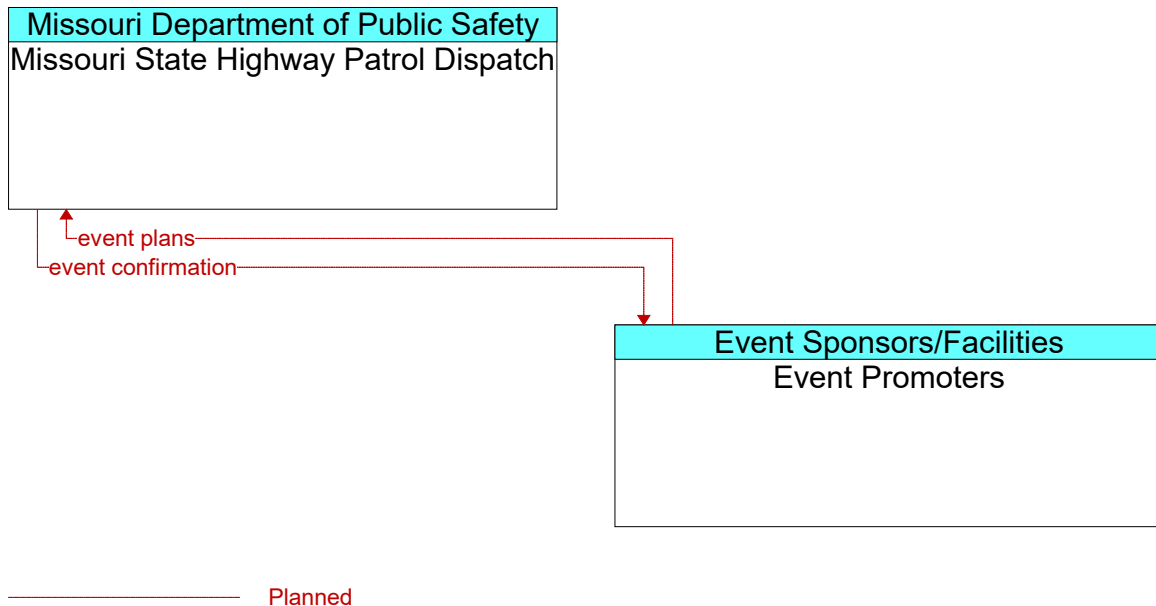
**Figure 345: Event Promoters - Kansas City Scout Traffic Management Center Interface**



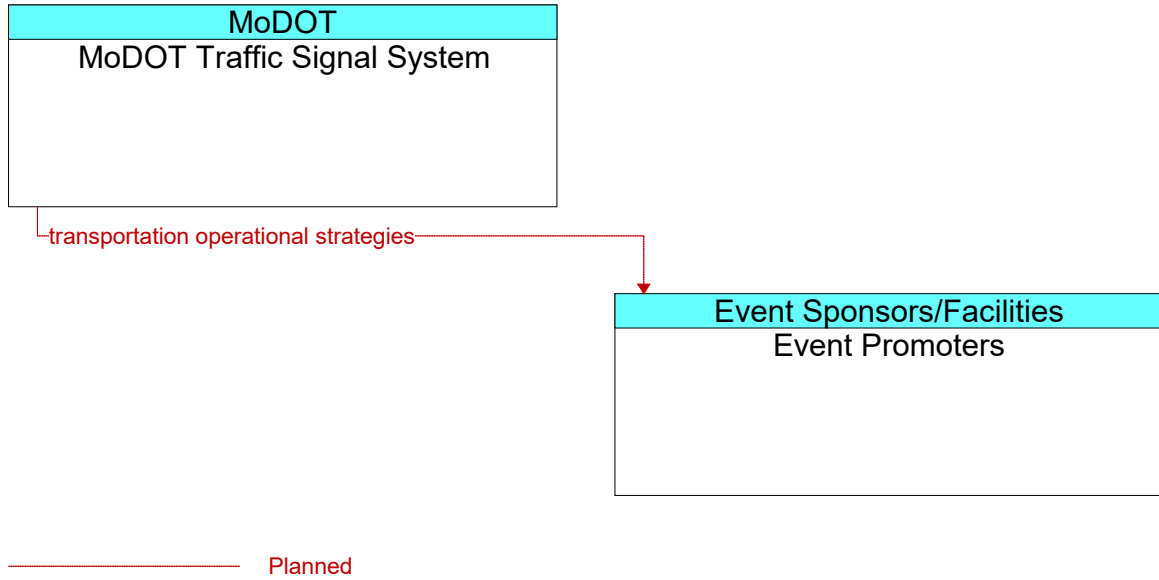
**Figure 346: Event Promoters - Kansas Highway Patrol Dispatch Interface**



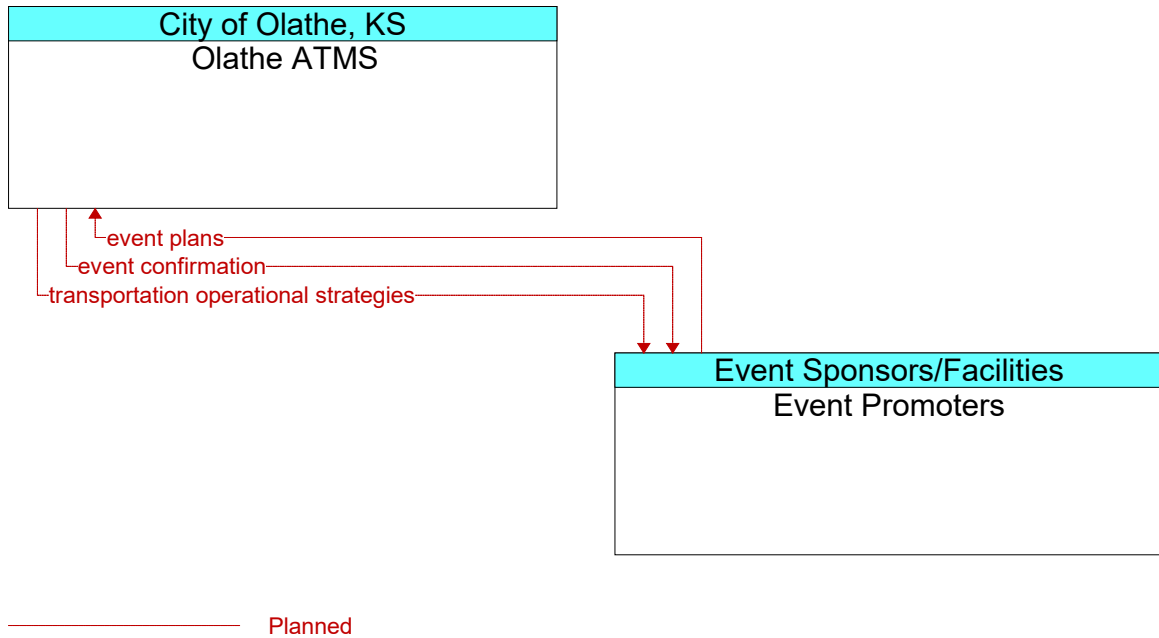
**Figure 347: Event Promoters - KCMO ATMS Interface**



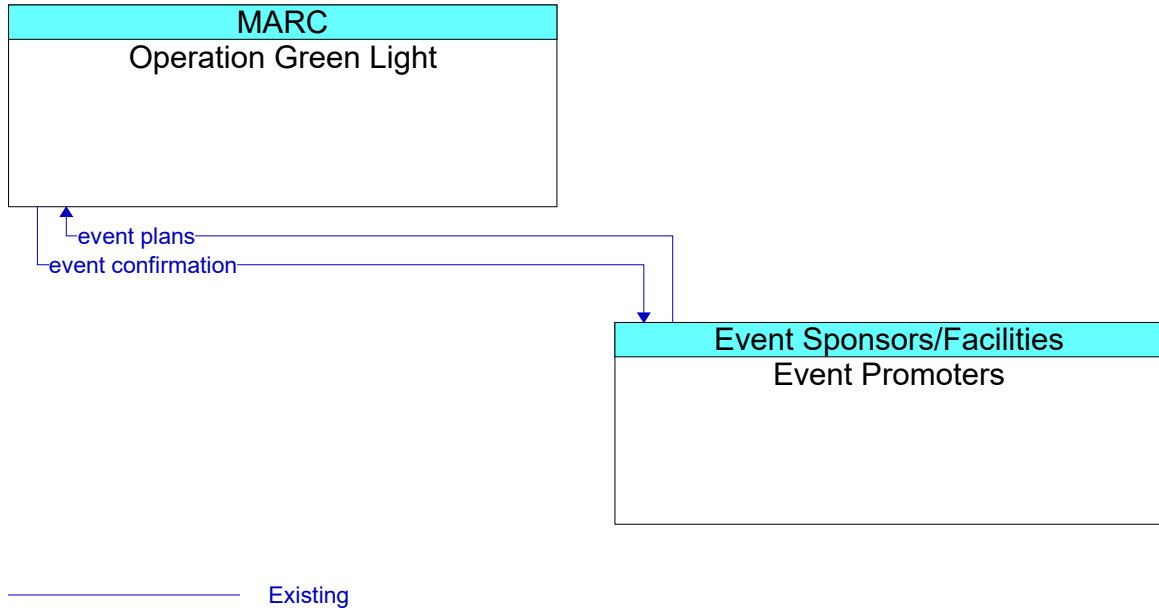
**Figure 348: Event Promoters - Missouri State Highway Patrol Dispatch Interface**



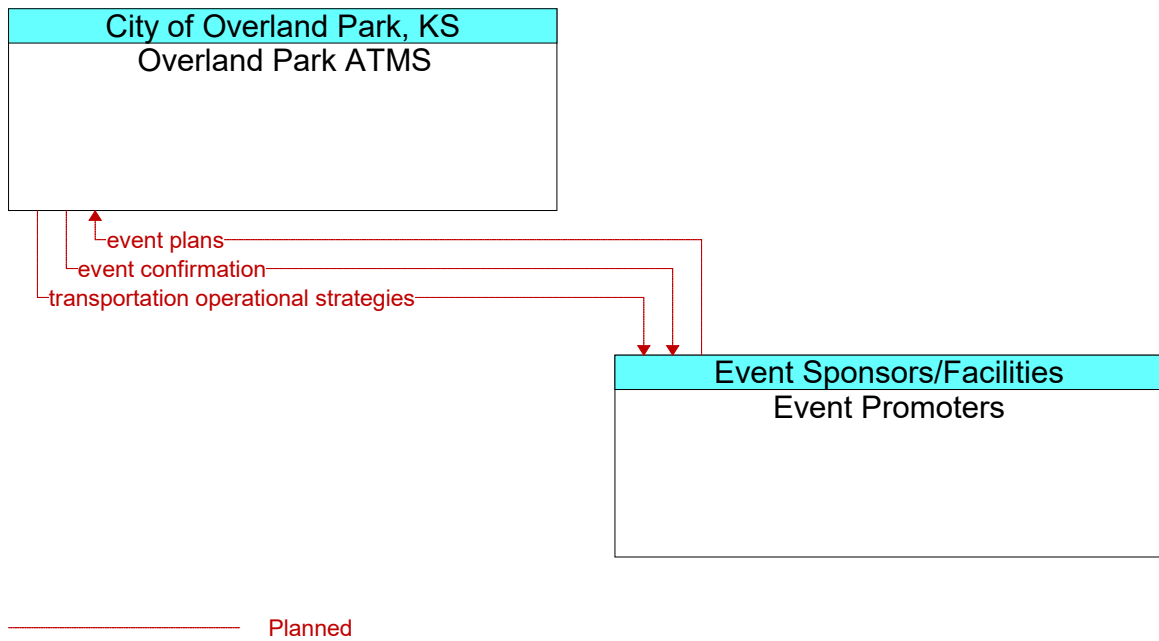
**Figure 349: Event Promoters - MoDOT Traffic Signal System Interface**



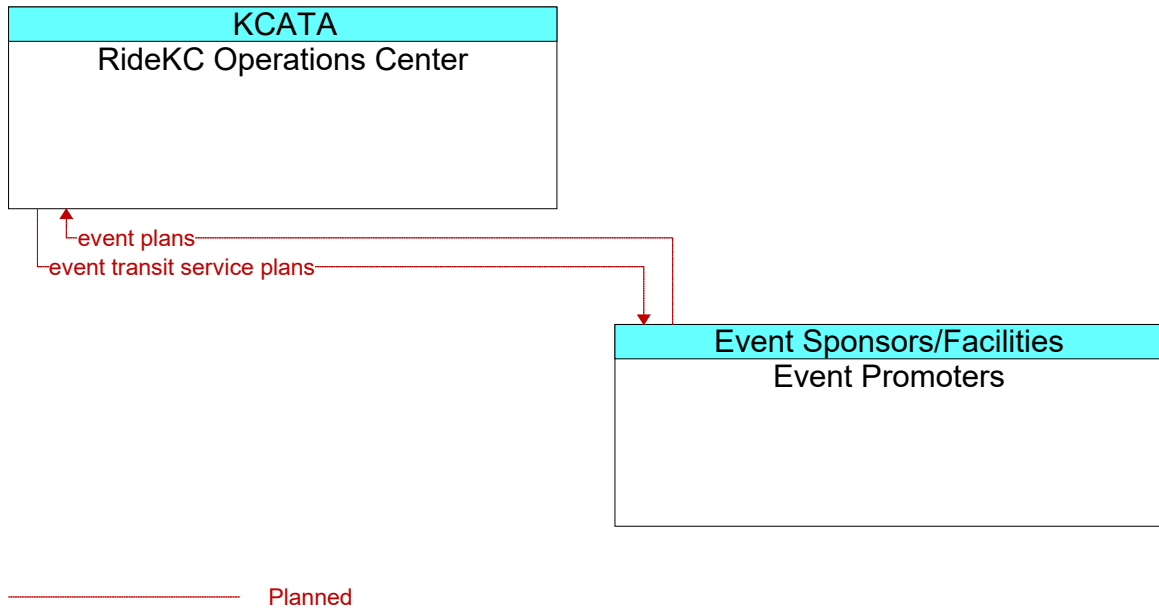
**Figure 350: Event Promoters - Olathe ATMS Interface**



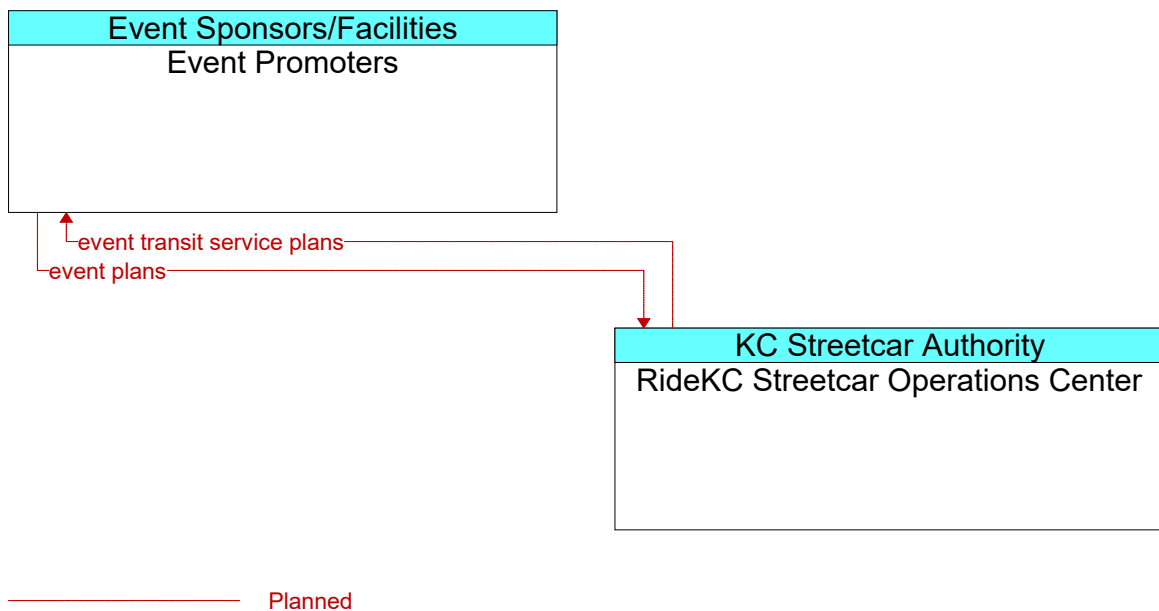
**Figure 351: Event Promoters - Operation Green Light Interface**



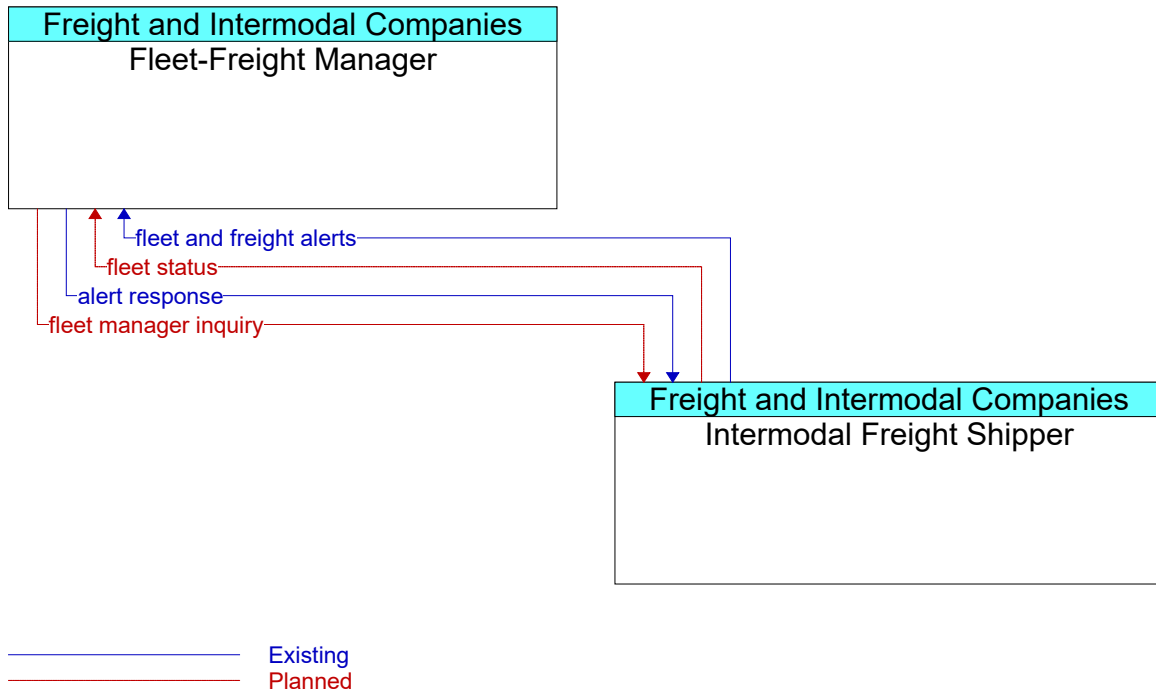
**Figure 352: Event Promoters - Overland Park ATMS Interface**



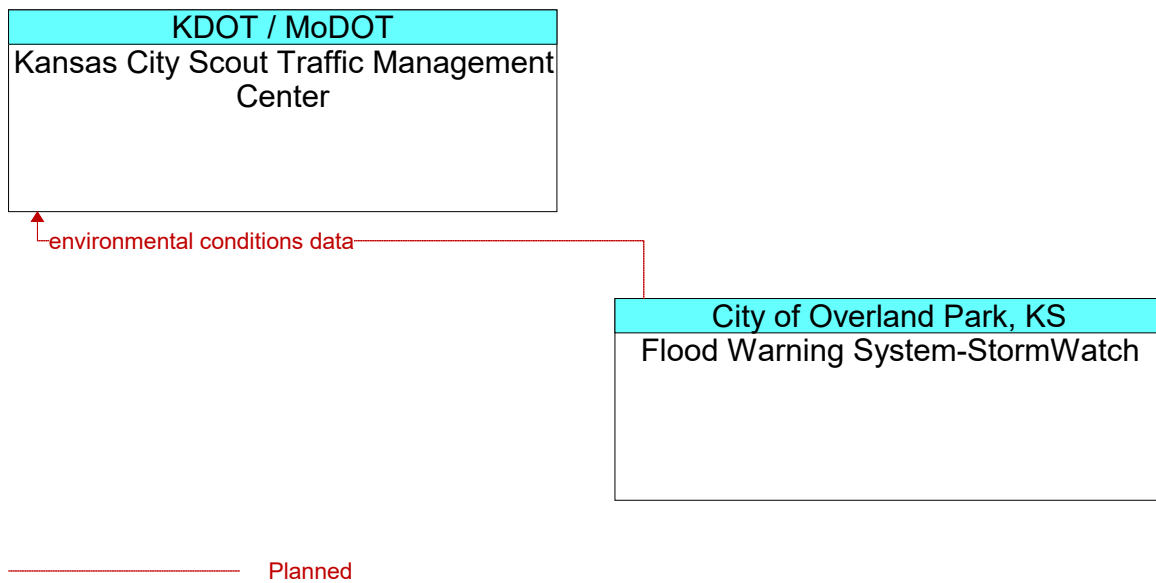
**Figure 353: Event Promoters - RideKC Operations Center Interface**



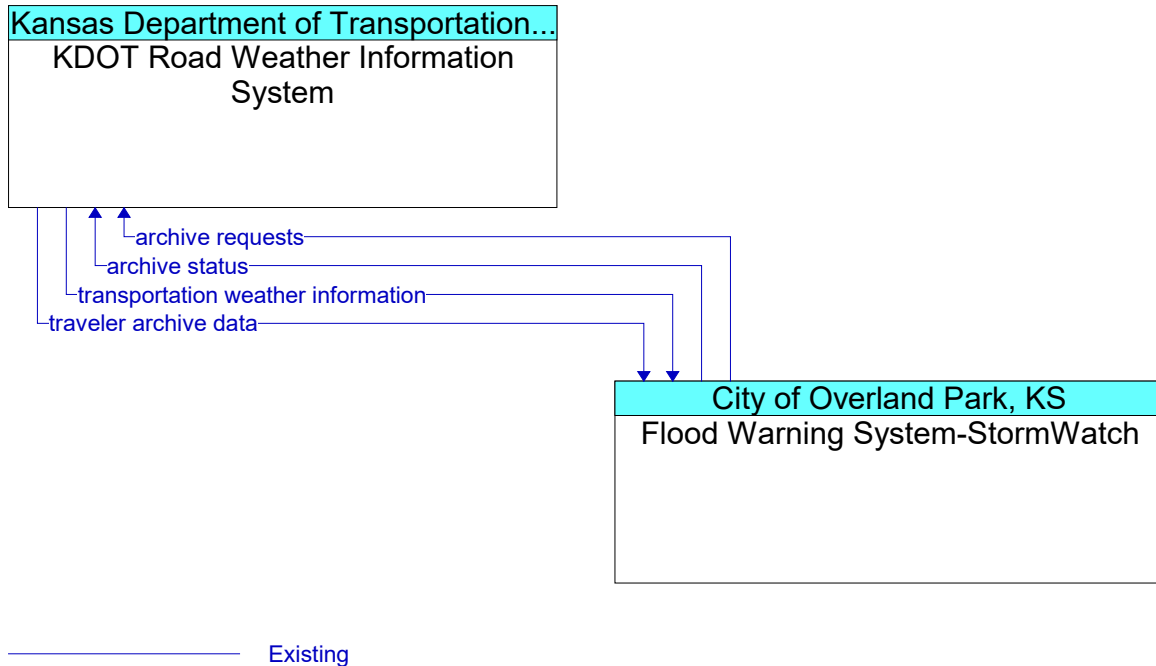
**Figure 354: Event Promoters - RideKC Streetcar Operations Center Interface**



**Figure 355: Fleet-Freight Manager - Intermodal Freight Shipper Interface**

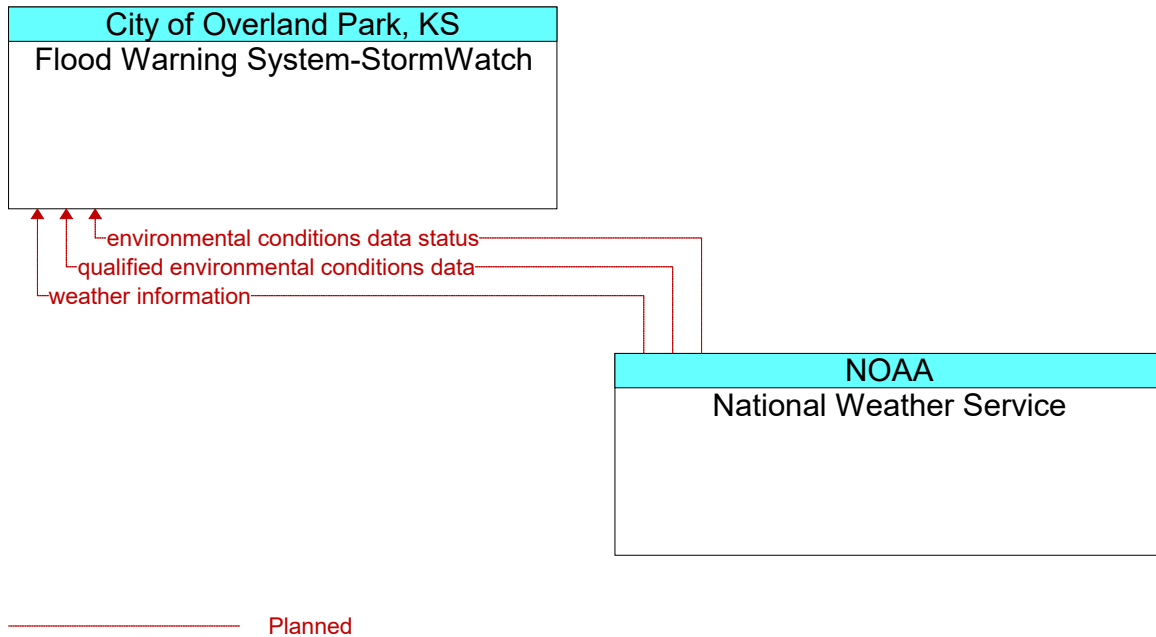


**Figure 356: Flood Warning System-StormWatch - Kansas City Scout Traffic Management Center Interface**

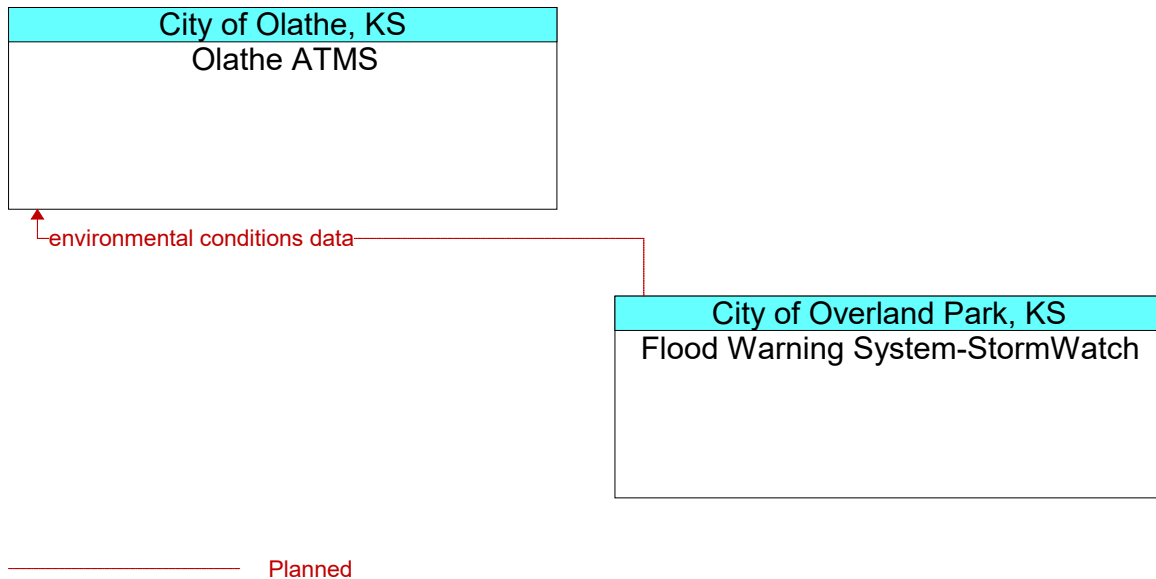


**Figure 357: Flood Warning System-StormWatch - KDOT Road Weather Information System Interface**

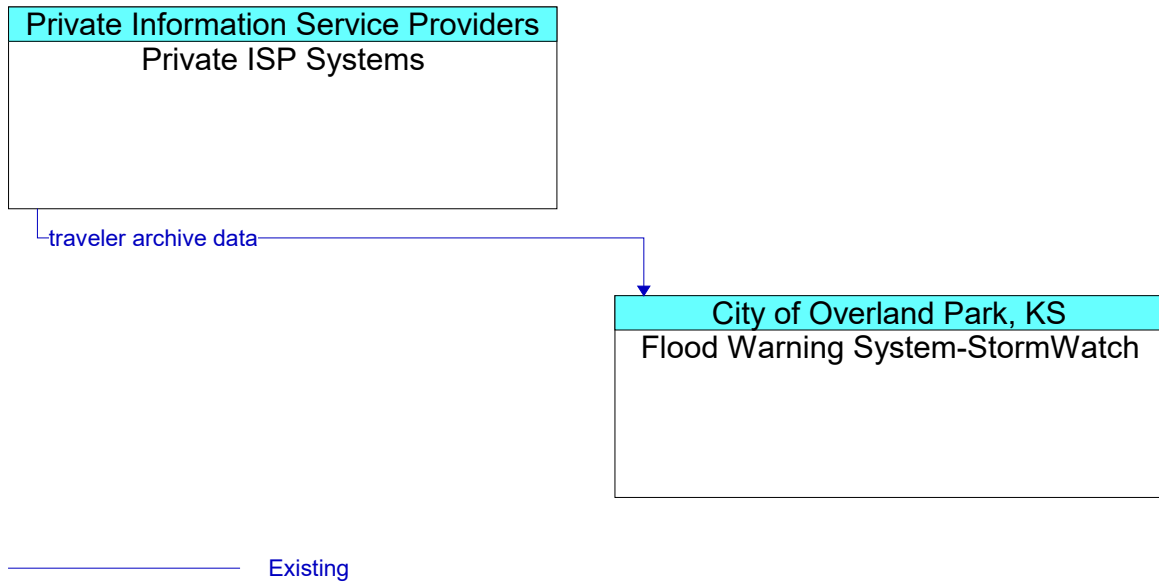




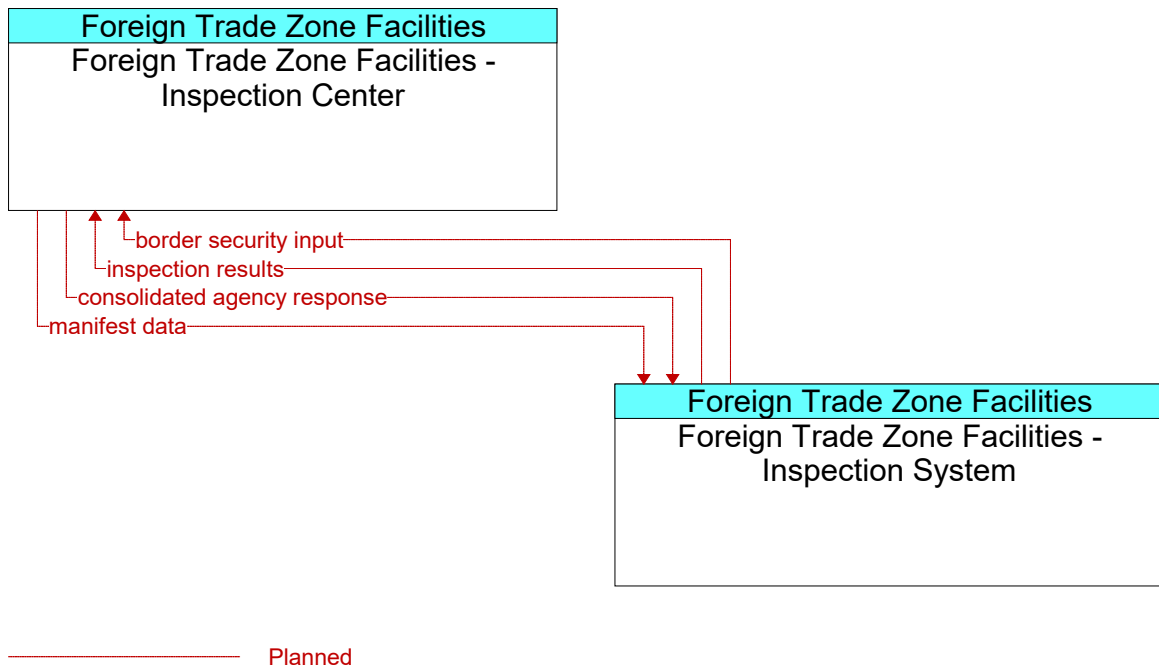
**Figure 358: Flood Warning System-StormWatch - National Weather Service Interface**



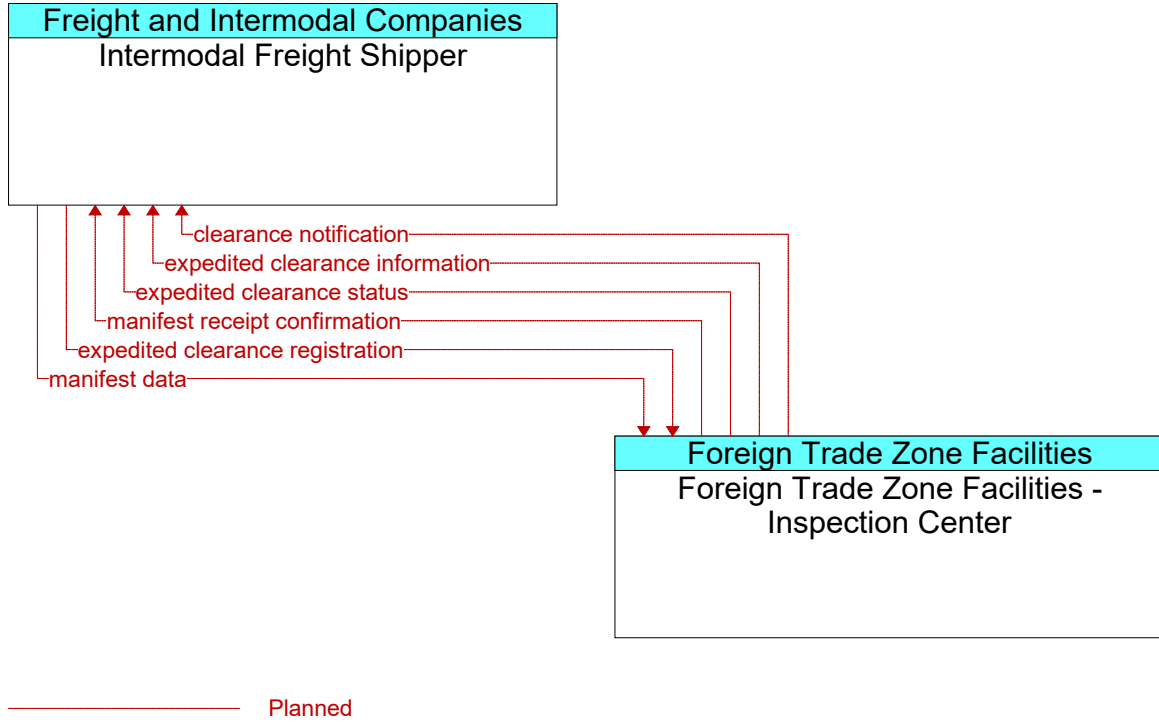
**Figure 359: Flood Warning System-StormWatch - Olathe ATMS Interface**



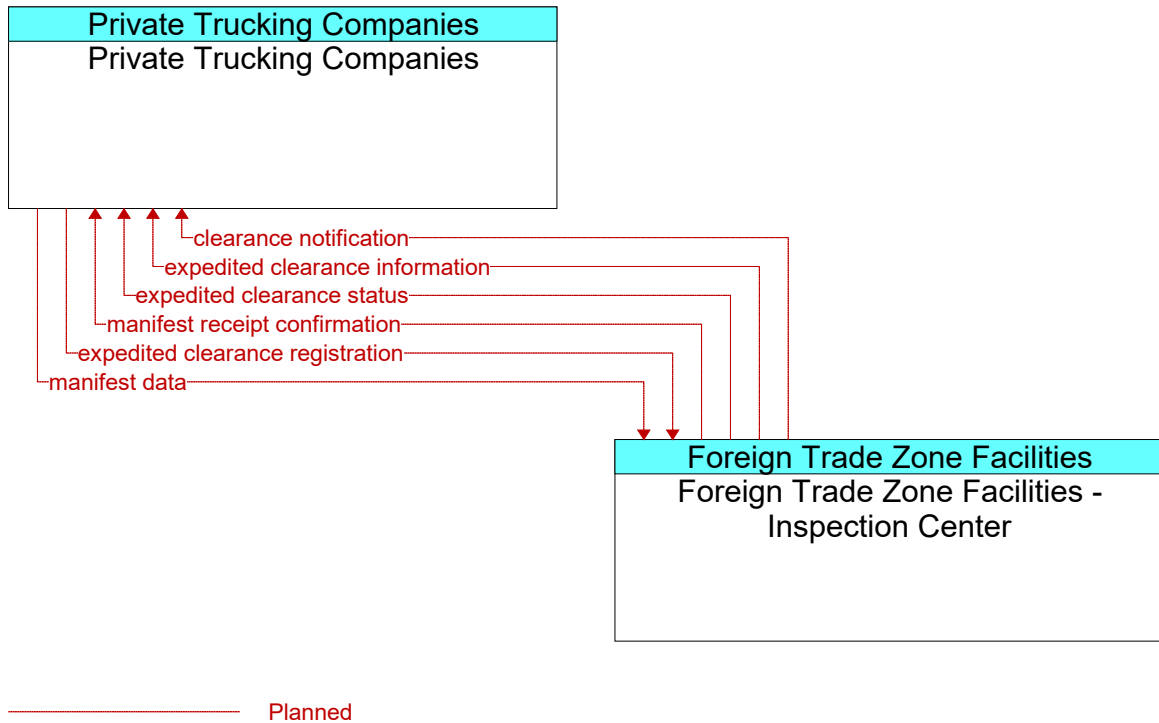
**Figure 360: Flood Warning System-StormWatch - Private ISP Systems Interface**



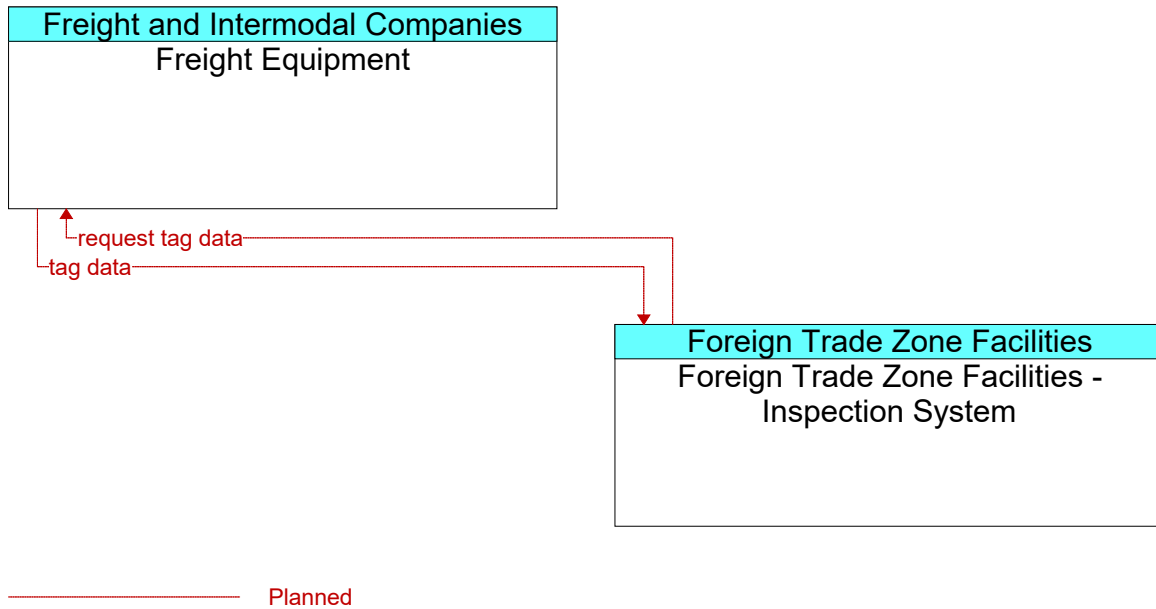
**Figure 361: Foreign Trade Zone Facilities - Inspection Center - Foreign Trade Zone Facilities - Inspection System Interface**



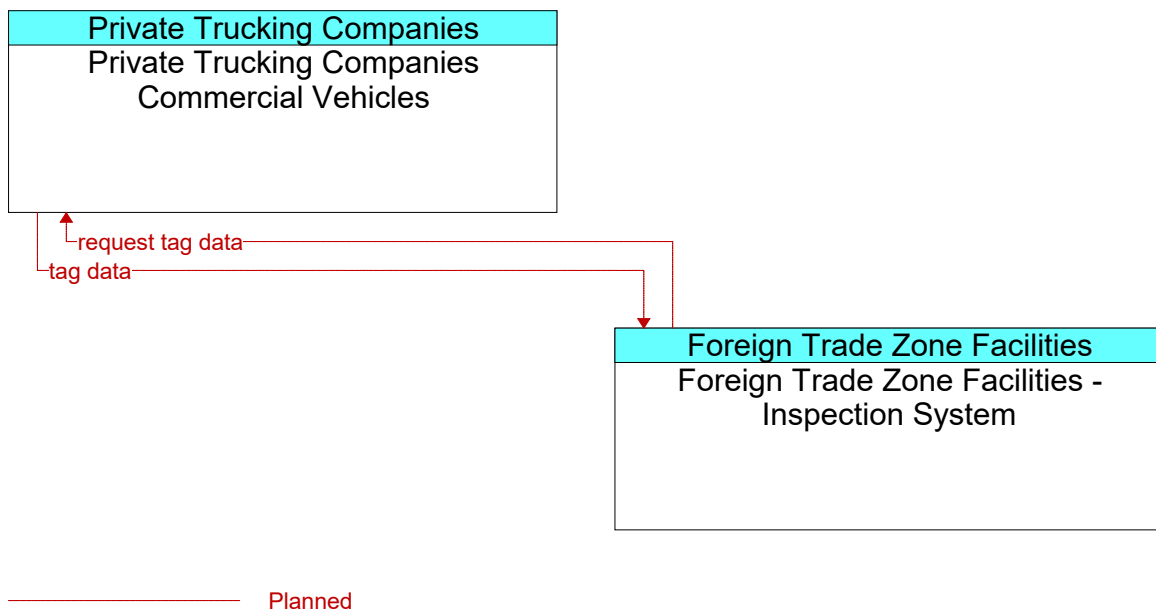
**Figure 362: Foreign Trade Zone Facilities - Inspection Center - Intermodal Freight Shipper Interface**



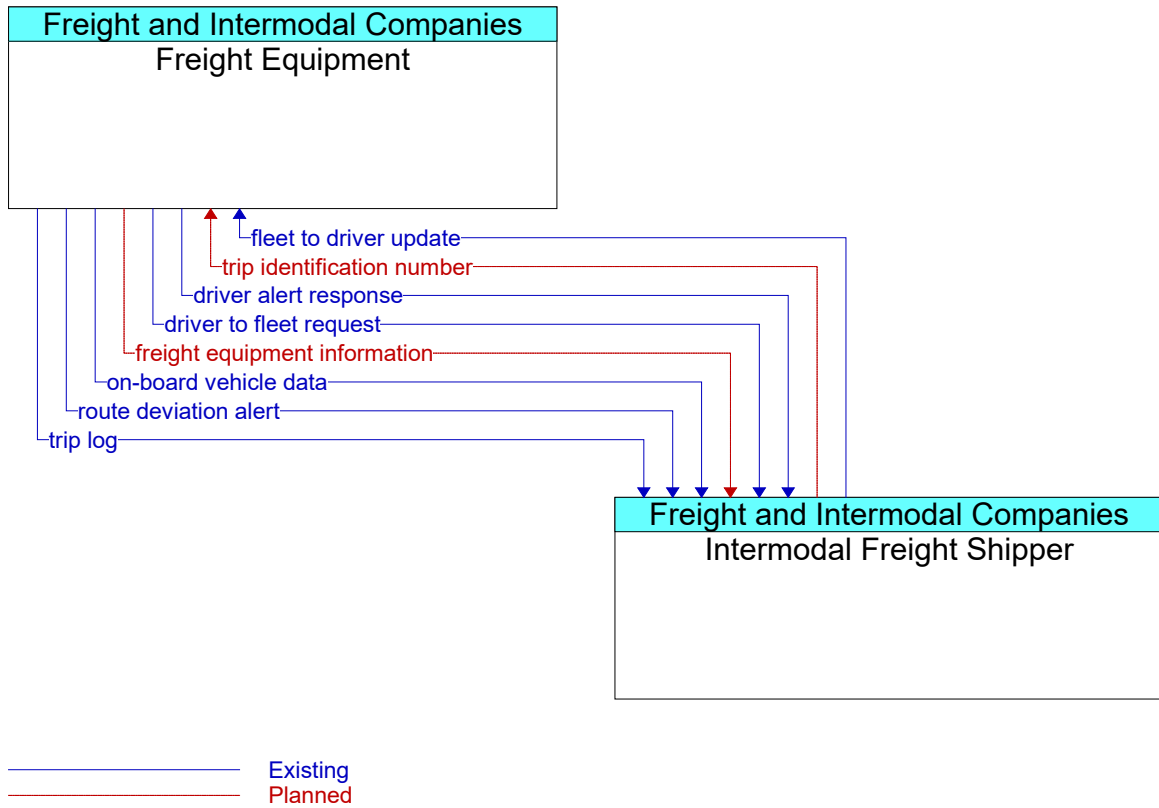
**Figure 363: Foreign Trade Zone Facilities - Inspection Center - Private Trucking Companies Interface**



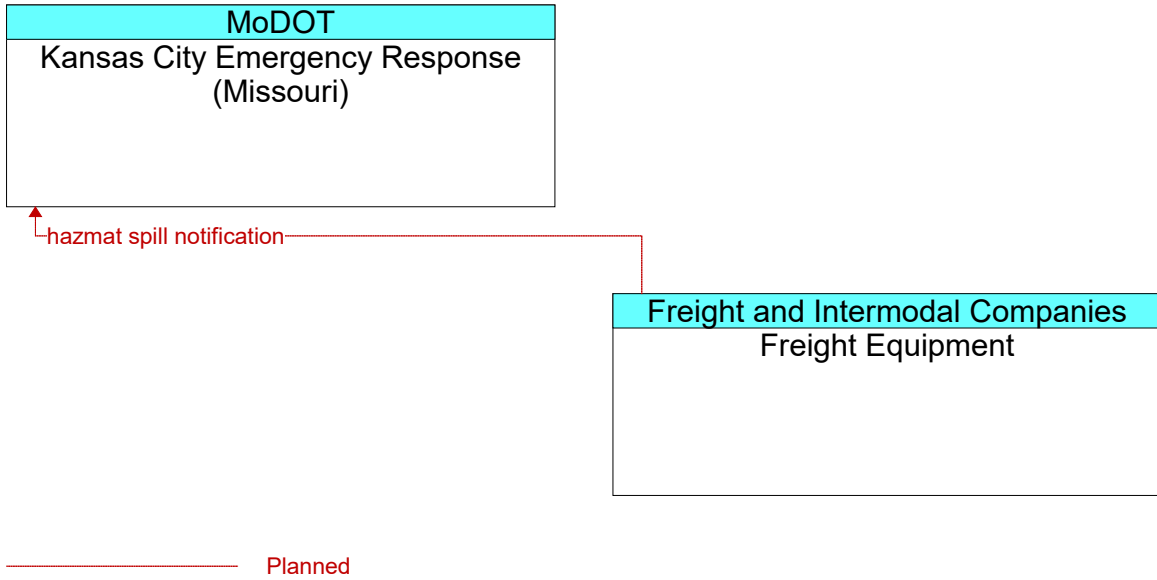
**Figure 364: Foreign Trade Zone Facilities - Inspection System - Freight Equipment Interface**



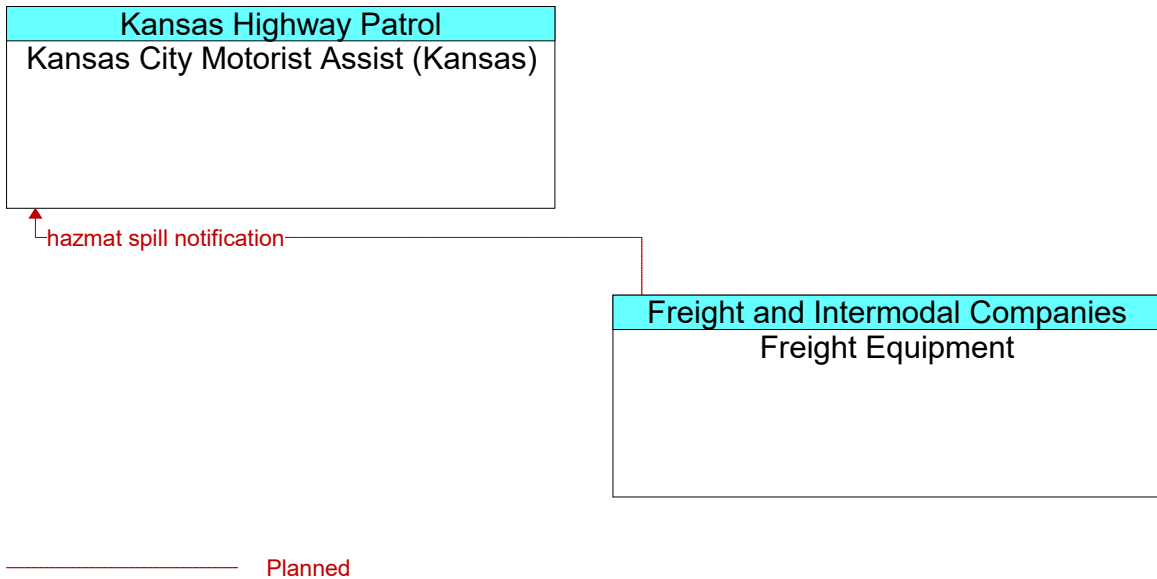
**Figure 365: Foreign Trade Zone Facilities - Inspection System - Private Trucking Companies Commercial Vehicles Interface**



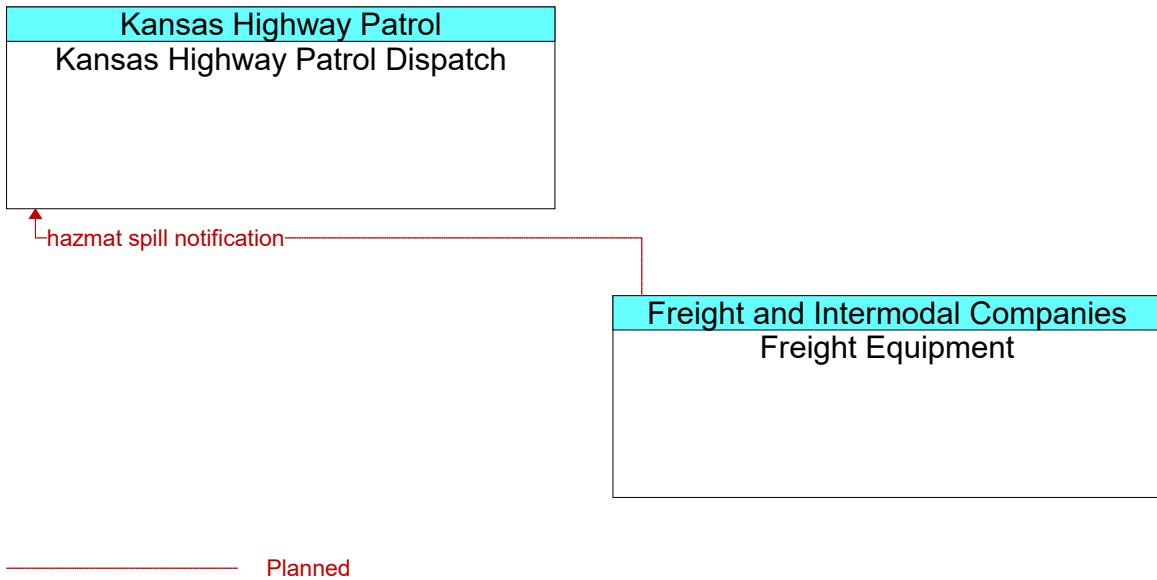
**Figure 366: Freight Equipment - Intermodal Freight Shipper Interface**



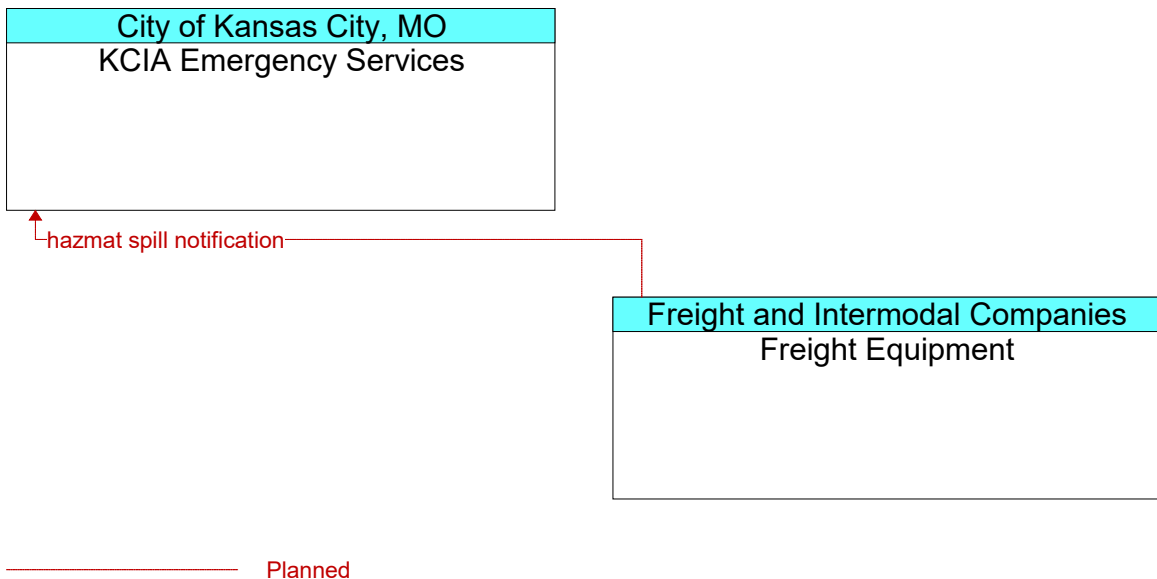
**Figure 367: Freight Equipment - Kansas City Emergency Response (Missouri) Interface**



**Figure 368: Freight Equipment - Kansas City Motorist Assist (Kansas) Interface**

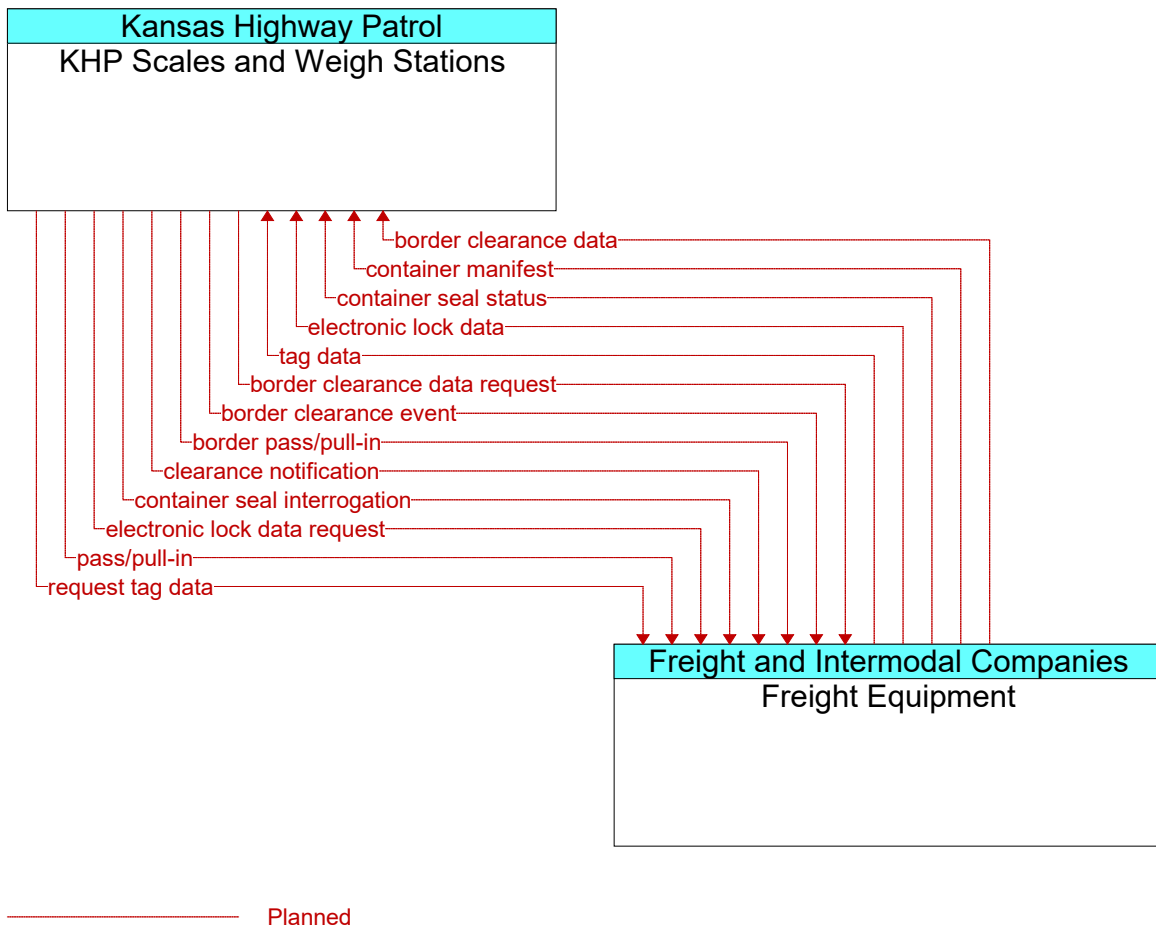


**Figure 369: Freight Equipment - Kansas Highway Patrol Dispatch Interface**

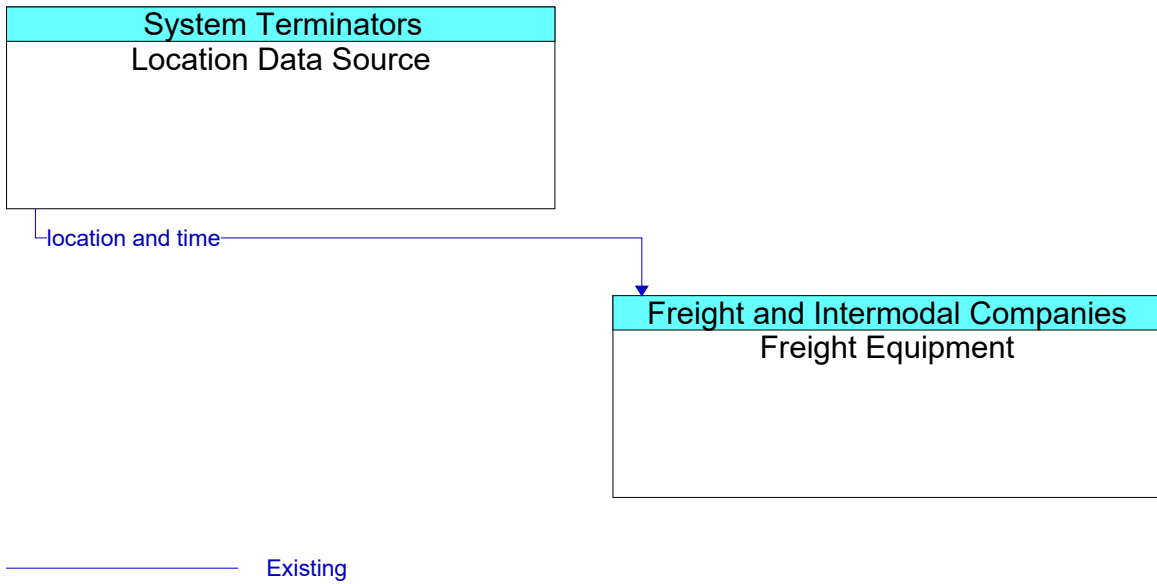


**Figure 370: Freight Equipment - KCIA Emergency Services Interface**

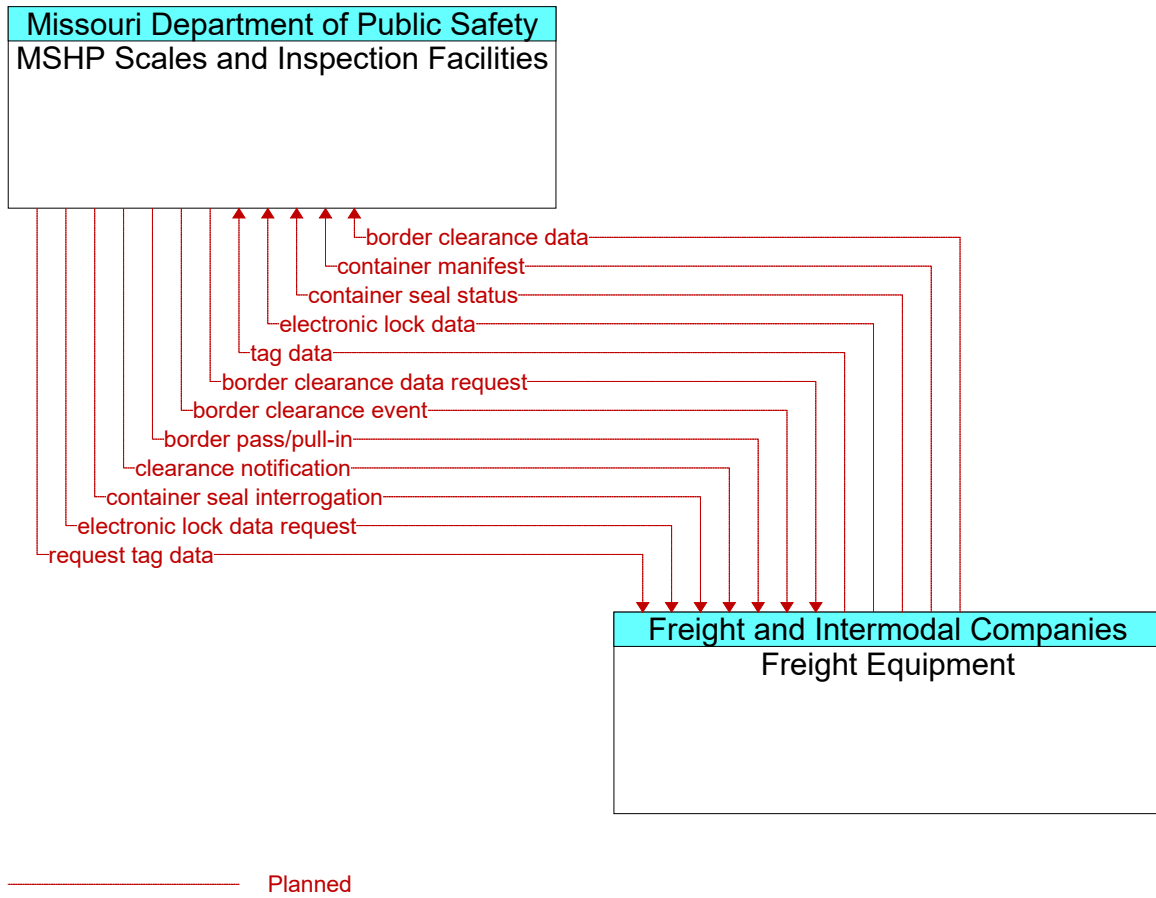




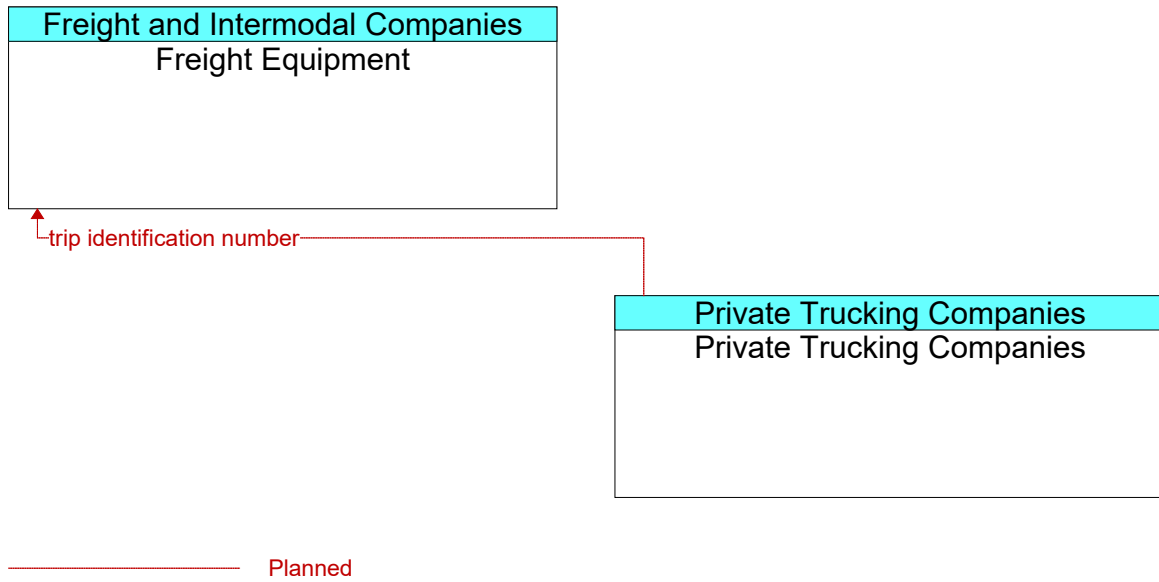
**Figure 371: Freight Equipment - KHP Scales and Weigh Stations Interface**



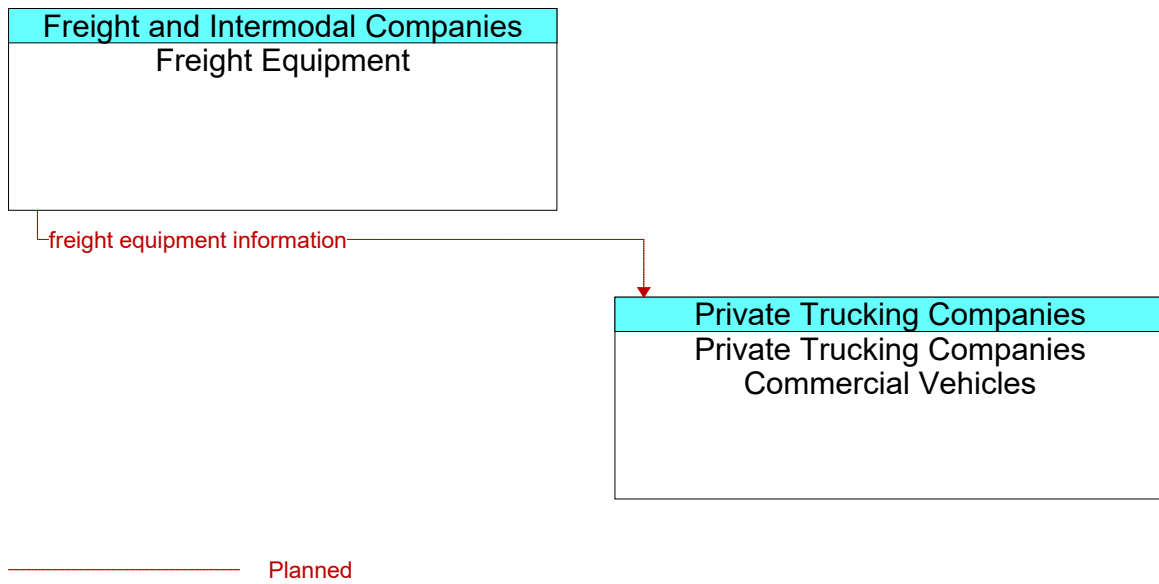
**Figure 372: Freight Equipment - Location Data Source Interface**



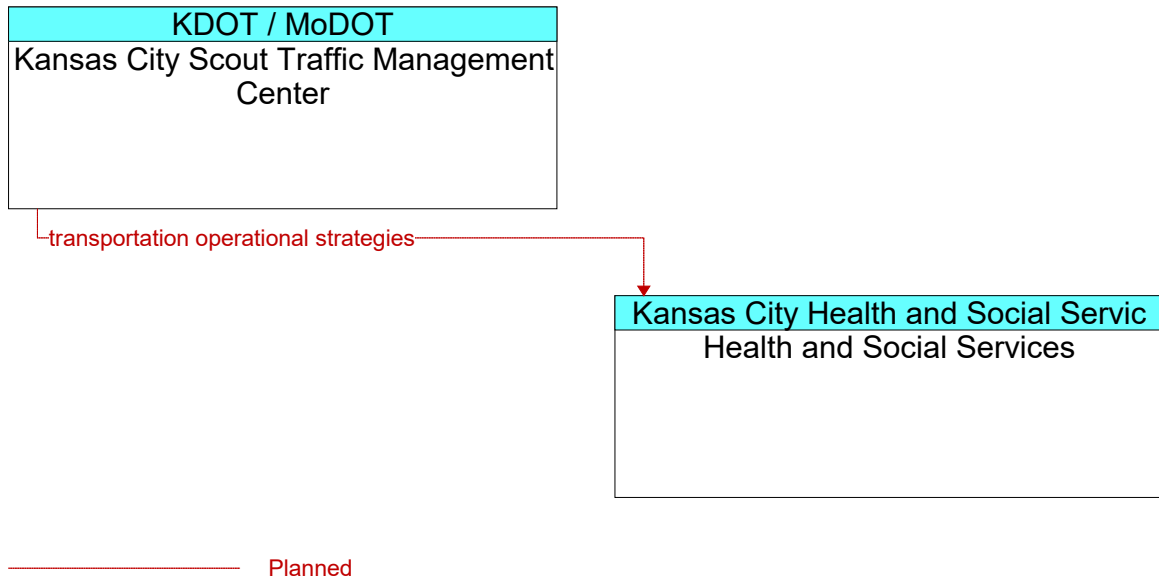
**Figure 373: Freight Equipment - MSHP Scales and Inspection Facilities Interface**



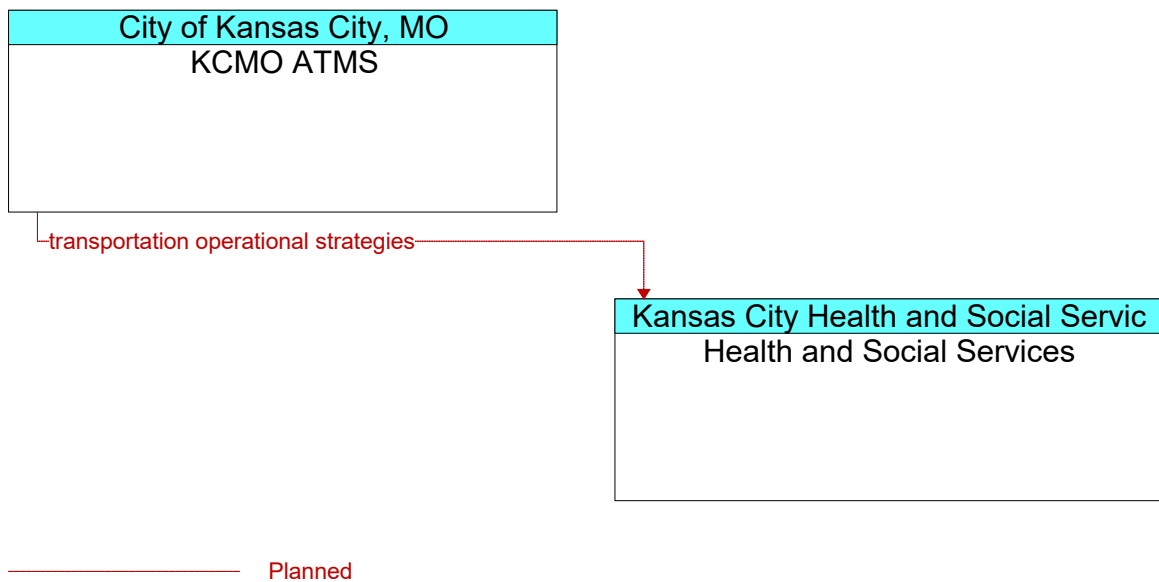
**Figure 374: Freight Equipment - Private Trucking Companies Interface**



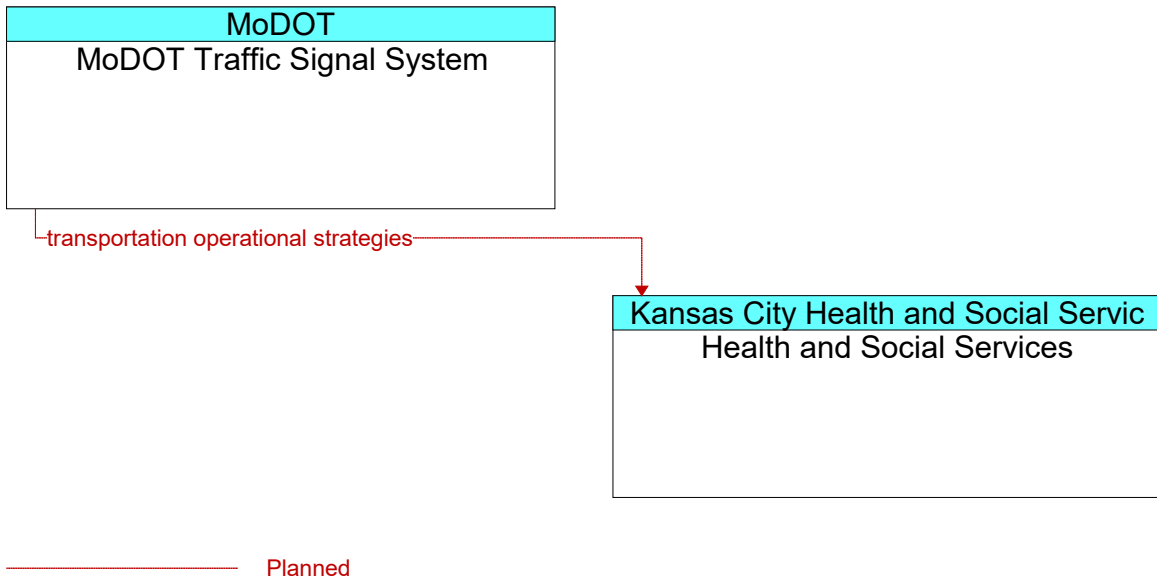
**Figure 375: Freight Equipment - Private Trucking Companies Commercial Vehicles Interface**



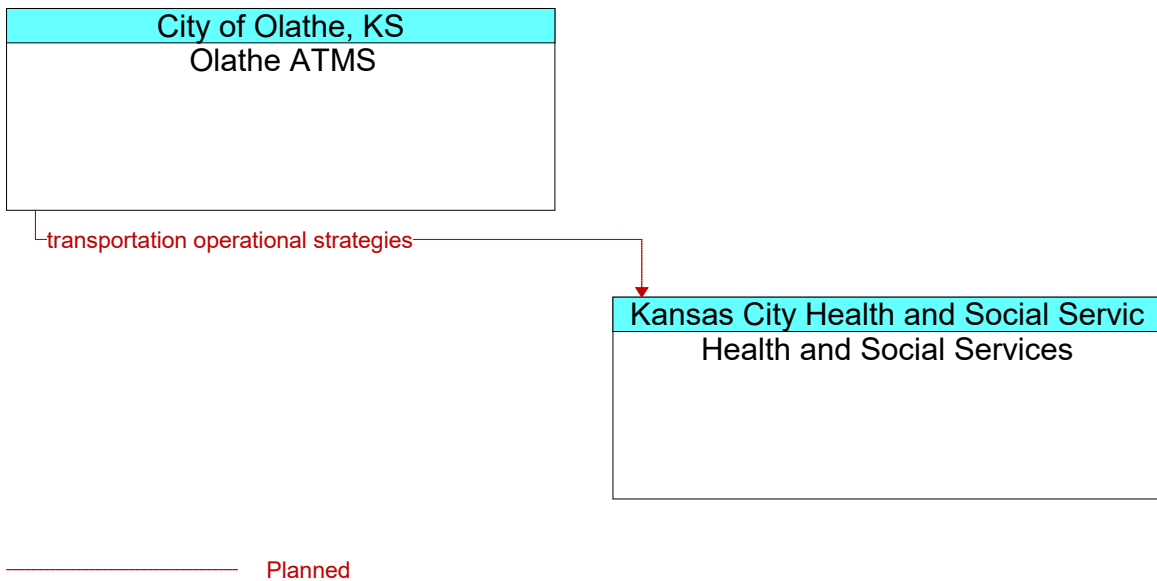
**Figure 376: Health and Social Services - Kansas City Scout Traffic Management Center Interface**



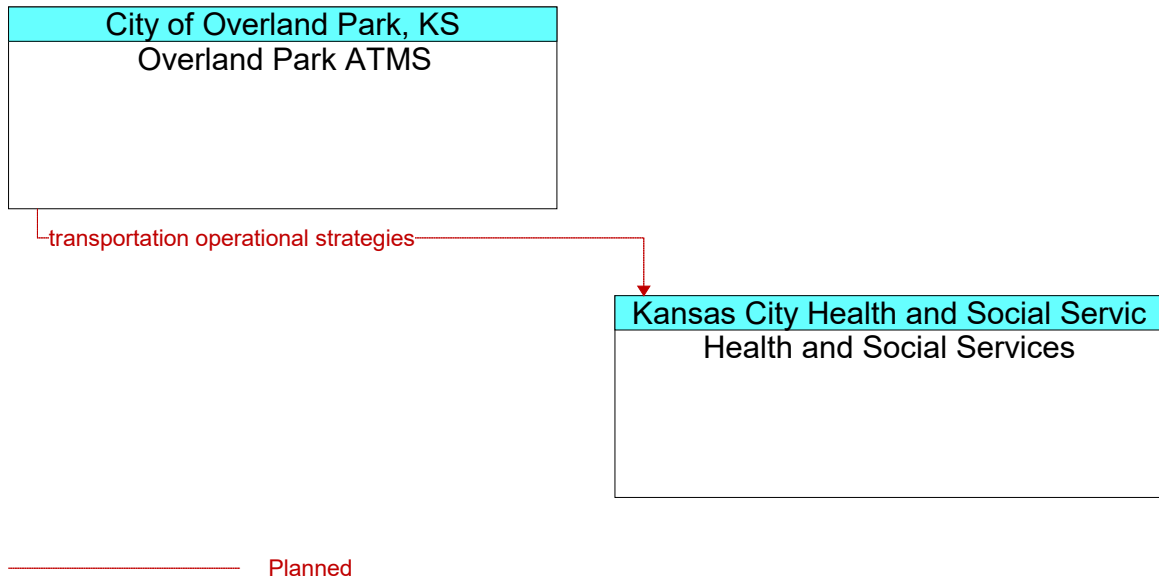
**Figure 377: Health and Social Services - KCMO ATMS Interface**



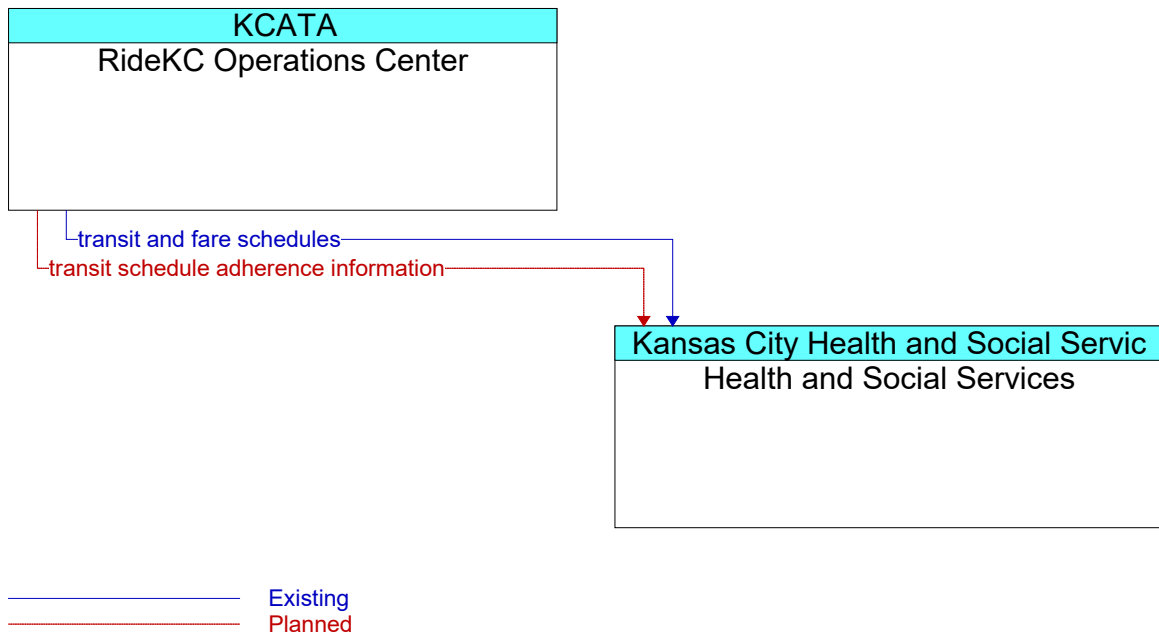
**Figure 378: Health and Social Services - MoDOT Traffic Signal System Interface**



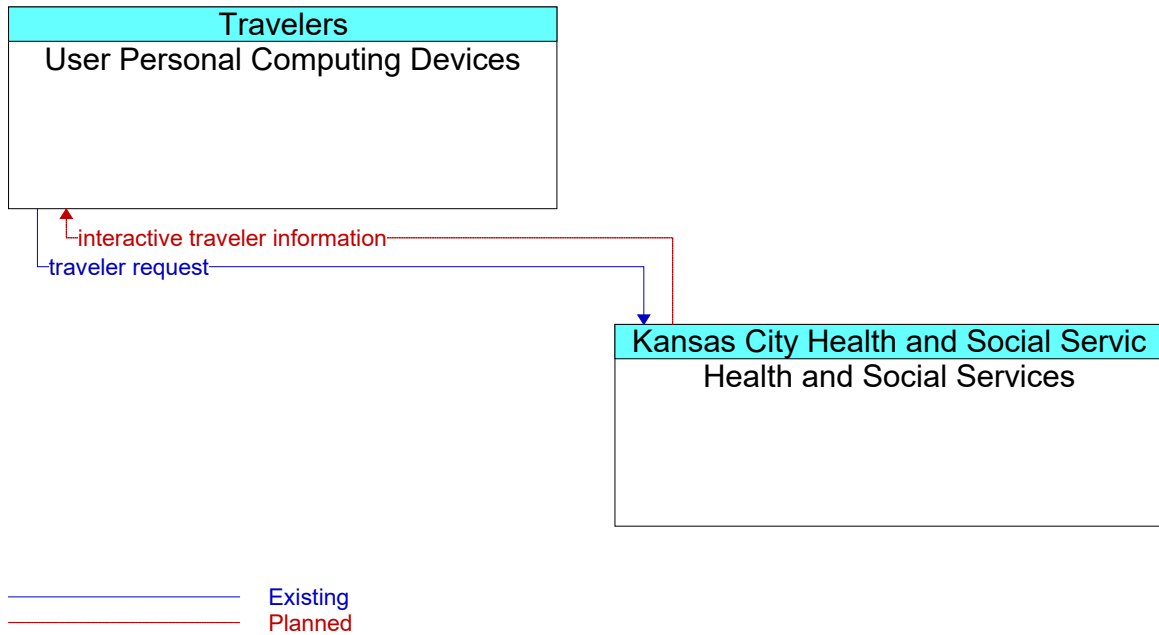
**Figure 379: Health and Social Services - Olathe ATMS Interface**



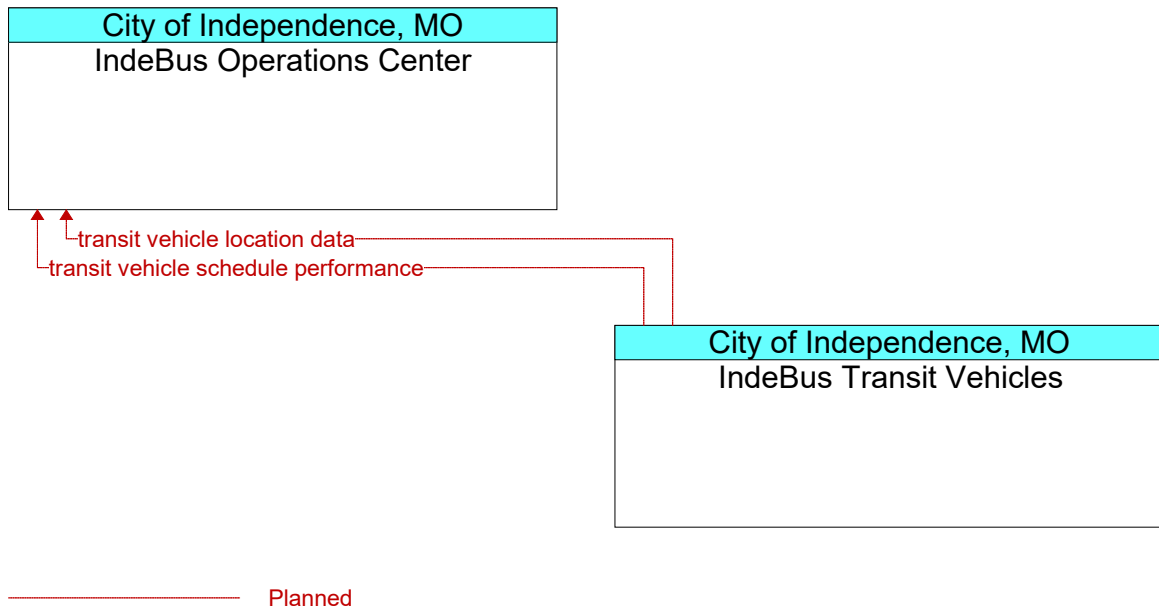
**Figure 380: Health and Social Services - Overland Park ATMS Interface**



**Figure 381: Health and Social Services - RideKC Operations Center Interface**

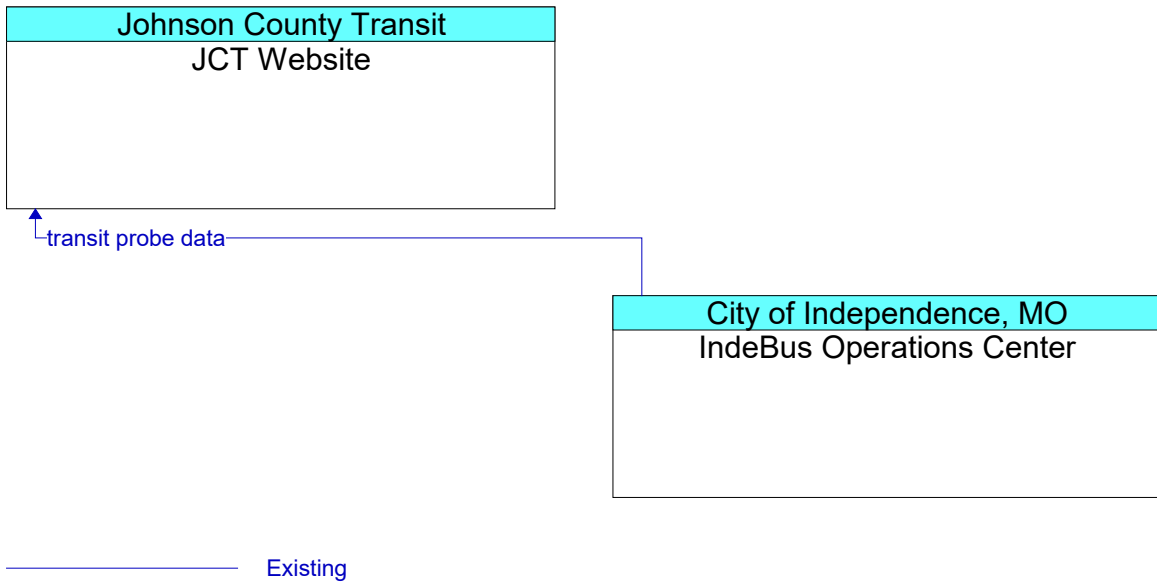


**Figure 382: Health and Social Services - User Personal Computing Devices Interface**

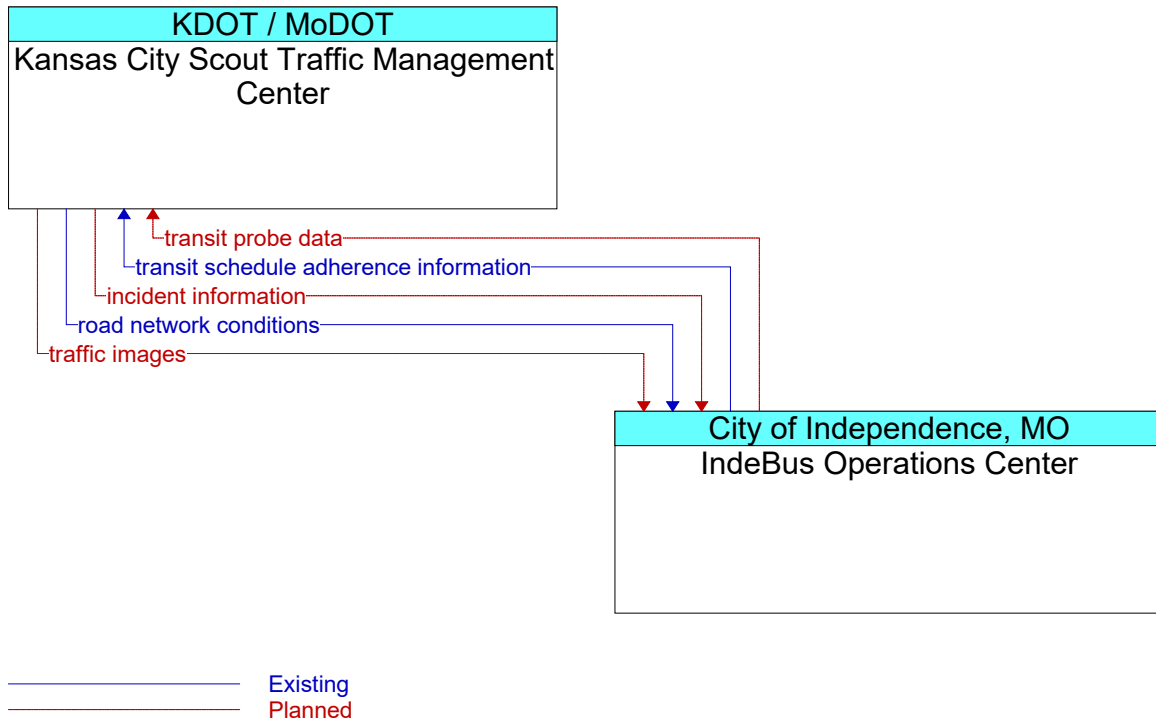


**Figure 383: IndeBus Operations Center - IndeBus Transit Vehicles Interface**

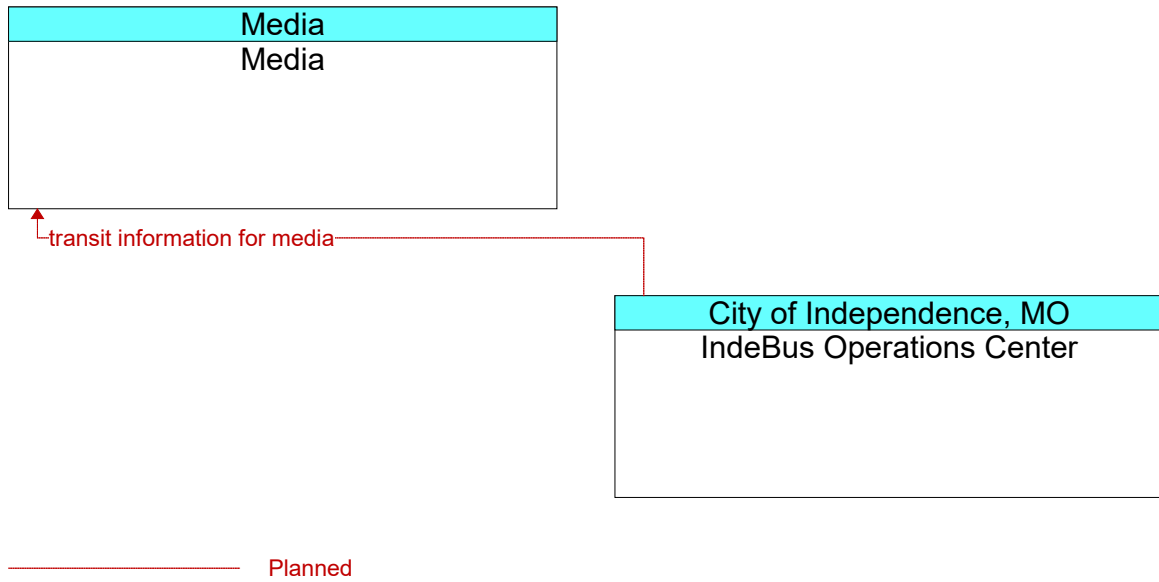




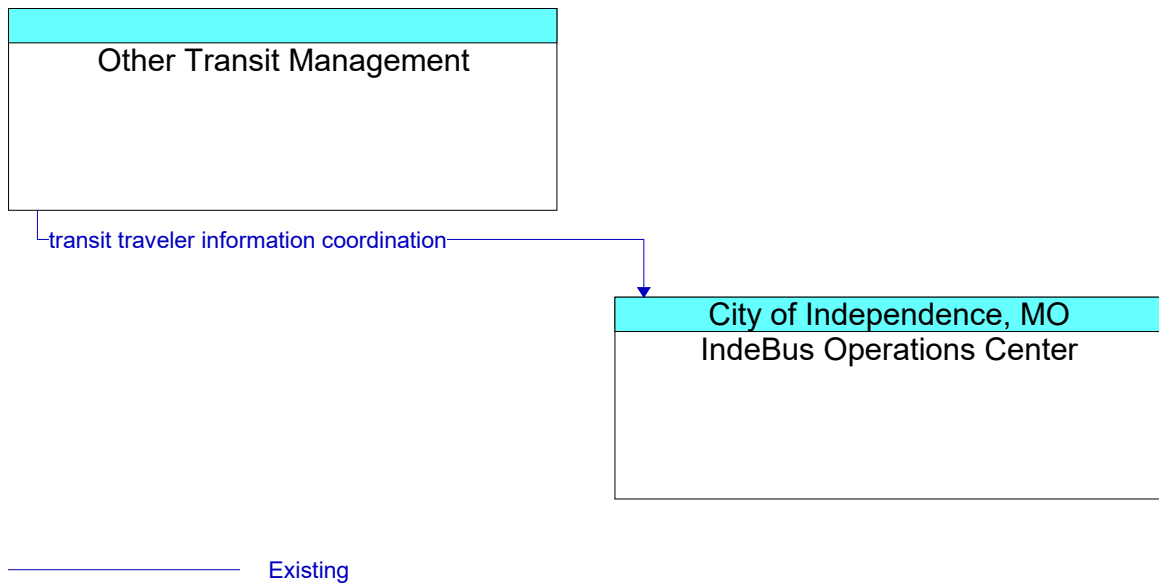
**Figure 384: IndeBus Operations Center - JCT Website Interface**



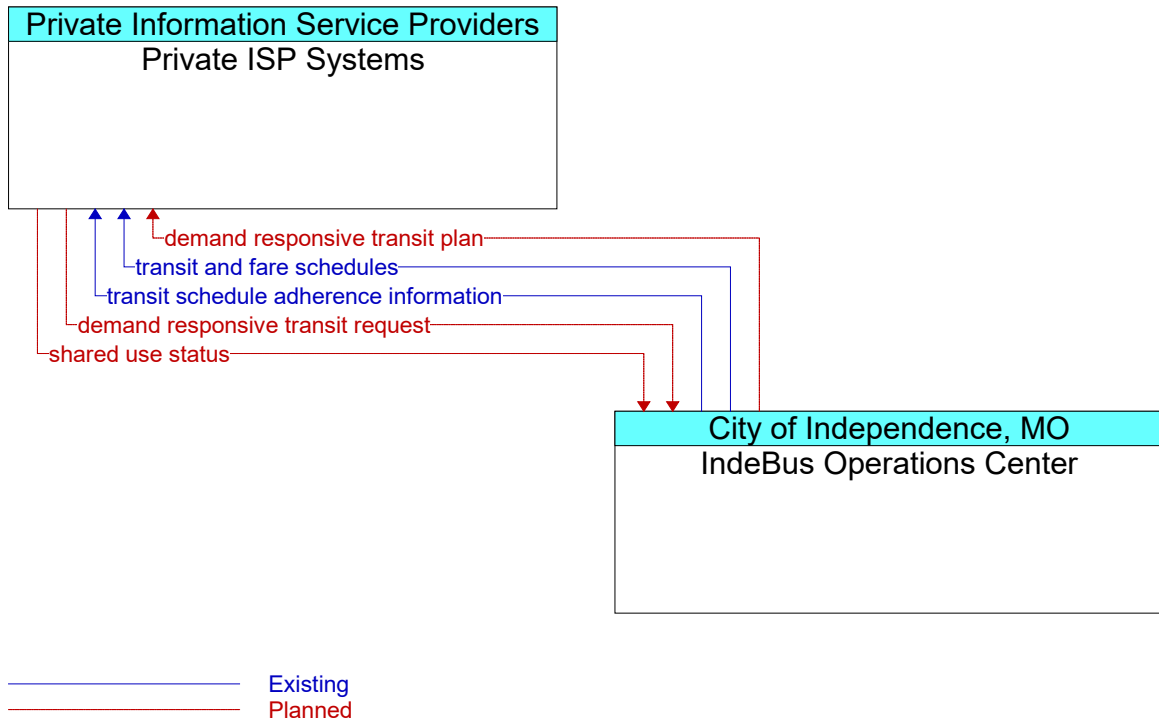
**Figure 385: IndeBus Operations Center - Kansas City Scout Traffic Management Center Interface**



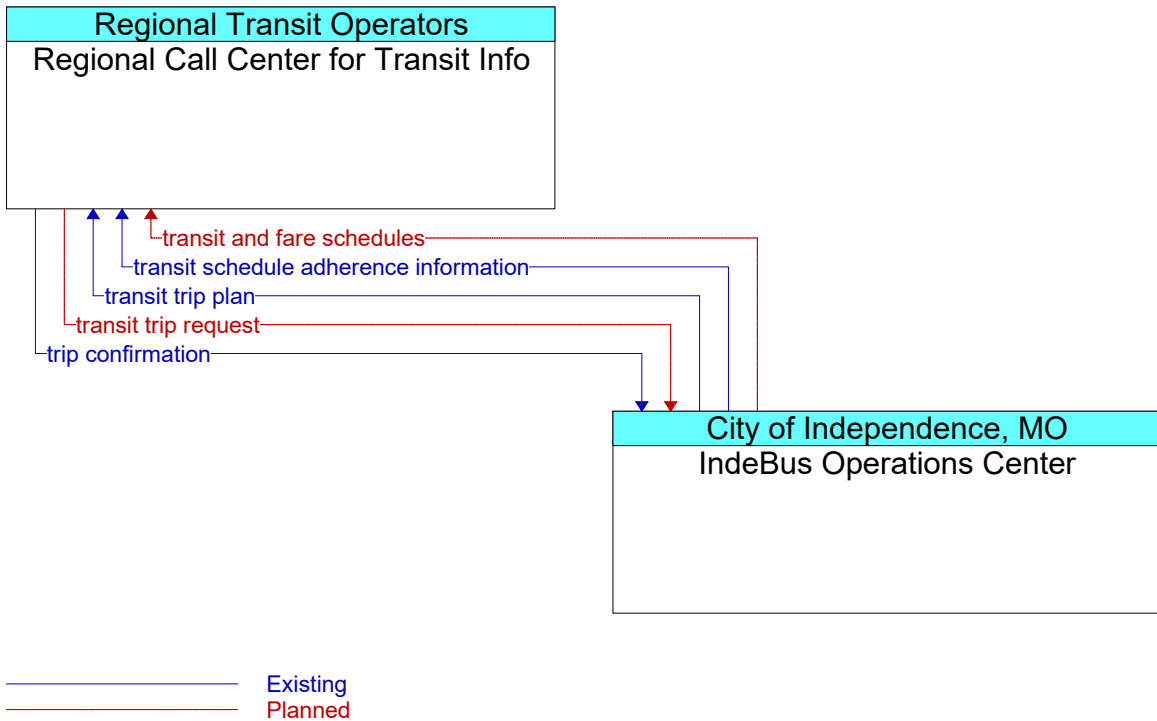
**Figure 386: IndeBus Operations Center - Media Interface**



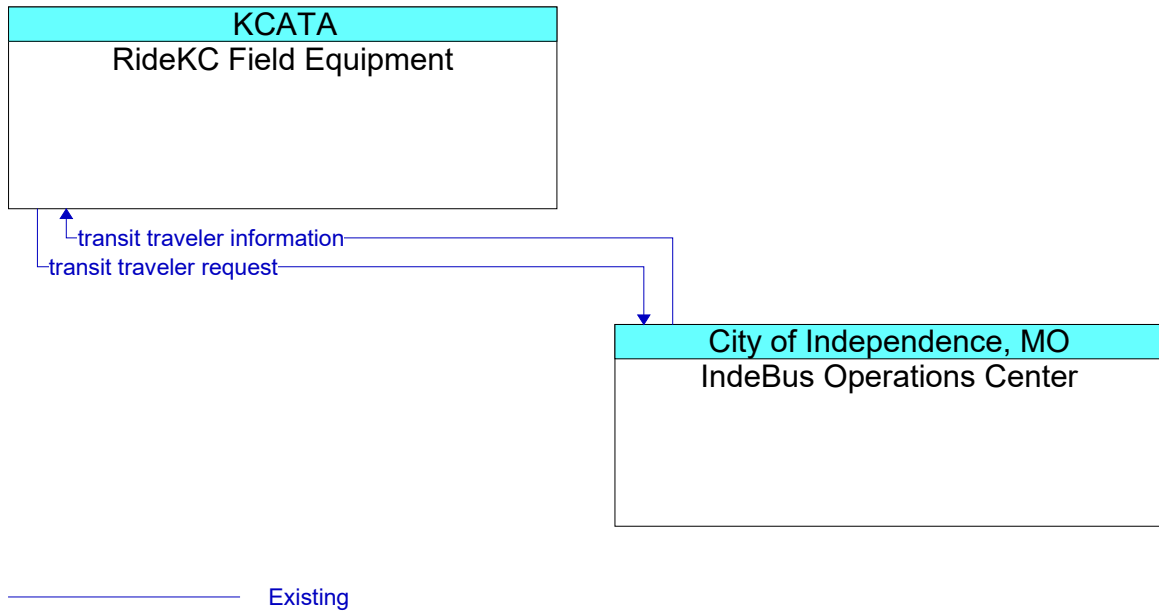
**Figure 387: IndeBus Operations Center - Other Transit Management Interface**



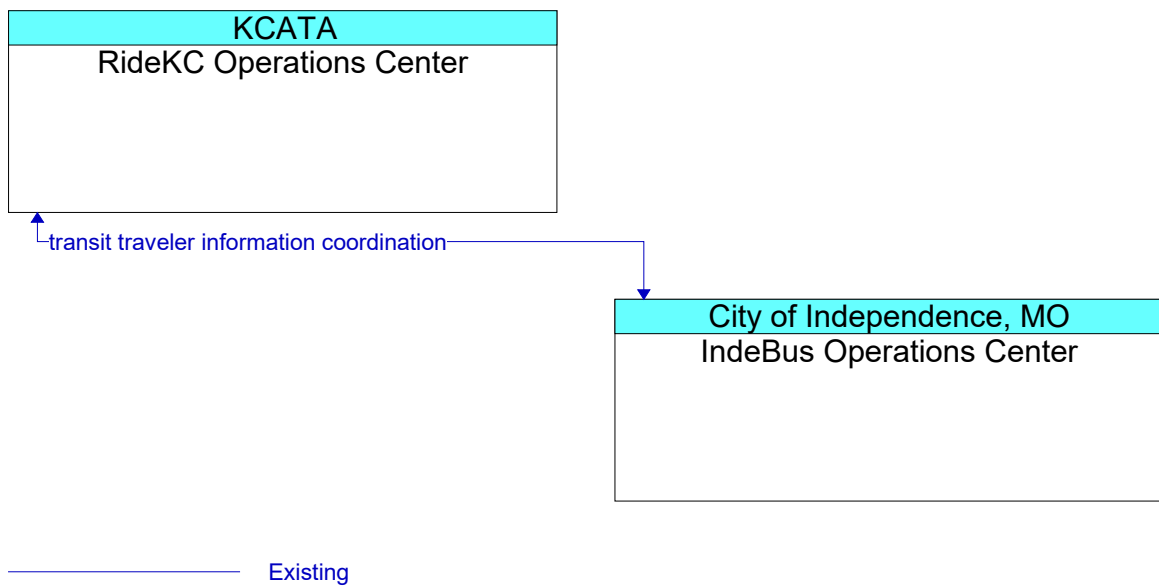
**Figure 388: IndeBus Operations Center - Private ISP Systems Interface**



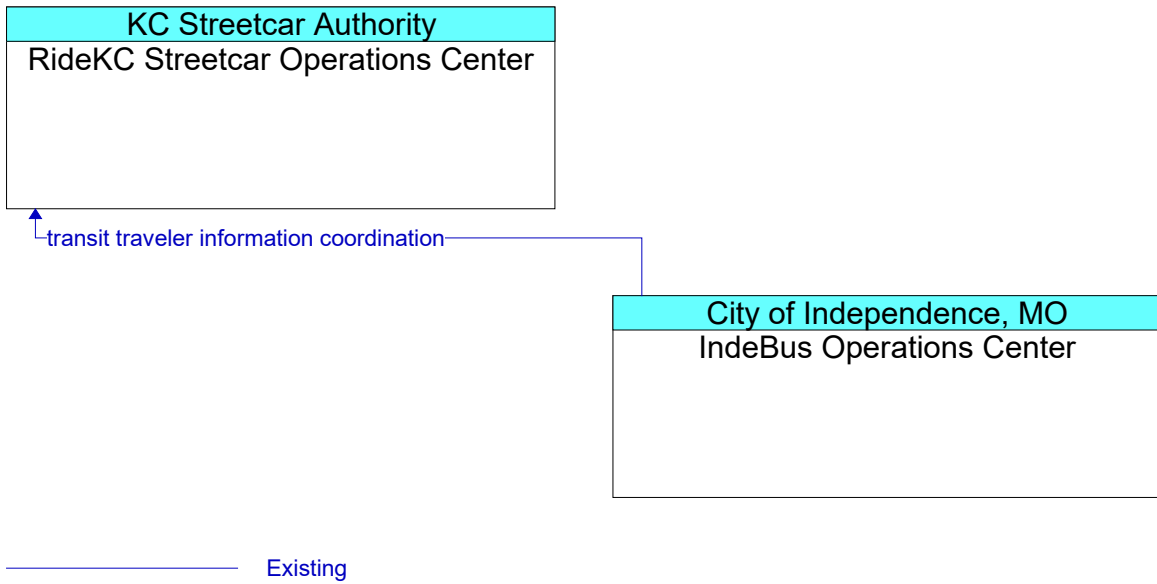
**Figure 389: IndeBus Operations Center - Regional Call Center for Transit Info Interface**



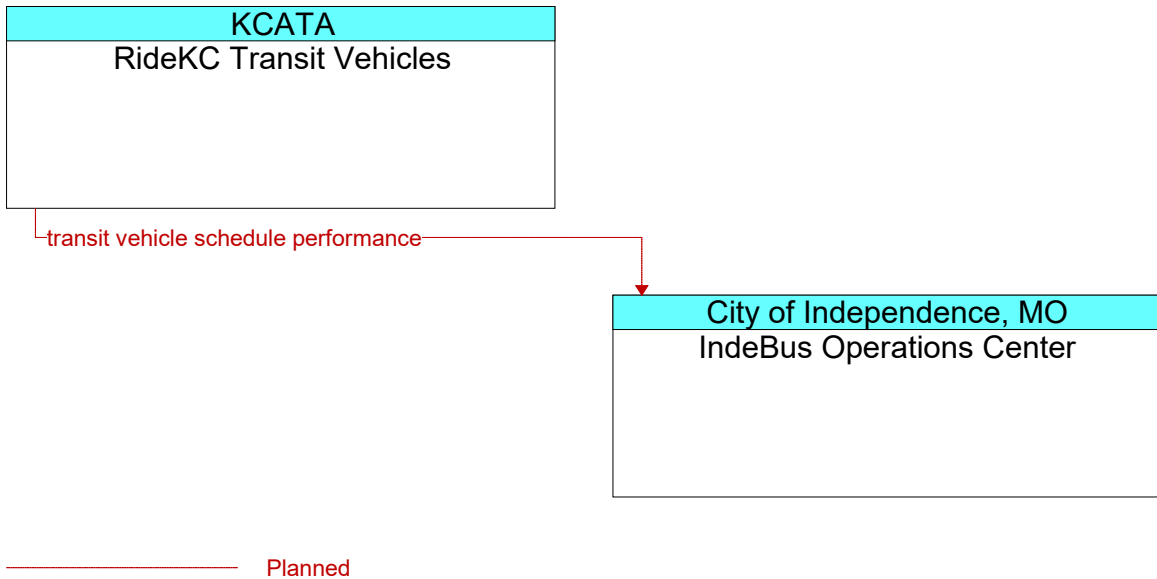
**Figure 390: IndeBus Operations Center - RideKC Field Equipment Interface**



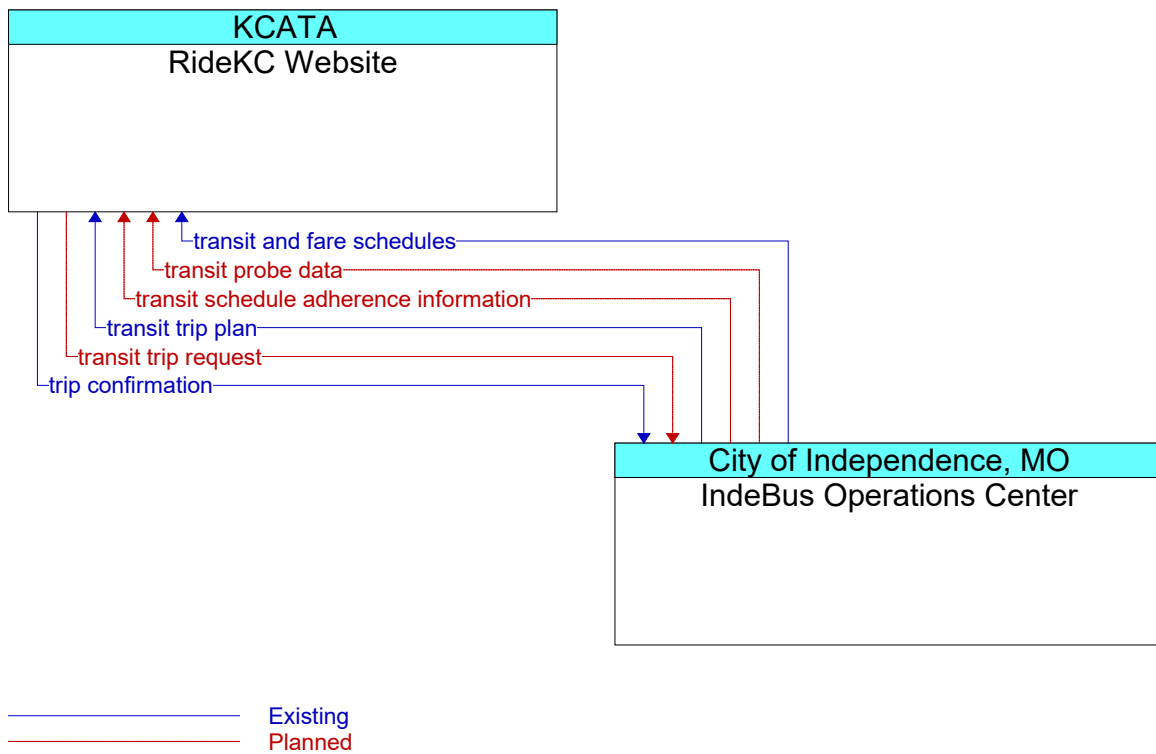
**Figure 391: IndeBus Operations Center - RideKC Operations Center Interface**



**Figure 392: IndeBus Operations Center - RideKC Streetcar Operations Center Interface**

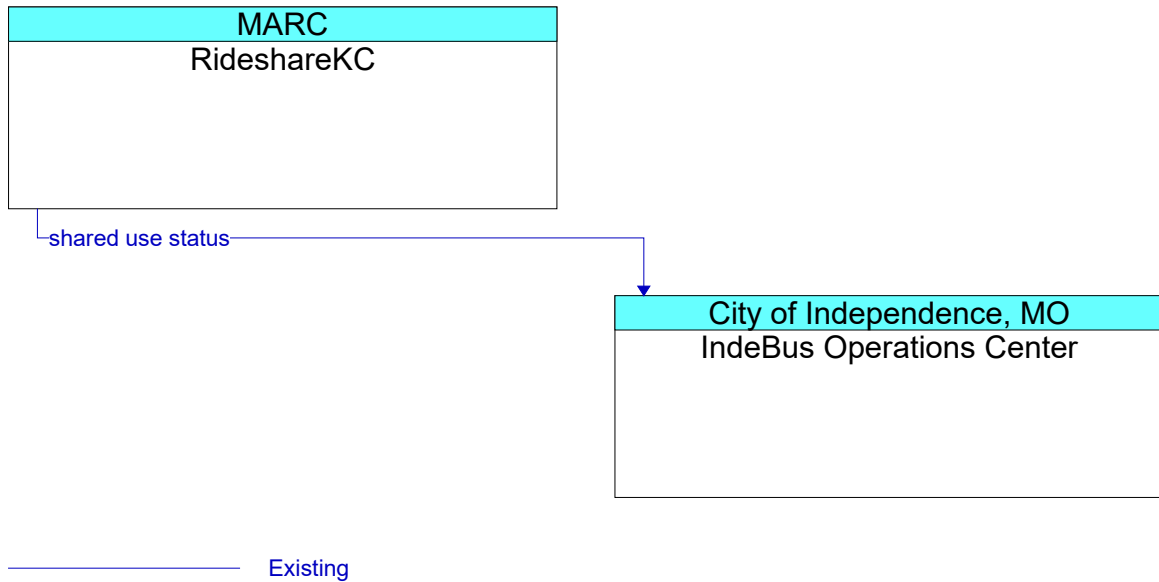


**Figure 393: IndeBus Operations Center - RideKC Transit Vehicles Interface**

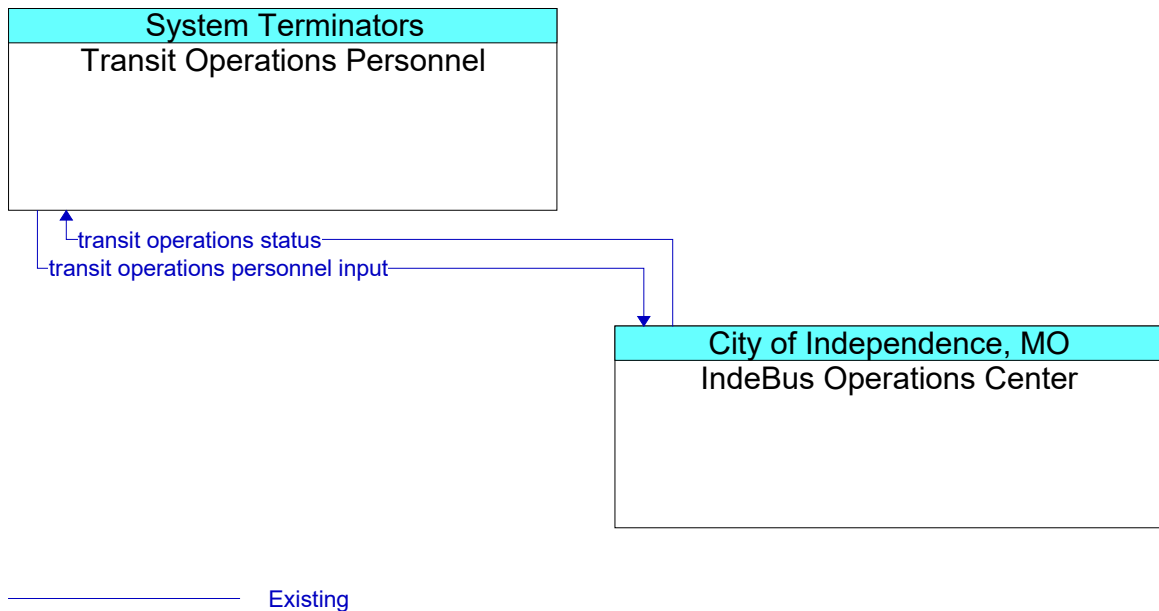


**Figure 394: IndeBus Operations Center - RideKC Website Interface**

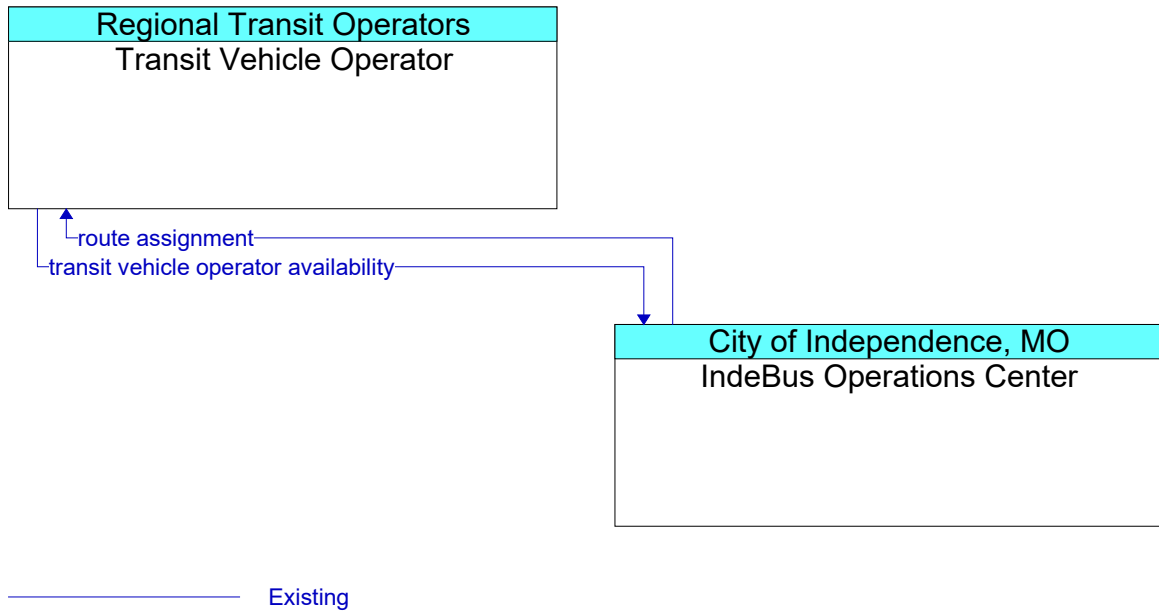




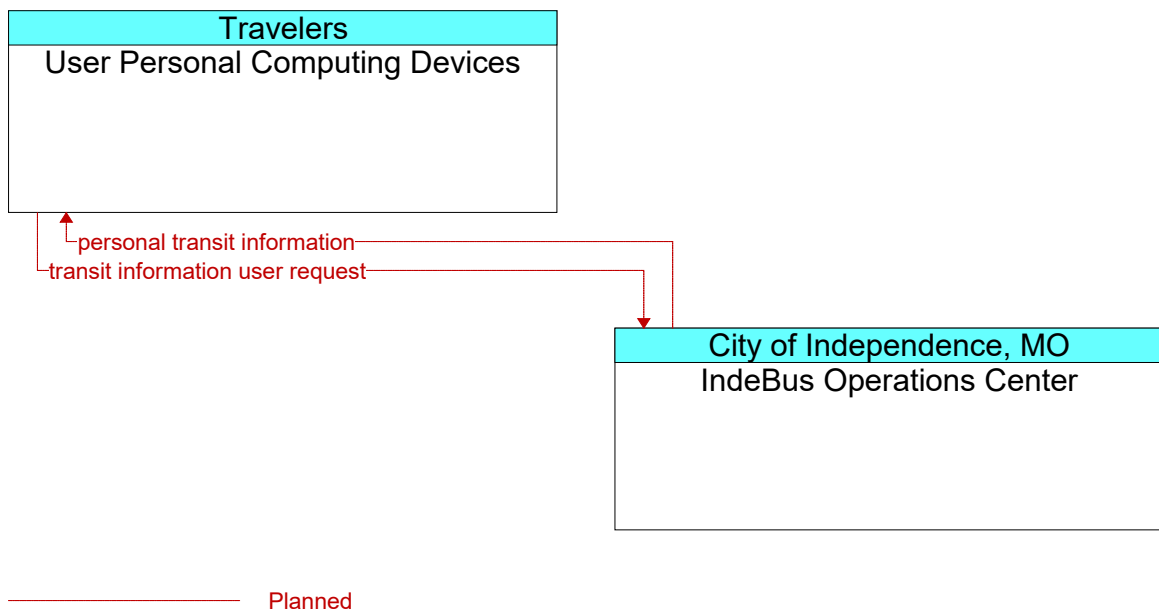
**Figure 395: IndeBus Operations Center - RideshareKC Interface**



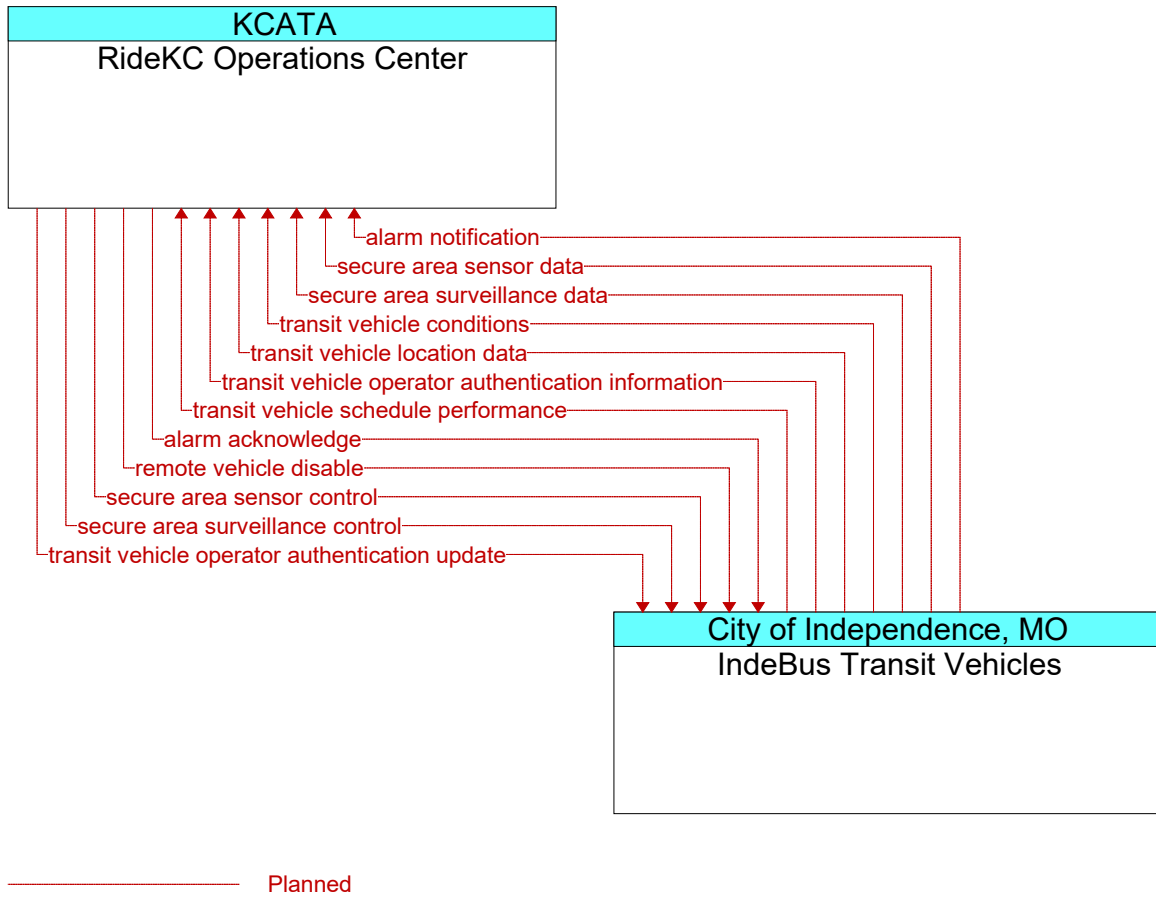
**Figure 396: IndeBus Operations Center - Transit Operations Personnel Interface**



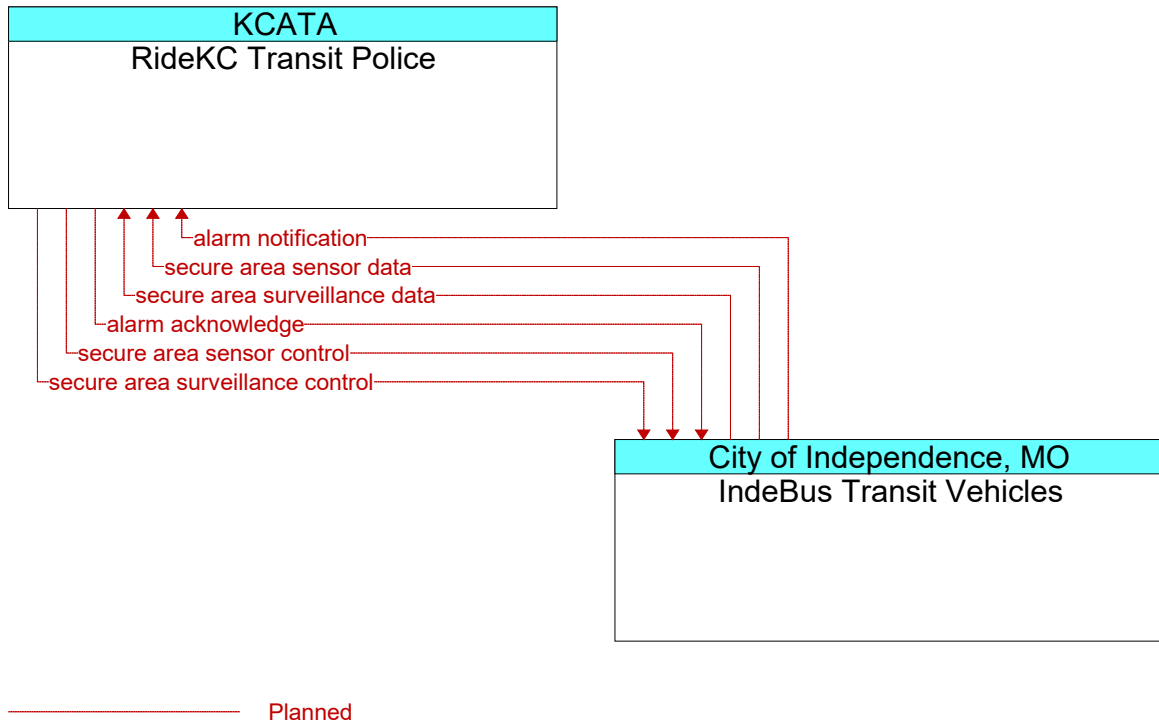
**Figure 397: IndeBus Operations Center - Transit Vehicle Operator Interface**



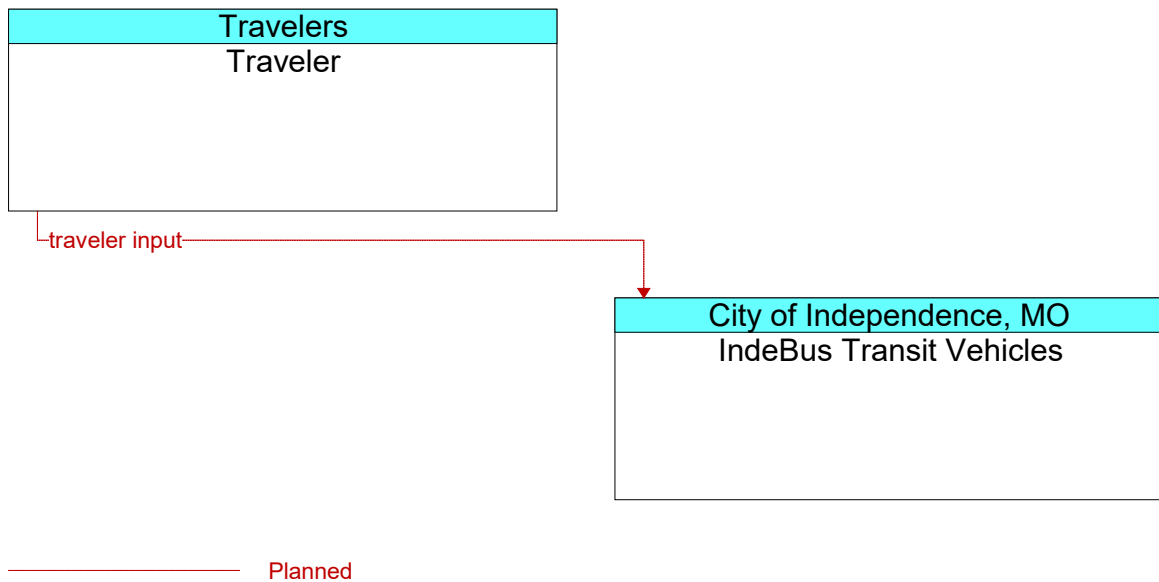
**Figure 398: IndeBus Operations Center - User Personal Computing Devices Interface**



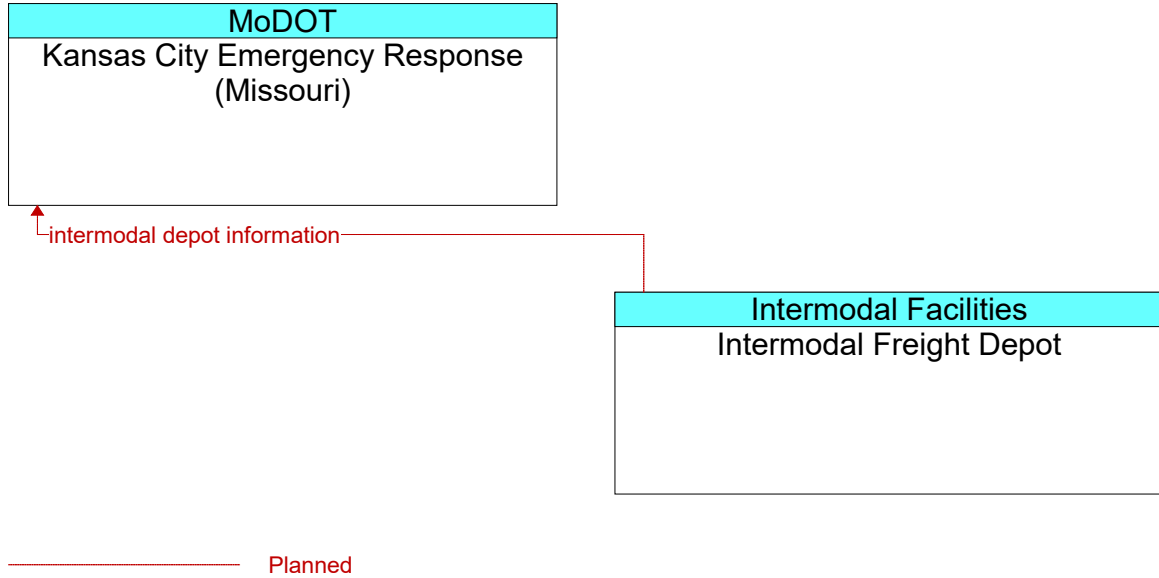
**Figure 399: IndeBus Transit Vehicles - RideKC Operations Center Interface**



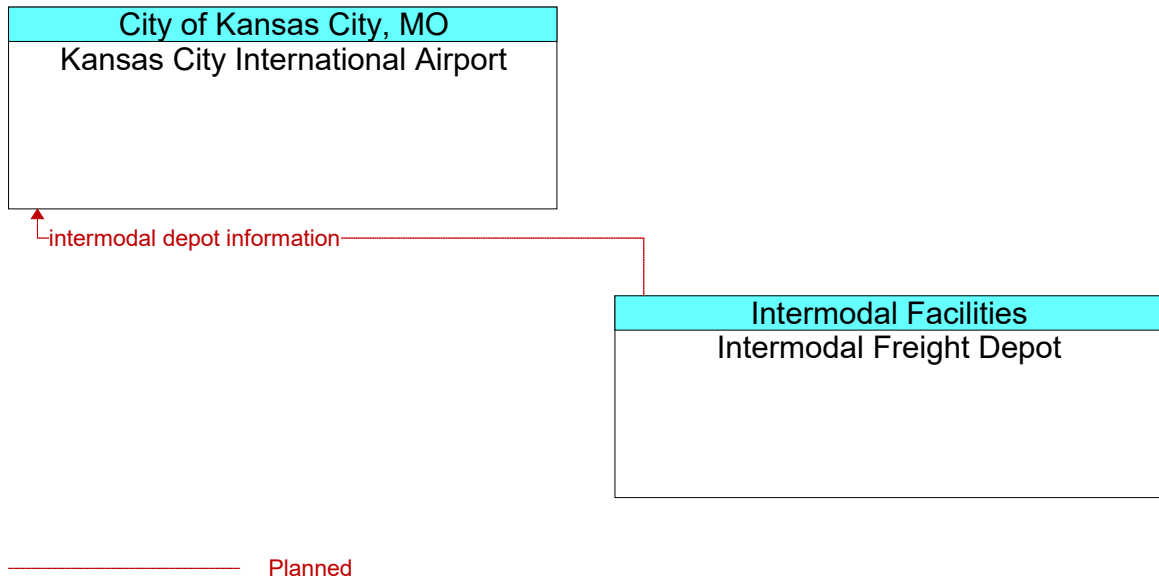
**Figure 400: IndeBus Transit Vehicles - RideKC Transit Police Interface**



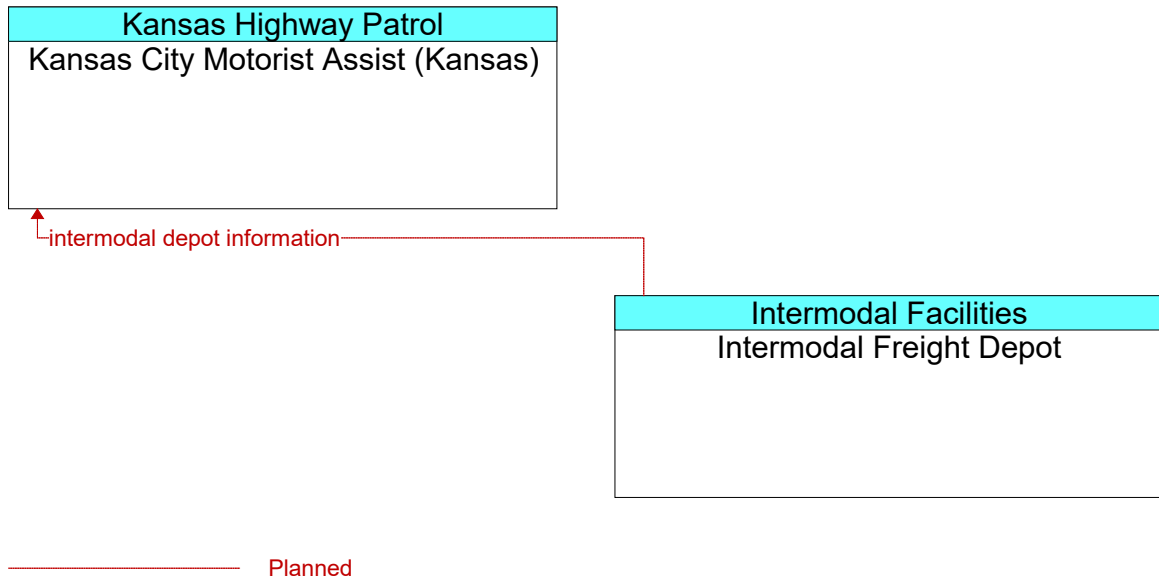
**Figure 401: IndeBus Transit Vehicles - Traveler Interface**



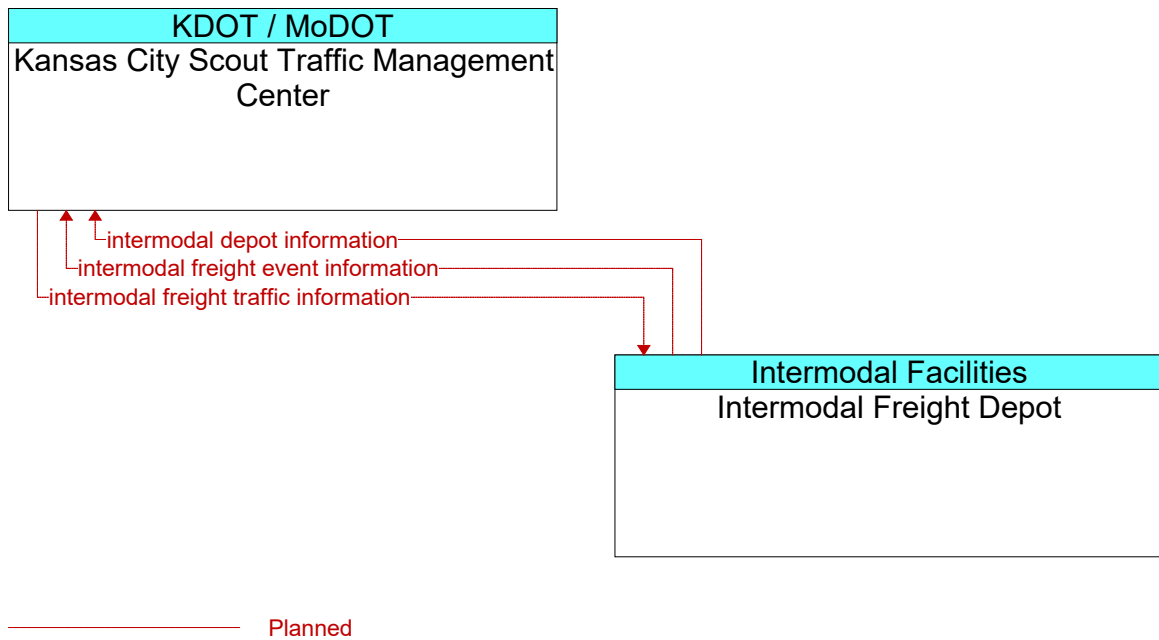
**Figure 402: Intermodal Freight Depot - Kansas City Emergency Response (Missouri) Interface**



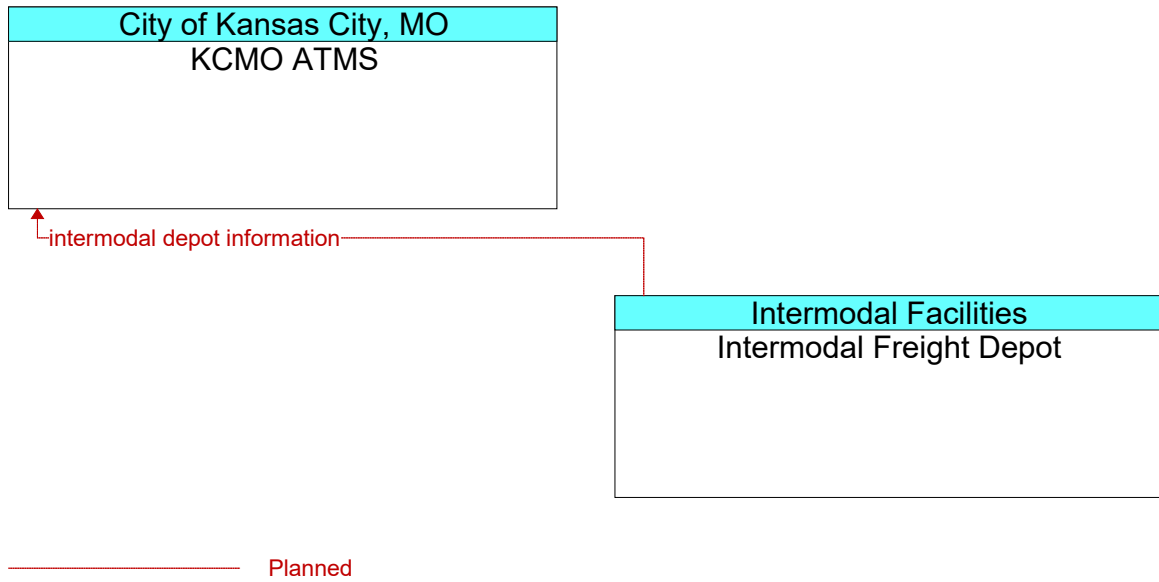
**Figure 403: Intermodal Freight Depot - Kansas City International Airport Interface**



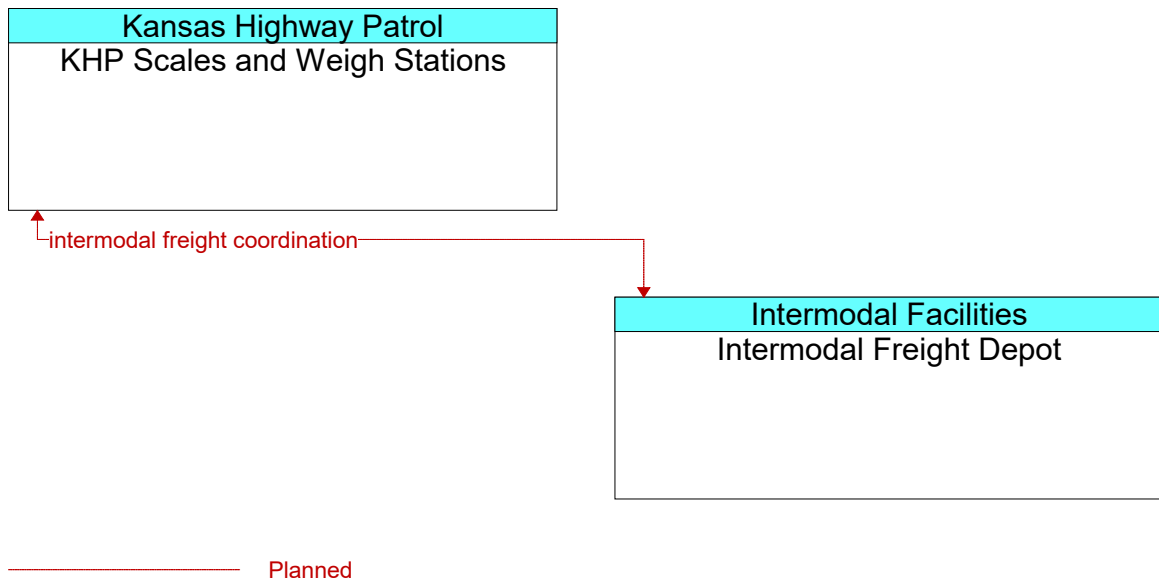
**Figure 404: Intermodal Freight Depot - Kansas City Motorist Assist (Kansas) Interface**



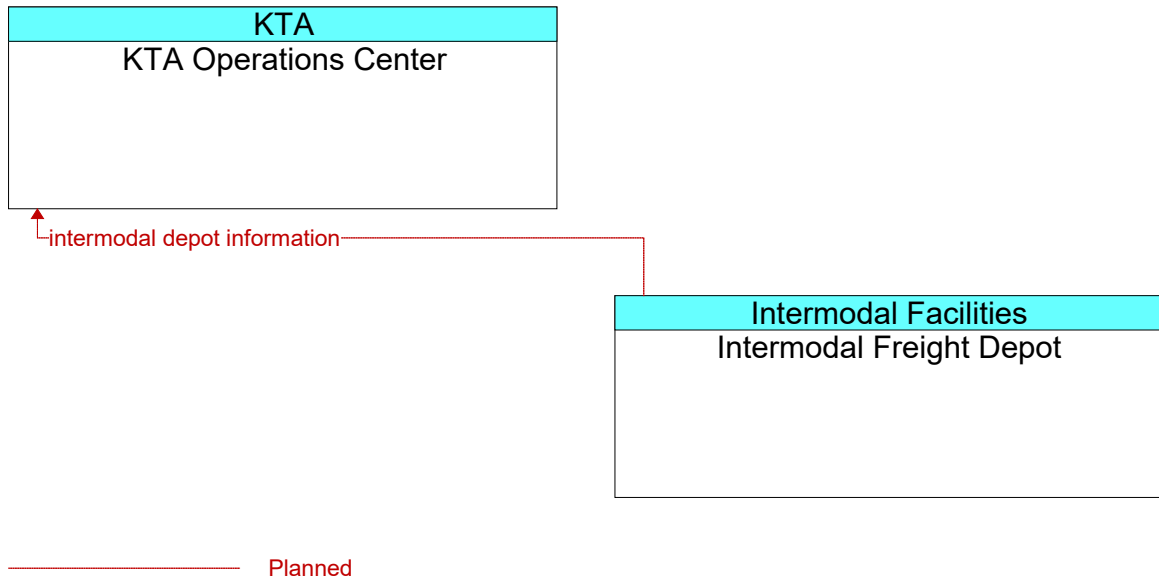
**Figure 405: Intermodal Freight Depot - Kansas City Scout Traffic Management Center Interface**



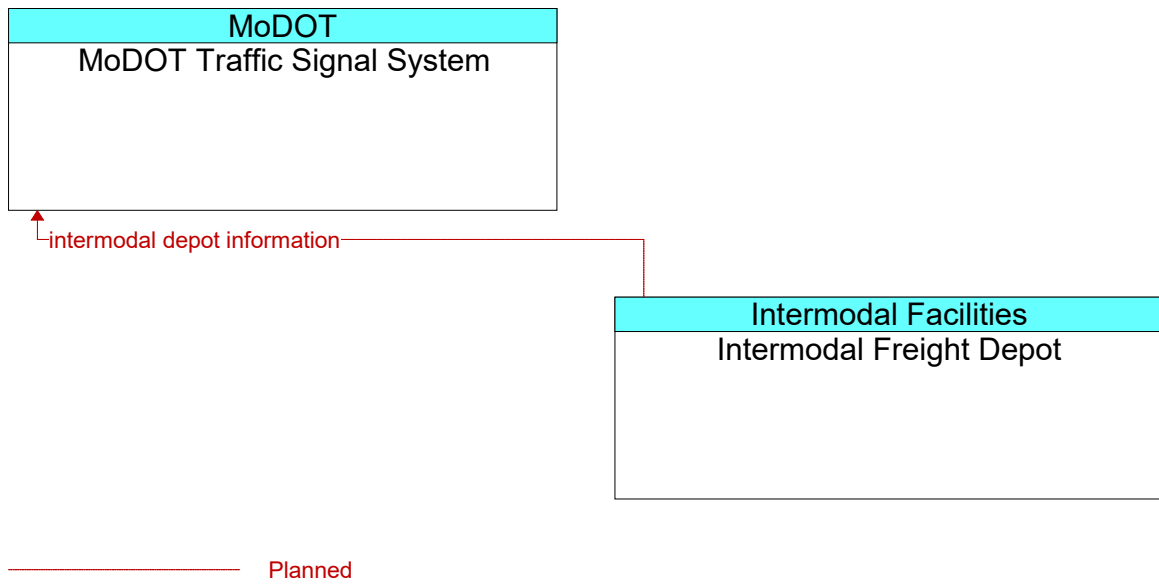
**Figure 406: Intermodal Freight Depot - KCMO ATMS Interface**



**Figure 407: Intermodal Freight Depot - KHP Scales and Weigh Stations Interface**

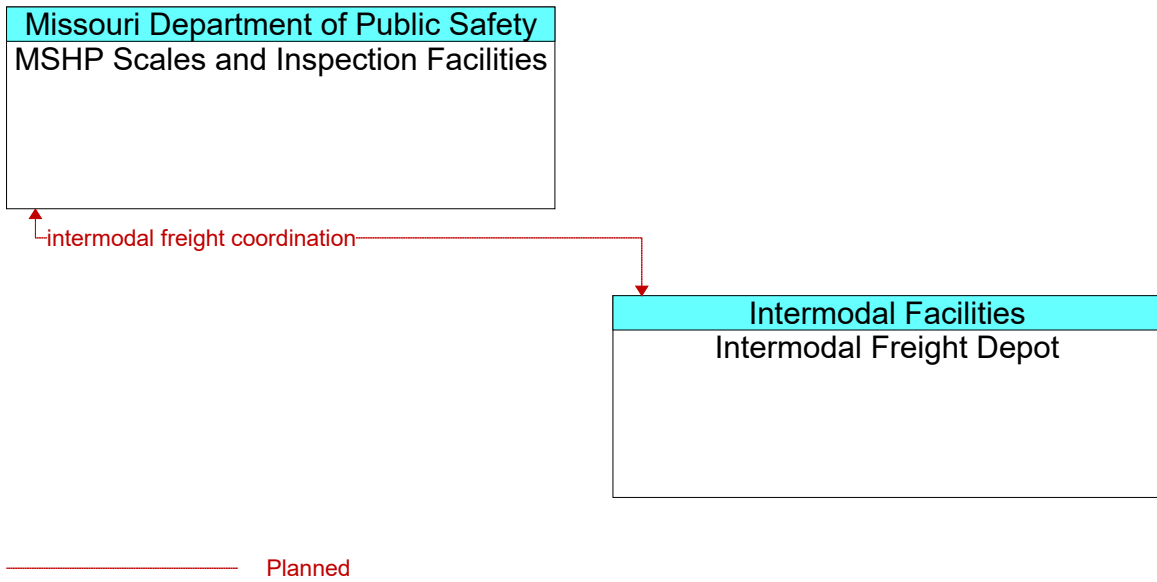


**Figure 408: Intermodal Freight Depot - KTA Operations Center Interface**

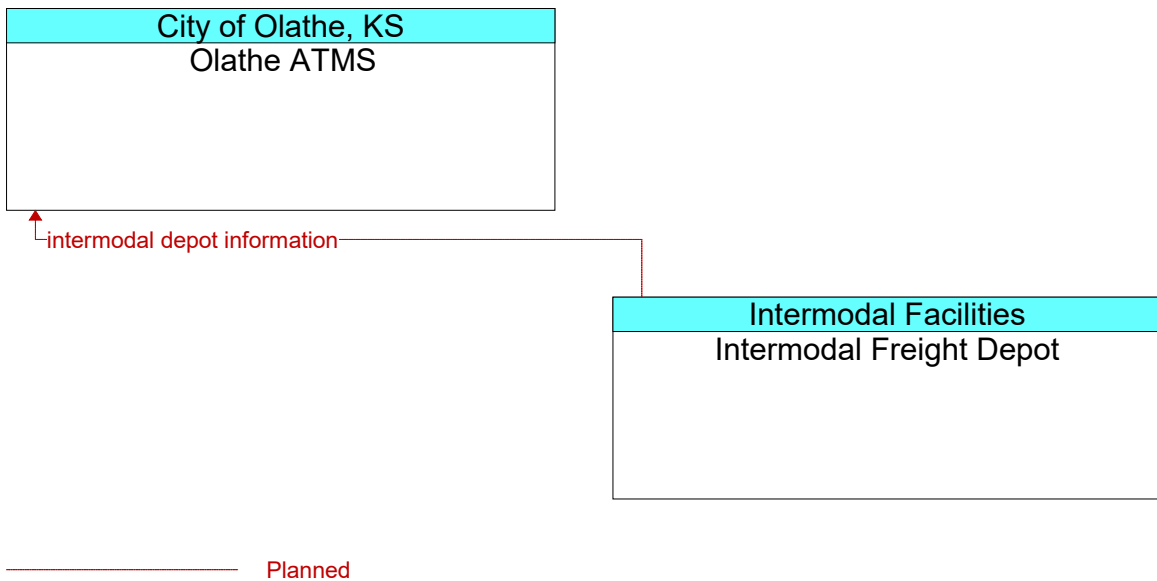


**Figure 409: Intermodal Freight Depot - MoDOT Traffic Signal System Interface**

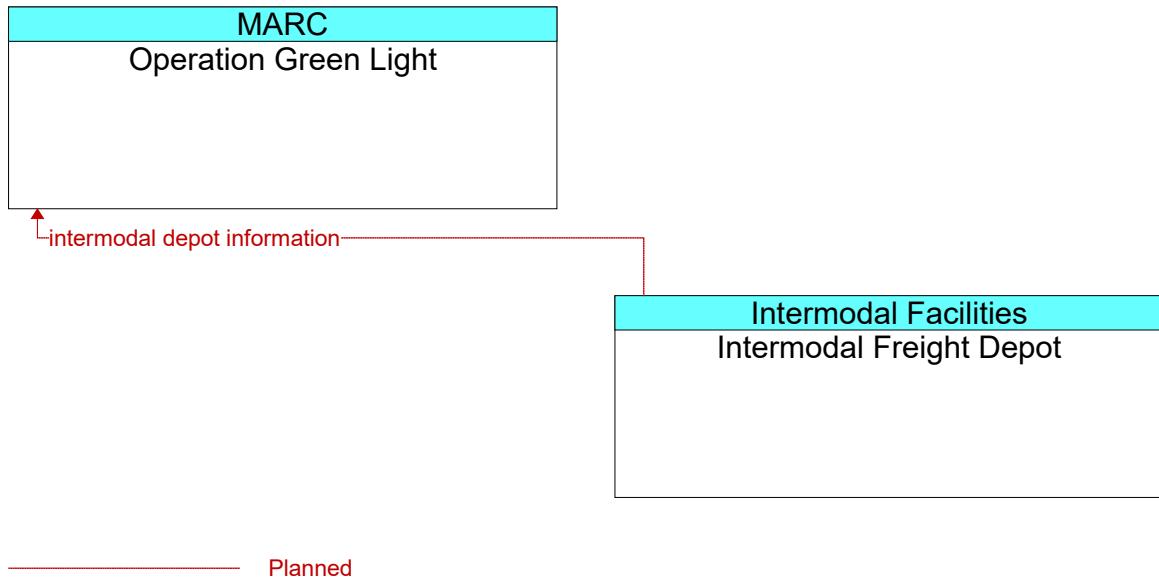




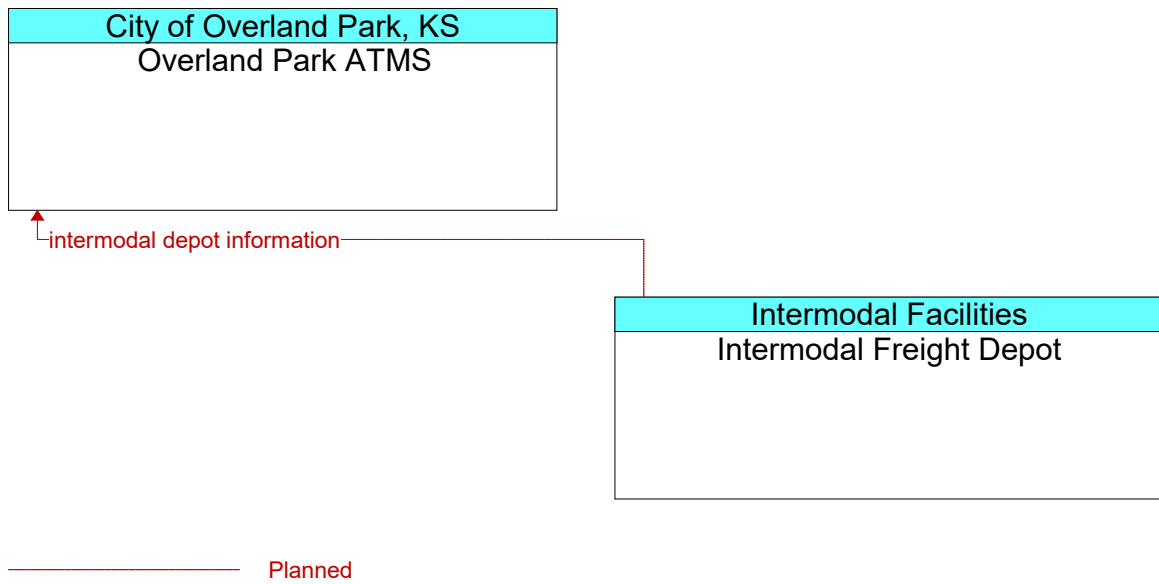
**Figure 410: Intermodal Freight Depot - MSHP Scales and Inspection Facilities Interface**



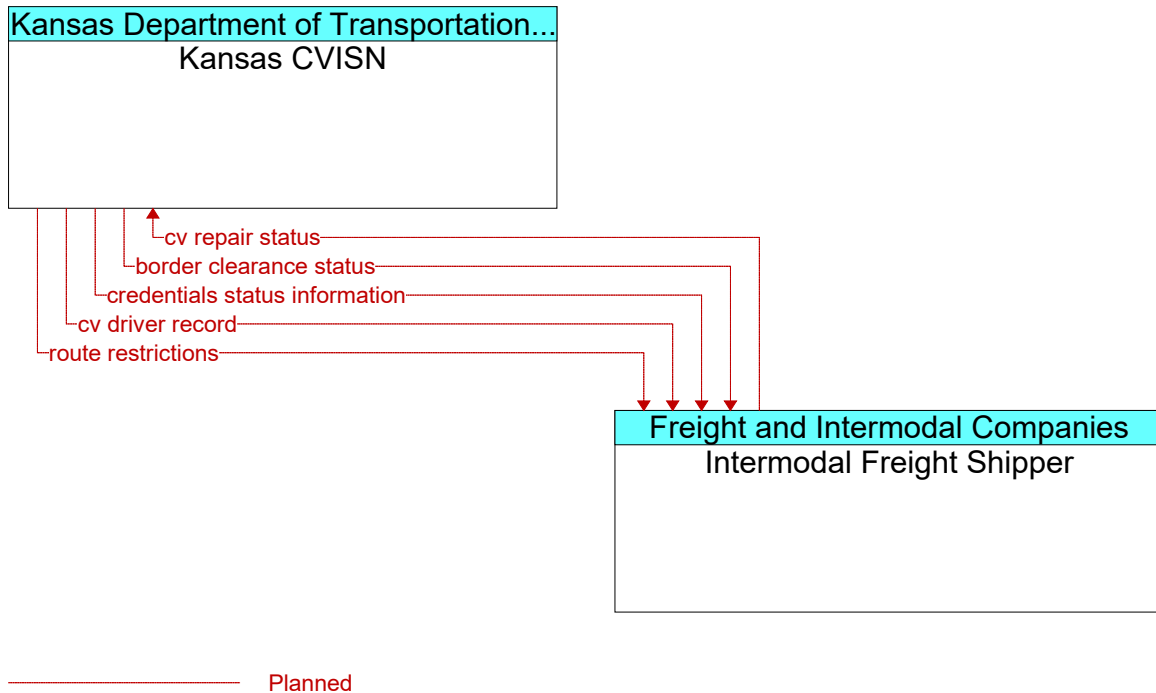
**Figure 411: Intermodal Freight Depot - Olathe ATMS Interface**



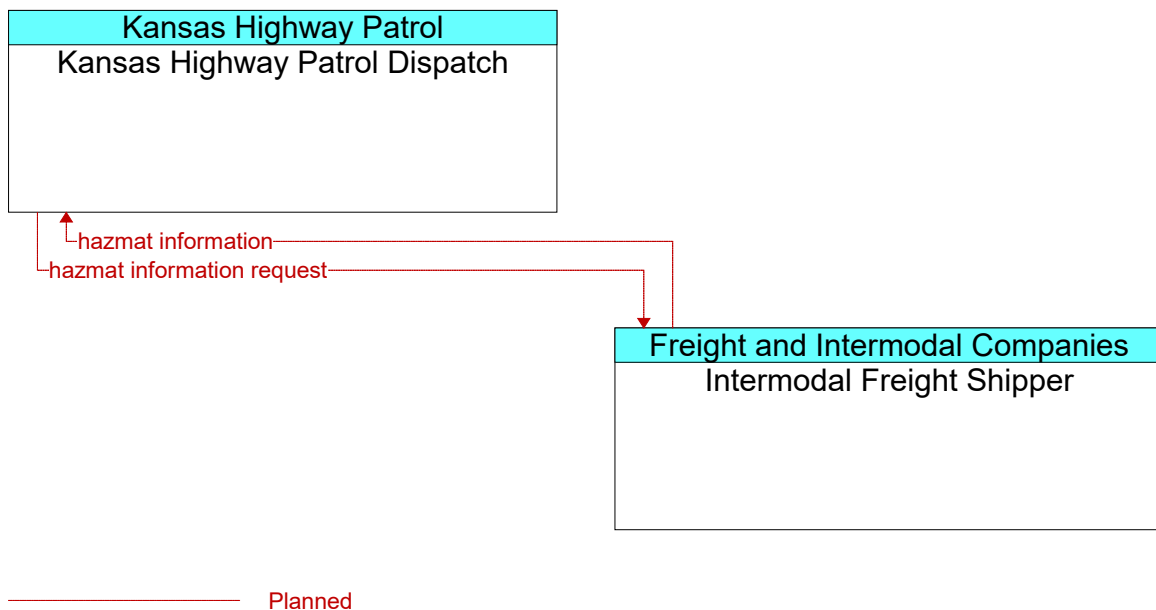
**Figure 412: Intermodal Freight Depot - Operation Green Light Interface**



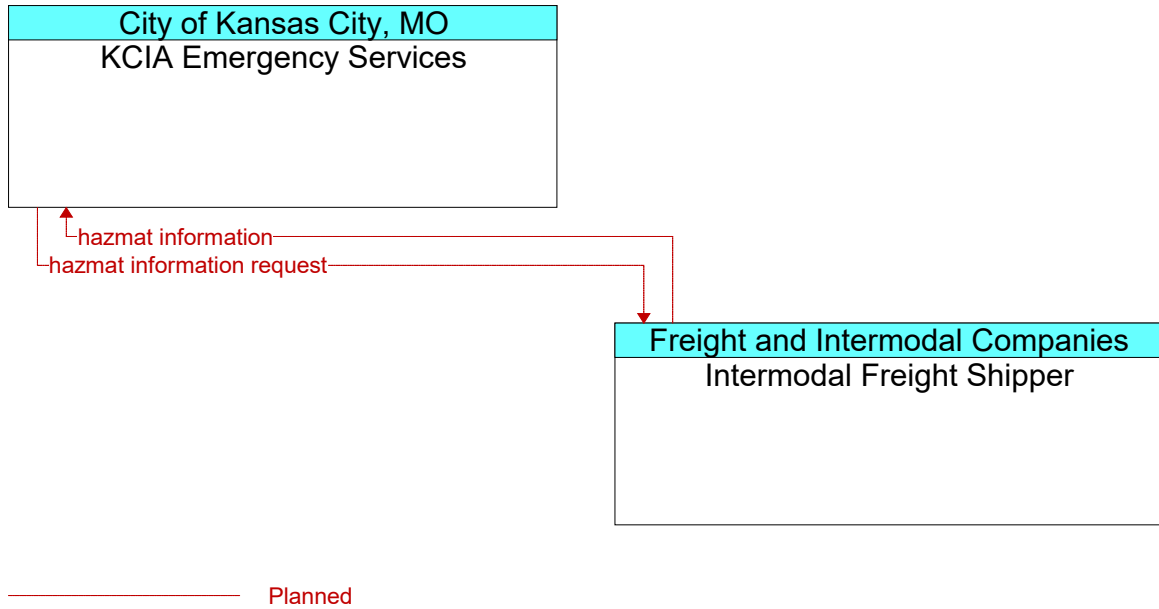
**Figure 413: Intermodal Freight Depot - Overland Park ATMS Interface**



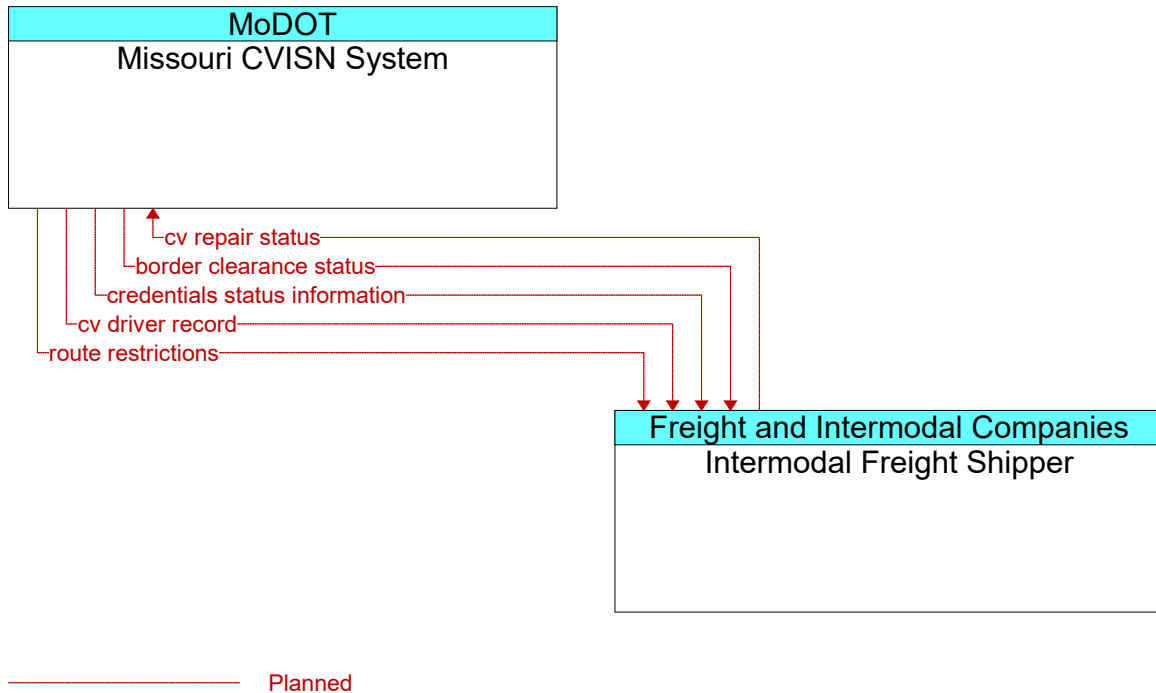
**Figure 414: Intermodal Freight Shipper - Kansas CVISN Interface**



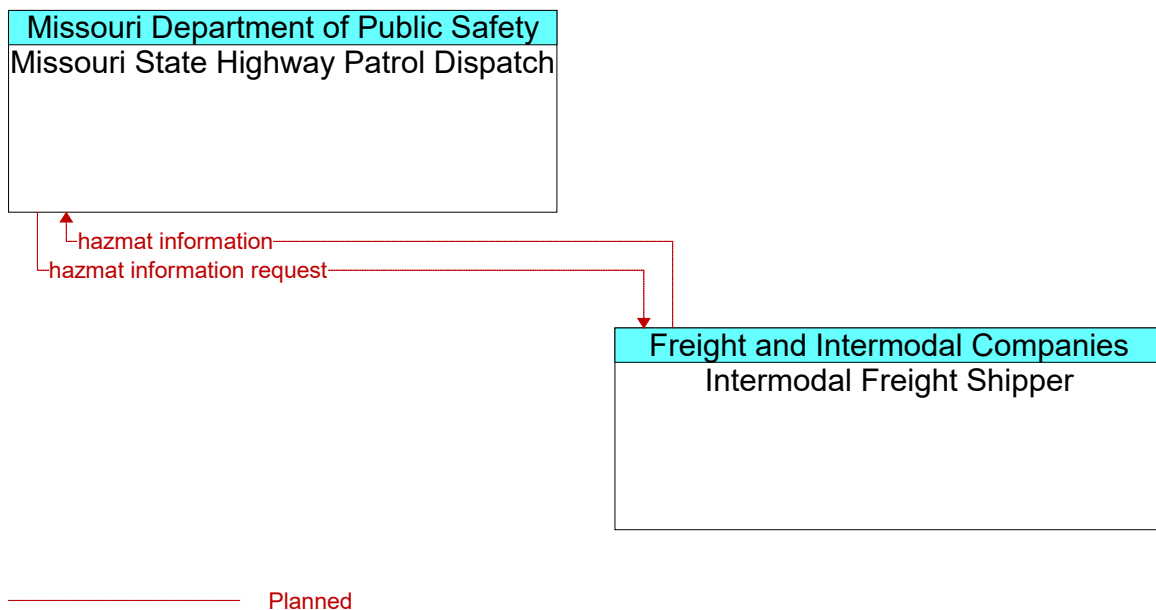
**Figure 415: Intermodal Freight Shipper - Kansas Highway Patrol Dispatch Interface**



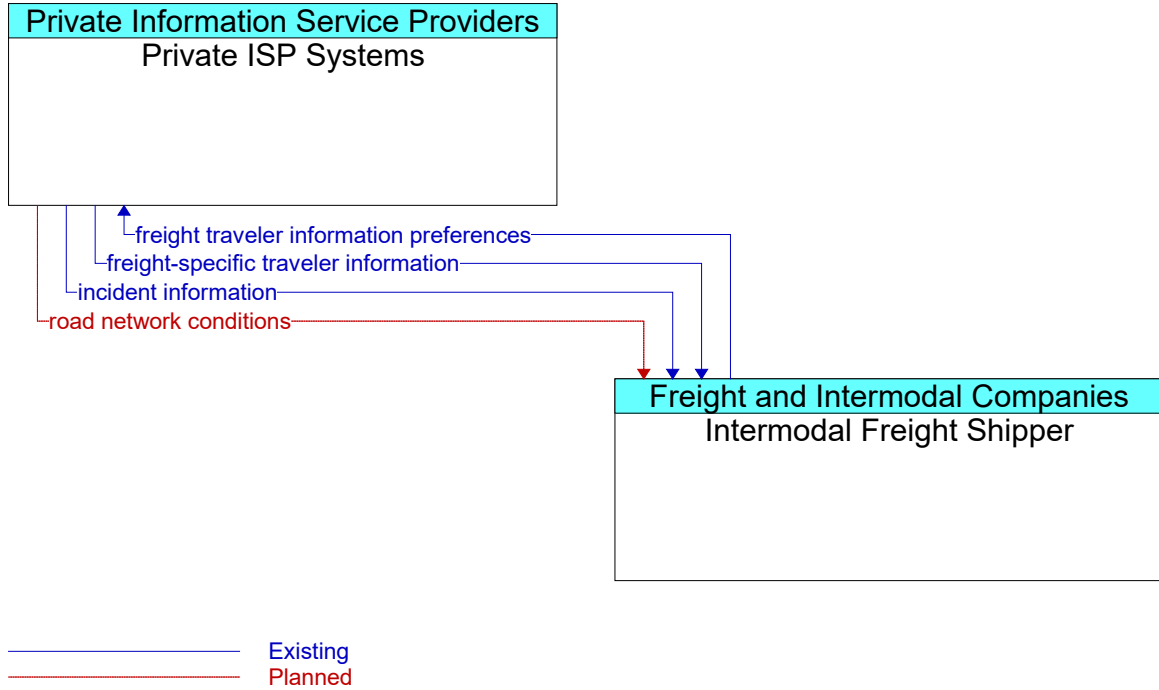
**Figure 416: Intermodal Freight Shipper - KCIA Emergency Services Interface**



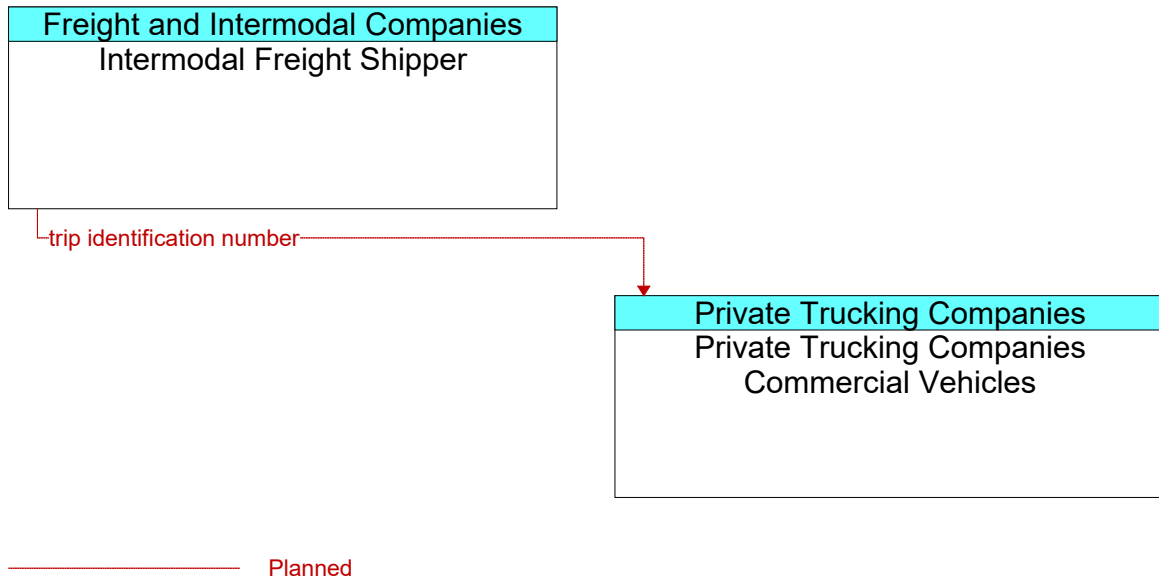
**Figure 417: Intermodal Freight Shipper - Missouri CVISN System Interface**



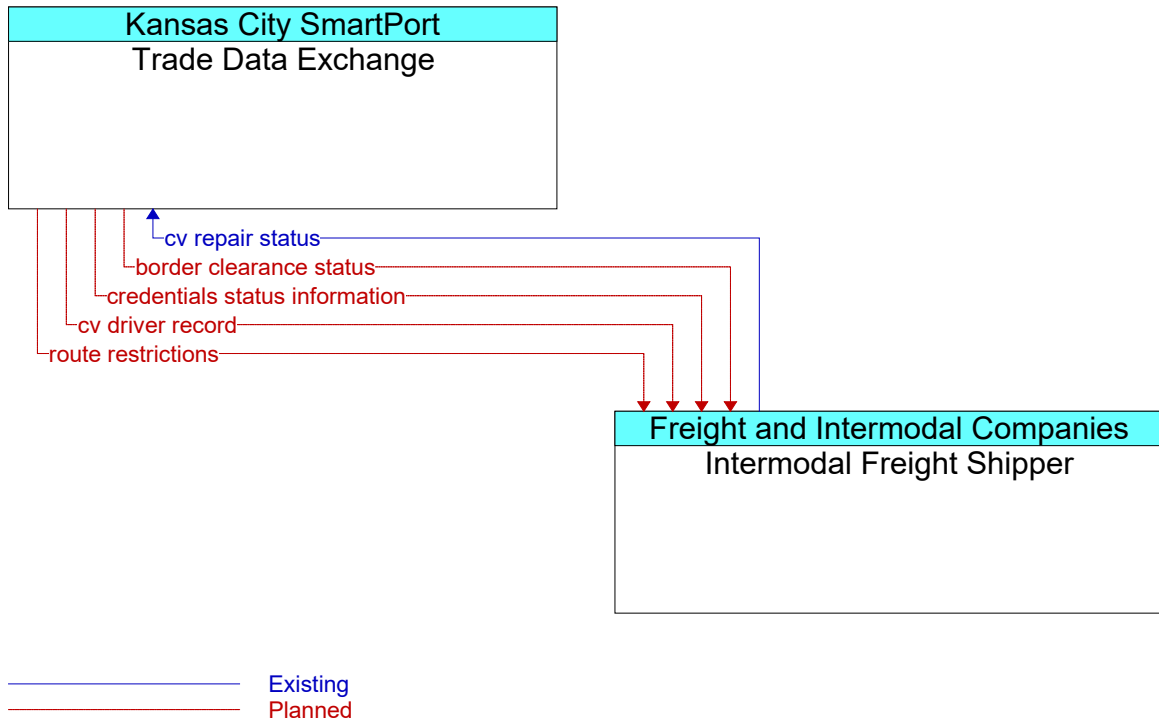
**Figure 418: Intermodal Freight Shipper - Missouri State Highway Patrol Dispatch Interface**



**Figure 419: Intermodal Freight Shipper - Private ISP Systems Interface**

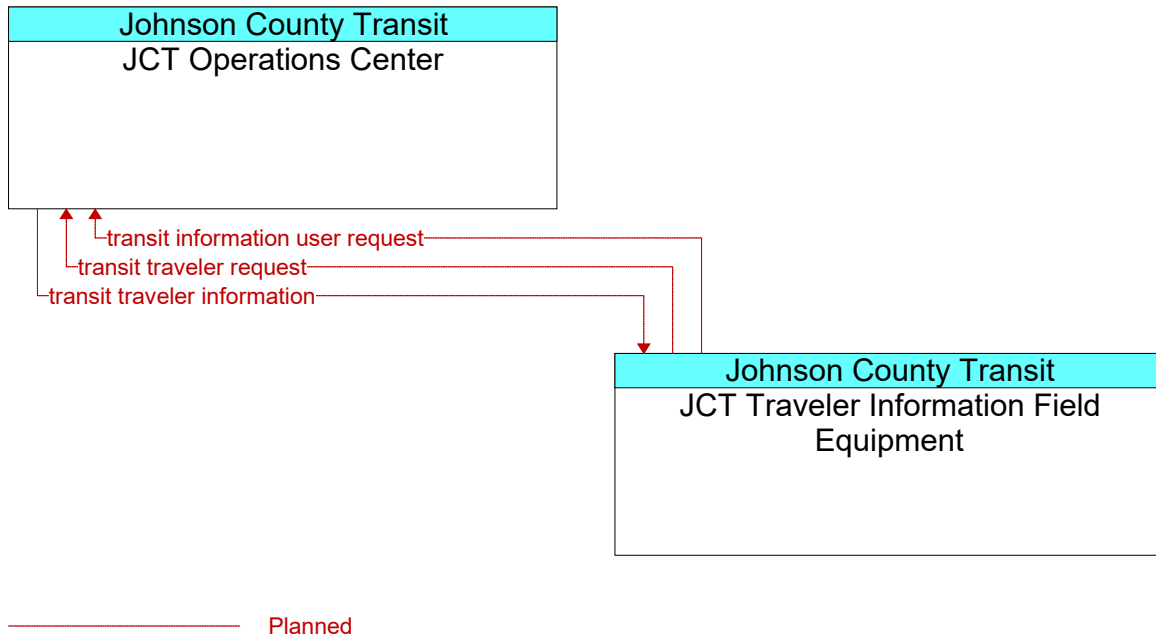


**Figure 420: Intermodal Freight Shipper - Private Trucking Companies Commercial Vehicles Interface**

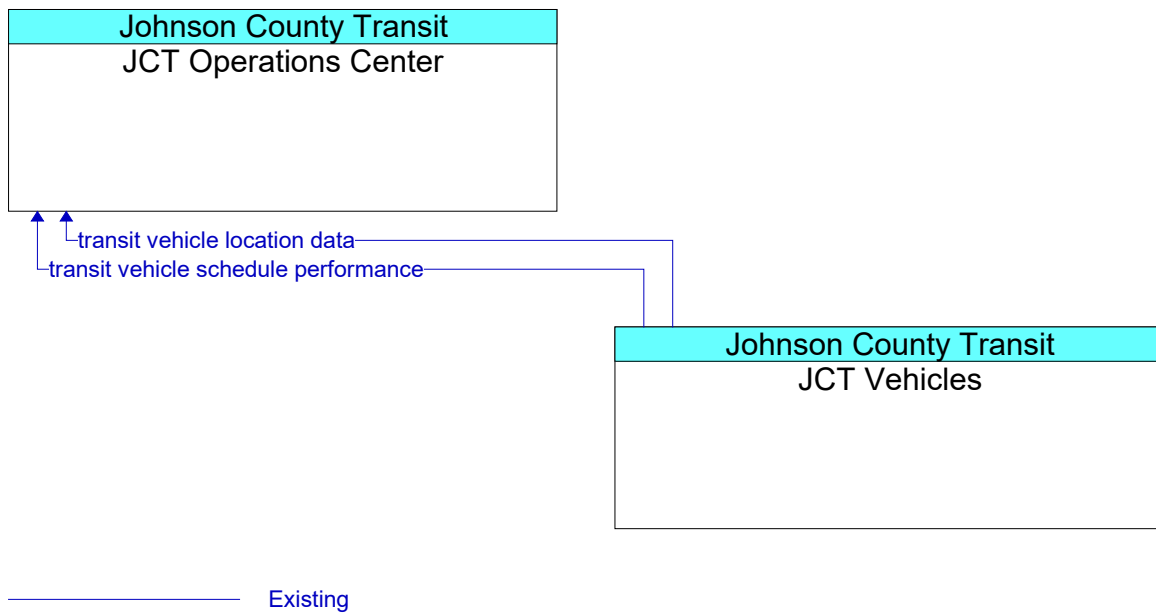


**Figure 421: Intermodal Freight Shipper - Trade Data Exchange Interface**

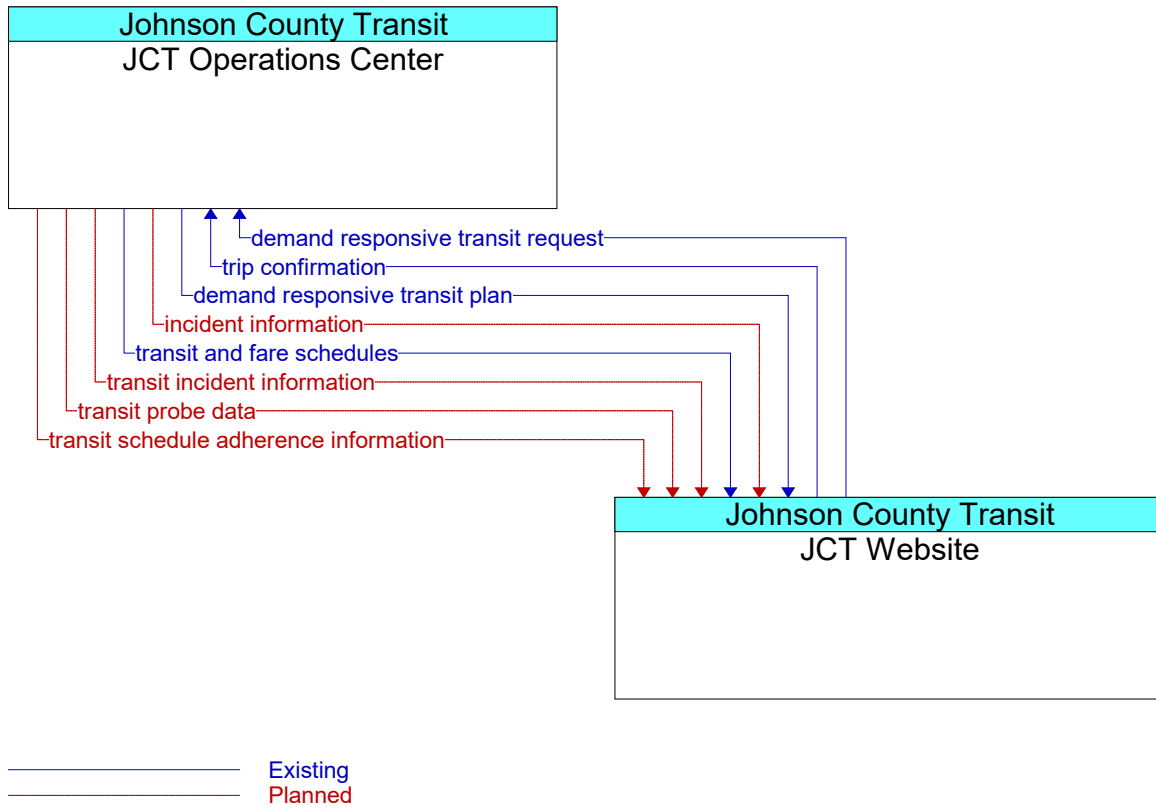




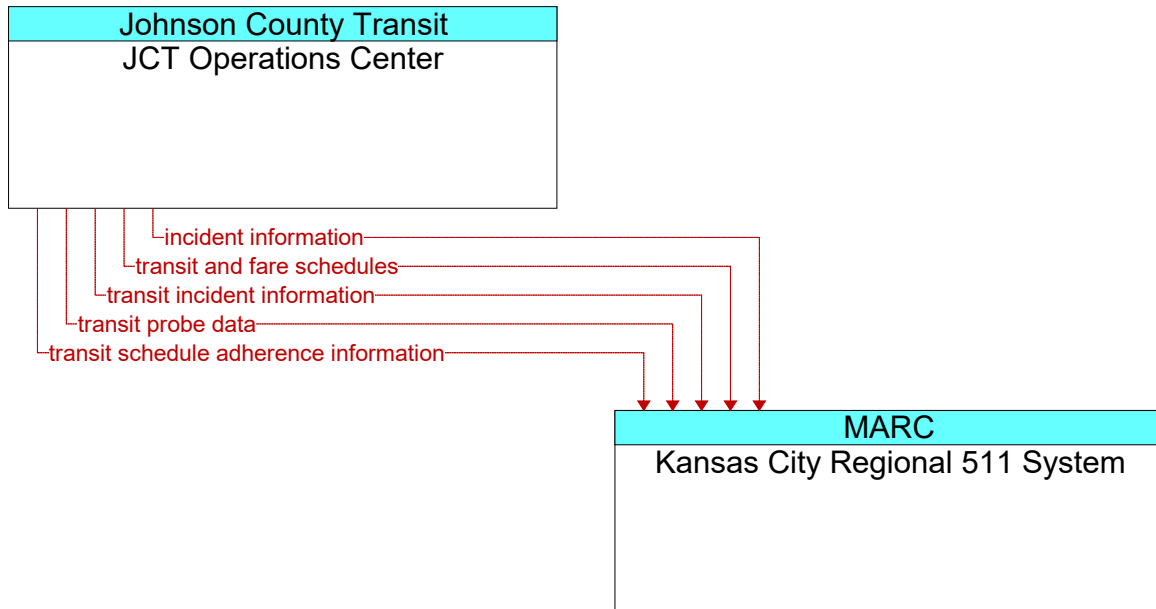
**Figure 422: JCT Operations Center - JCT Traveler Information Field Equipment Interface**



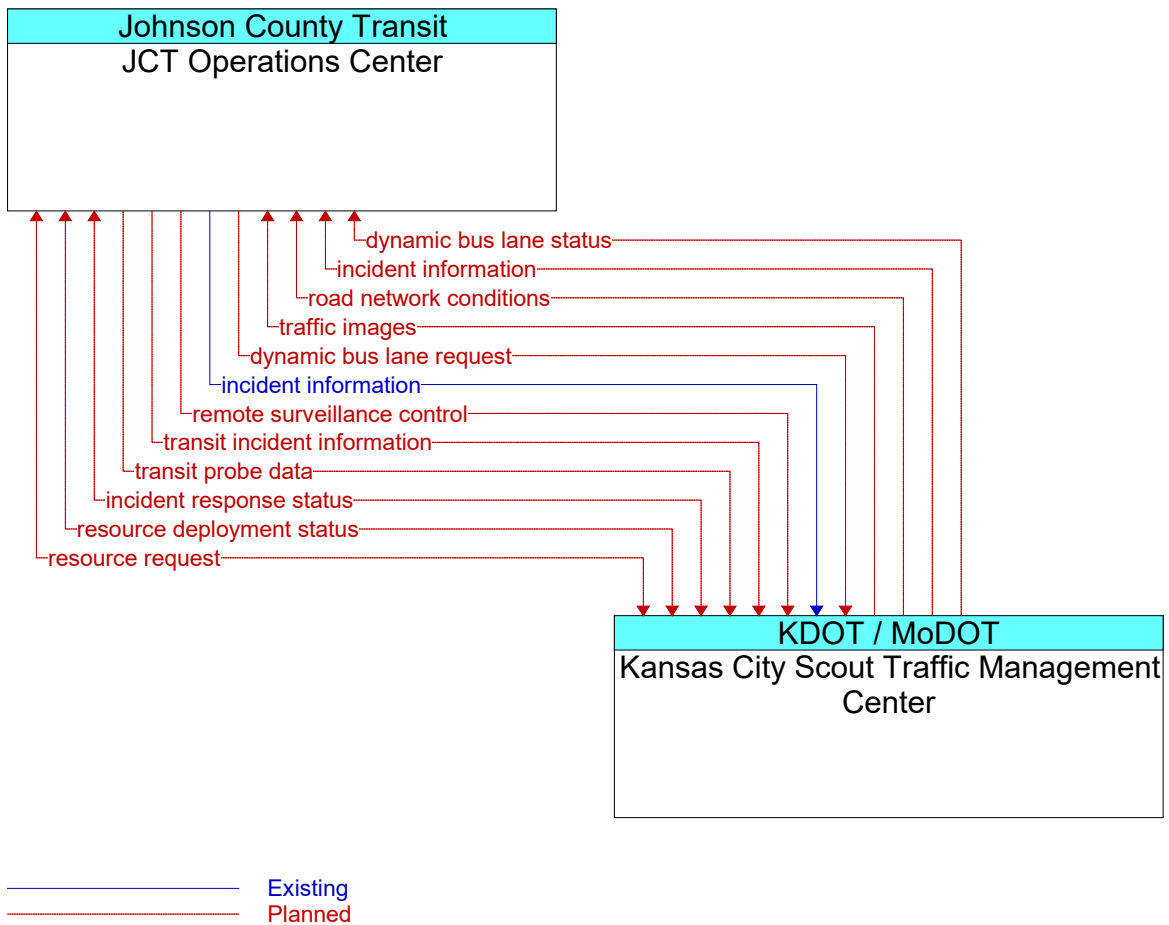
**Figure 423: JCT Operations Center - JCT Vehicles Interface**



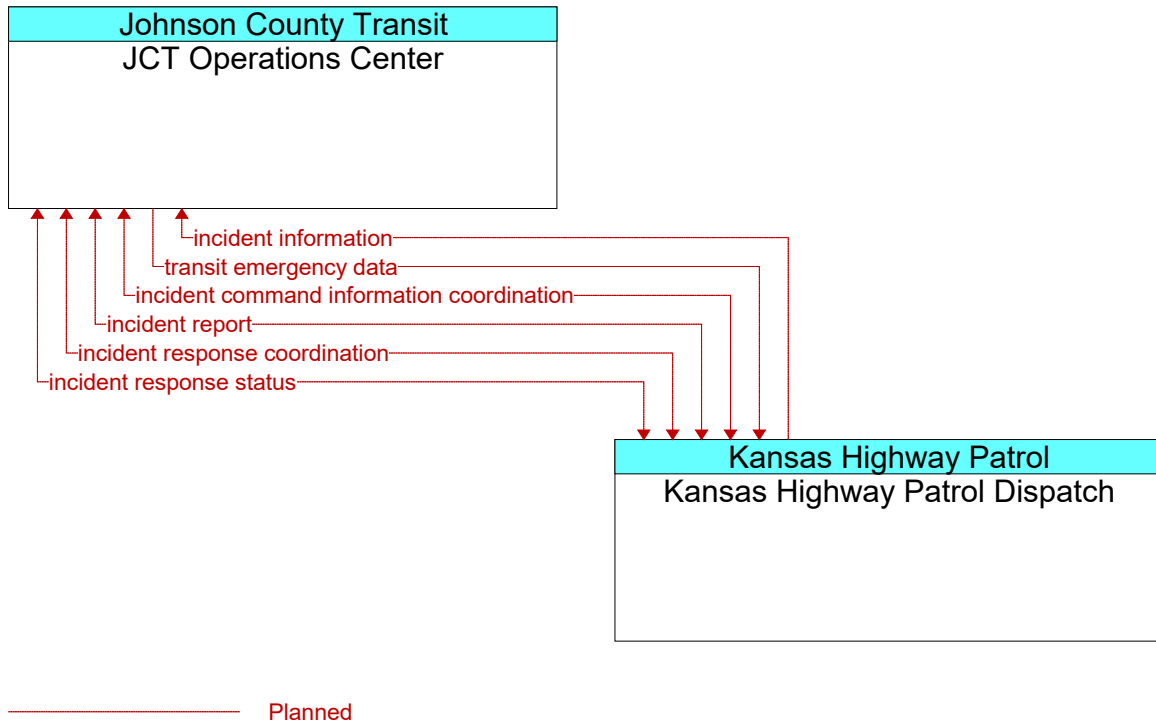
**Figure 424: JCT Operations Center - JCT Website Interface**



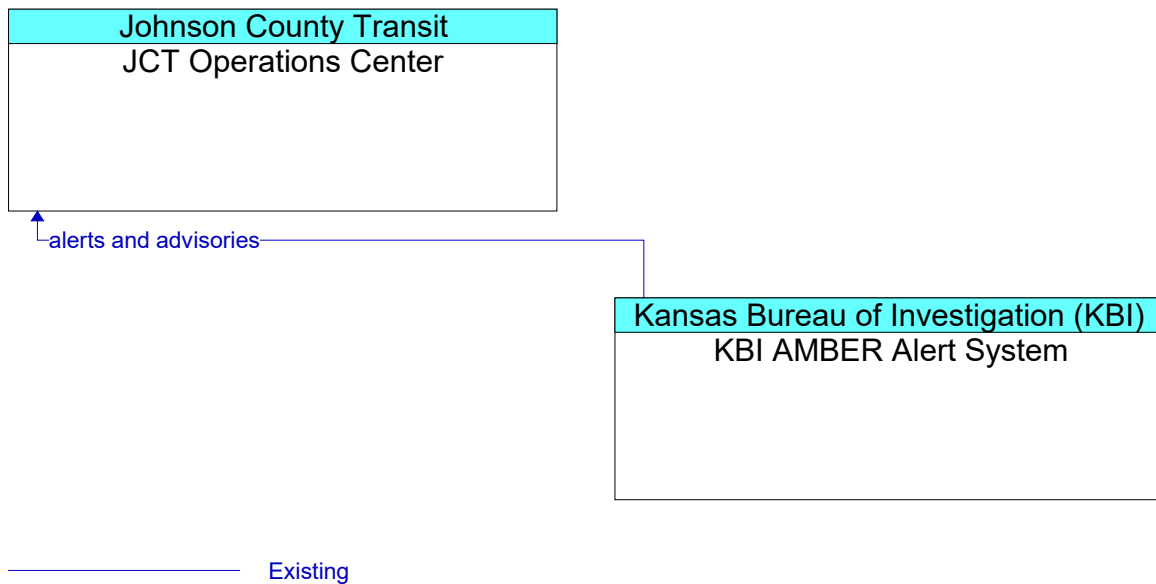
**Figure 425: JCT Operations Center - Kansas City Regional 511 System Interface**



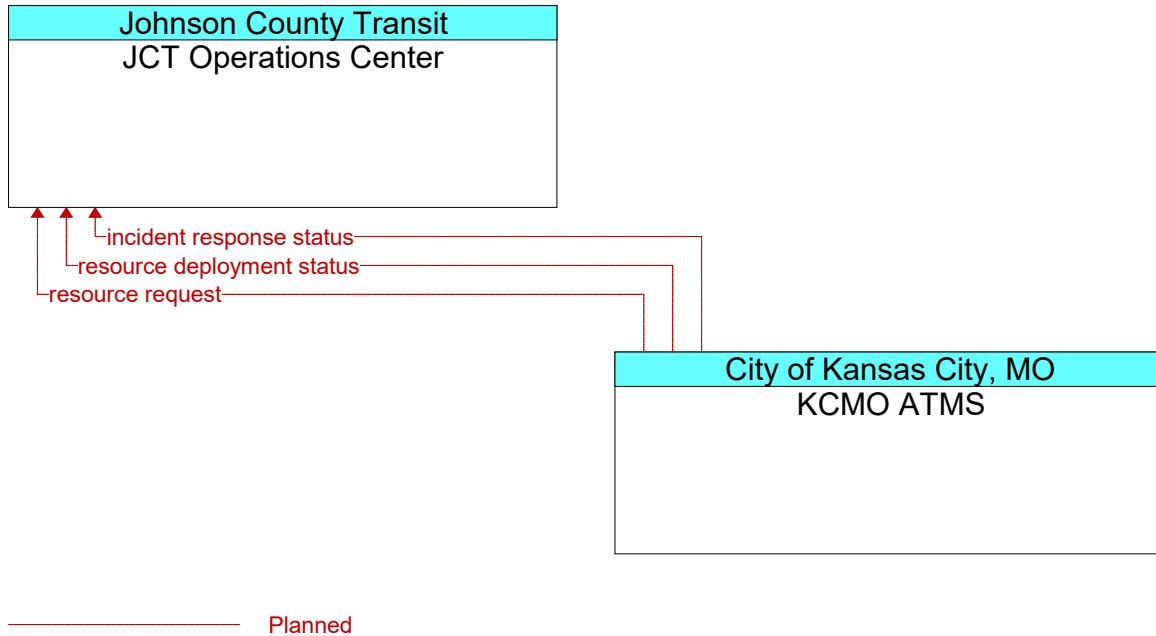
**Figure 426: JCT Operations Center - Kansas City Scout Traffic Management Center Interface**



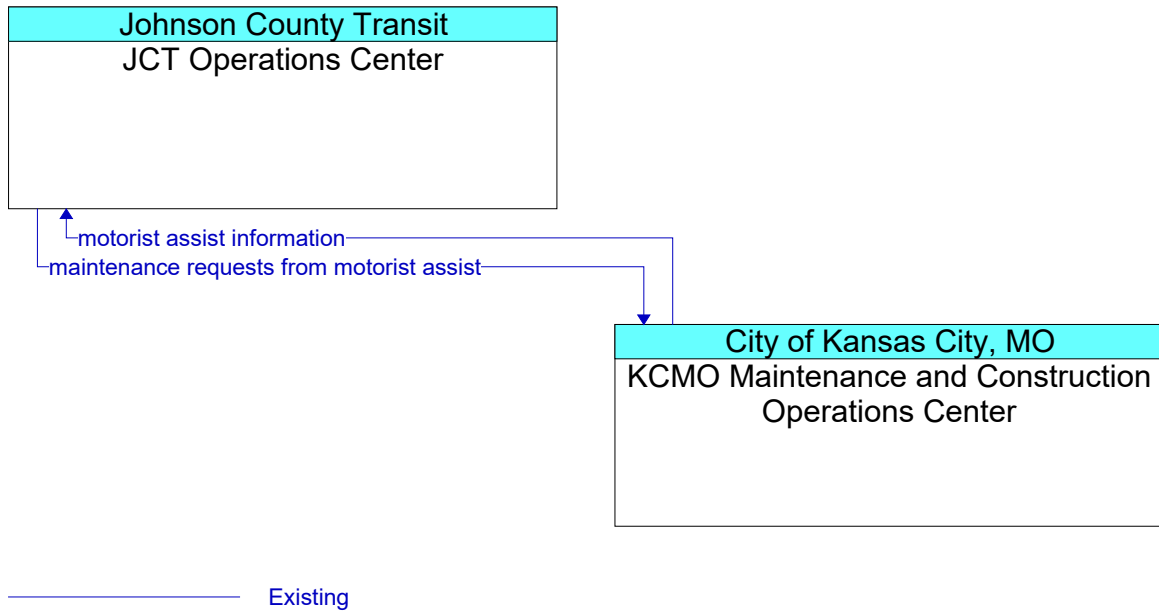
**Figure 427: JCT Operations Center - Kansas Highway Patrol Dispatch Interface**



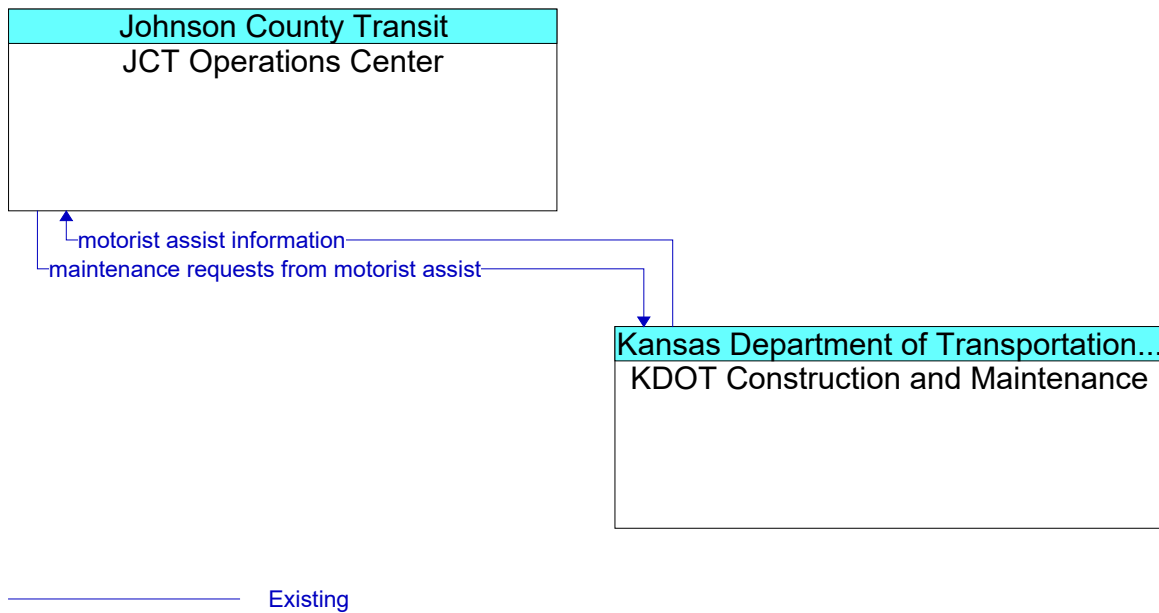
**Figure 428: JCT Operations Center - KBI AMBER Alert System Interface**



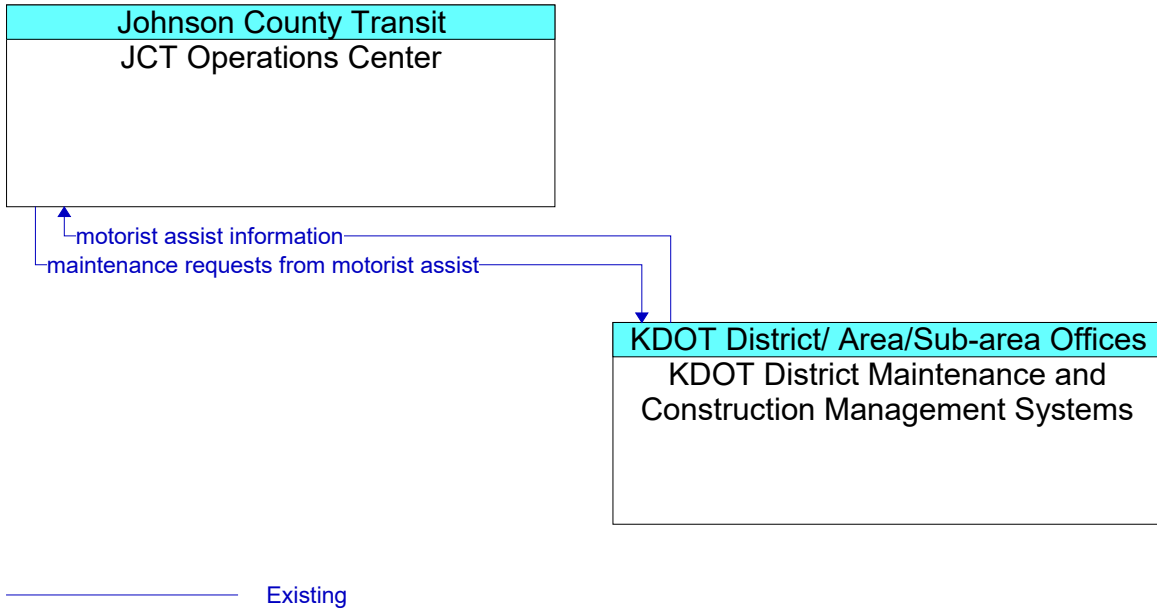
**Figure 429: JCT Operations Center - KCMO ATMS Interface**



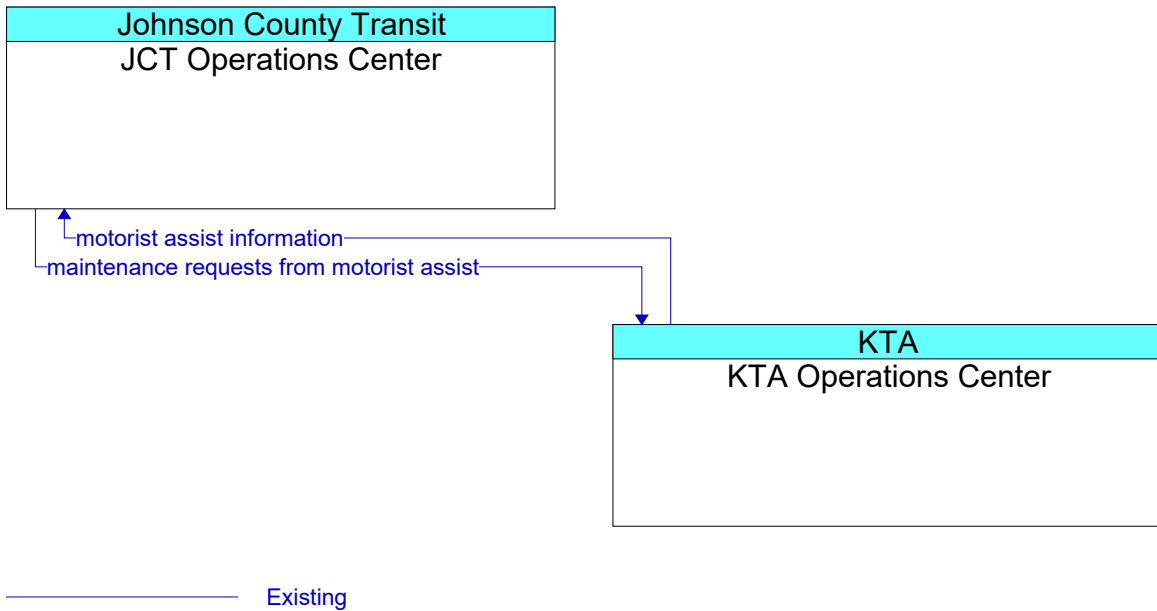
**Figure 430: JCT Operations Center - KCMO Maintenance and Construction Operations Center Interface**



**Figure 431: JCT Operations Center - KDOT Construction and Maintenance Interface**

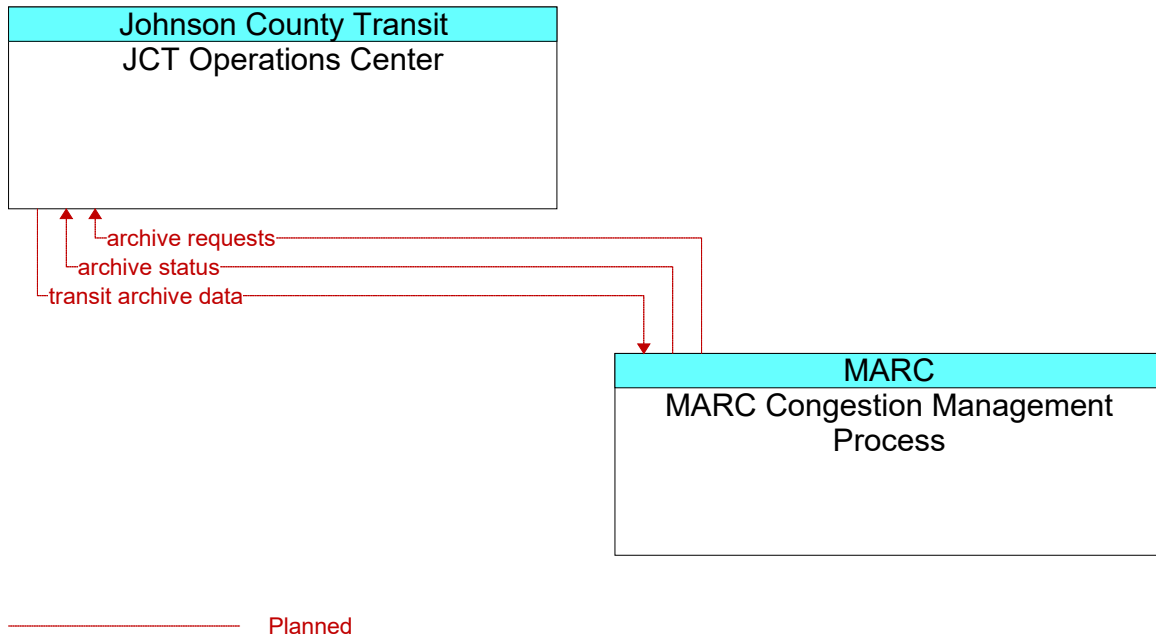


**Figure 432: JCT Operations Center - KDOT District Maintenance and Construction Management Systems Interface**

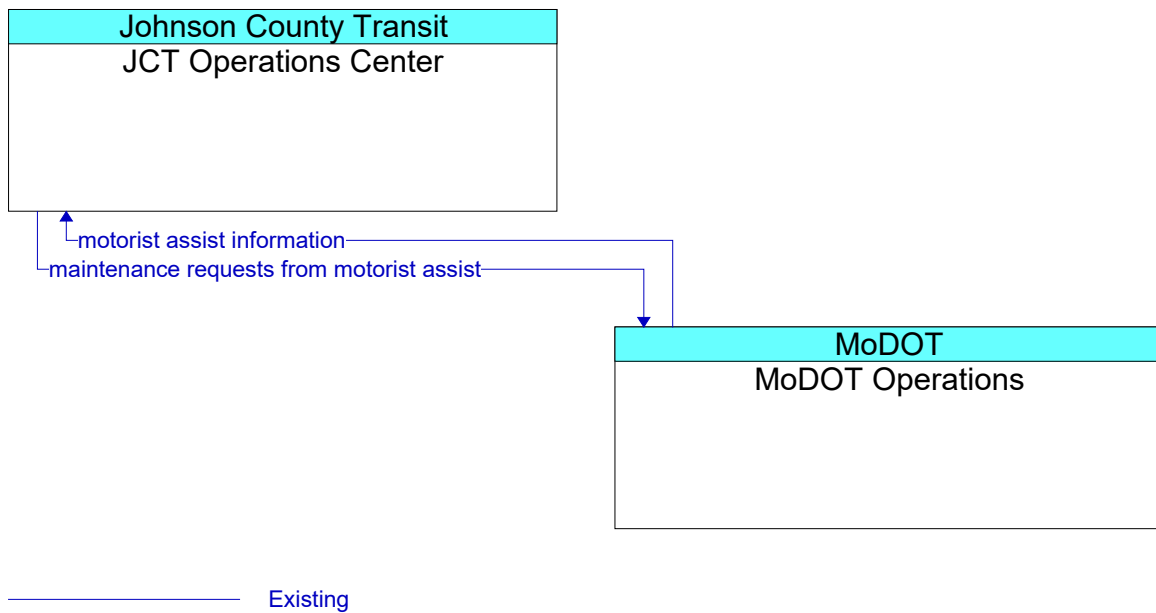


**Figure 433: JCT Operations Center - KTA Operations Center Interface**

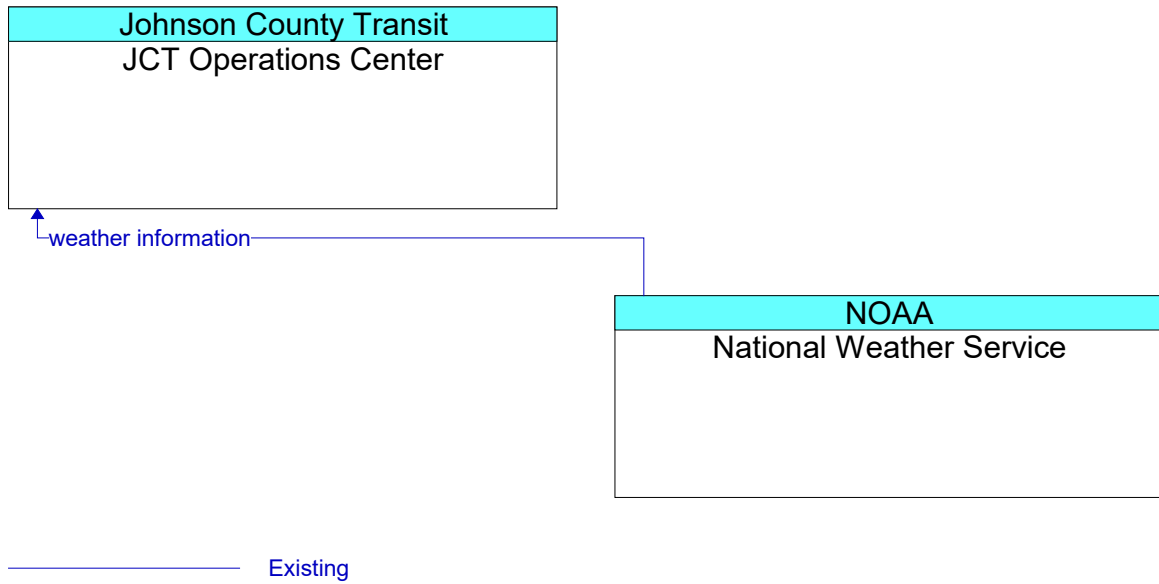




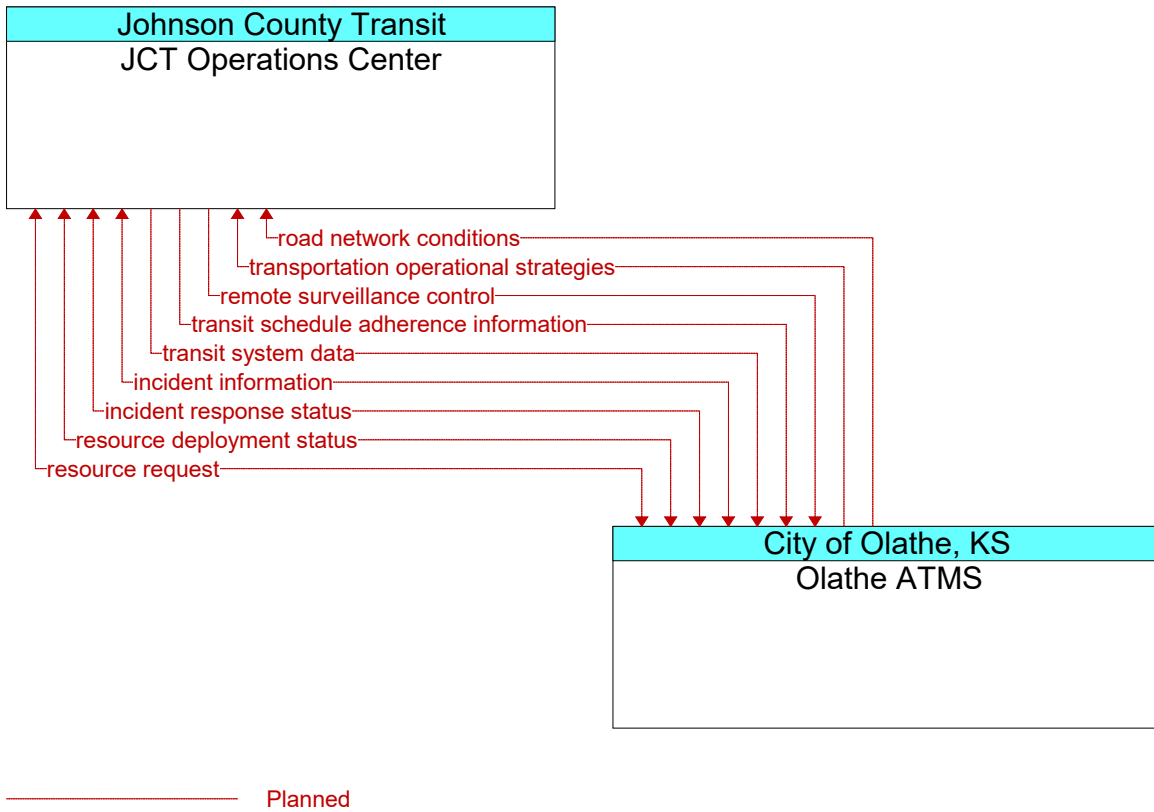
**Figure 434: JCT Operations Center - MARC Congestion Management Process Interface**



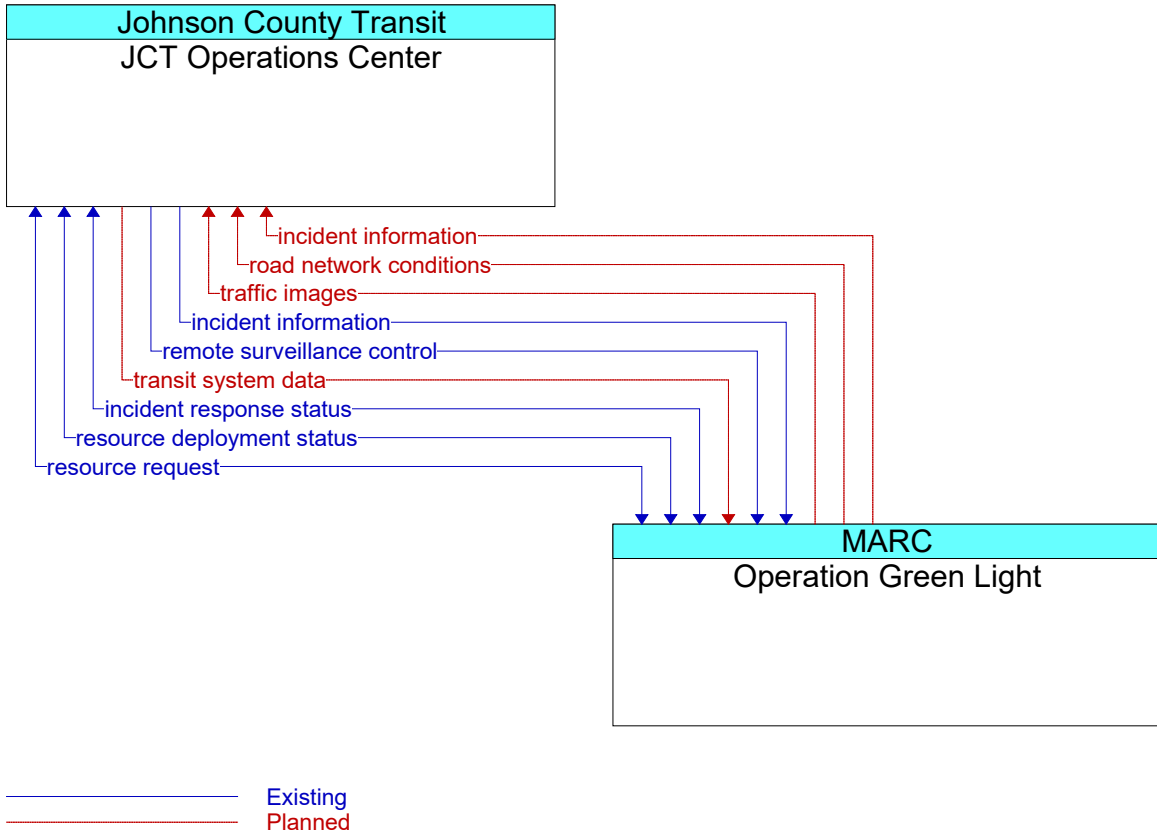
**Figure 435: JCT Operations Center - MoDOT Operations Interface**



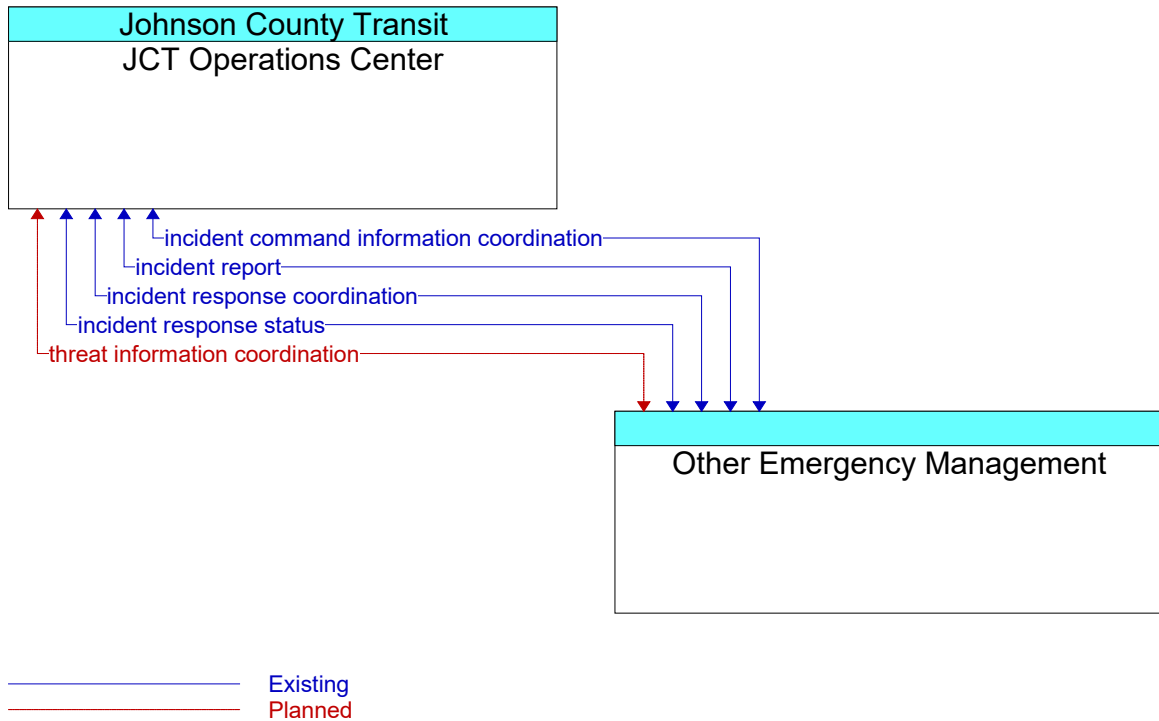
**Figure 436: JCT Operations Center - National Weather Service Interface**



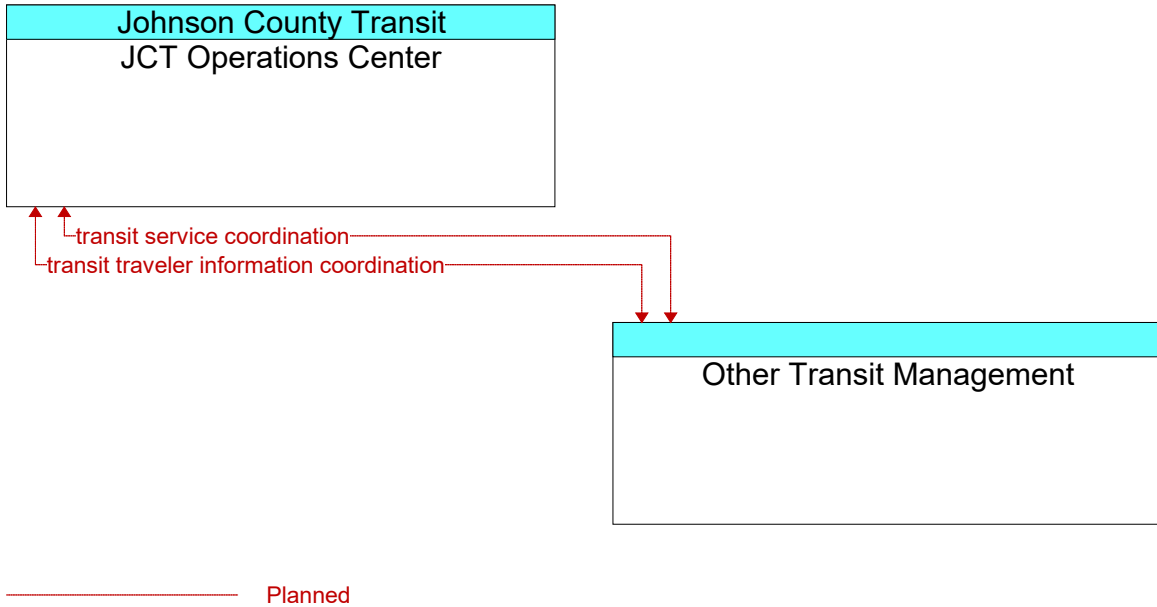
**Figure 437: JCT Operations Center - Olathe ATMS Interface**



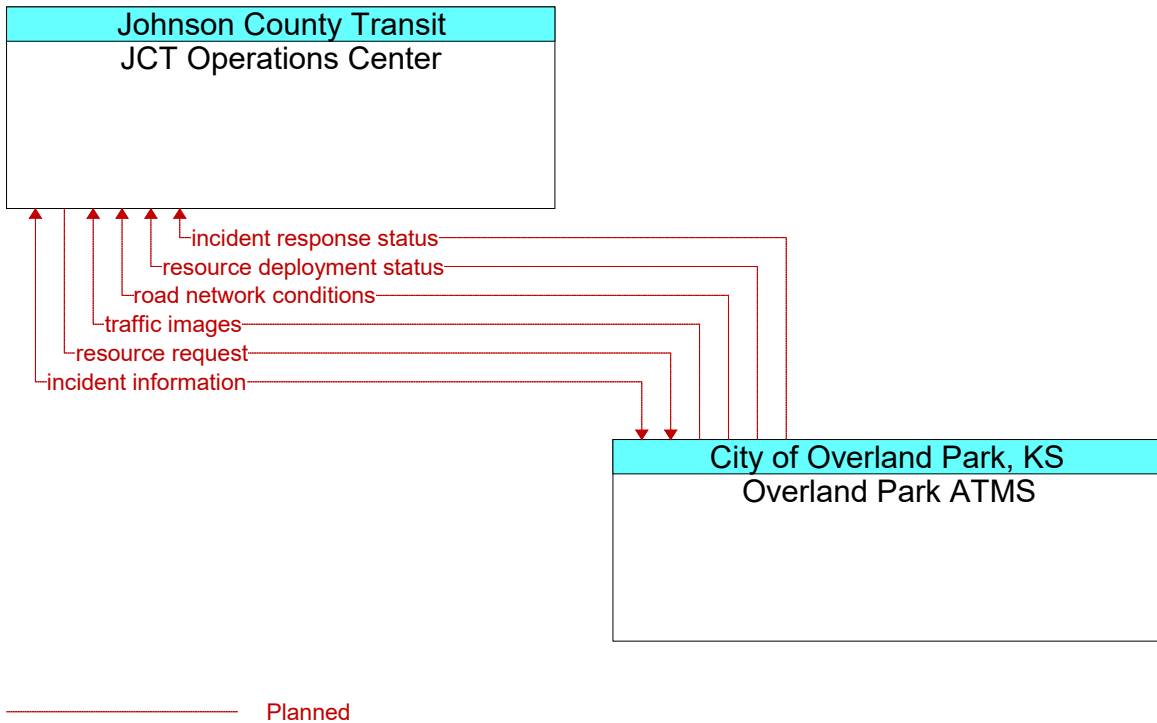
**Figure 438: JCT Operations Center - Operation Green Light Interface**



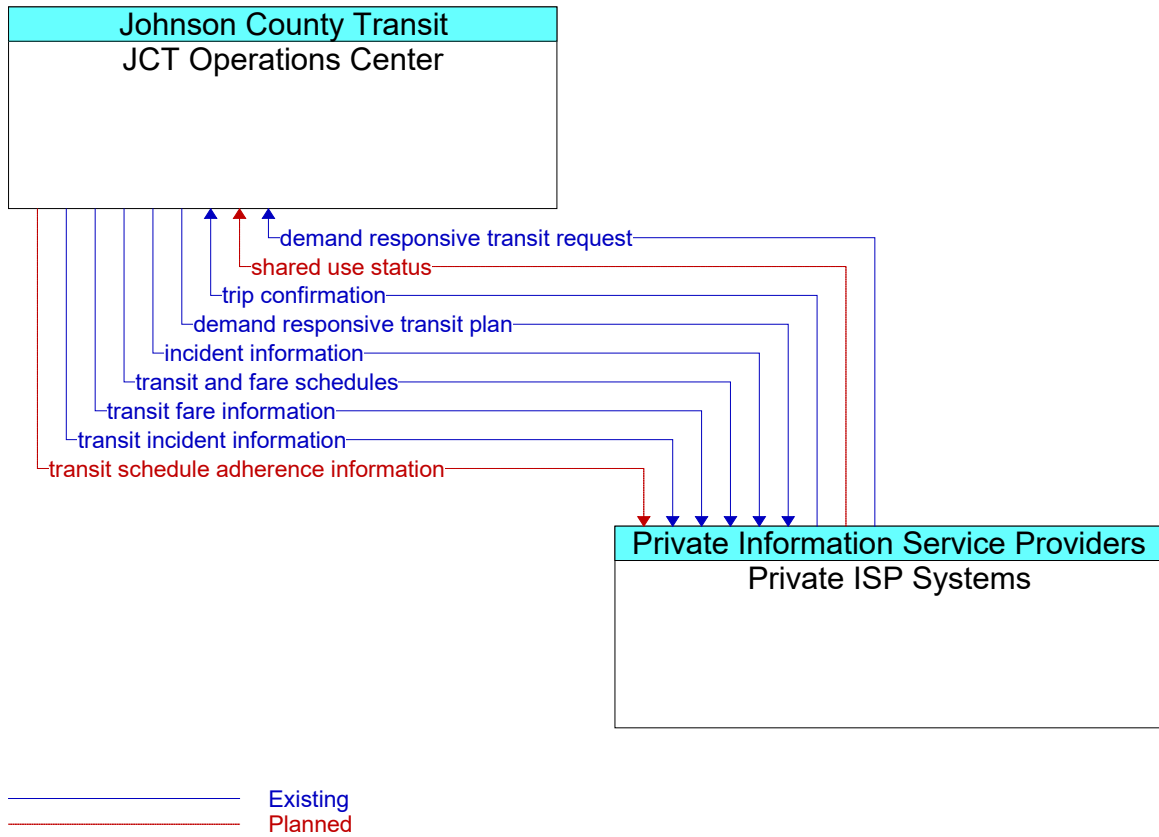
**Figure 439: JCT Operations Center - Other Emergency Management Interface**



**Figure 440: JCT Operations Center - Other Transit Management Interface**

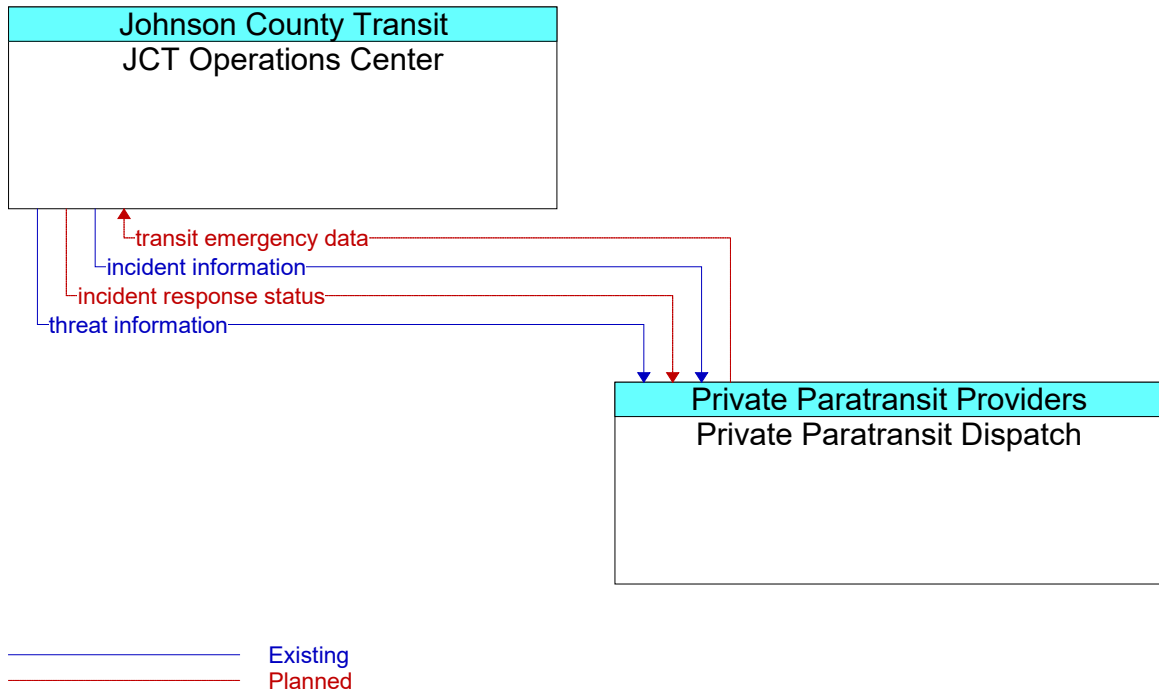


**Figure 441: JCT Operations Center - Overland Park ATMS Interface**

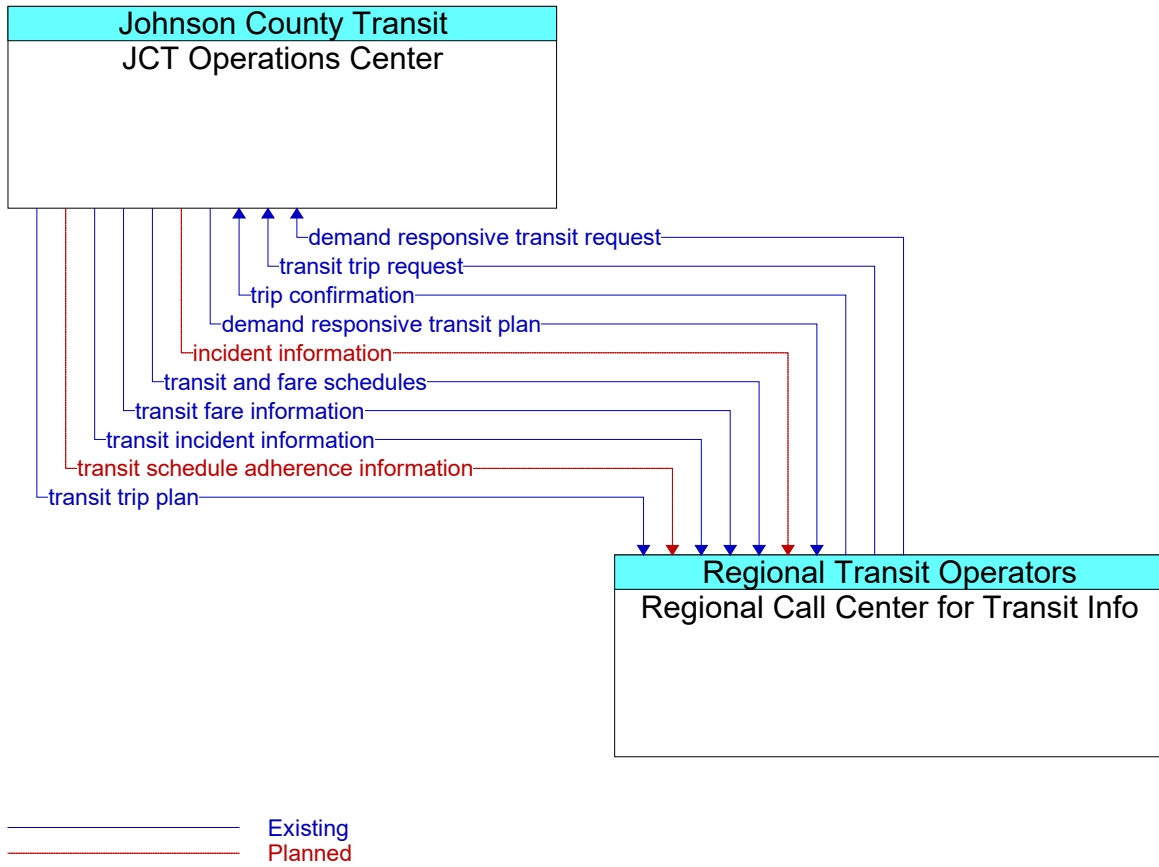


**Figure 442: JCT Operations Center - Private ISP Systems Interface**

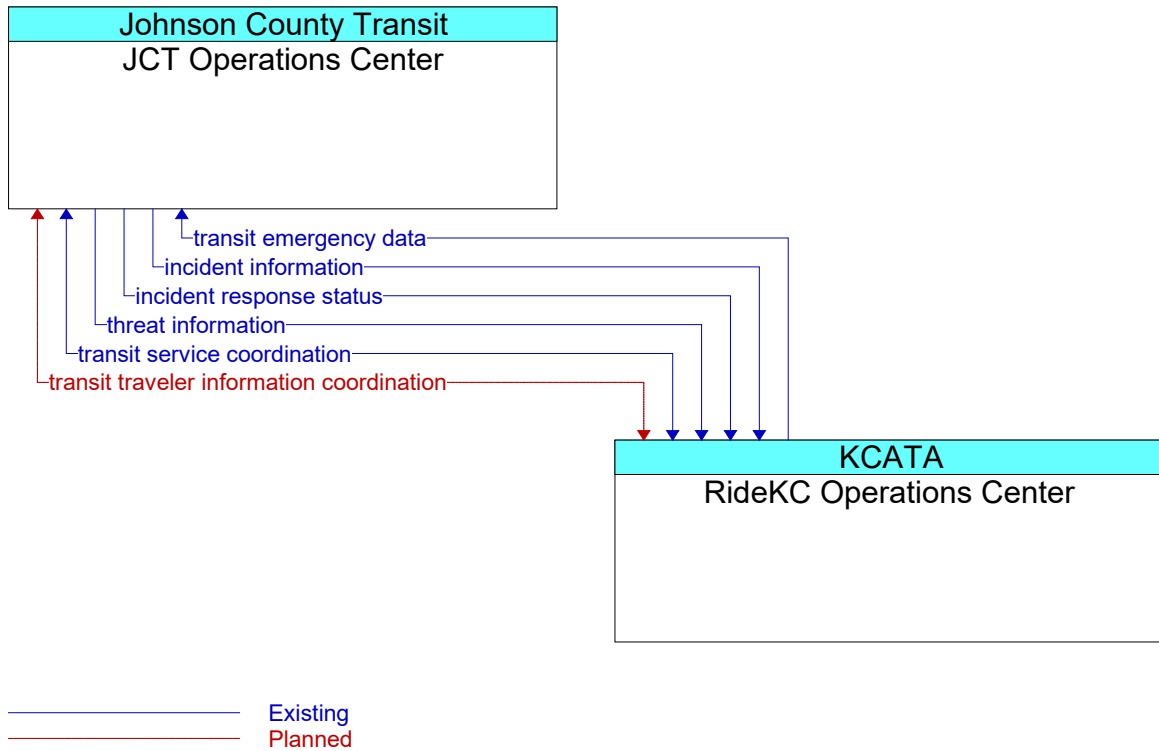




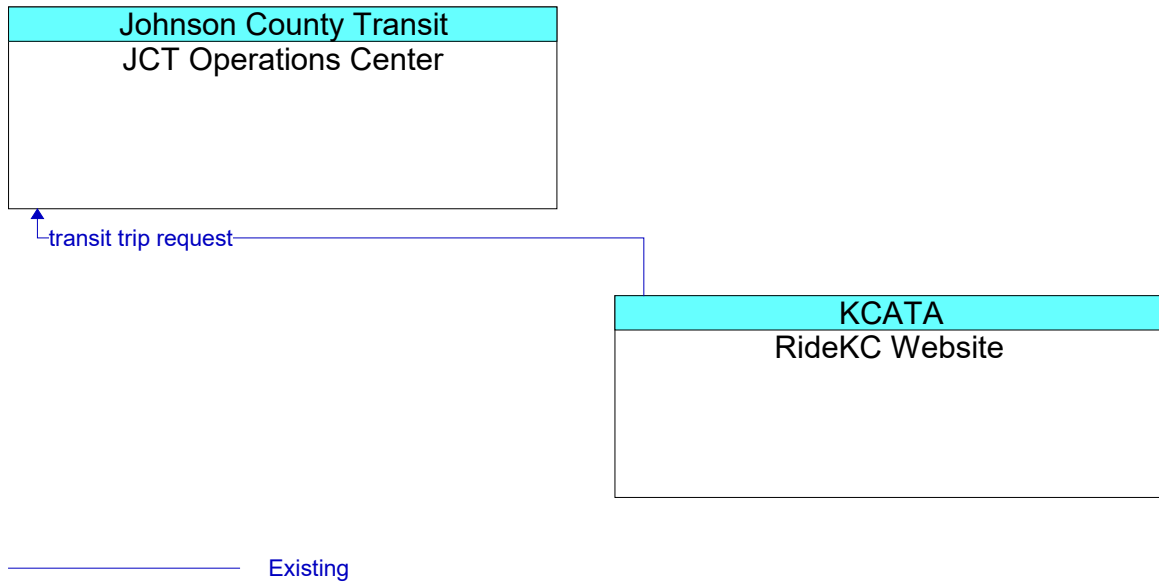
**Figure 443: JCT Operations Center - Private Paratransit Dispatch Interface**



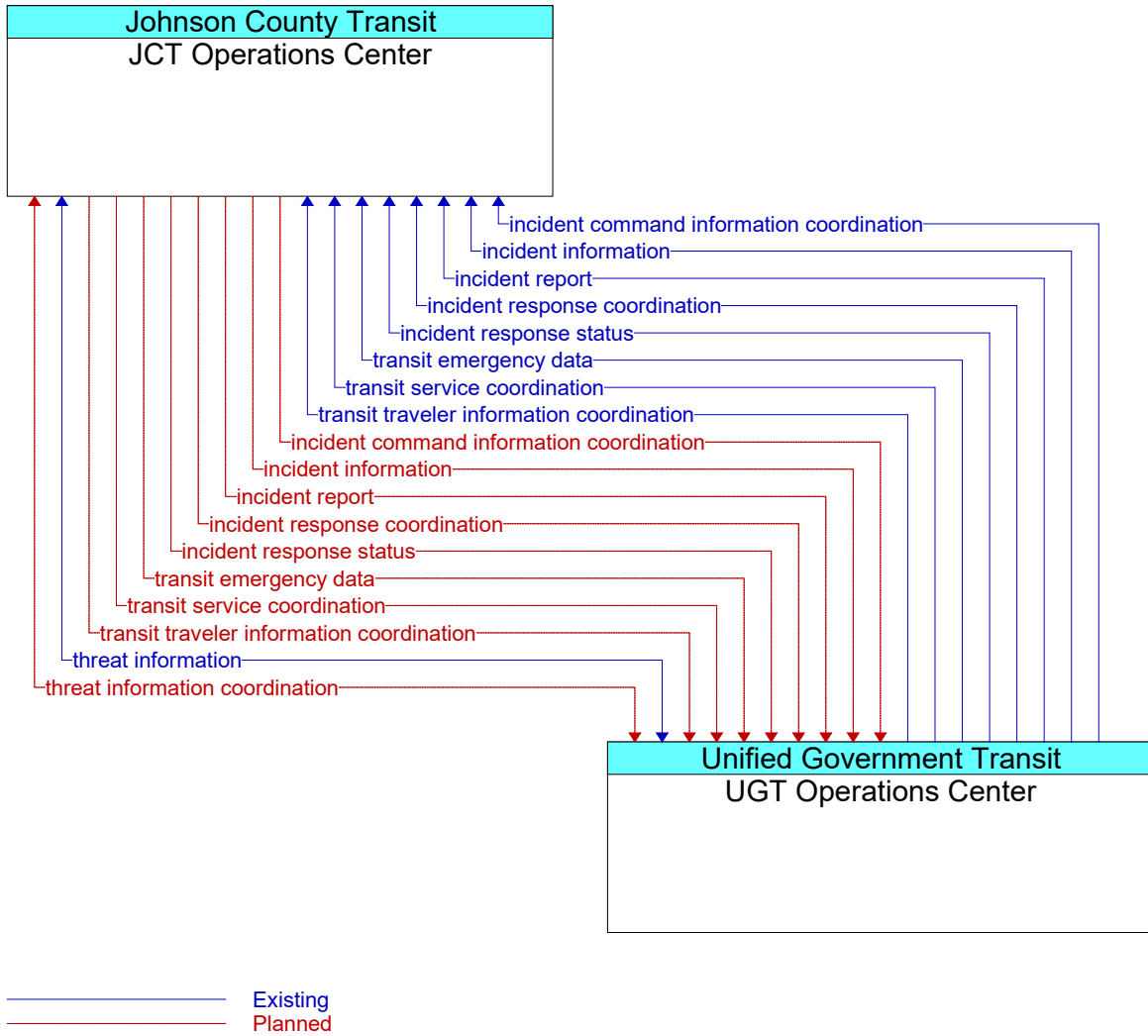
**Figure 444: JCT Operations Center - Regional Call Center for Transit Info Interface**



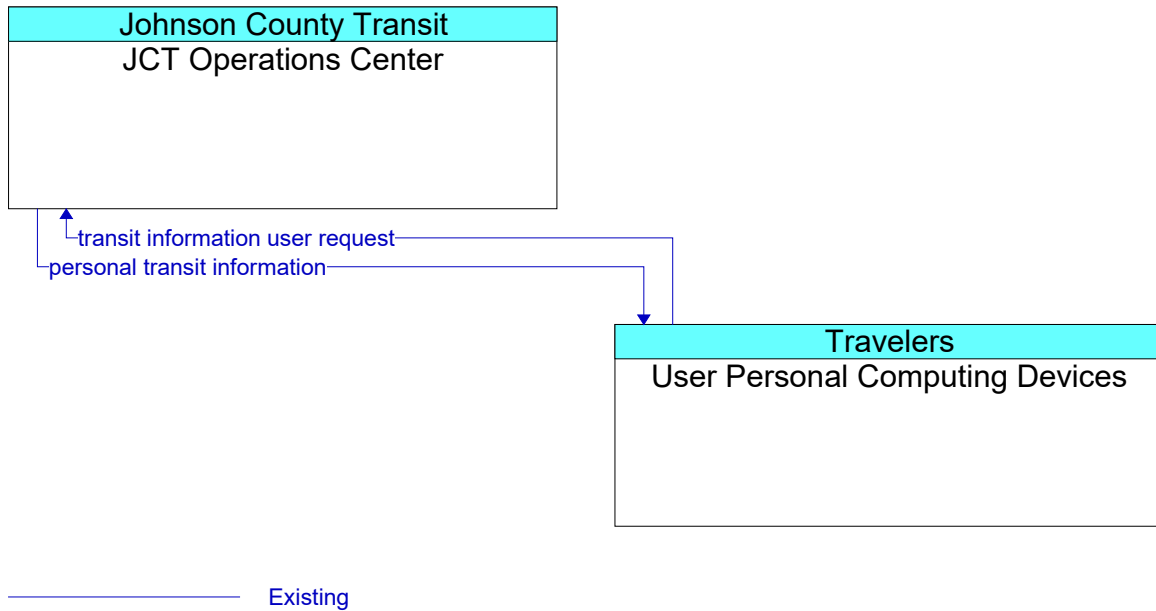
**Figure 445: JCT Operations Center - RideKC Operations Center Interface**



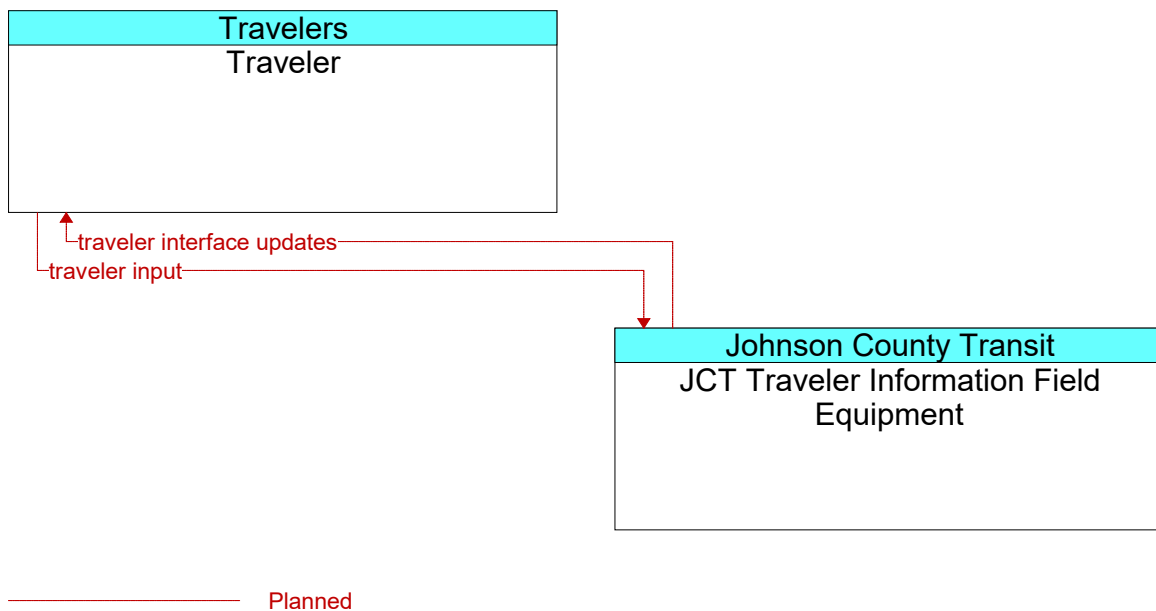
**Figure 446: JCT Operations Center - RideKC Website Interface**



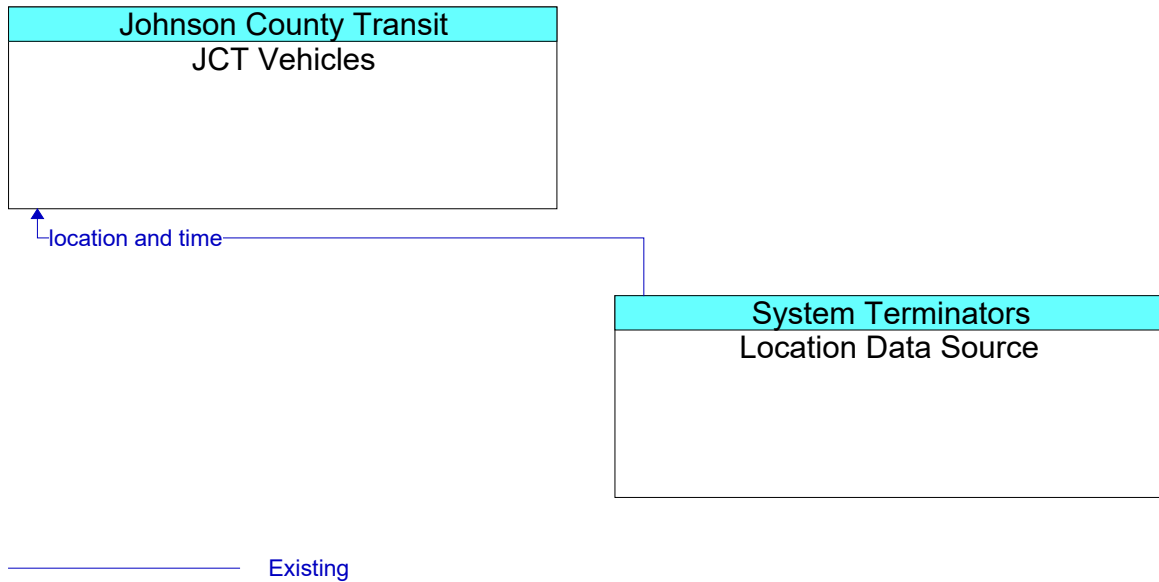
**Figure 447: JCT Operations Center - UGT Operations Center Interface**



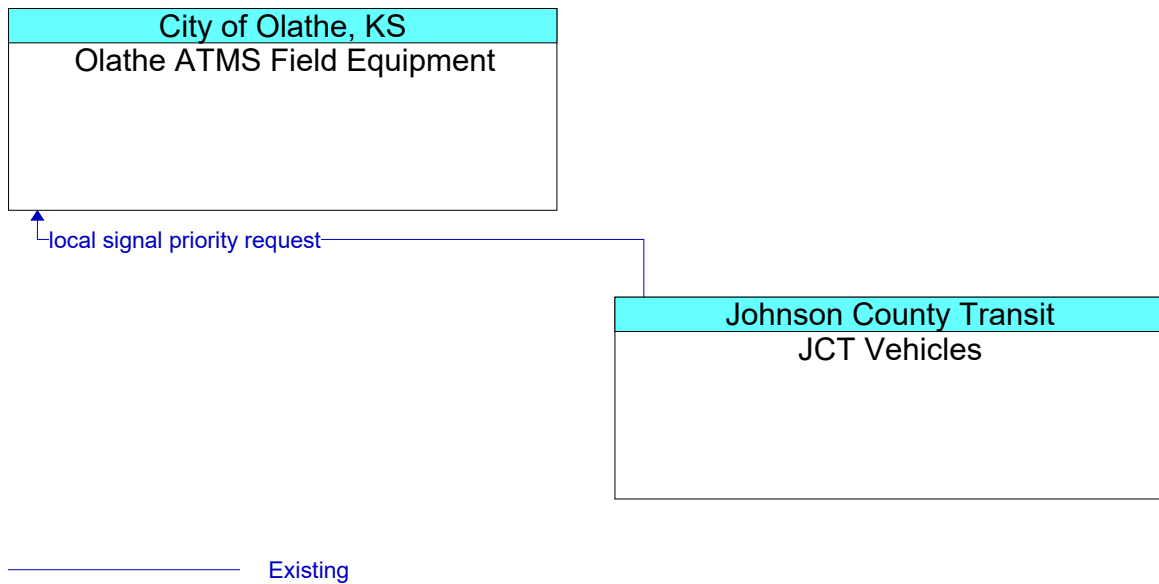
**Figure 448: JCT Operations Center - User Personal Computing Devices Interface**



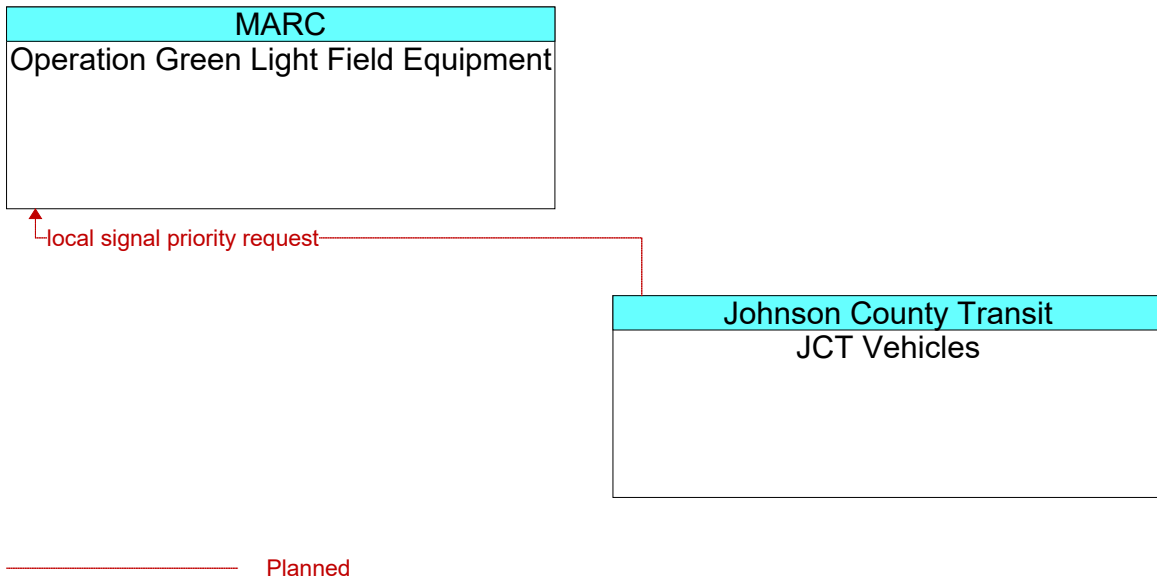
**Figure 449: JCT Traveler Information Field Equipment - Traveler Interface**



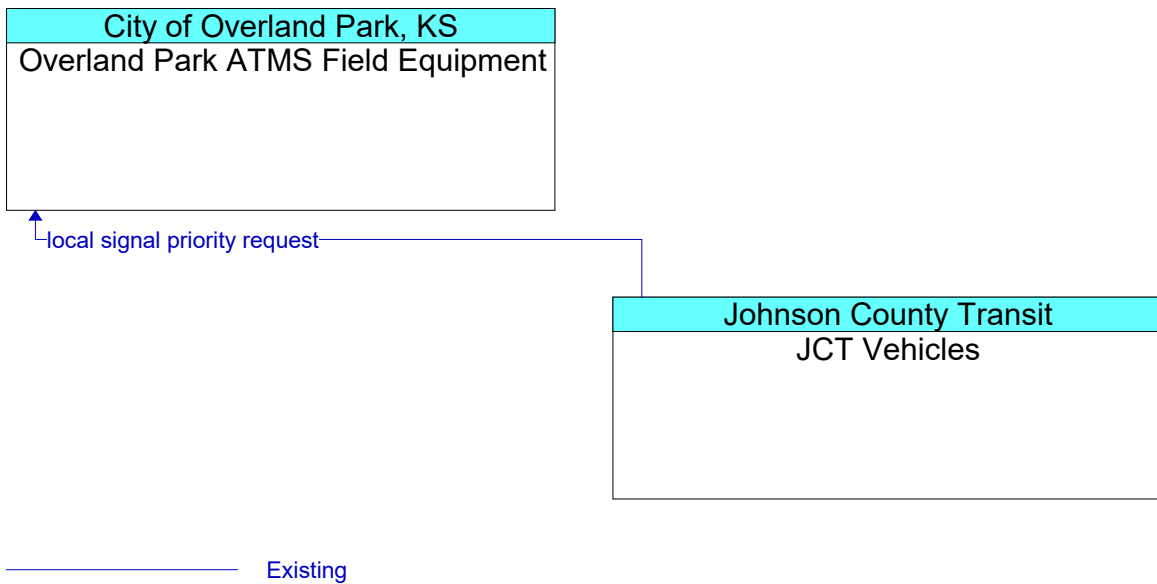
**Figure 450: JCT Vehicles - Location Data Source Interface**



**Figure 451: JCT Vehicles - Olathe ATMS Field Equipment Interface**

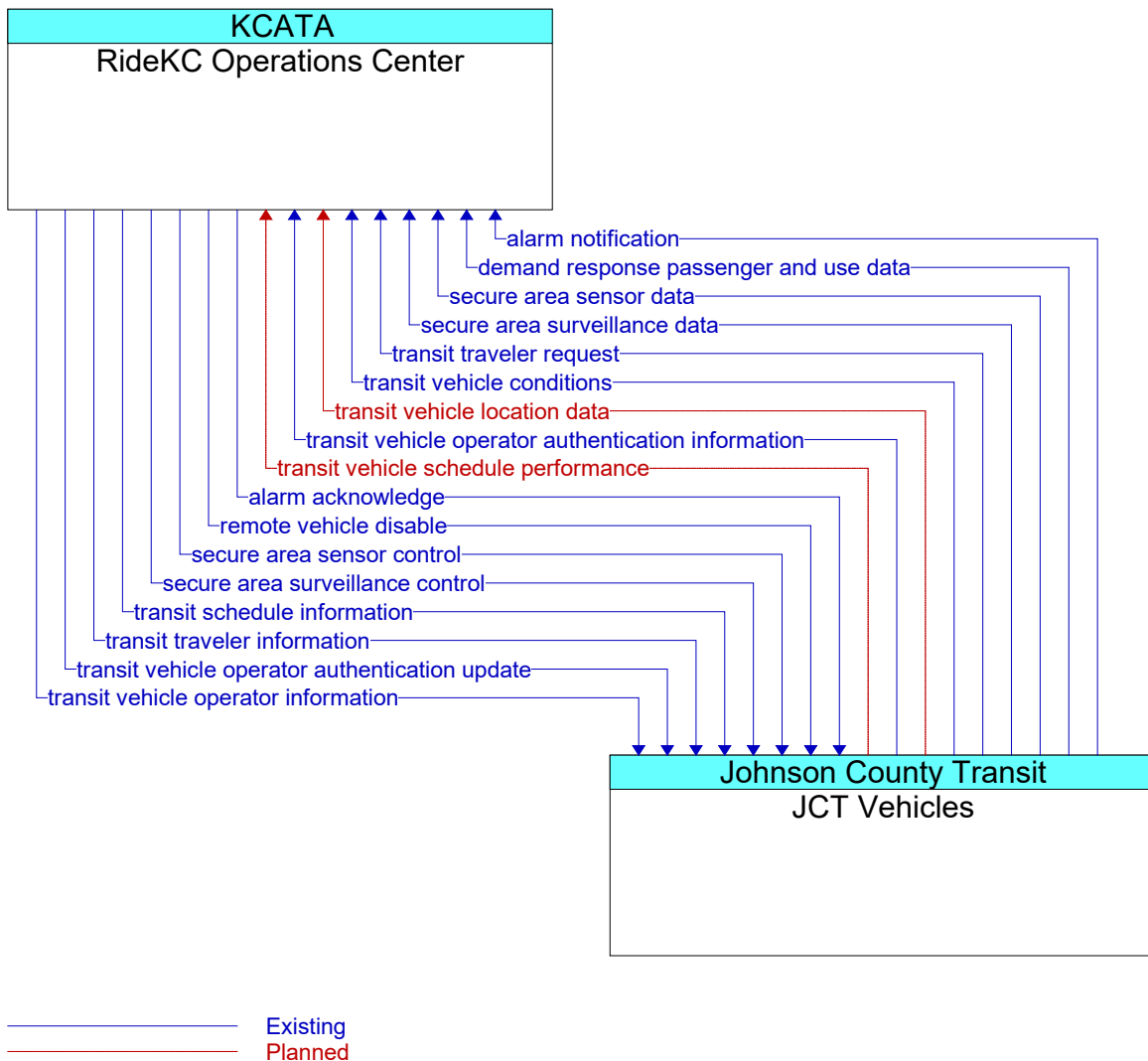


**Figure 452: JCT Vehicles - Operation Green Light Field Equipment Interface**

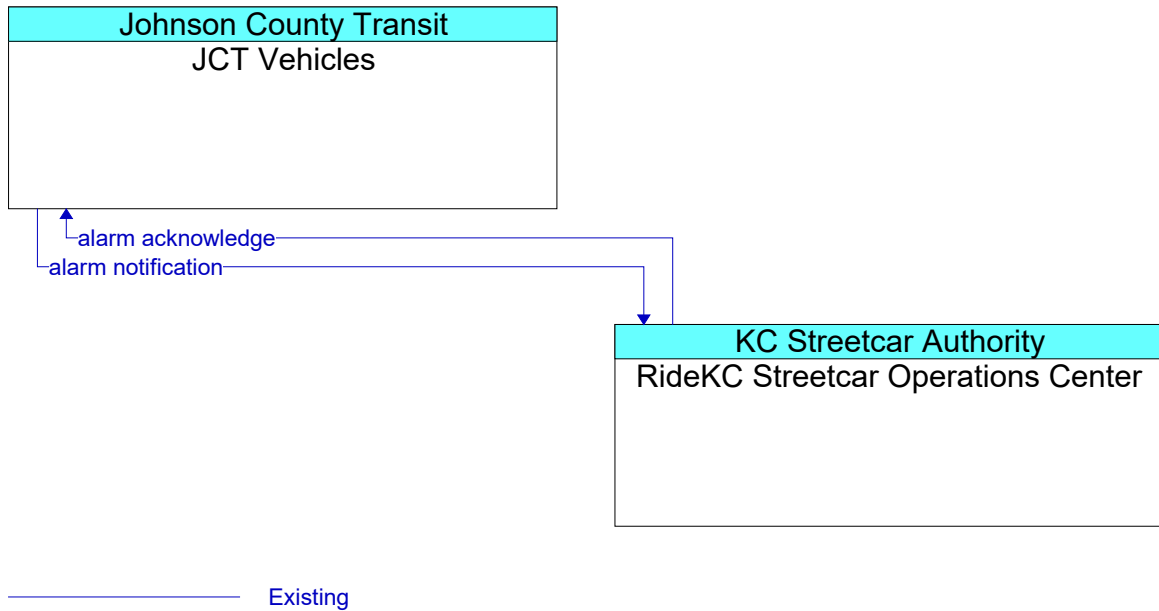


**Figure 453: JCT Vehicles - Overland Park ATMS Field Equipment Interface**

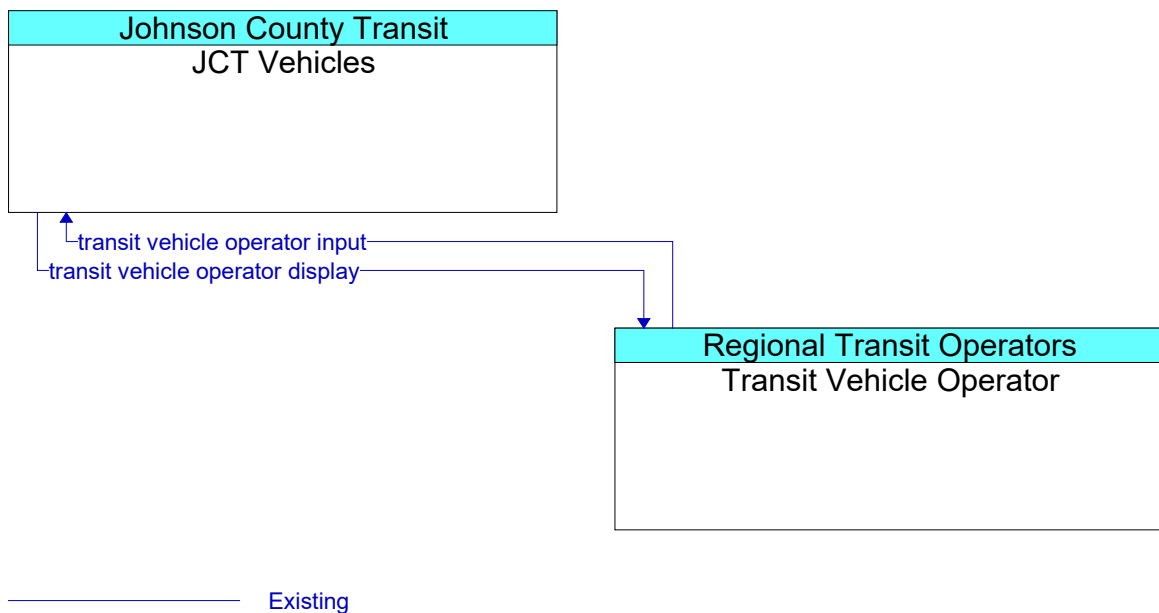




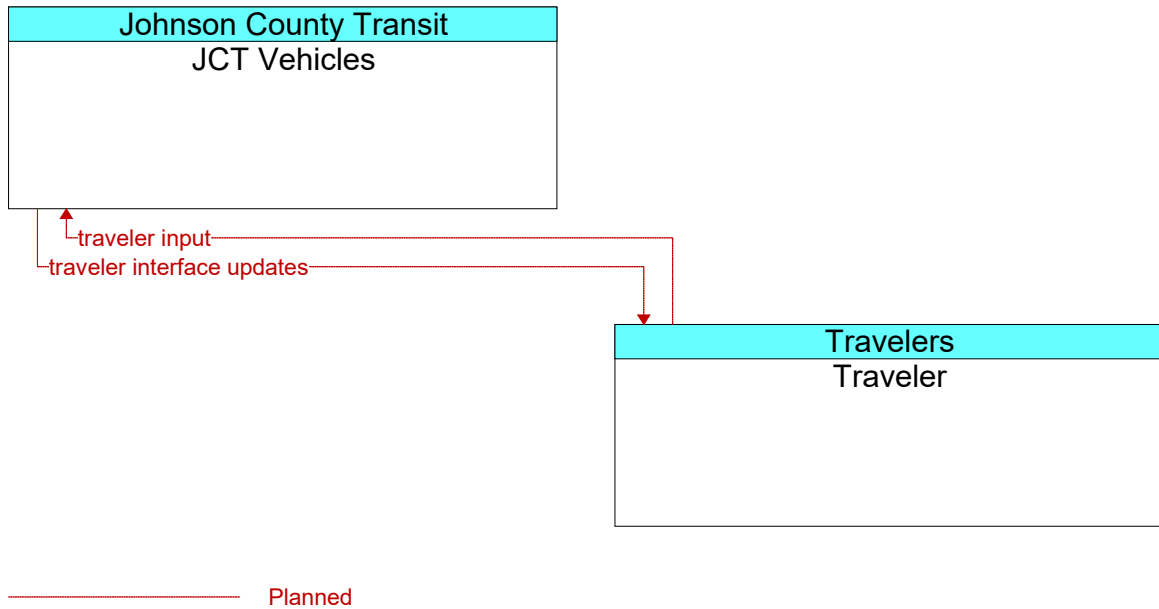
**Figure 454: JCT Vehicles - RideKC Operations Center Interface**



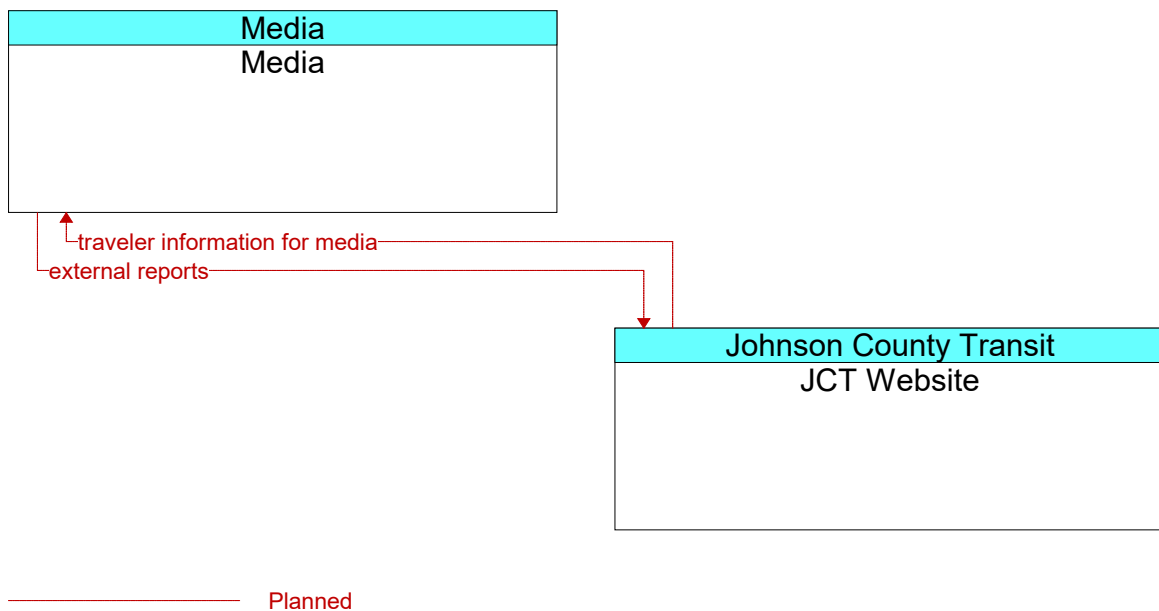
**Figure 455: JCT Vehicles - RideKC Streetcar Operations Center Interface**



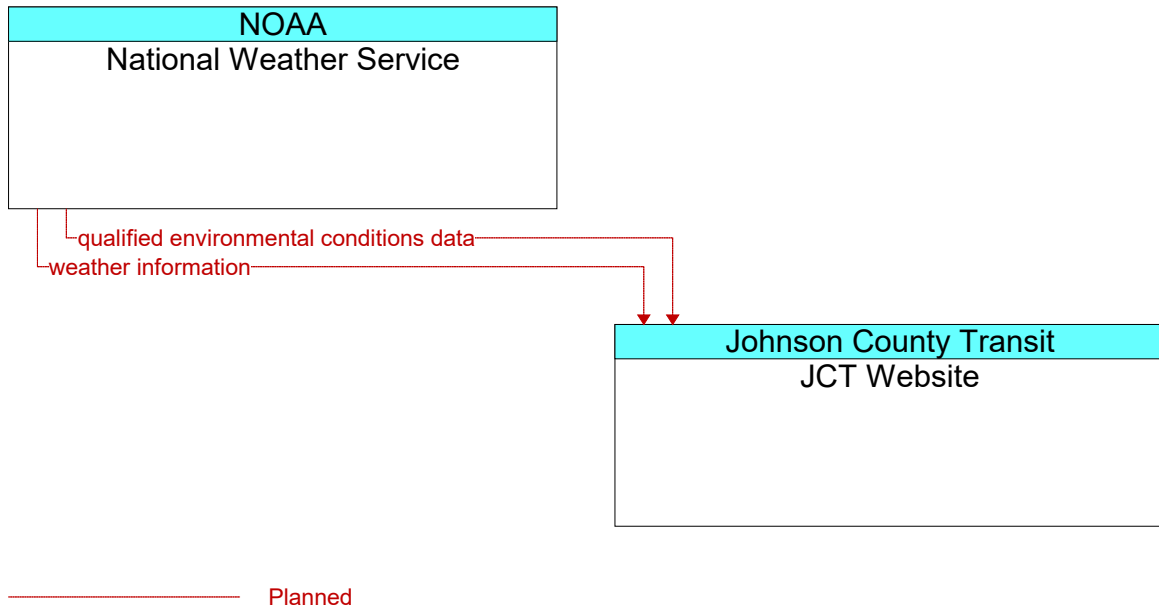
**Figure 456: JCT Vehicles - Transit Vehicle Operator Interface**



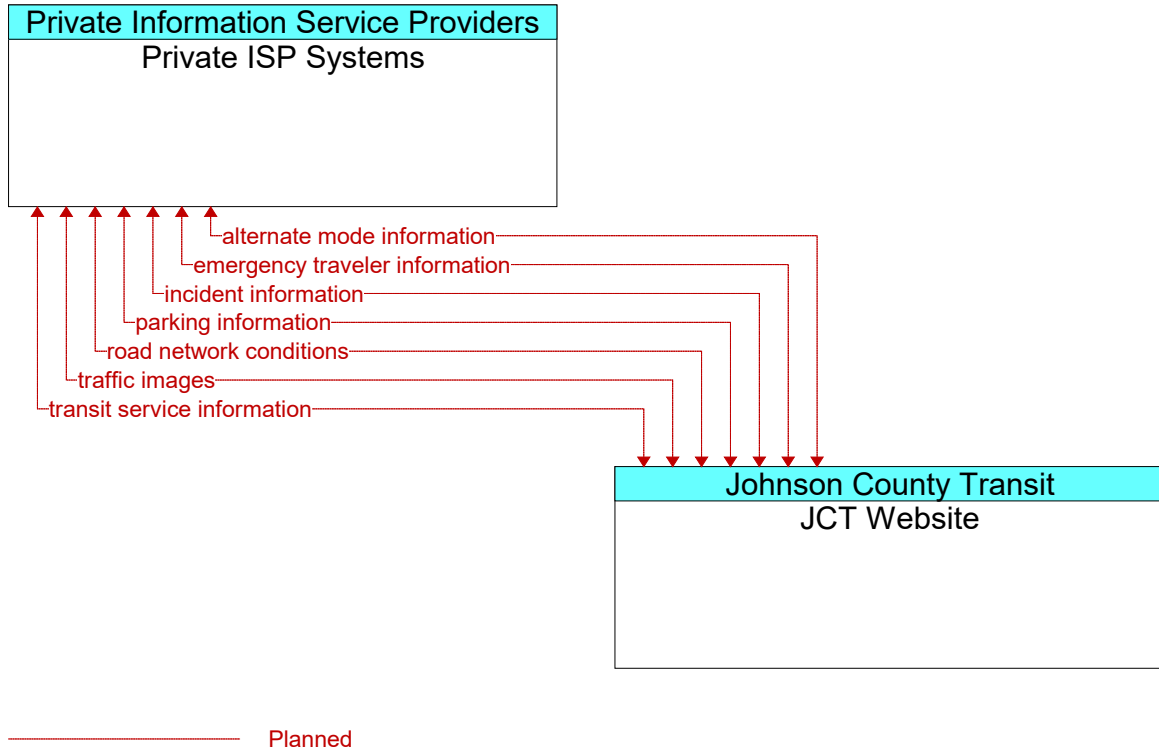
**Figure 457: JCT Vehicles - Traveler Interface**



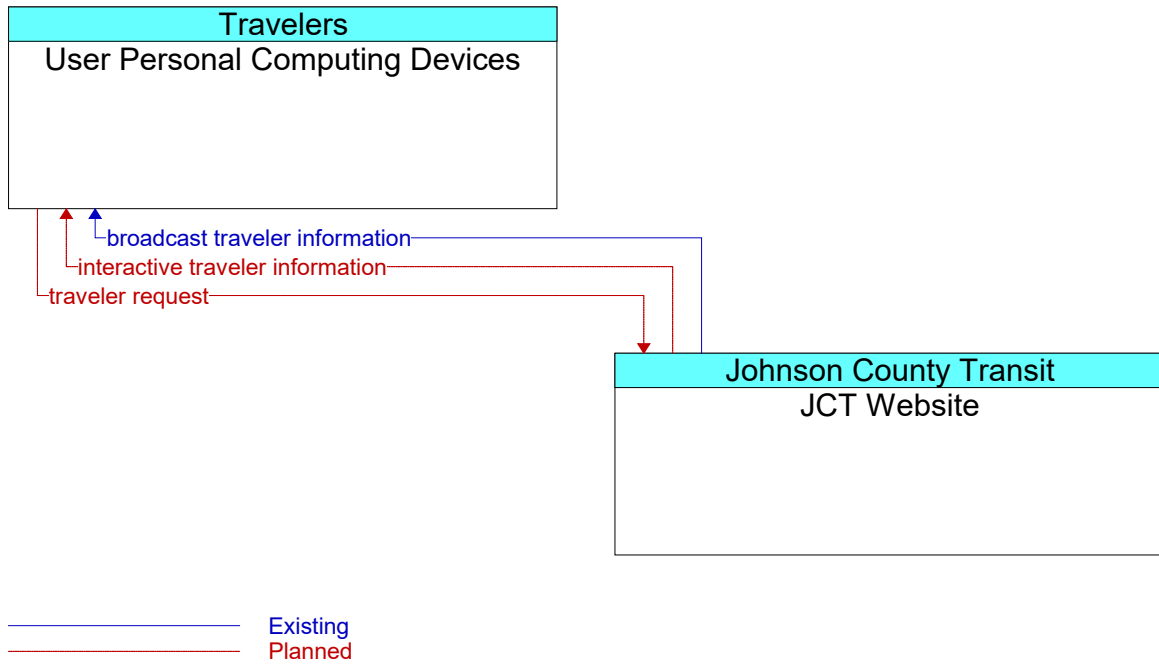
**Figure 458: JCT Website - Media Interface**



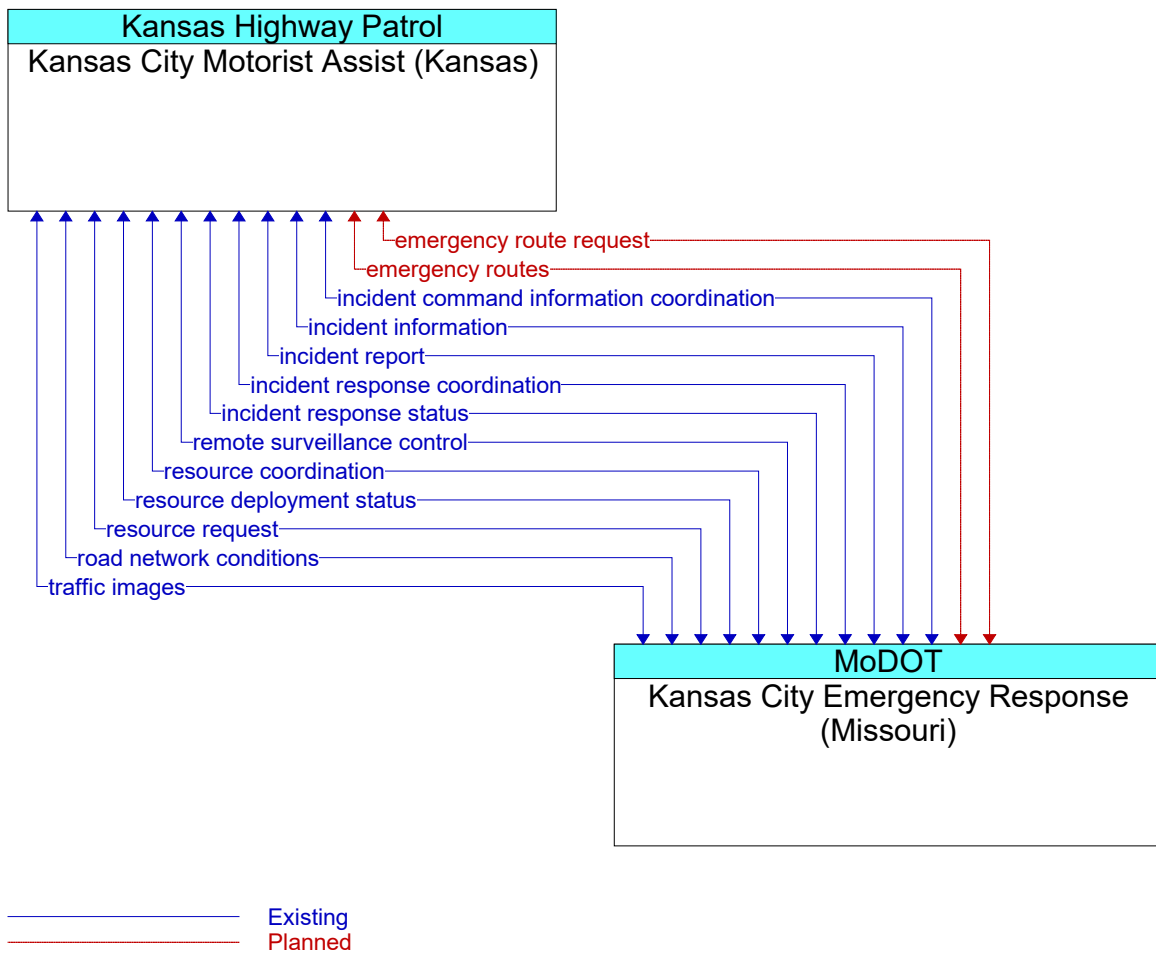
**Figure 459: JCT Website - National Weather Service Interface**



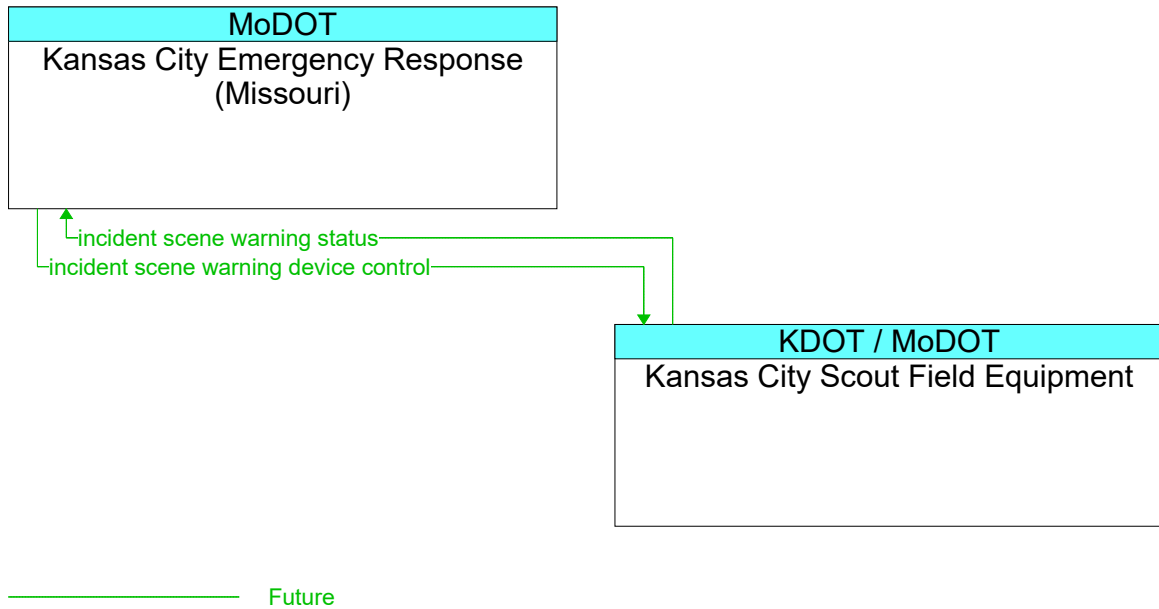
**Figure 460: JCT Website - Private ISP Systems Interface**



**Figure 461: JCT Website - User Personal Computing Devices Interface**

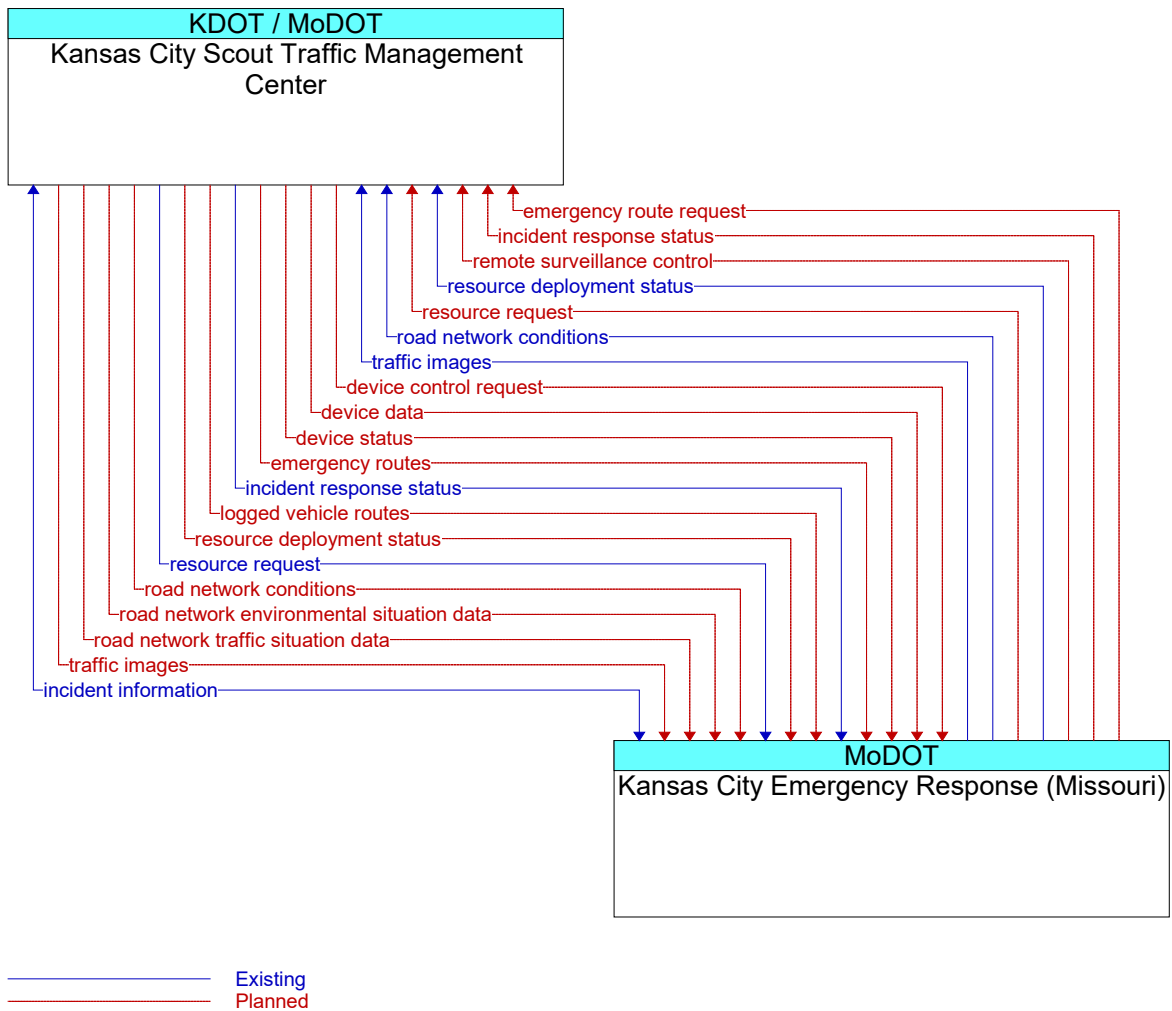


**Figure 462: Kansas City Emergency Response (Missouri) - Kansas City Motorist Assist (Kansas) Interface**

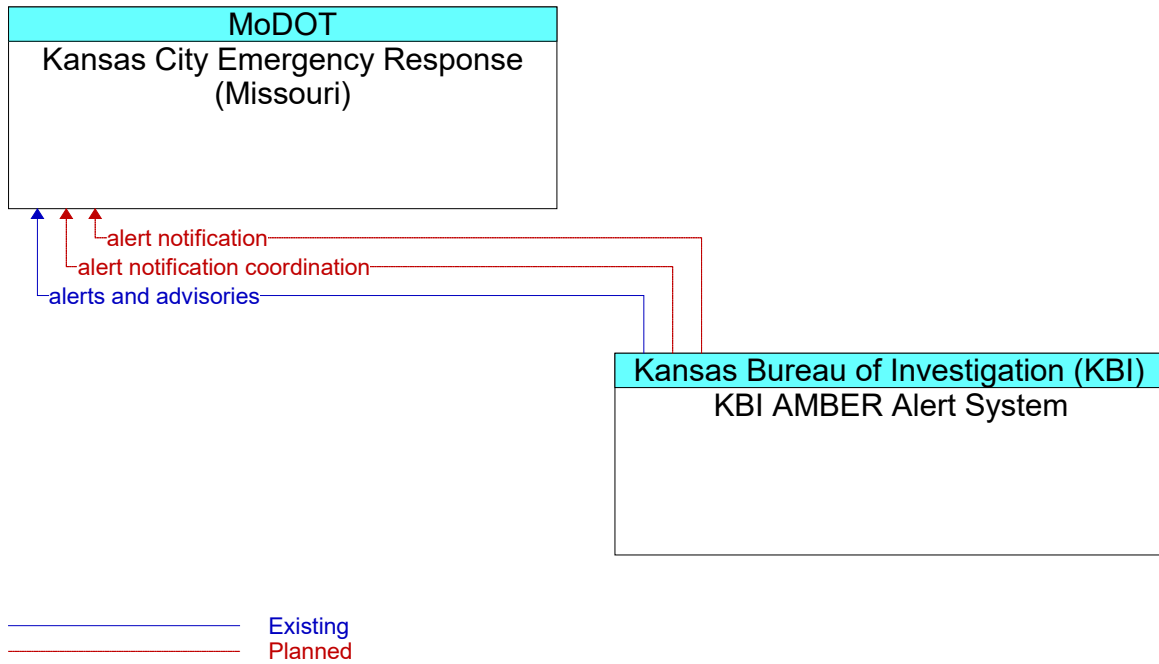


**Figure 463: Kansas City Emergency Response (Missouri) - Kansas City Scout Field Equipment Interface**

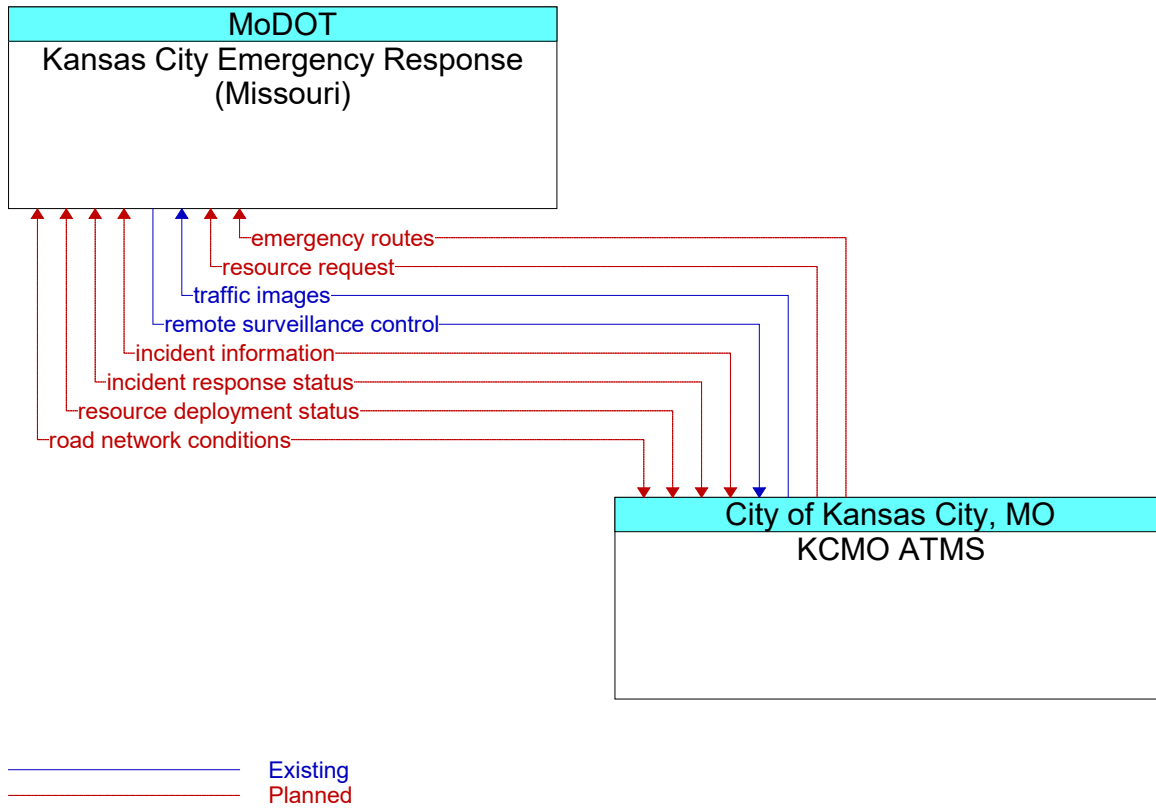




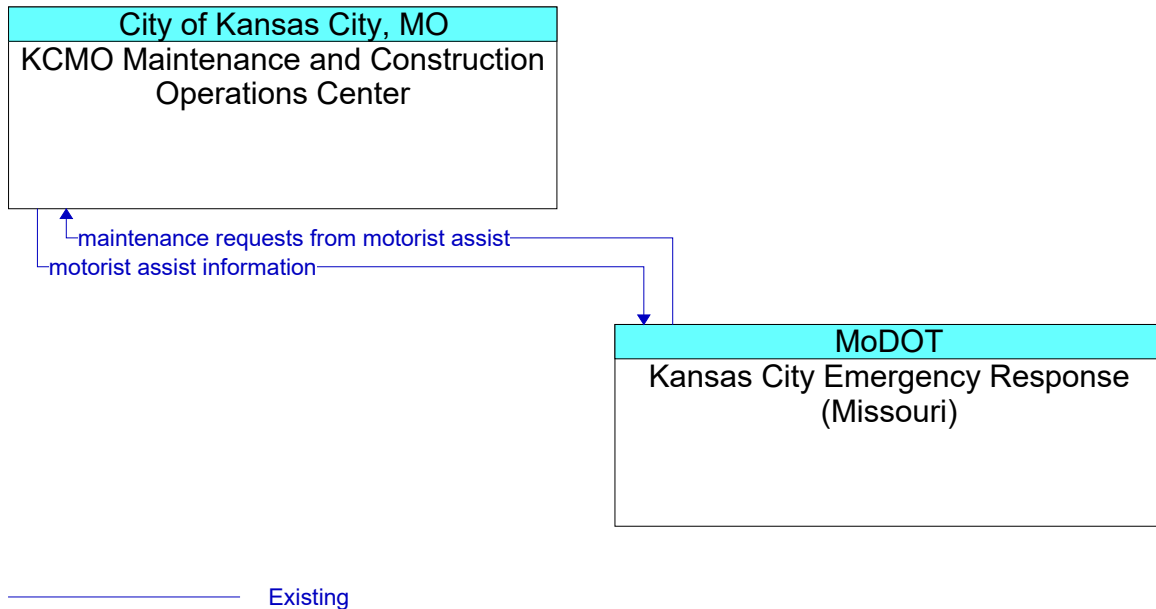
**Figure 464: Kansas City Emergency Response (Missouri) - Kansas City Scout Traffic Management Center Interface**



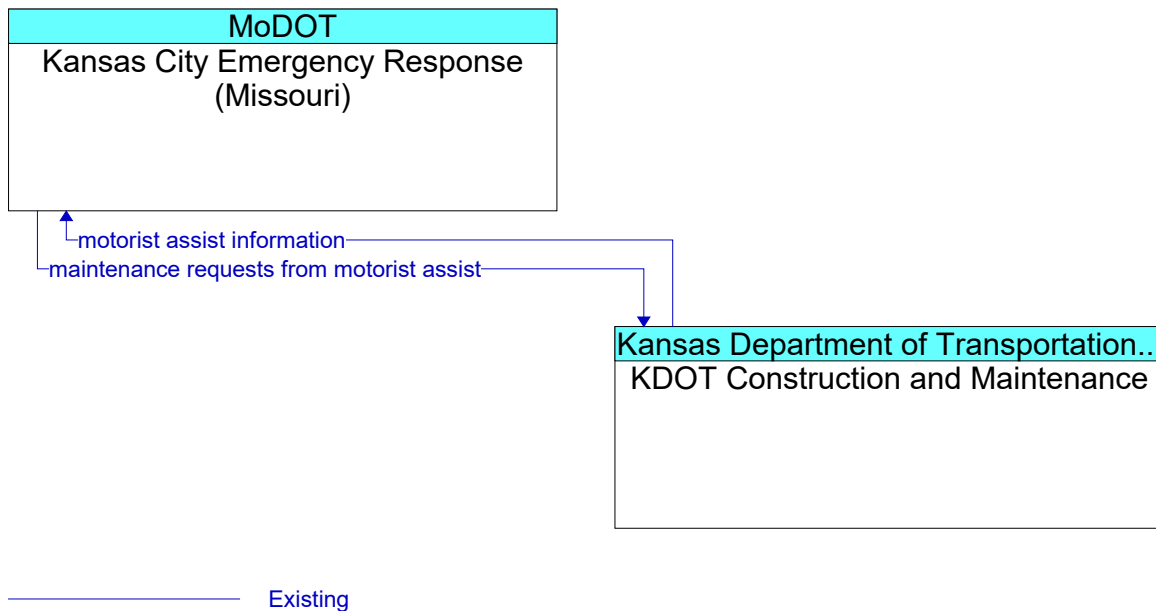
**Figure 465: Kansas City Emergency Response (Missouri) - KBI AMBER Alert System Interface**



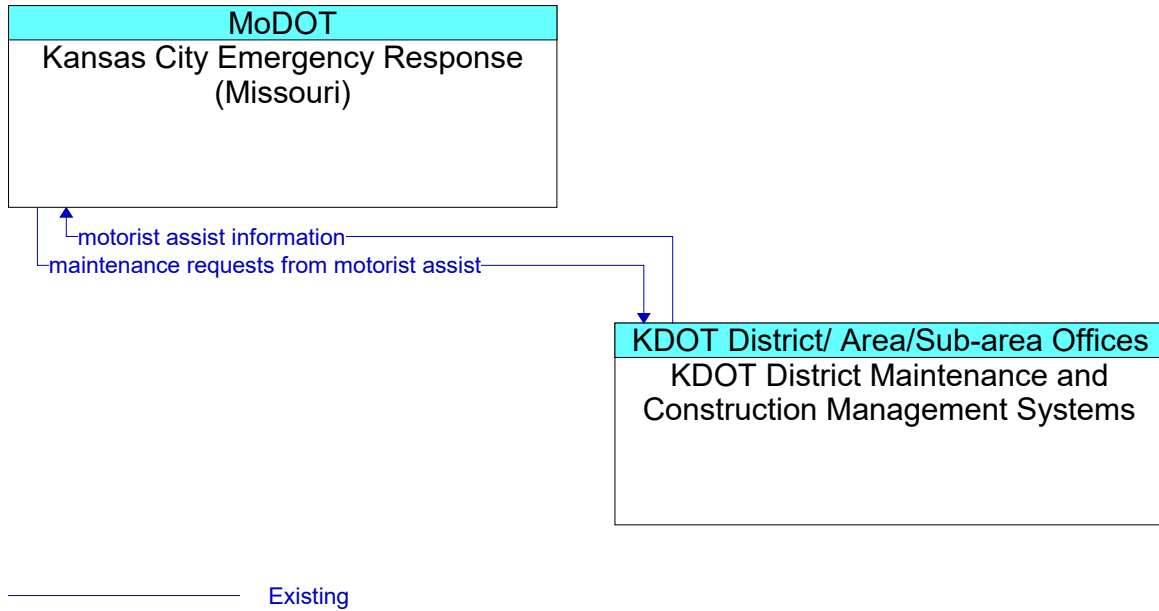
**Figure 466: Kansas City Emergency Response (Missouri) - KCMO ATMS Interface**



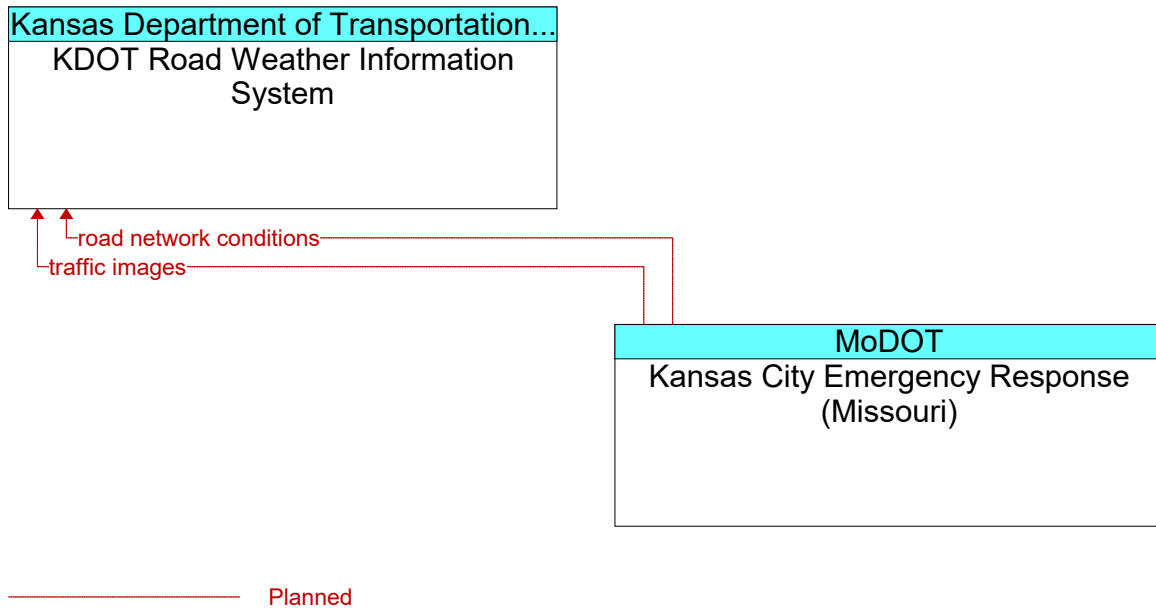
**Figure 467: Kansas City Emergency Response (Missouri) - KCMO Maintenance and Construction Operations Center Interface**



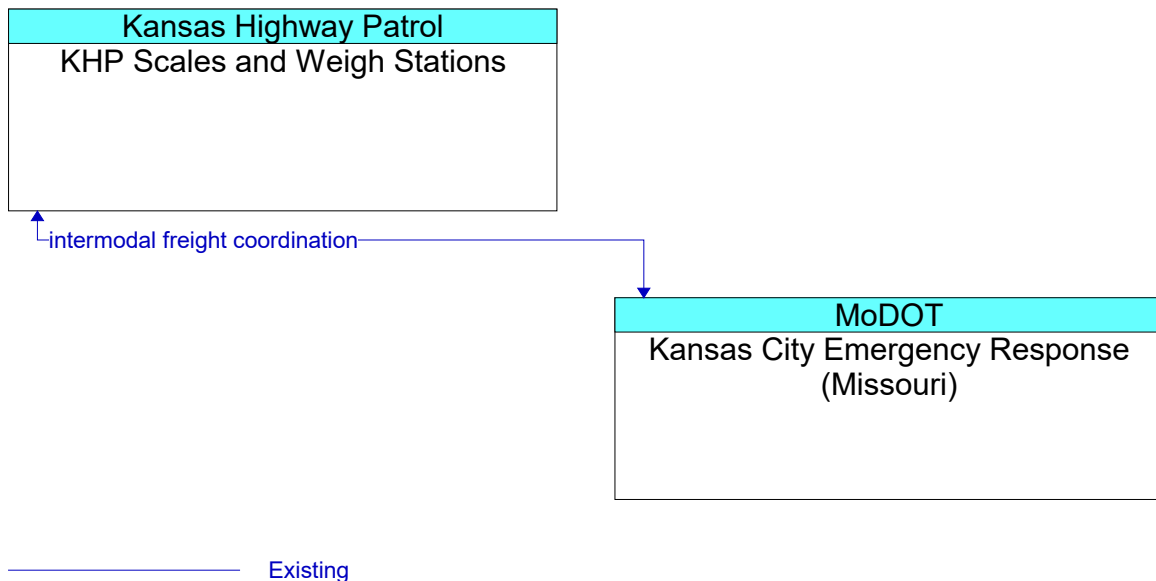
**Figure 468: Kansas City Emergency Response (Missouri) - KDOT Construction and Maintenance Interface**



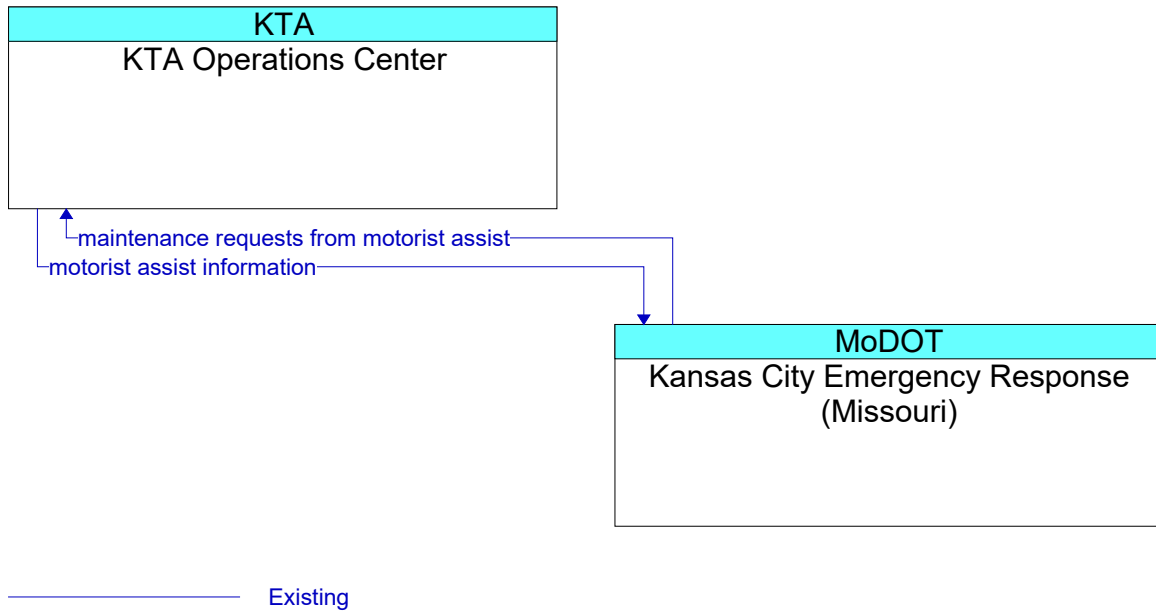
**Figure 469: Kansas City Emergency Response (Missouri) - KDOT District Maintenance and Construction Management Systems Interface**



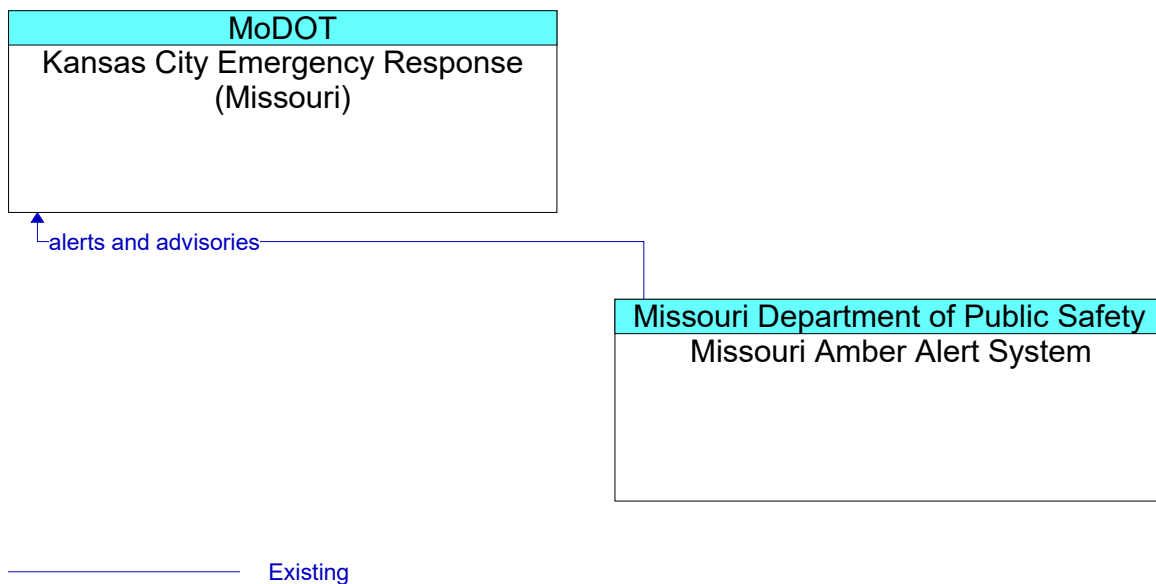
**Figure 470: Kansas City Emergency Response (Missouri) - KDOT Road Weather Information System Interface**



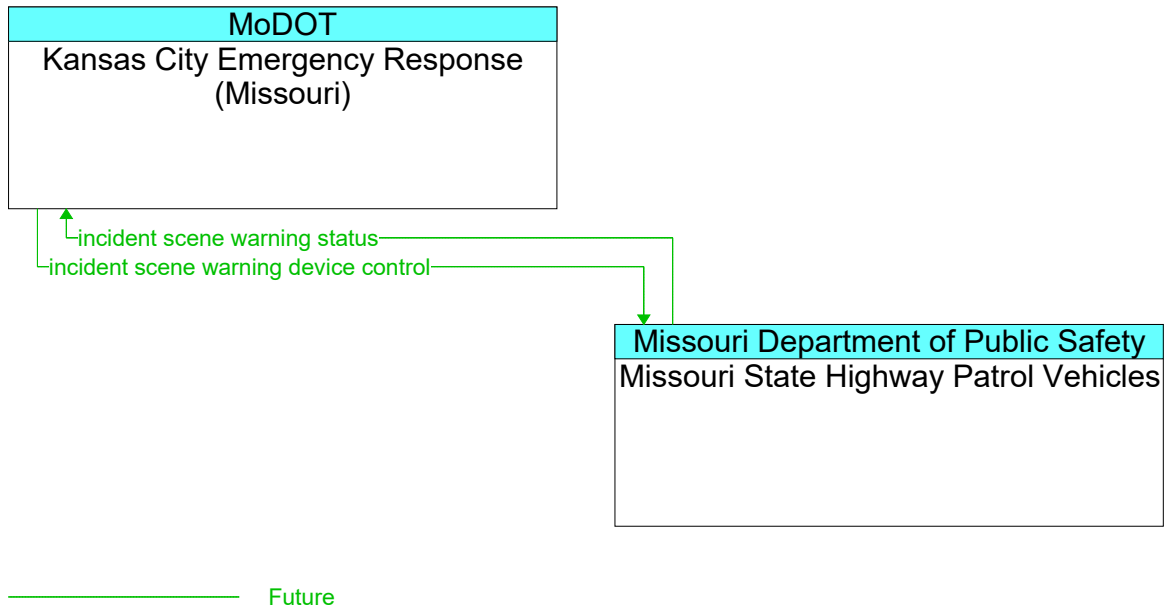
**Figure 471: Kansas City Emergency Response (Missouri) - KHP Scales and Weigh Stations Interface**



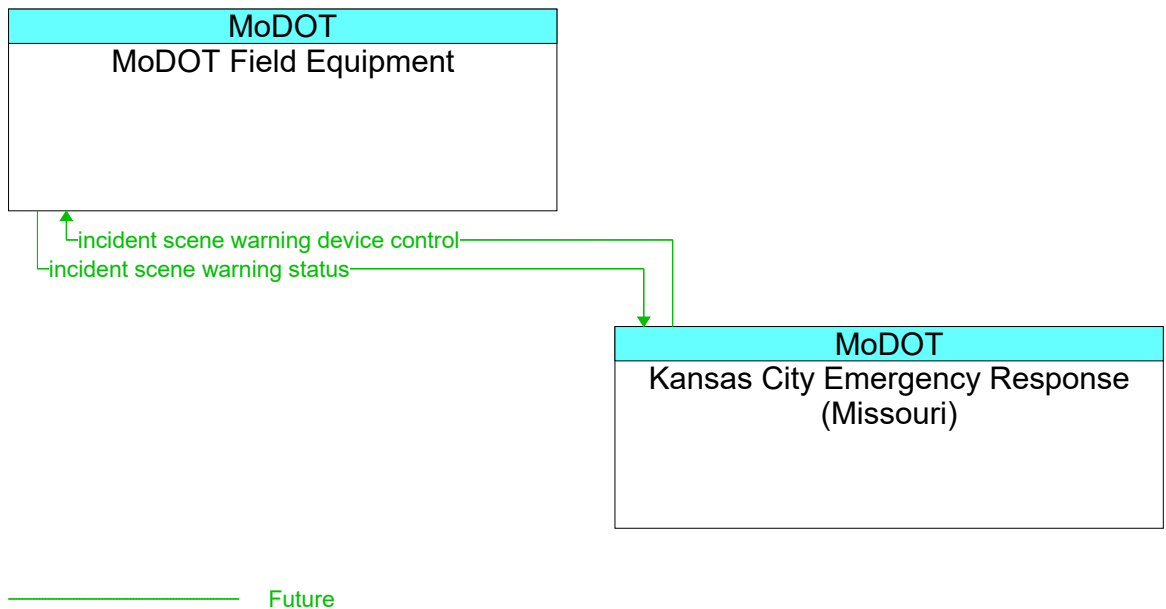
**Figure 472: Kansas City Emergency Response (Missouri) - KTA Operations Center Interface**



**Figure 473: Kansas City Emergency Response (Missouri) - Missouri Amber Alert System Interface**

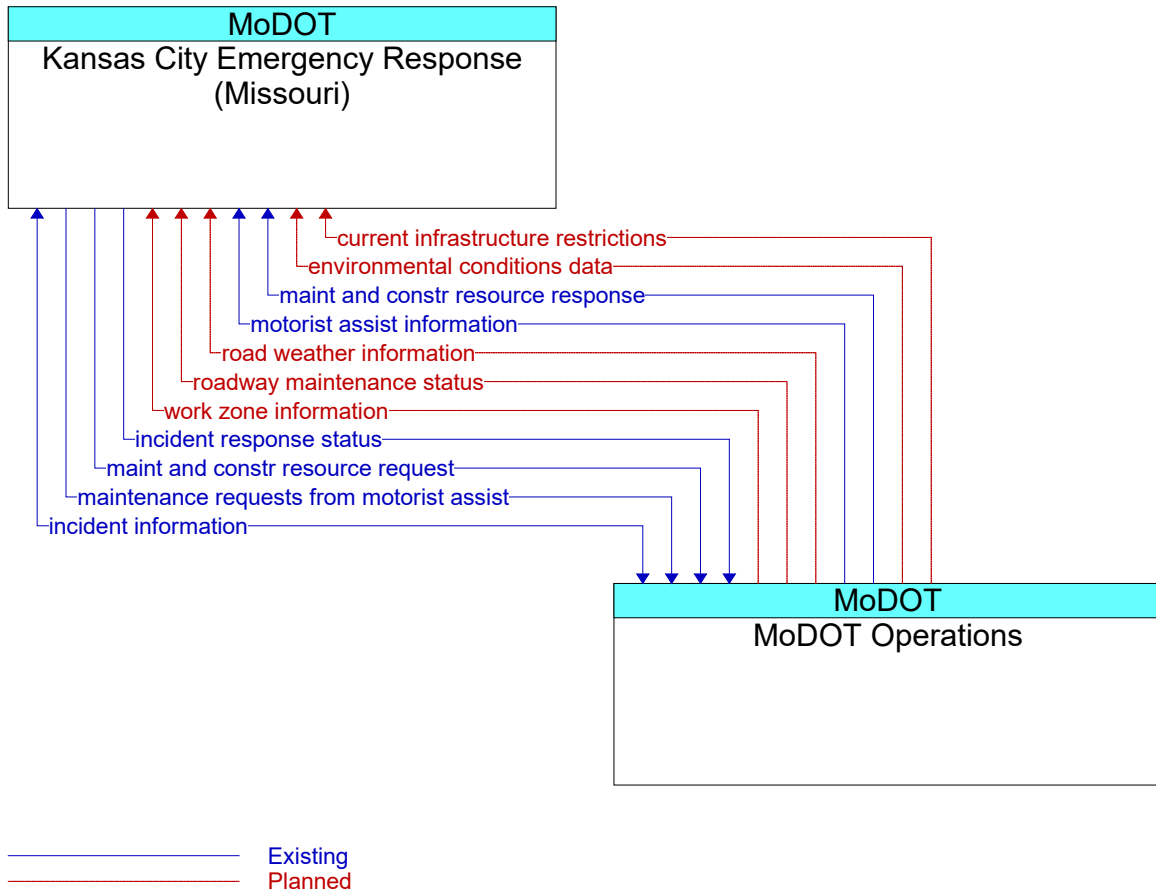


**Figure 474: Kansas City Emergency Response (Missouri) - Missouri State Highway Patrol Vehicles Interface**

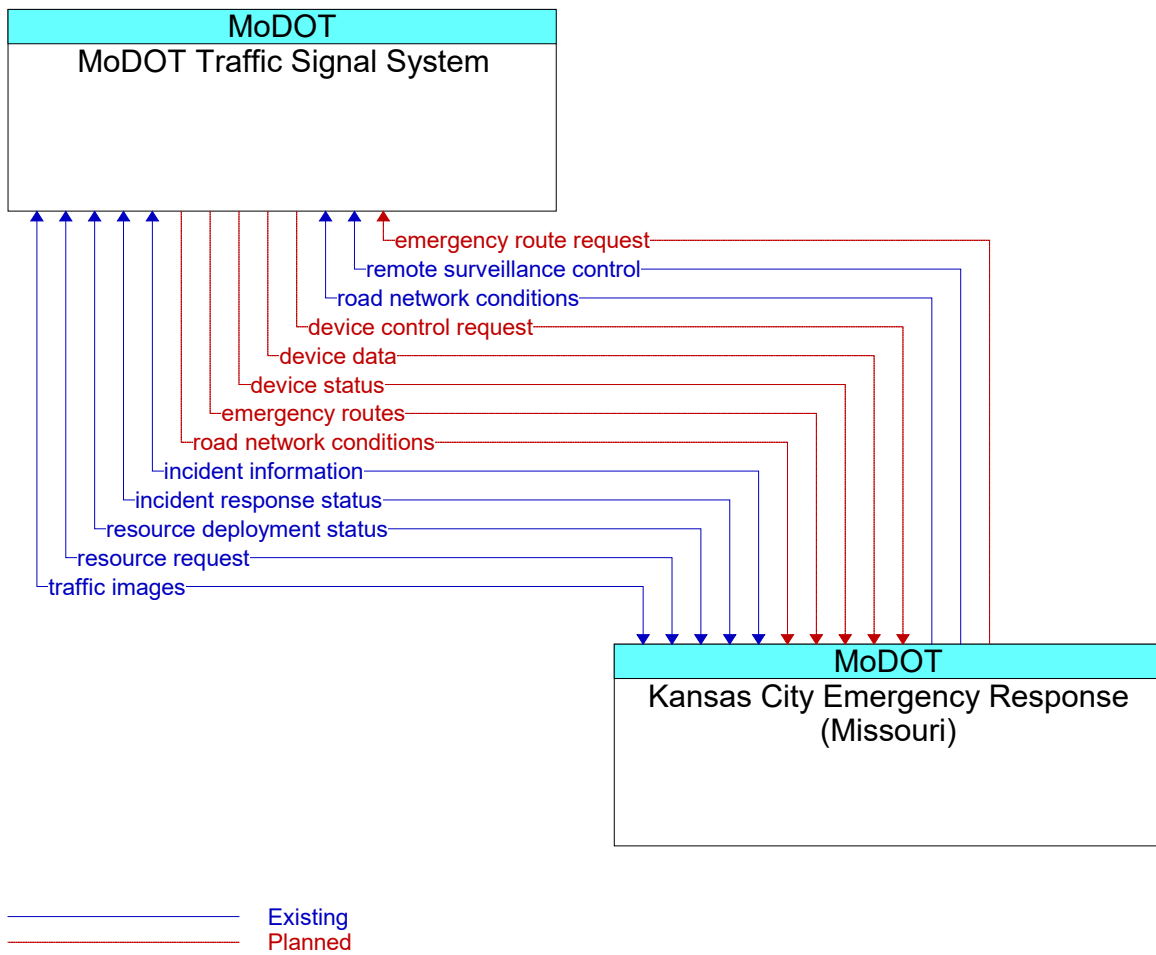


**Figure 475: Kansas City Emergency Response (Missouri) - MoDOT Field Equipment Interface**

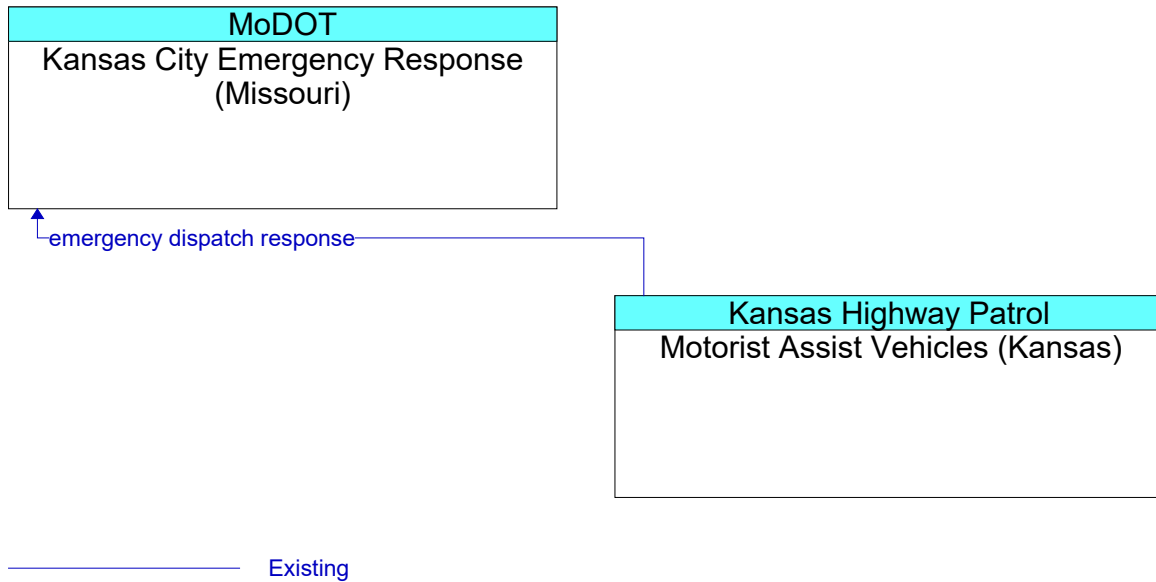




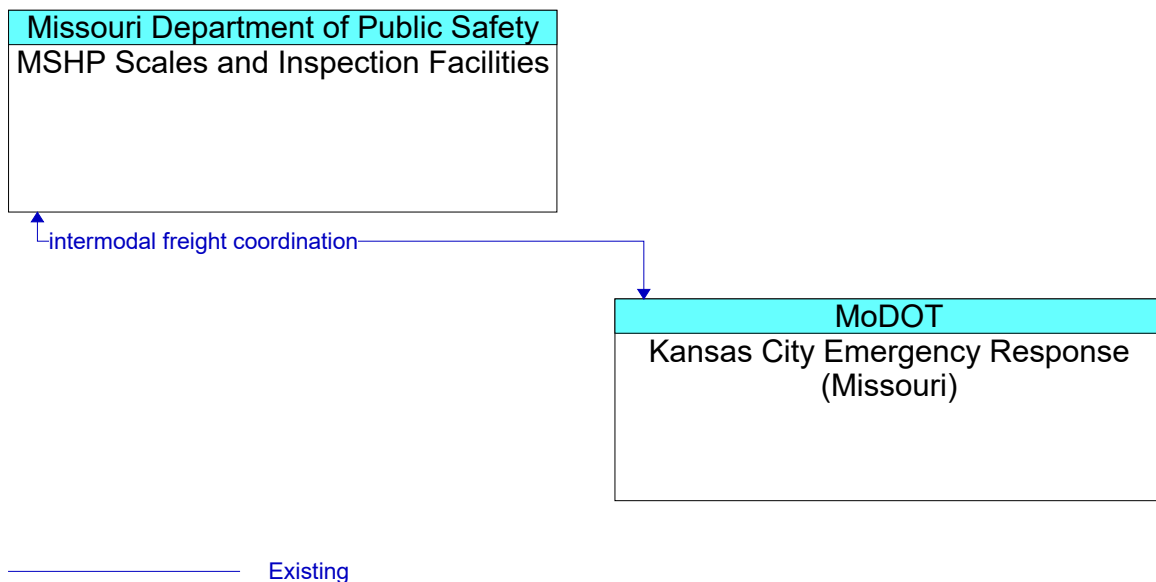
**Figure 476: Kansas City Emergency Response (Missouri) - MoDOT Operations Interface**



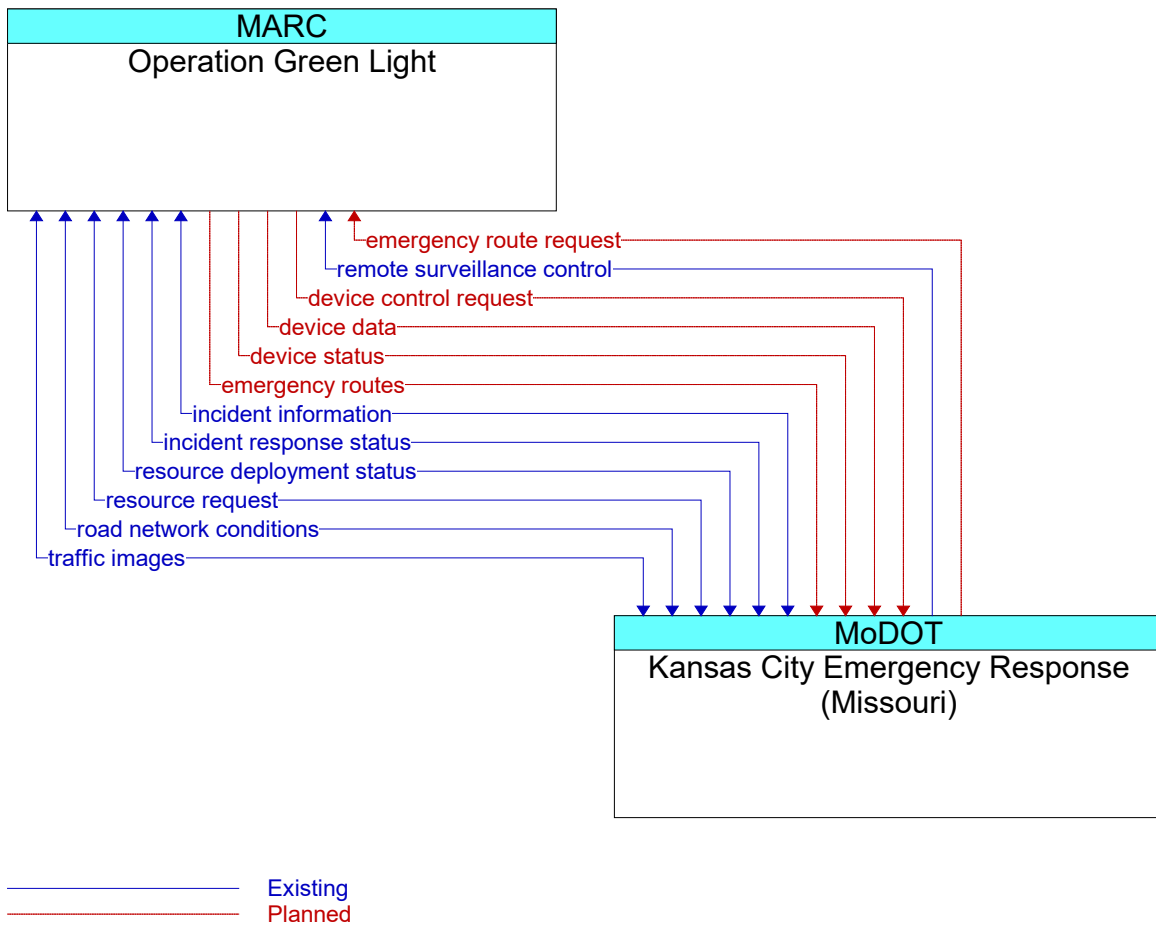
**Figure 477: Kansas City Emergency Response (Missouri) - MoDOT Traffic Signal System Interface**



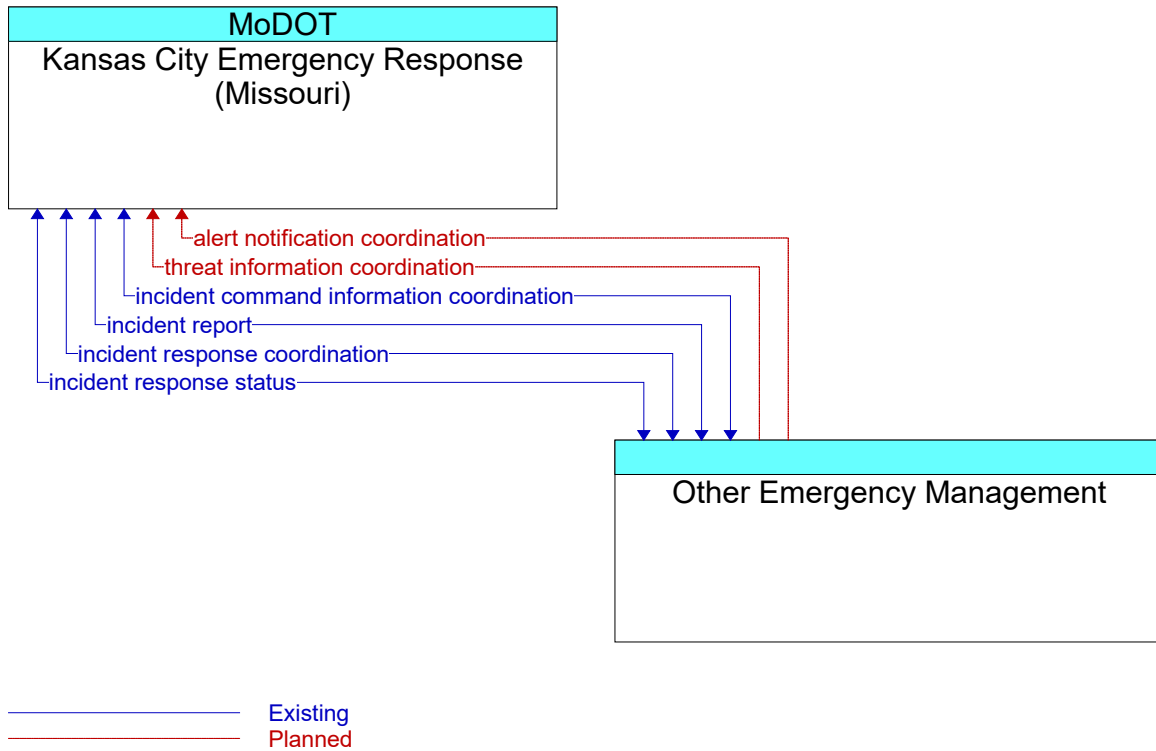
**Figure 478: Kansas City Emergency Response (Missouri) - Motorist Assist Vehicles (Kansas) Interface**



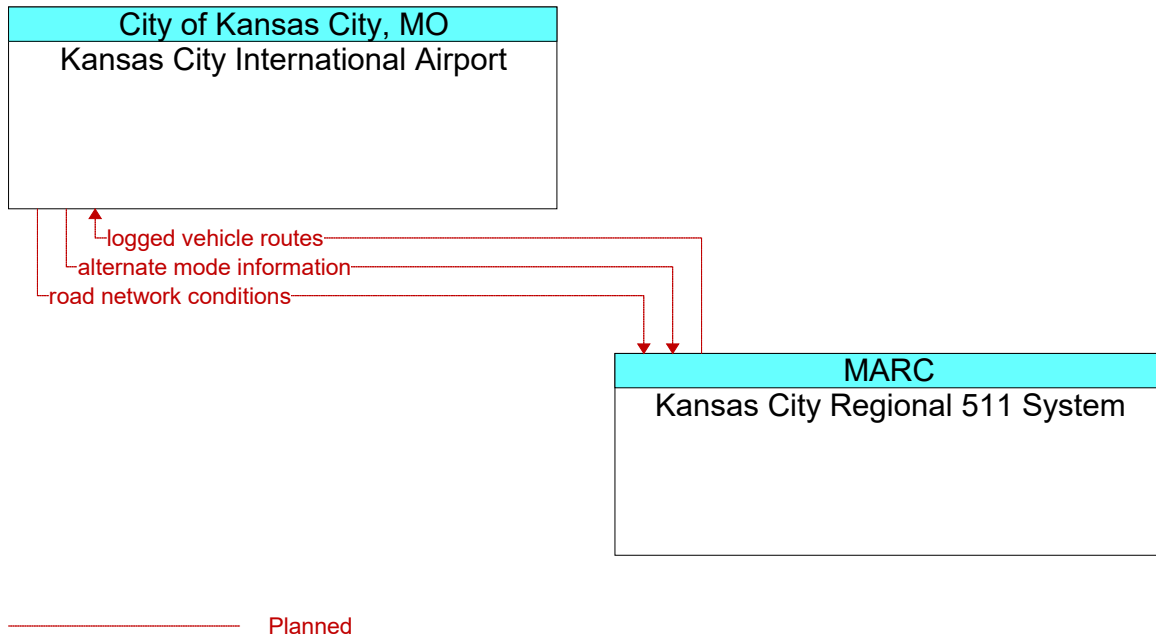
**Figure 479: Kansas City Emergency Response (Missouri) - MSHP Scales and Inspection Facilities Interface**



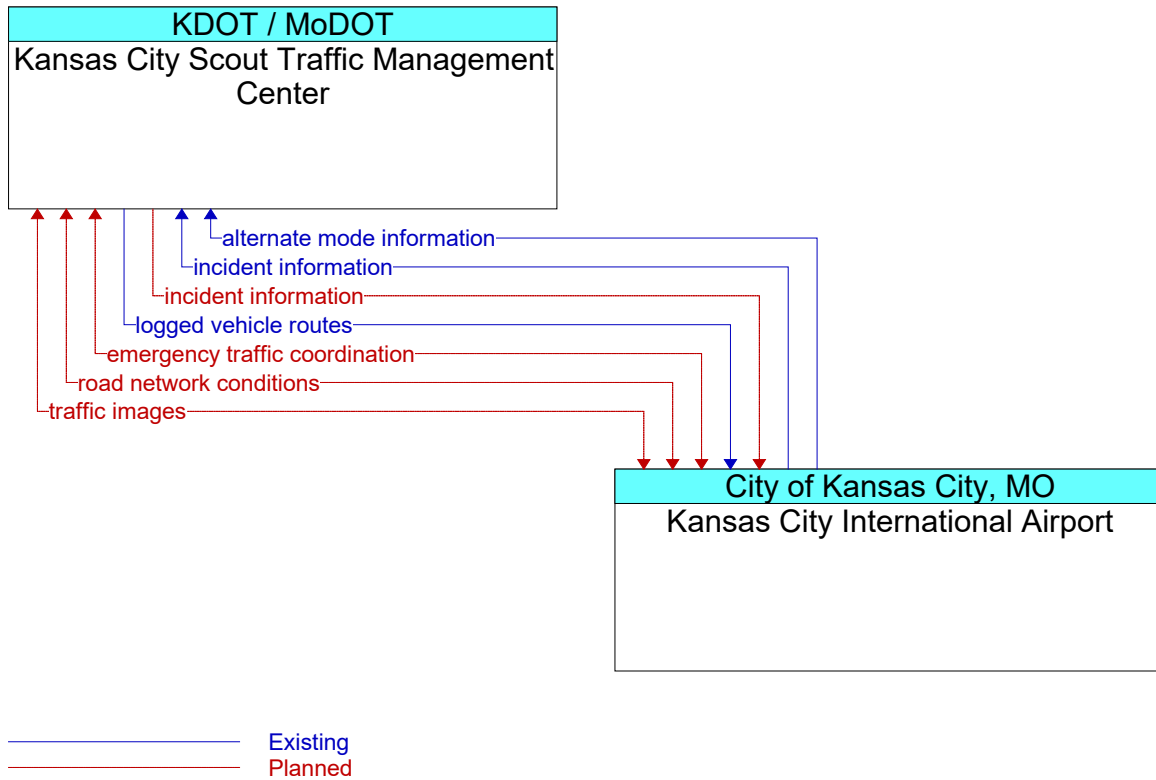
**Figure 480: Kansas City Emergency Response (Missouri) - Operation Green Light Interface**



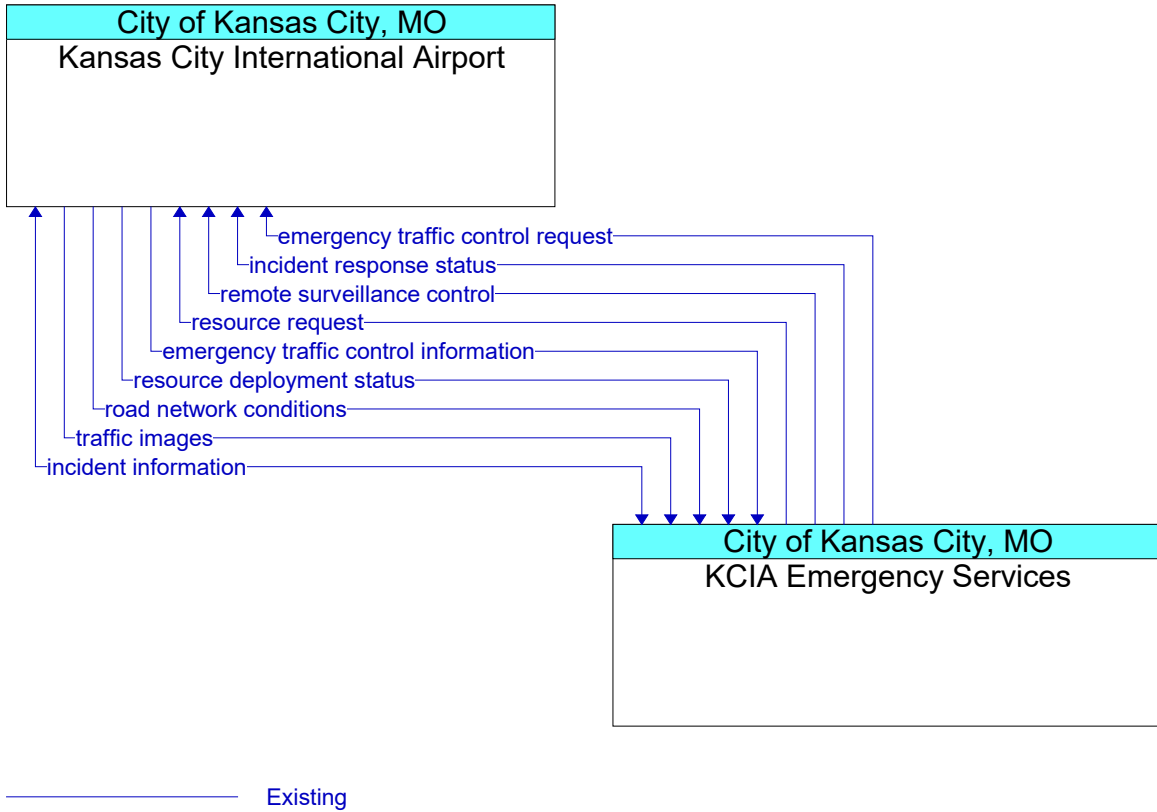
**Figure 481: Kansas City Emergency Response (Missouri) - Other Emergency Management Interface**



**Figure 482: Kansas City International Airport - Kansas City Regional 511 System Interface**



**Figure 483: Kansas City International Airport - Kansas City Scout Traffic Management Center Interface**



**Figure 484: Kansas City International Airport - KCIA Emergency Services Interface**



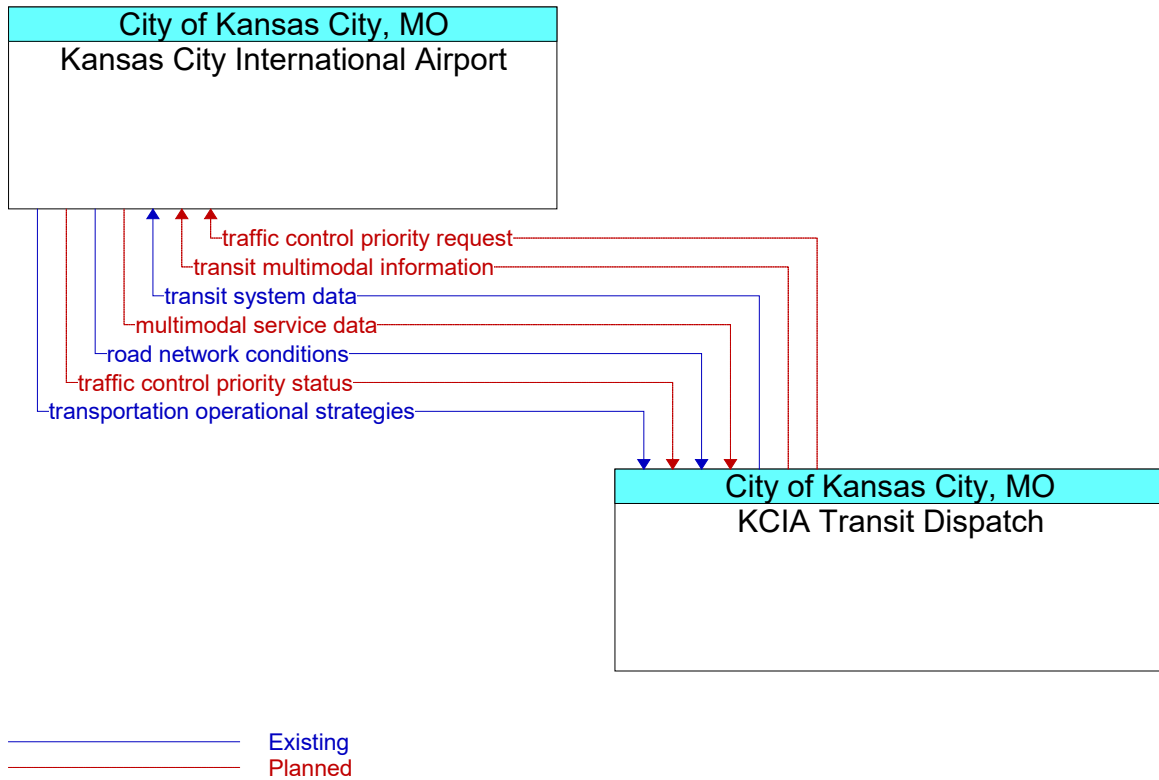
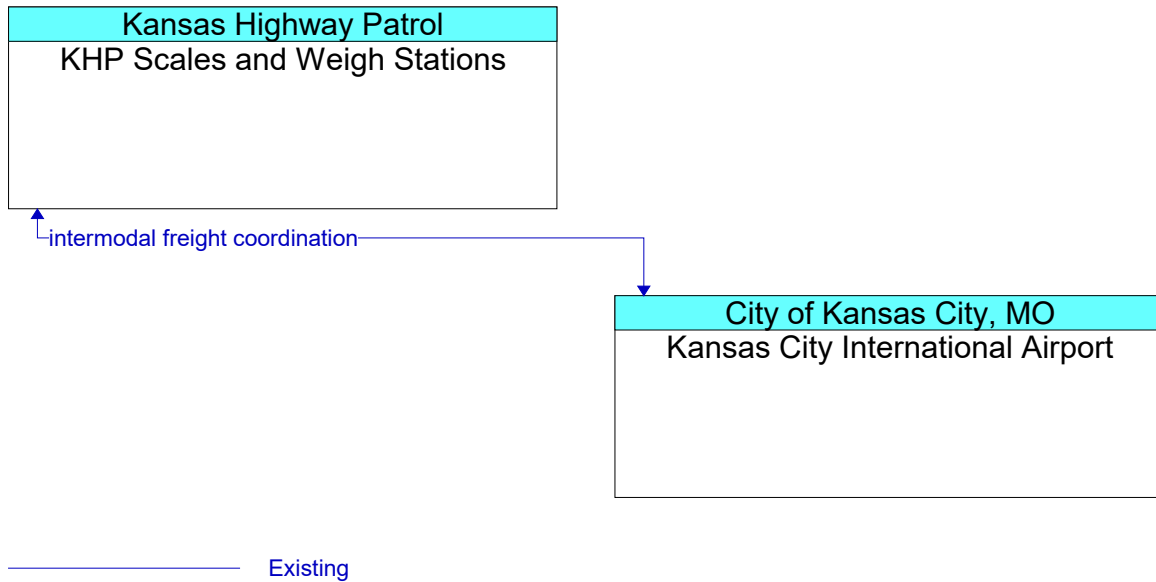
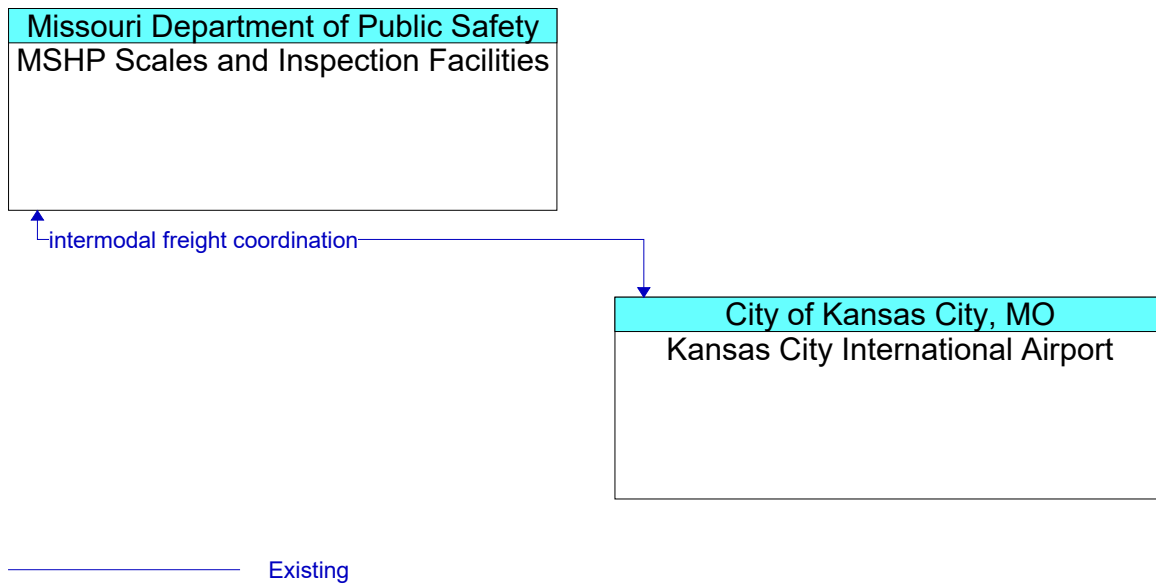


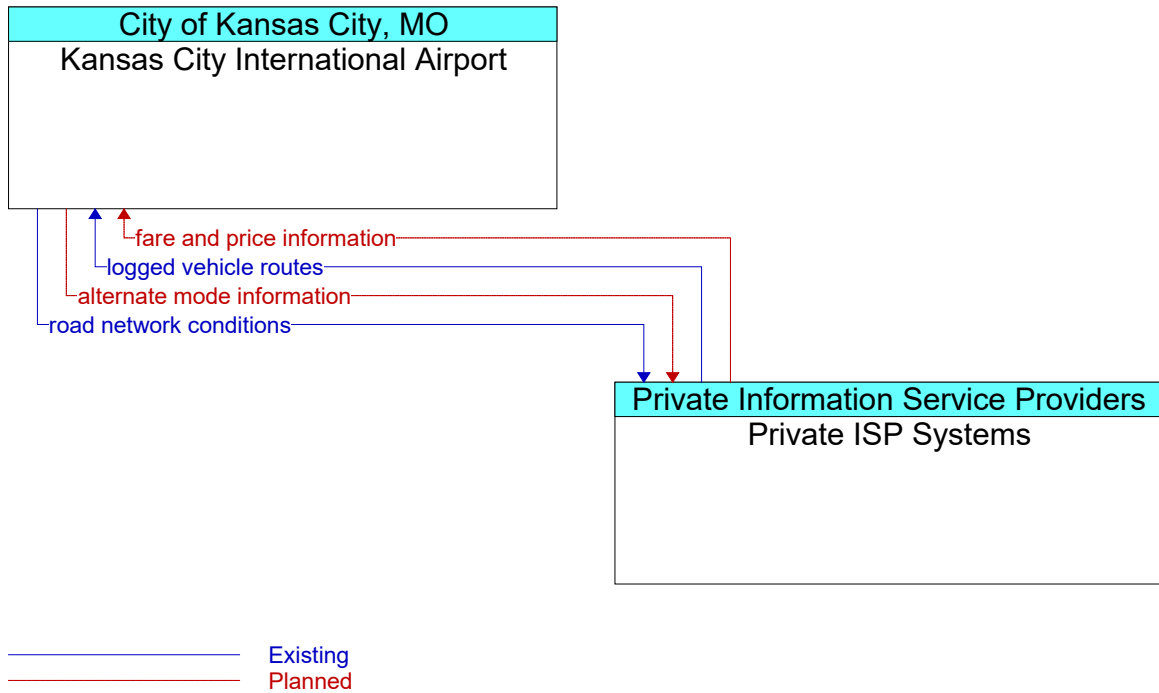
Figure 485: Kansas City International Airport - KCIA Transit Dispatch Interface



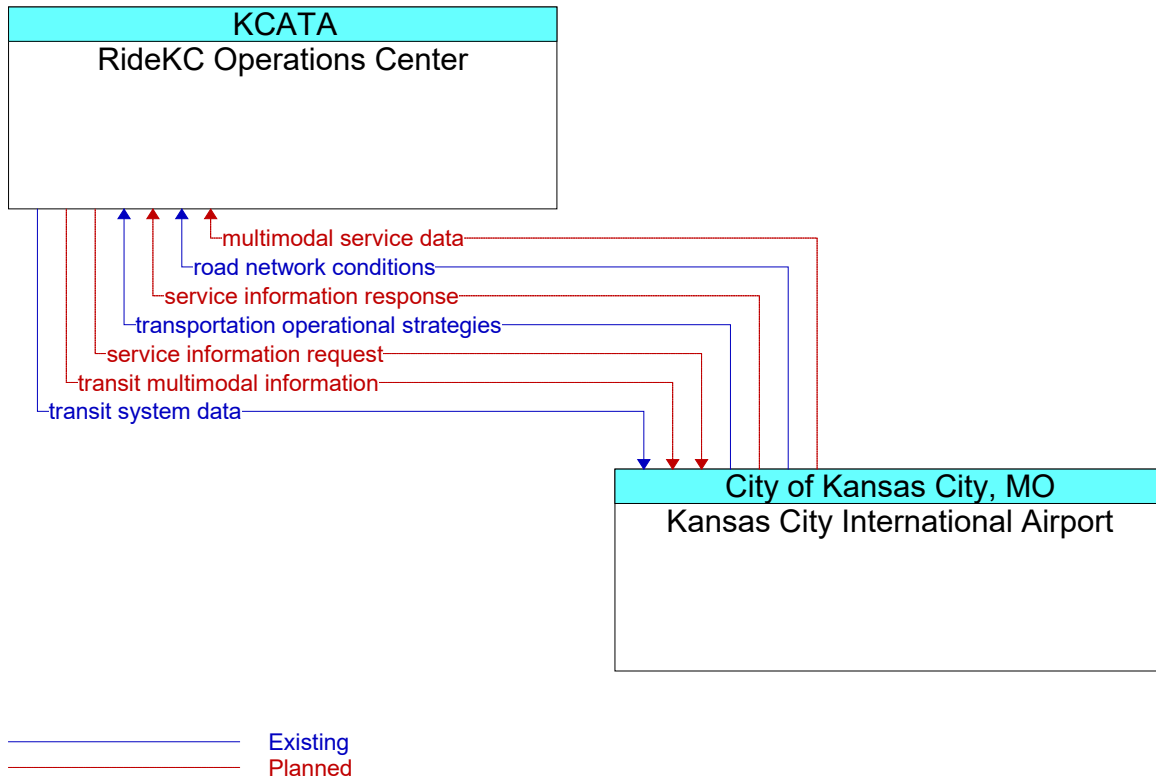
**Figure 486: Kansas City International Airport - KHP Scales and Weigh Stations Interface**



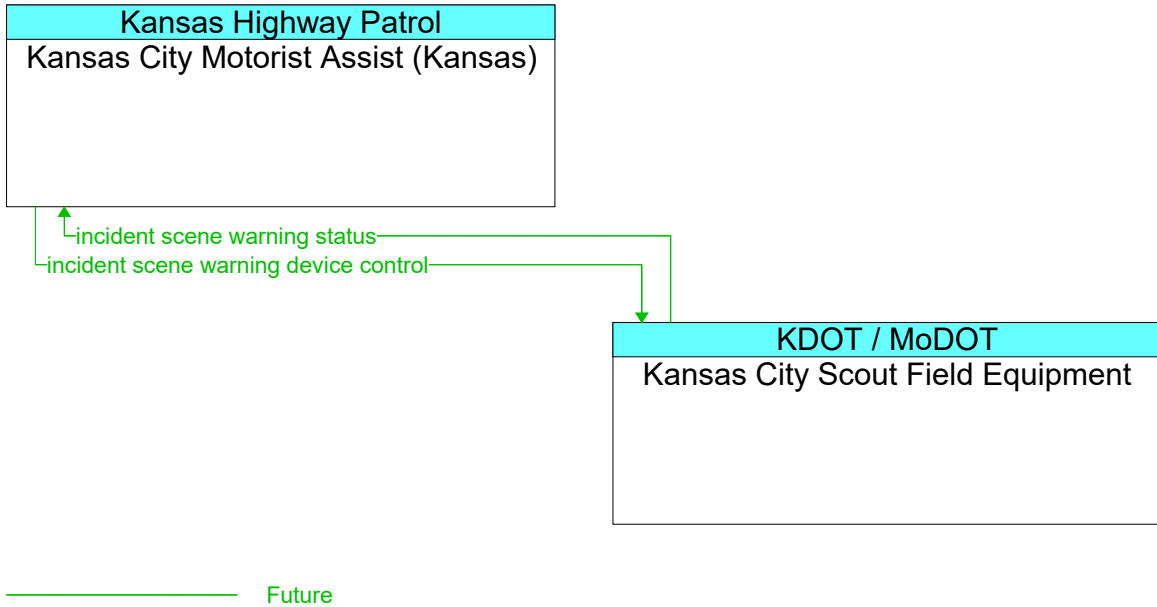
**Figure 487: Kansas City International Airport - MSHP Scales and Inspection Facilities Interface**



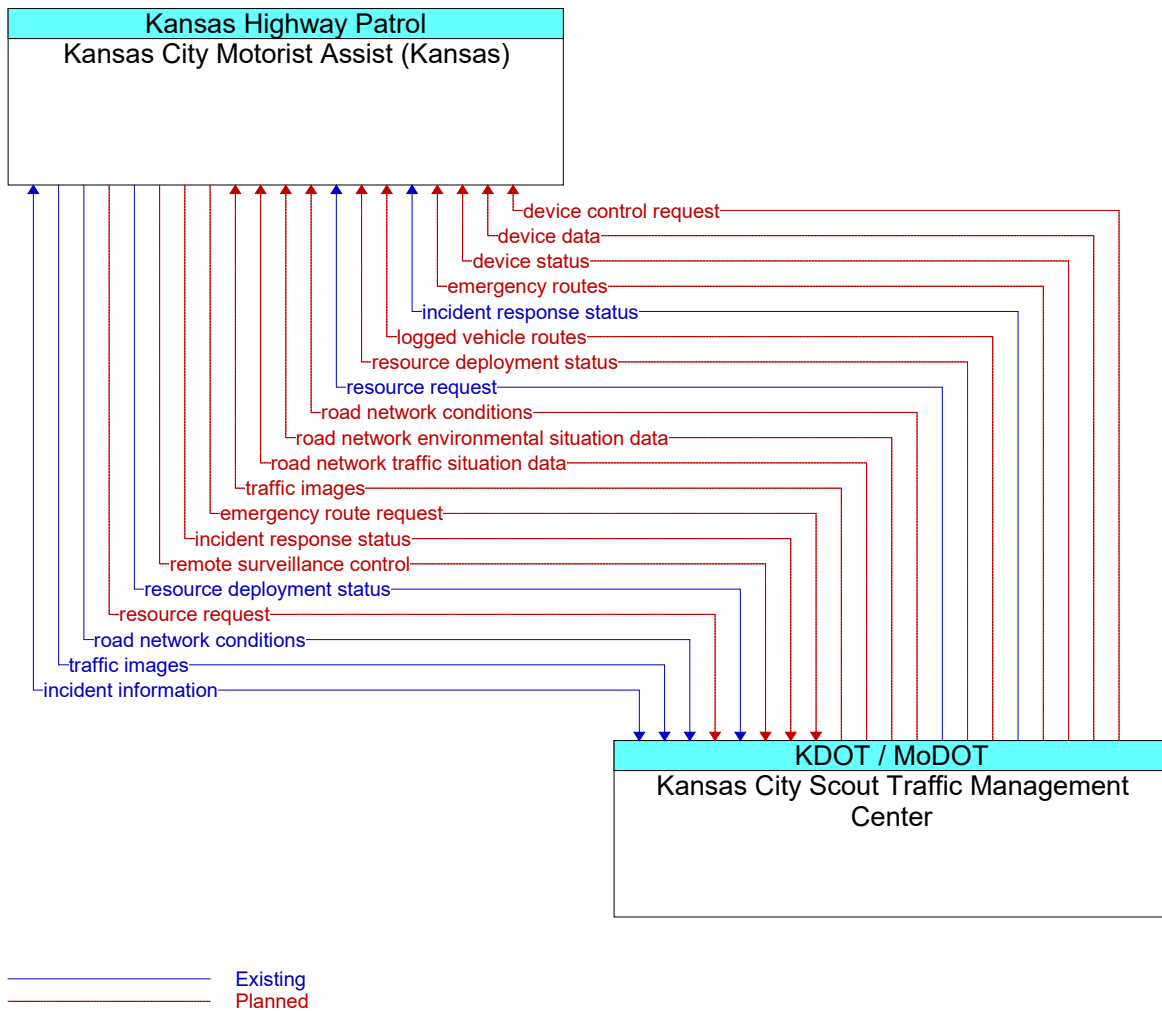
**Figure 488: Kansas City International Airport - Private ISP Systems Interface**



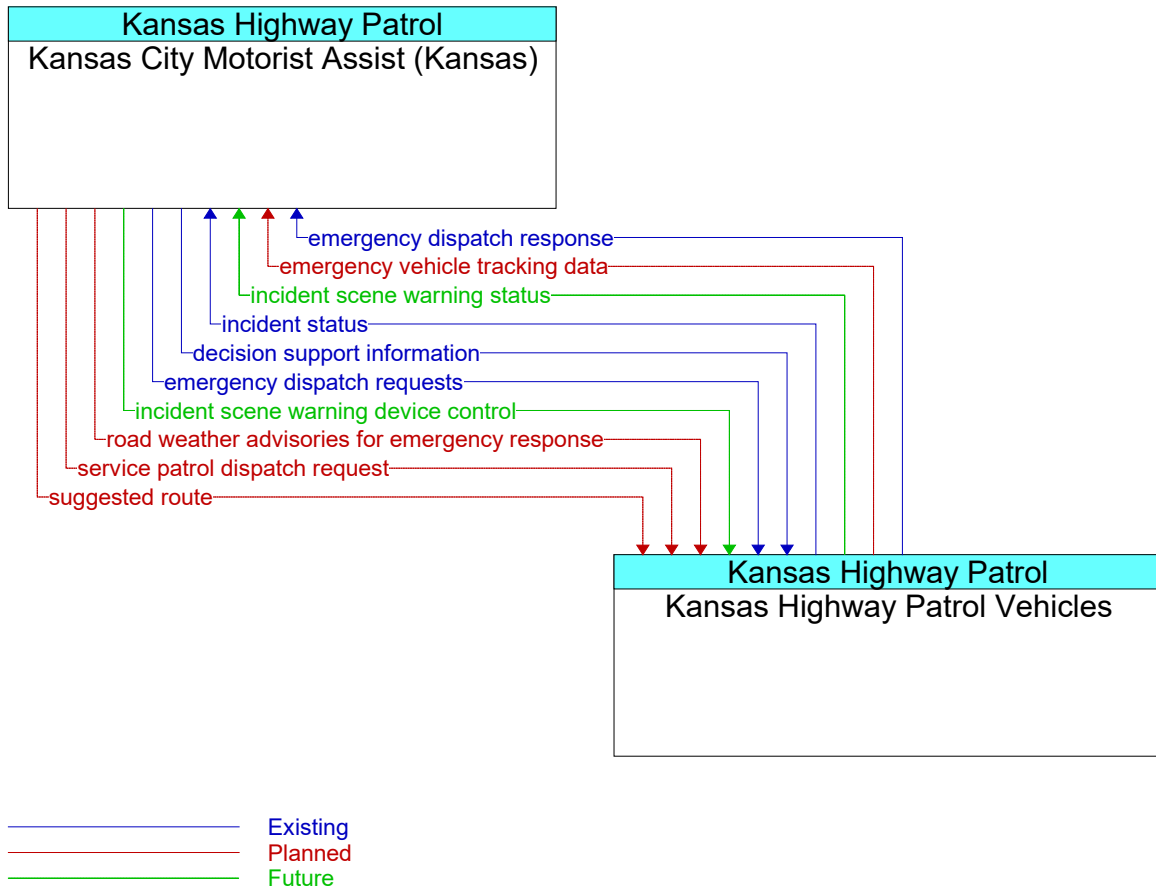
**Figure 489: Kansas City International Airport - RideKC Operations Center Interface**



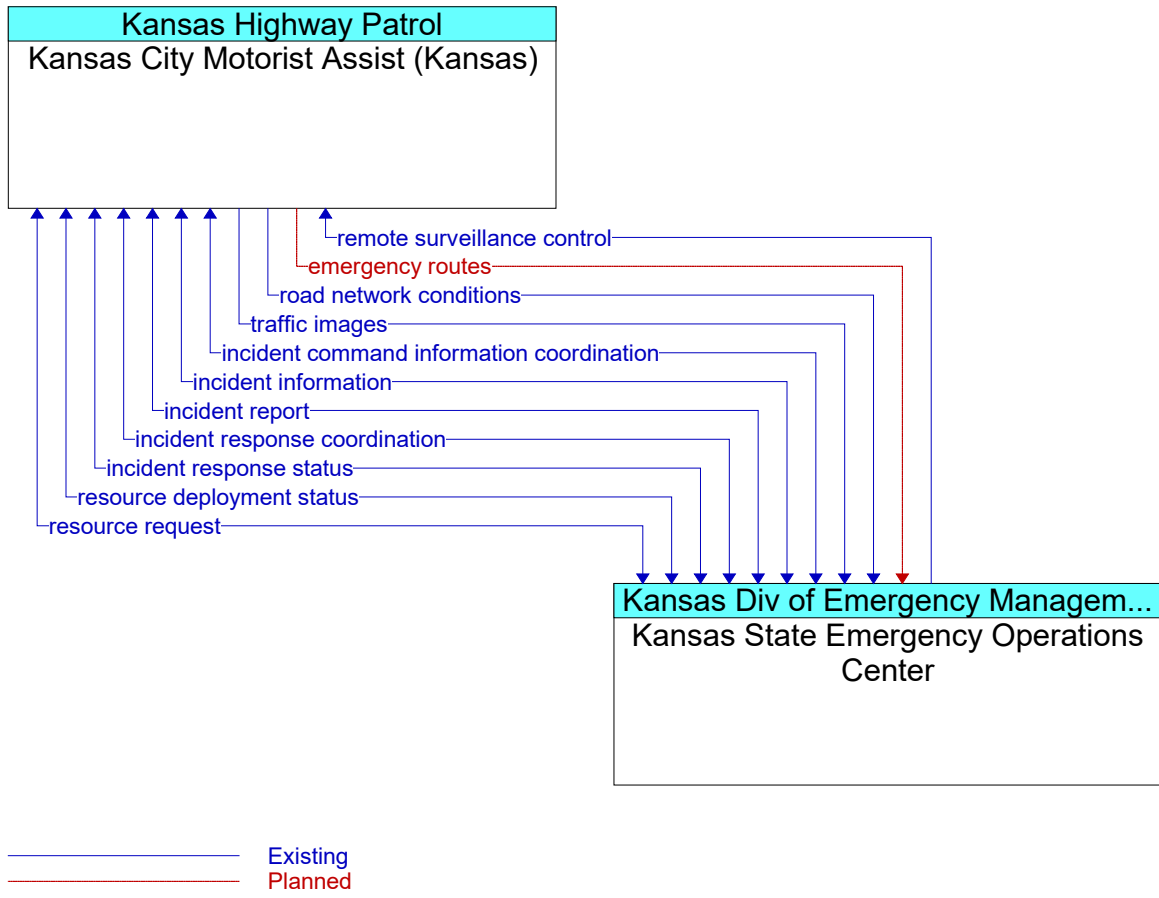
**Figure 490: Kansas City Motorist Assist (Kansas) - Kansas City Scout Field Equipment Interface**



**Figure 491: Kansas City Motorist Assist (Kansas) - Kansas City Scout Traffic Management Center Interface**

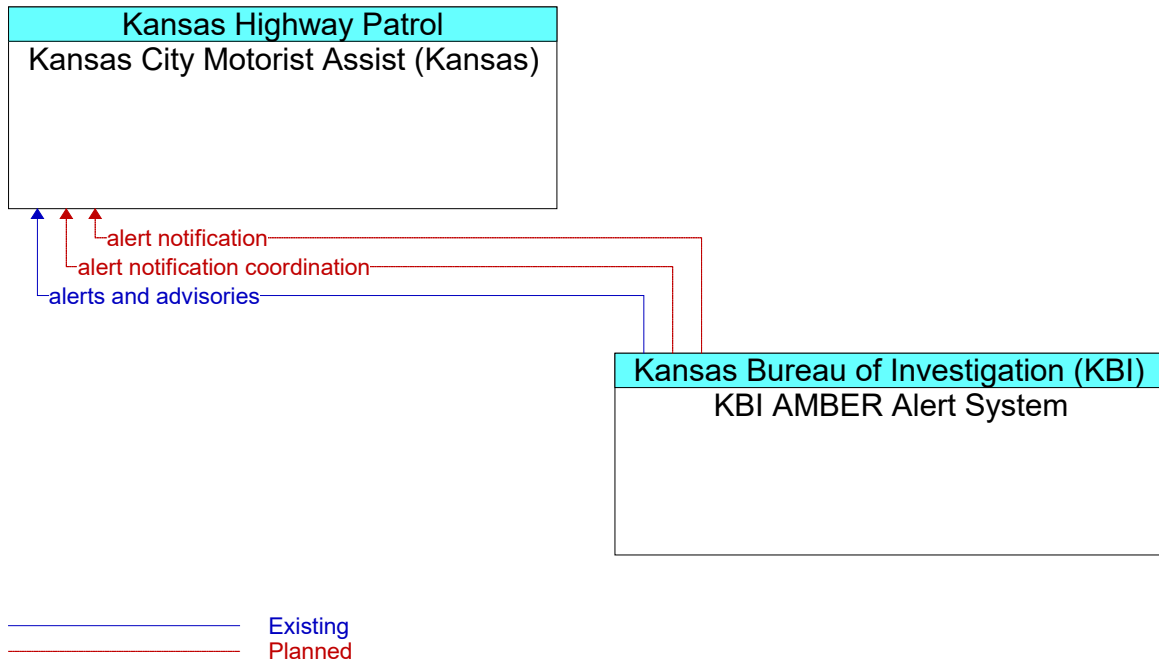


**Figure 492: Kansas City Motorist Assist (Kansas) - Kansas Highway Patrol Vehicles Interface**

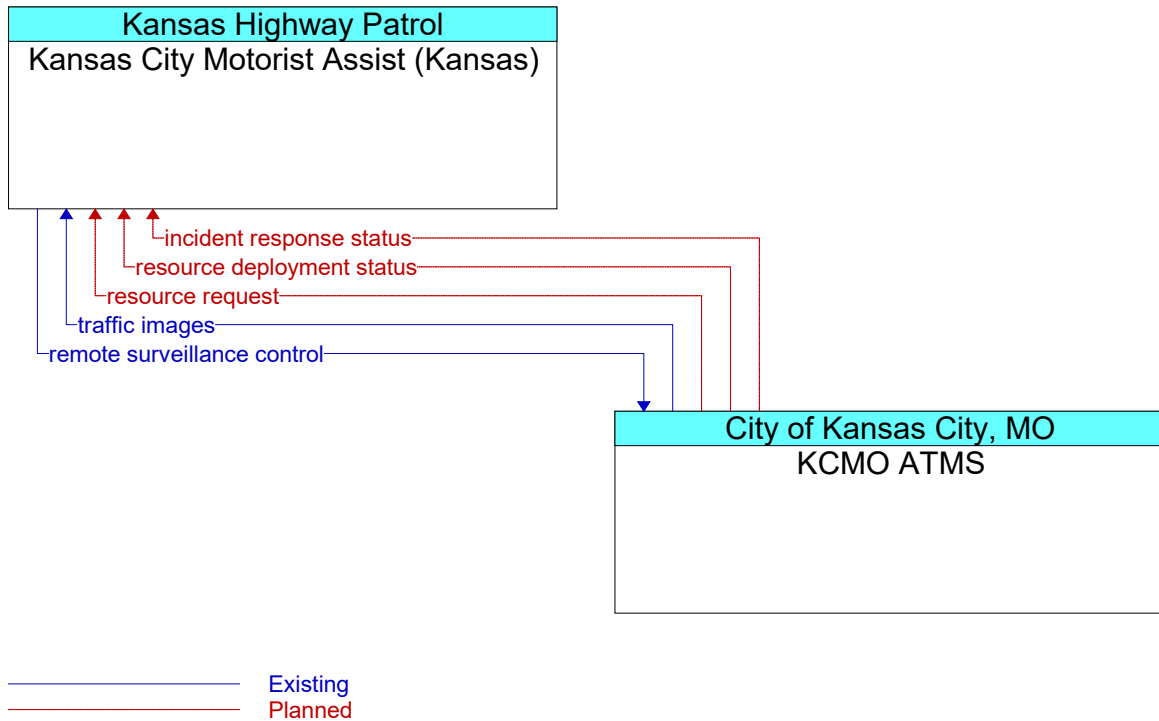


**Figure 493: Kansas City Motorist Assist (Kansas) - Kansas State Emergency Operations Center Interface**

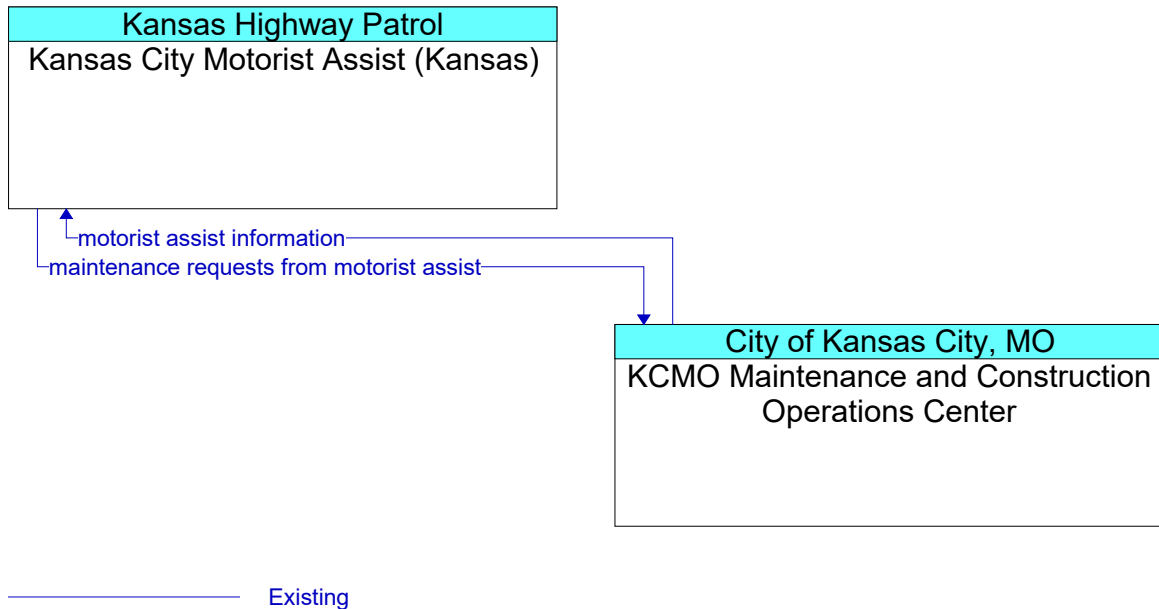




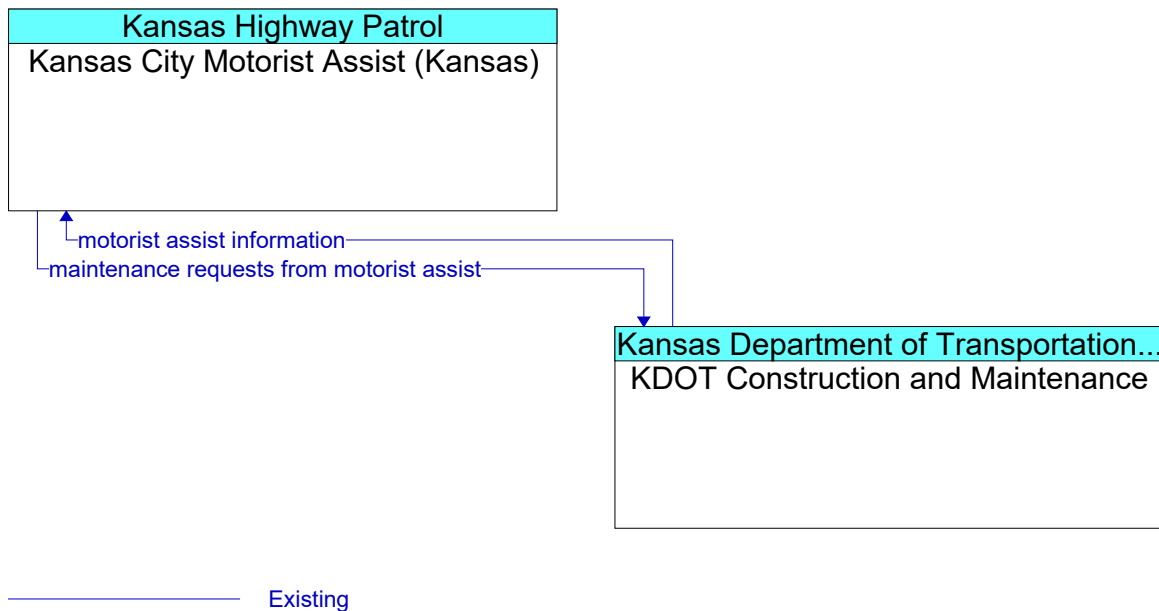
**Figure 494: Kansas City Motorist Assist (Kansas) - KBI AMBER Alert System Interface**



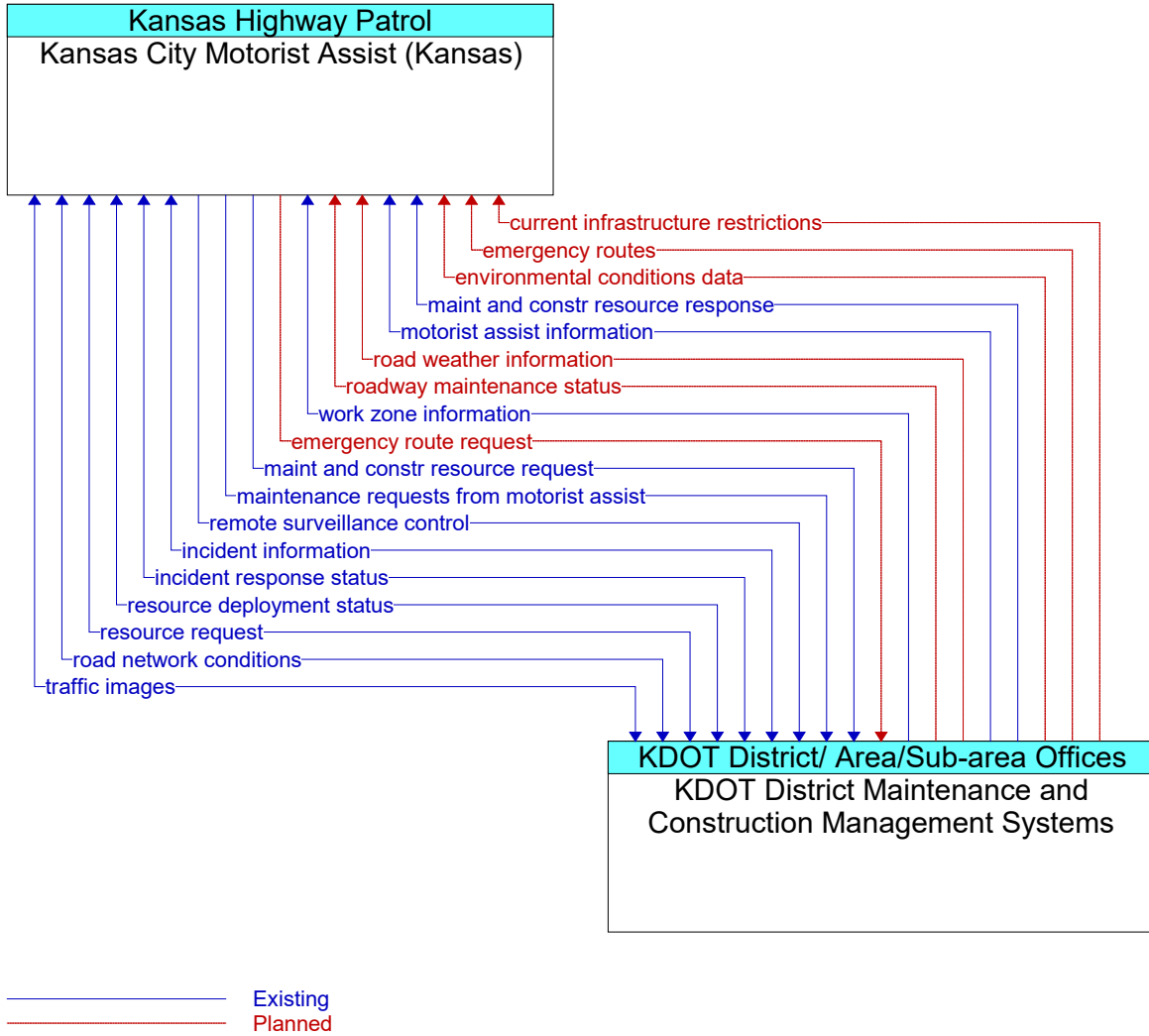
**Figure 495: Kansas City Motorist Assist (Kansas) - KCMO ATMS Interface**



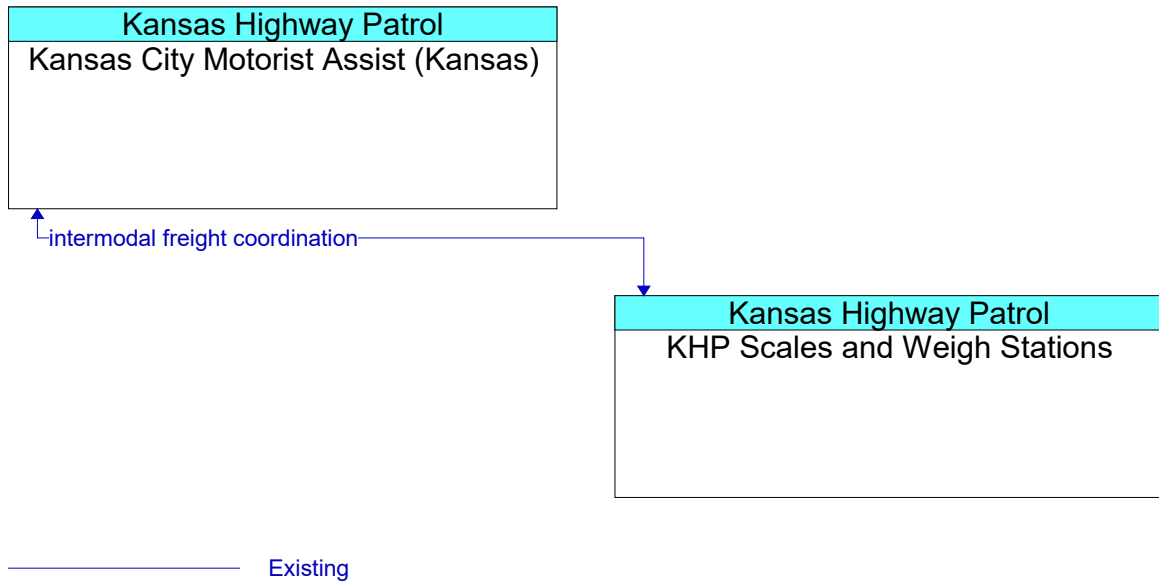
**Figure 496: Kansas City Motorist Assist (Kansas) - KCMO Maintenance and Construction Operations Center Interface**



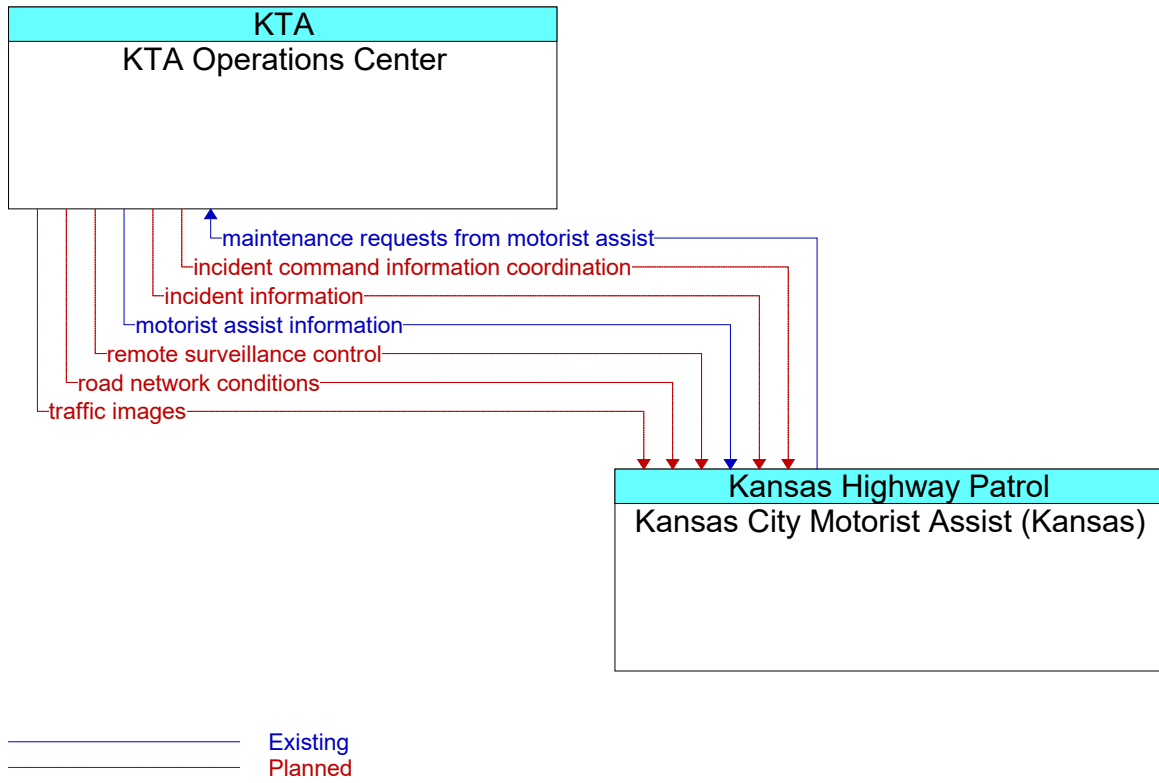
**Figure 497: Kansas City Motorist Assist (Kansas) - KDOT Construction and Maintenance Interface**



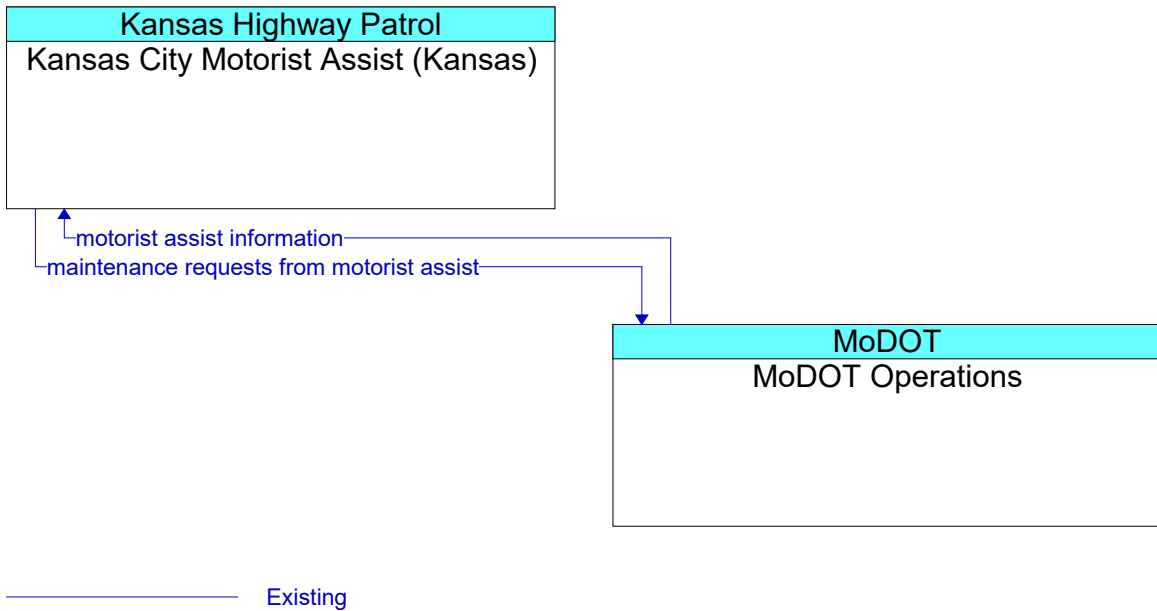
**Figure 498: Kansas City Motorist Assist (Kansas) - KDOT District Maintenance and Construction Management Systems Interface**



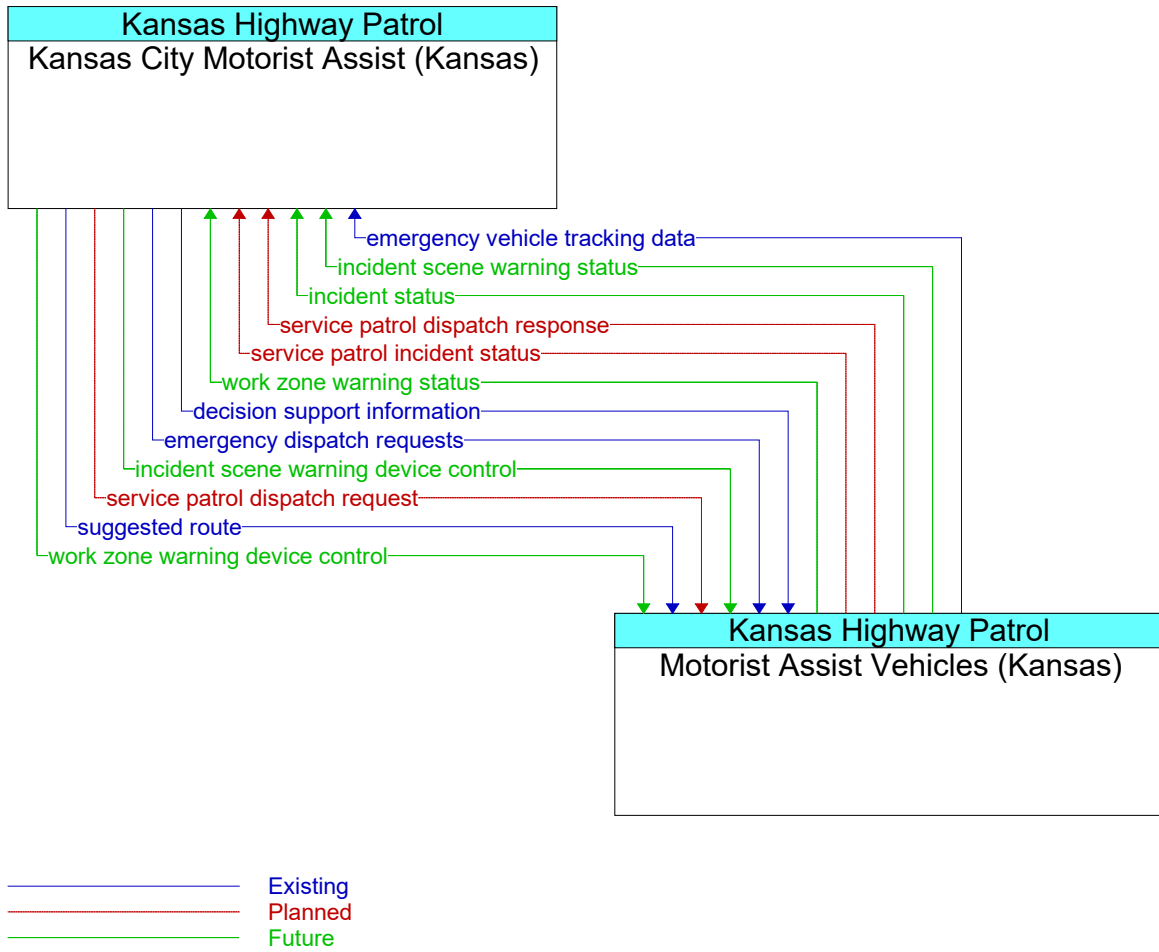
**Figure 499: Kansas City Motorist Assist (Kansas) - KHP Scales and Weigh Stations Interface**



**Figure 500: Kansas City Motorist Assist (Kansas) - KTA Operations Center Interface**

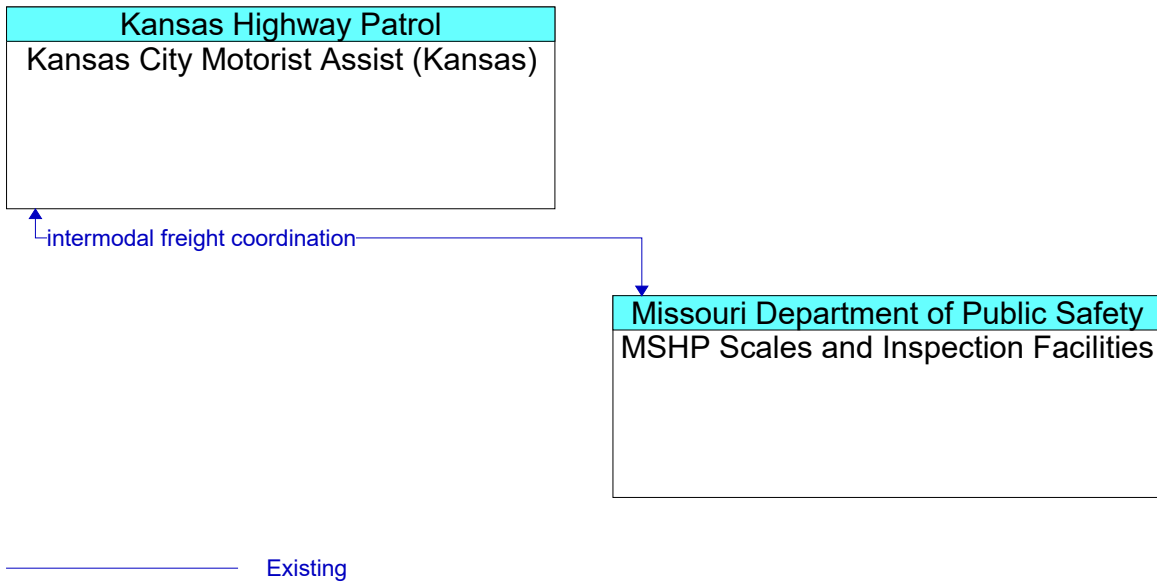


**Figure 501: Kansas City Motorist Assist (Kansas) - MoDOT Operations Interface**

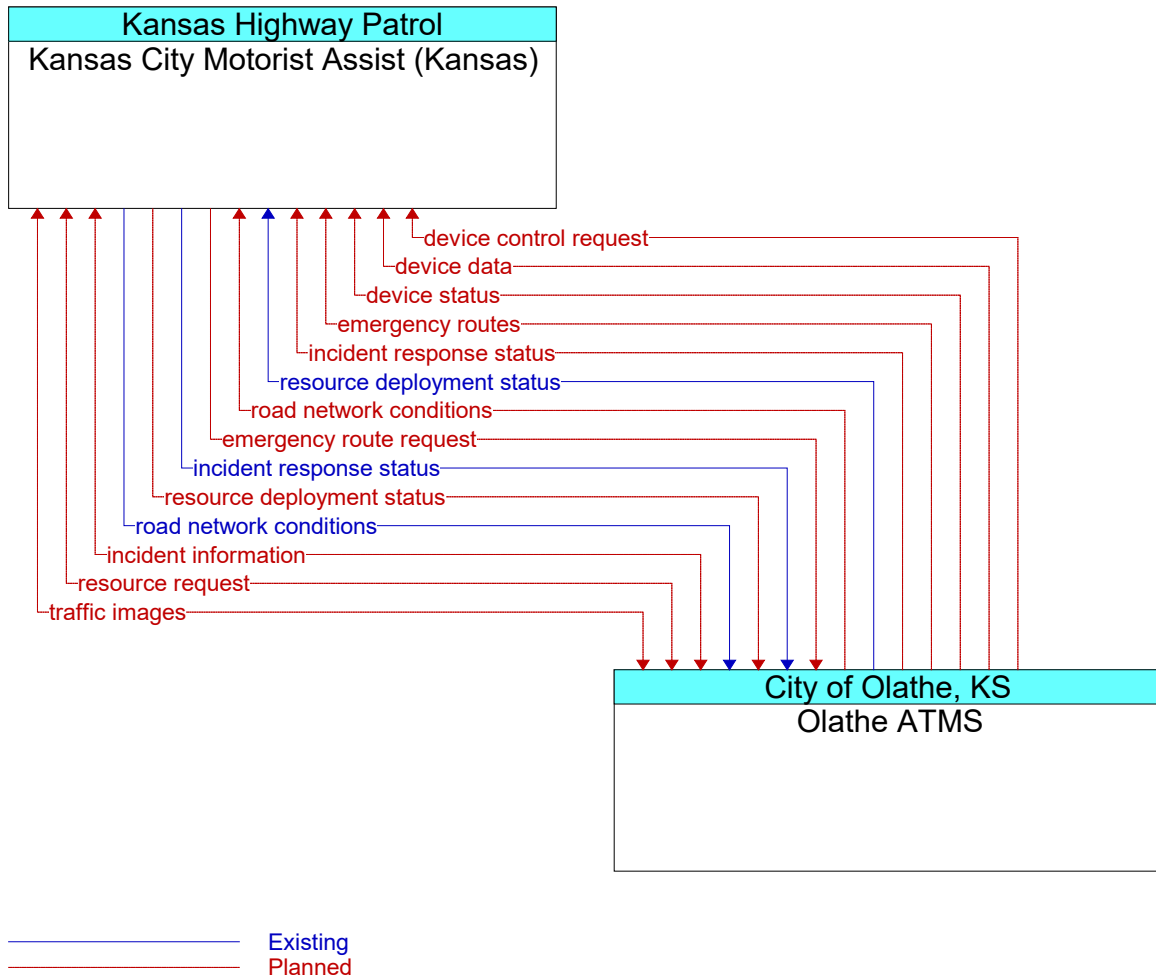


**Figure 502: Kansas City Motorist Assist (Kansas) - Motorist Assist Vehicles (Kansas) Interface**

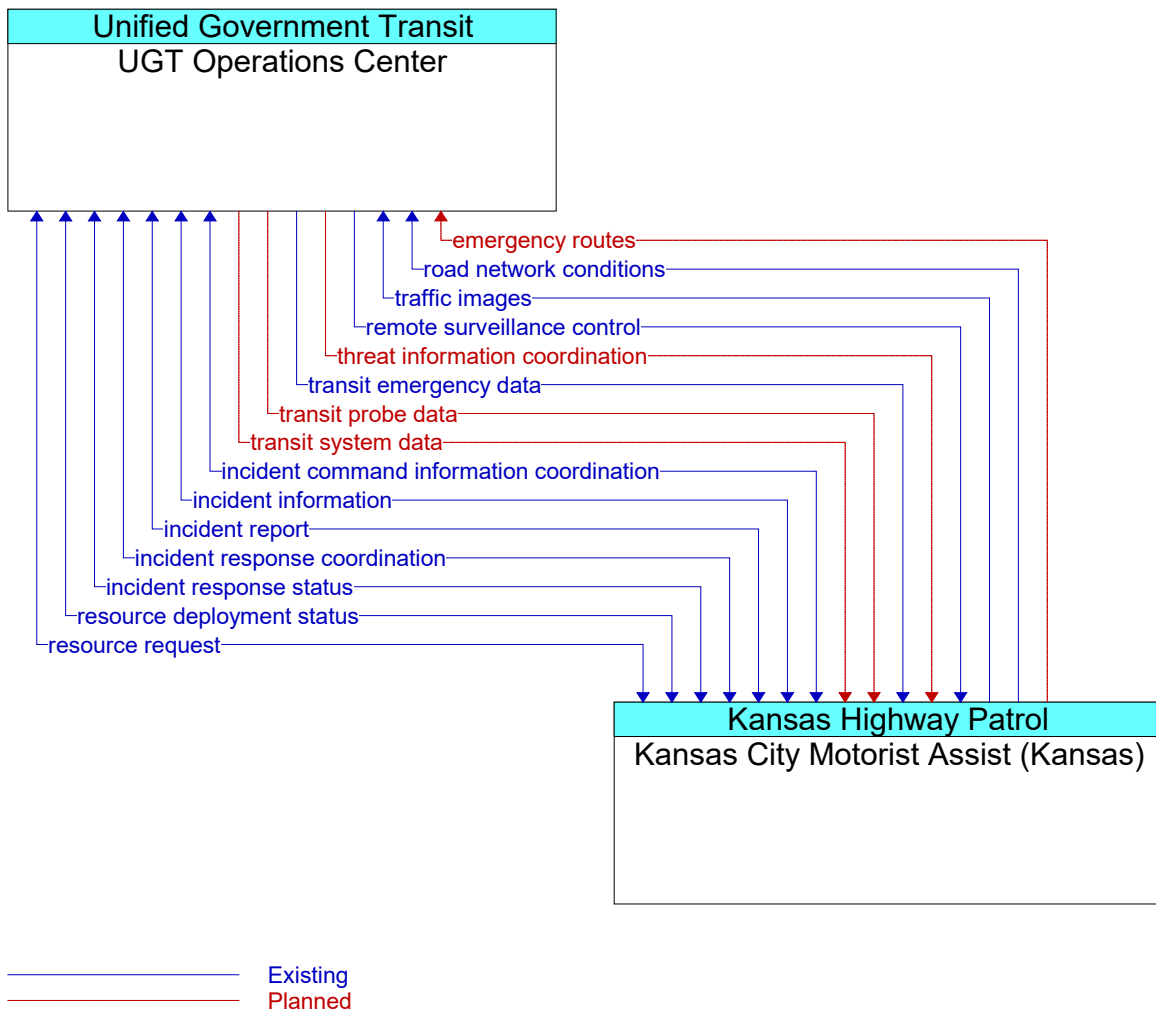




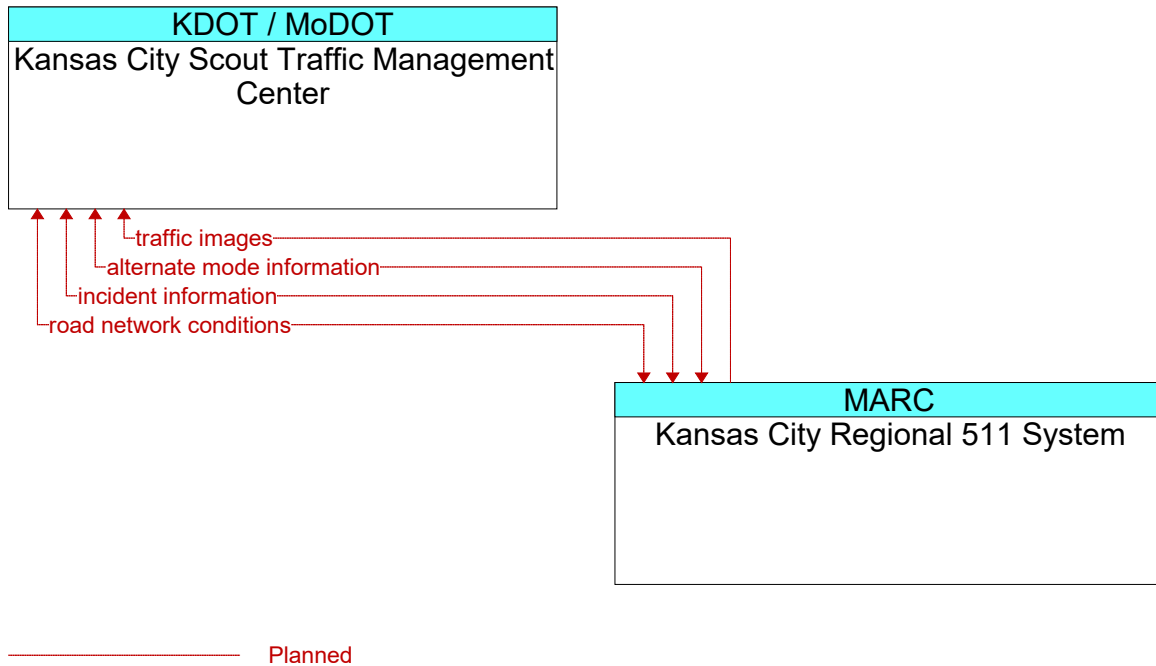
**Figure 503: Kansas City Motorist Assist (Kansas) - MSHP Scales and Inspection Facilities Interface**



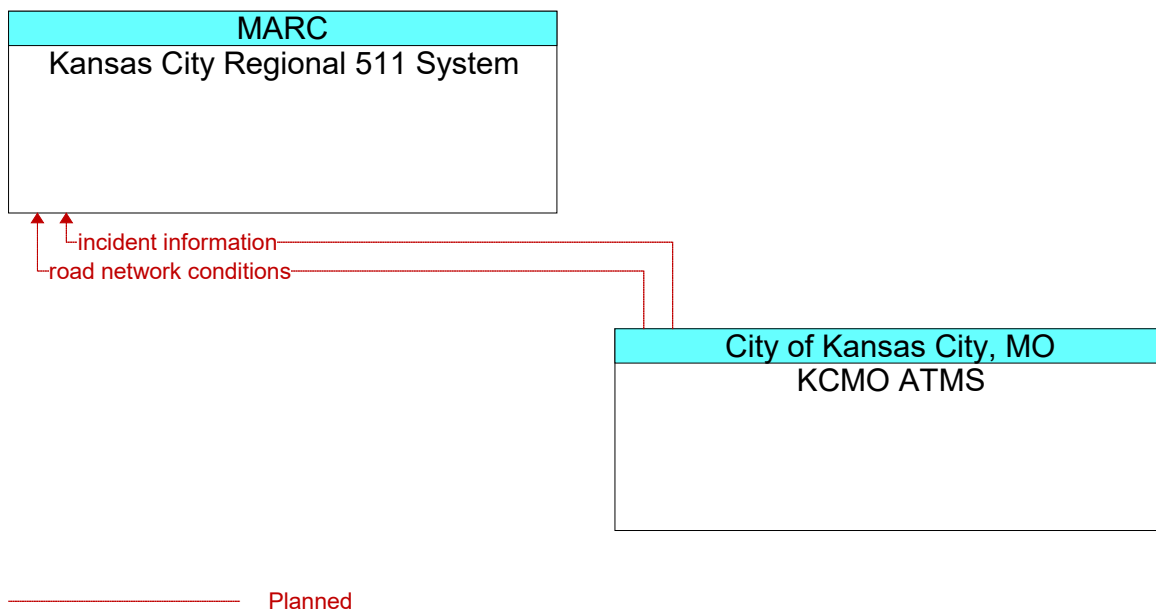
**Figure 504: Kansas City Motorist Assist (Kansas) - Olathe ATMS Interface**



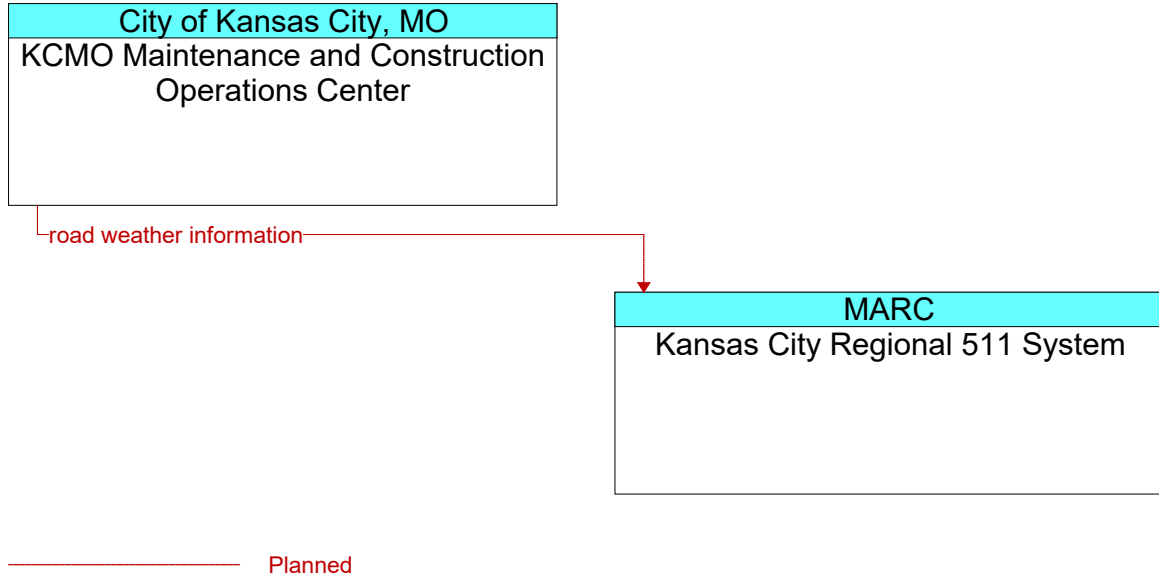
**Figure 505: Kansas City Motorist Assist (Kansas) - UGT Operations Center Interface**



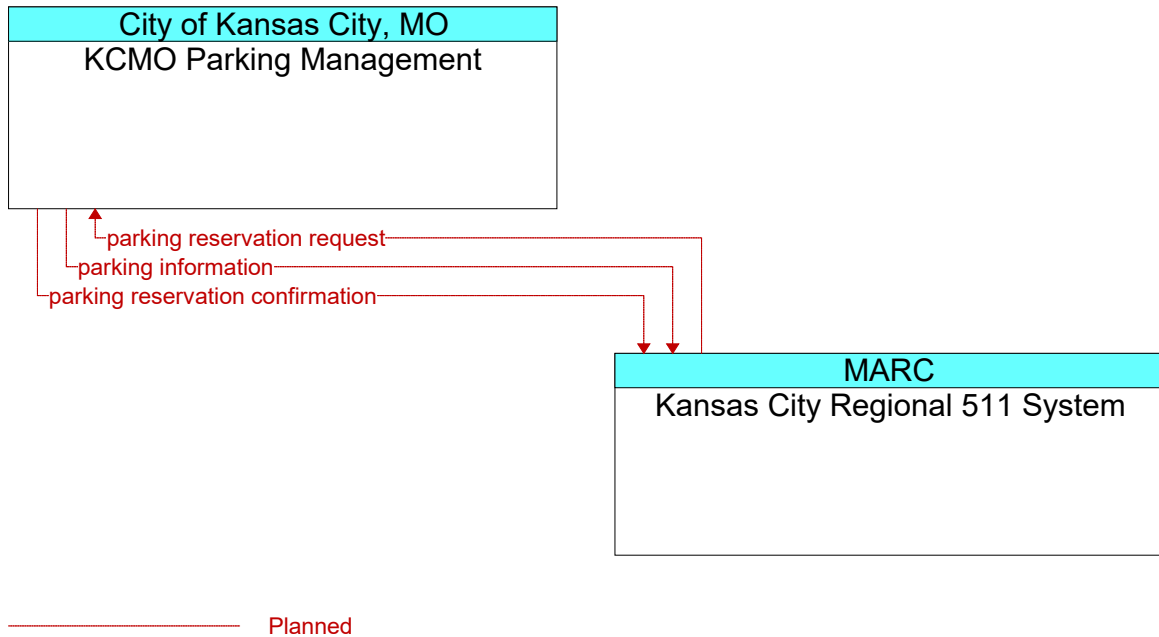
**Figure 506: Kansas City Regional 511 System - Kansas City Scout Traffic Management Center Interface**



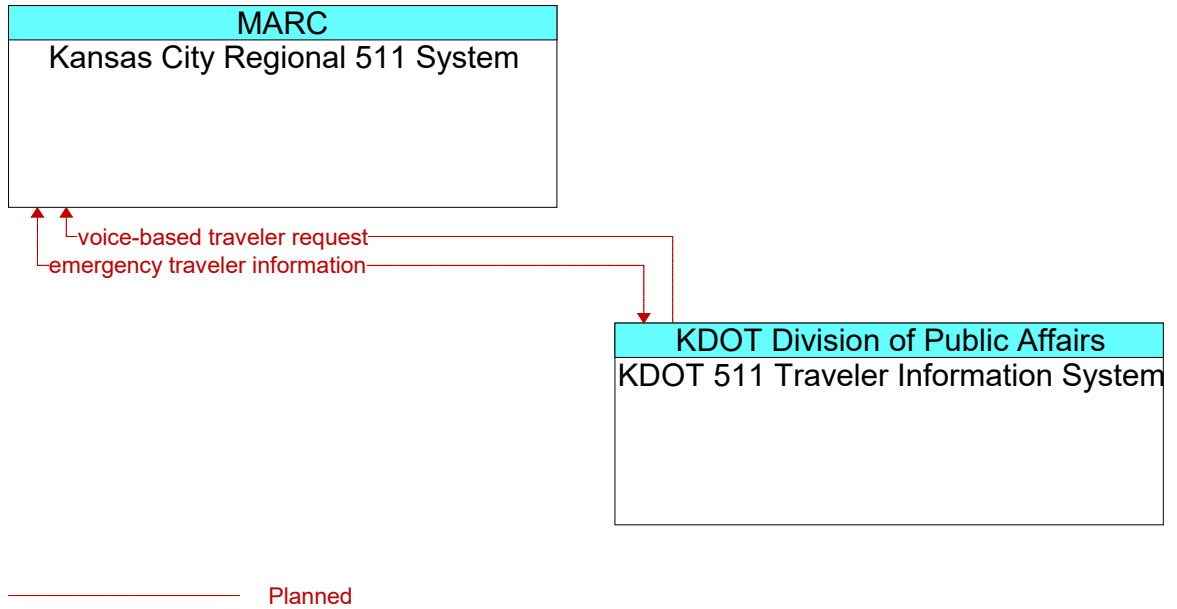
**Figure 507: Kansas City Regional 511 System - KCMO ATMS Interface**



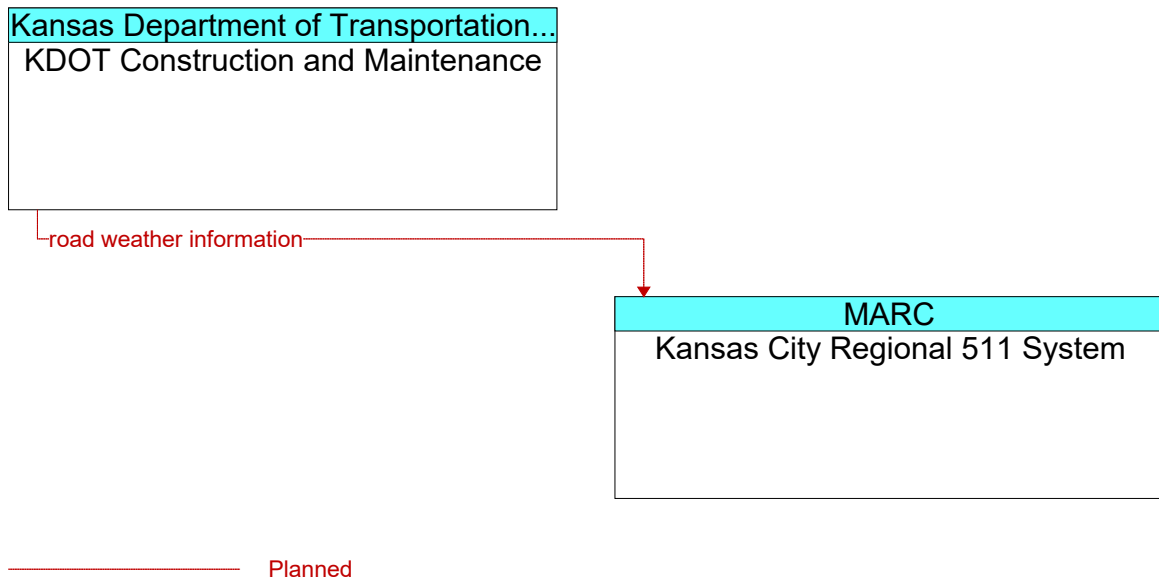
**Figure 508: Kansas City Regional 511 System - KCMO Maintenance and Construction Operations Center Interface**



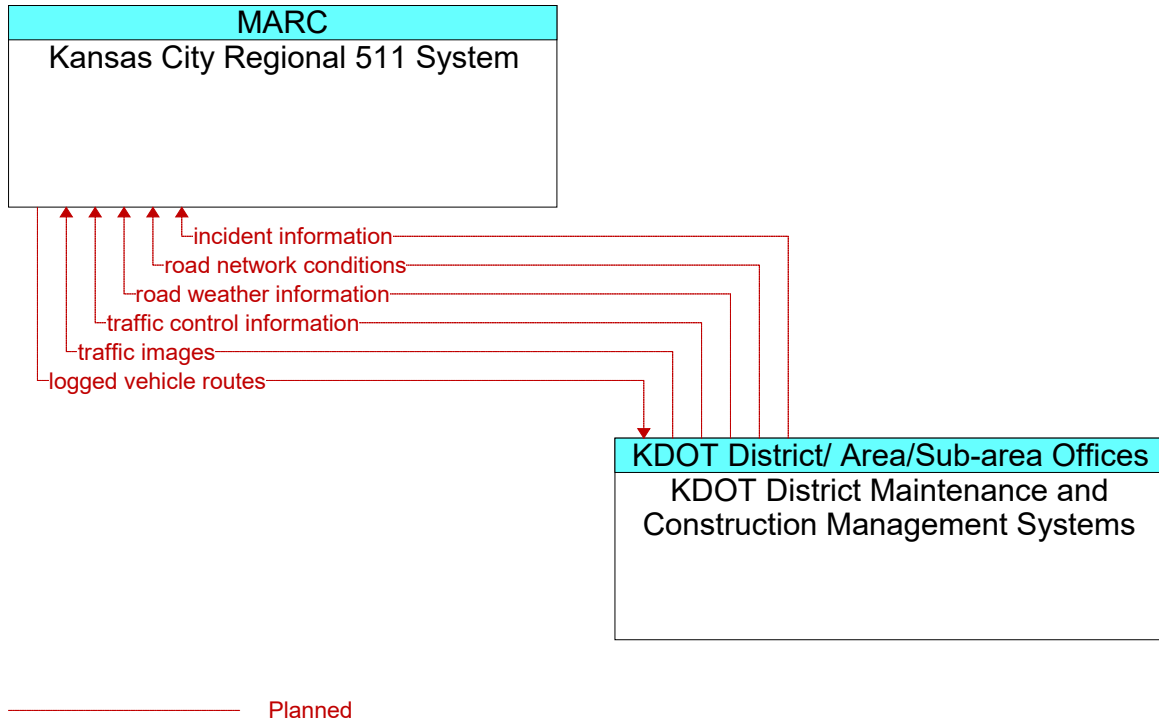
**Figure 509: Kansas City Regional 511 System - KCMO Parking Management Interface**



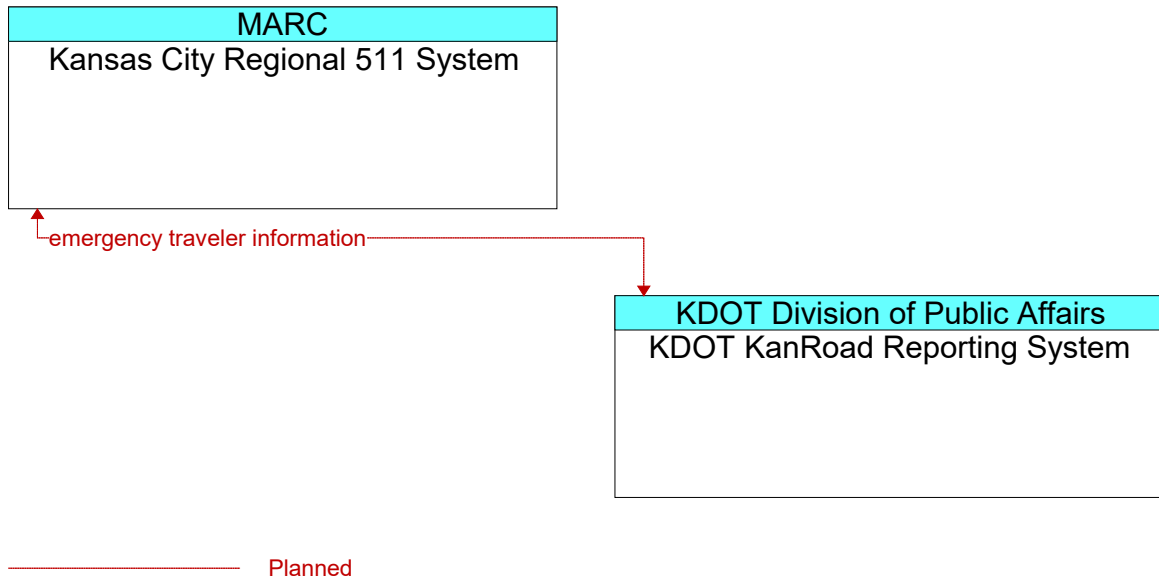
**Figure 510: Kansas City Regional 511 System - KDOT 511 Traveler Information System Interface**



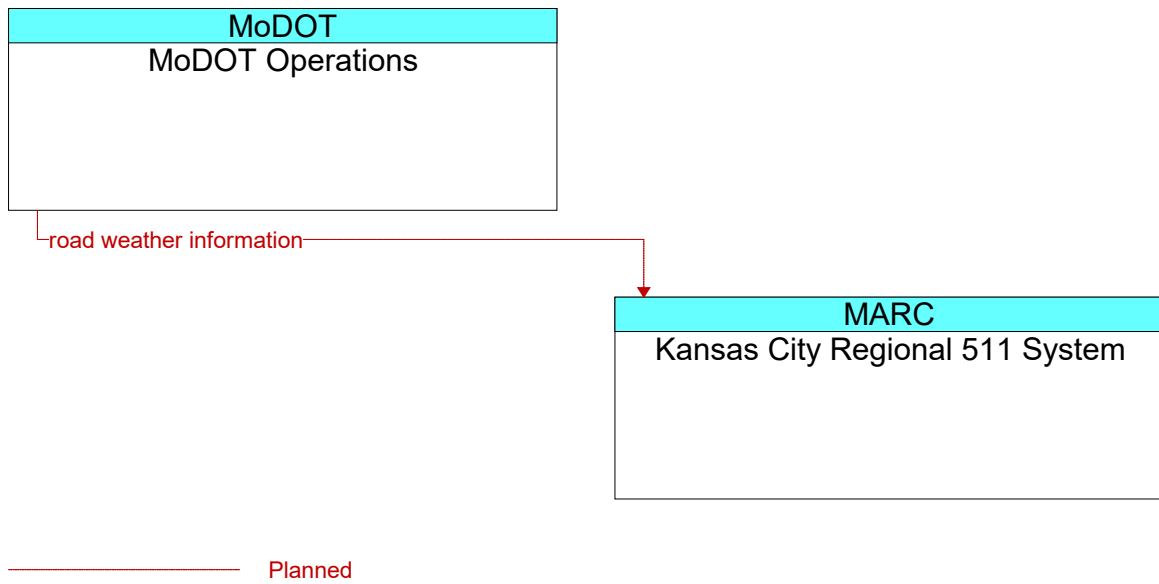
**Figure 511: Kansas City Regional 511 System - KDOT Construction and Maintenance Interface**



**Figure 512: Kansas City Regional 511 System - KDOT District Maintenance and Construction Management Systems Interface**

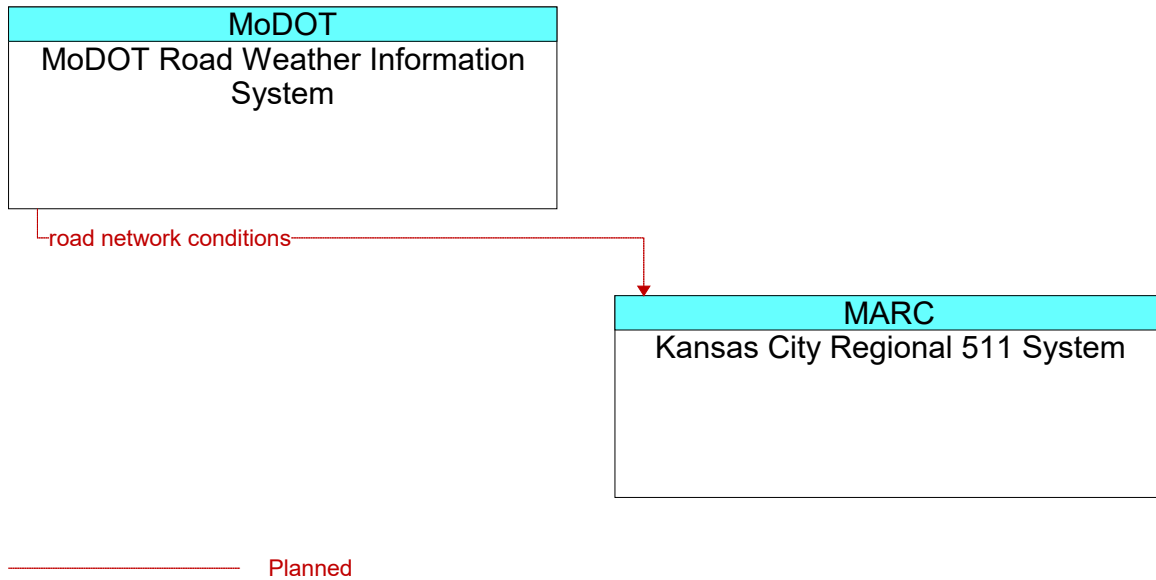


**Figure 513: Kansas City Regional 511 System - KDOT KanRoad Reporting System Interface**

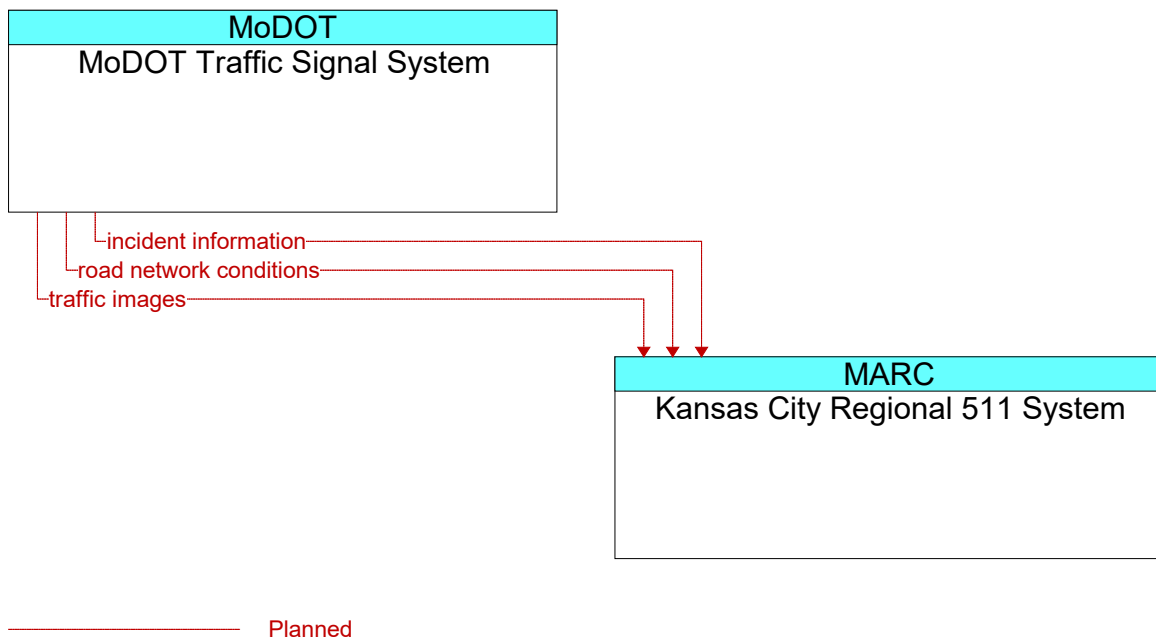


**Figure 514: Kansas City Regional 511 System - MoDOT Operations Interface**

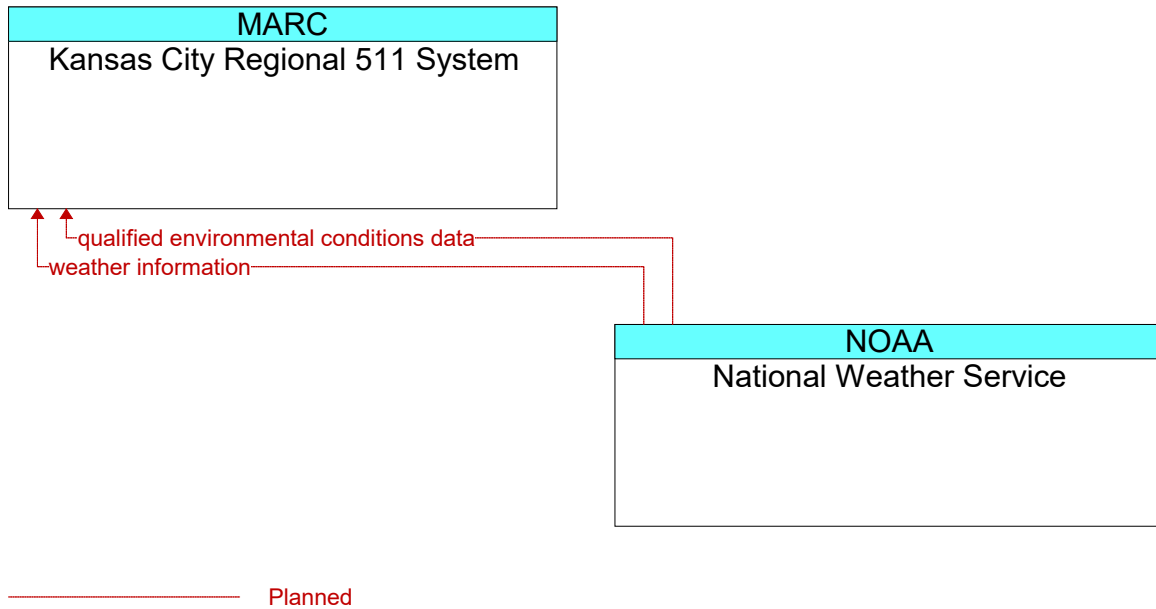




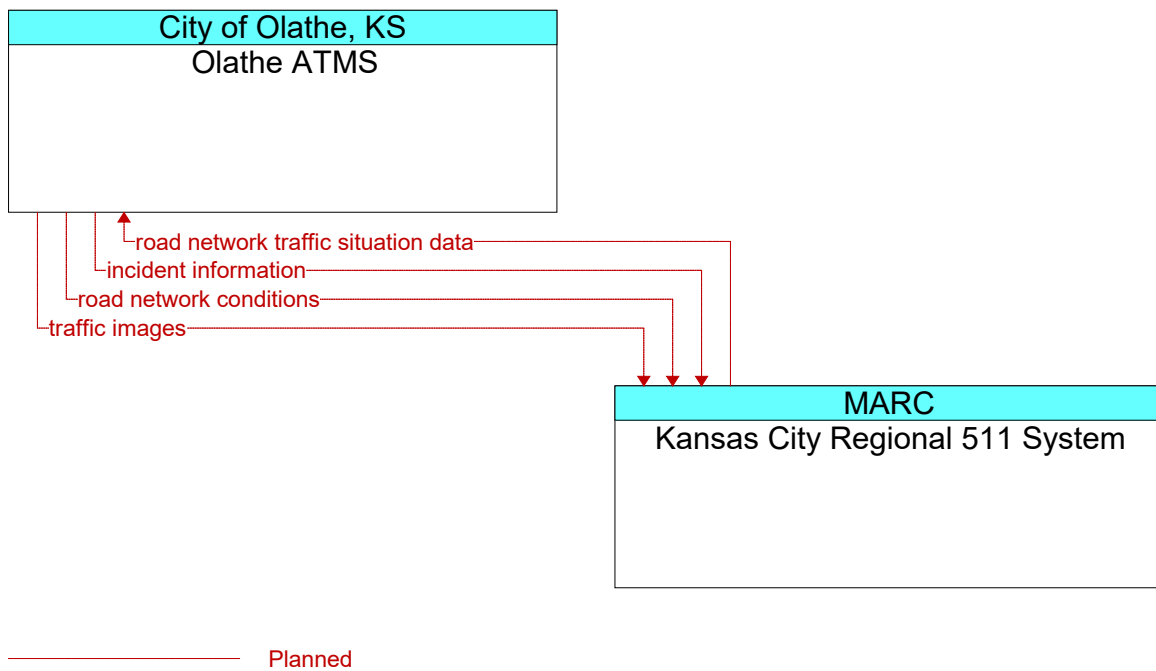
**Figure 515: Kansas City Regional 511 System - MoDOT Road Weather Information System Interface**



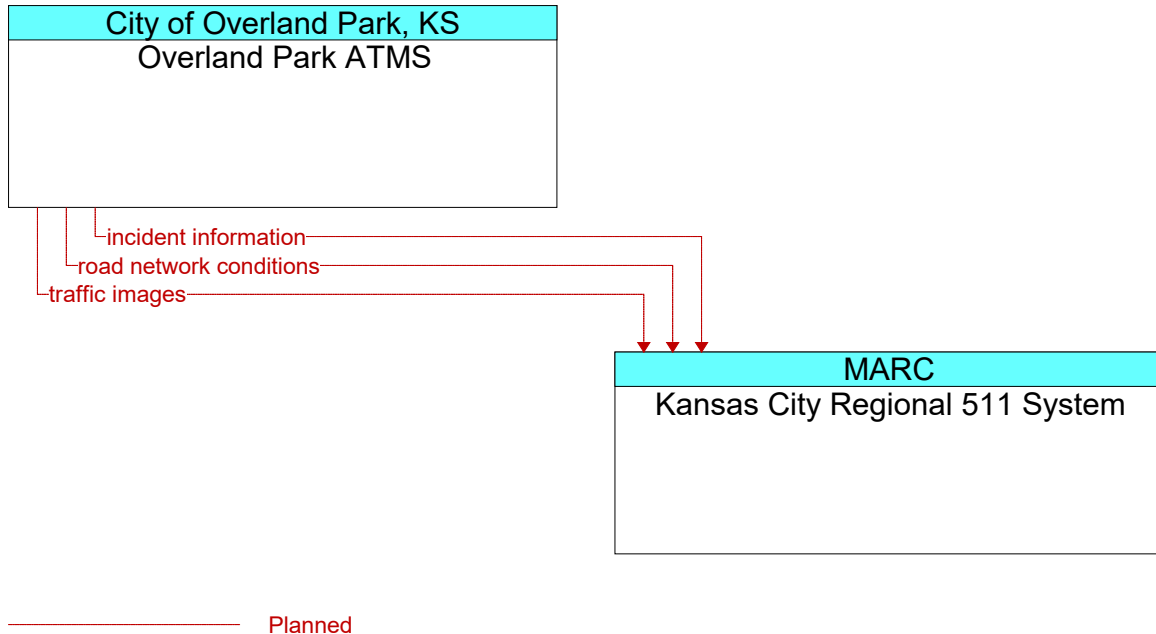
**Figure 516: Kansas City Regional 511 System - MoDOT Traffic Signal System Interface**



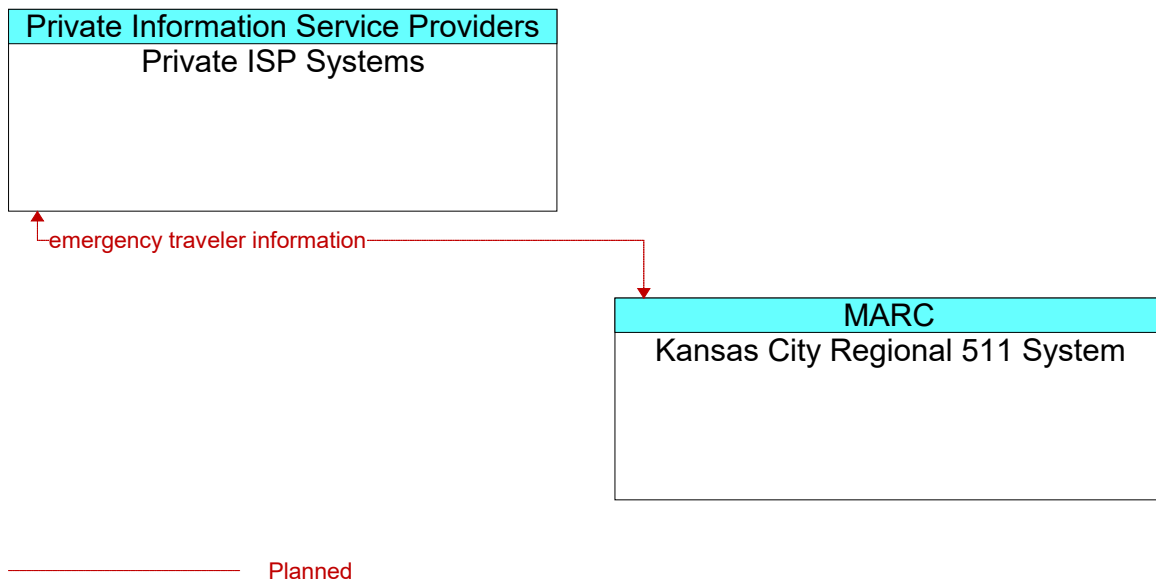
**Figure 517: Kansas City Regional 511 System - National Weather Service Interface**



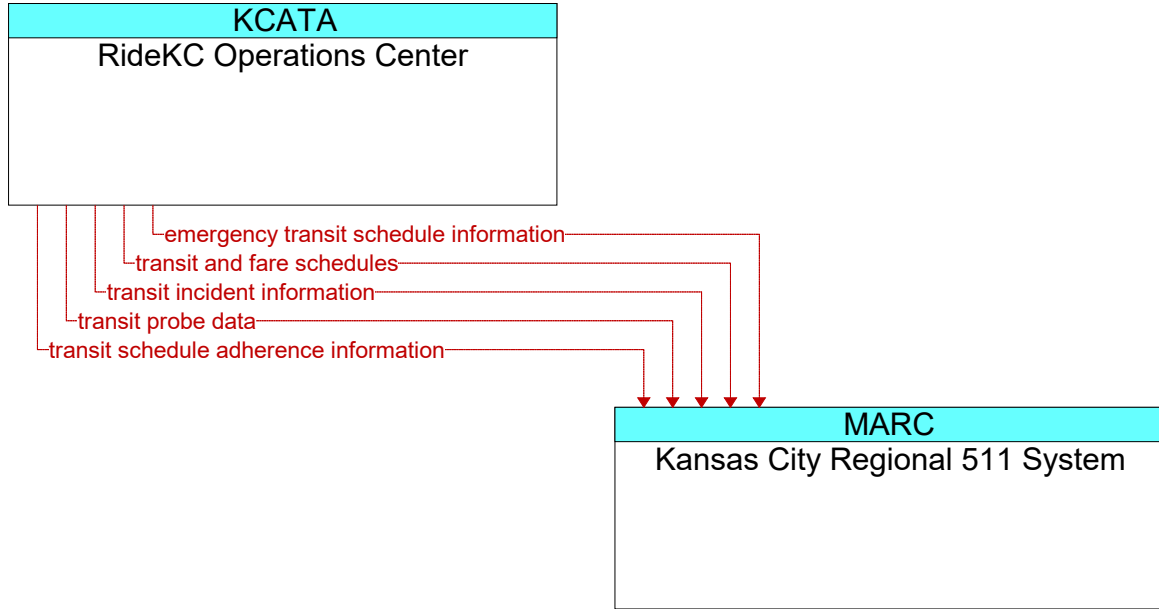
**Figure 518: Kansas City Regional 511 System - Olathe ATMS Interface**



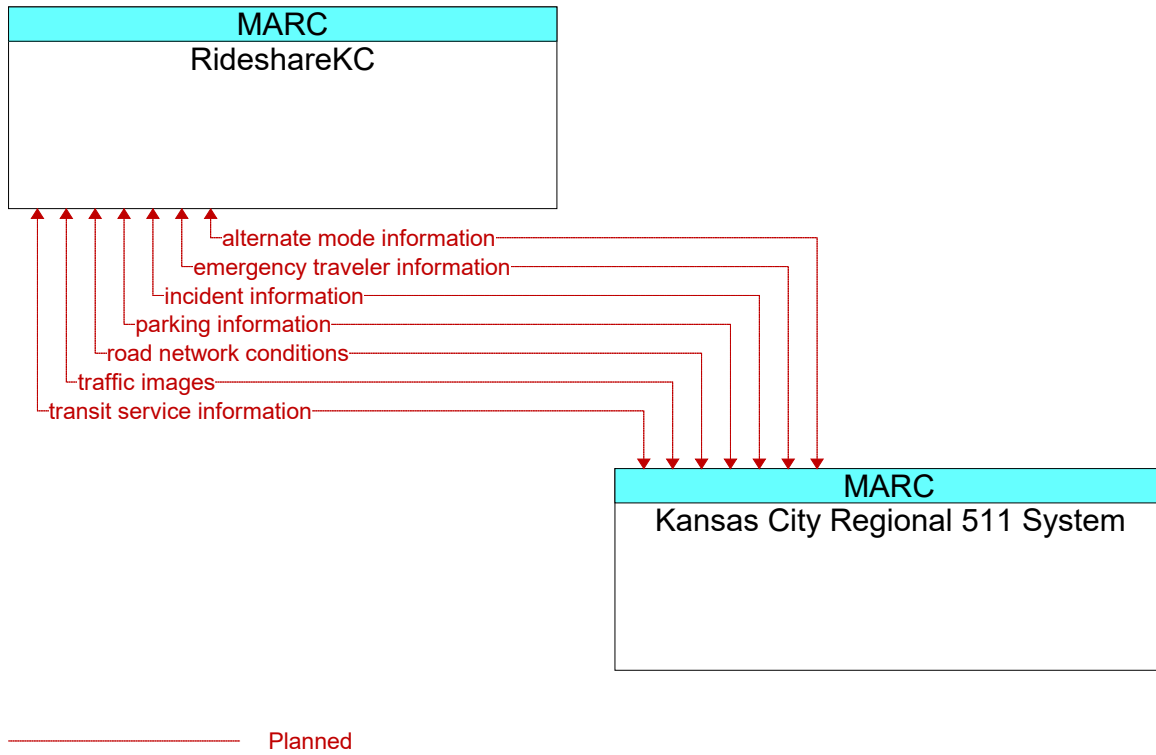
**Figure 519: Kansas City Regional 511 System - Overland Park ATMS Interface**



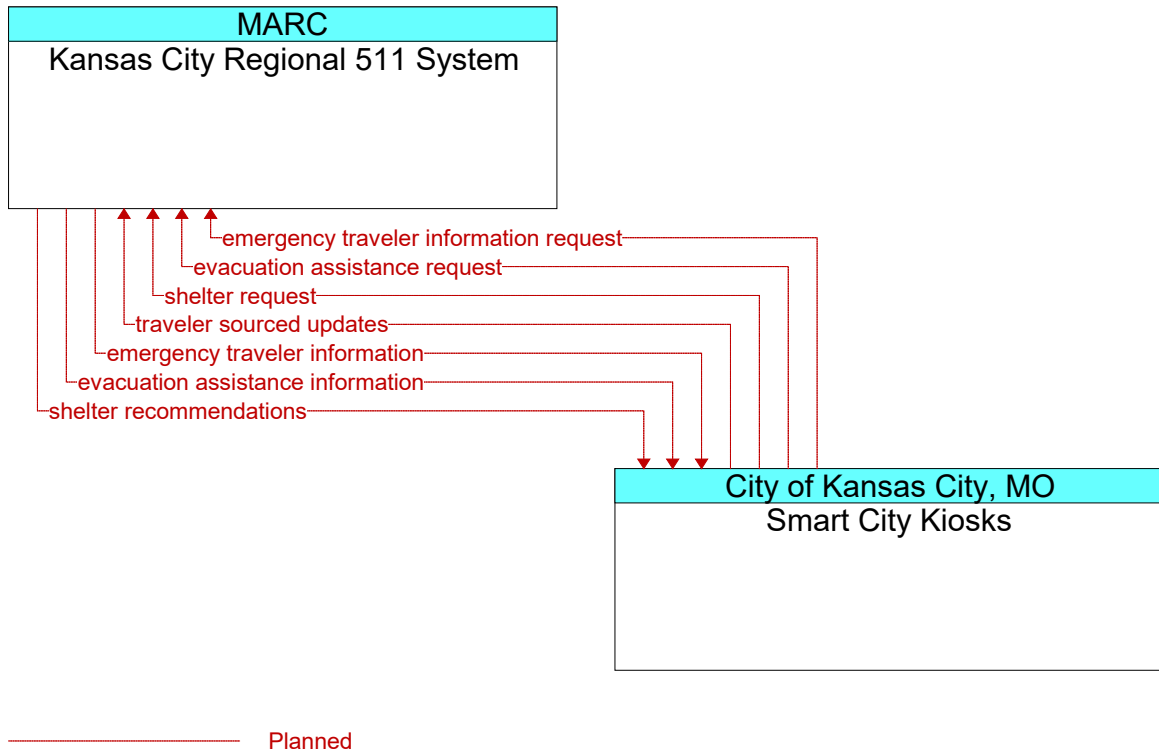
**Figure 520: Kansas City Regional 511 System - Private ISP Systems Interface**



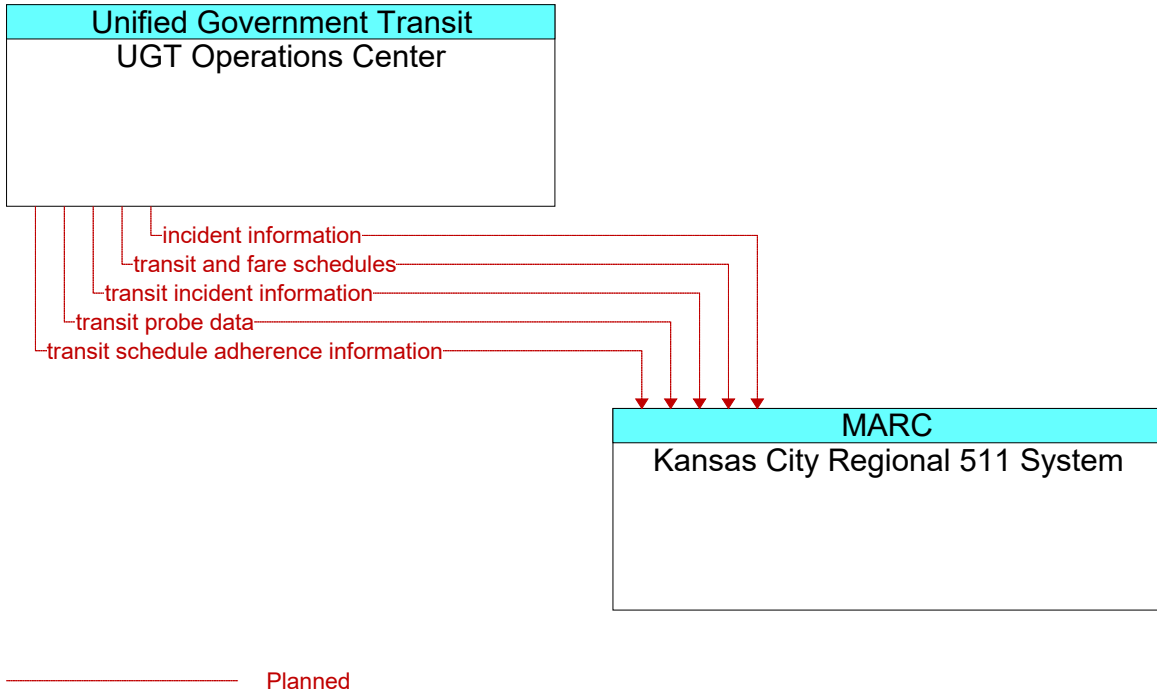
**Figure 521: Kansas City Regional 511 System - RideKC Operations Center Interface**



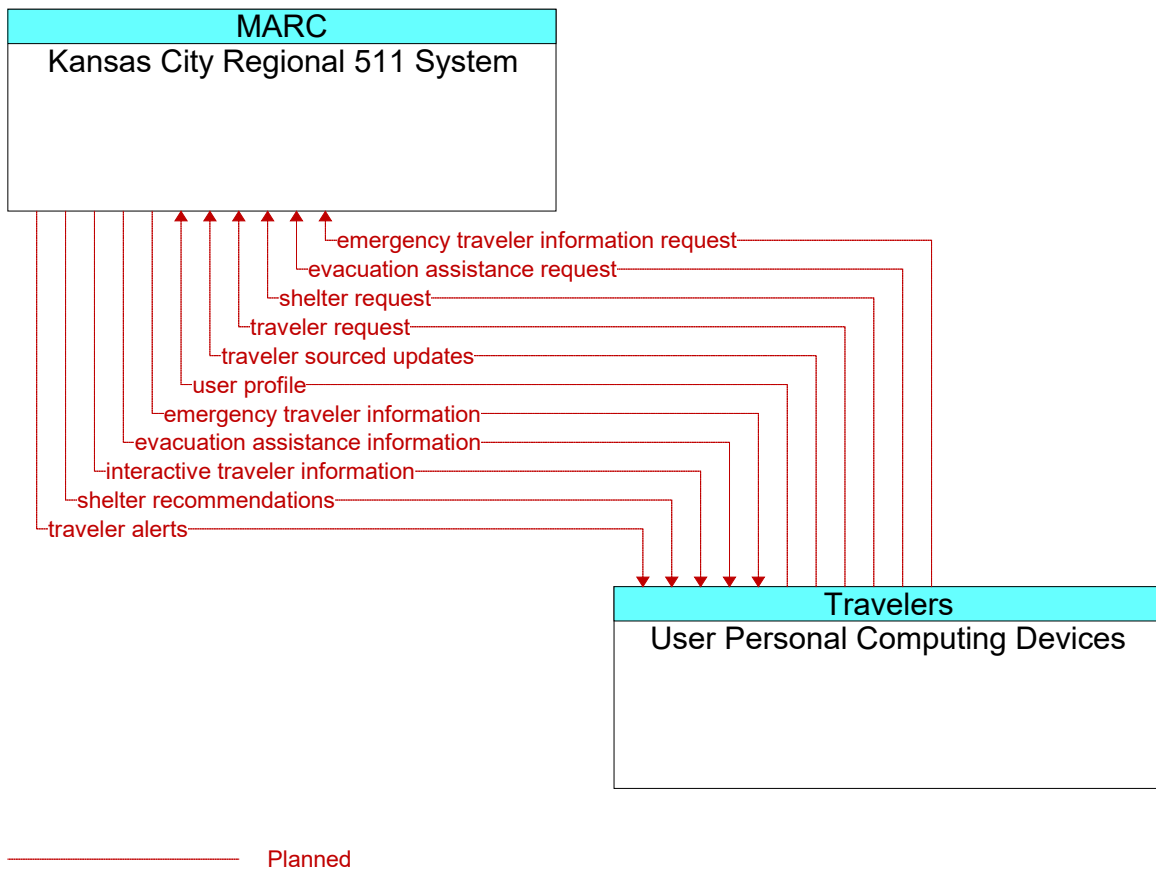
**Figure 522: Kansas City Regional 511 System - RideshareKC Interface**



**Figure 523: Kansas City Regional 511 System - Smart City Kiosks Interface**

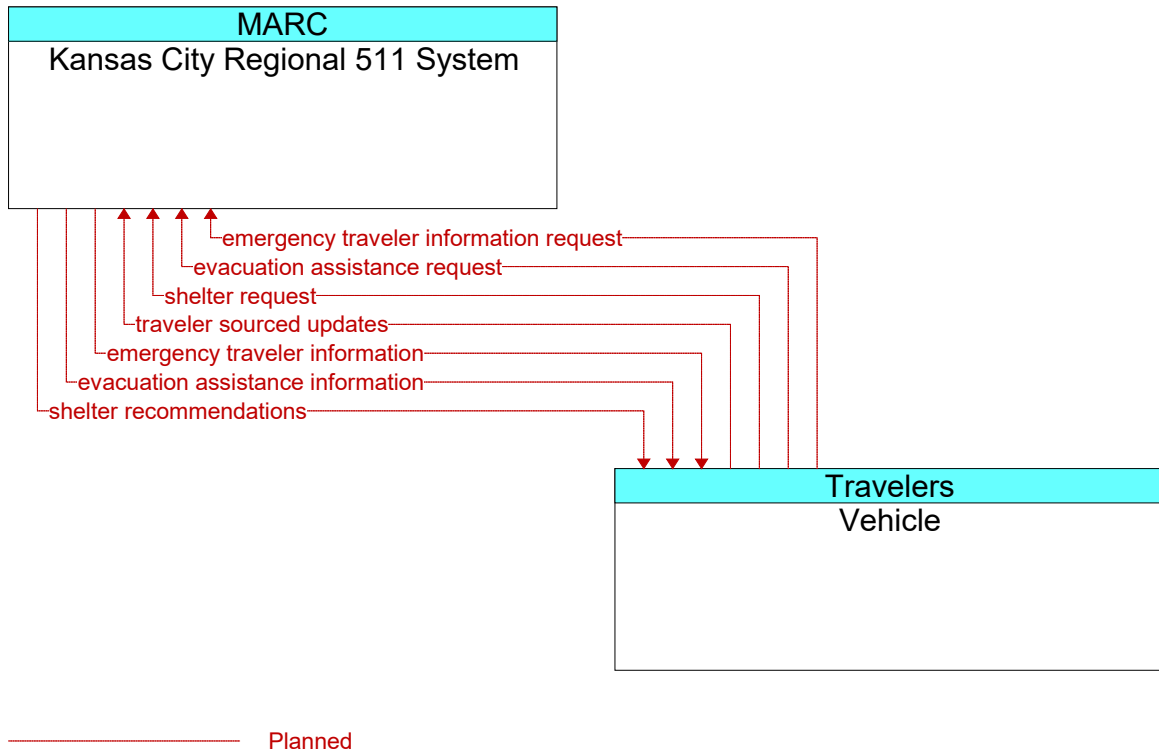


**Figure 524: Kansas City Regional 511 System - UGT Operations Center Interface**

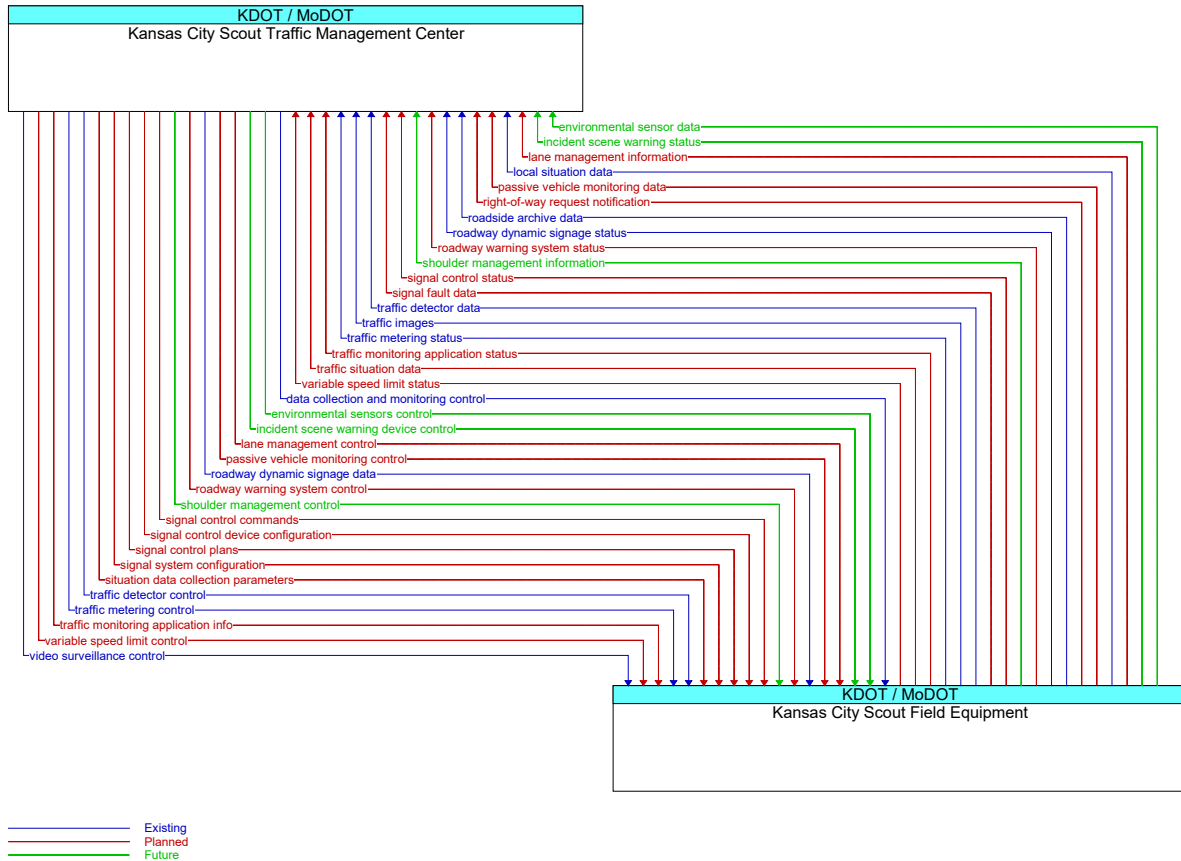


**Figure 525: Kansas City Regional 511 System - User Personal Computing Devices Interface**

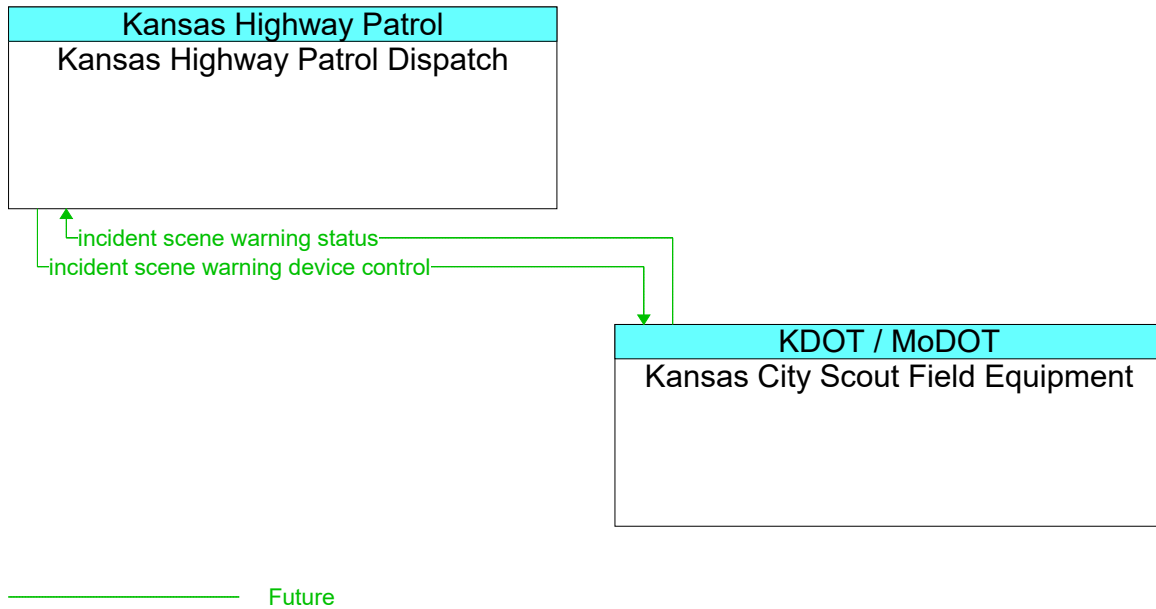




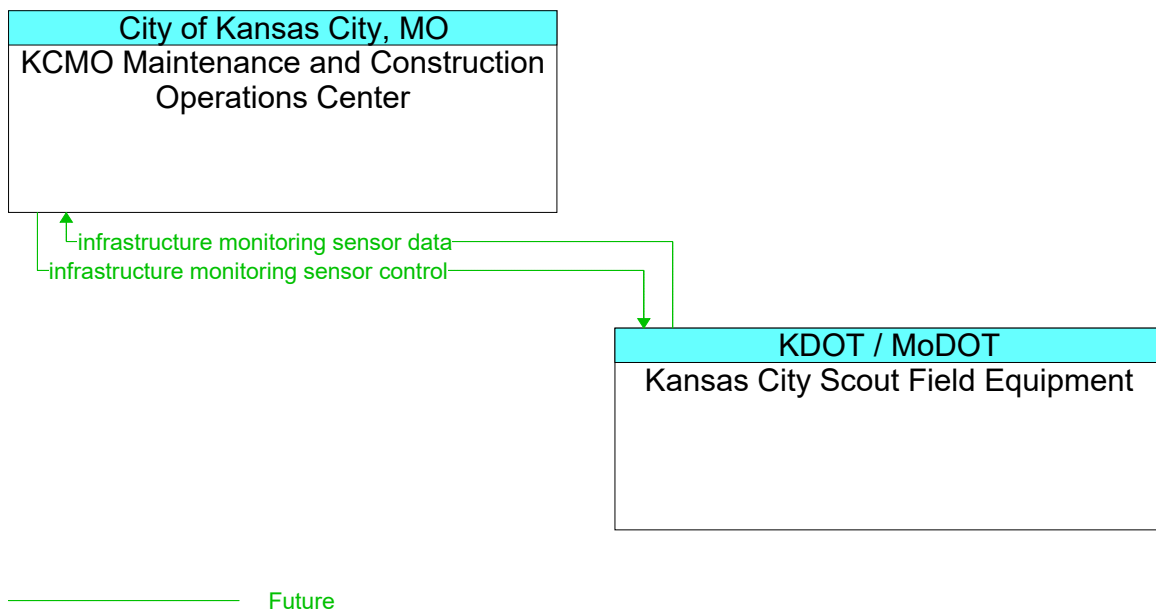
**Figure 526: Kansas City Regional 511 System - Vehicle Interface**



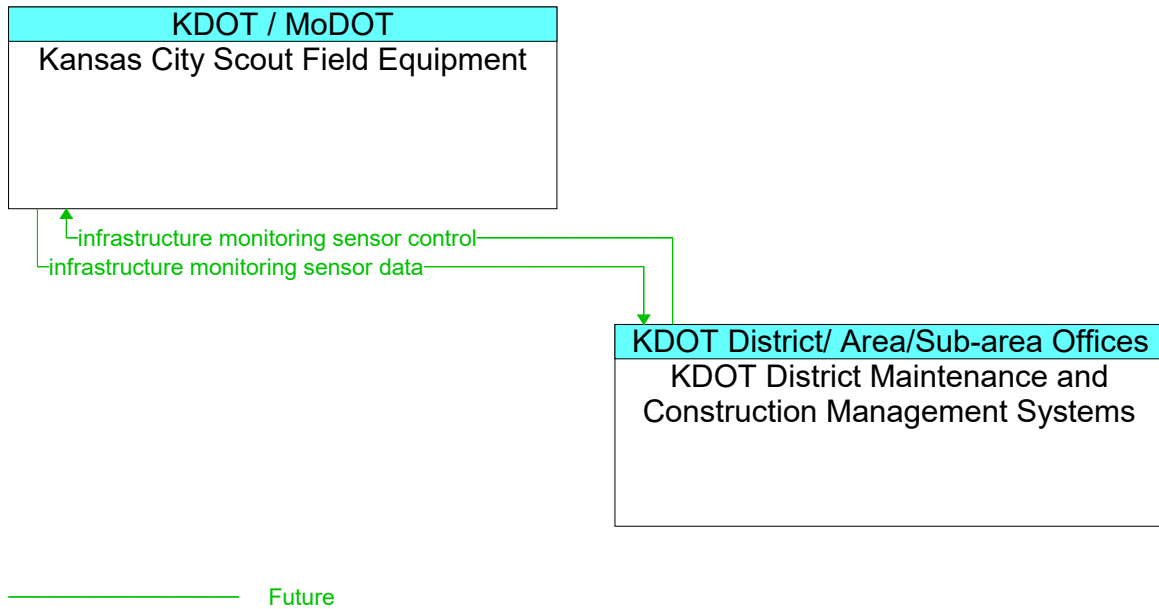
**Figure 527: Kansas City Scout Field Equipment - Kansas City Scout Traffic Management Center Interface**



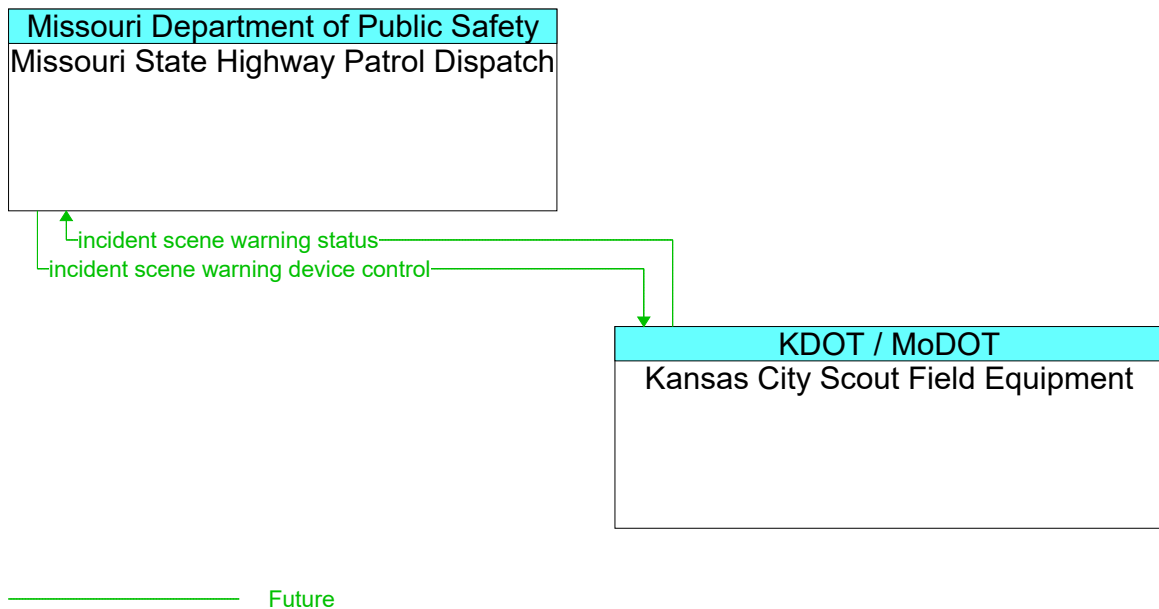
**Figure 528: Kansas City Scout Field Equipment - Kansas Highway Patrol Dispatch Interface**



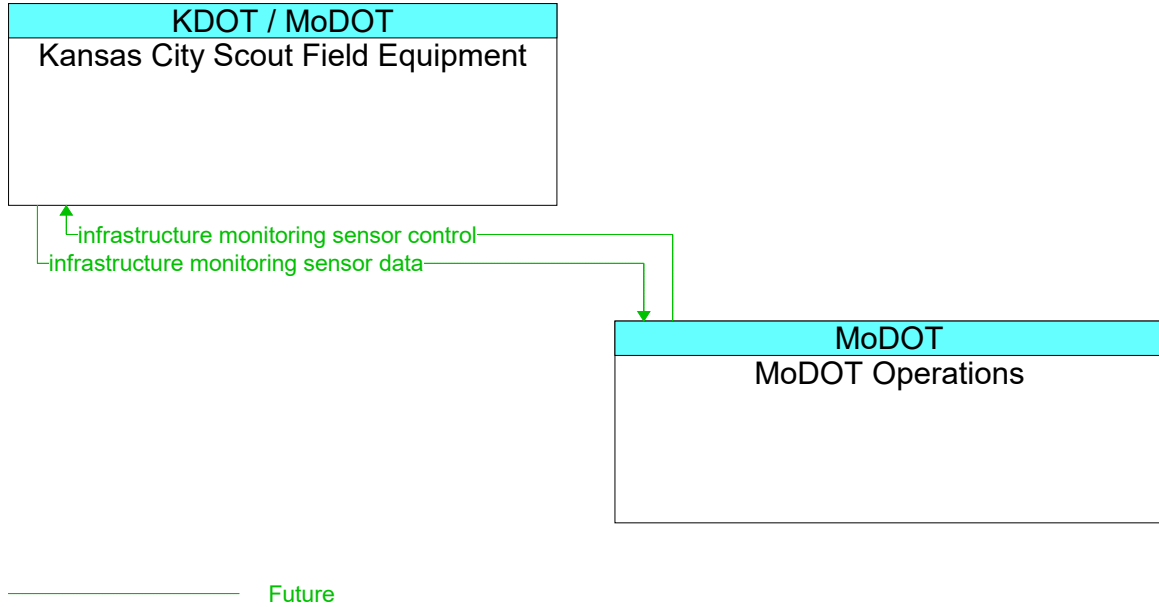
**Figure 529: Kansas City Scout Field Equipment - KCMO Maintenance and Construction Operations Center Interface**



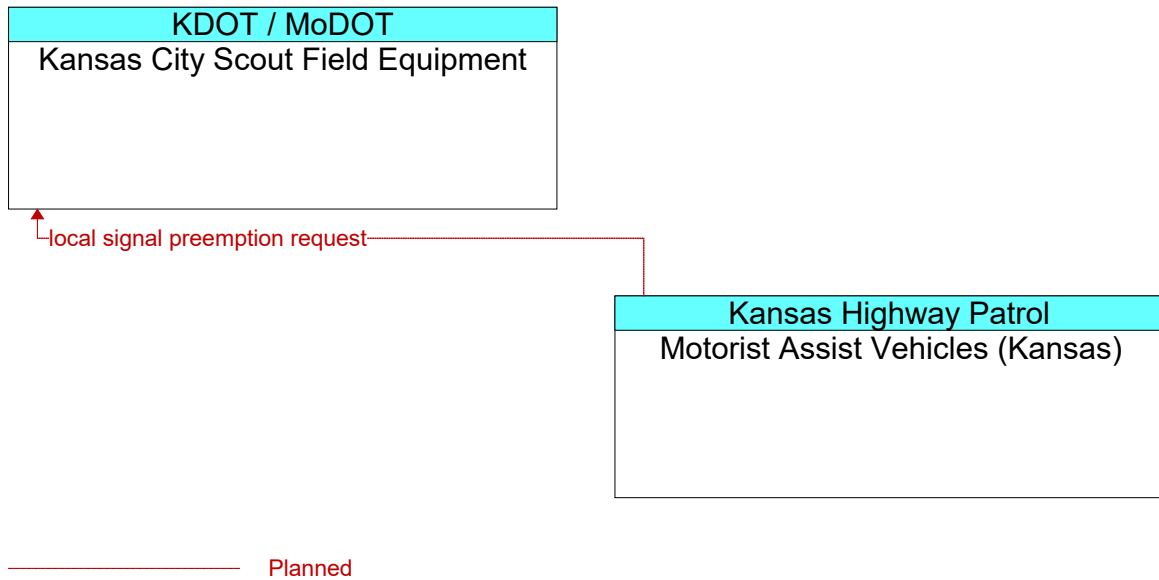
**Figure 530: Kansas City Scout Field Equipment - KDOT District Maintenance and Construction Management Systems Interface**



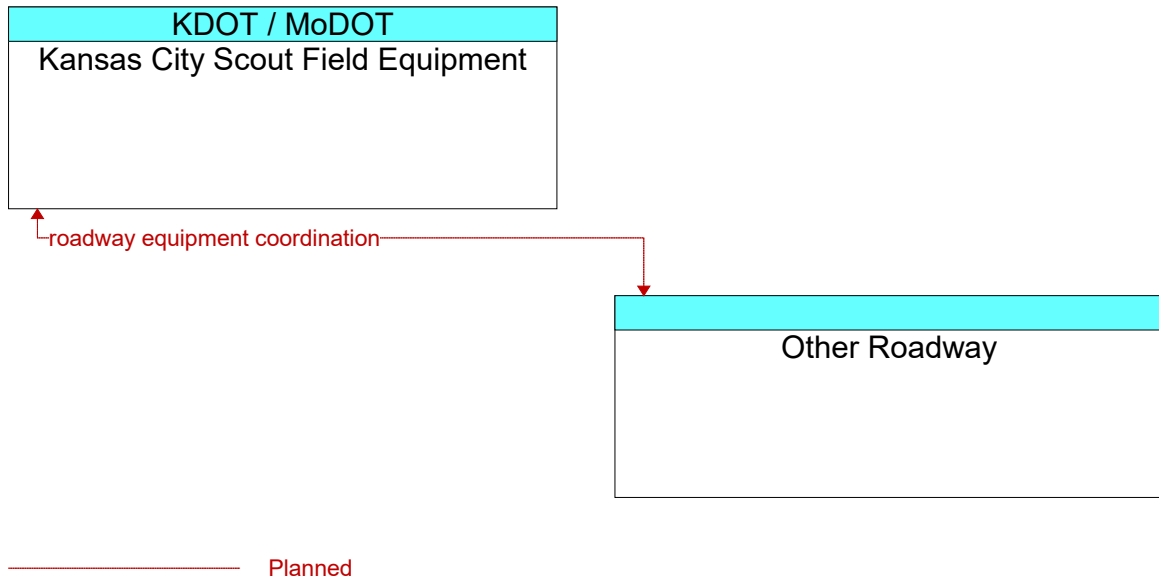
**Figure 531: Kansas City Scout Field Equipment - Missouri State Highway Patrol Dispatch Interface**



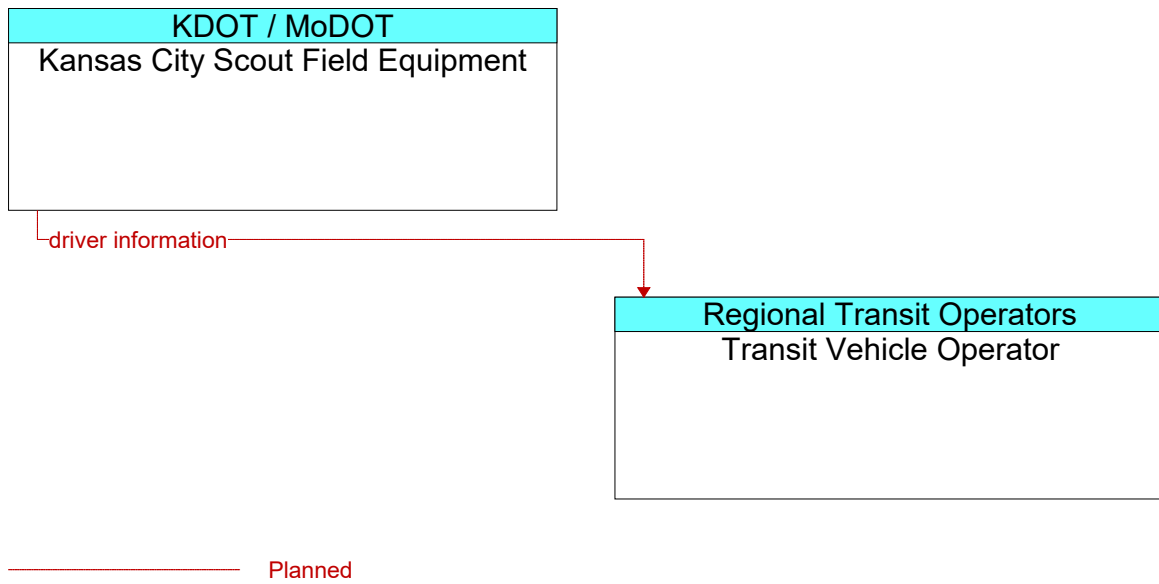
**Figure 532: Kansas City Scout Field Equipment - MoDOT Operations Interface**



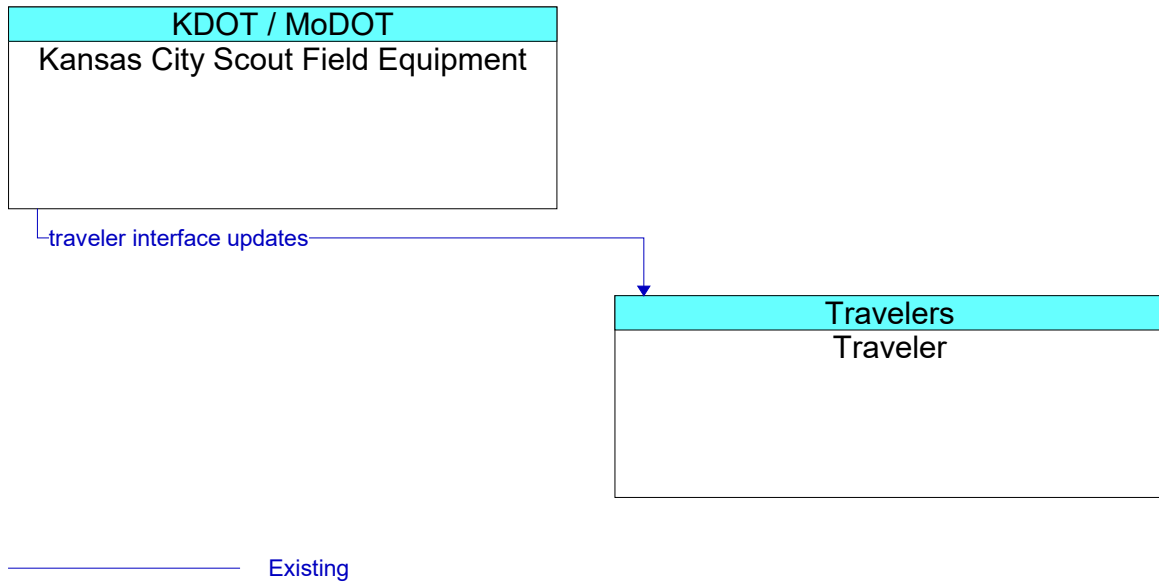
**Figure 533: Kansas City Scout Field Equipment - Motorist Assist Vehicles (Kansas) Interface**



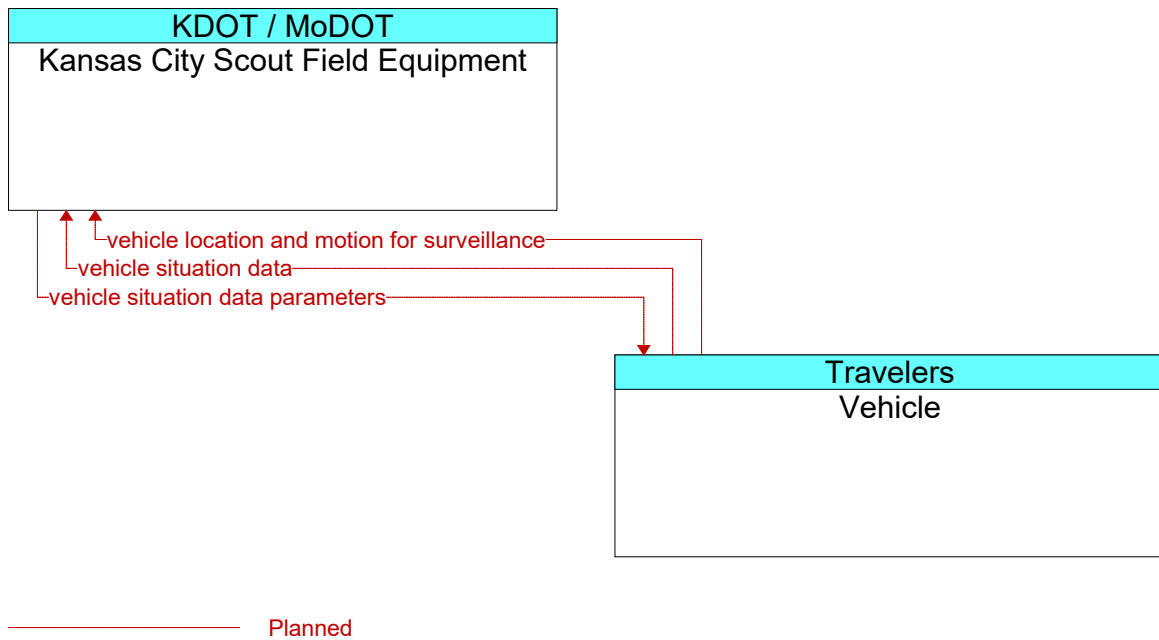
**Figure 534: Kansas City Scout Field Equipment - Other Roadway Interface**



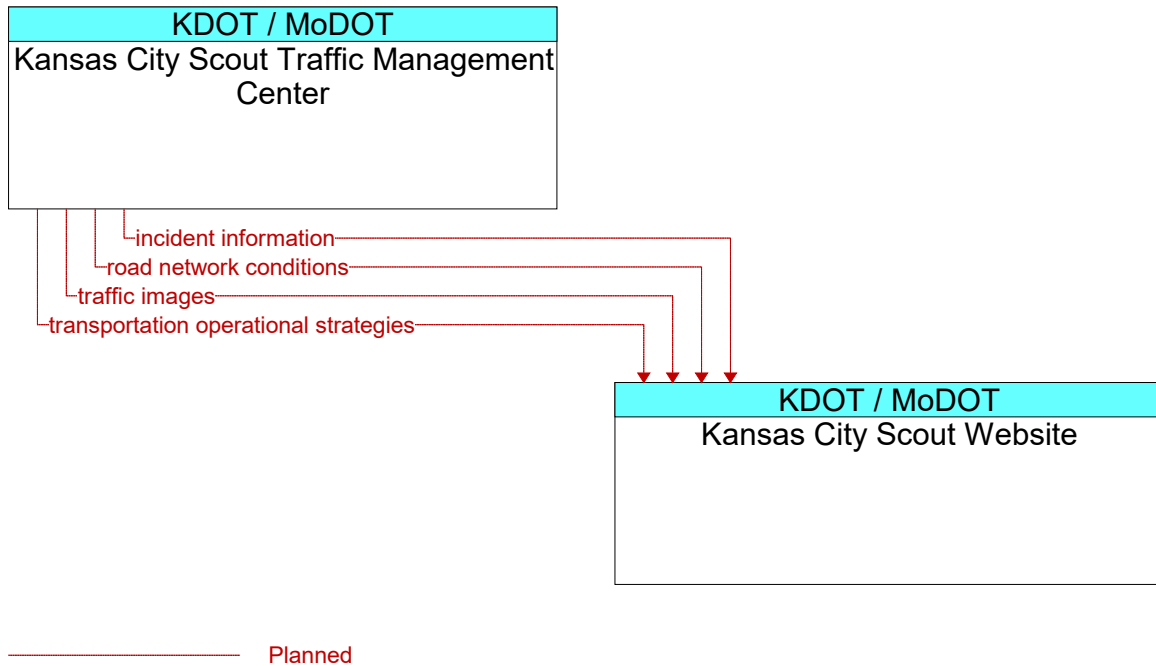
**Figure 535: Kansas City Scout Field Equipment - Transit Vehicle Operator Interface**



**Figure 536: Kansas City Scout Field Equipment - Traveler Interface**

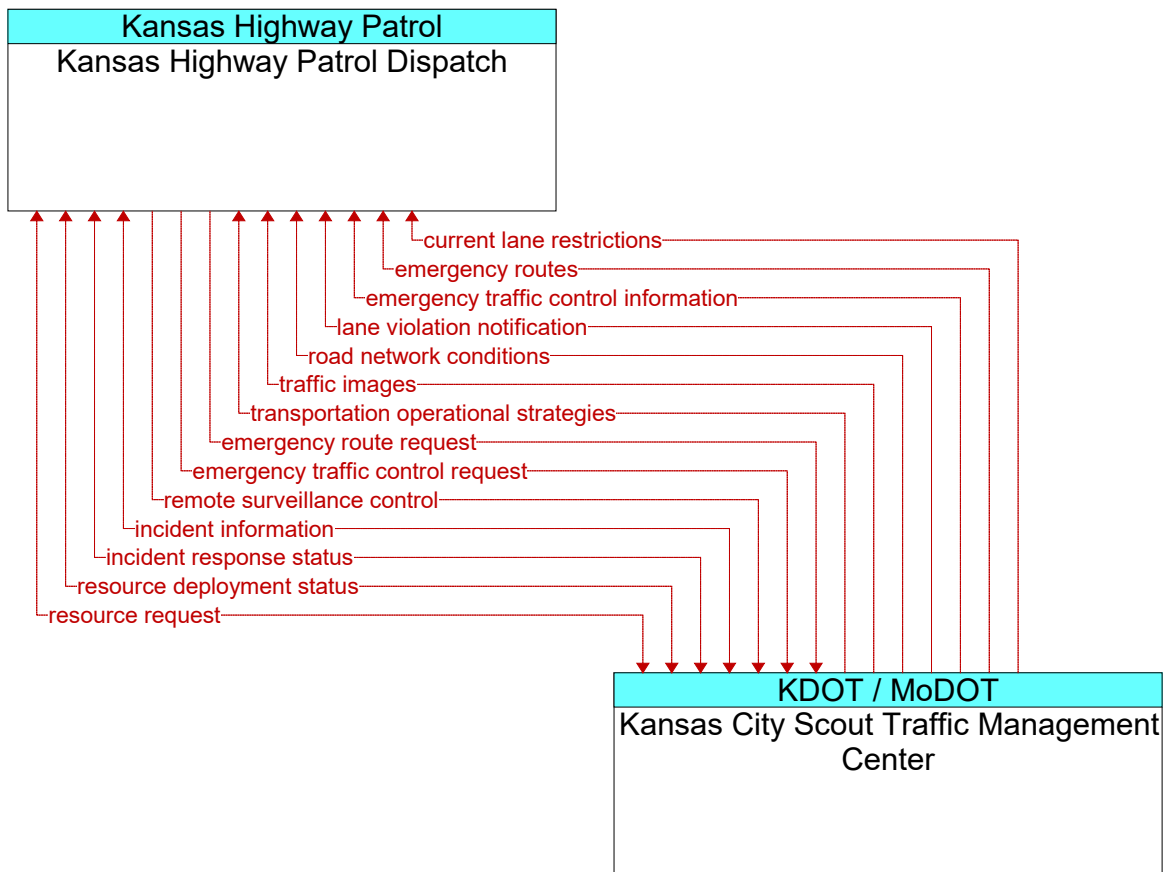


**Figure 537: Kansas City Scout Field Equipment - Vehicle Interface**



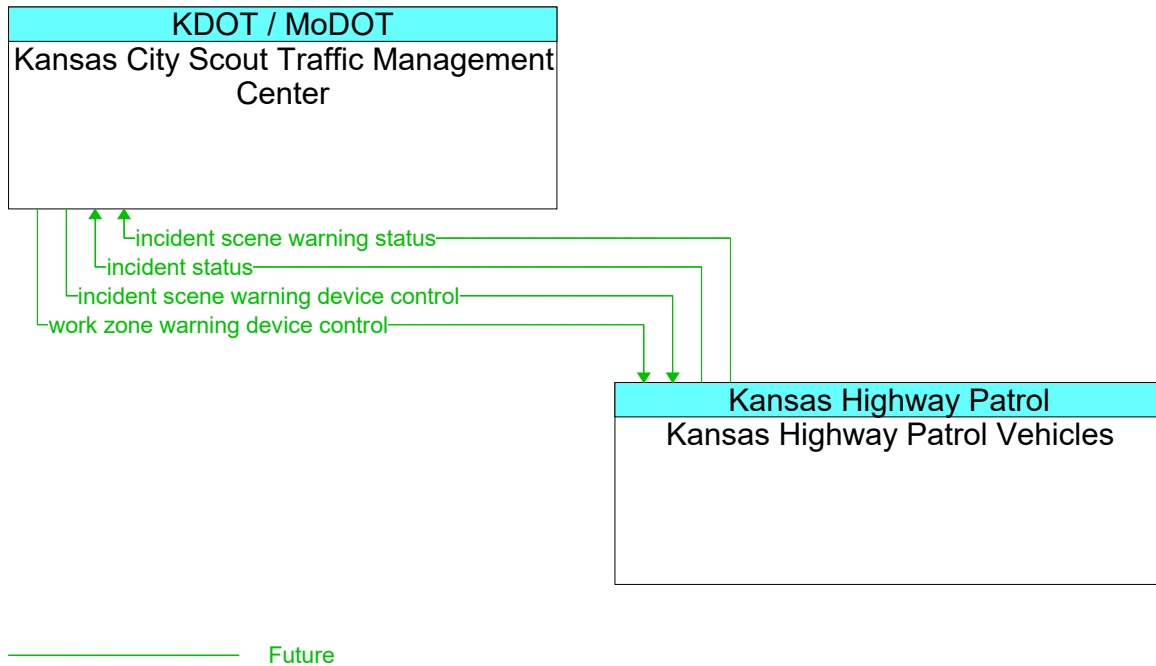
**Figure 538: Kansas City Scout Traffic Management Center - Kansas City Scout Website Interface**



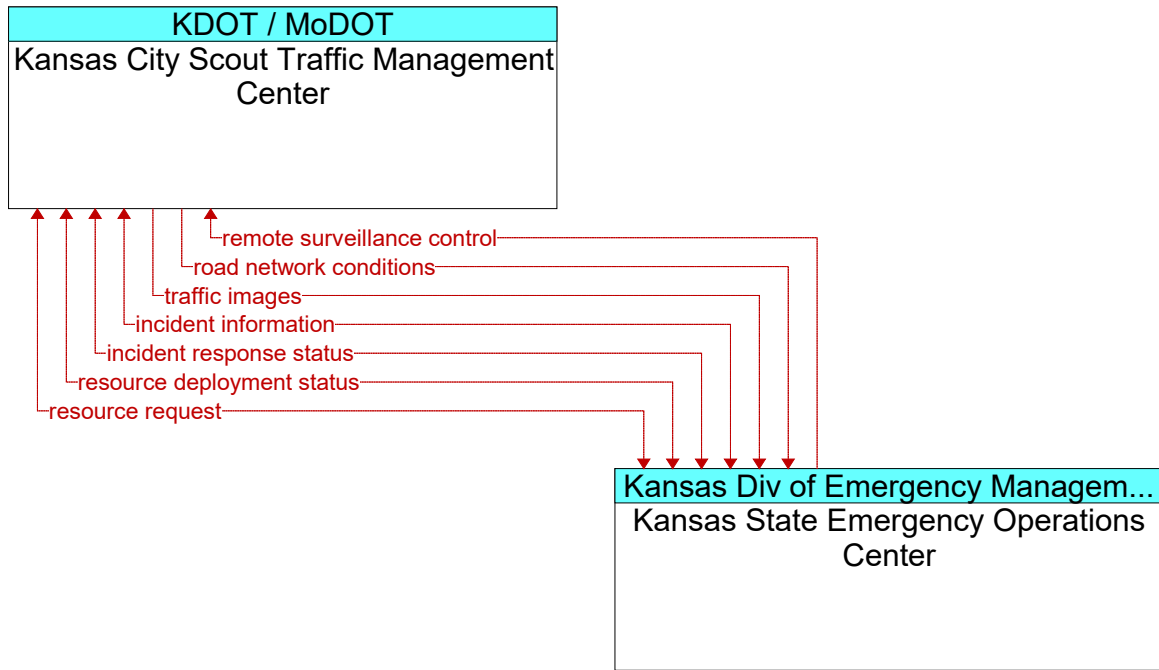


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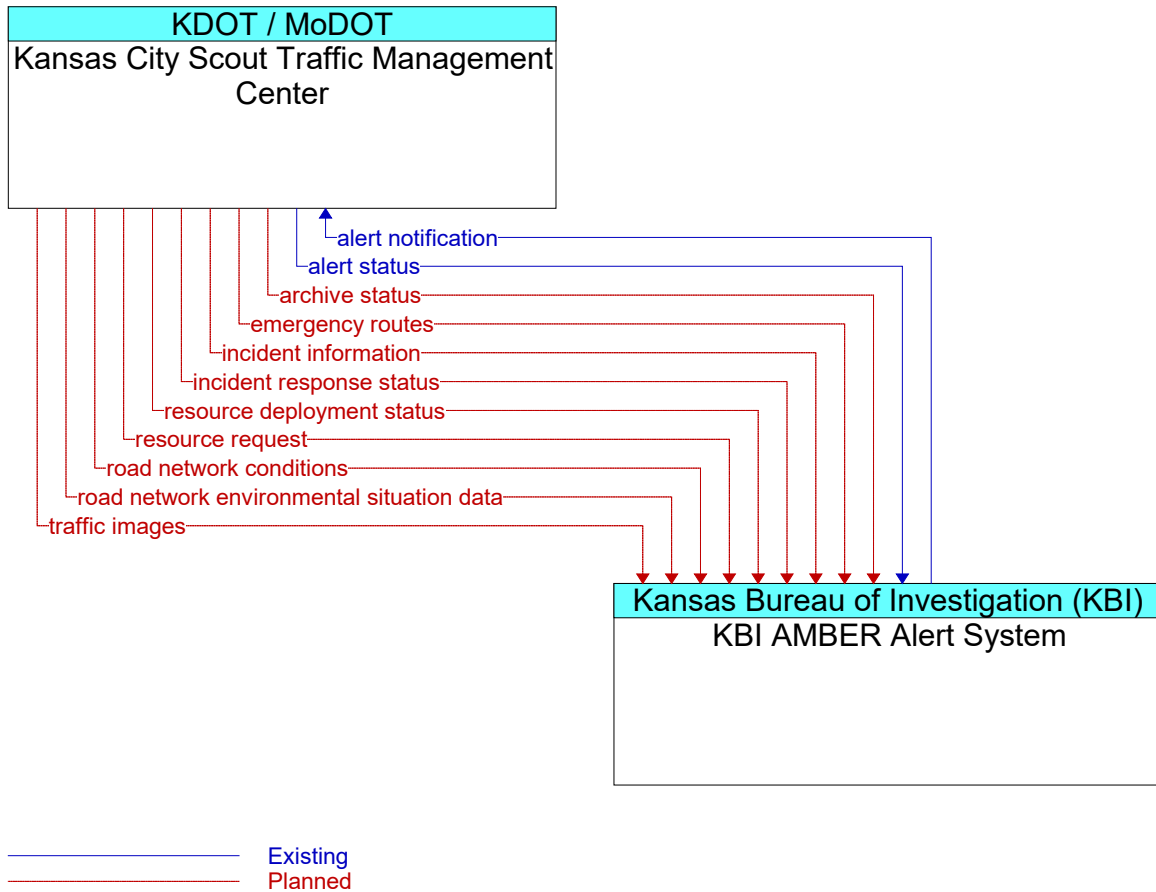
**Figure 539: Kansas City Scout Traffic Management Center - Kansas Highway Patrol Dispatch Interface**



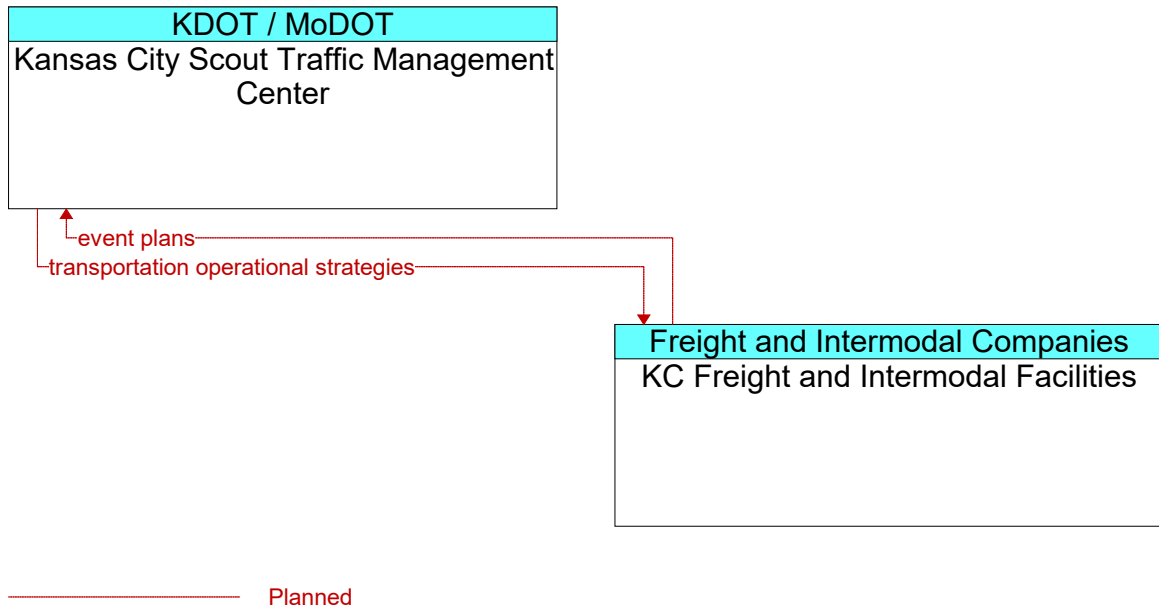
**Figure 540: Kansas City Scout Traffic Management Center - Kansas Highway Patrol Vehicles Interface**



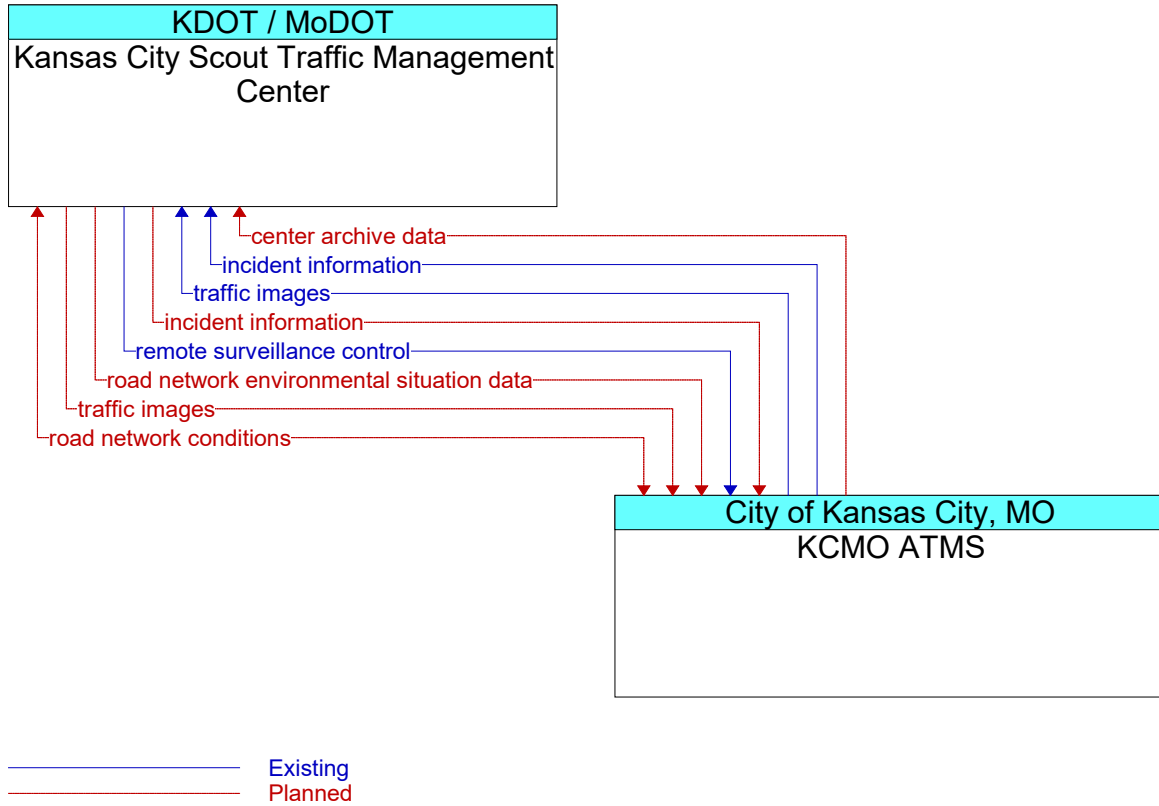
**Figure 541: Kansas City Scout Traffic Management Center - Kansas State Emergency Operations Center Interface**



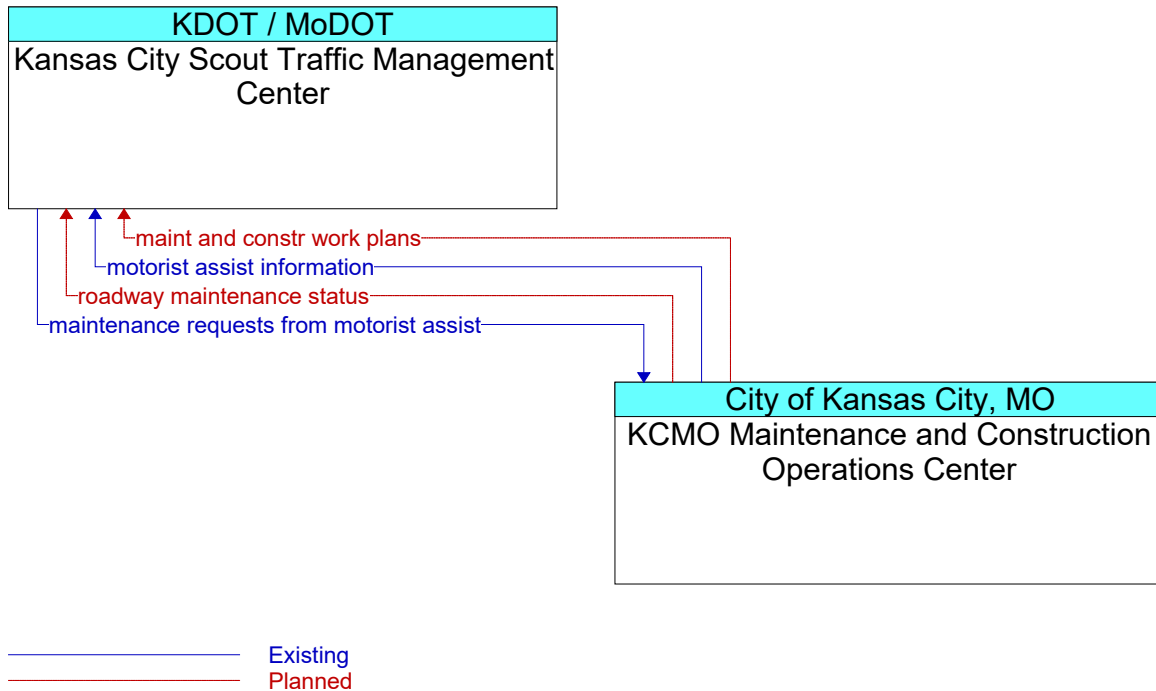
**Figure 542: Kansas City Scout Traffic Management Center - KBI AMBER Alert System Interface**



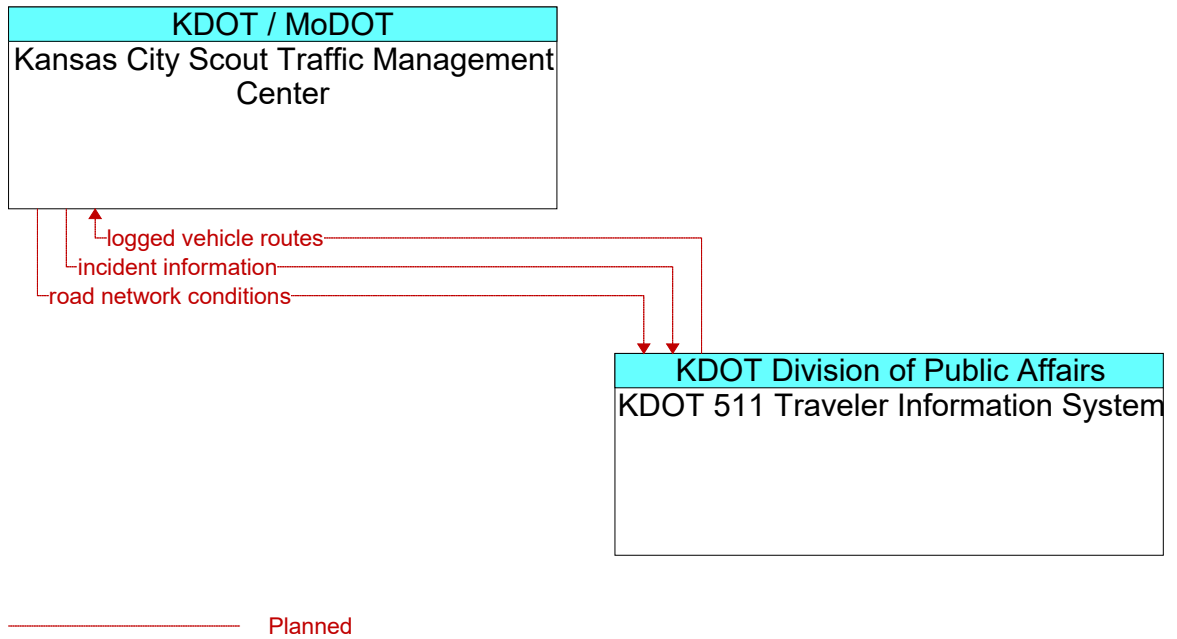
**Figure 543: Kansas City Scout Traffic Management Center - KC Freight and Intermodal Facilities Interface**



**Figure 544: Kansas City Scout Traffic Management Center - KCMO ATMS Interface**

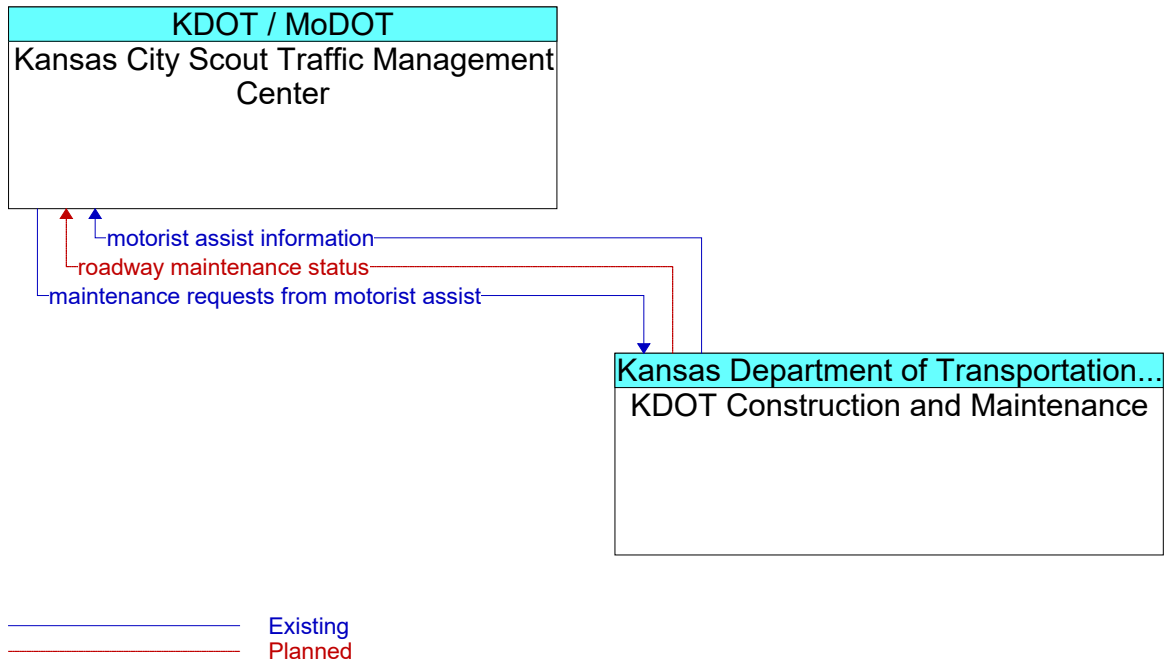


**Figure 545: Kansas City Scout Traffic Management Center - KCMO Maintenance and Construction Operations Center Interface**

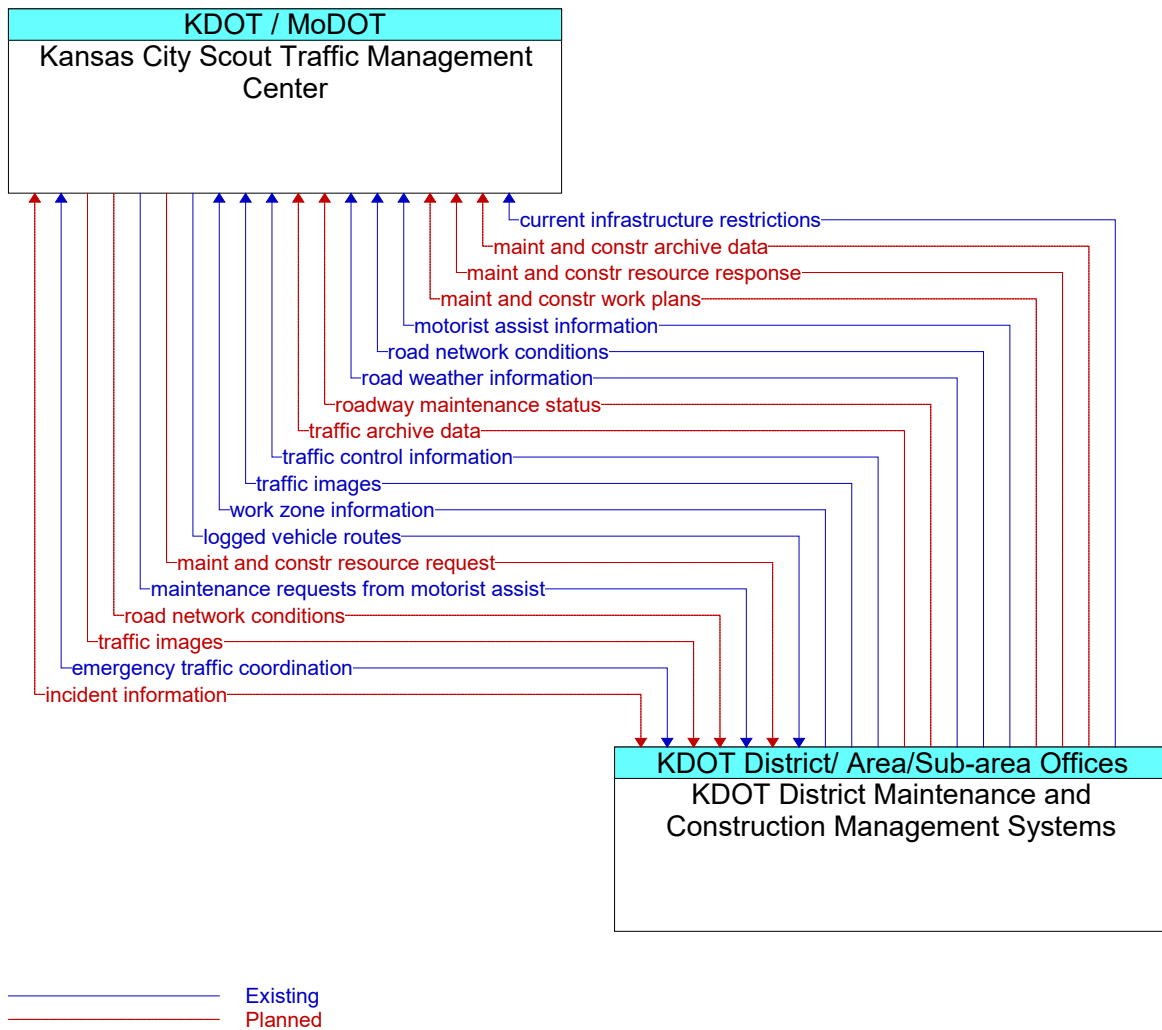


**Figure 546: Kansas City Scout Traffic Management Center - KDOT 511 Traveler Information System Interface**

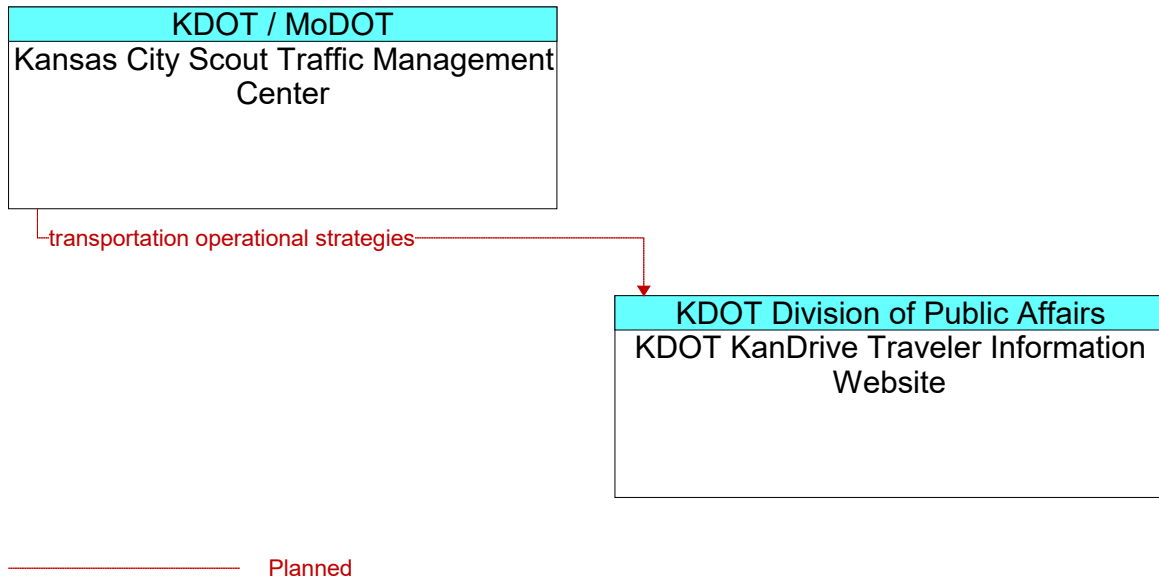




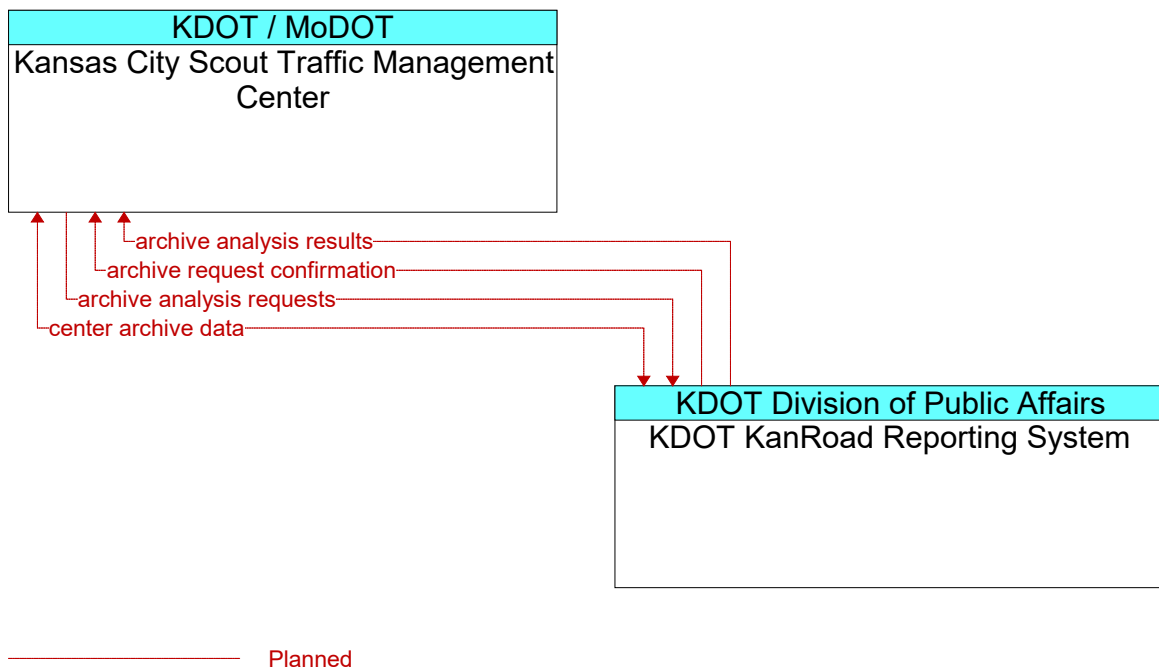
**Figure 547: Kansas City Scout Traffic Management Center - KDOT Construction and Maintenance Interface**



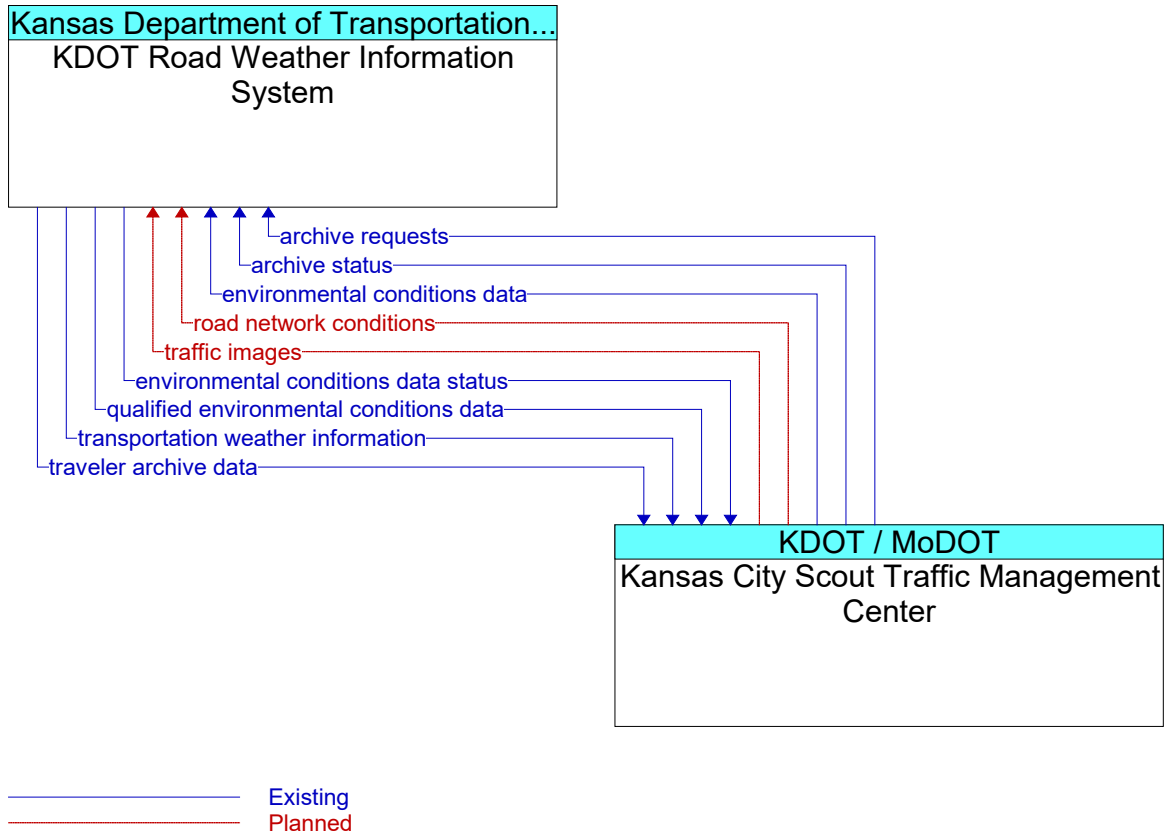
**Figure 548: Kansas City Scout Traffic Management Center - KDOT District Maintenance and Construction Management Systems Interface**



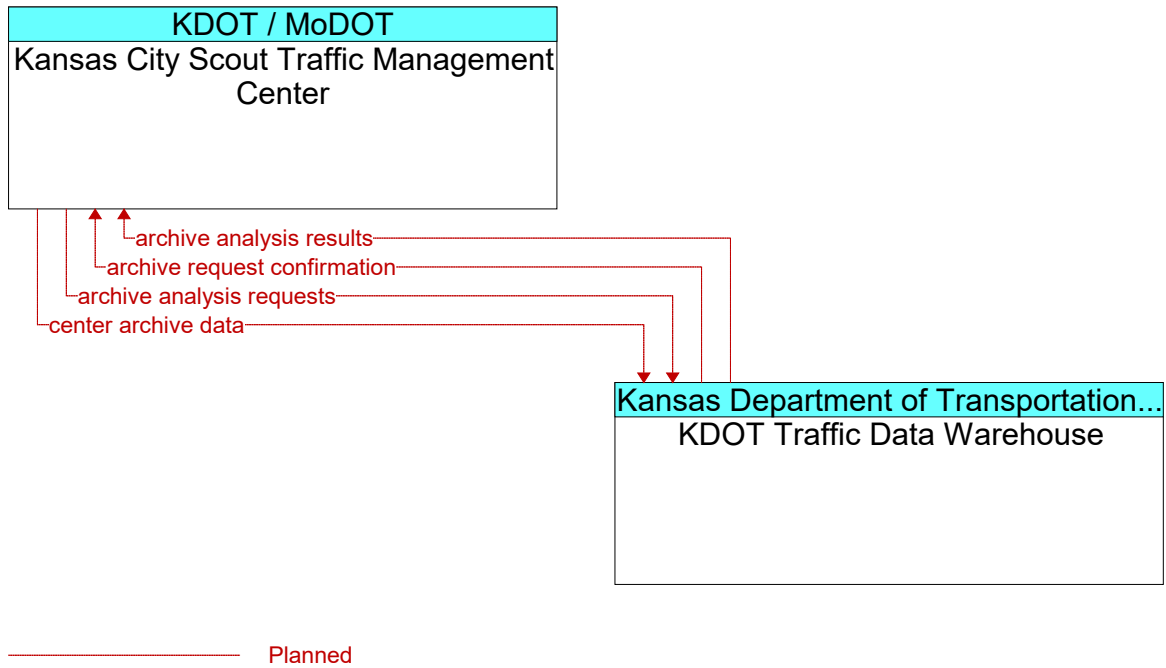
**Figure 549: Kansas City Scout Traffic Management Center - KDOT KanDrive Traveler Information Website Interface**



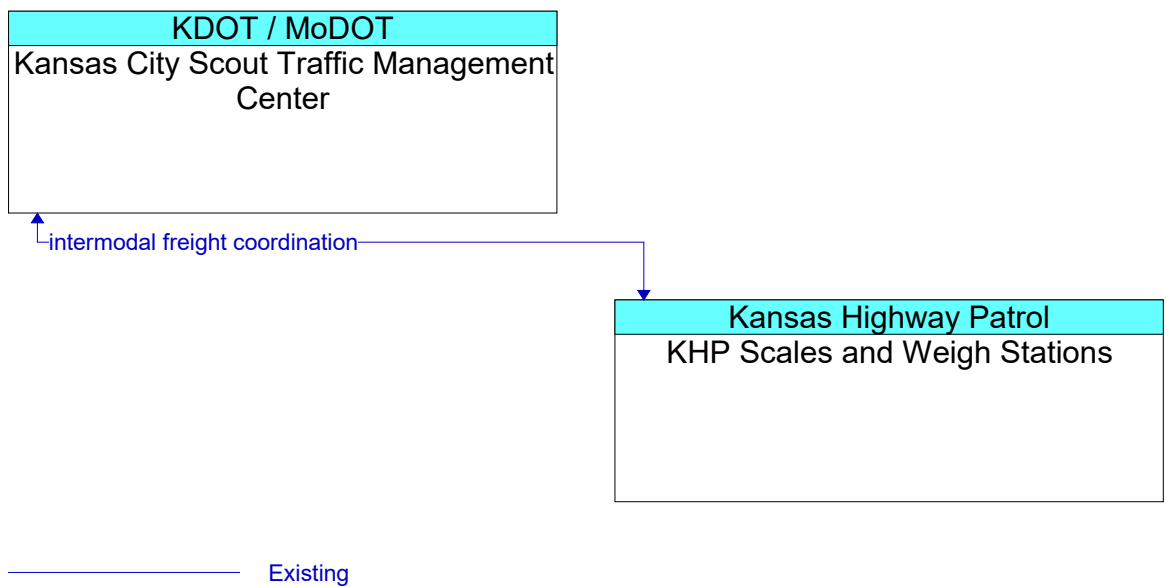
**Figure 550: Kansas City Scout Traffic Management Center - KDOT KanRoad Reporting System Interface**



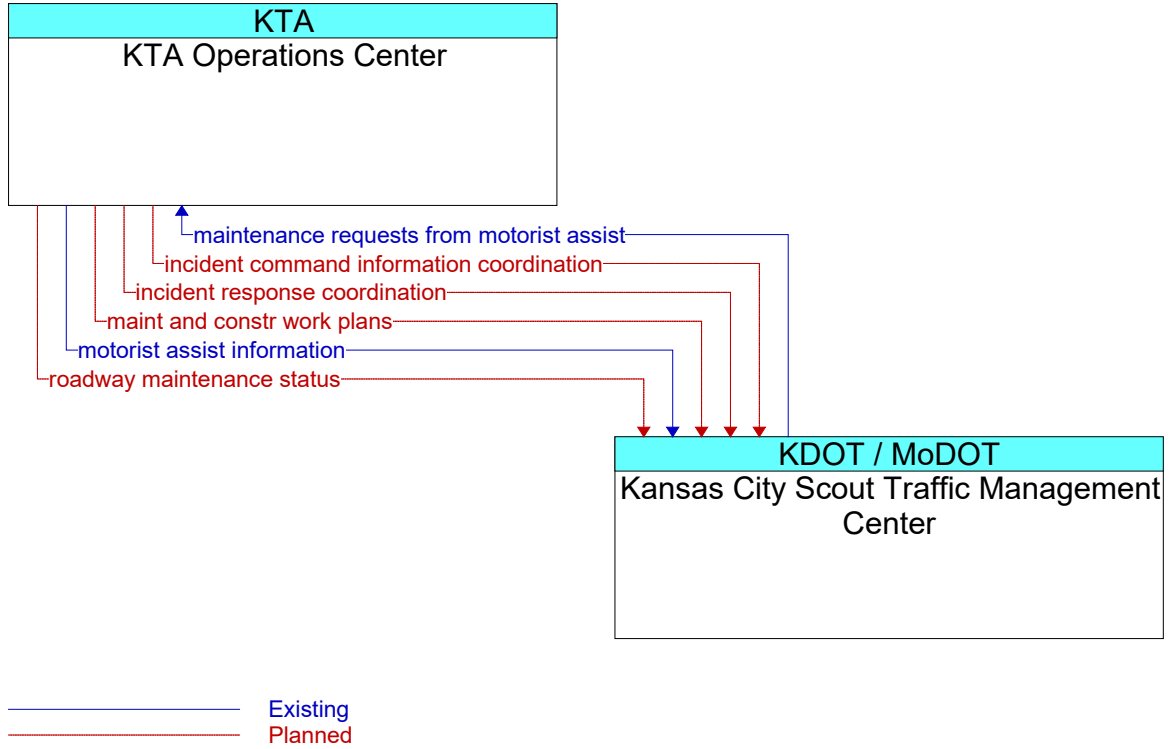
**Figure 551: Kansas City Scout Traffic Management Center - KDOT Road Weather Information System Interface**



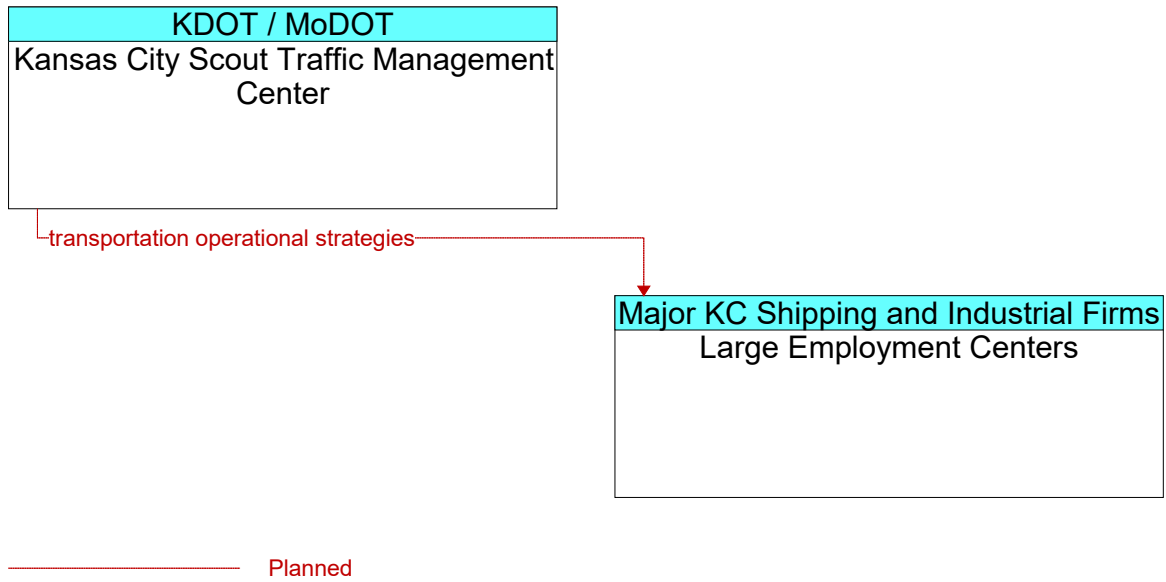
**Figure 552: Kansas City Scout Traffic Management Center - KDOT Traffic Data Warehouse Interface**



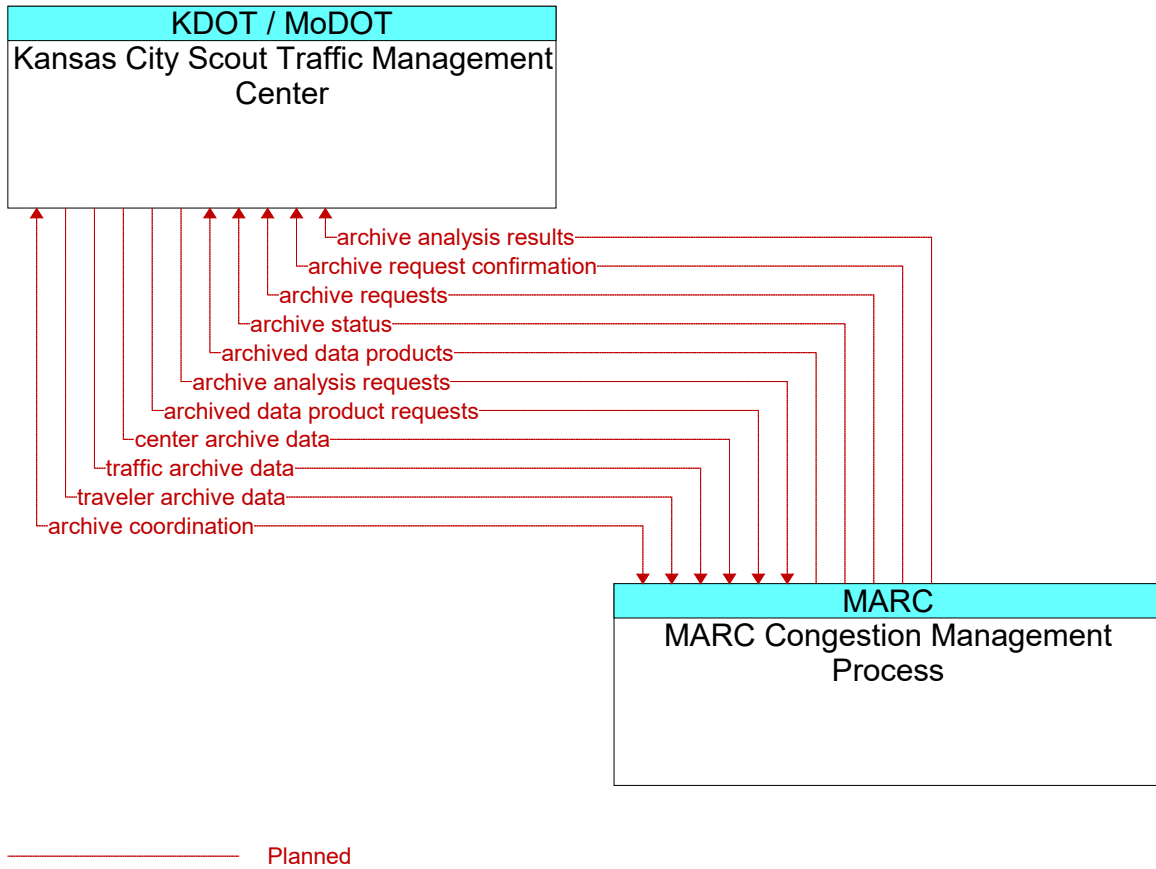
**Figure 553: Kansas City Scout Traffic Management Center - KHP Scales and Weigh Stations Interface**



**Figure 554: Kansas City Scout Traffic Management Center - KTA Operations Center Interface**

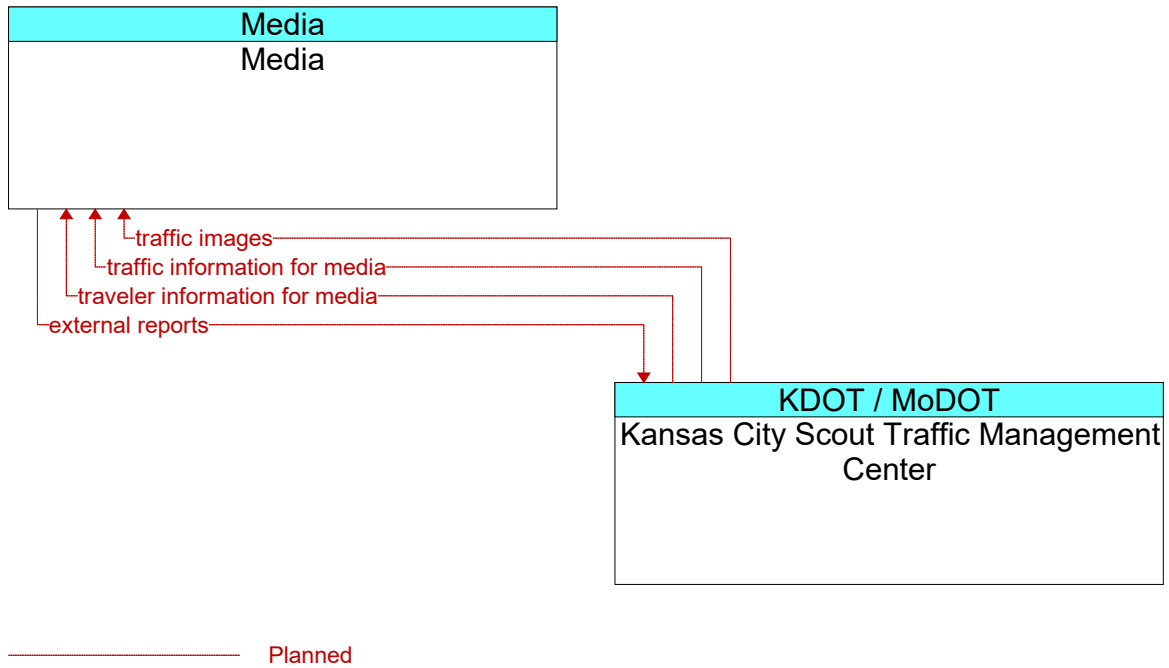


**Figure 555: Kansas City Scout Traffic Management Center - Large Employment Centers Interface**

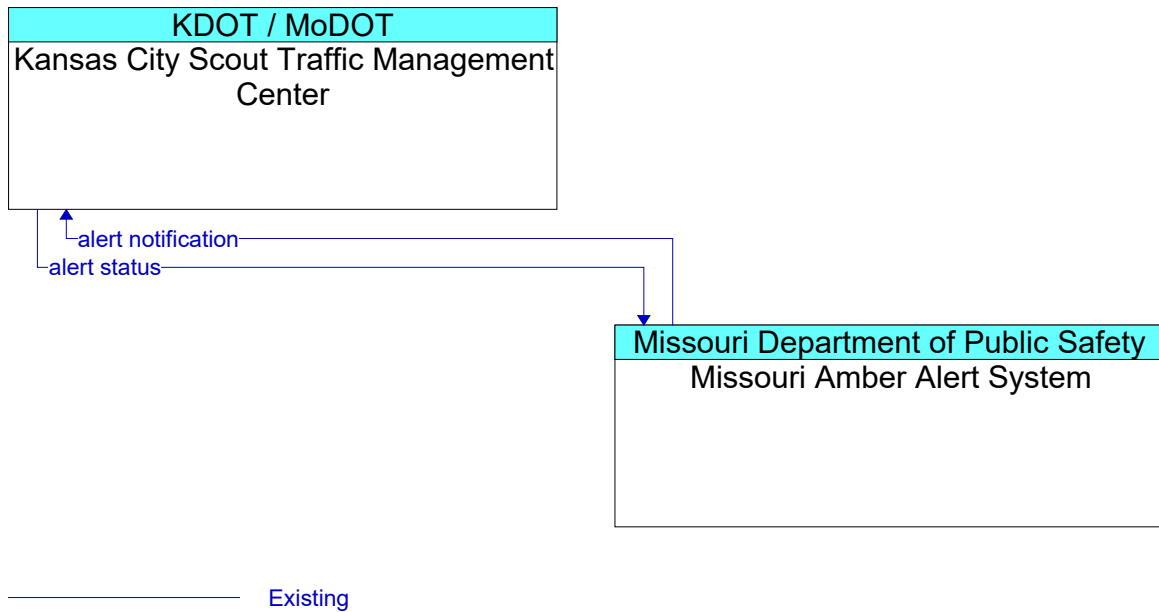


**Figure 556: Kansas City Scout Traffic Management Center - MARC Congestion Management Process Interface**

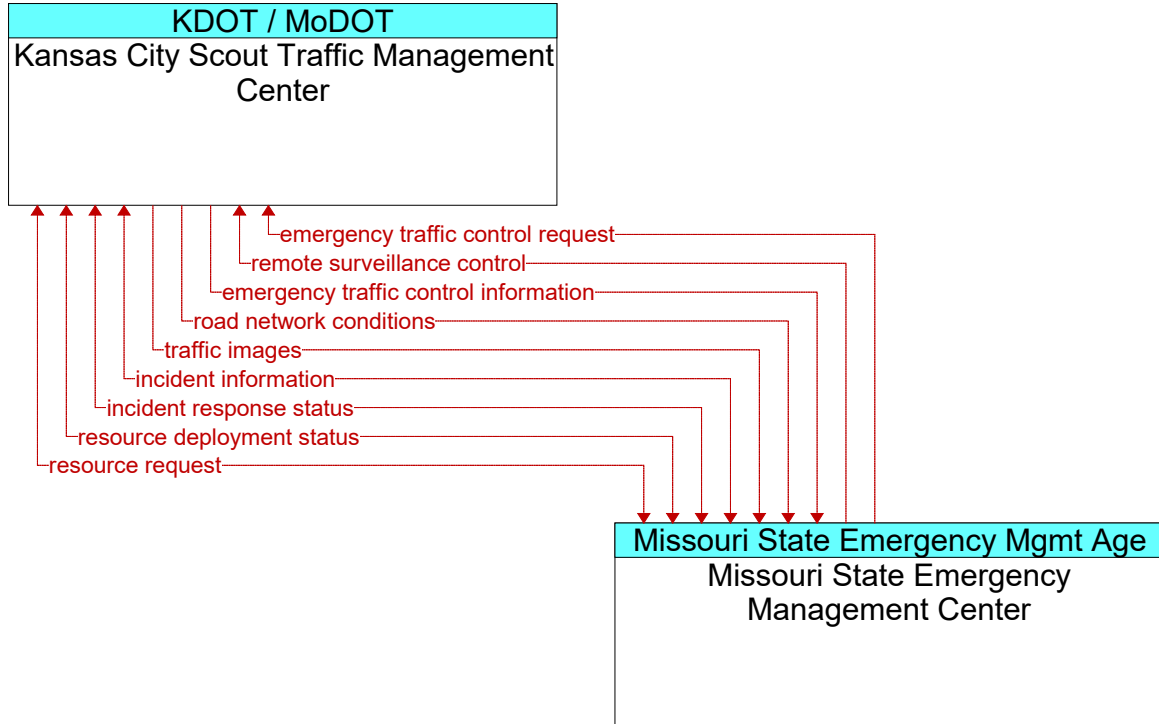




**Figure 557: Kansas City Scout Traffic Management Center - Media Interface**

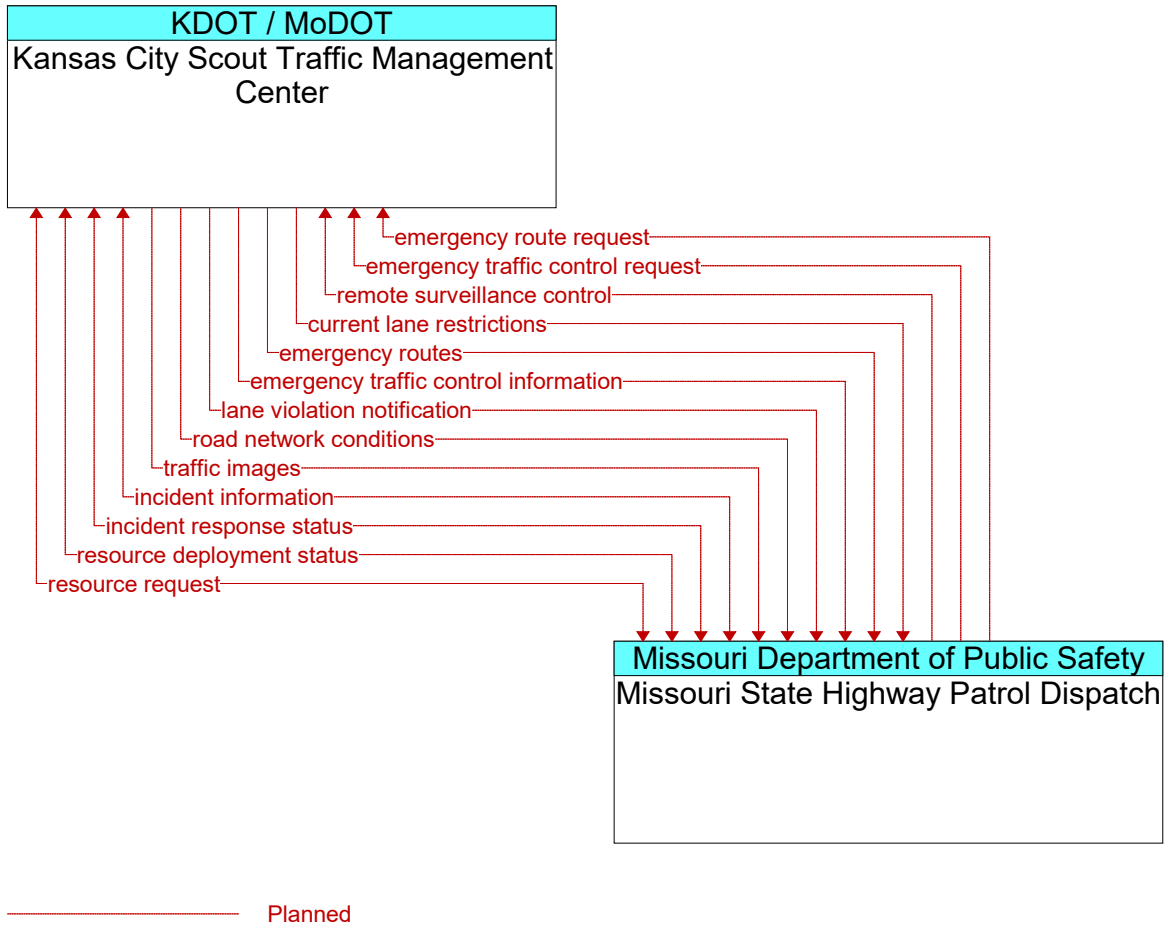


**Figure 558: Kansas City Scout Traffic Management Center - Missouri Amber Alert System Interface**

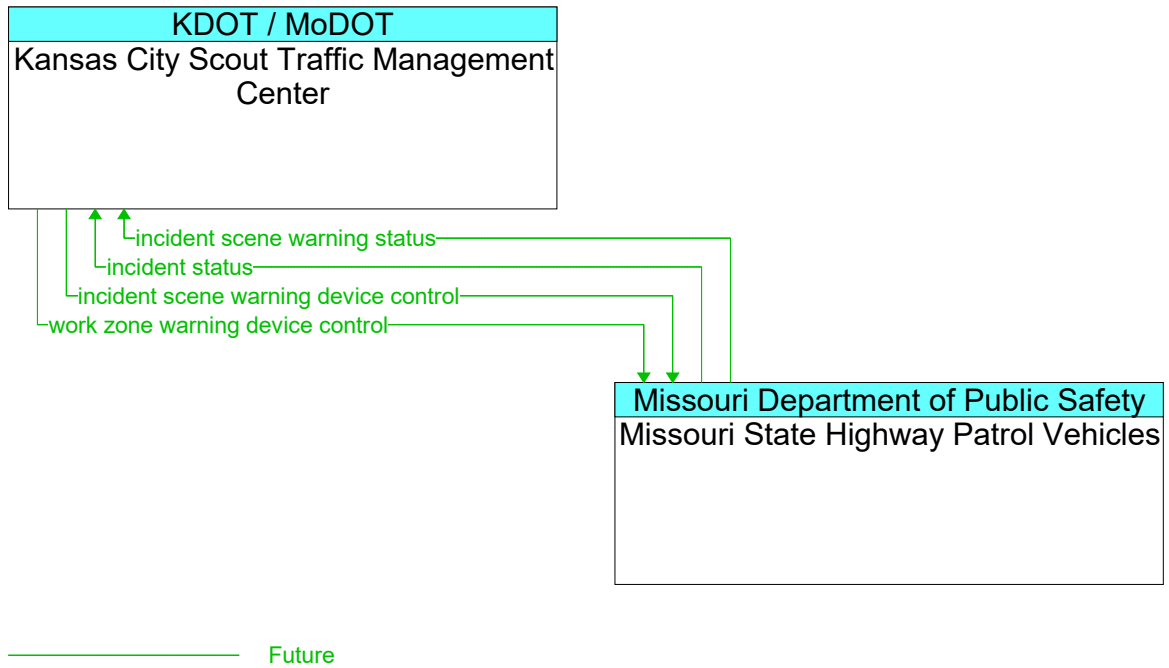


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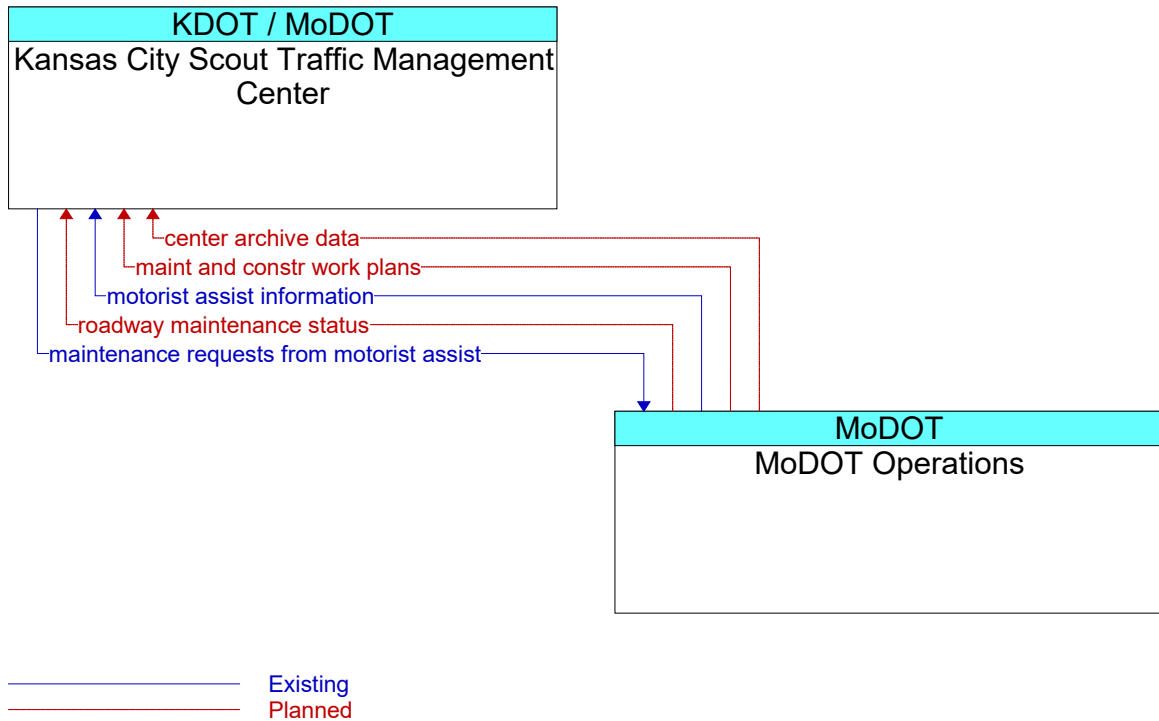
**Figure 559: Kansas City Scout Traffic Management Center - Missouri State Emergency Management Center Interface**



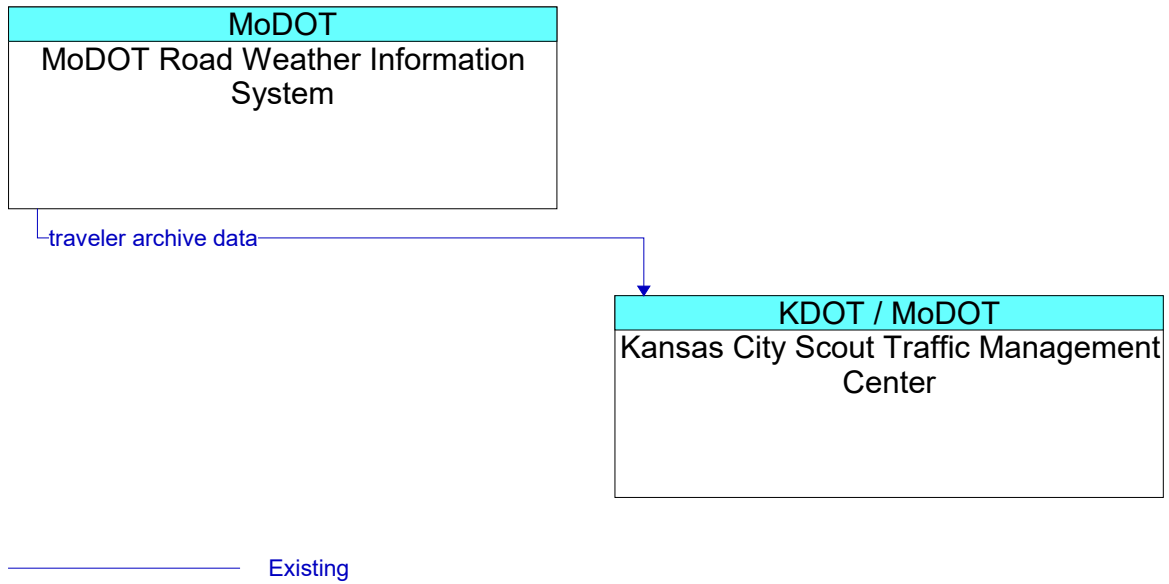
**Figure 560: Kansas City Scout Traffic Management Center - Missouri State Highway Patrol Dispatch Interface**



**Figure 561: Kansas City Scout Traffic Management Center - Missouri State Highway Patrol Vehicles Interface**



**Figure 562: Kansas City Scout Traffic Management Center - MoDOT Operations Interface**



**Figure 563: Kansas City Scout Traffic Management Center - MoDOT Road Weather Information System Interface**

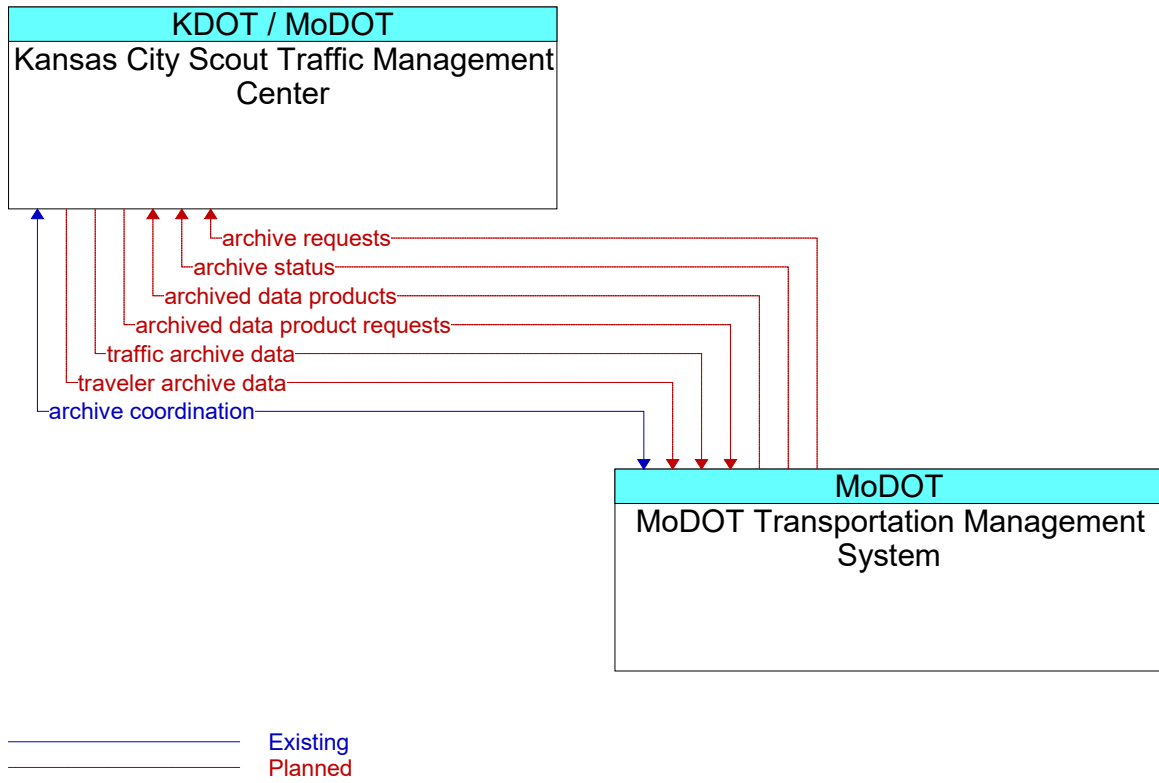
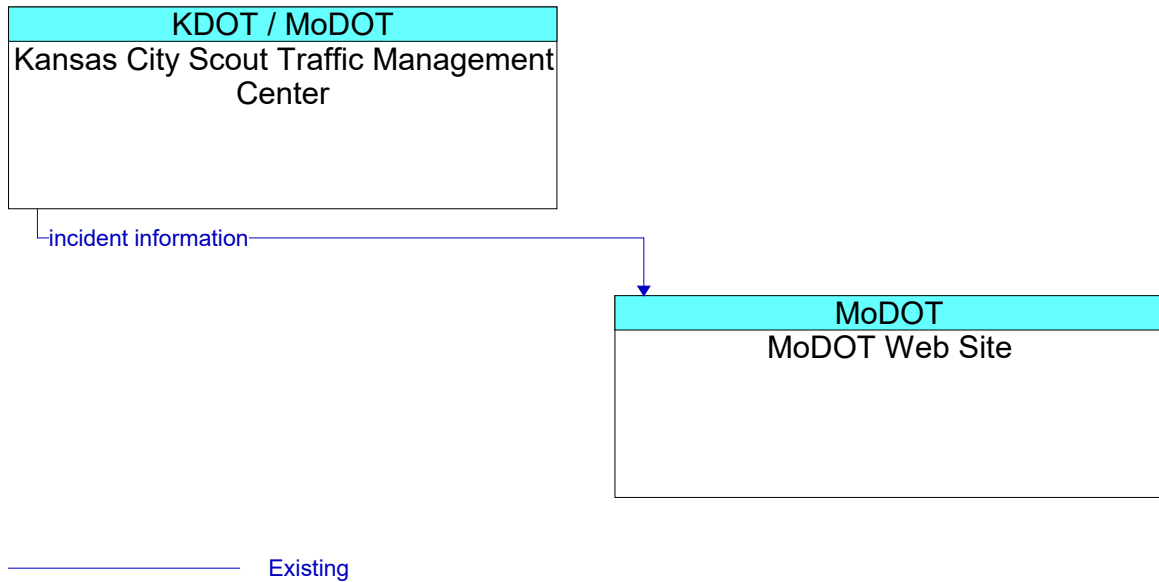
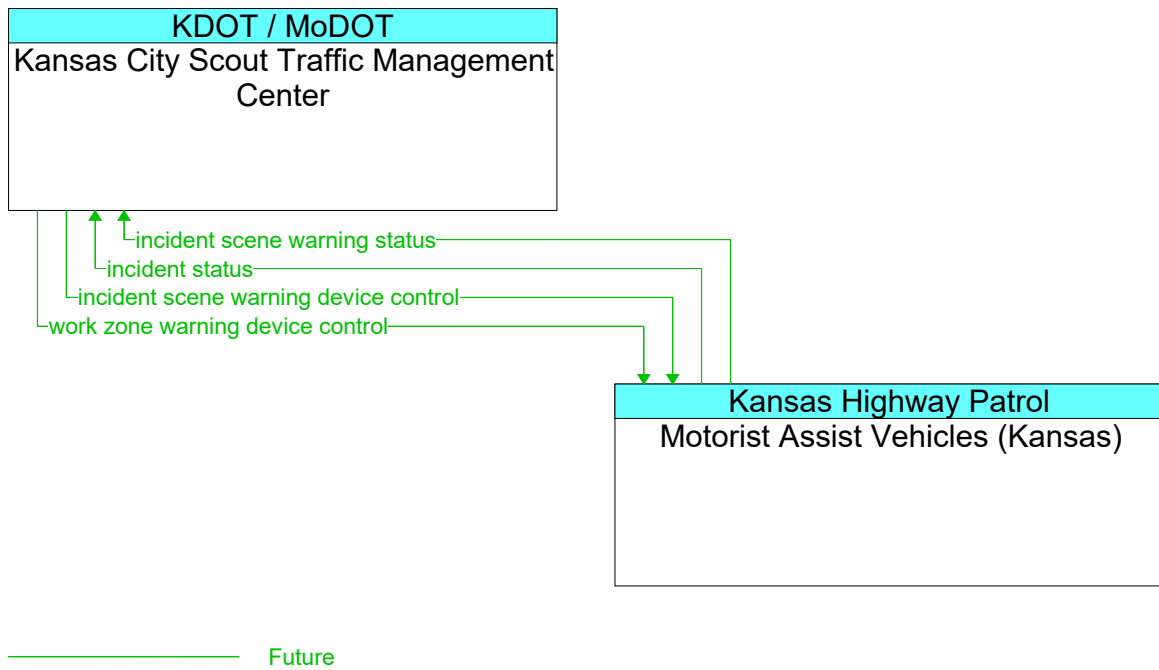


Figure 564: Kansas City Scout Traffic Management Center - MoDOT Transportation Management System Interface

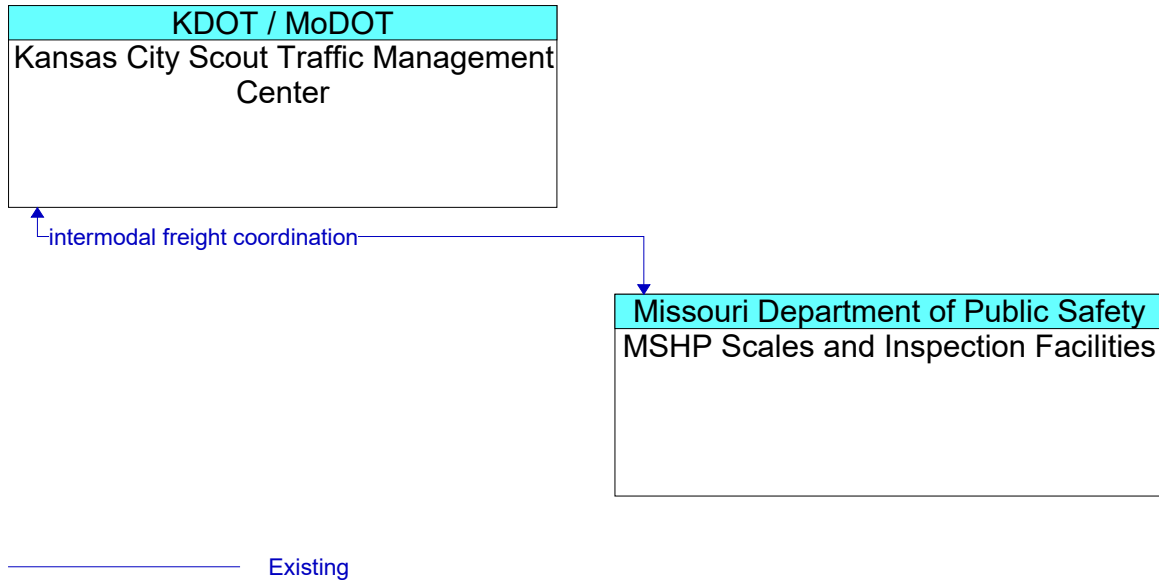


**Figure 565: Kansas City Scout Traffic Management Center - MoDOT Web Site Interface**

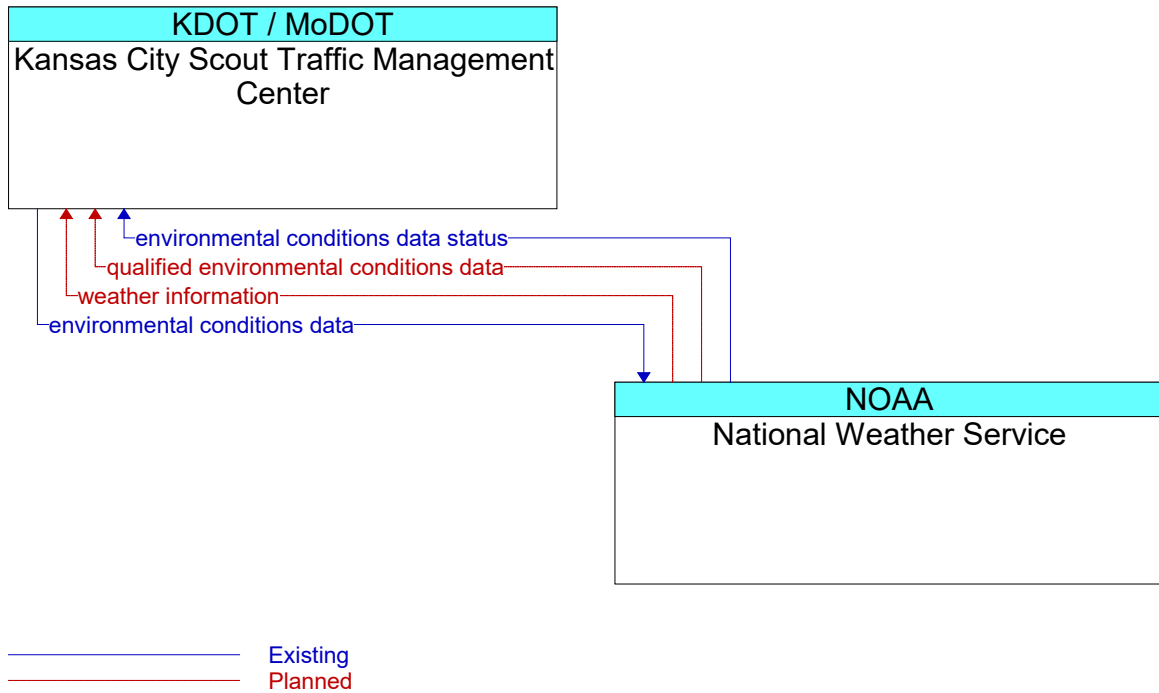


**Figure 566: Kansas City Scout Traffic Management Center - Motorist Assist Vehicles (Kansas) Interface**

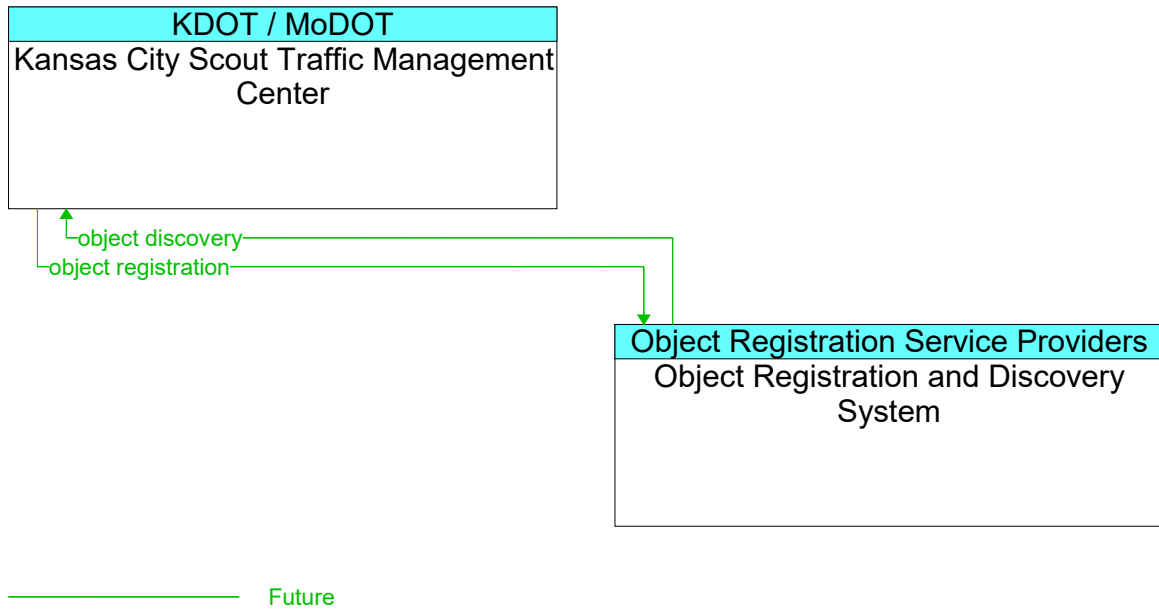




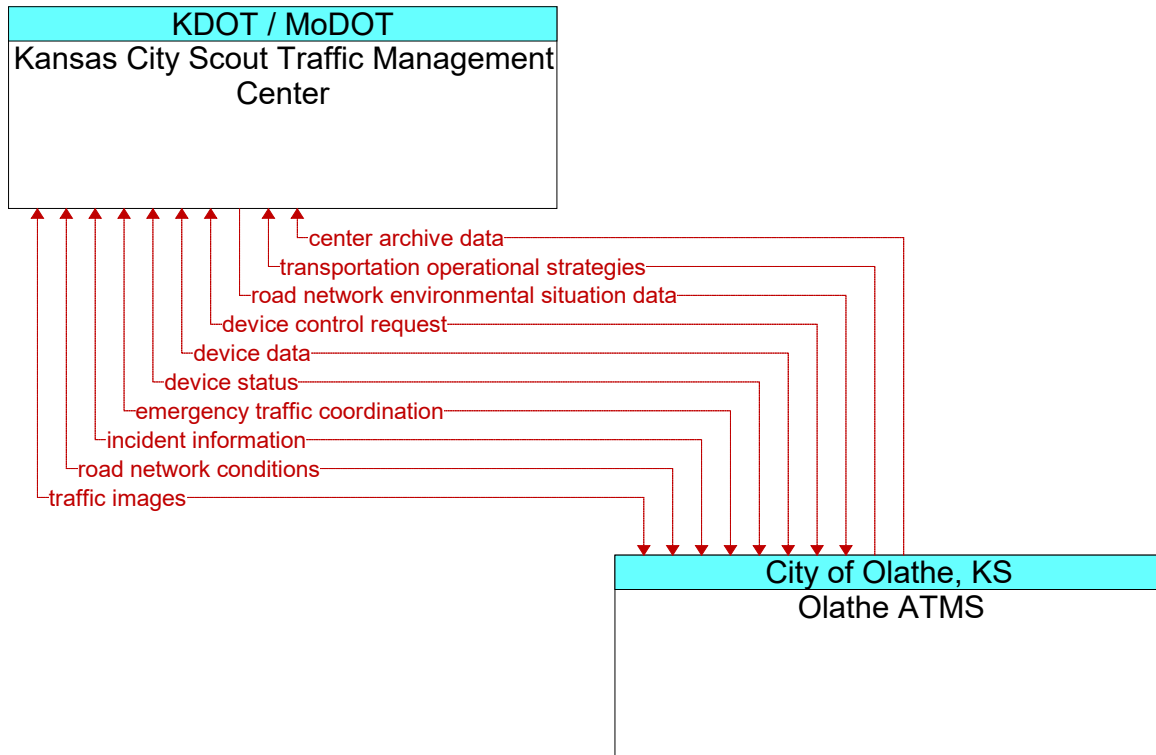
**Figure 567: Kansas City Scout Traffic Management Center - MSHP Scales and Inspection Facilities Interface**



**Figure 568: Kansas City Scout Traffic Management Center - National Weather Service Interface**

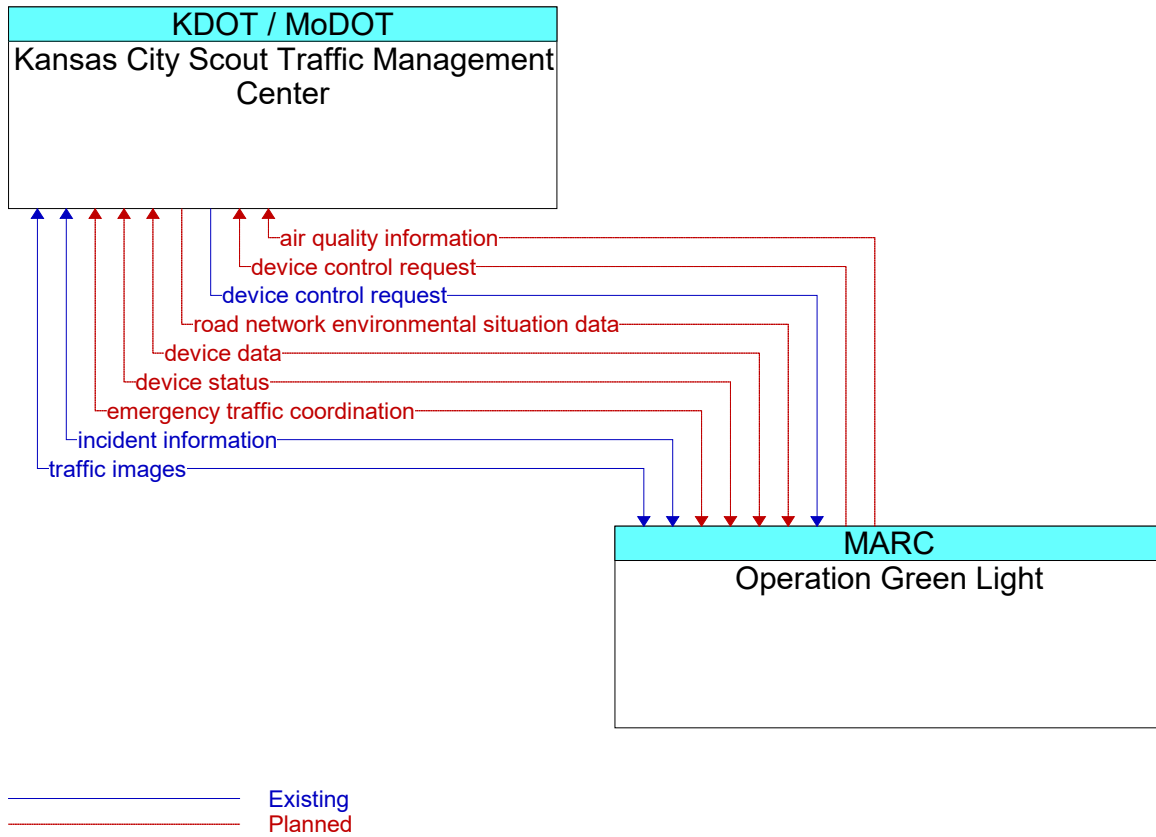


**Figure 569: Kansas City Scout Traffic Management Center - Object Registration and Discovery System Interface**

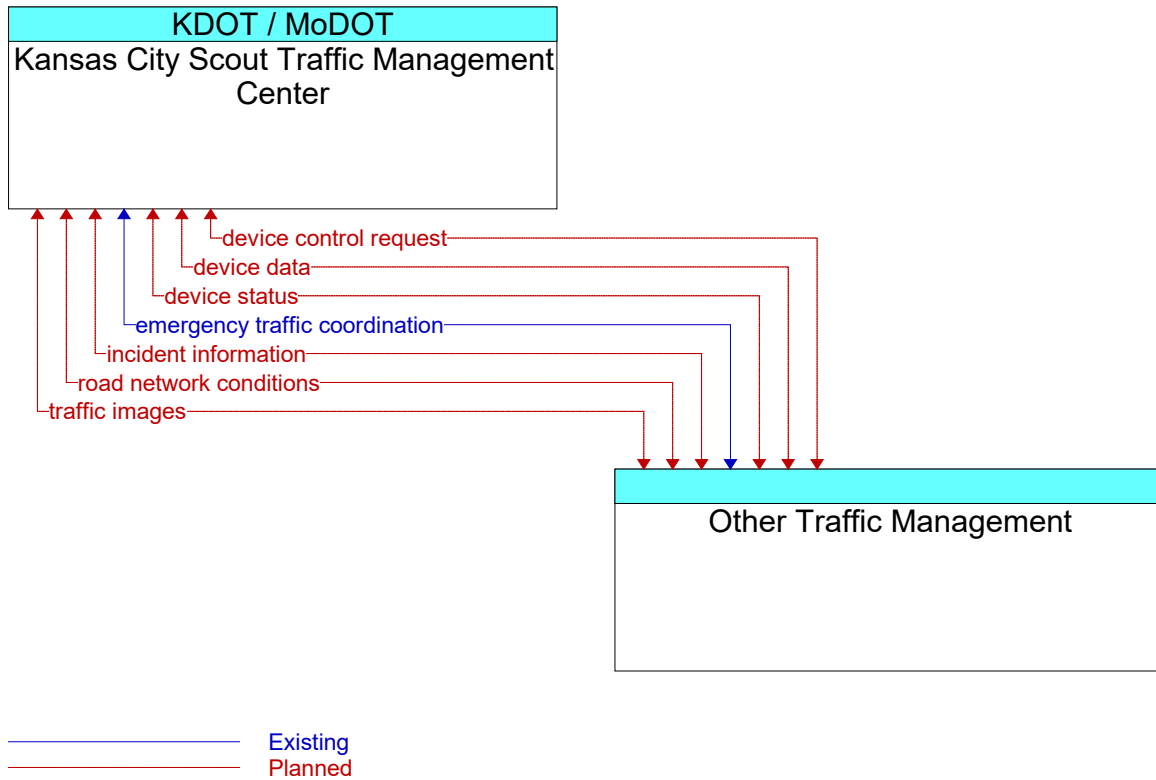


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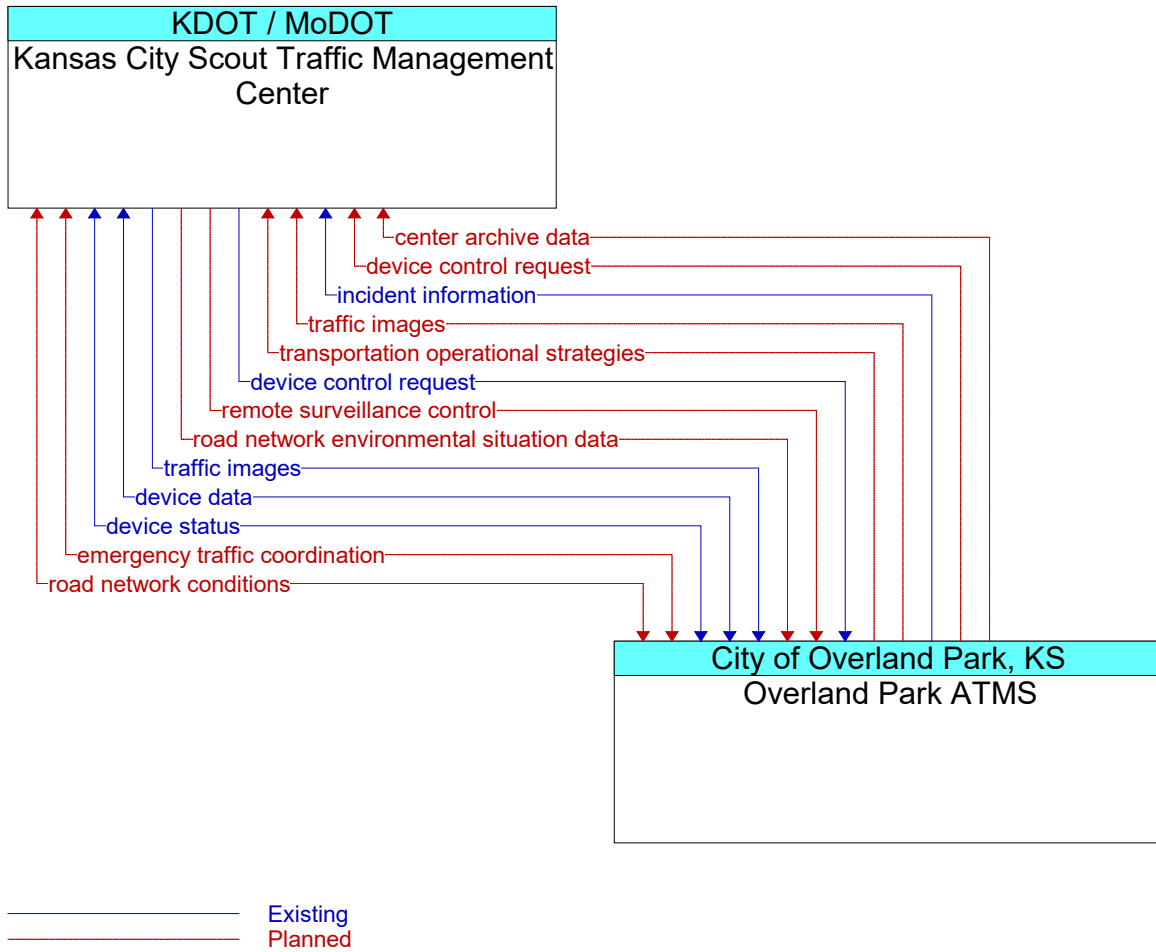
**Figure 570: Kansas City Scout Traffic Management Center - Olathe ATMS Interface**



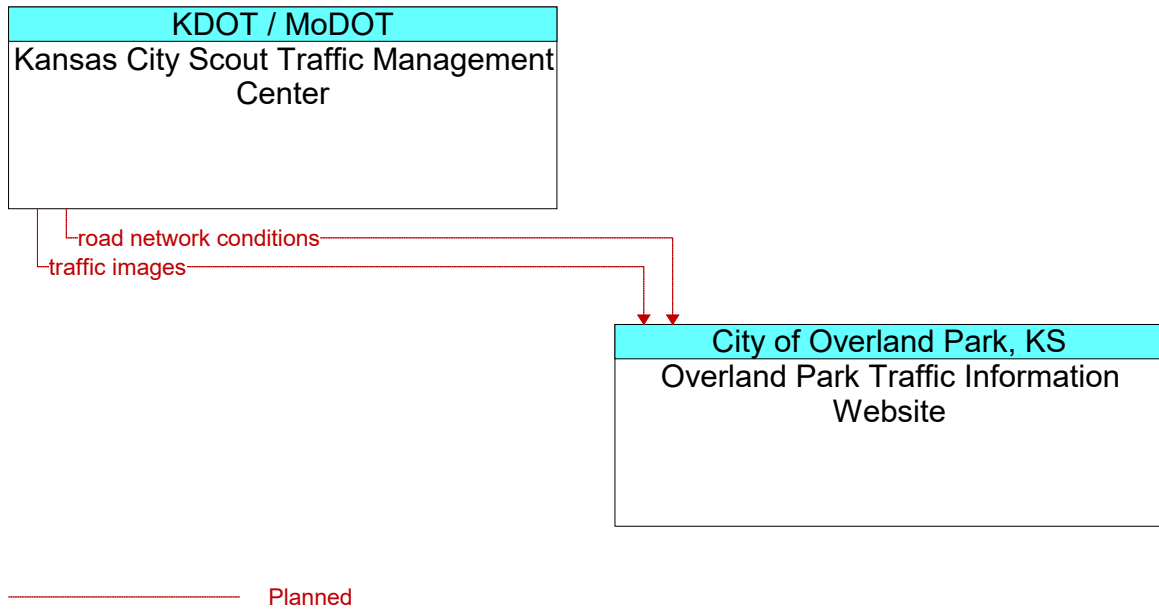
**Figure 571: Kansas City Scout Traffic Management Center - Operation Green Light Interface**



**Figure 572: Kansas City Scout Traffic Management Center - Other Traffic Management Interface**

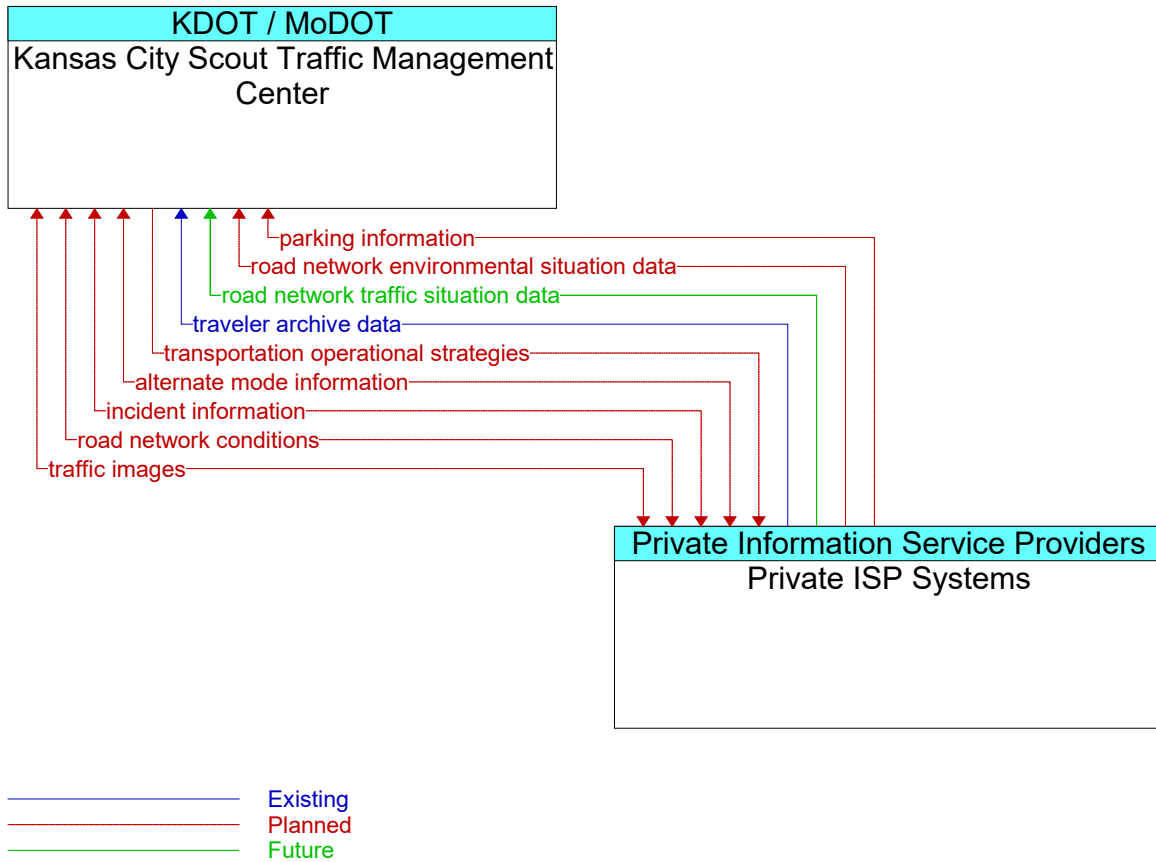


**Figure 573: Kansas City Scout Traffic Management Center - Overland Park ATMS Interface**

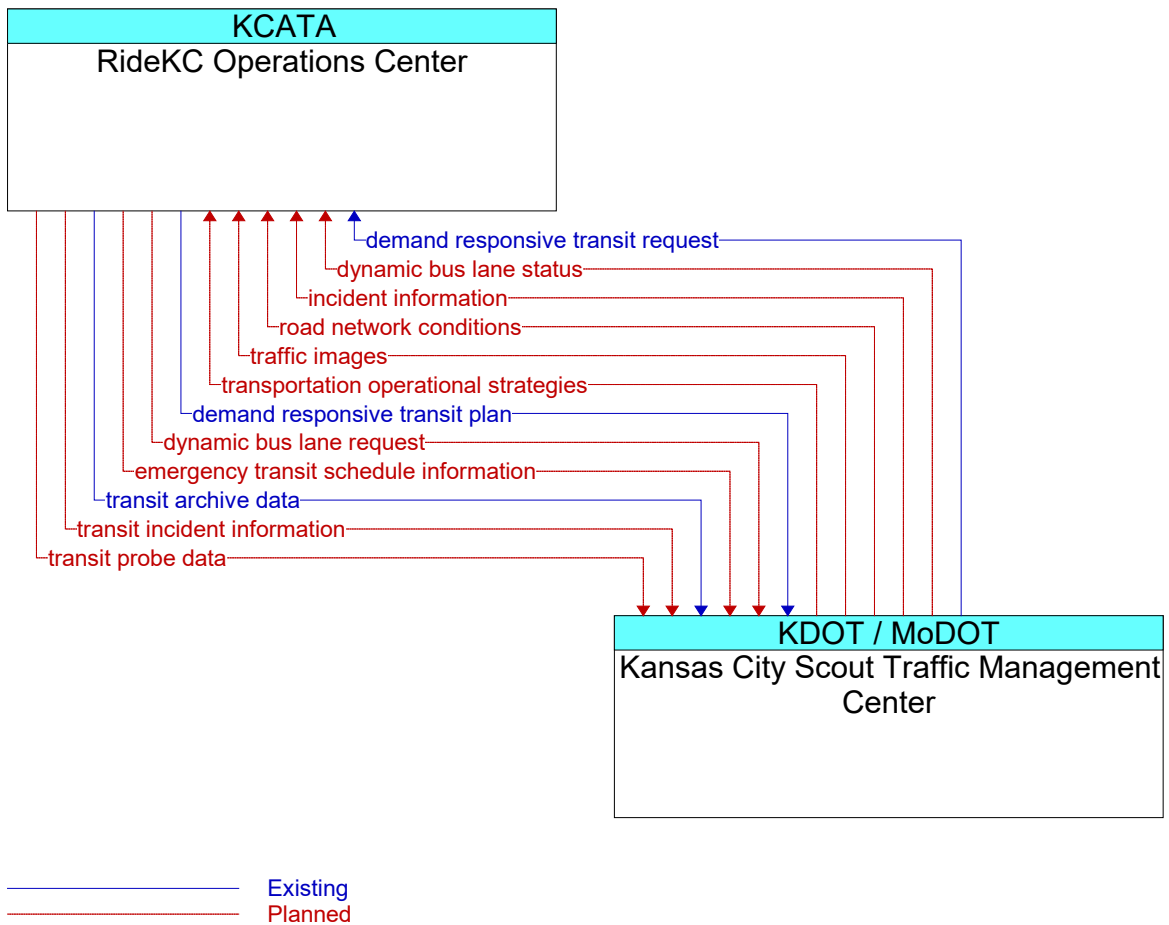


**Figure 574: Kansas City Scout Traffic Management Center - Overland Park Traffic Information Website Interface**

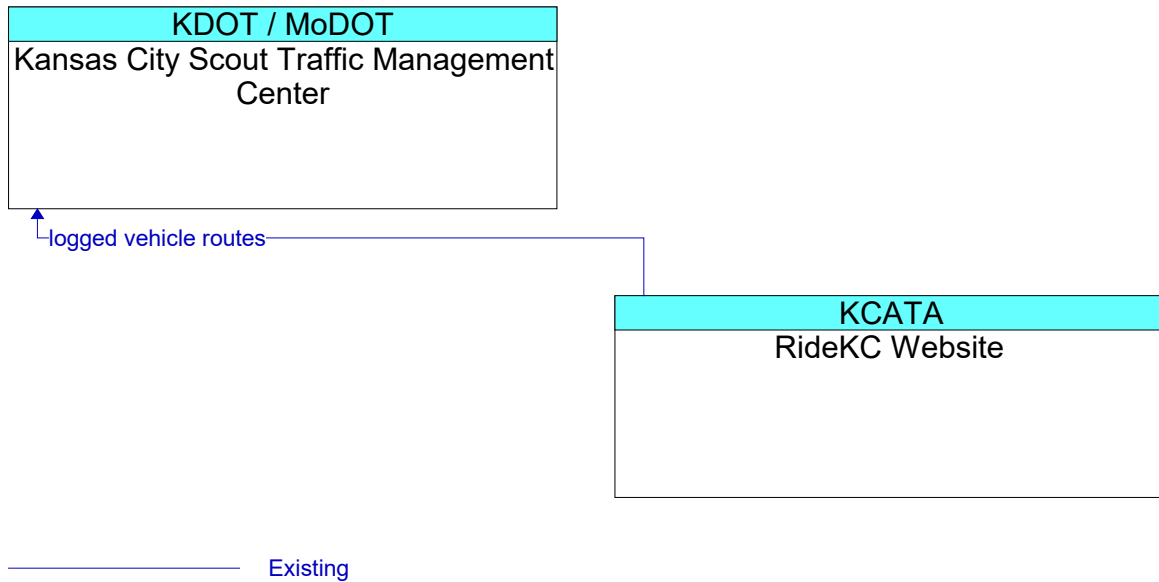




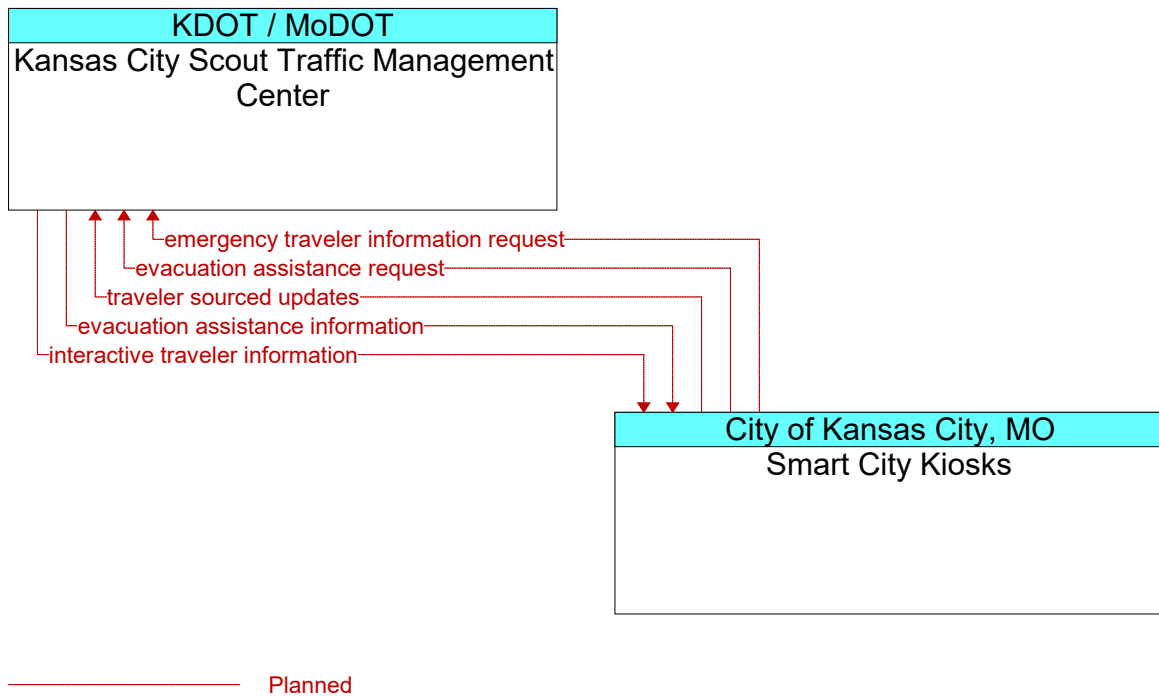
**Figure 575: Kansas City Scout Traffic Management Center - Private ISP Systems Interface**



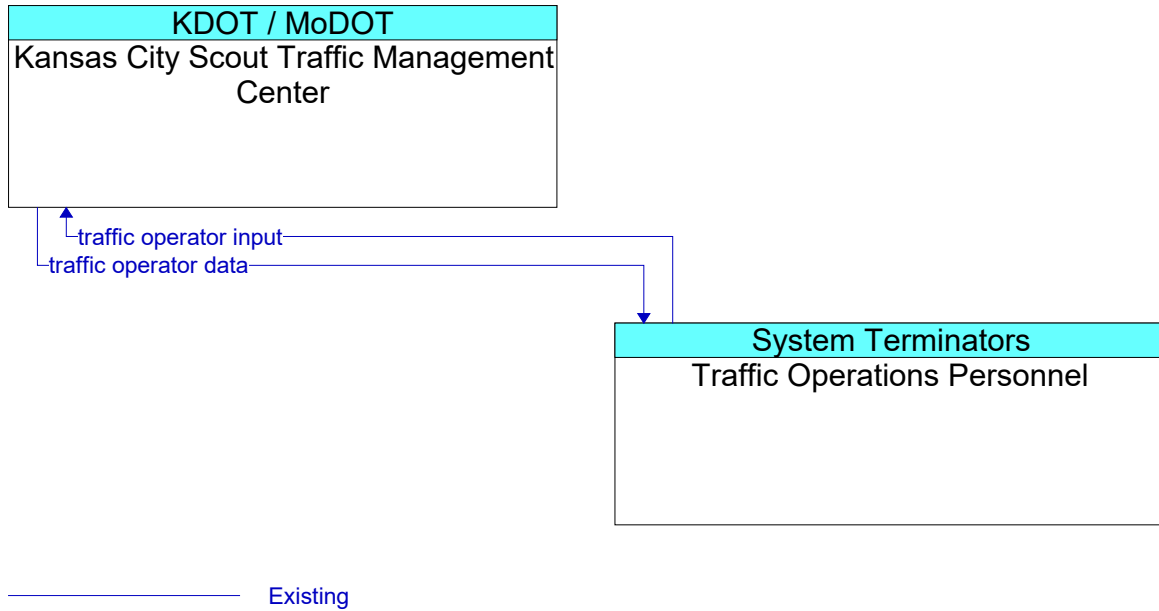
**Figure 576: Kansas City Scout Traffic Management Center - RideKC Operations Center Interface**



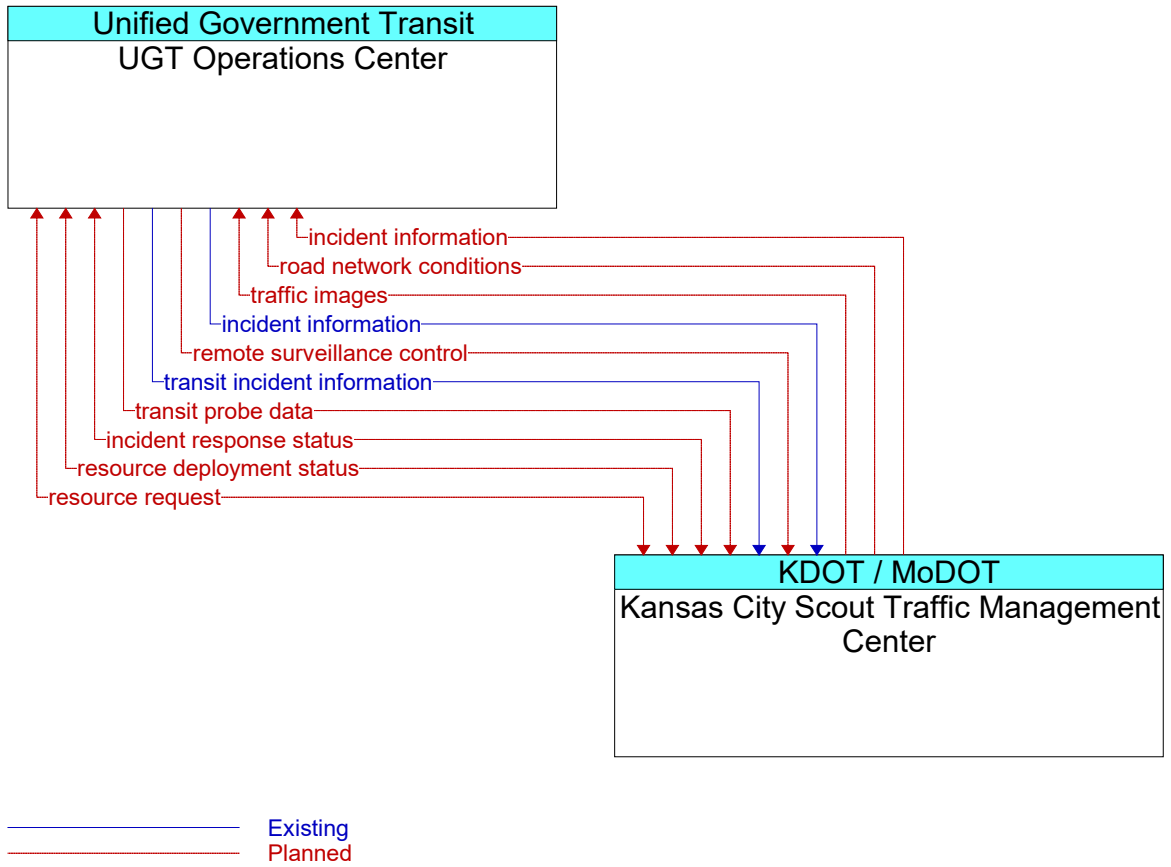
**Figure 577: Kansas City Scout Traffic Management Center - RideKC Website Interface**



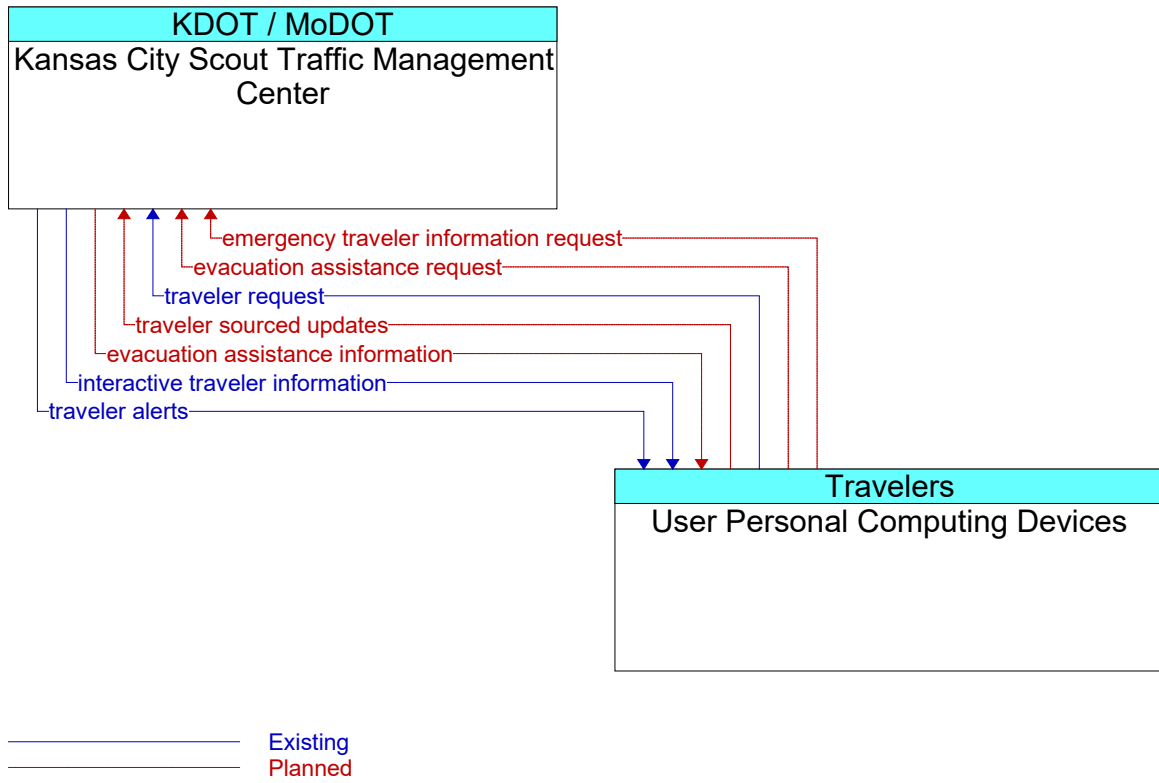
**Figure 578: Kansas City Scout Traffic Management Center - Smart City Kiosks Interface**



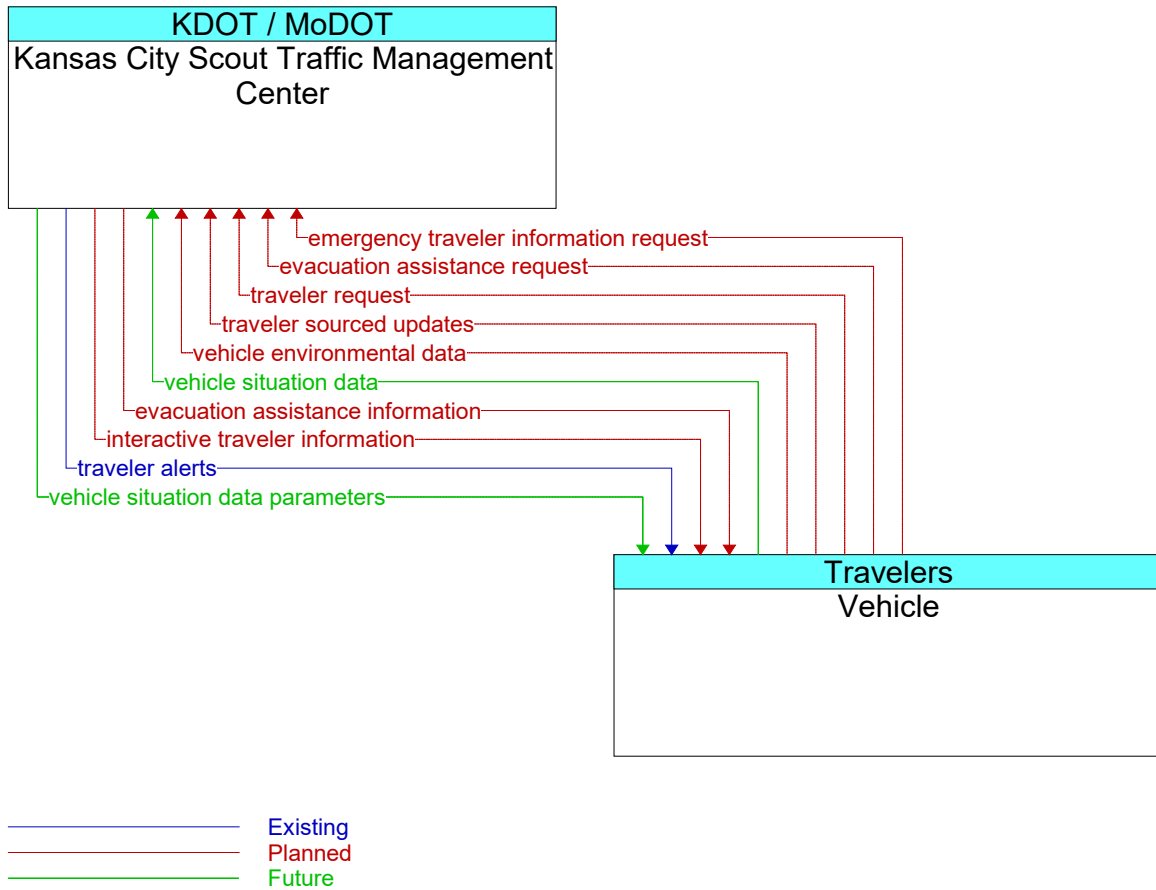
**Figure 579: Kansas City Scout Traffic Management Center - Traffic Operations Personnel Interface**



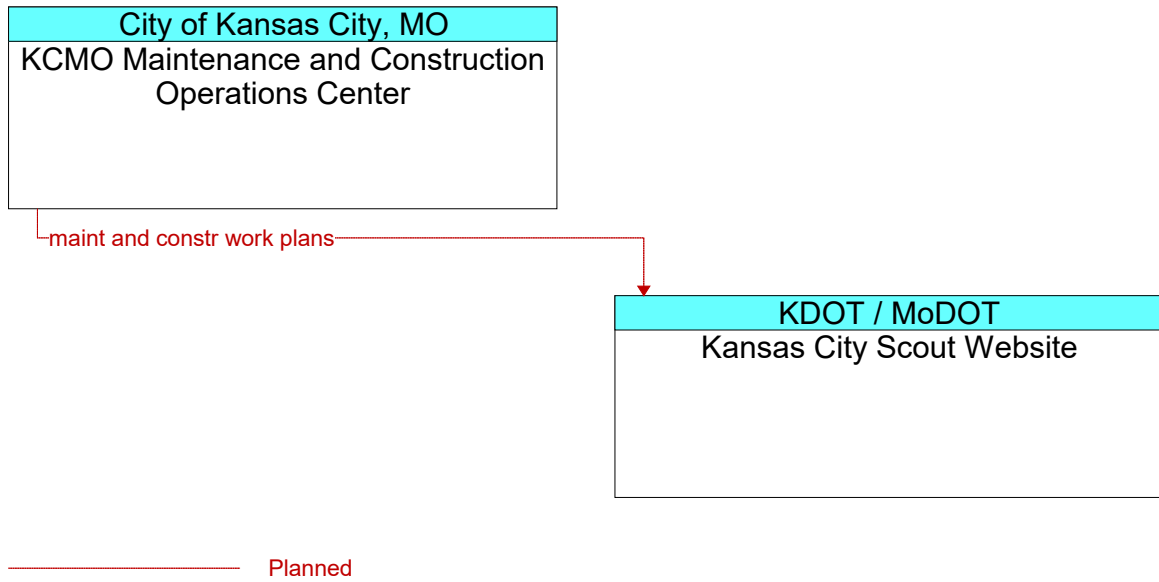
**Figure 580: Kansas City Scout Traffic Management Center - UGT Operations Center Interface**



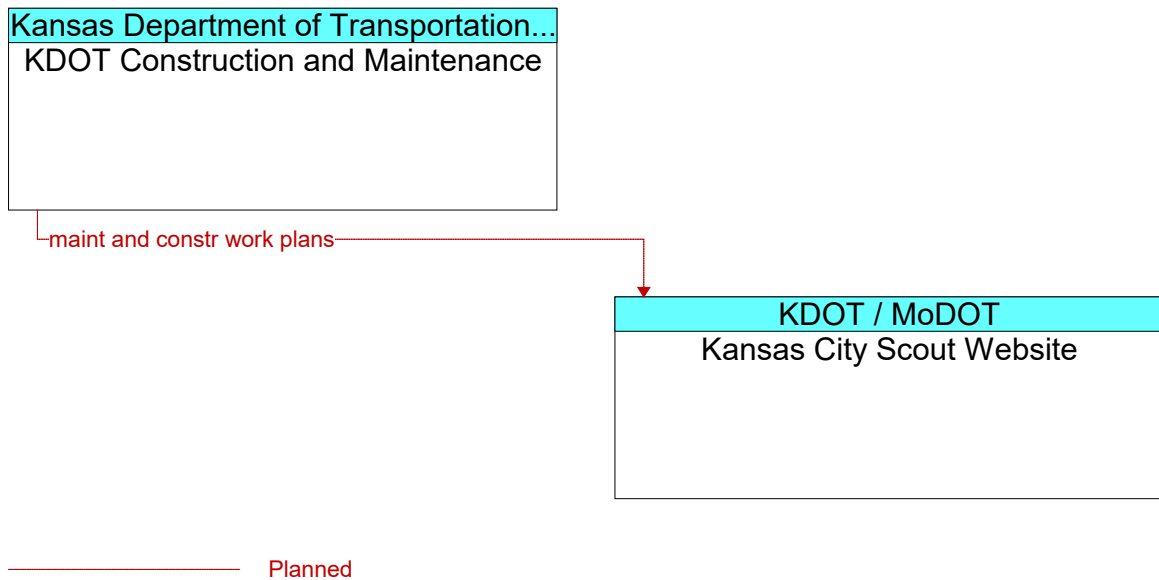
**Figure 581: Kansas City Scout Traffic Management Center - User Personal Computing Devices Interface**



**Figure 582: Kansas City Scout Traffic Management Center - Vehicle Interface**

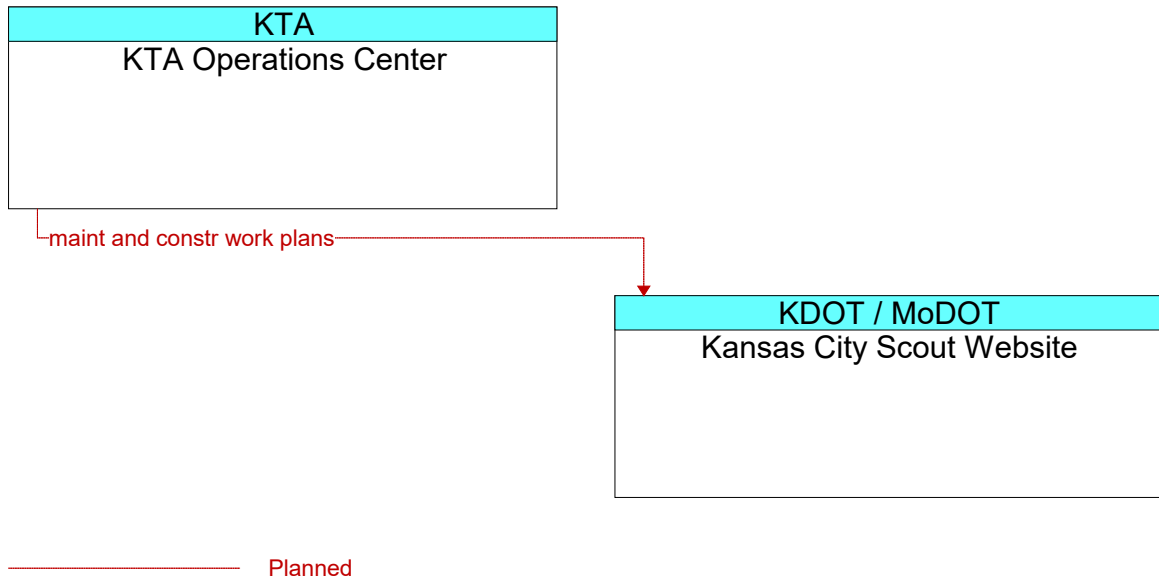


**Figure 583: Kansas City Scout Website - KCMO Maintenance and Construction Operations Center Interface**

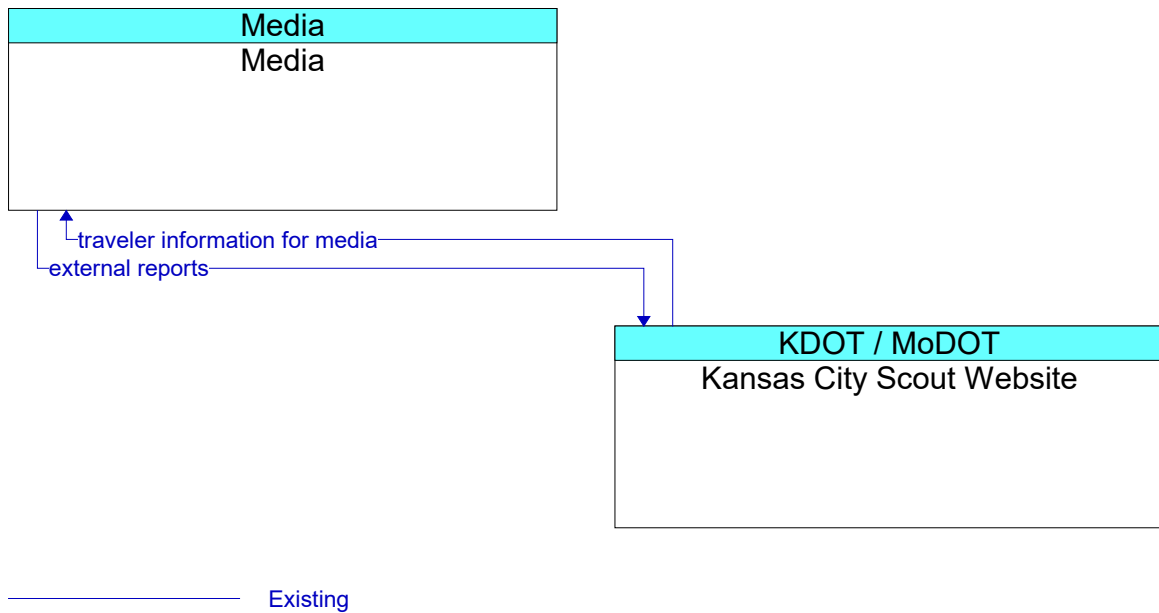


**Figure 584: Kansas City Scout Website - KDOT Construction and Maintenance Interface**

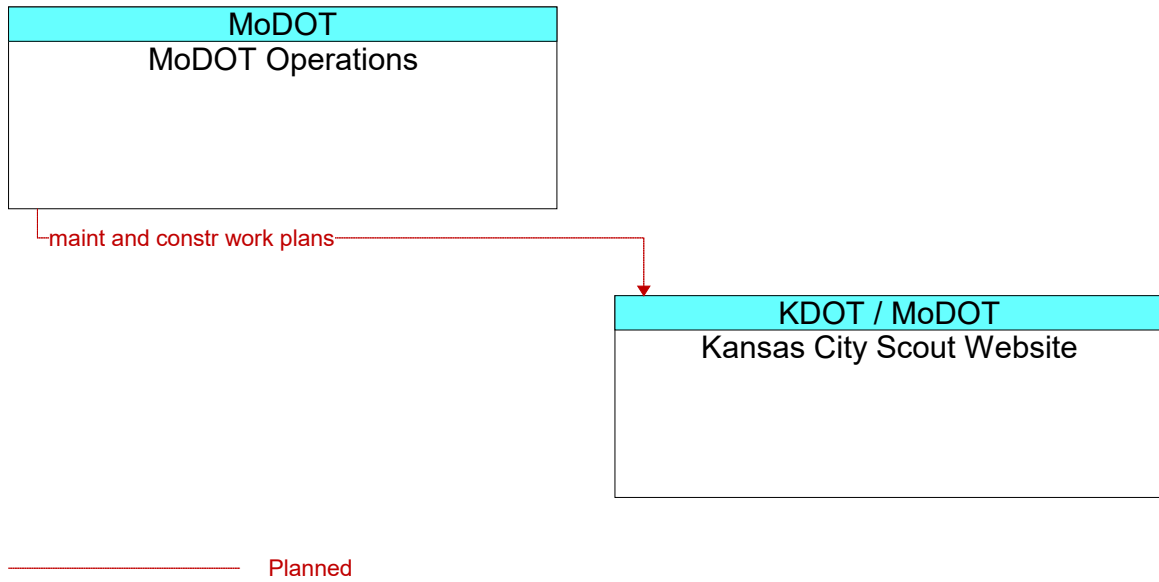




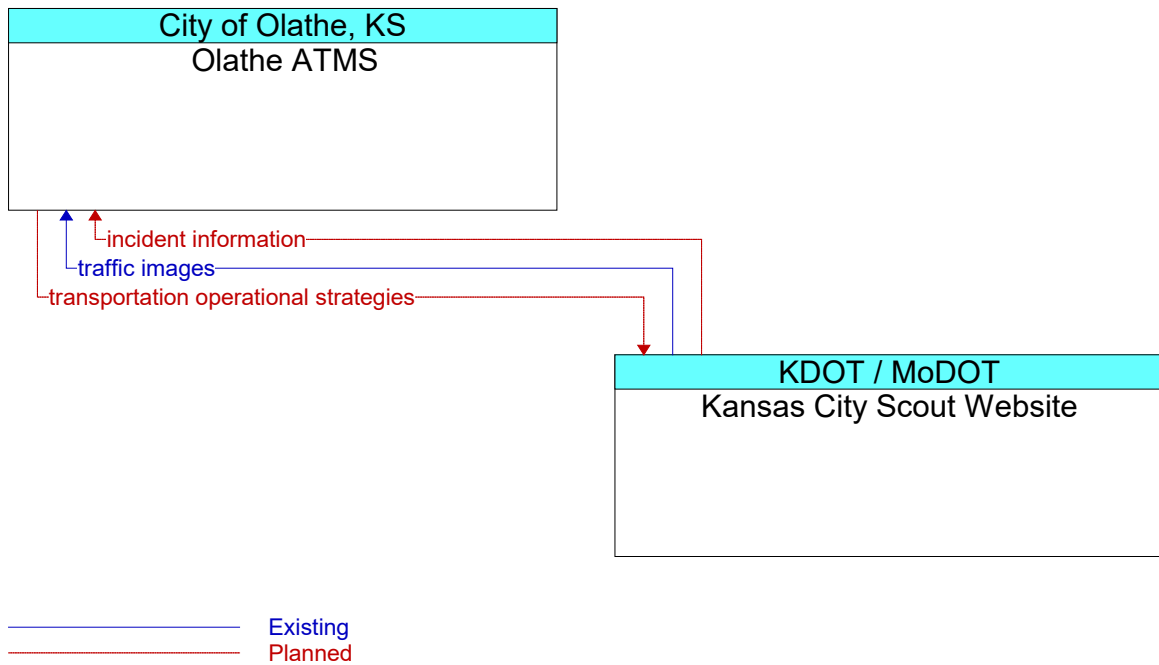
**Figure 585: Kansas City Scout Website - KTA Operations Center Interface**



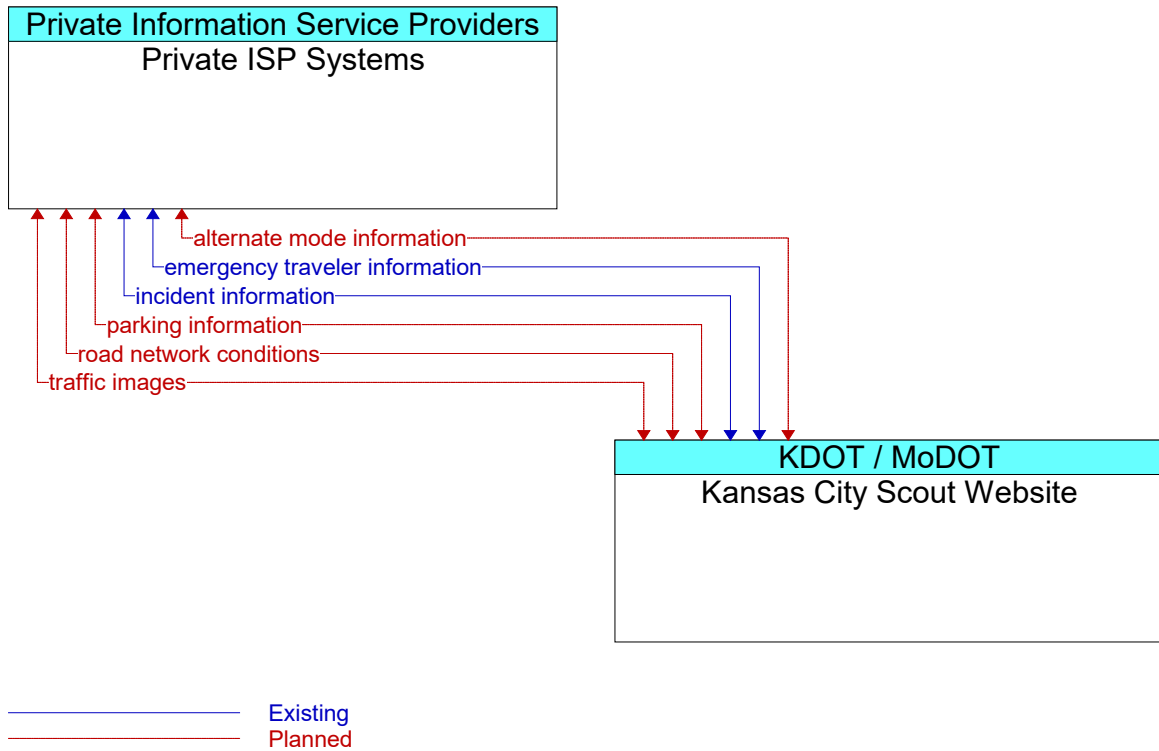
**Figure 586: Kansas City Scout Website - Media Interface**



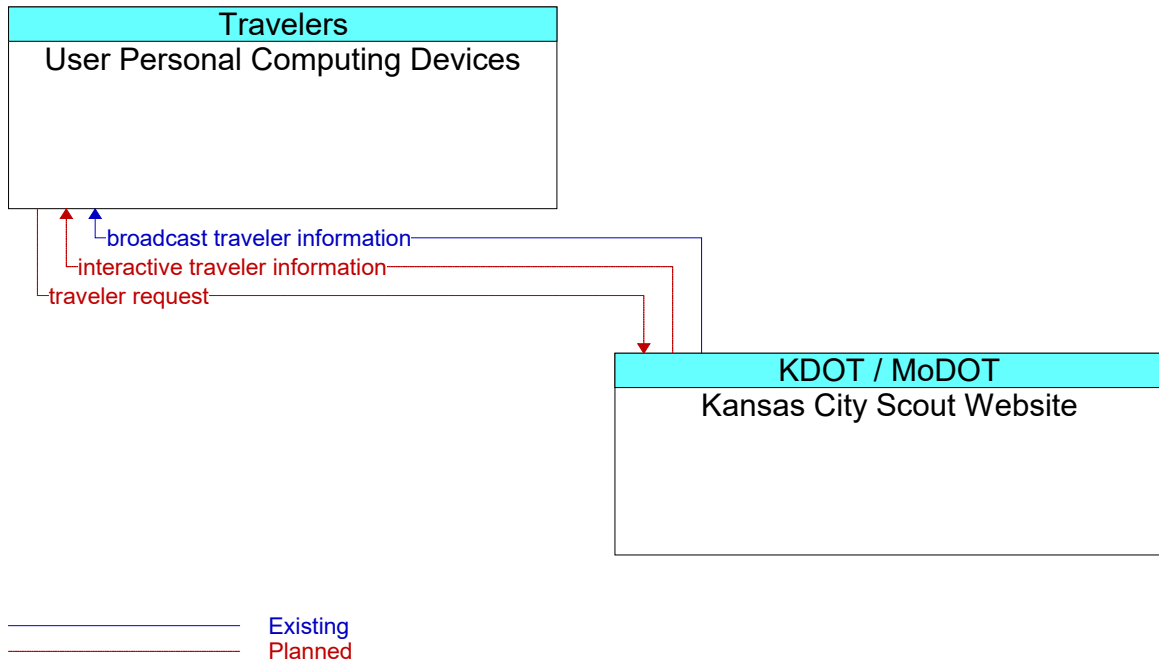
**Figure 587: Kansas City Scout Website - MoDOT Operations Interface**



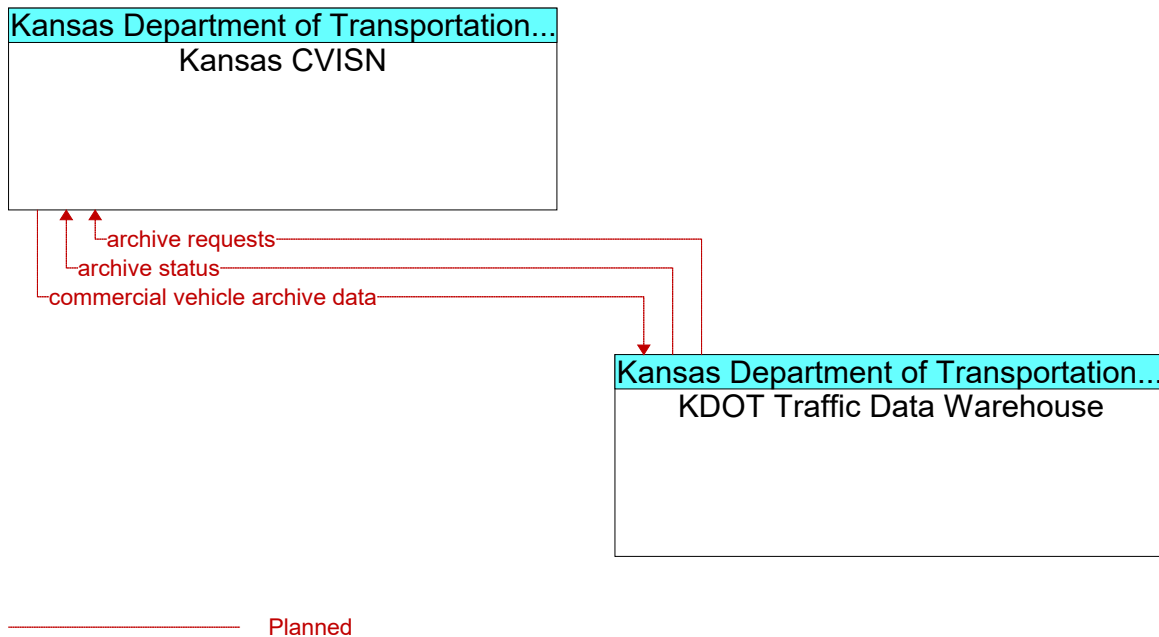
**Figure 588: Kansas City Scout Website - Olathe ATMS Interface**



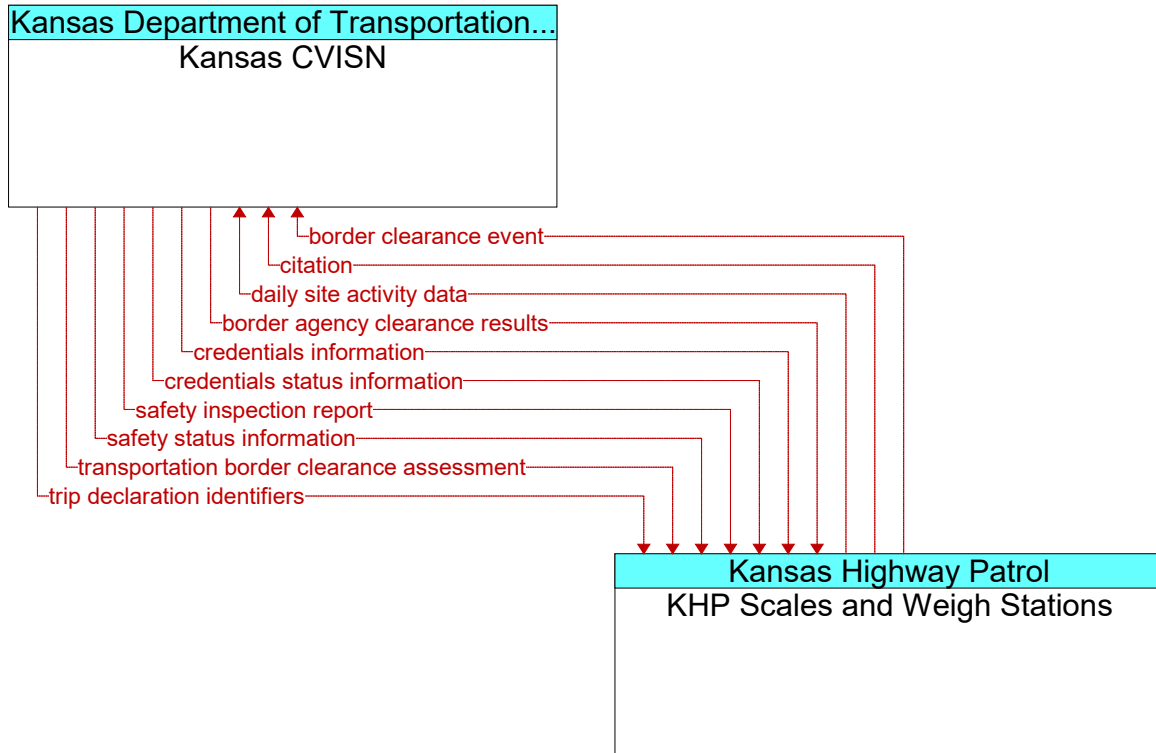
**Figure 589: Kansas City Scout Website - Private ISP Systems Interface**



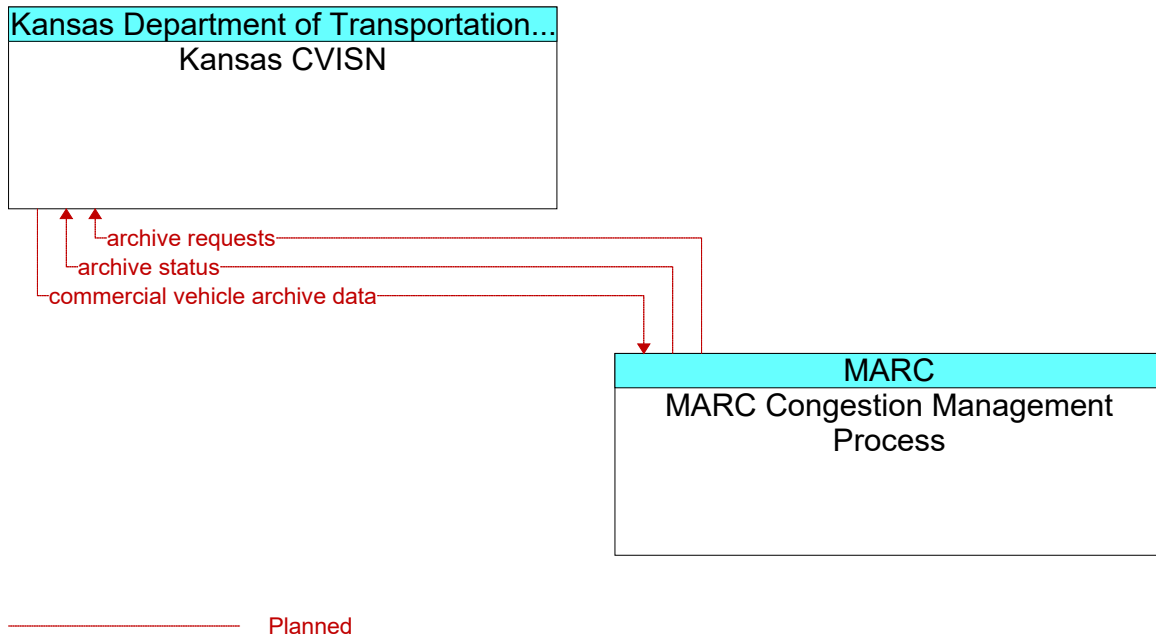
**Figure 590: Kansas City Scout Website - User Personal Computing Devices Interface**



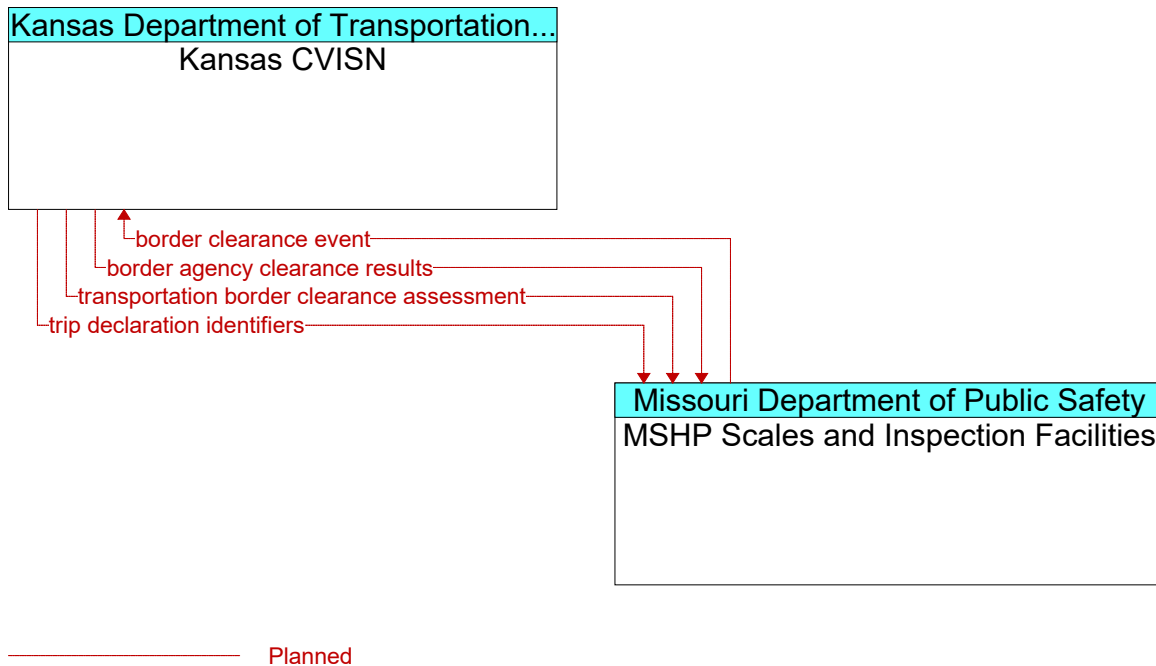
**Figure 591: Kansas CVISN - KDOT Traffic Data Warehouse Interface**



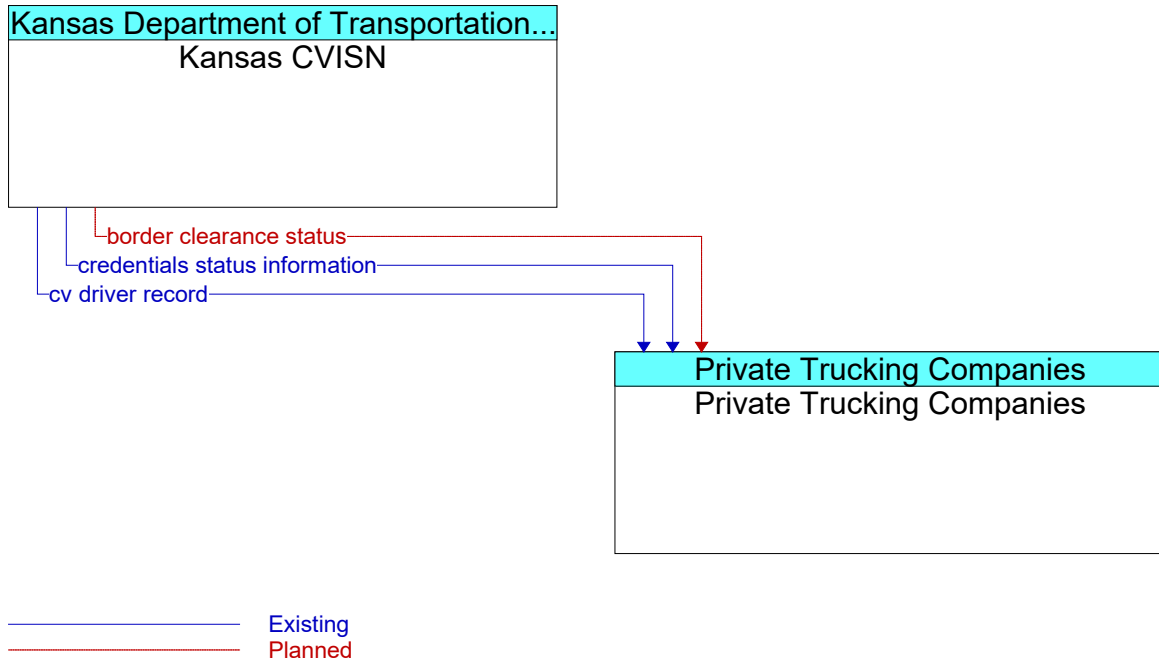
**Figure 592: Kansas CVISN - KHP Scales and Weigh Stations Interface**



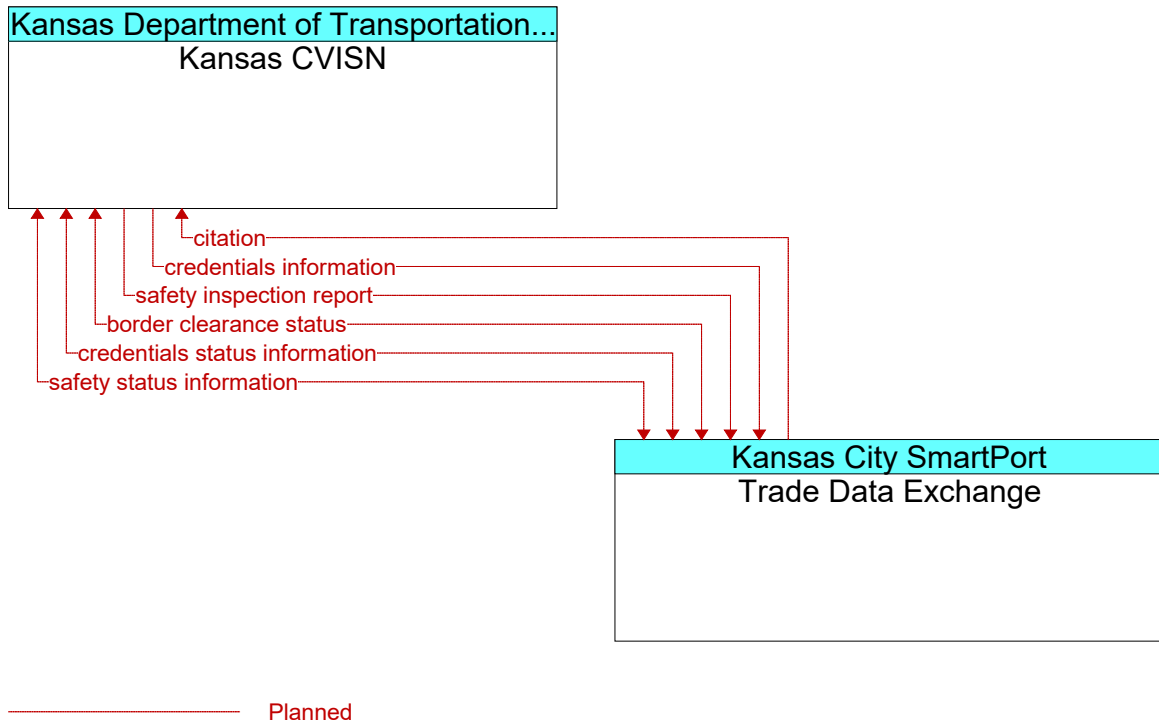
**Figure 593: Kansas CVISN - MARC Congestion Management Process Interface**



**Figure 594: Kansas CVISN - MSHP Scales and Inspection Facilities Interface**

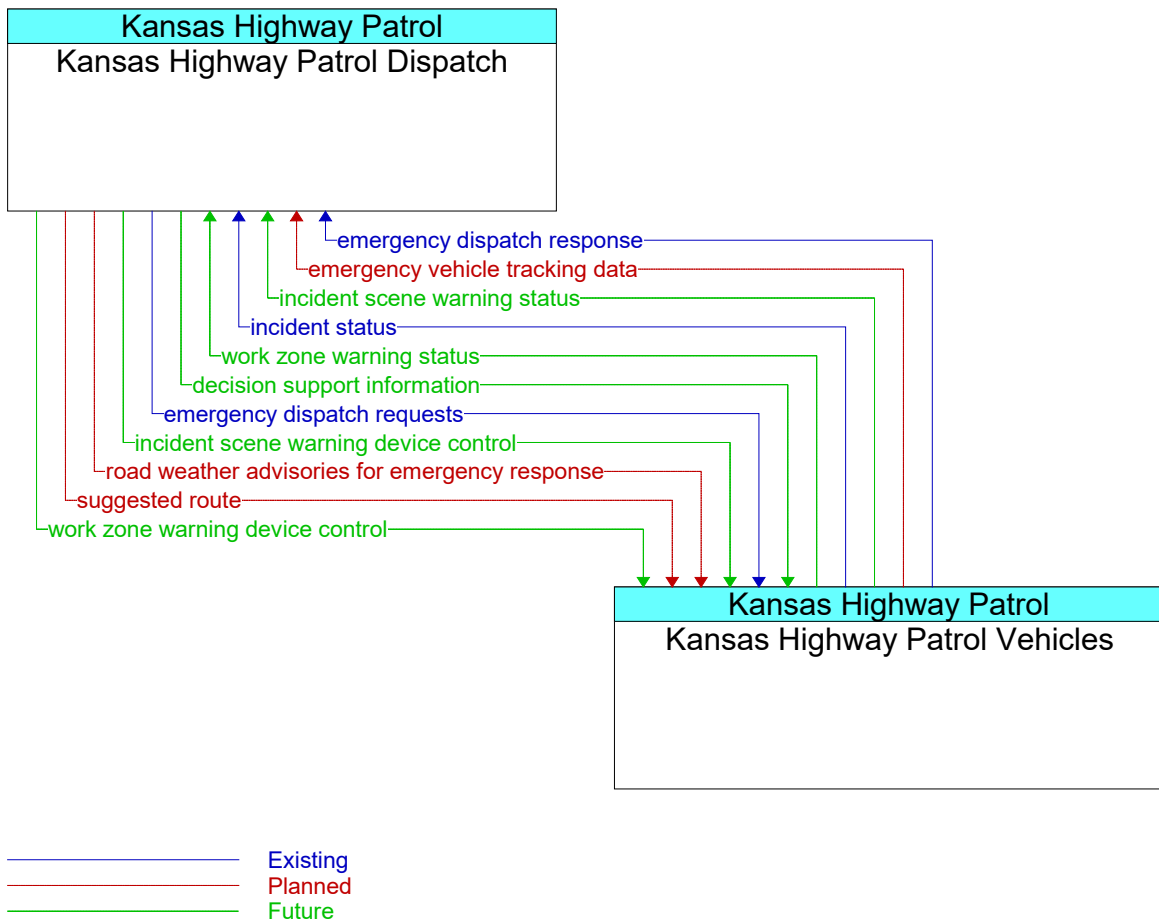


**Figure 595: Kansas CVISN - Private Trucking Companies Interface**



**Figure 596: Kansas CVISN - Trade Data Exchange Interface**





**Figure 597: Kansas Highway Patrol Dispatch - Kansas Highway Patrol Vehicles Interface**

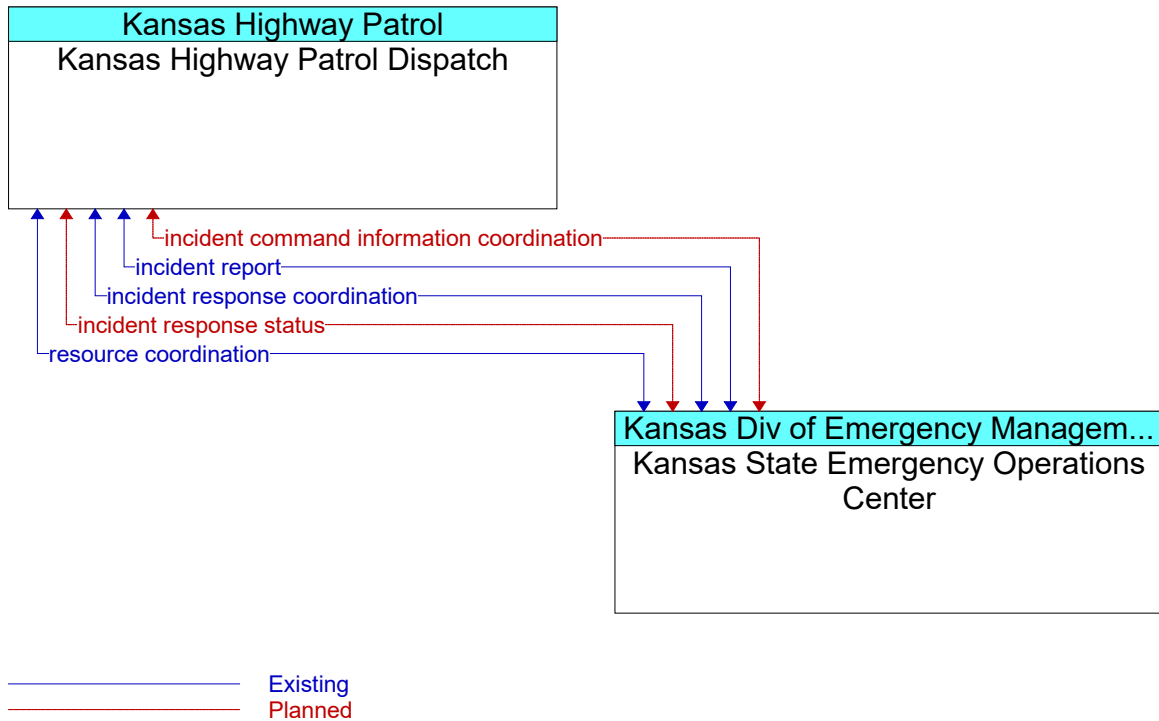
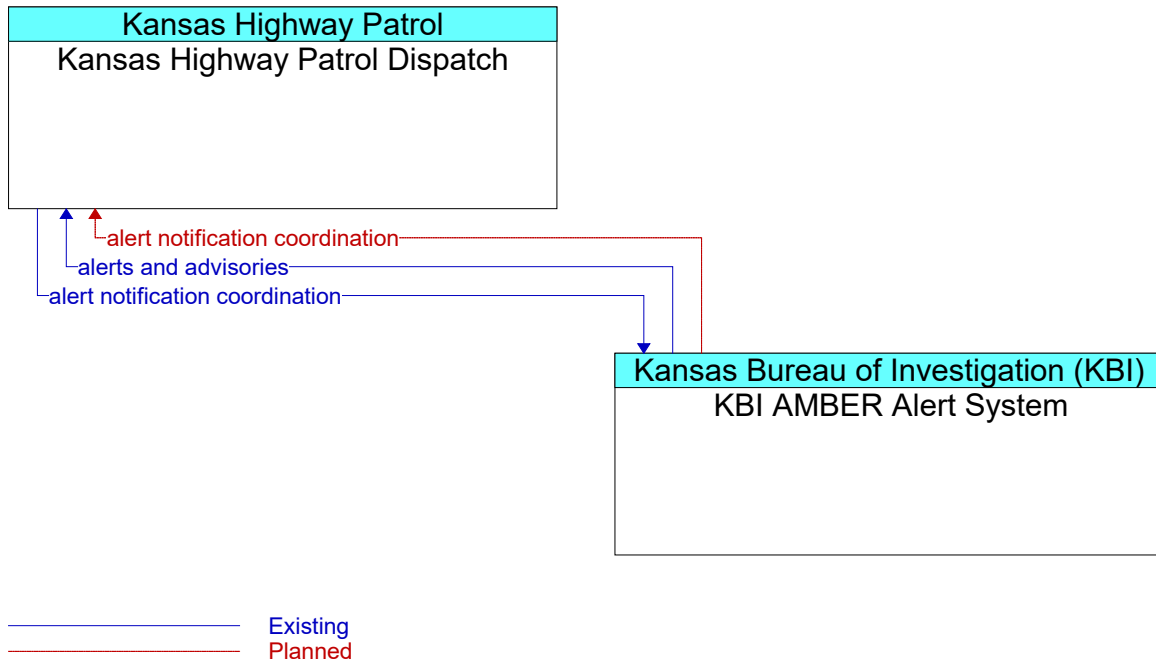
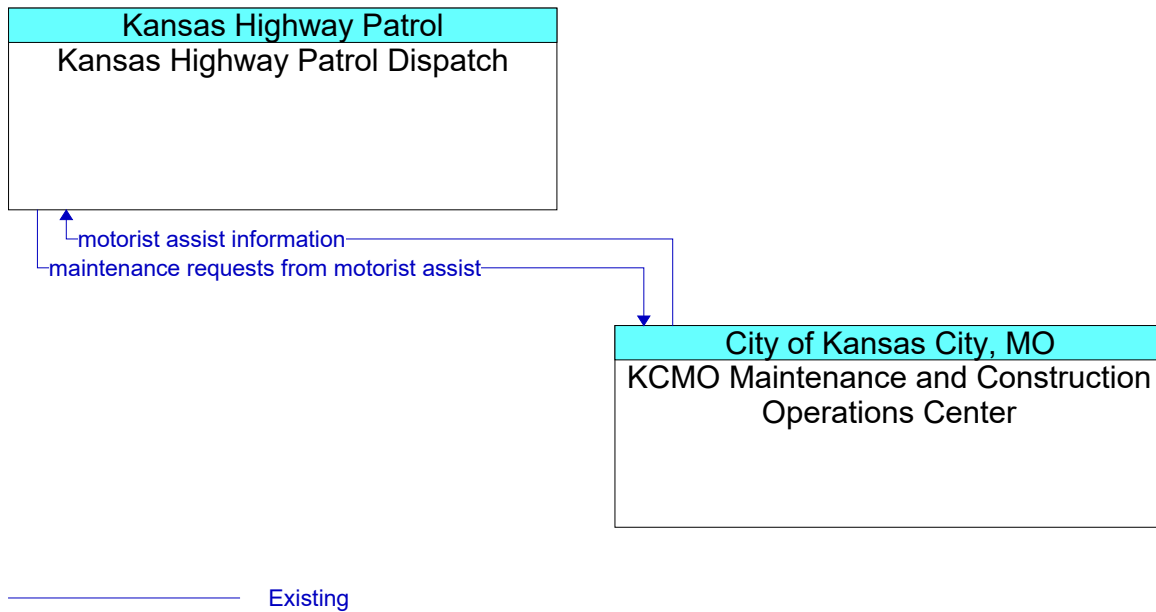


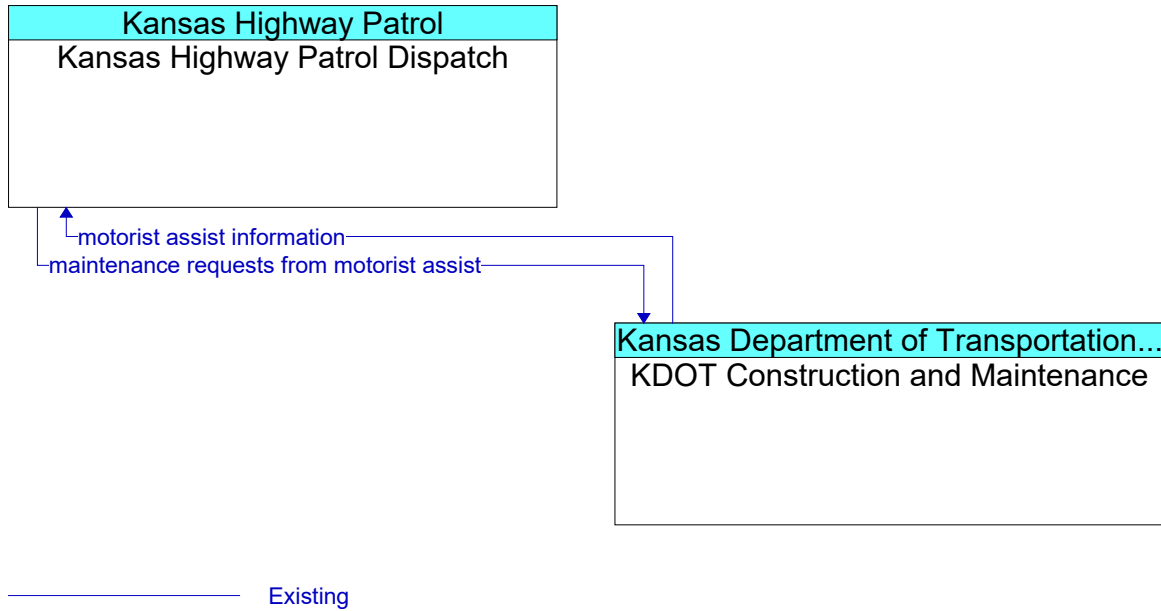
Figure 598: Kansas Highway Patrol Dispatch - Kansas State Emergency Operations Center Interface



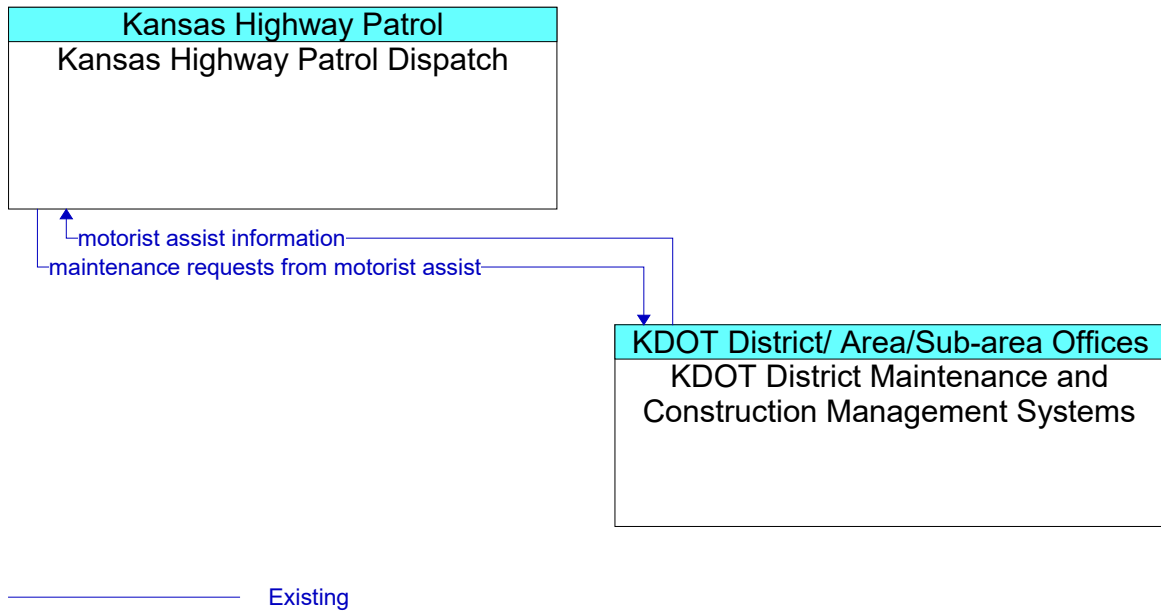
**Figure 599: Kansas Highway Patrol Dispatch - KBI AMBER Alert System Interface**



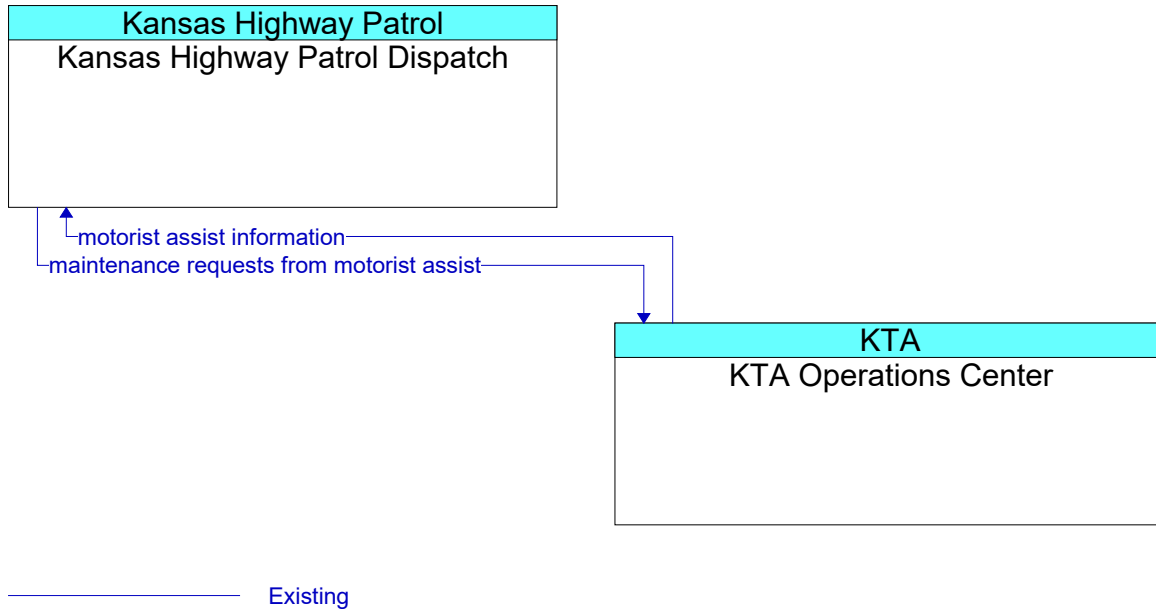
**Figure 600: Kansas Highway Patrol Dispatch - KCMO Maintenance and Construction Operations Center Interface**



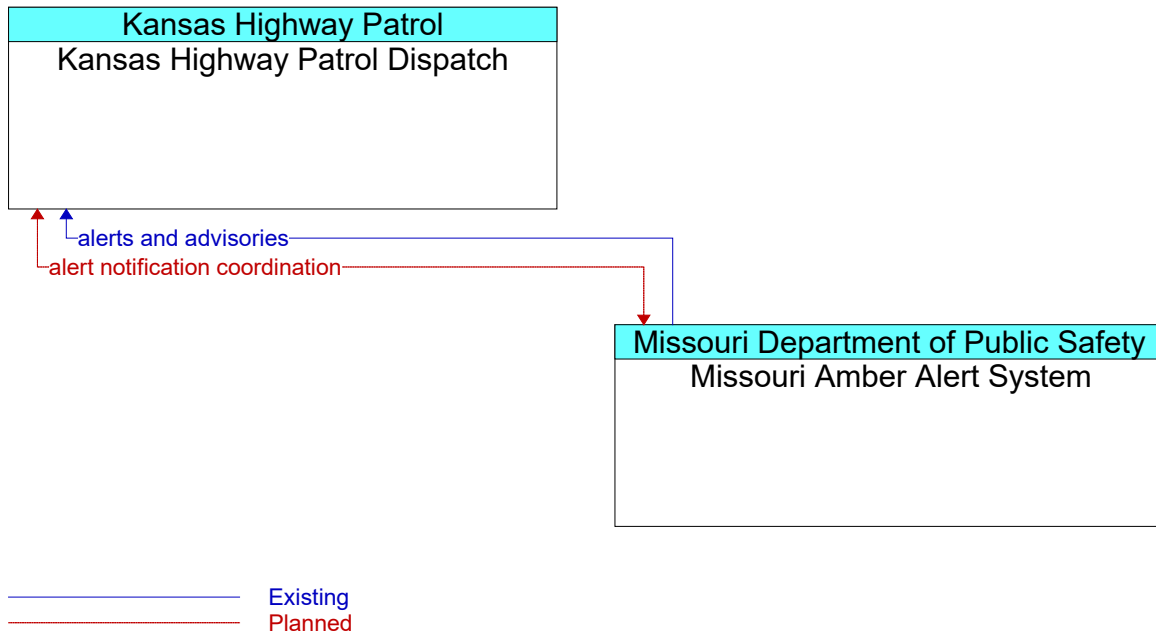
**Figure 601: Kansas Highway Patrol Dispatch - KDOT Construction and Maintenance Interface**



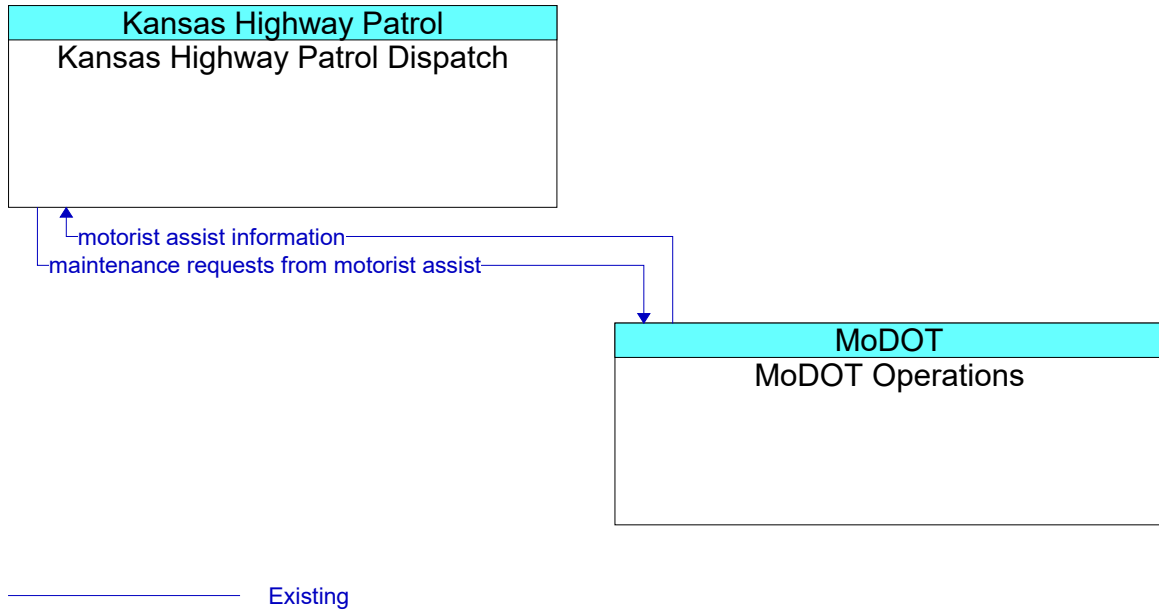
**Figure 602: Kansas Highway Patrol Dispatch - KDOT District Maintenance and Construction Management Systems Interface**



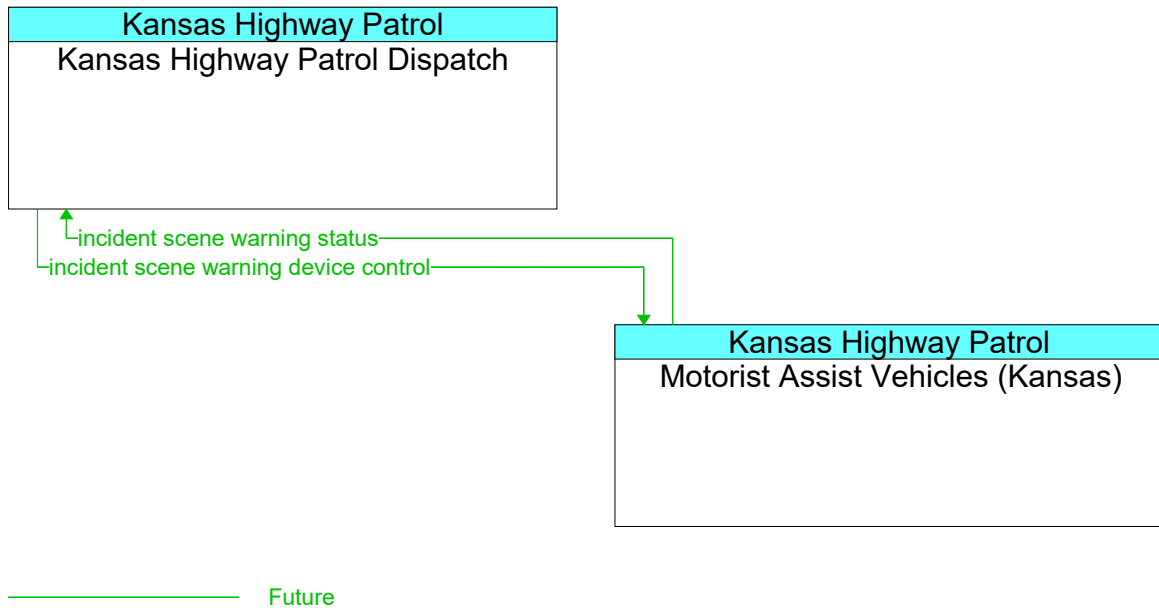
**Figure 603: Kansas Highway Patrol Dispatch - KTA Operations Center Interface**



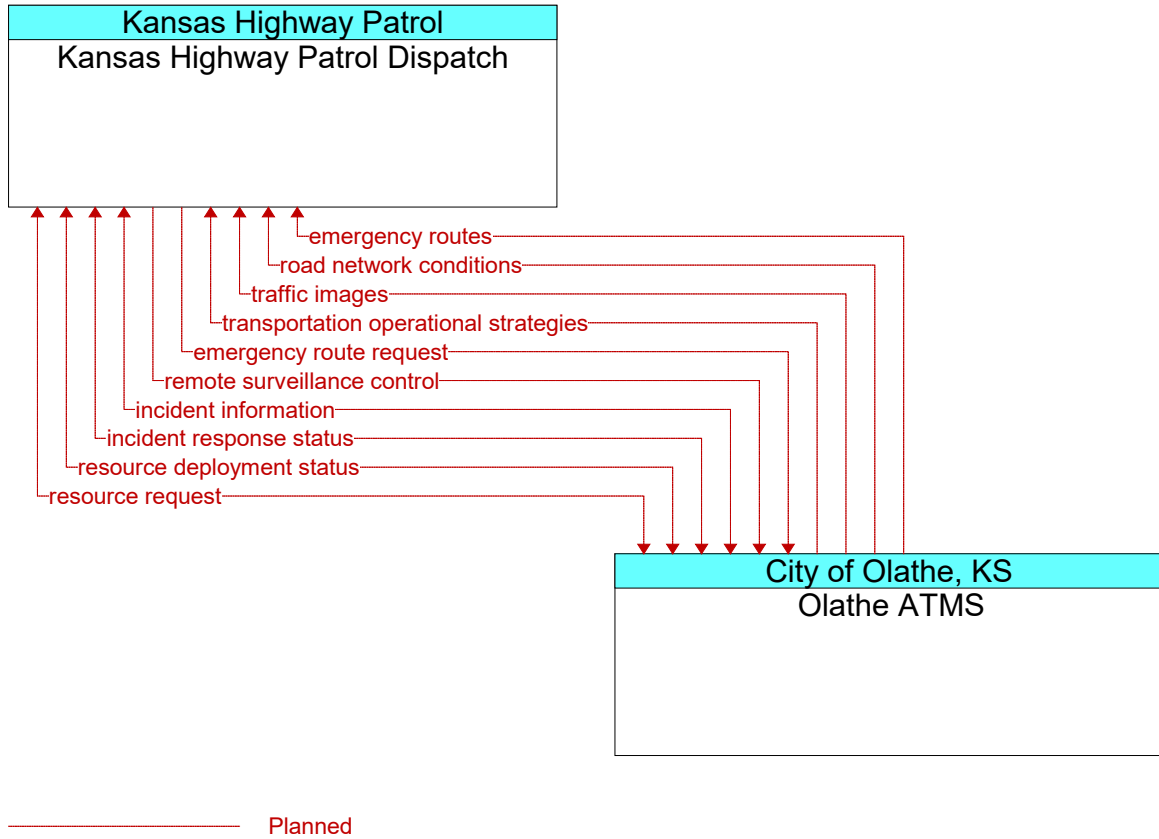
**Figure 604: Kansas Highway Patrol Dispatch - Missouri Amber Alert System Interface**



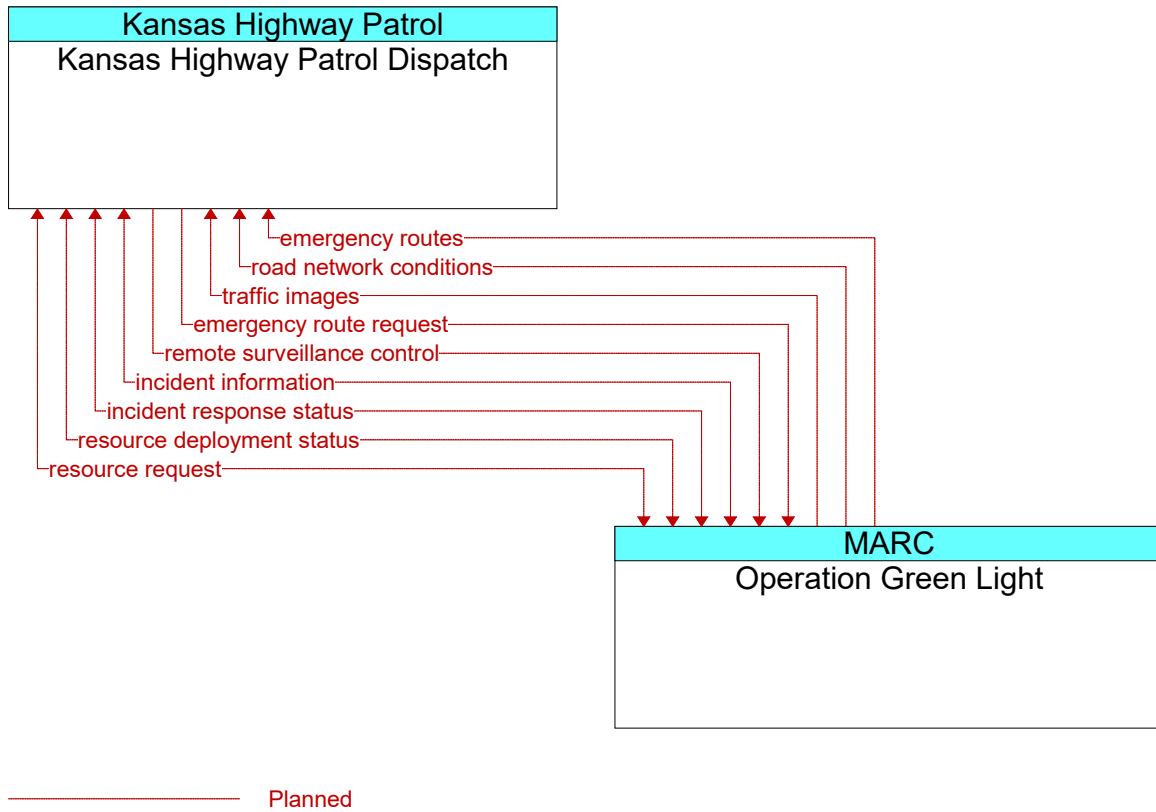
**Figure 605: Kansas Highway Patrol Dispatch - MoDOT Operations Interface**



**Figure 606: Kansas Highway Patrol Dispatch - Motorist Assist Vehicles (Kansas) Interface**

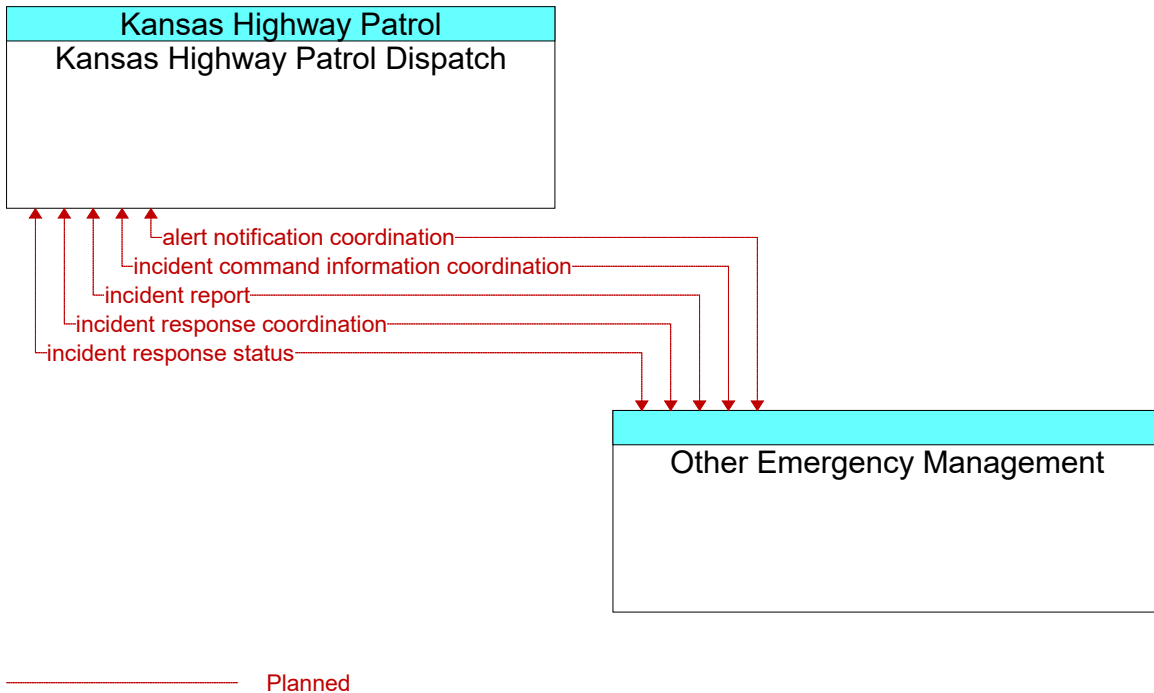


**Figure 607: Kansas Highway Patrol Dispatch - Olathe ATMS Interface**

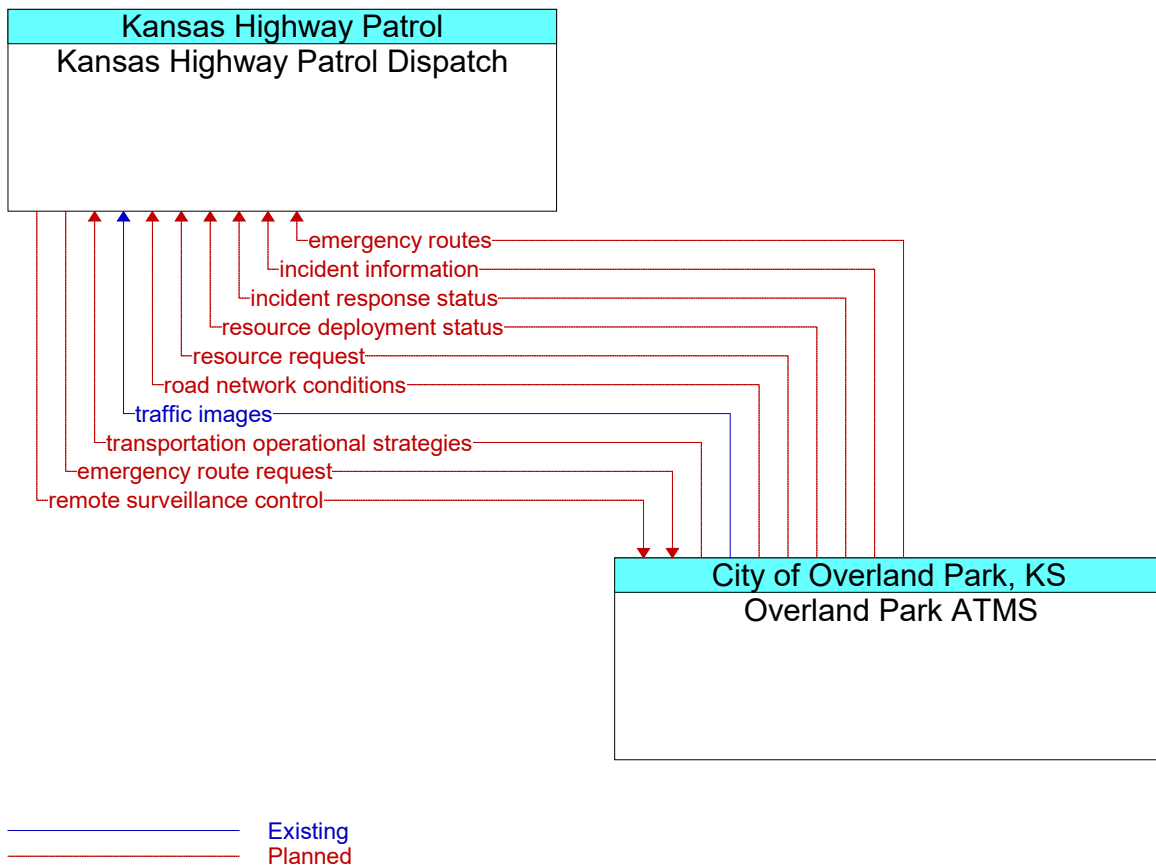


**Figure 608: Kansas Highway Patrol Dispatch - Operation Green Light Interface**

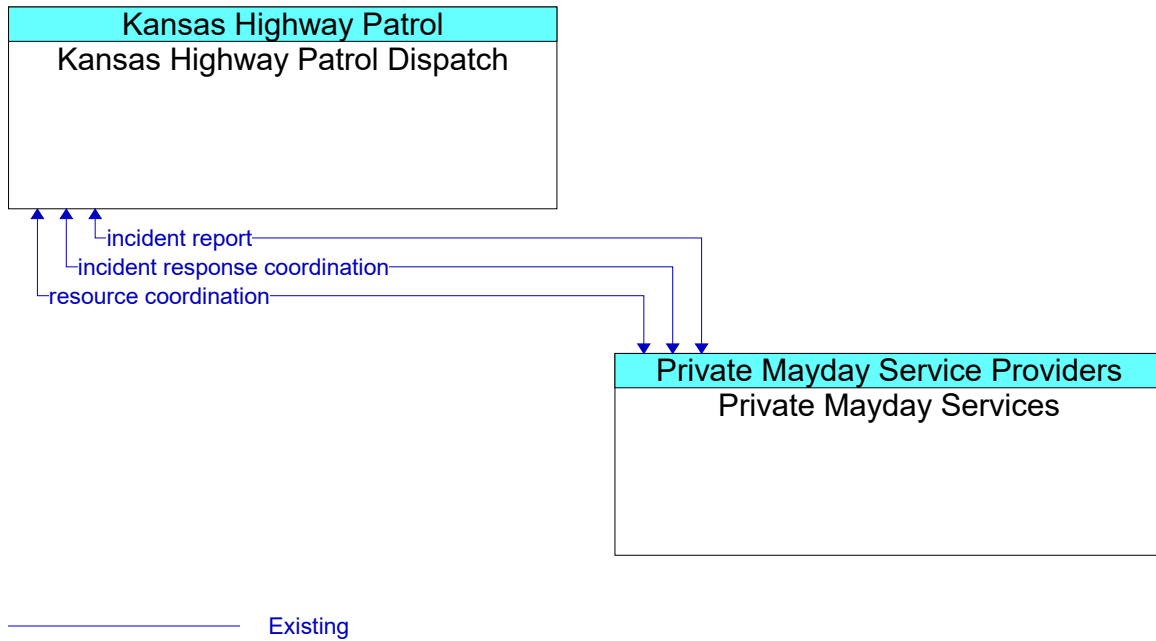




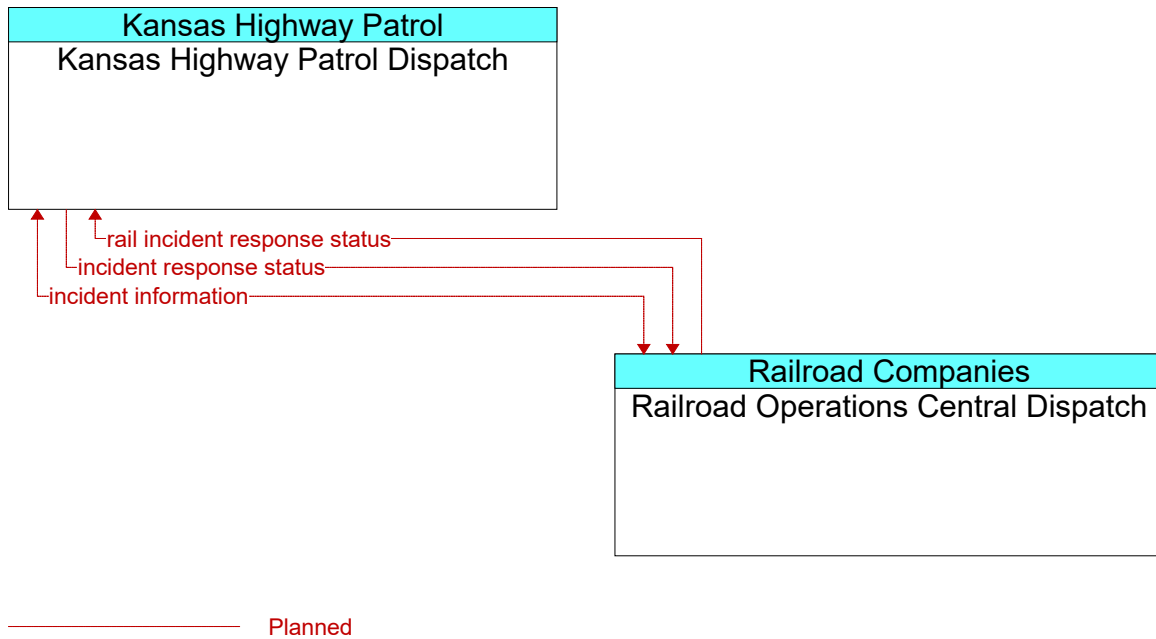
**Figure 609: Kansas Highway Patrol Dispatch - Other Emergency Management Interface**



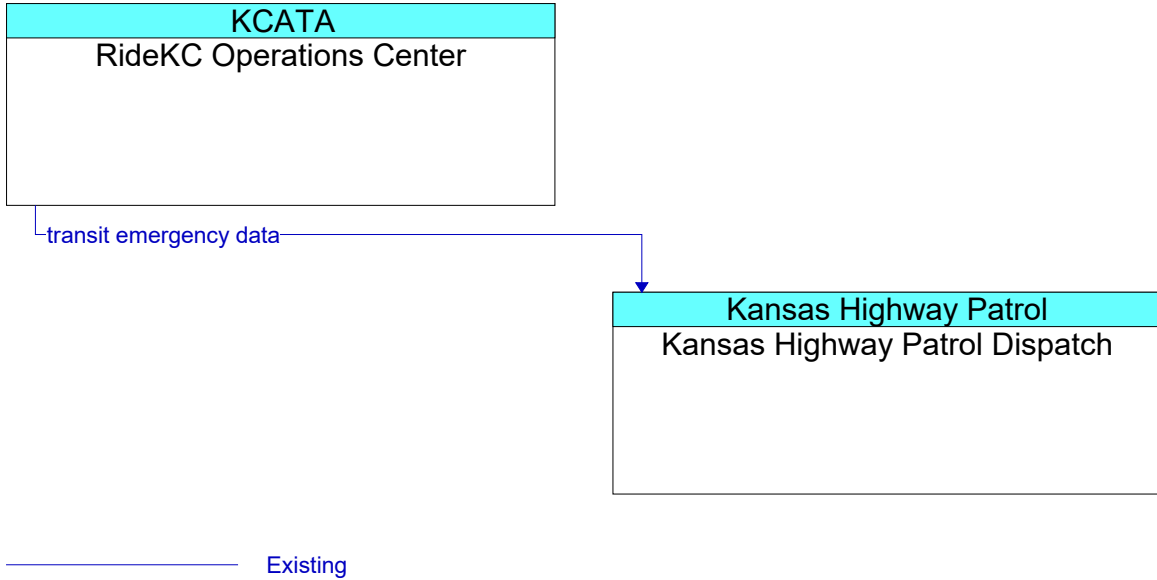
**Figure 610: Kansas Highway Patrol Dispatch - Overland Park ATMS Interface**



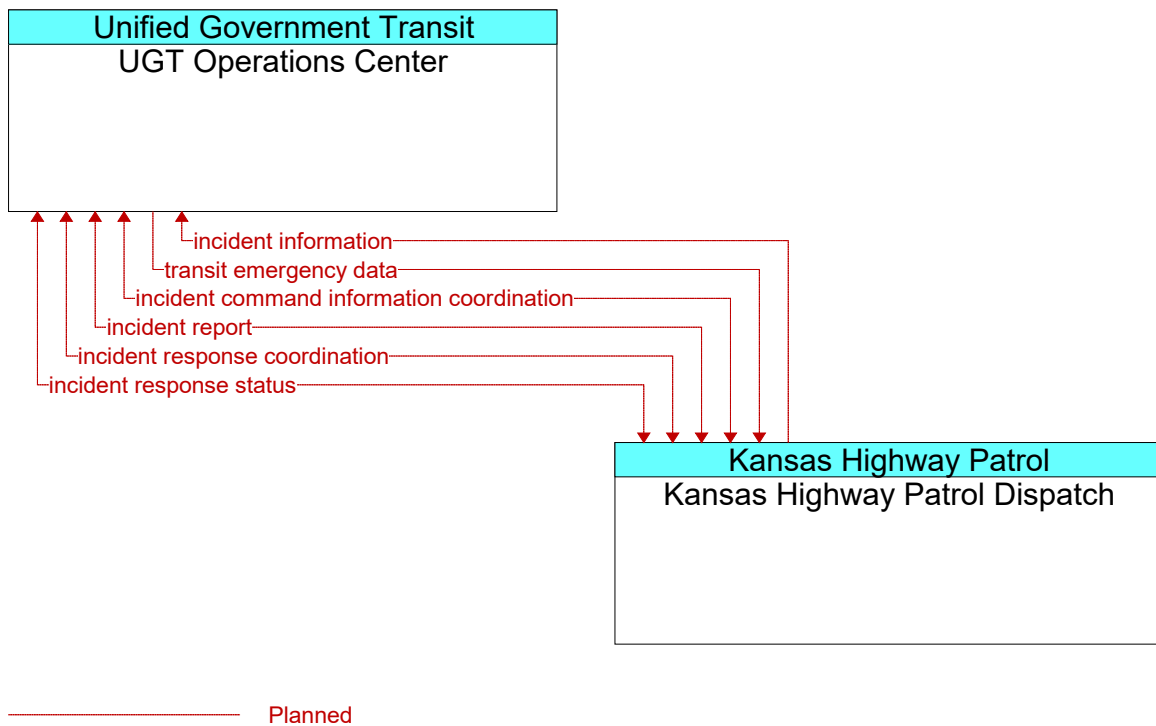
**Figure 611: Kansas Highway Patrol Dispatch - Private Mayday Services Interface**



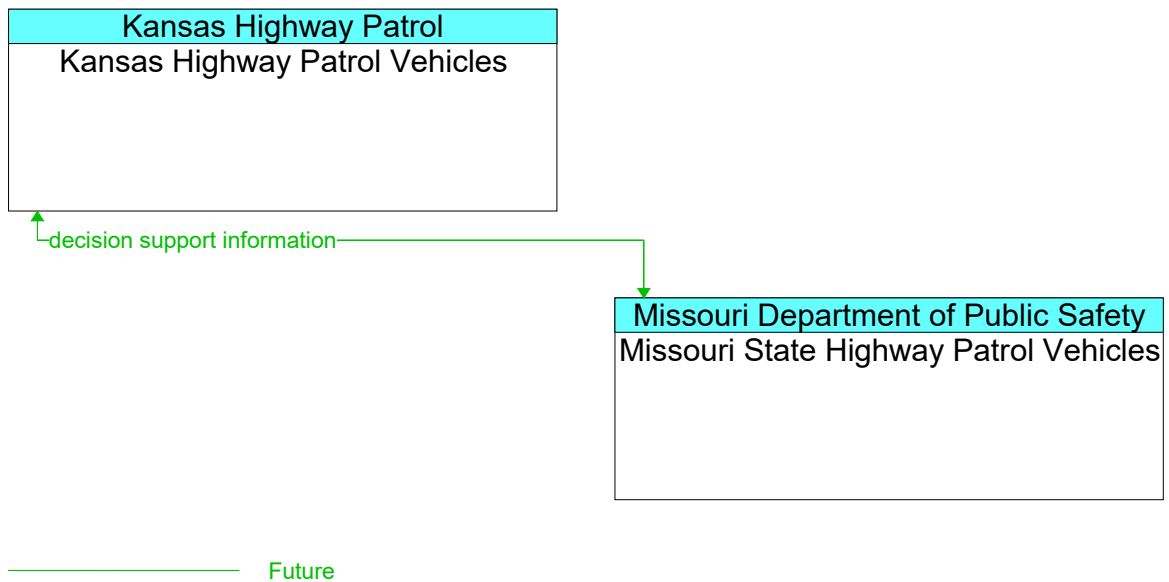
**Figure 612: Kansas Highway Patrol Dispatch - Railroad Operations Central Dispatch Interface**



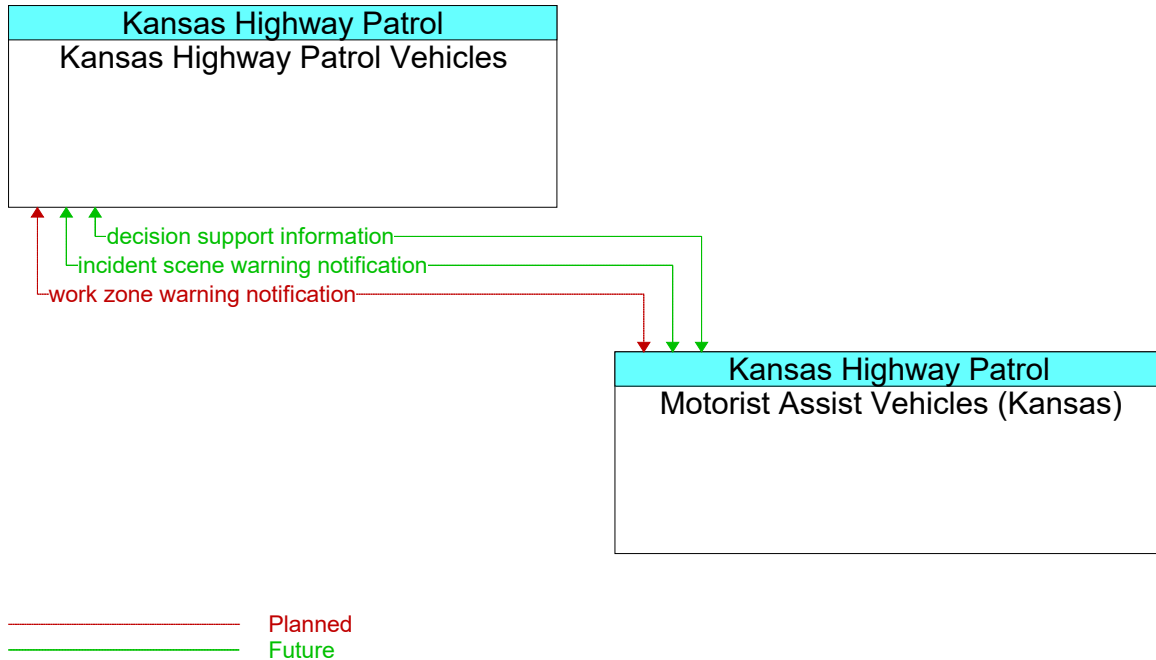
**Figure 613: Kansas Highway Patrol Dispatch - RideKC Operations Center Interface**



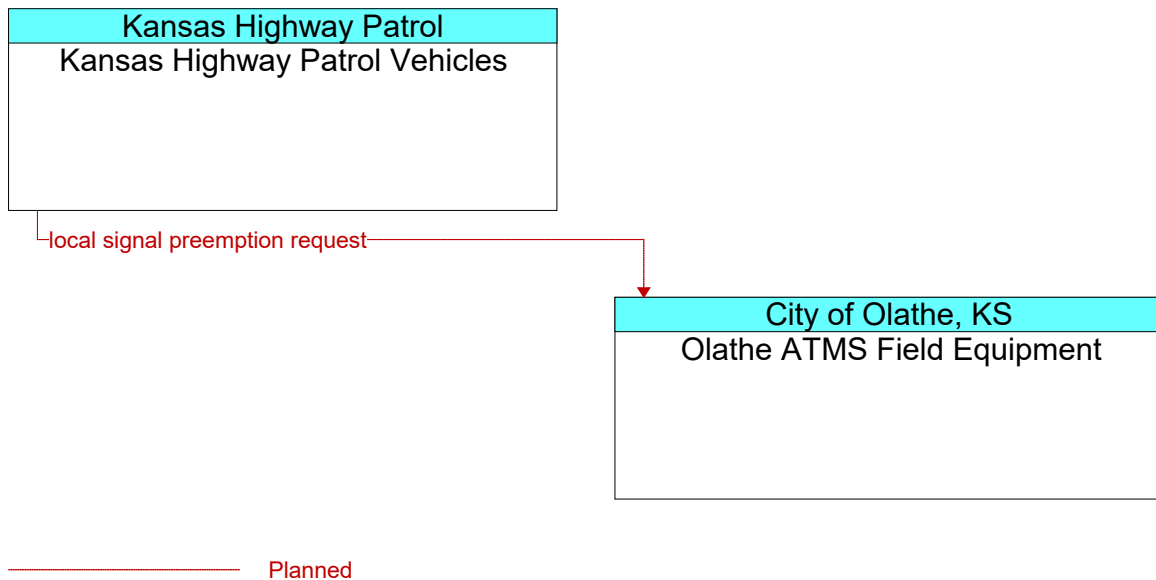
**Figure 614: Kansas Highway Patrol Dispatch - UGT Operations Center Interface**



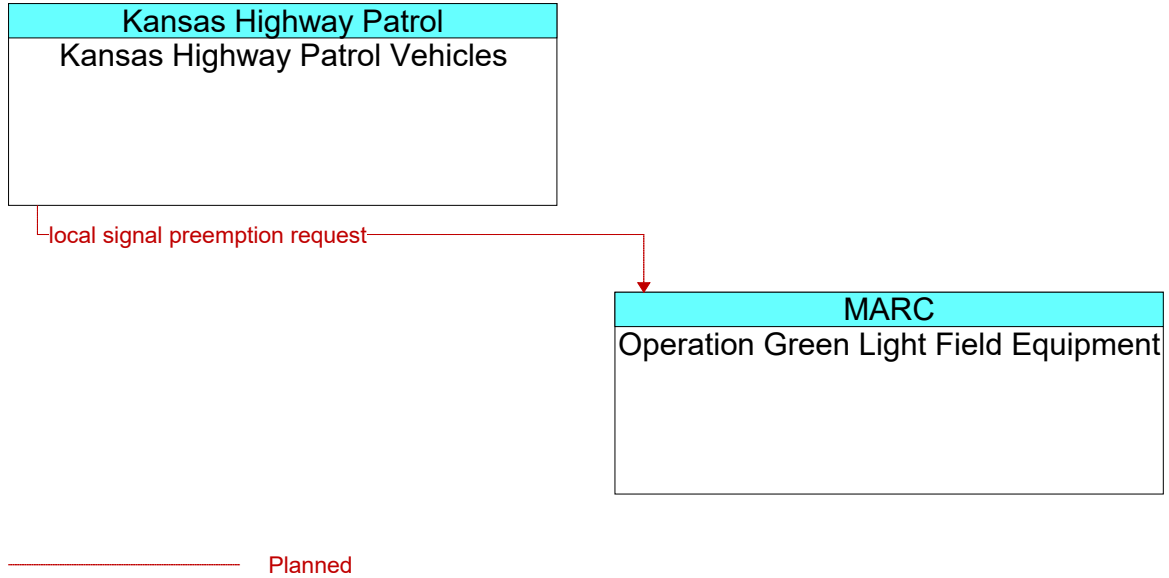
**Figure 615: Kansas Highway Patrol Vehicles - Missouri State Highway Patrol Vehicles Interface**



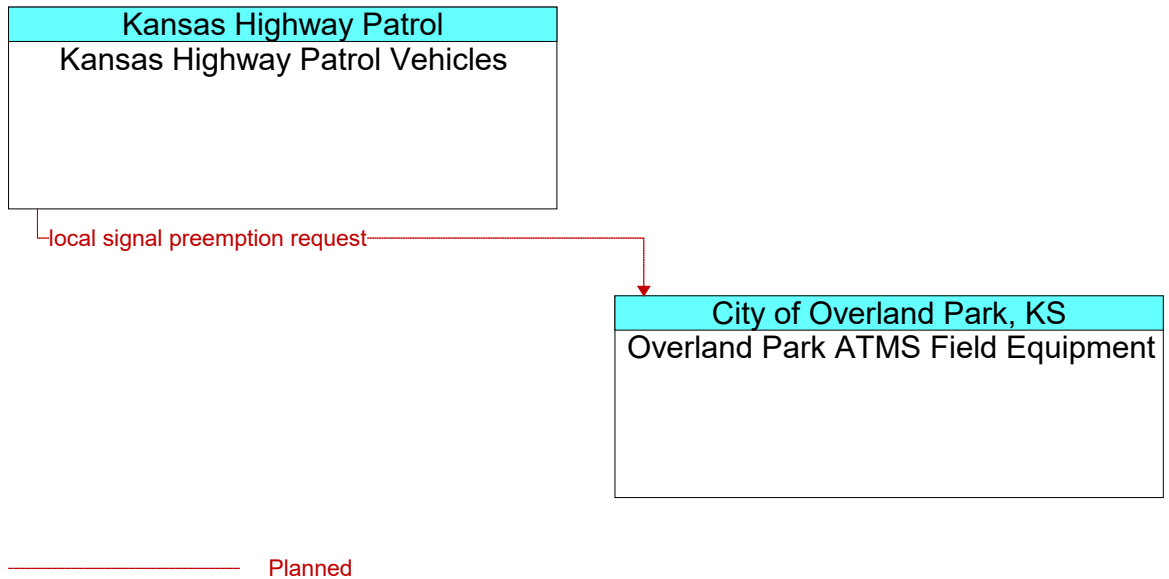
**Figure 616: Kansas Highway Patrol Vehicles - Motorist Assist Vehicles (Kansas) Interface**



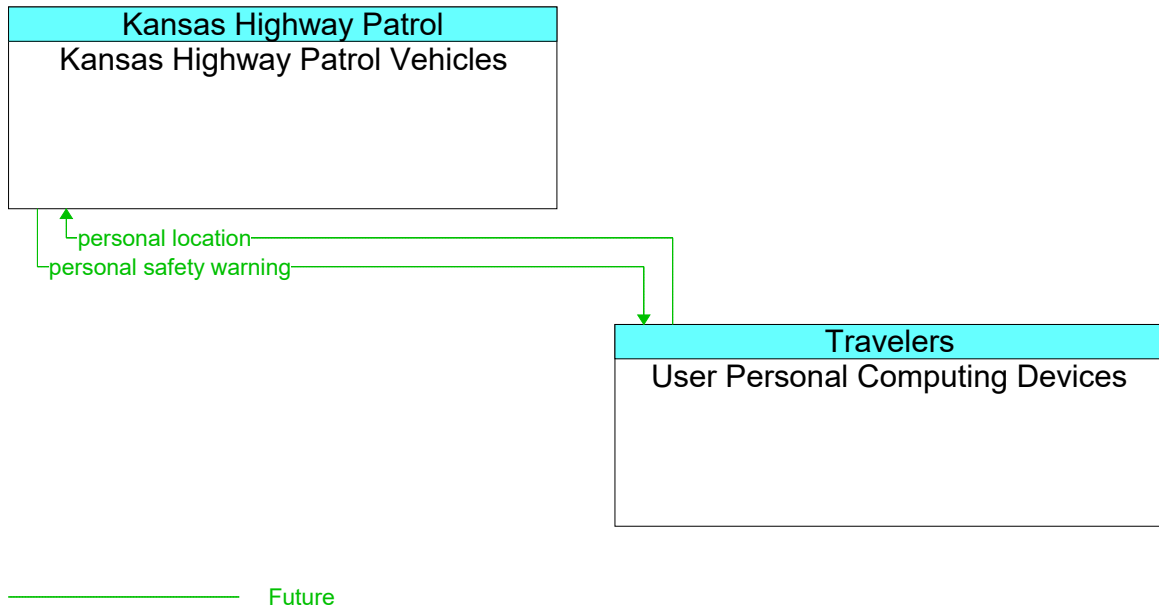
**Figure 617: Kansas Highway Patrol Vehicles - Olathe ATMS Field Equipment Interface**



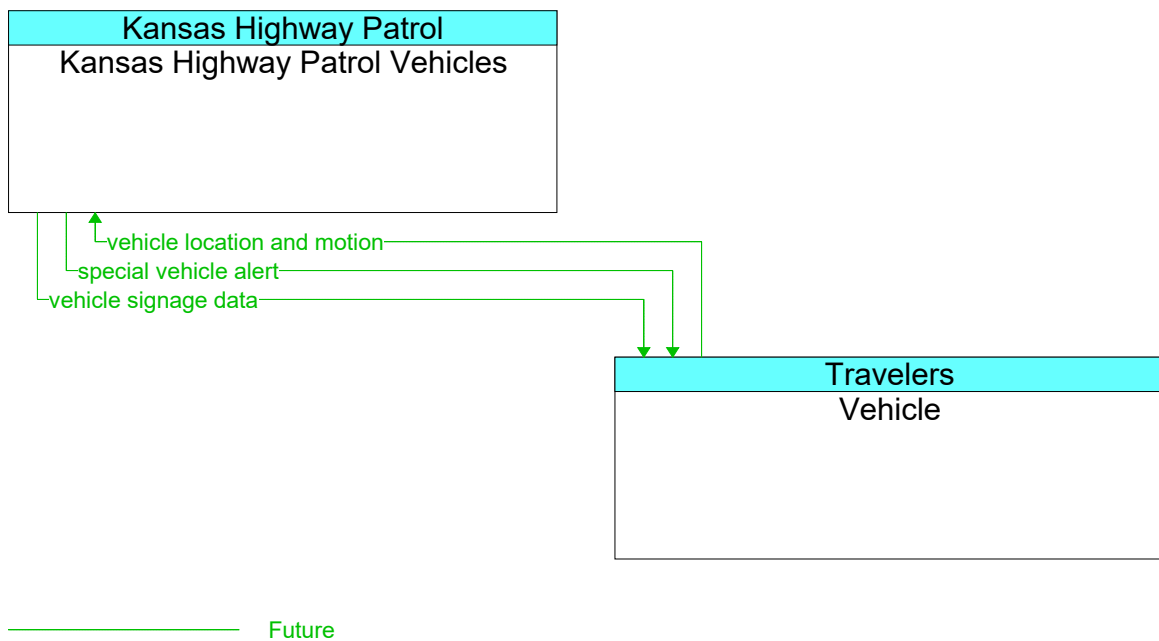
**Figure 618: Kansas Highway Patrol Vehicles - Operation Green Light Field Equipment Interface**



**Figure 619: Kansas Highway Patrol Vehicles - Overland Park ATMS Field Equipment Interface**

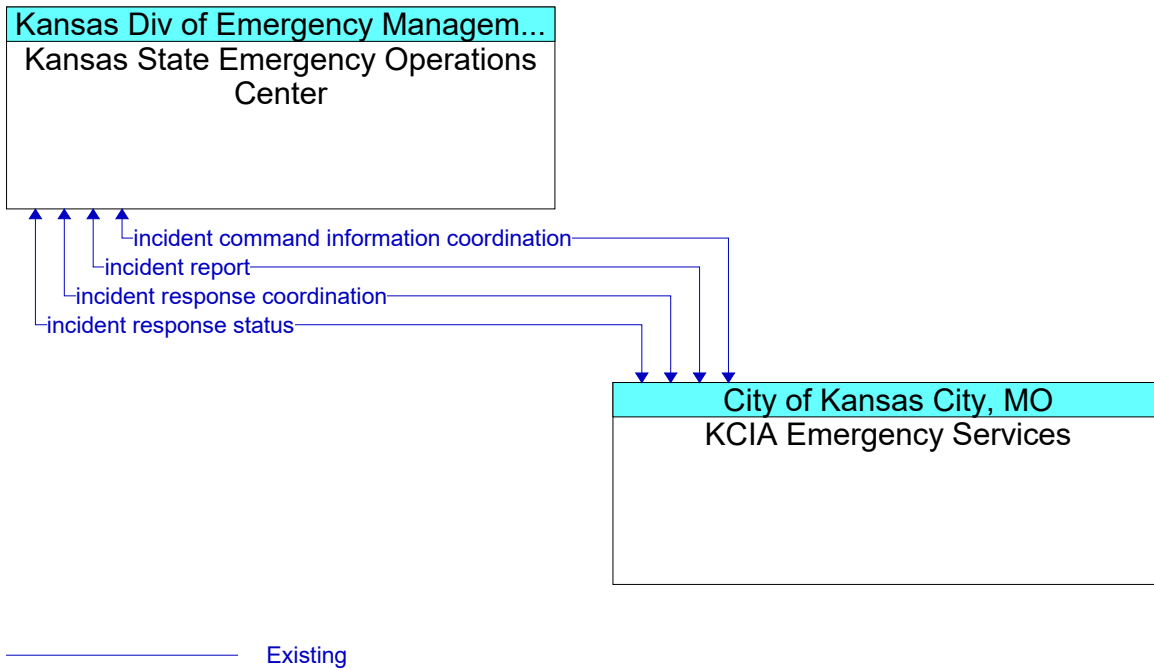


**Figure 620: Kansas Highway Patrol Vehicles - User Personal Computing Devices Interface**

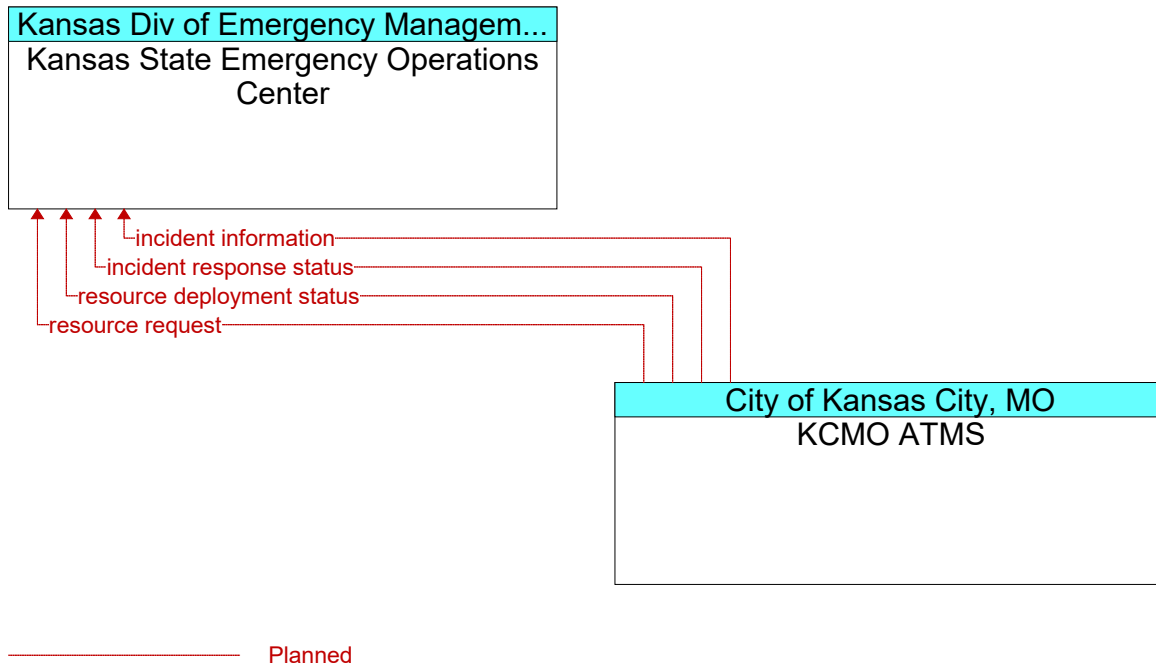


**Figure 621: Kansas Highway Patrol Vehicles - Vehicle Interface**

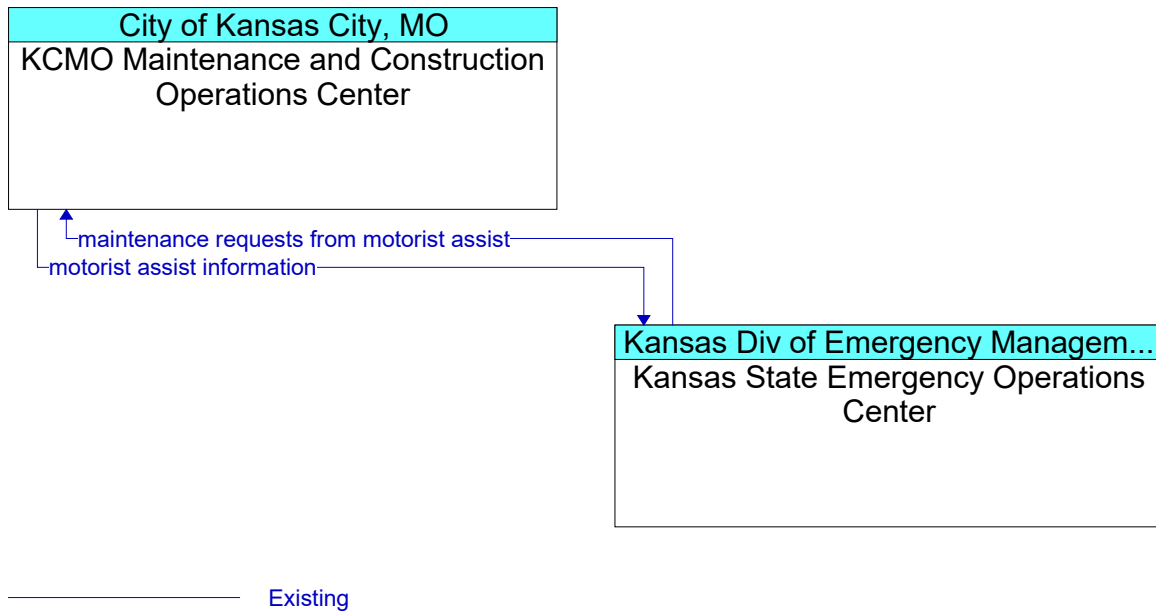




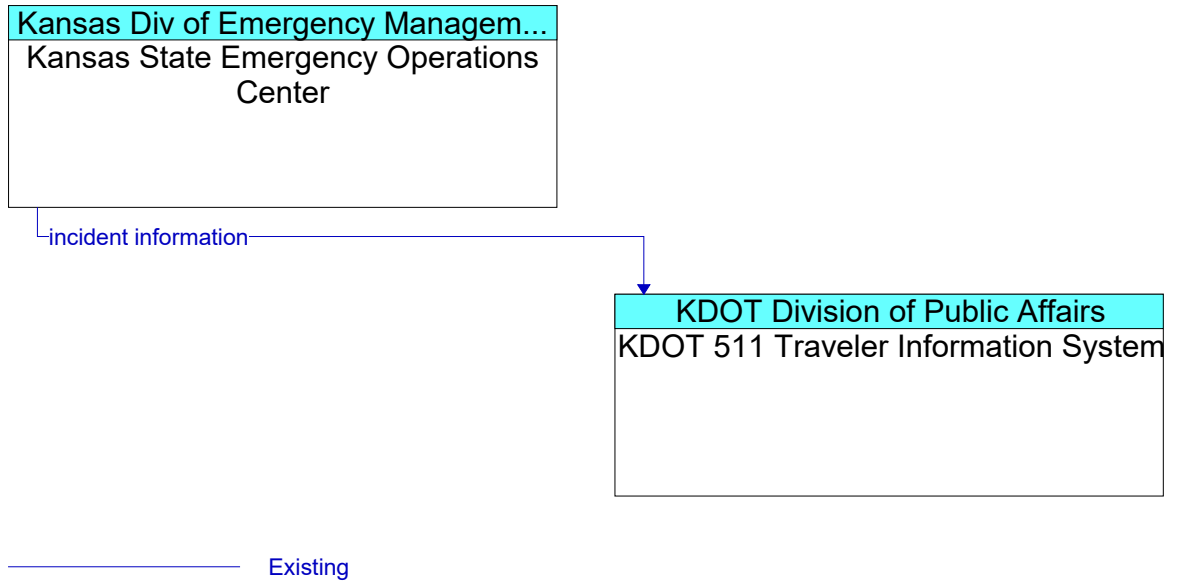
**Figure 622: Kansas State Emergency Operations Center - KCIA Emergency Services Interface**



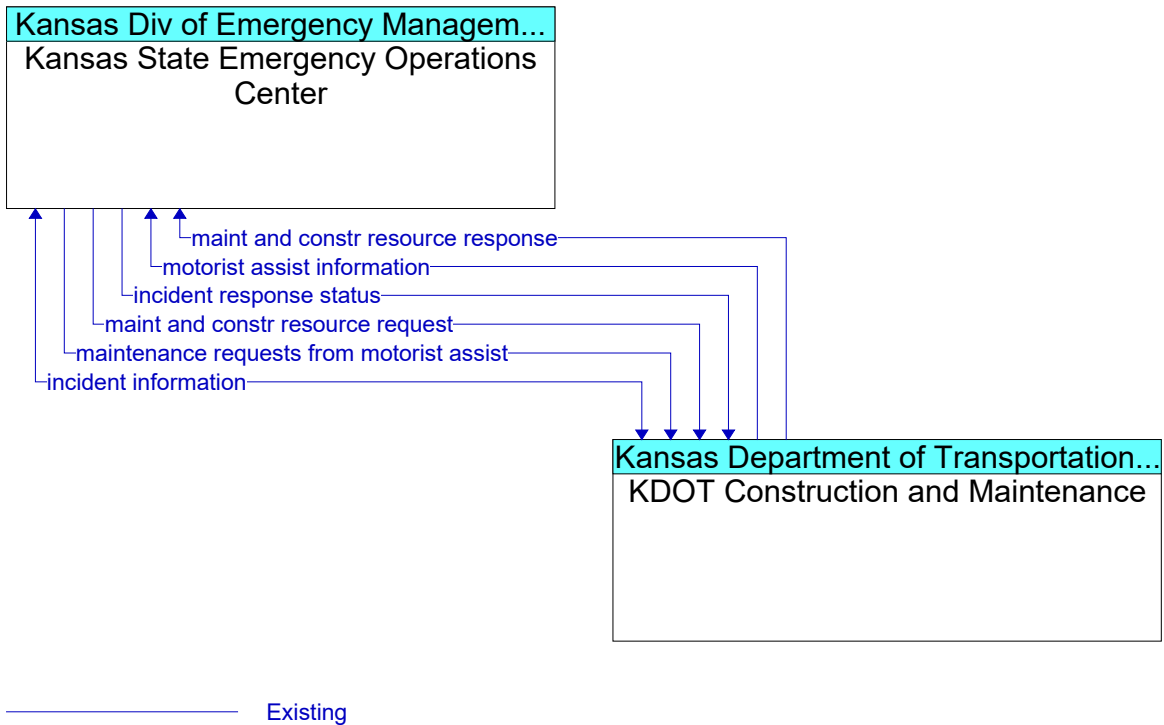
**Figure 623: Kansas State Emergency Operations Center - KCMO ATMS Interface**



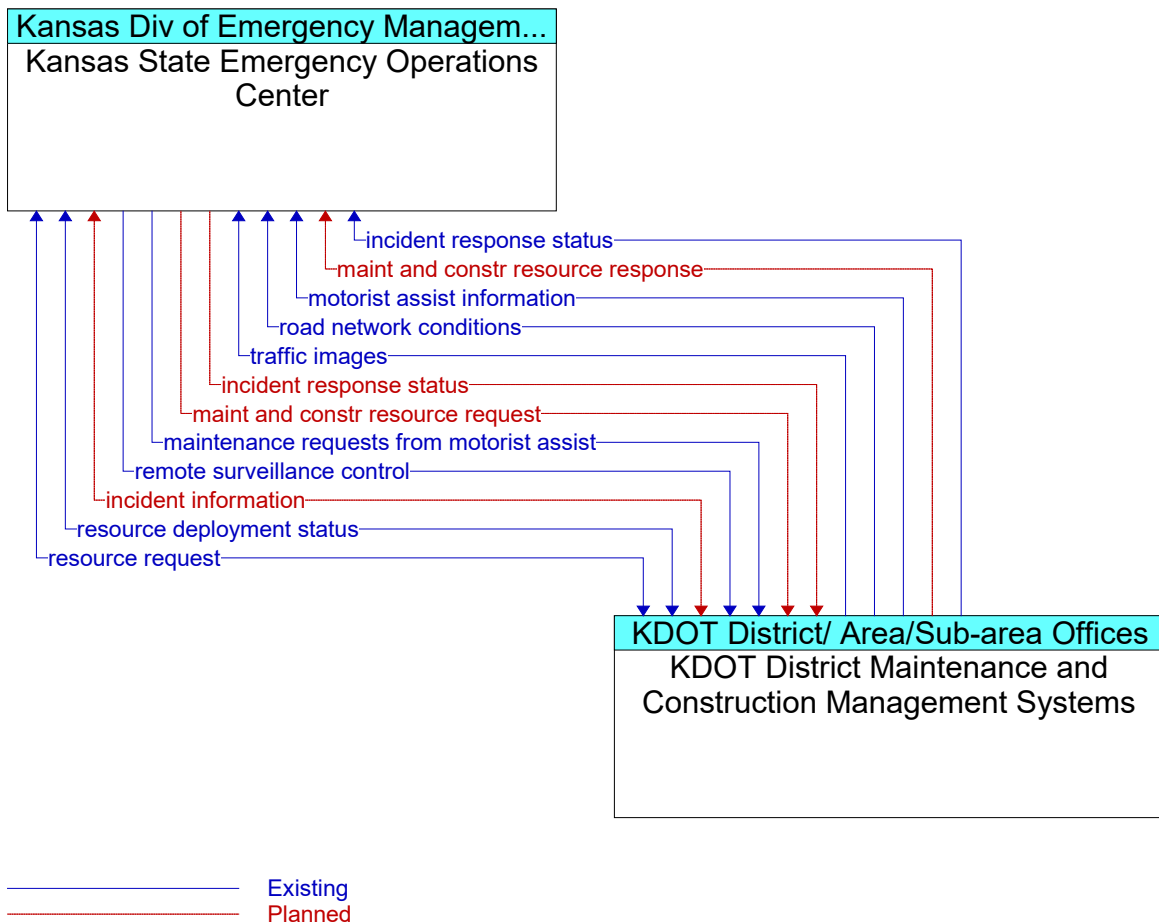
**Figure 624: Kansas State Emergency Operations Center - KCMO Maintenance and Construction Operations Center Interface**



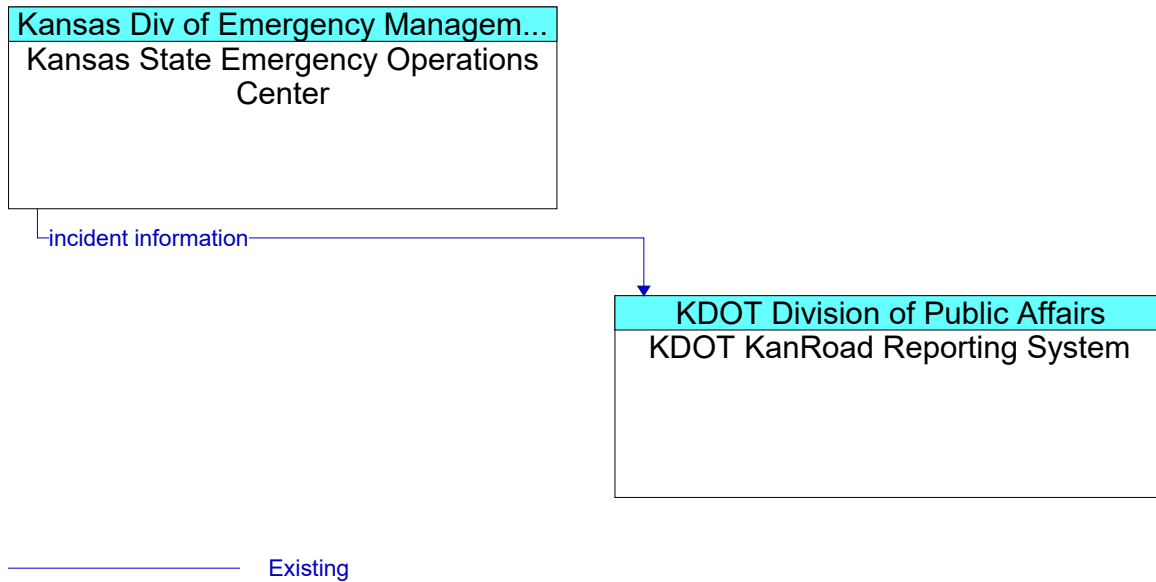
**Figure 625: Kansas State Emergency Operations Center - KDOT 511 Traveler Information System Interface**



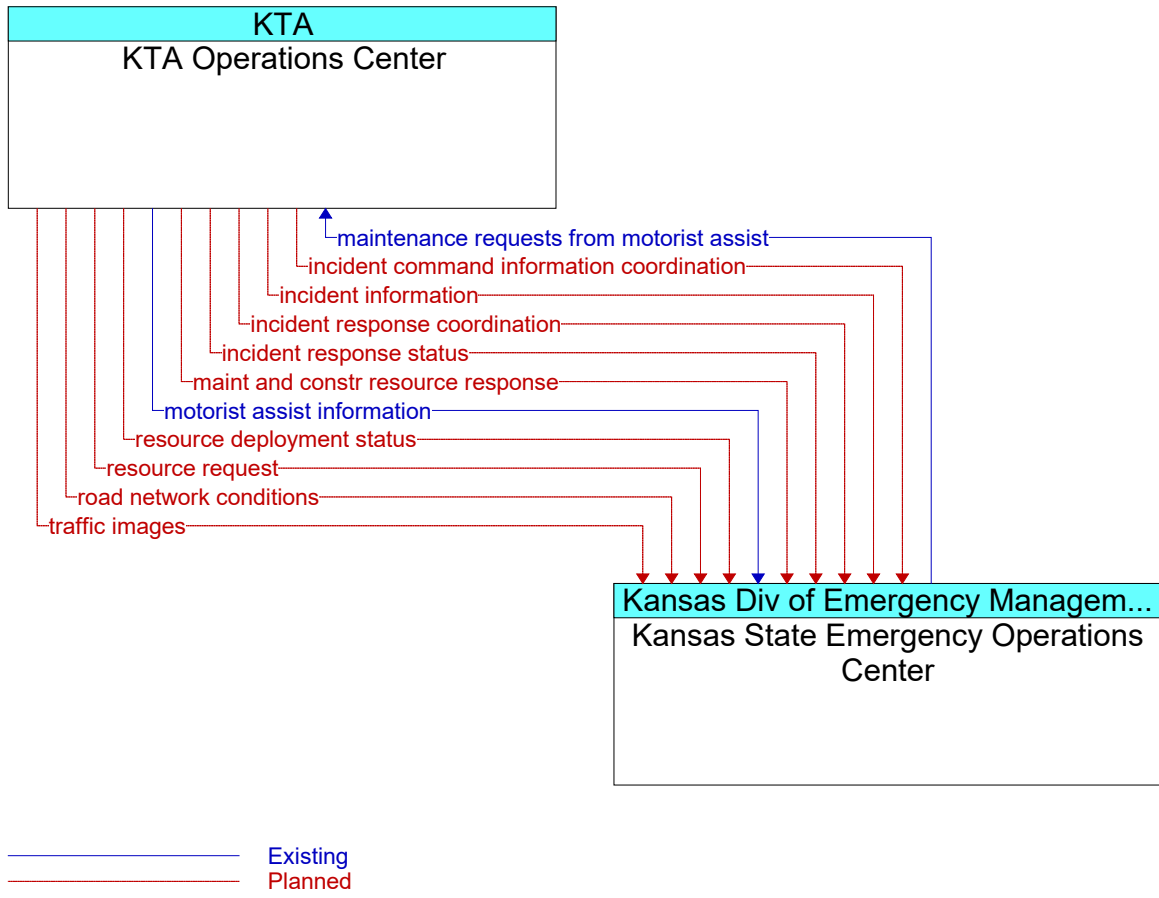
**Figure 626: Kansas State Emergency Operations Center - KDOT Construction and Maintenance Interface**



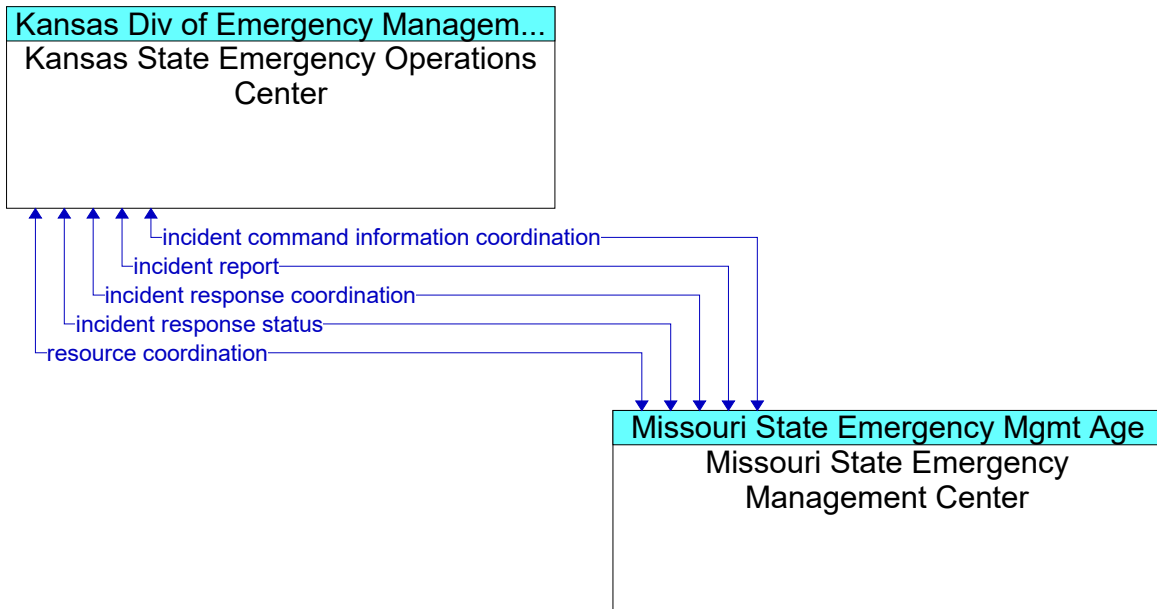
**Figure 627: Kansas State Emergency Operations Center - KDOT District Maintenance and Construction Management Systems Interface**



**Figure 628: Kansas State Emergency Operations Center - KDOT KanRoad Reporting System Interface**



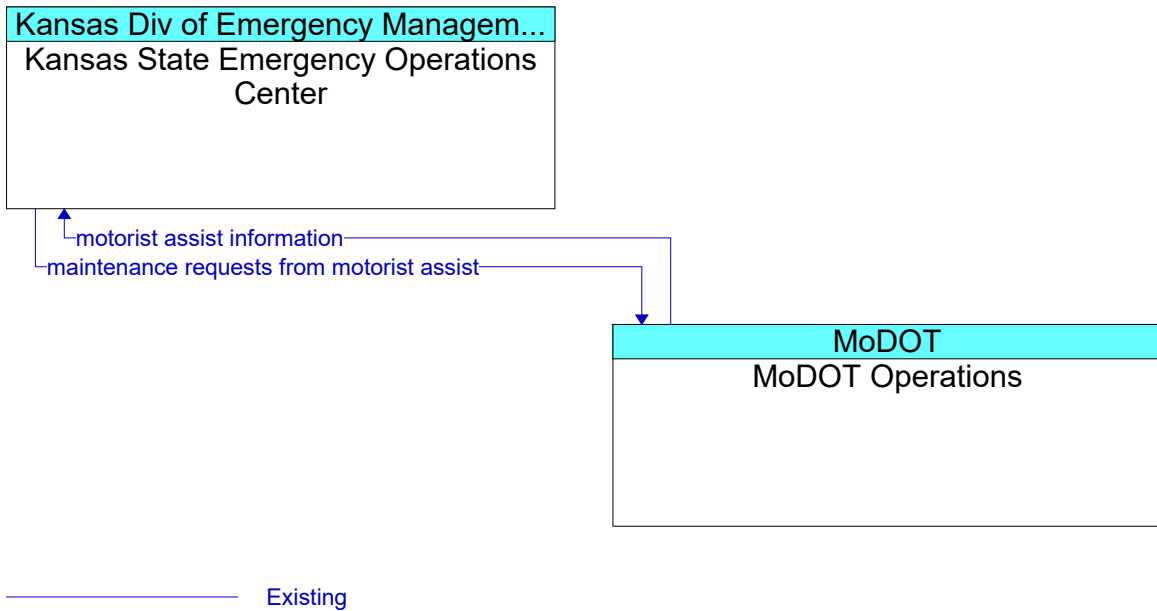
**Figure 629: Kansas State Emergency Operations Center - KTA Operations Center Interface**



Existing

**Figure 630: Kansas State Emergency Operations Center - Missouri State Emergency Management Center Interface**





**Figure 631: Kansas State Emergency Operations Center - MoDOT Operations Interface**

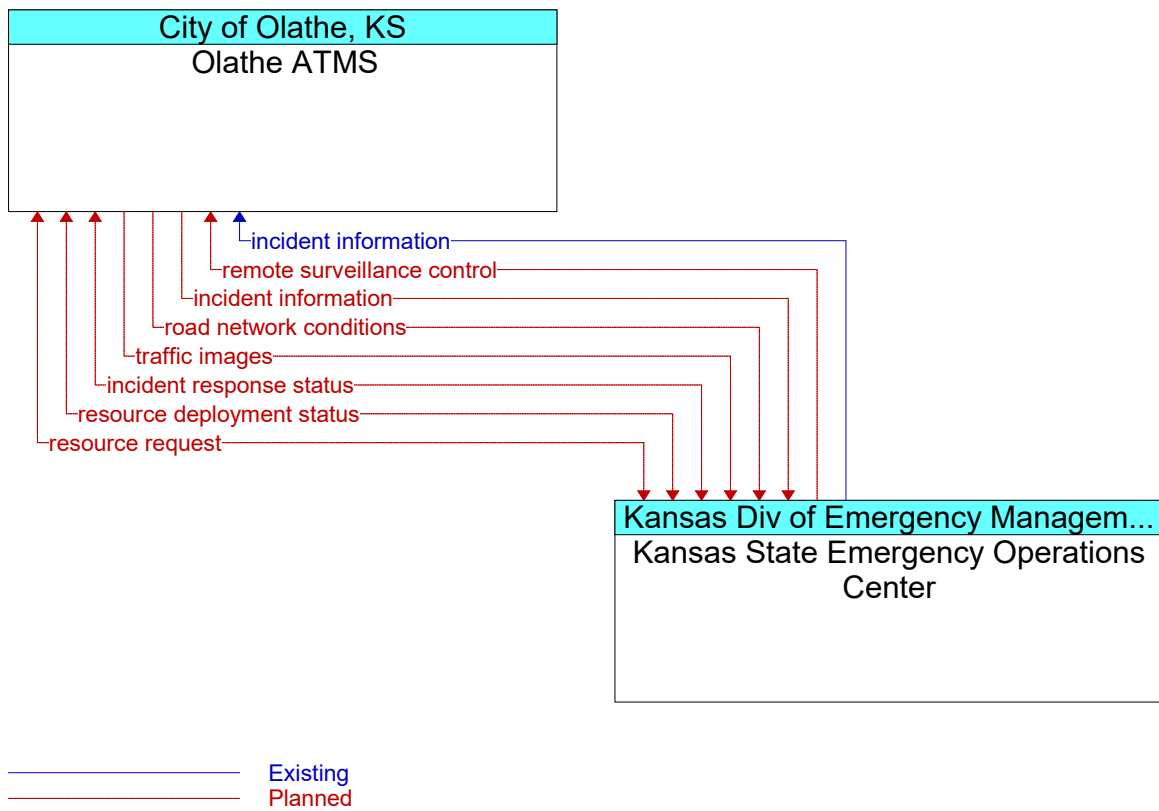
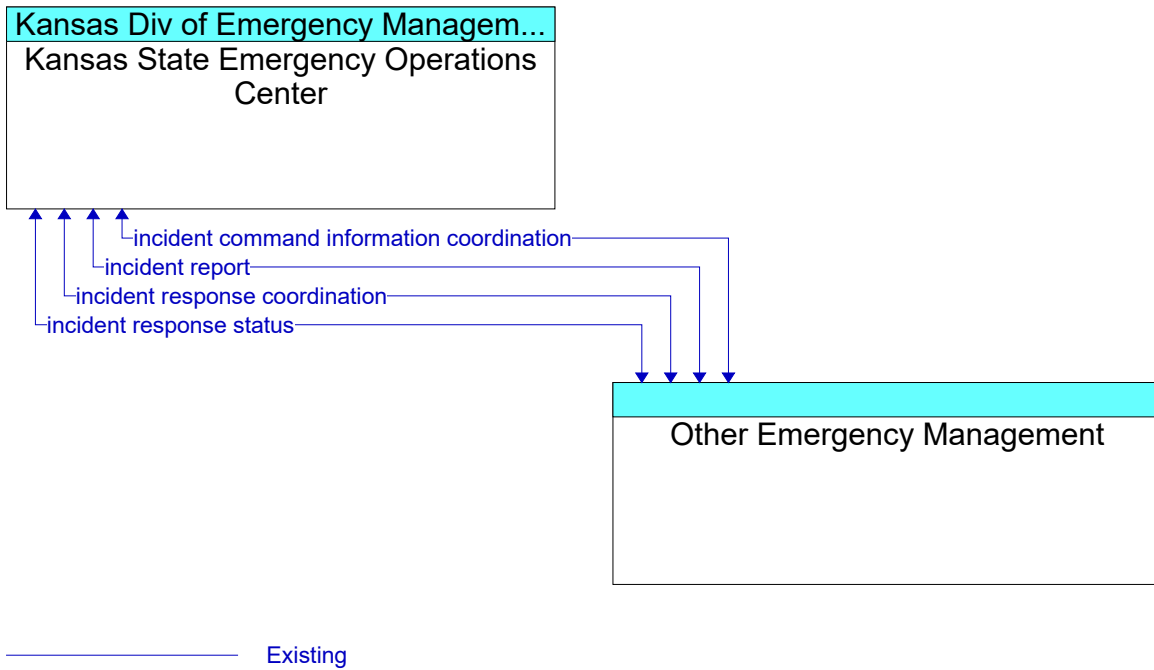
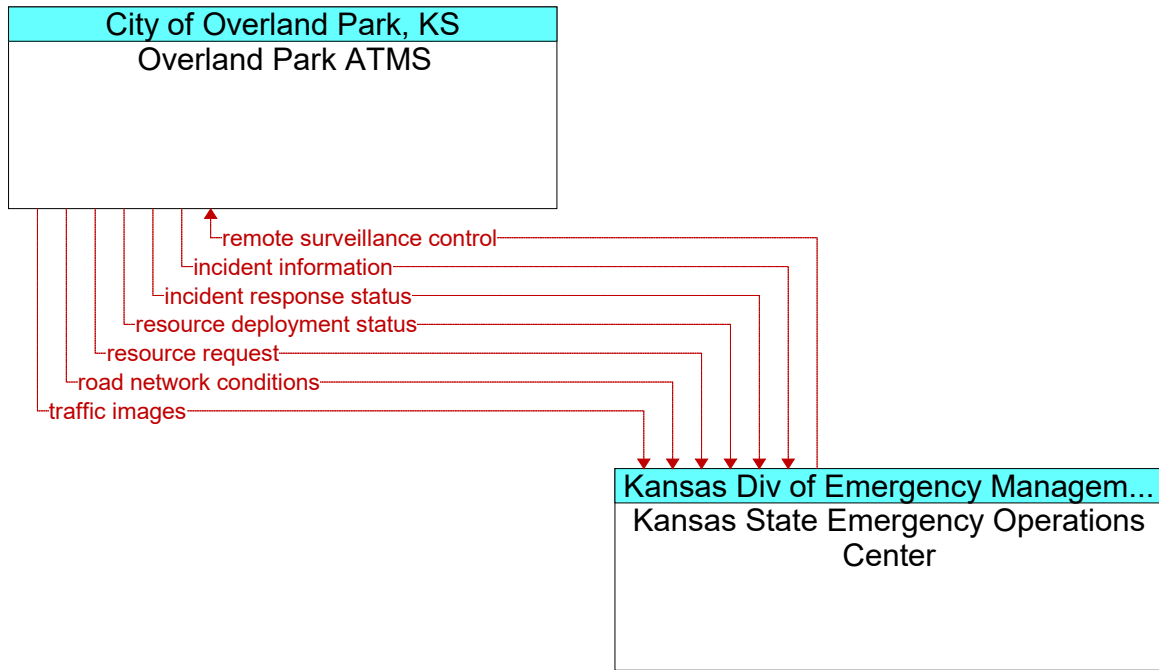


Figure 632: Kansas State Emergency Operations Center - Olathe ATMS Interface

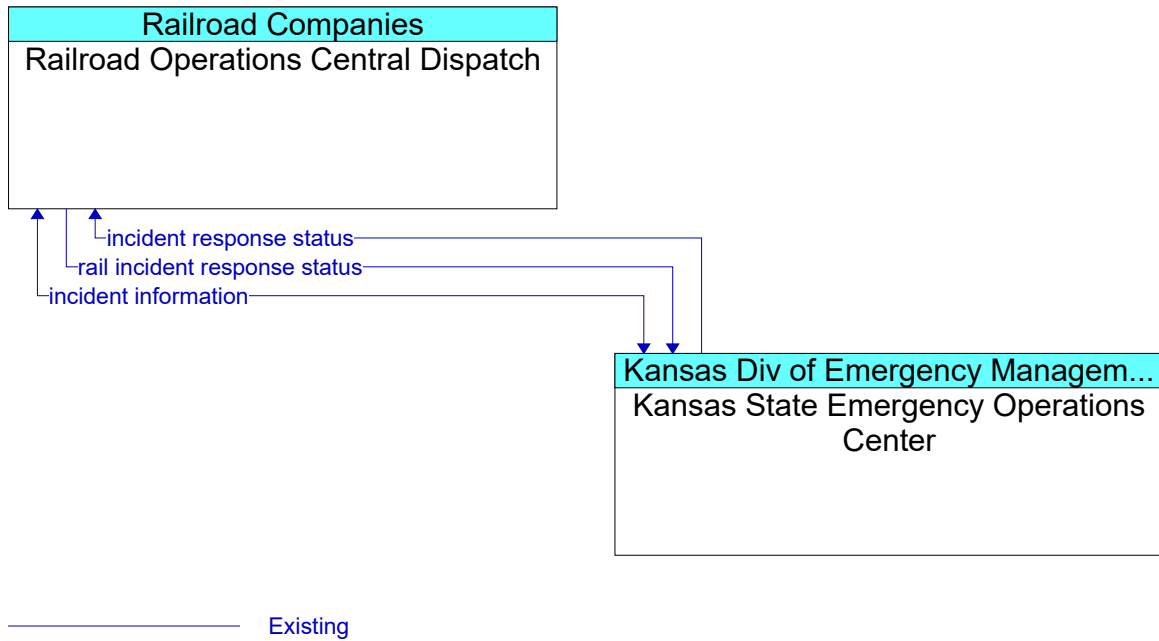


**Figure 633: Kansas State Emergency Operations Center - Other Emergency Management Interface**

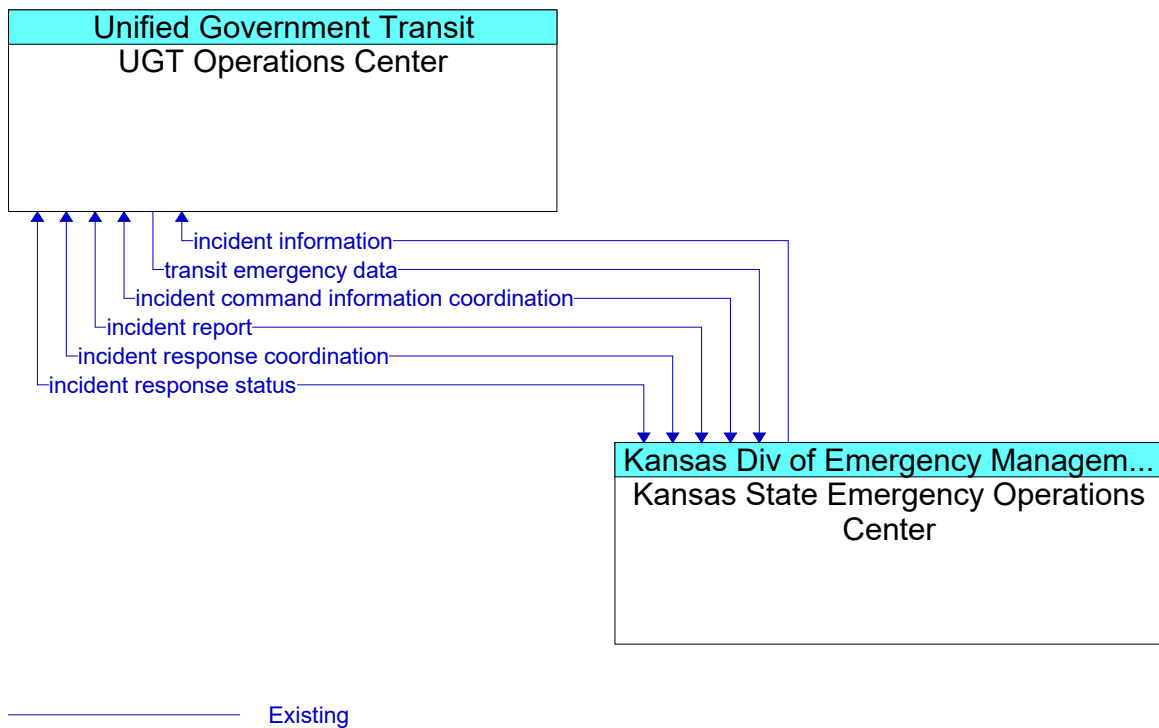


Planned

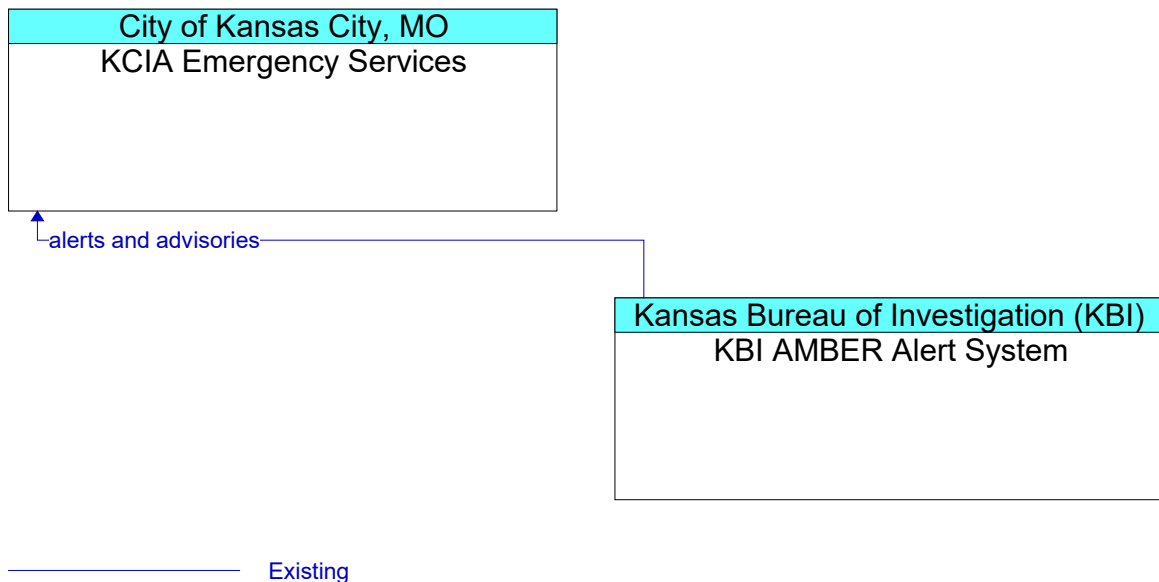
**Figure 634: Kansas State Emergency Operations Center - Overland Park ATMS Interface**



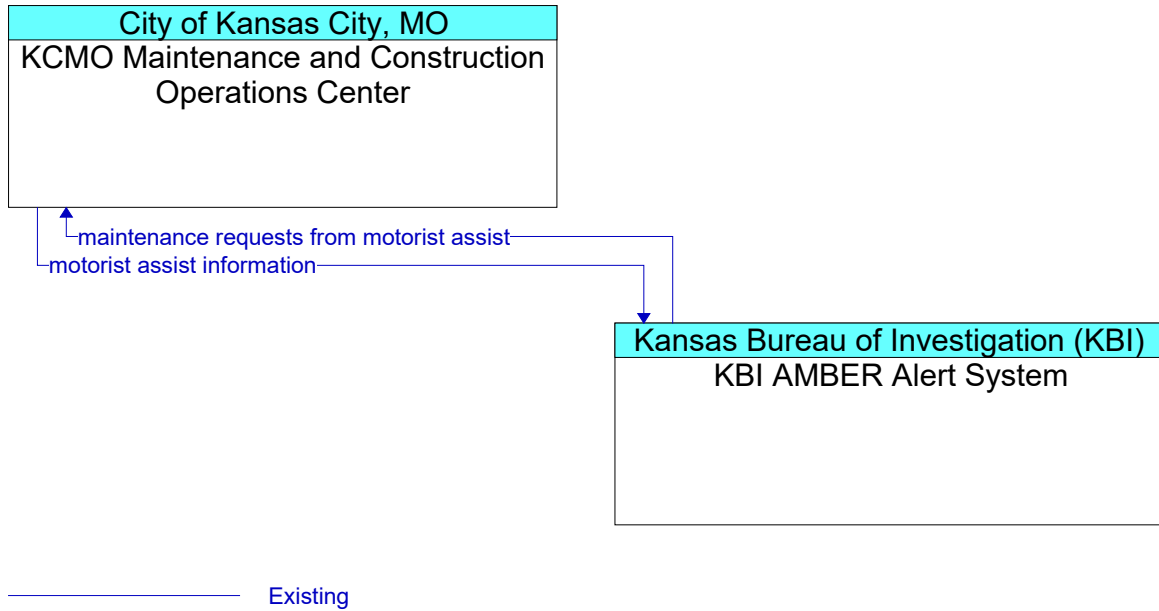
**Figure 635: Kansas State Emergency Operations Center - Railroad Operations Central Dispatch Interface**



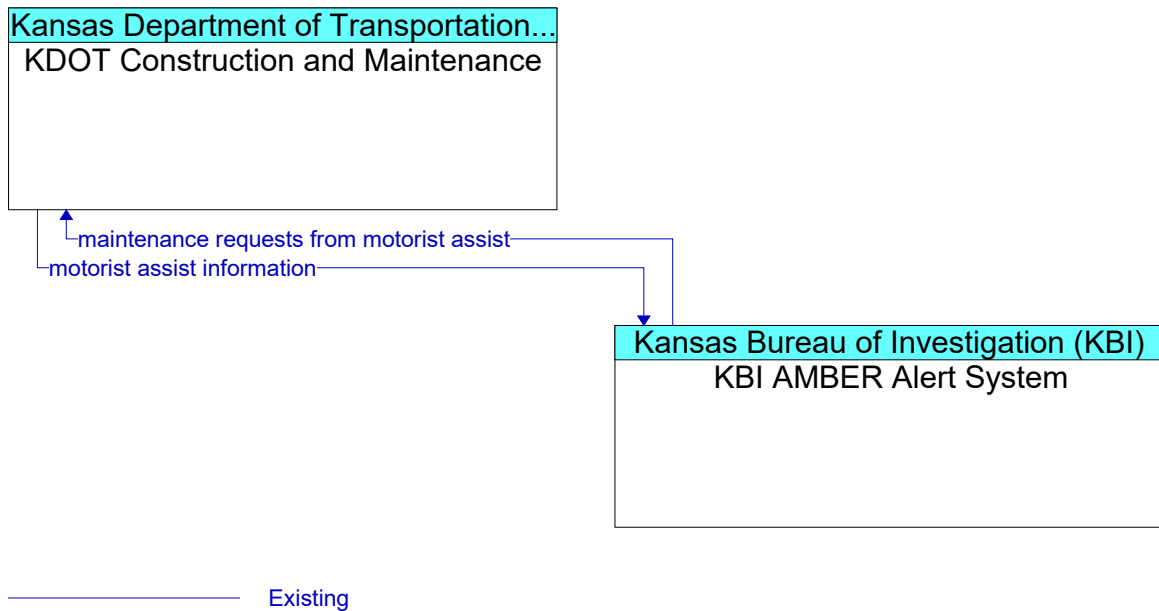
**Figure 636: Kansas State Emergency Operations Center - UGT Operations Center Interface**



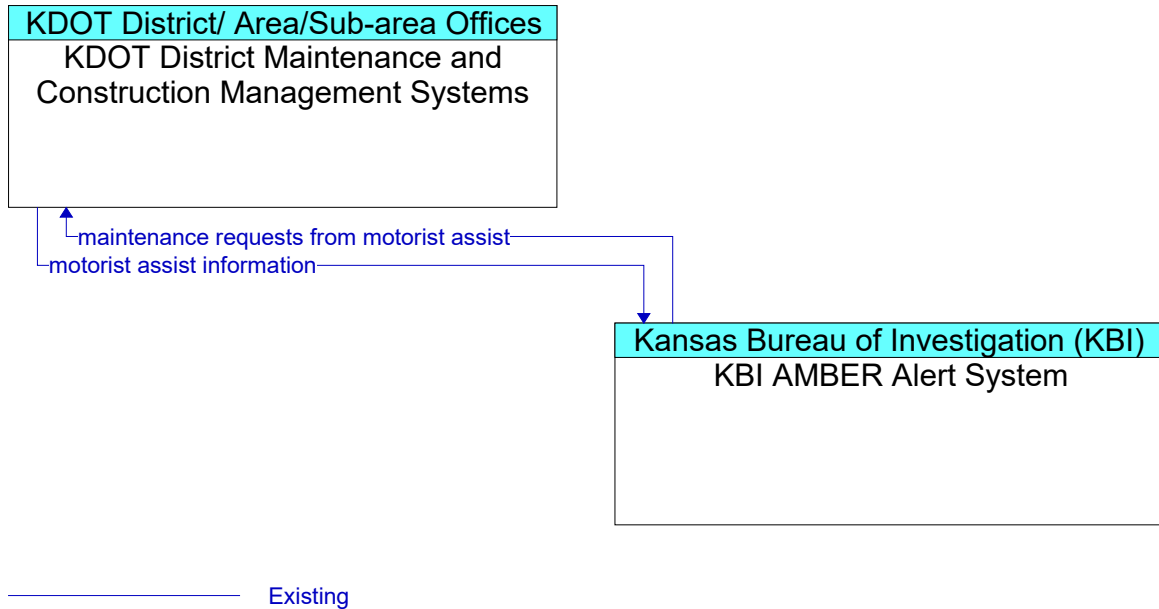
**Figure 637: KBI AMBER Alert System - KCIA Emergency Services Interface**



**Figure 638: KBI AMBER Alert System - KCMO Maintenance and Construction Operations Center Interface**

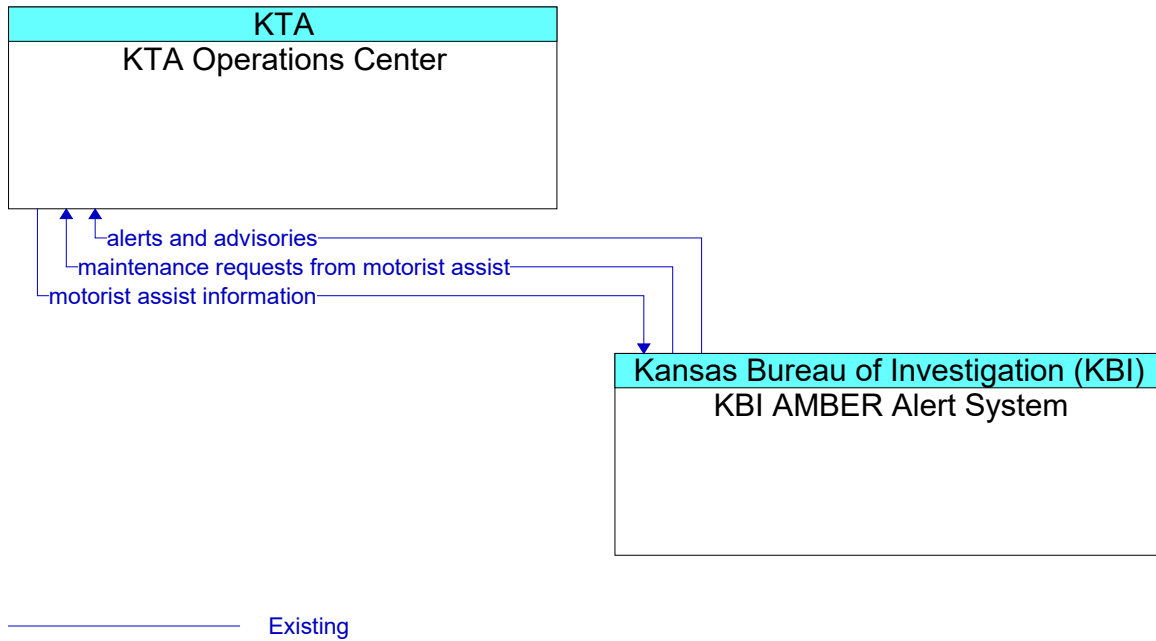


**Figure 639: KBI AMBER Alert System - KDOT Construction and Maintenance Interface**

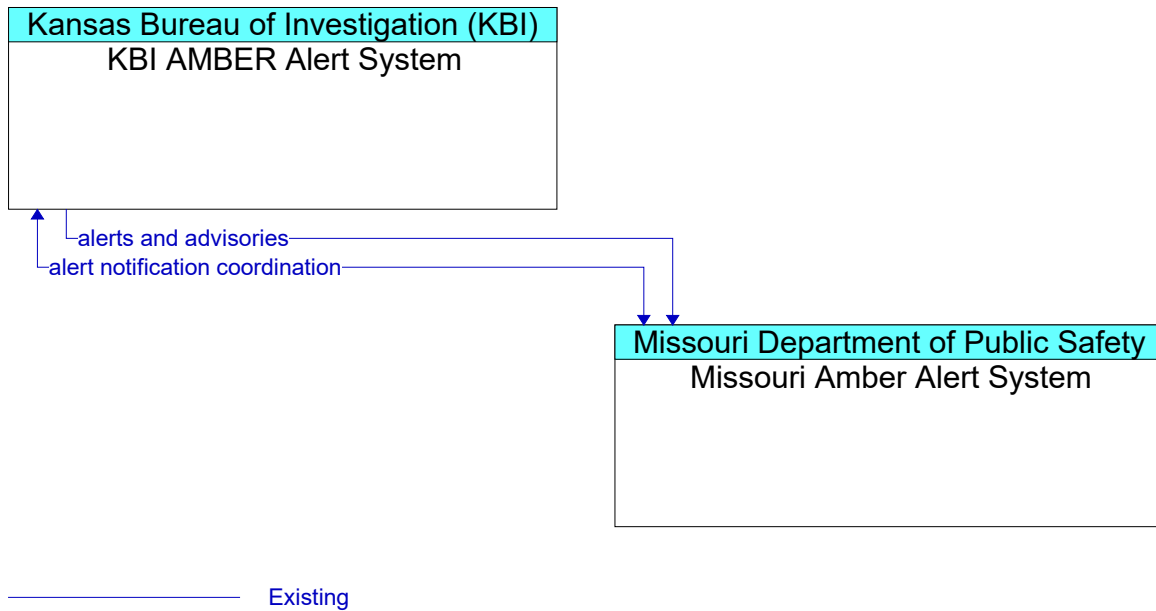


**Figure 640: KBI AMBER Alert System - KDOT District Maintenance and Construction Management Systems Interface**

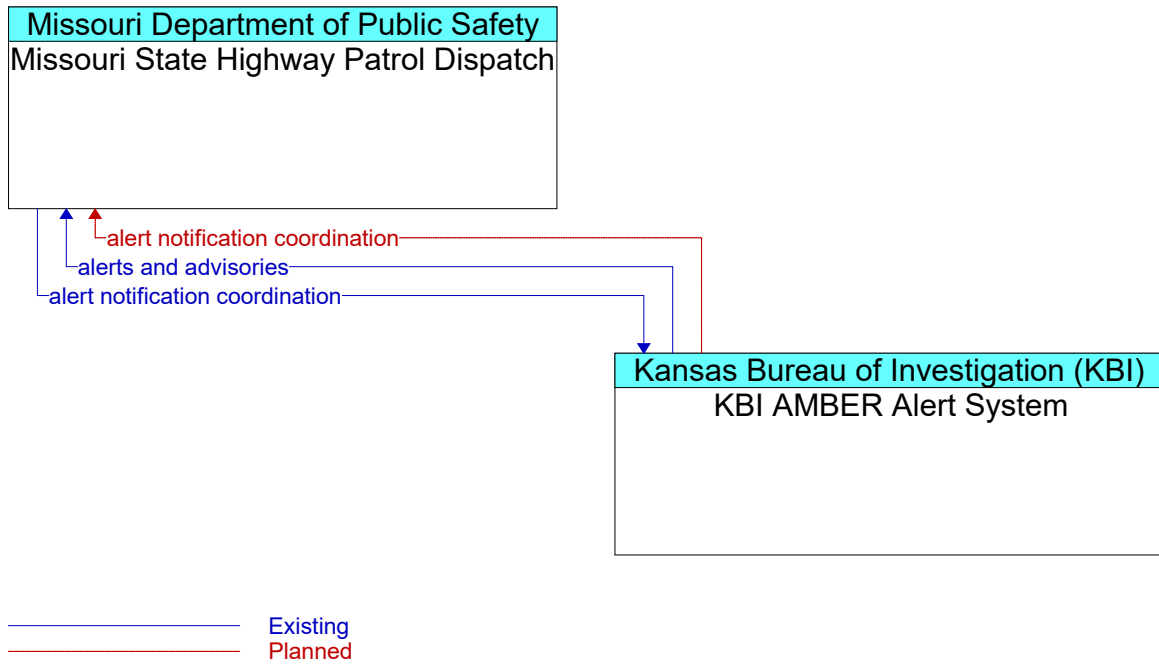




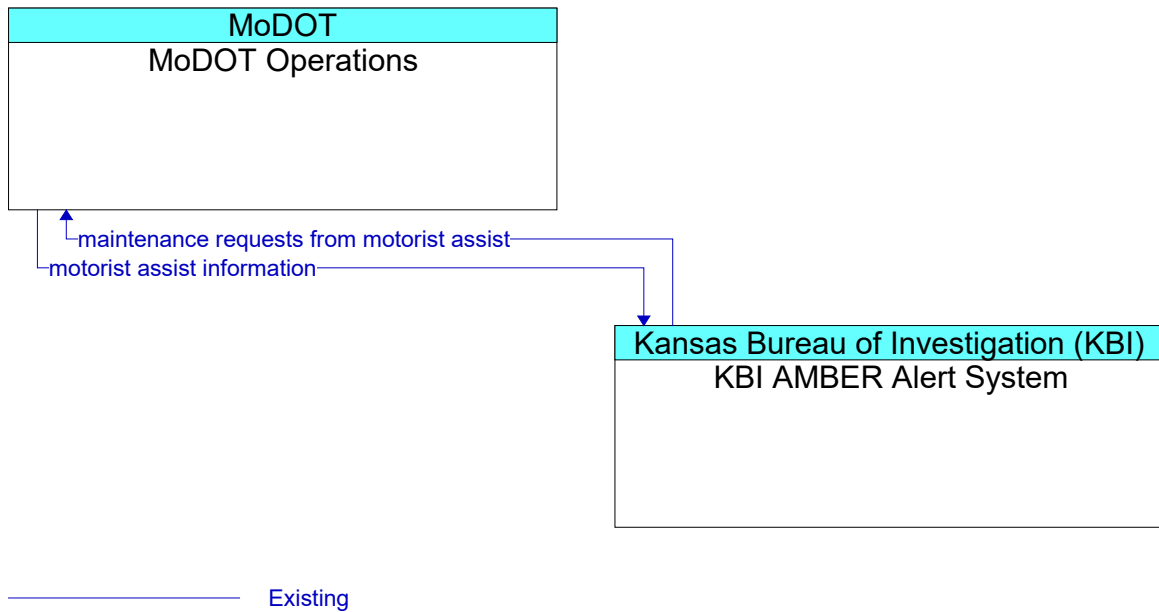
**Figure 641: KBI AMBER Alert System - KTA Operations Center Interface**



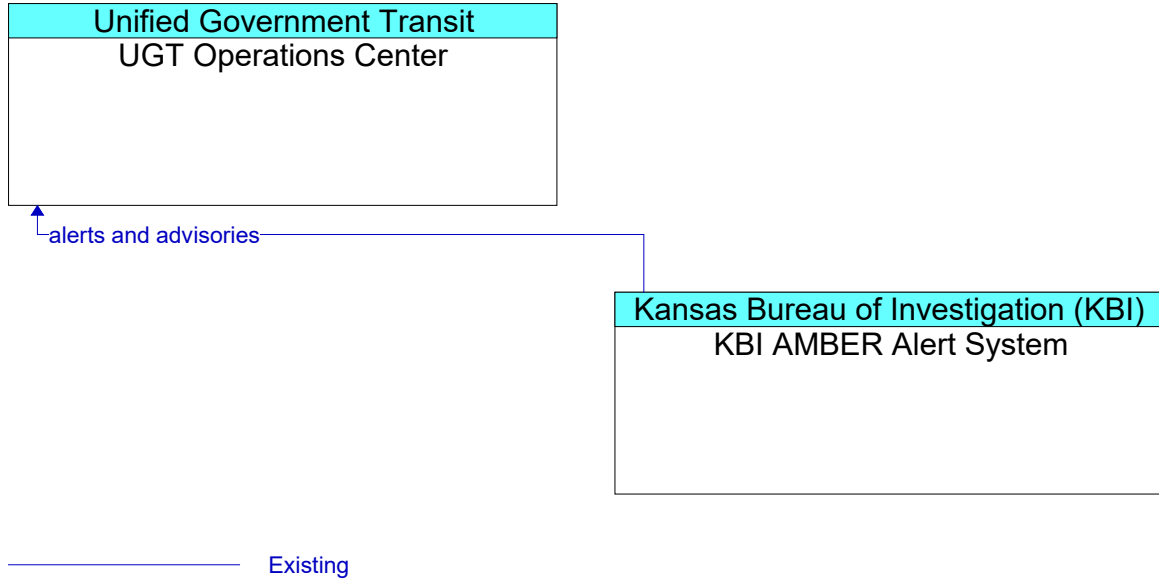
**Figure 642: KBI AMBER Alert System - Missouri Amber Alert System Interface**



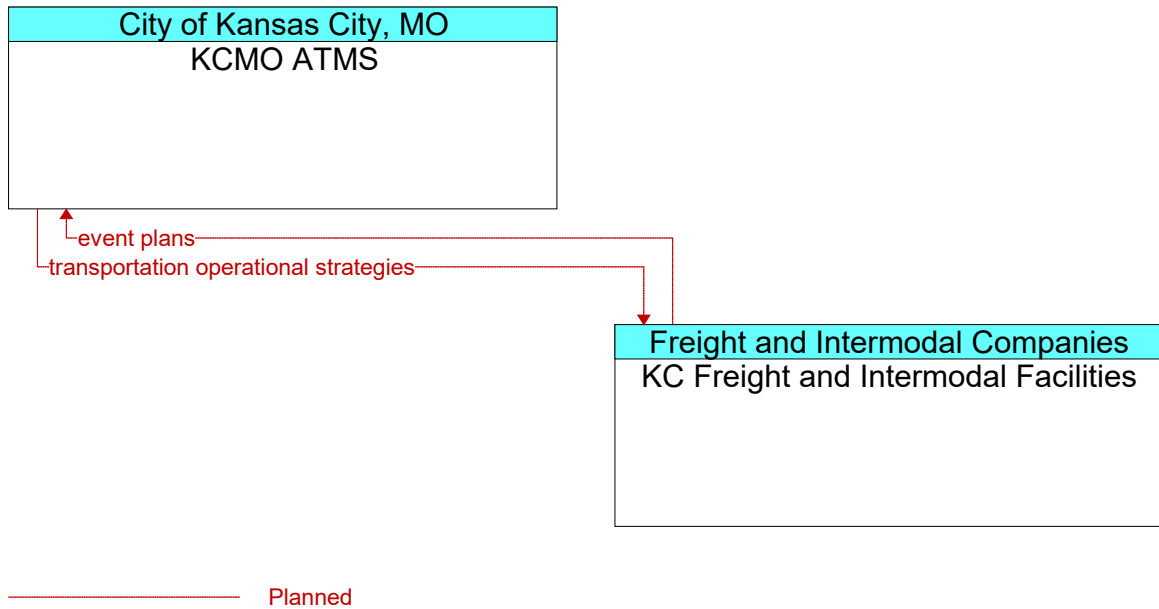
**Figure 643: KBI AMBER Alert System - Missouri State Highway Patrol Dispatch Interface**



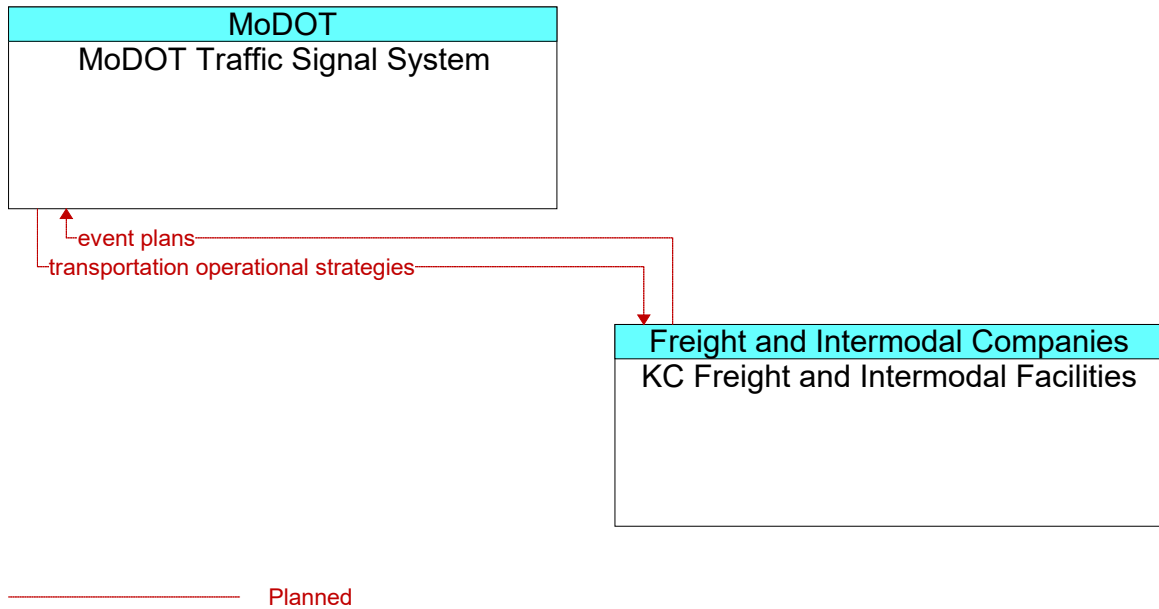
**Figure 644: KBI AMBER Alert System - MoDOT Operations Interface**



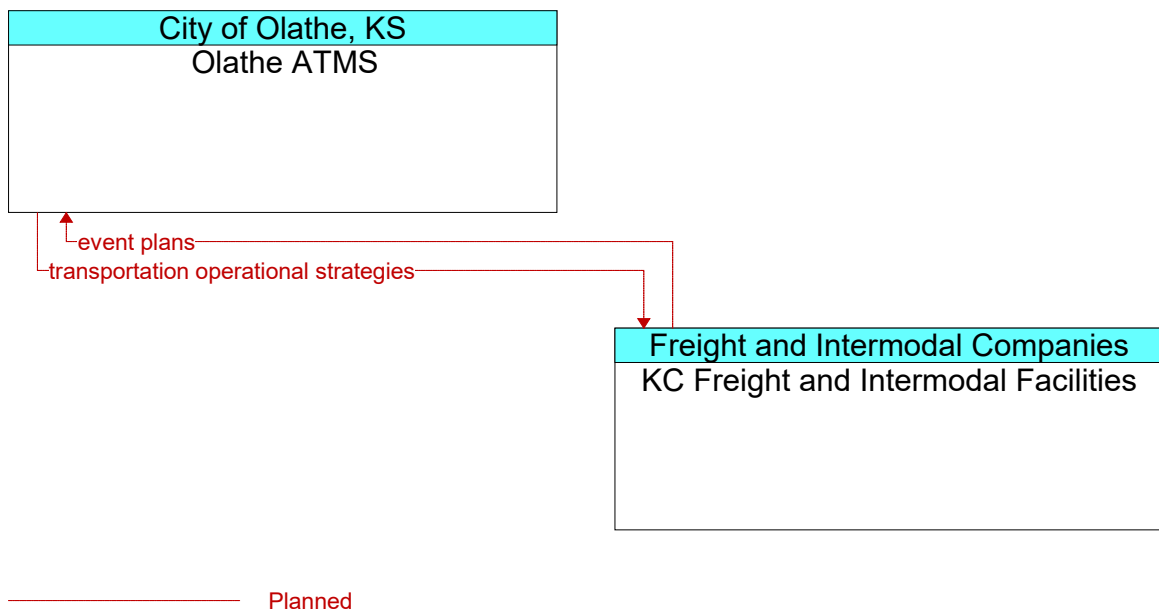
**Figure 645: KBI AMBER Alert System - UGT Operations Center Interface**



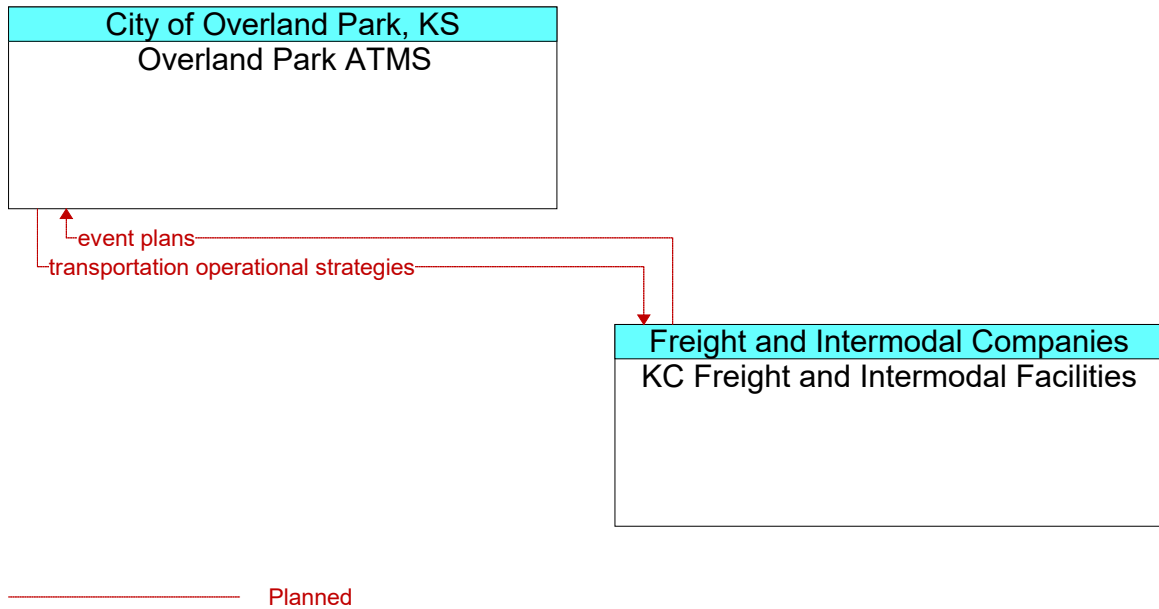
**Figure 646: KC Freight and Intermodal Facilities - KCMO ATMS Interface**



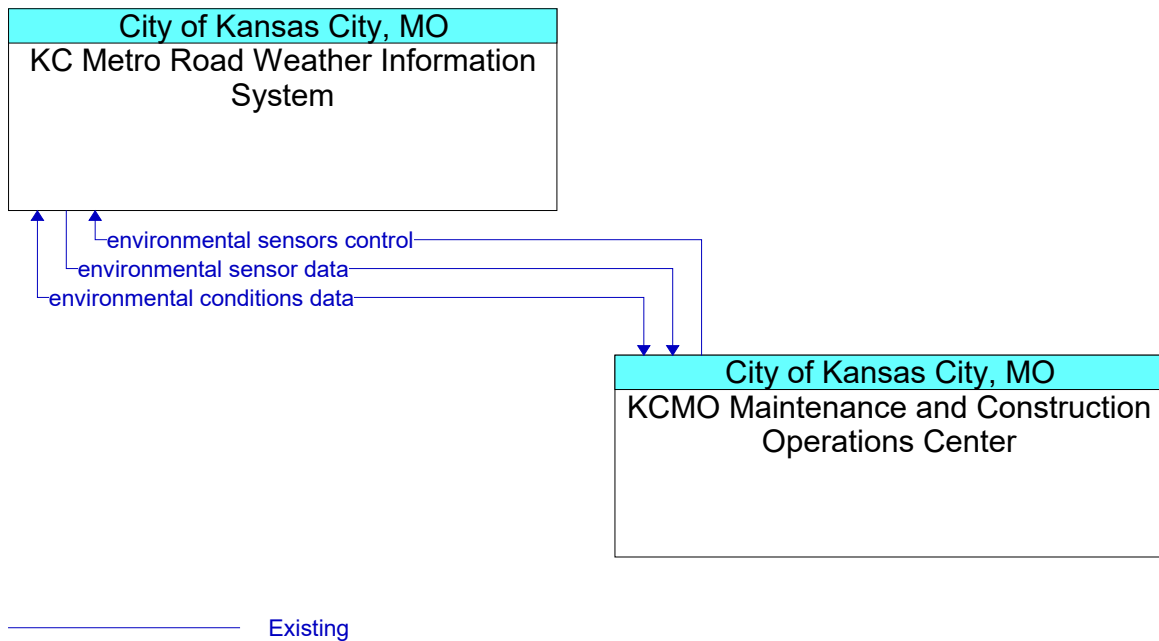
**Figure 647: KC Freight and Intermodal Facilities - MoDOT Traffic Signal System Interface**



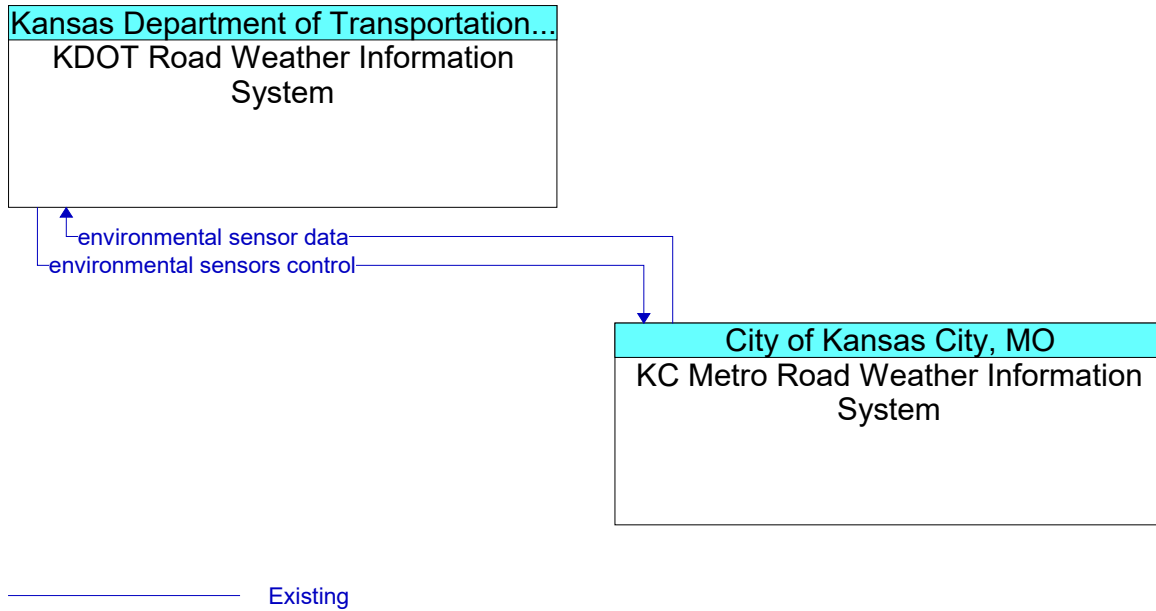
**Figure 648: KC Freight and Intermodal Facilities - Olathe ATMS Interface**



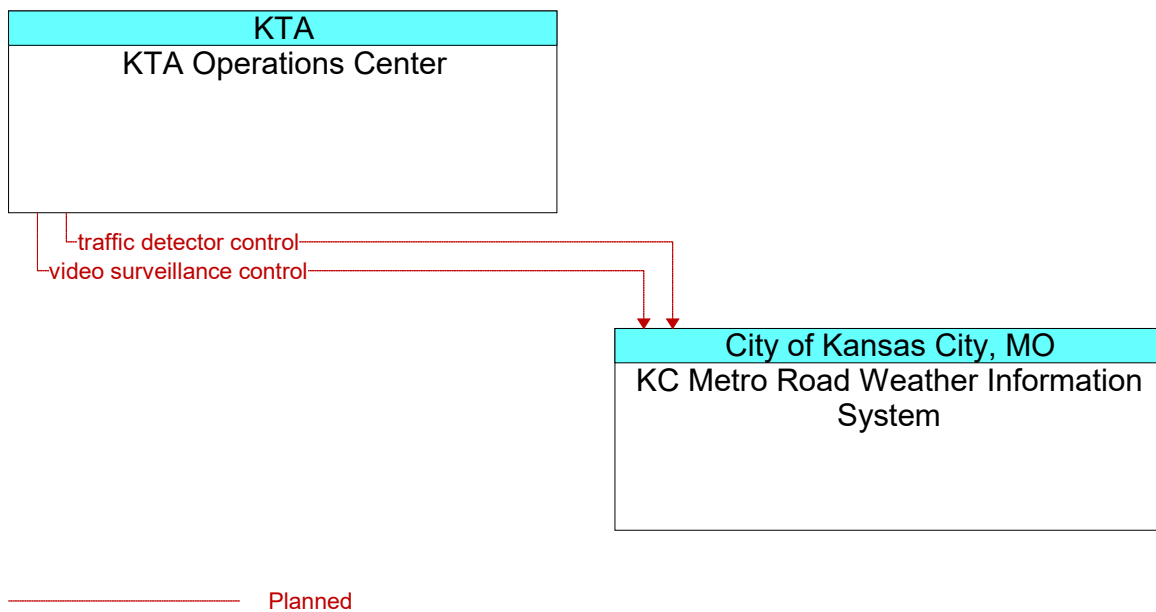
**Figure 649: KC Freight and Intermodal Facilities - Overland Park ATMS Interface**



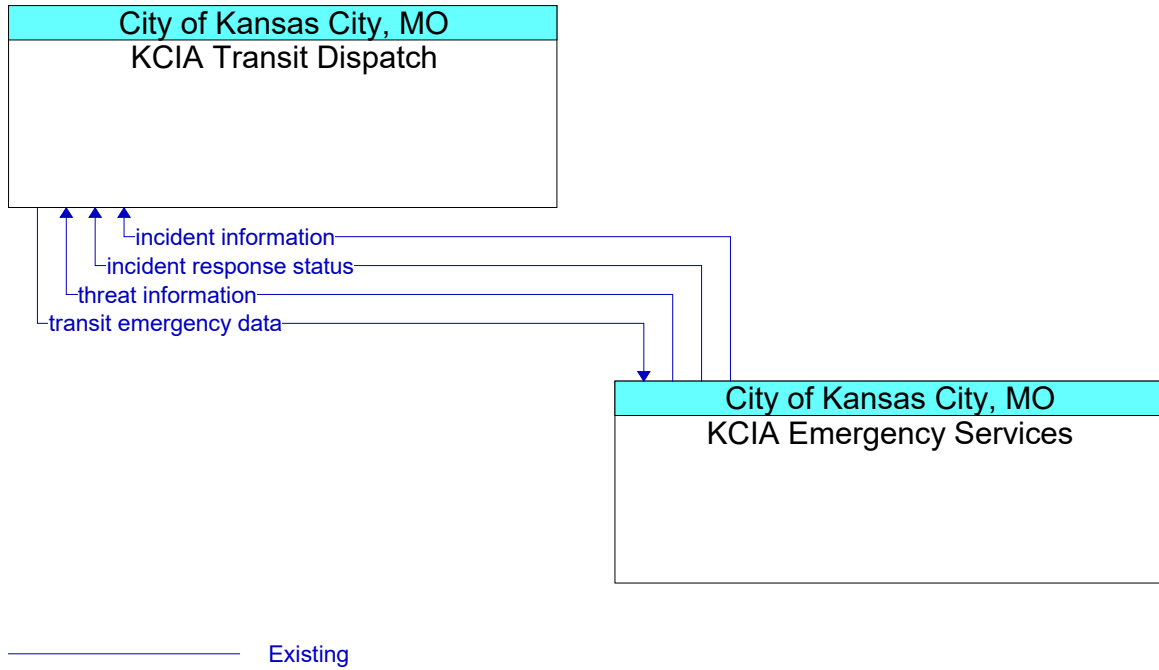
**Figure 650: KC Metro Road Weather Information System - KCMO Maintenance and Construction Operations Center Interface**



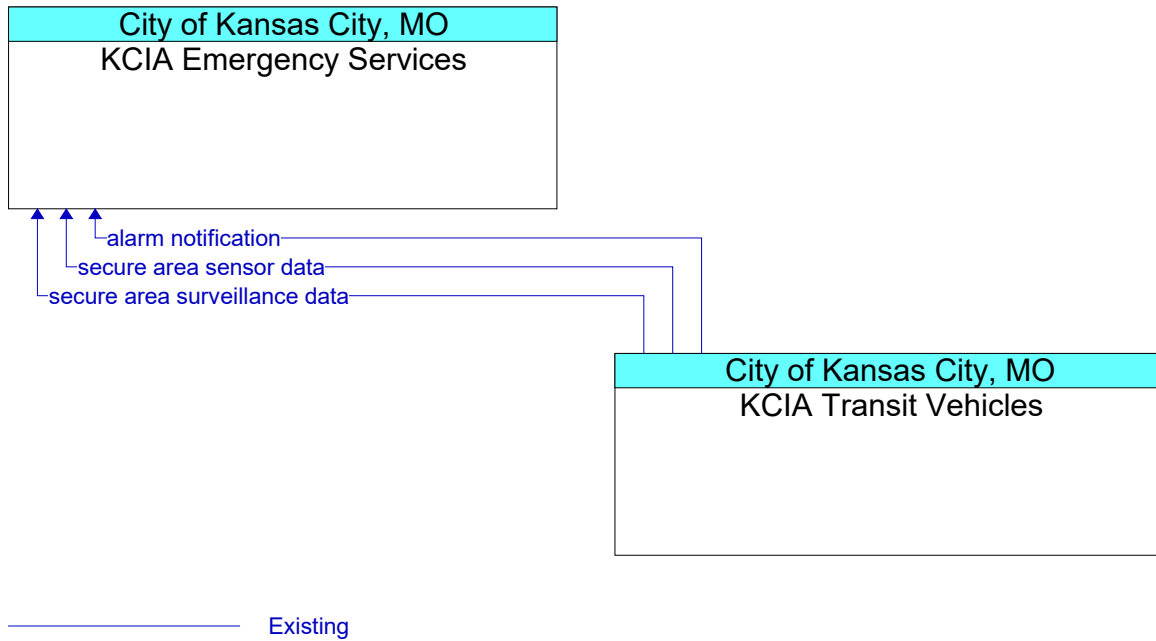
**Figure 651: KC Metro Road Weather Information System - KDOT Road Weather Information System Interface**



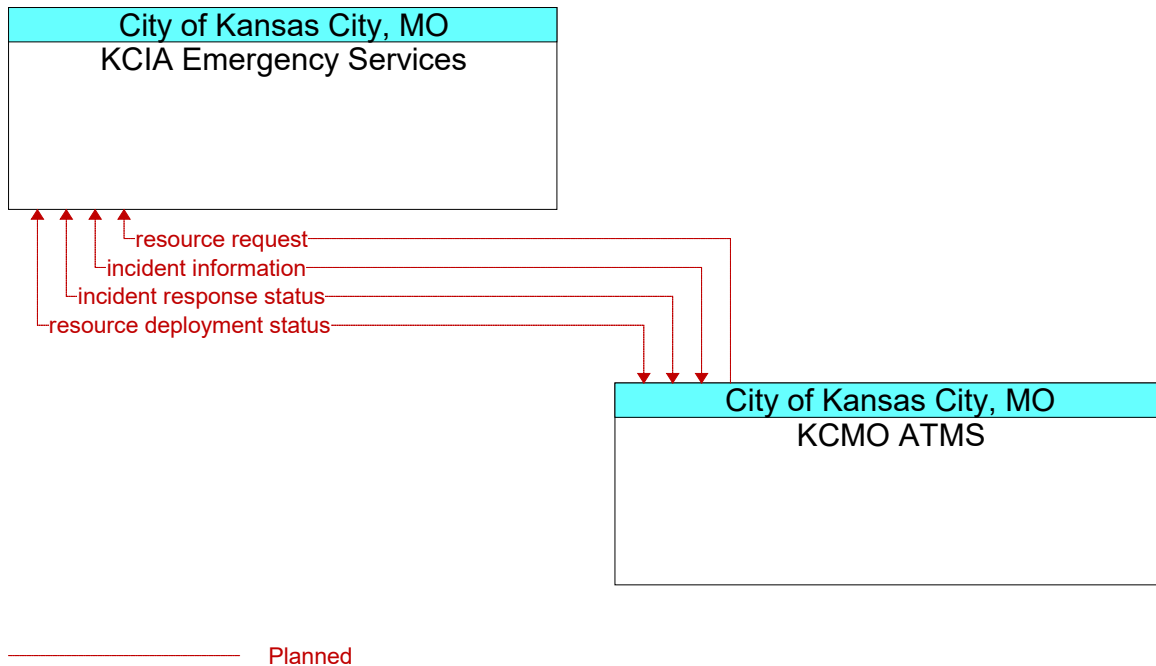
**Figure 652: KC Metro Road Weather Information System - KTA Operations Center Interface**



**Figure 653: KCIA Emergency Services - KCIA Transit Dispatch Interface**

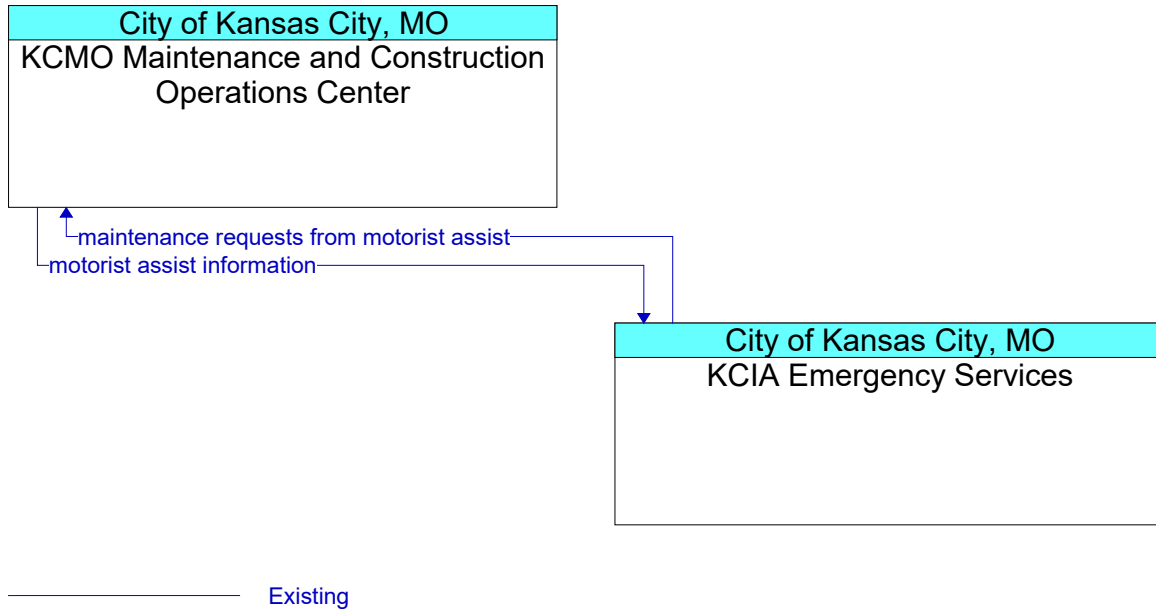


**Figure 654: KCIA Emergency Services - KCIA Transit Vehicles Interface**

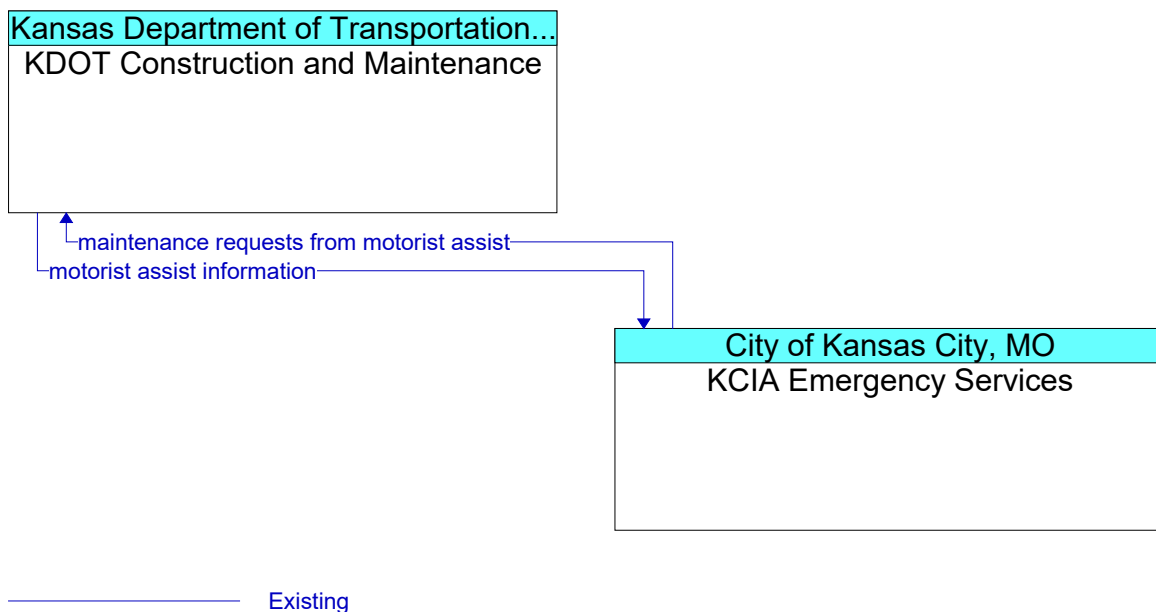


**Figure 655: KCIA Emergency Services - KCMO ATMS Interface**

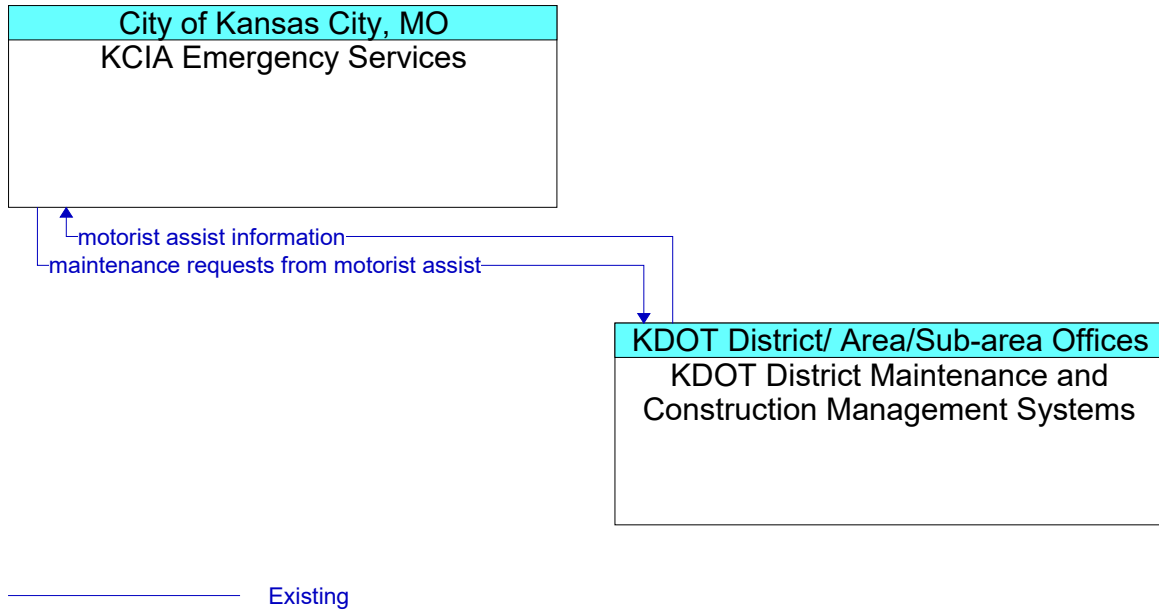




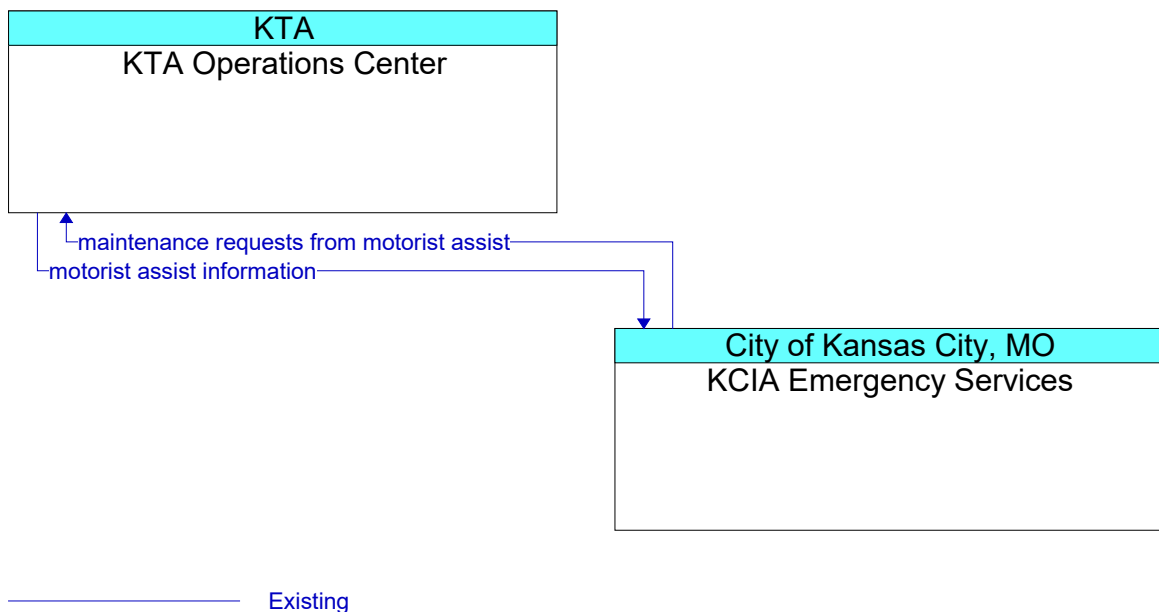
**Figure 656: KCIA Emergency Services - KCMO Maintenance and Construction Operations Center Interface**



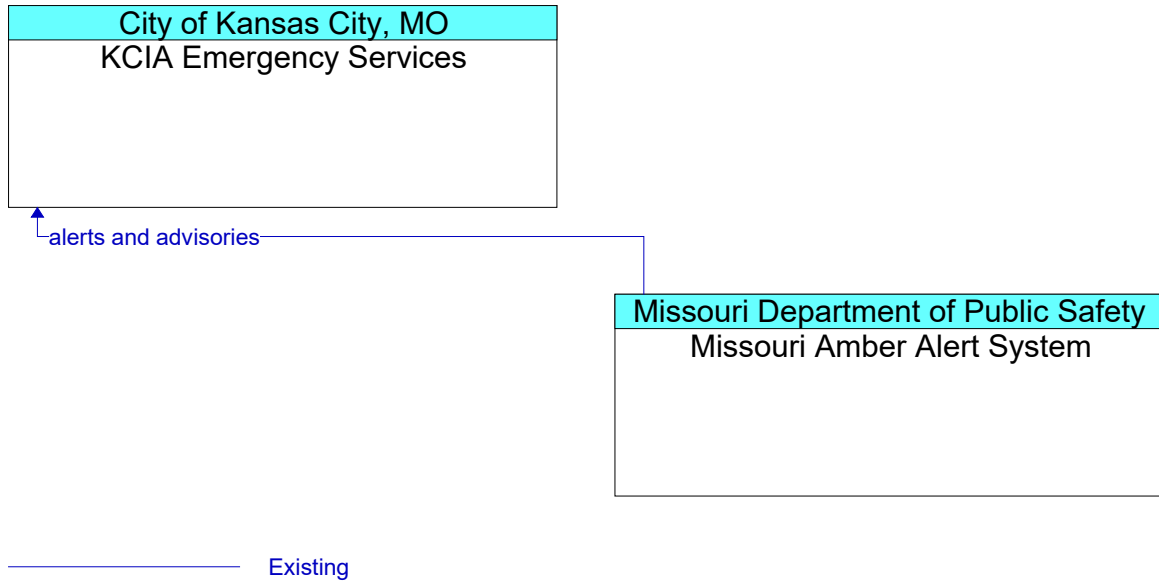
**Figure 657: KCIA Emergency Services - KDOT Construction and Maintenance Interface**



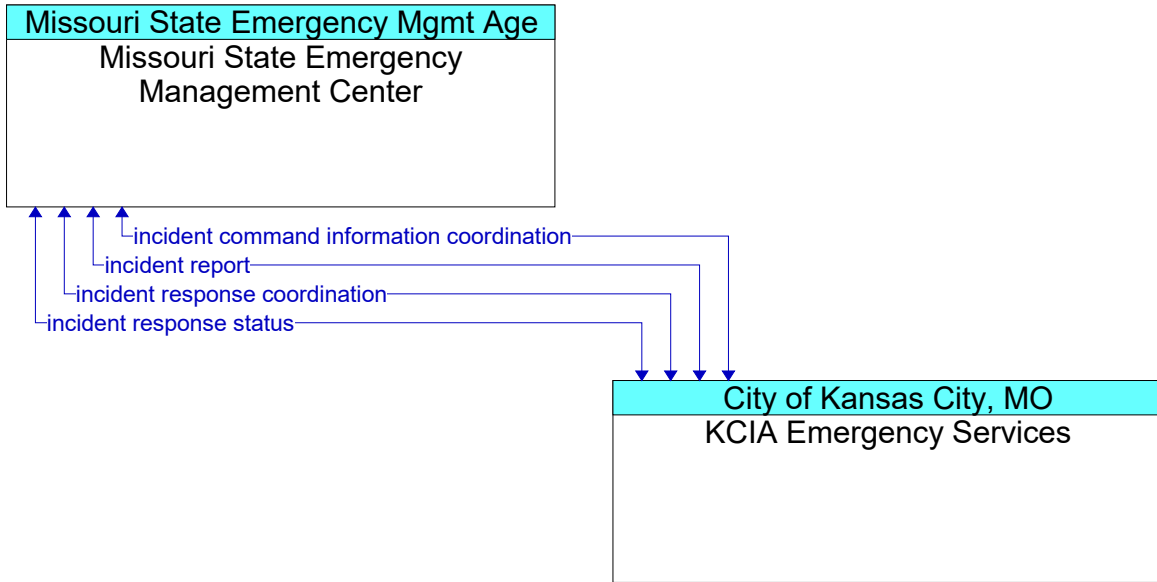
**Figure 658: KCIA Emergency Services - KDOT District Maintenance and Construction Management Systems Interface**



**Figure 659: KCIA Emergency Services - KTA Operations Center Interface**

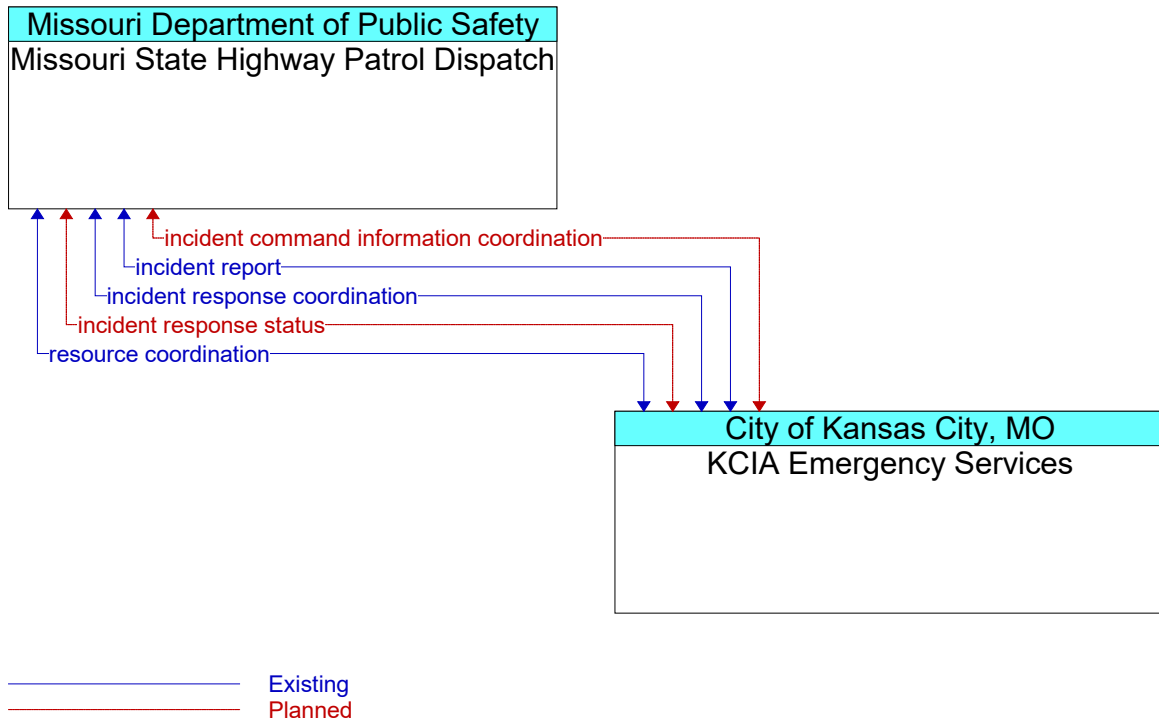


**Figure 660: KCIA Emergency Services - Missouri Amber Alert System Interface**

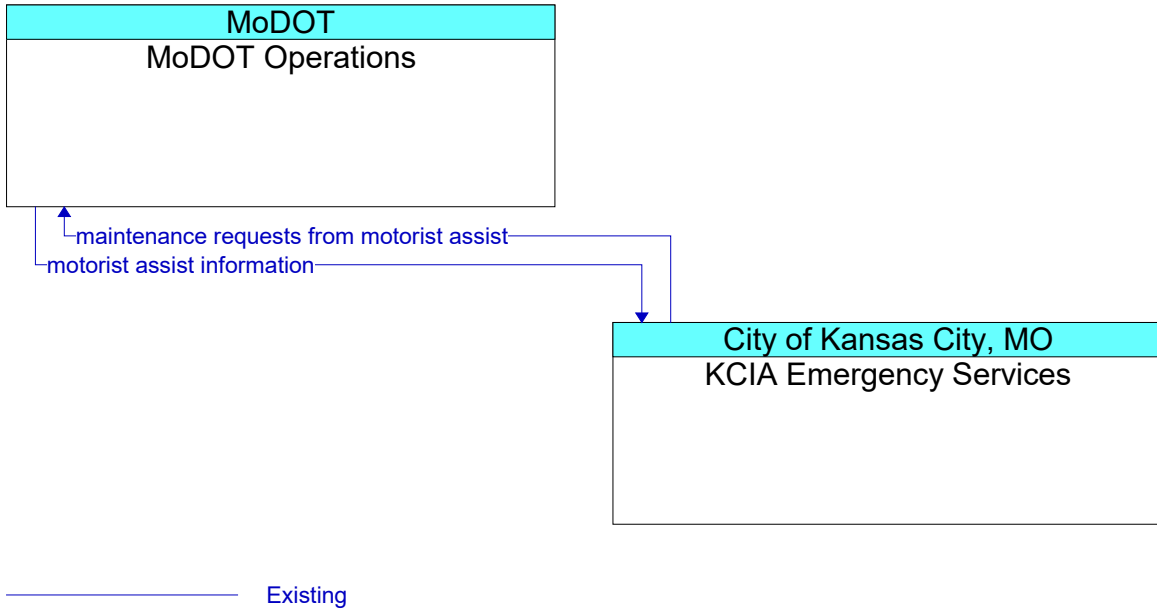


Existing

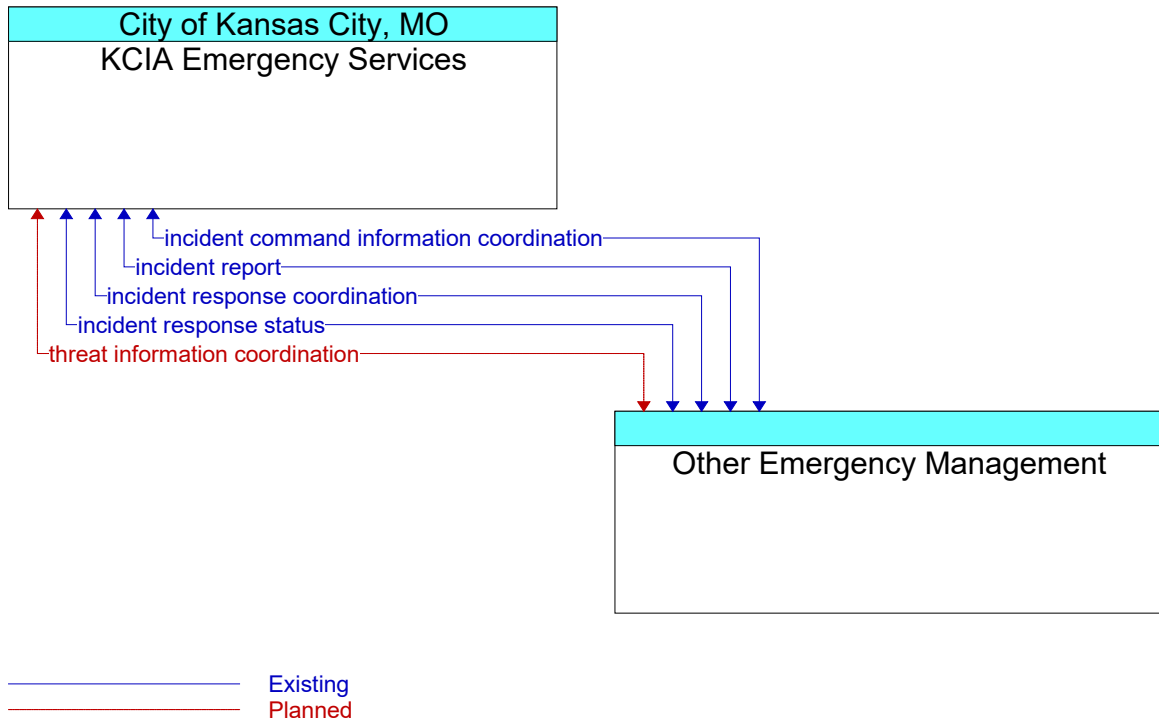
**Figure 661: KCIA Emergency Services - Missouri State Emergency Management Center Interface**



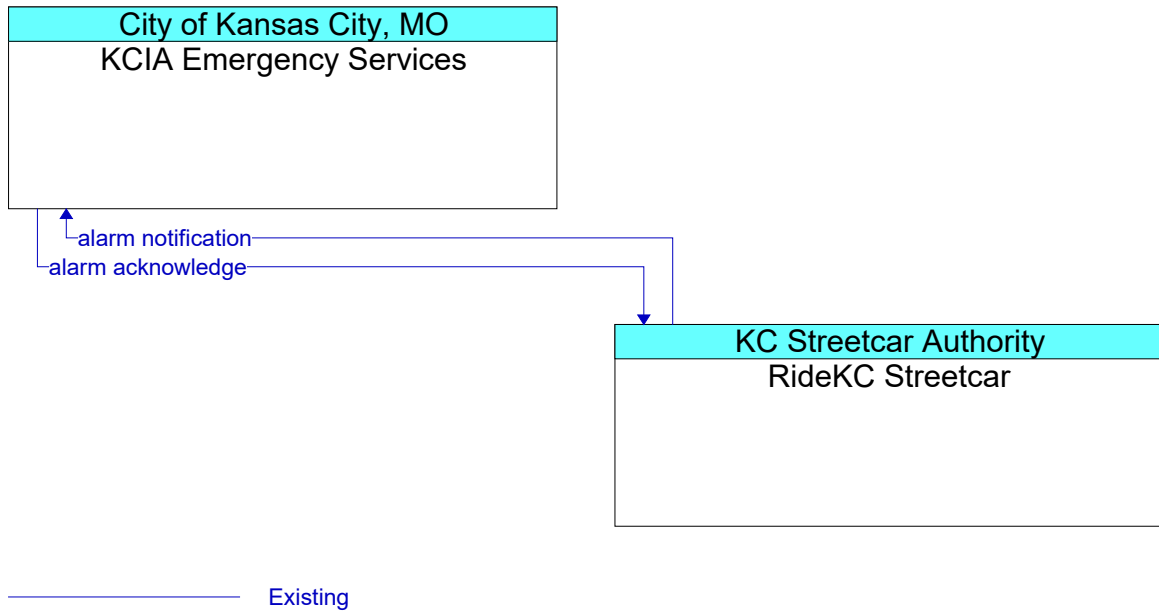
**Figure 662: KIA Emergency Services - Missouri State Highway Patrol Dispatch Interface**



**Figure 663: KIA Emergency Services - MoDOT Operations Interface**



**Figure 664: KCIA Emergency Services - Other Emergency Management Interface**



**Figure 665: KCIA Emergency Services - RideKC Streetcar Interface**



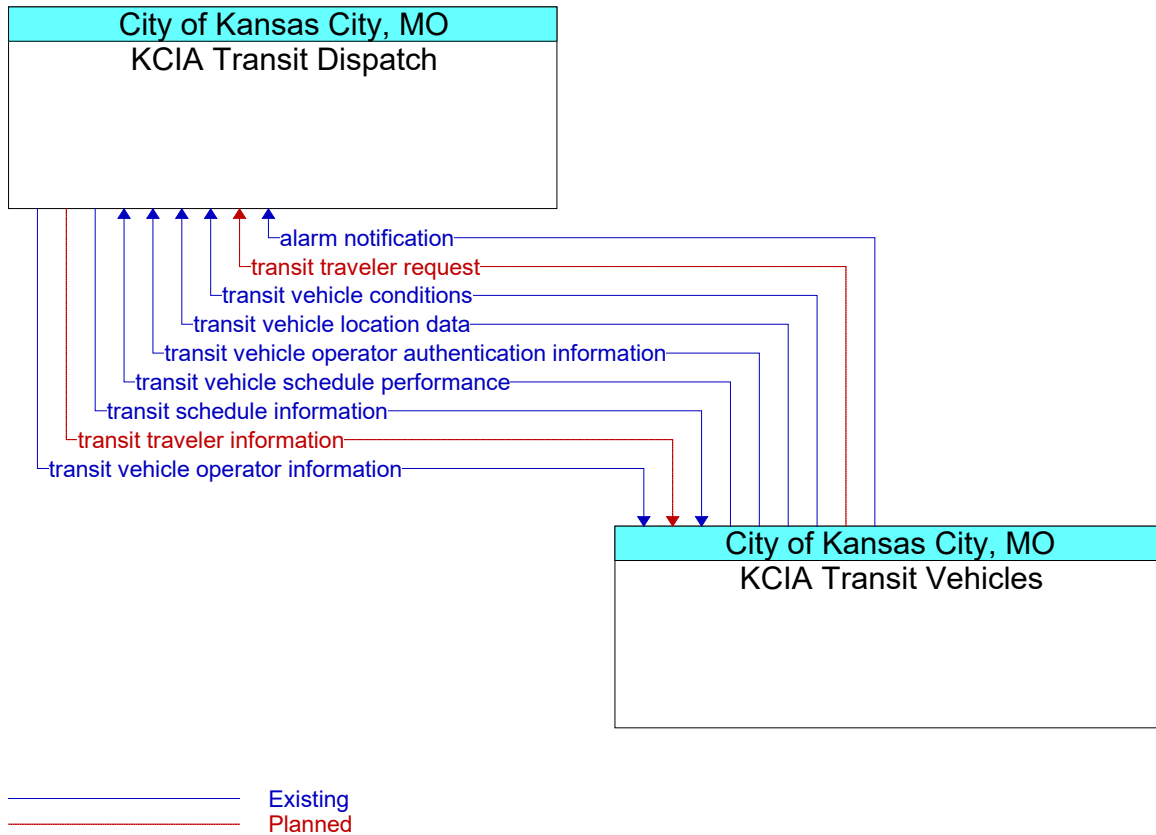
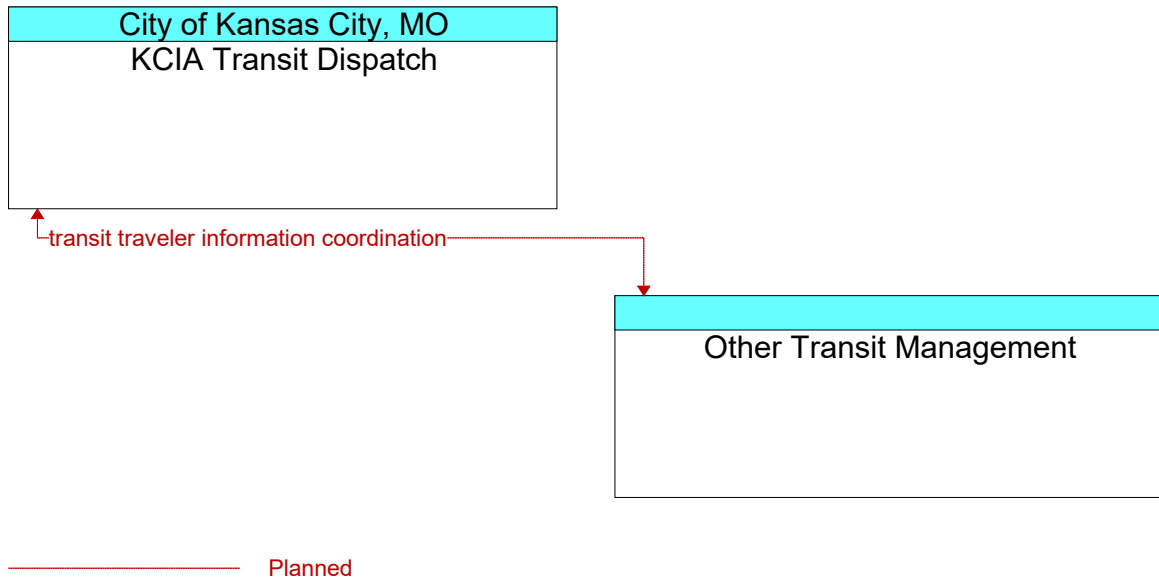
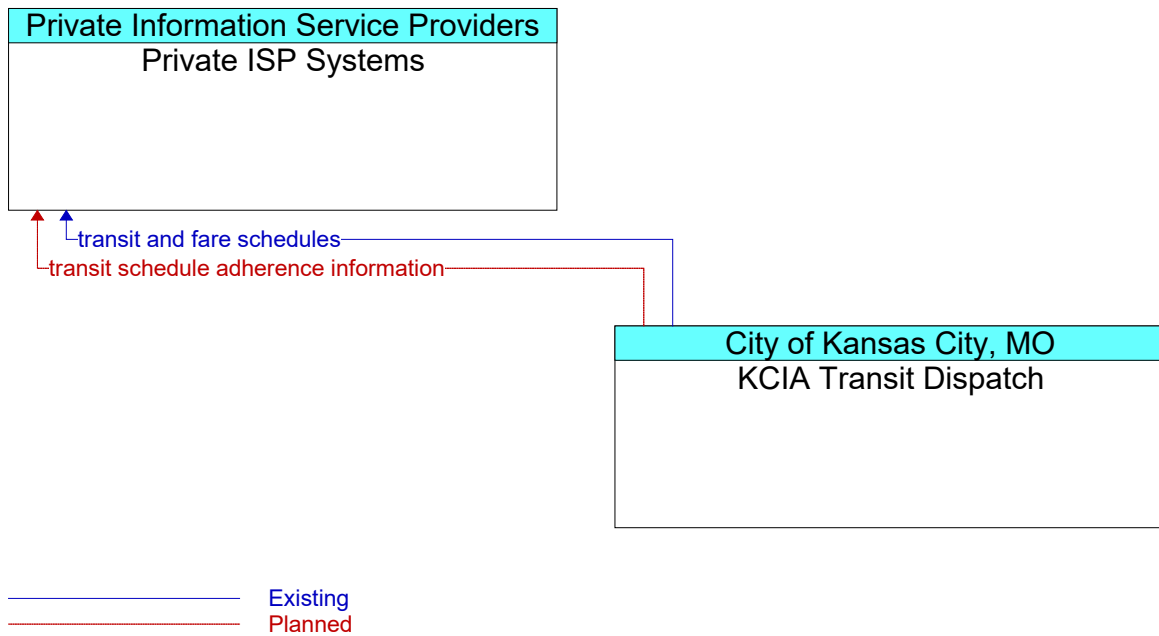


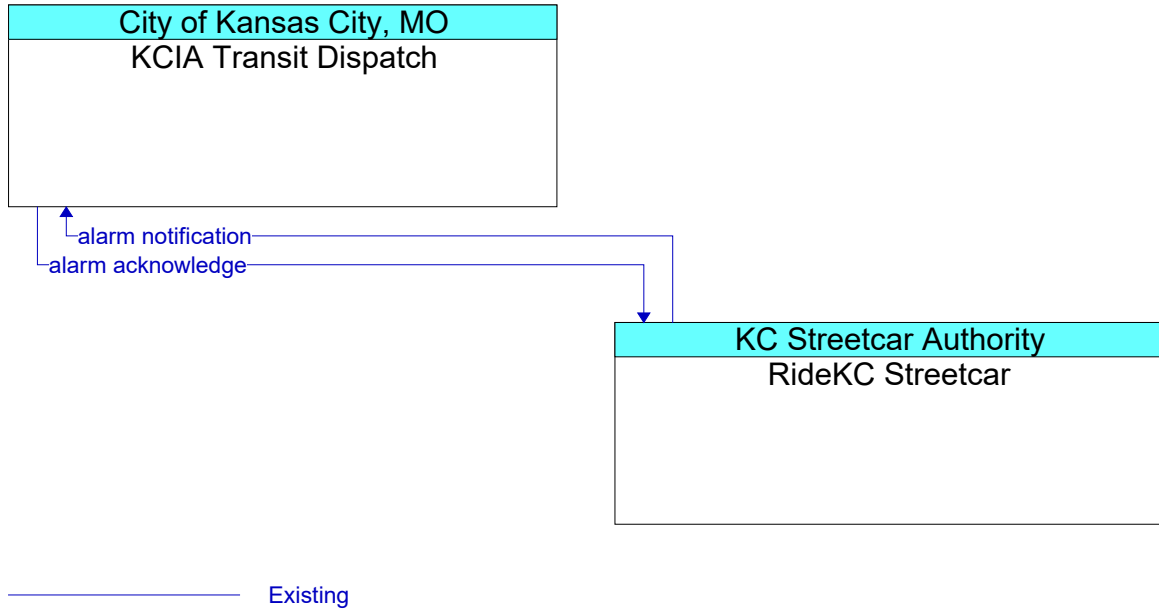
Figure 666: KCIA Transit Dispatch - KCIA Transit Vehicles Interface



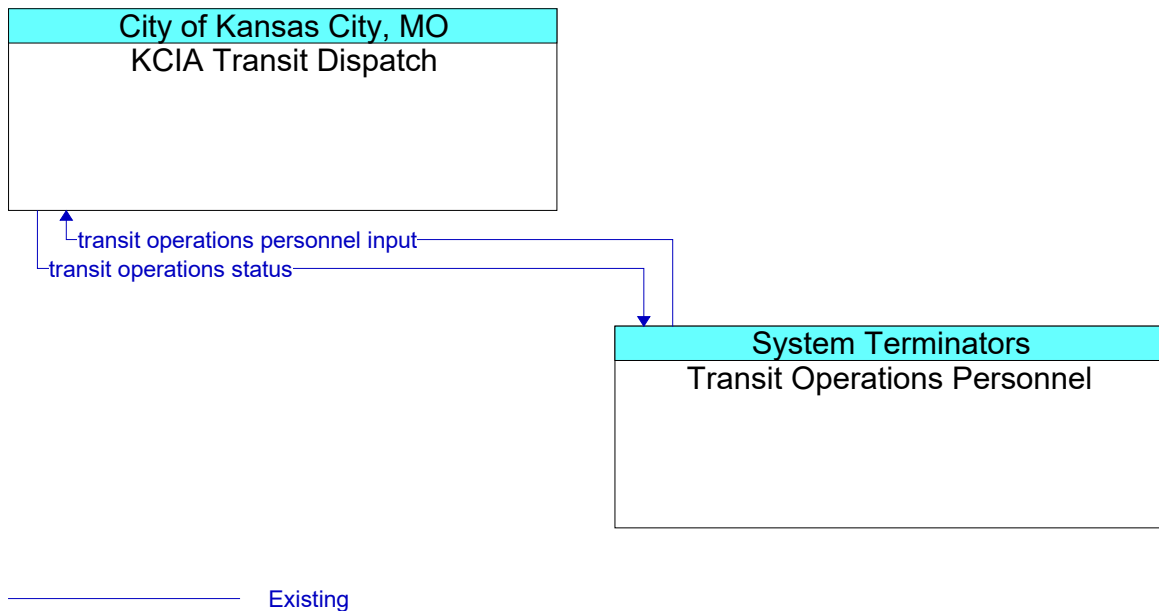
**Figure 667: KCIA Transit Dispatch - Other Transit Management Interface**



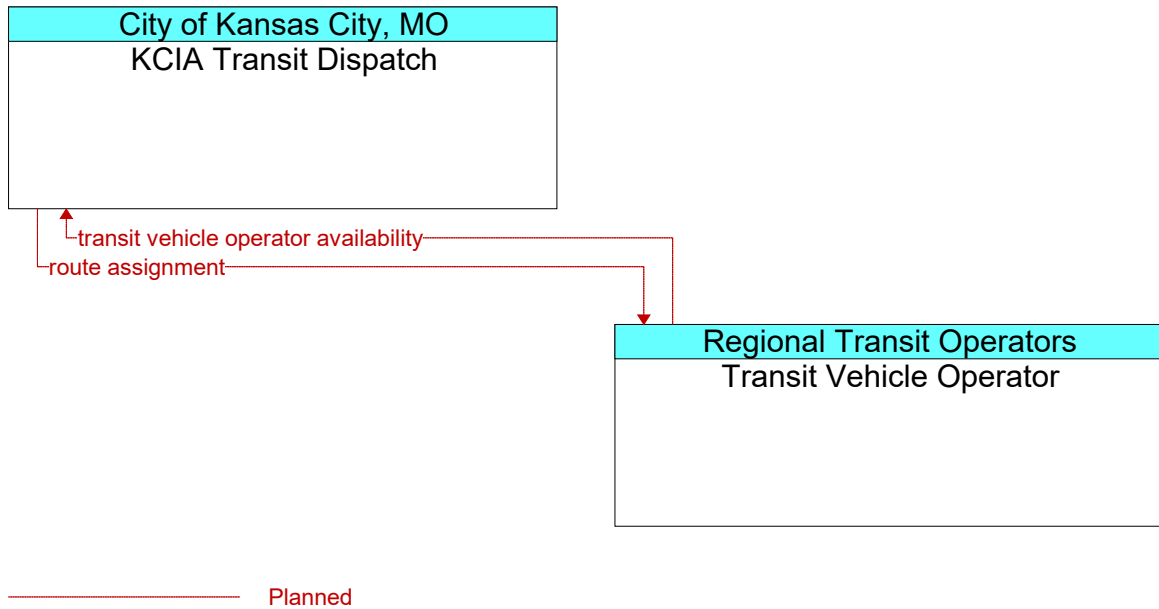
**Figure 668: KCIA Transit Dispatch - Private ISP Systems Interface**



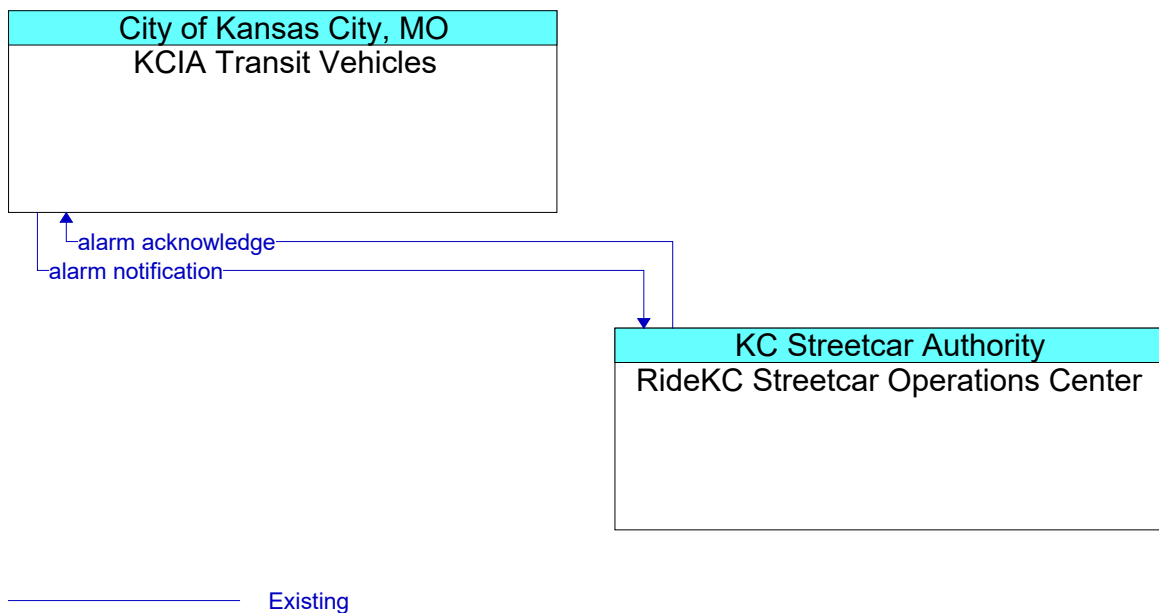
**Figure 669: KCIA Transit Dispatch - RideKC Streetcar Interface**



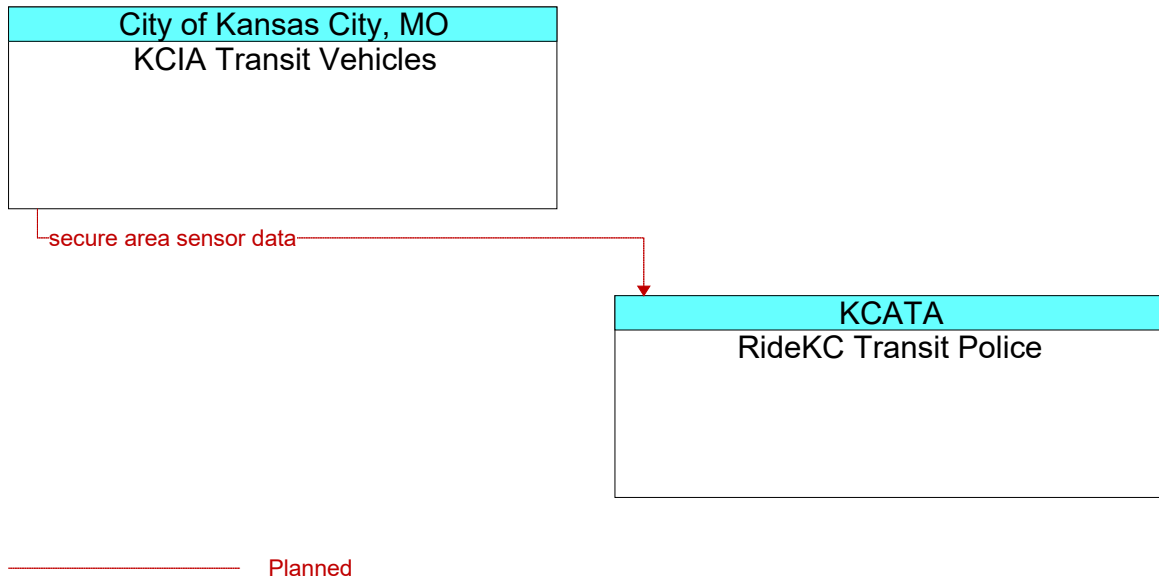
**Figure 670: KCIA Transit Dispatch - Transit Operations Personnel Interface**



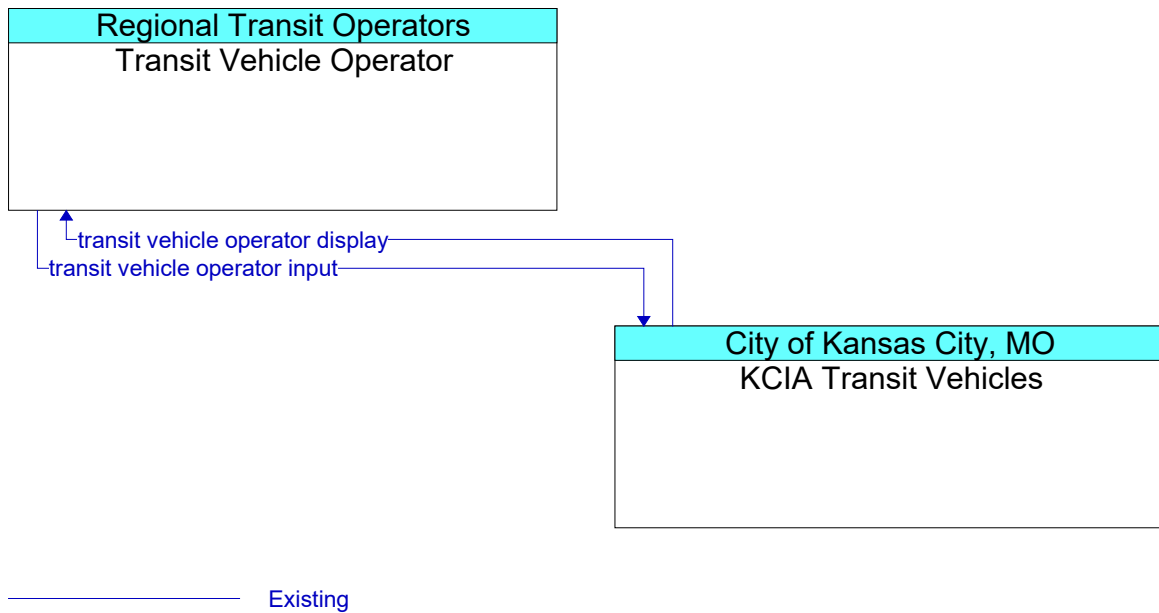
**Figure 671: KCIA Transit Dispatch - Transit Vehicle Operator Interface**



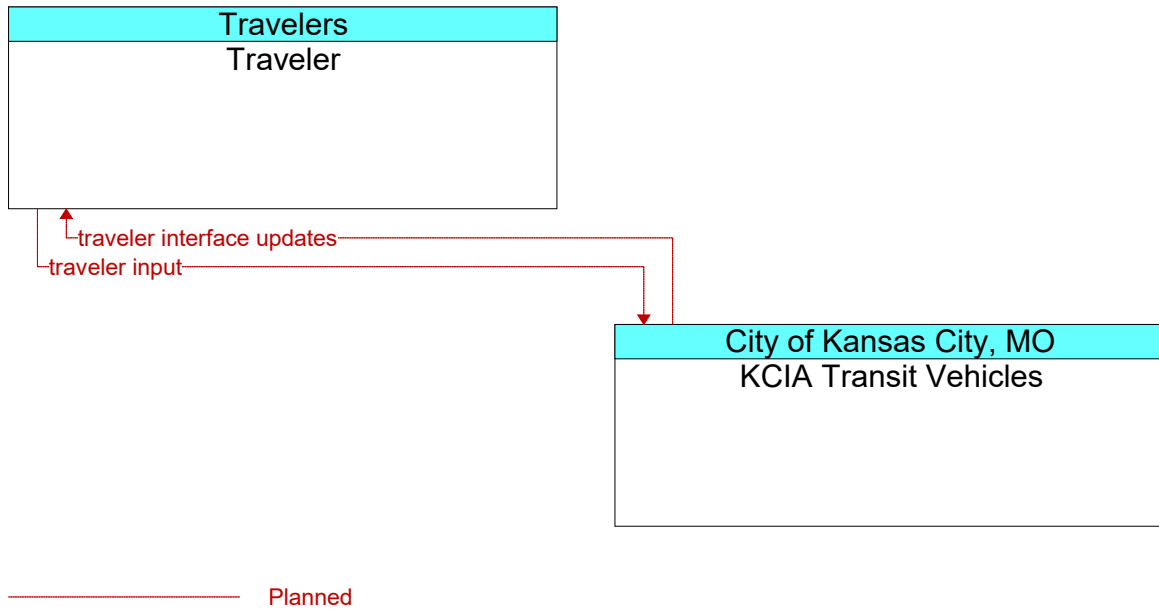
**Figure 672: KCIA Transit Vehicles - RideKC Streetcar Operations Center Interface**



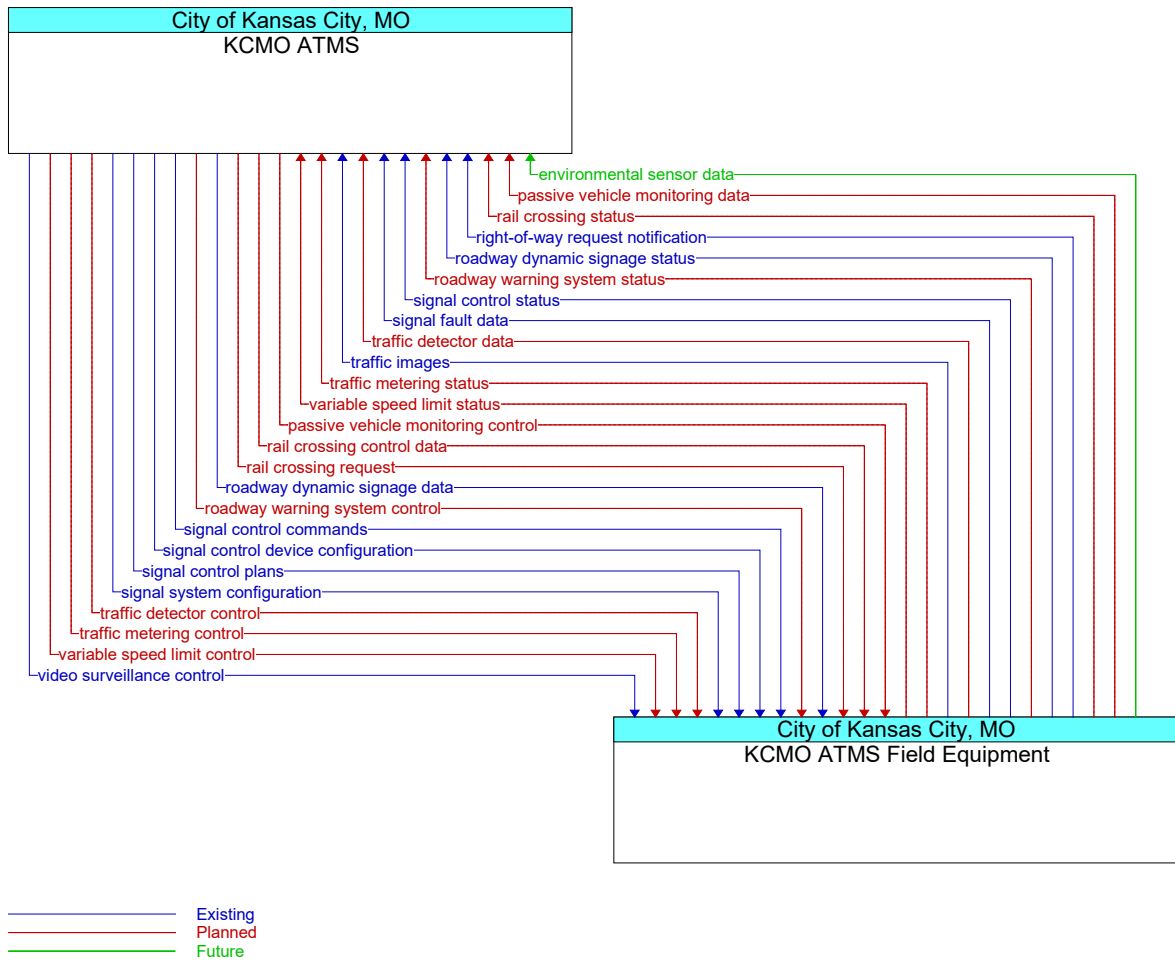
**Figure 673: KCIA Transit Vehicles - RideKC Transit Police Interface**



**Figure 674: KCIA Transit Vehicles - Transit Vehicle Operator Interface**



**Figure 675: KCIA Transit Vehicles - Traveler Interface**



**Figure 676: KCMO ATMS - KCMO ATMS Field Equipment Interface**

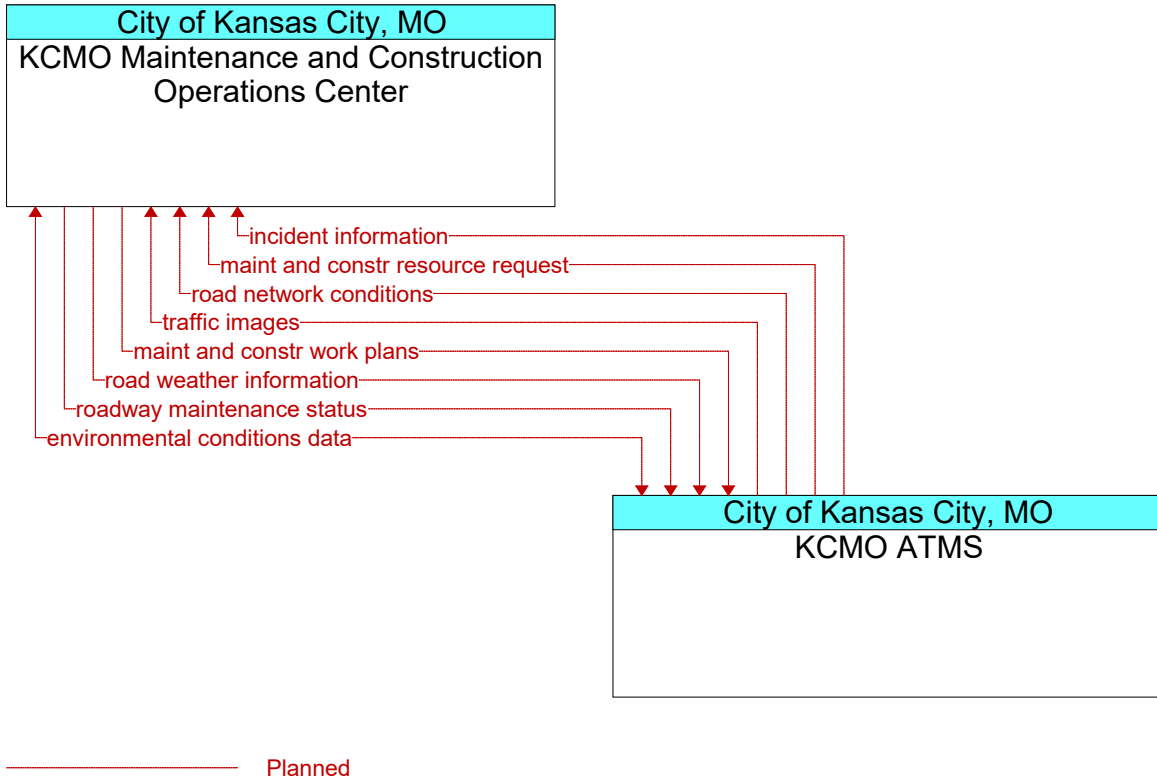
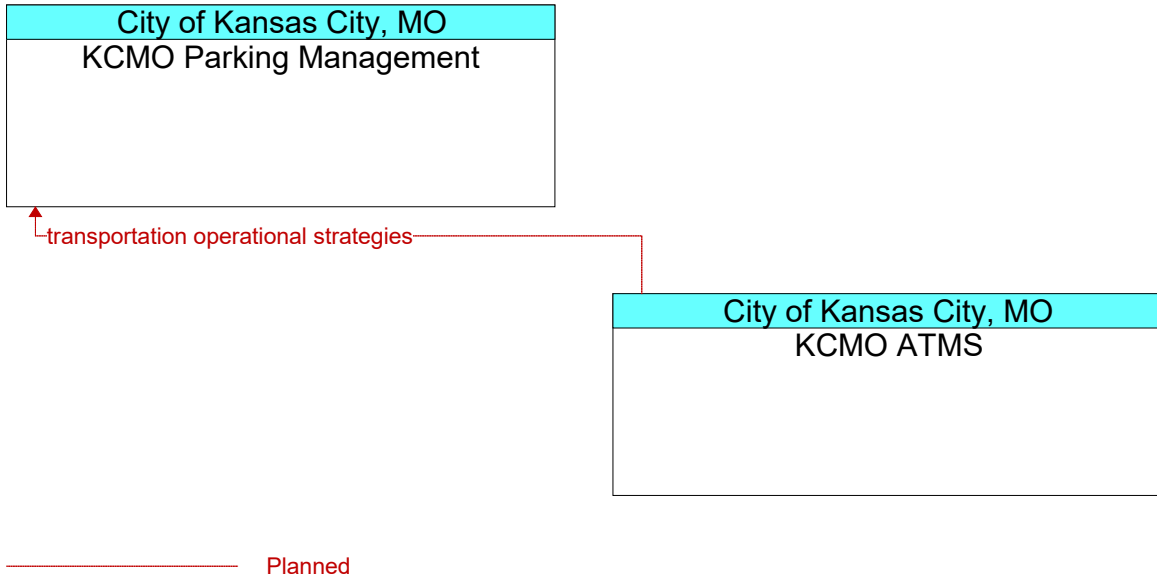
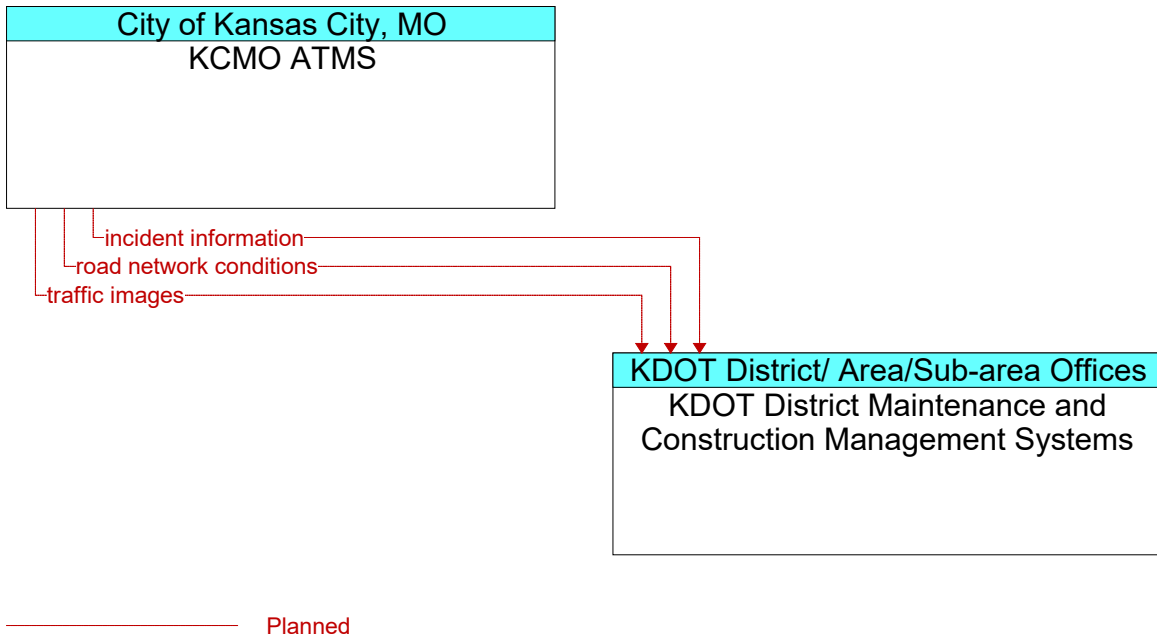


Figure 677: KCMO ATMS - KCMO Maintenance and Construction Operations Center Interface

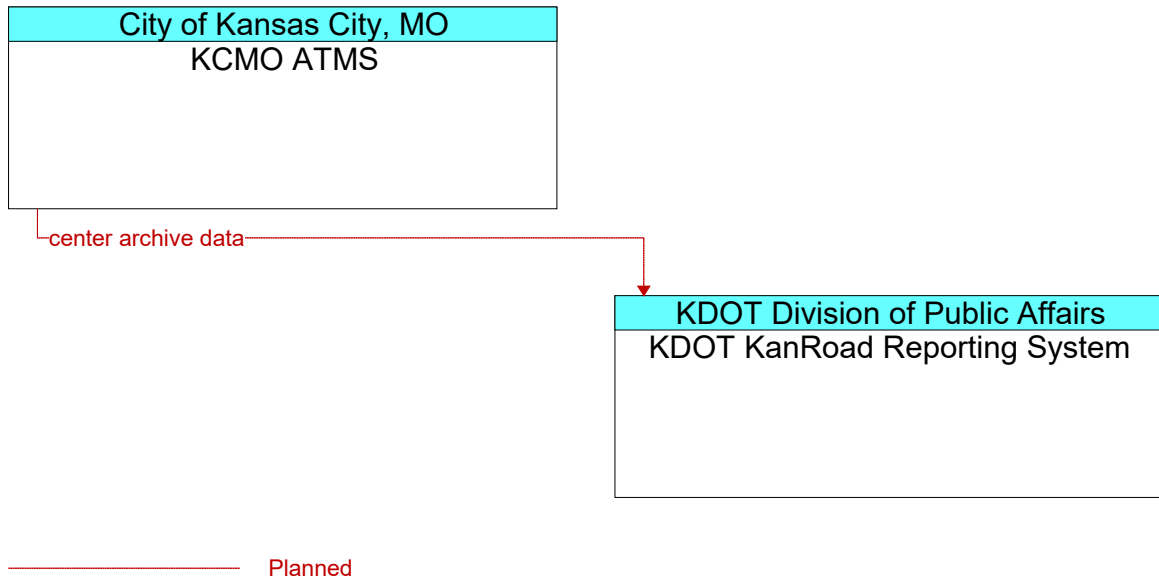




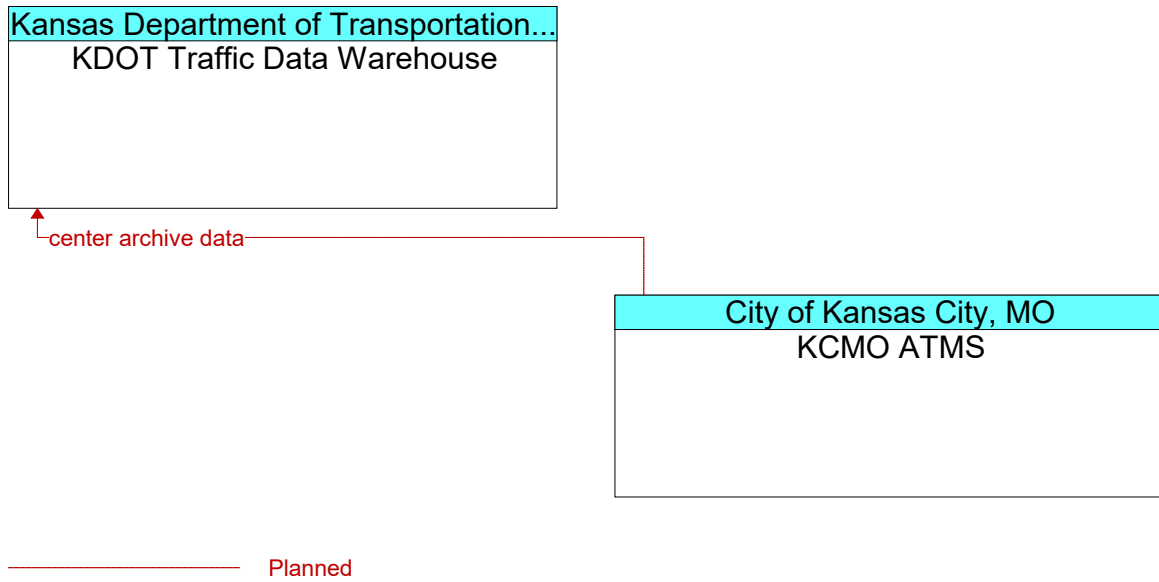
**Figure 678: KCMO ATMS - KCMO Parking Management Interface**



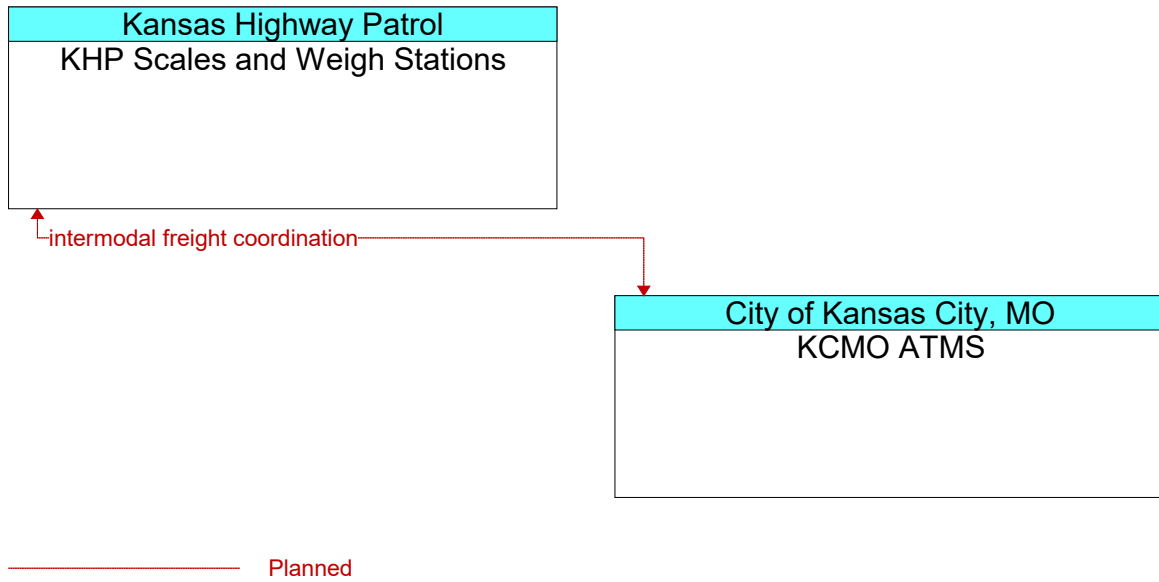
**Figure 679: KCMO ATMS - KDOT District Maintenance and Construction Management Systems Interface**



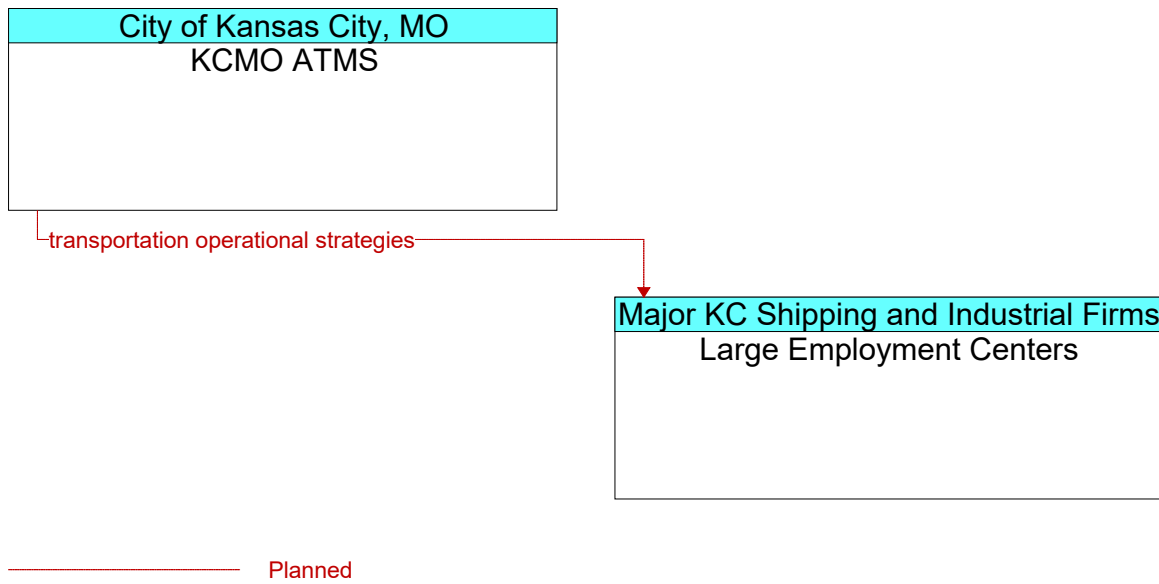
**Figure 680: KCMO ATMS - KDOT KanRoad Reporting System Interface**



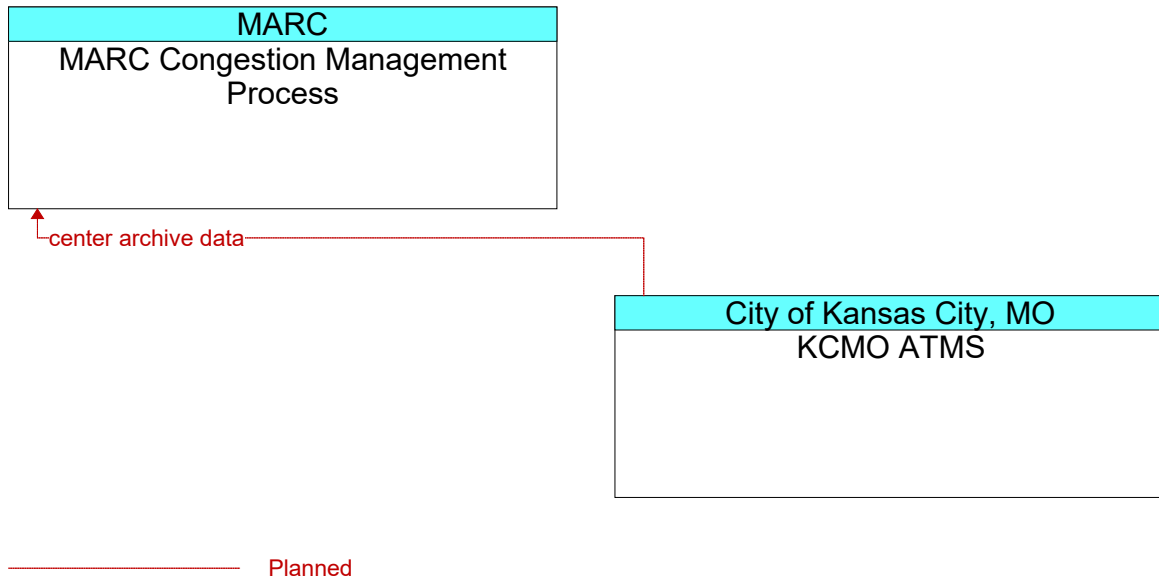
**Figure 681: KCMO ATMS - KDOT Traffic Data Warehouse Interface**



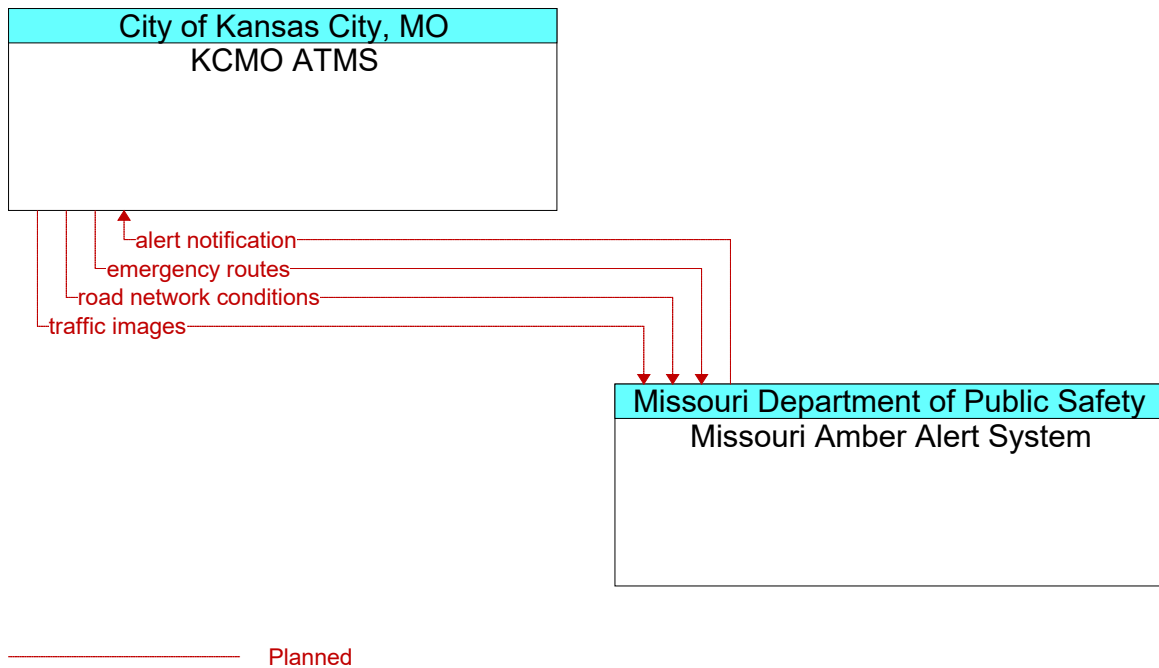
**Figure 682: KCMO ATMS - KHP Scales and Weigh Stations Interface**



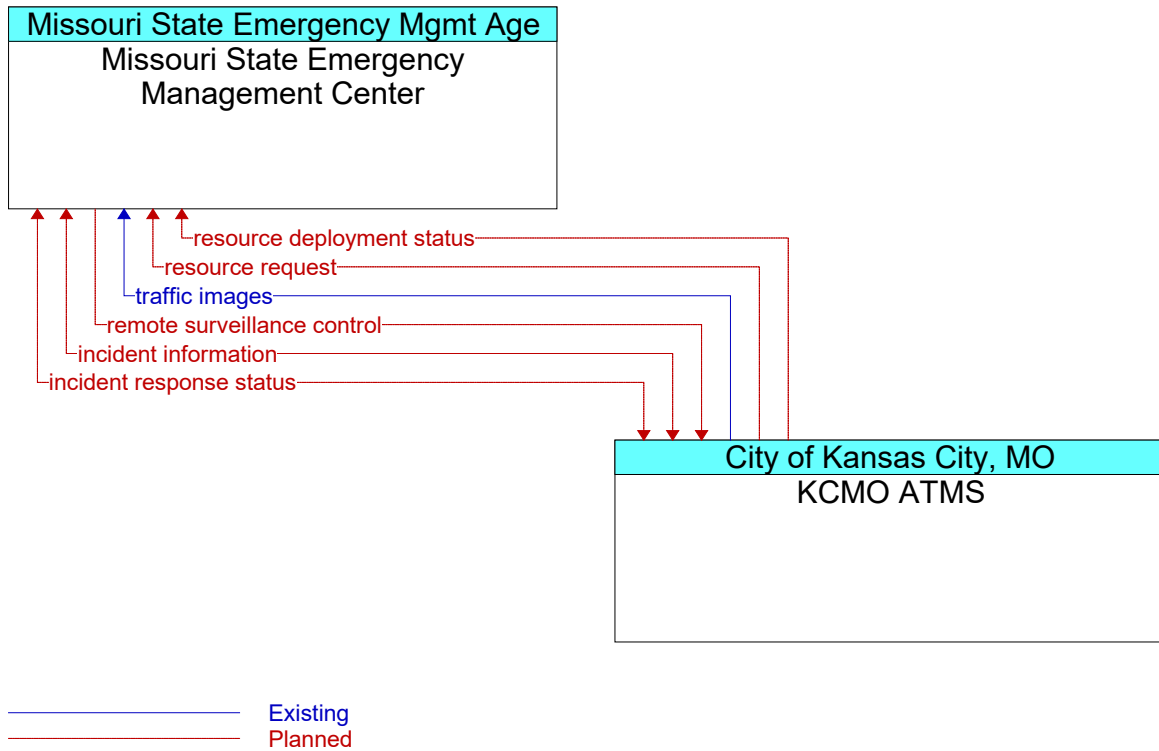
**Figure 683: KCMO ATMS - Large Employment Centers Interface**



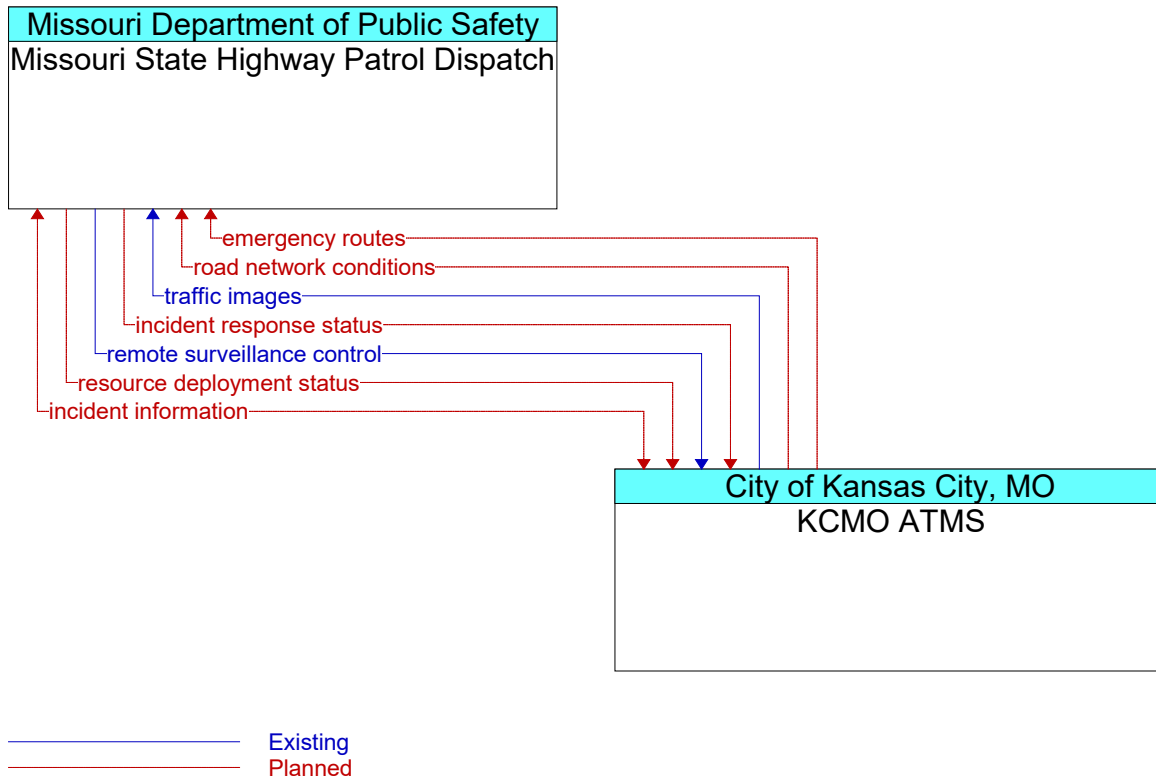
**Figure 684: KCMO ATMS - MARC Congestion Management Process Interface**



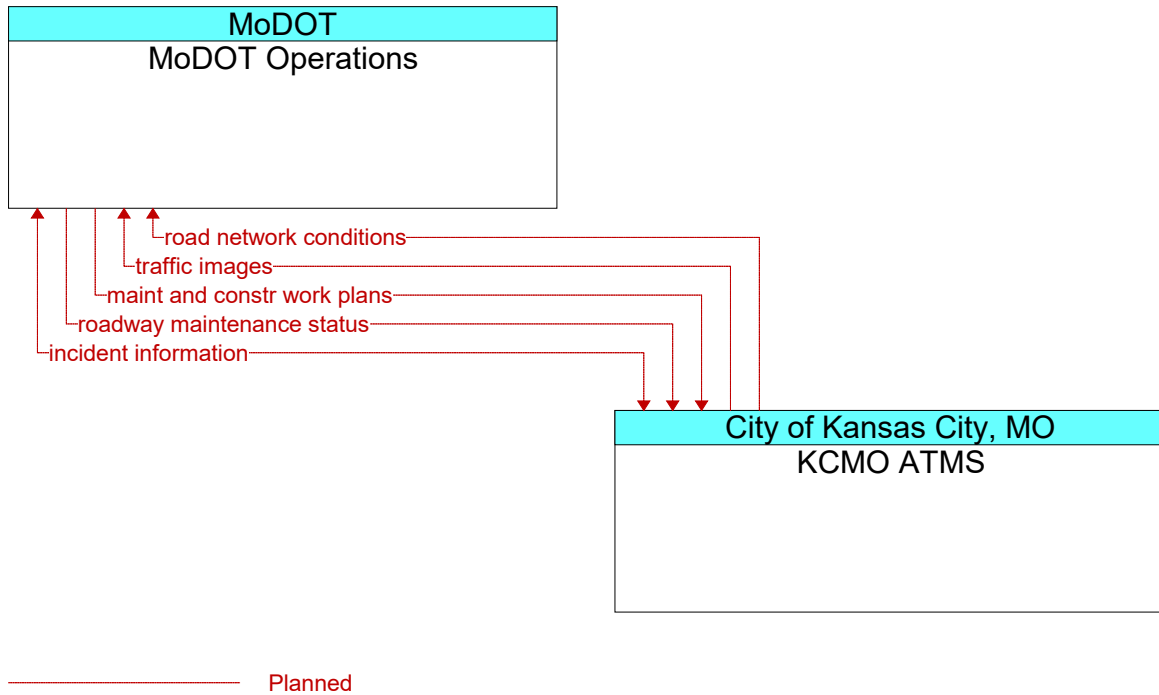
**Figure 685: KCMO ATMS - Missouri Amber Alert System Interface**



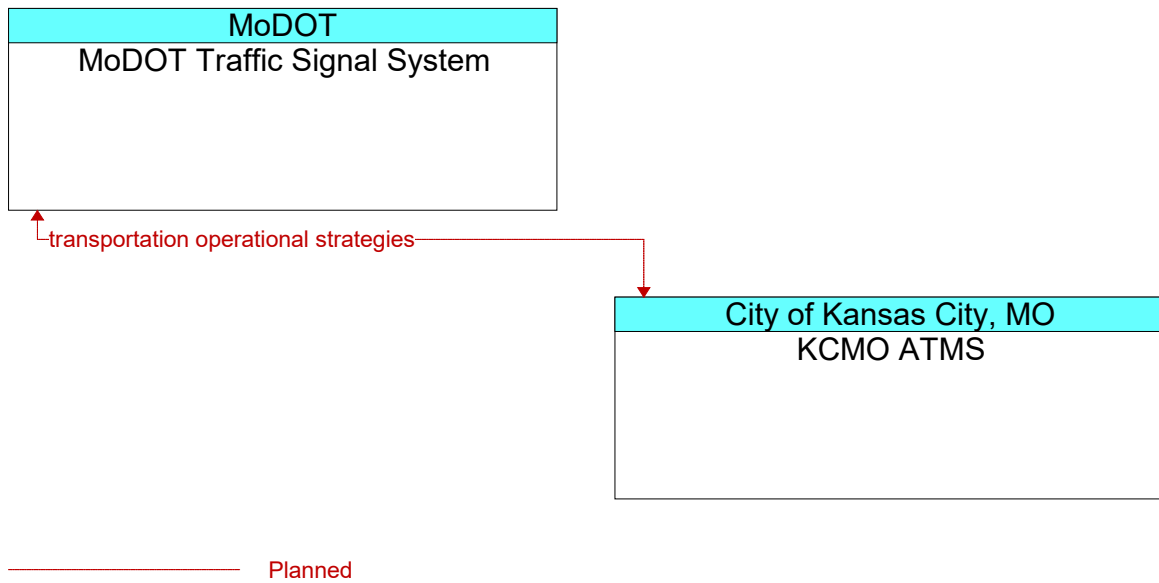
**Figure 686: KCMO ATMS - Missouri State Emergency Management Center Interface**



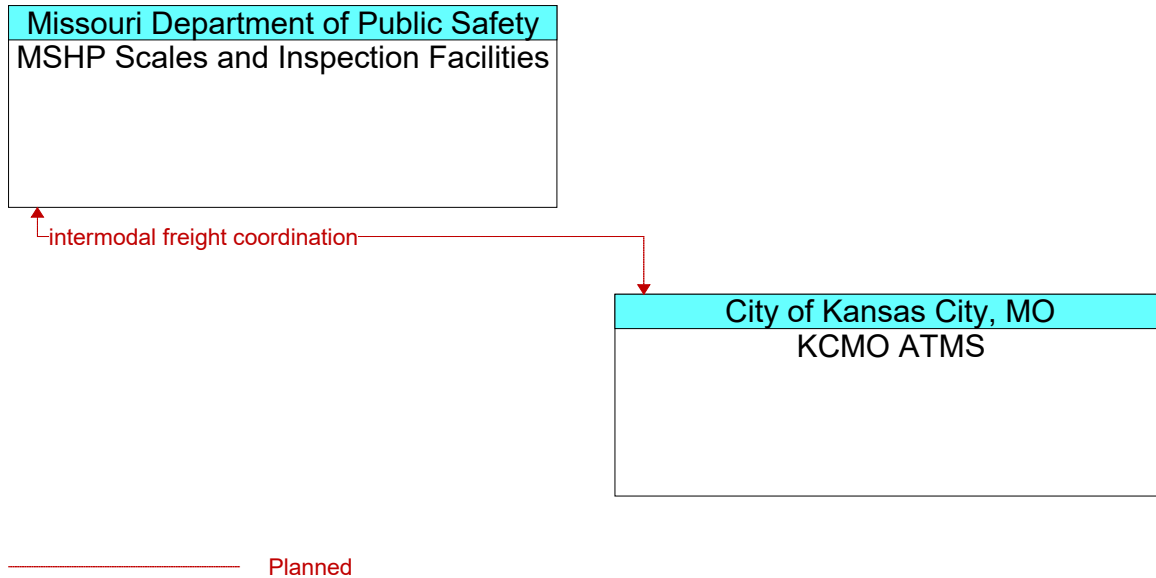
**Figure 687: KCMO ATMS - Missouri State Highway Patrol Dispatch Interface**



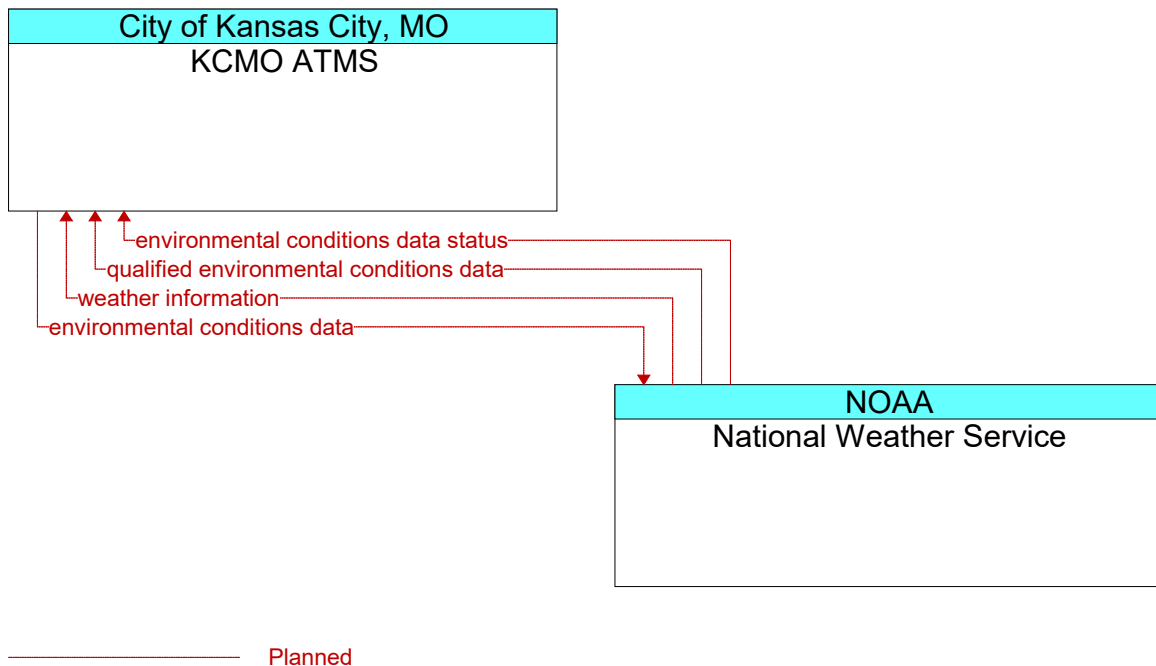
**Figure 688: KCMO ATMS - MoDOT Operations Interface**



**Figure 689: KCMO ATMS - MoDOT Traffic Signal System Interface**

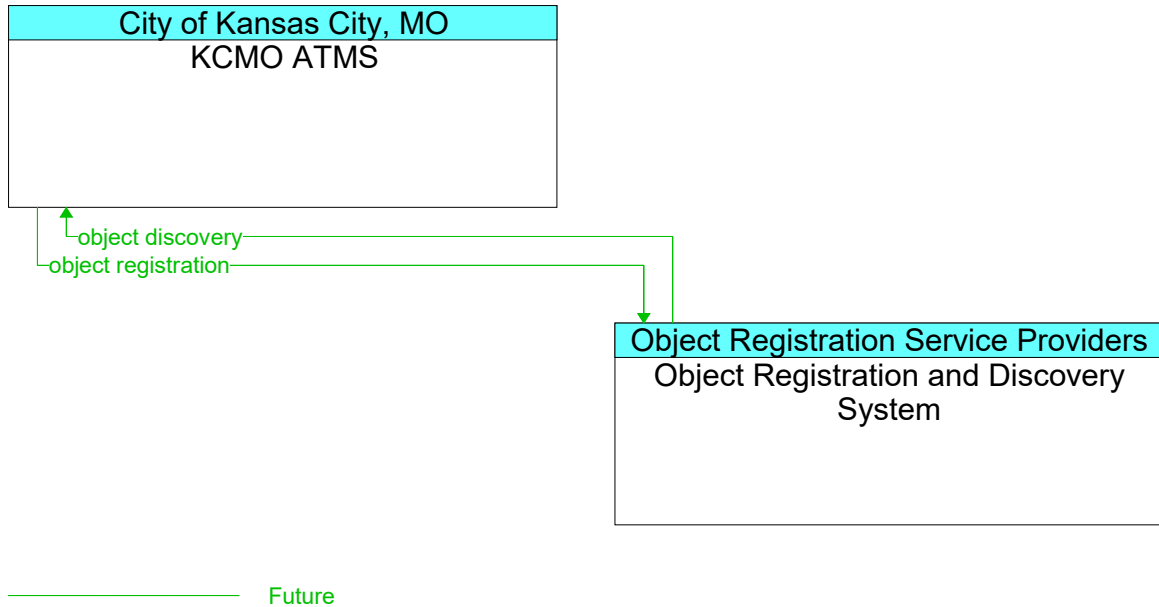


**Figure 690: KCMO ATMS - MSHP Scales and Inspection Facilities Interface**

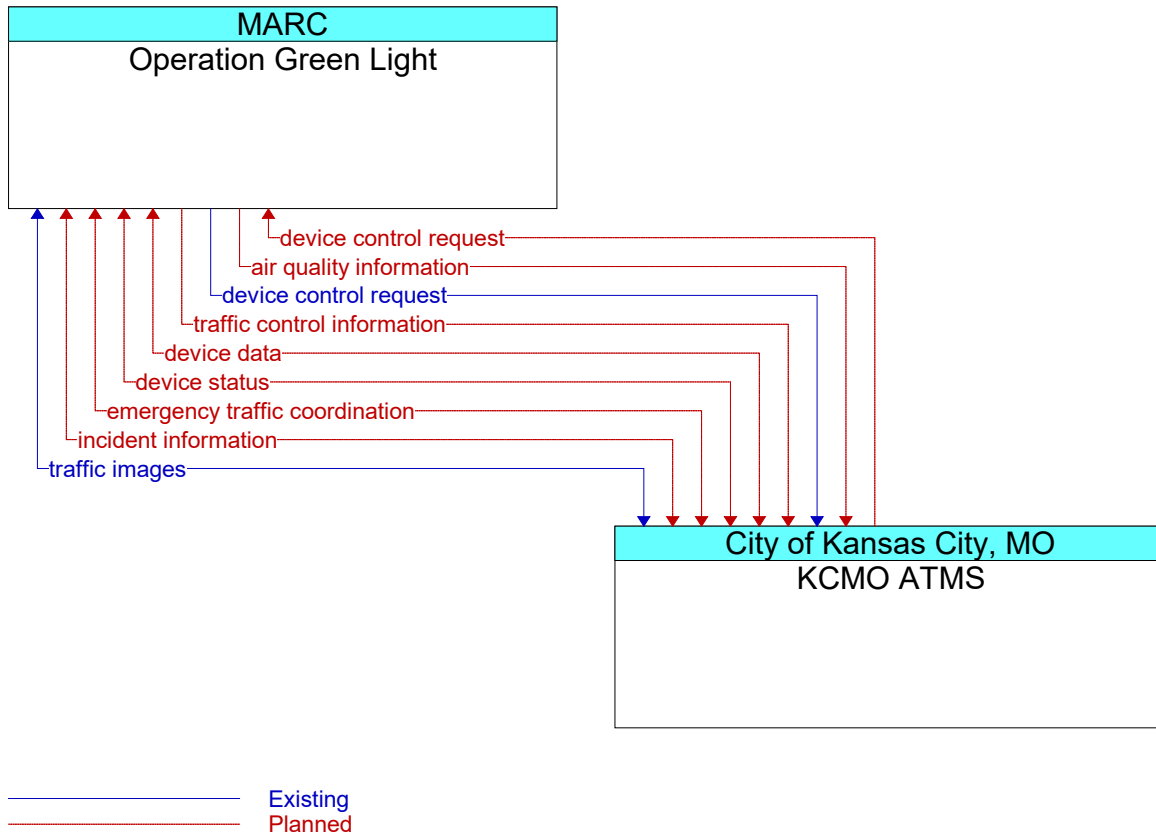


**Figure 691: KCMO ATMS - National Weather Service Interface**

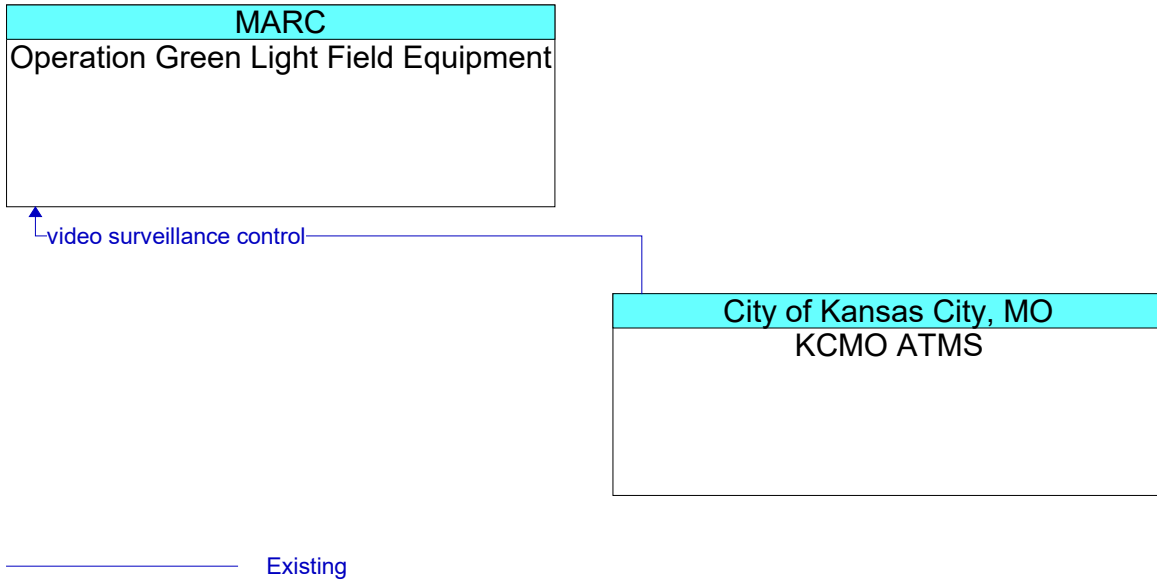




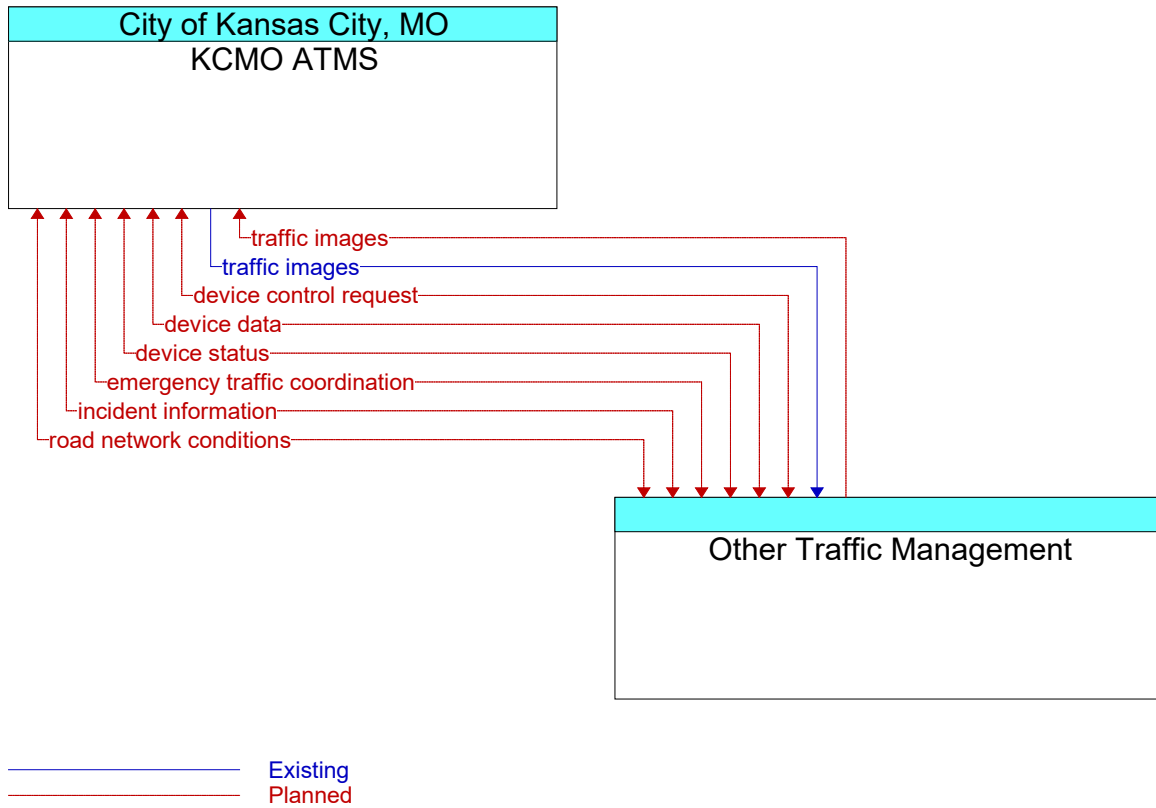
**Figure 692: KCMO ATMS - Object Registration and Discovery System Interface**



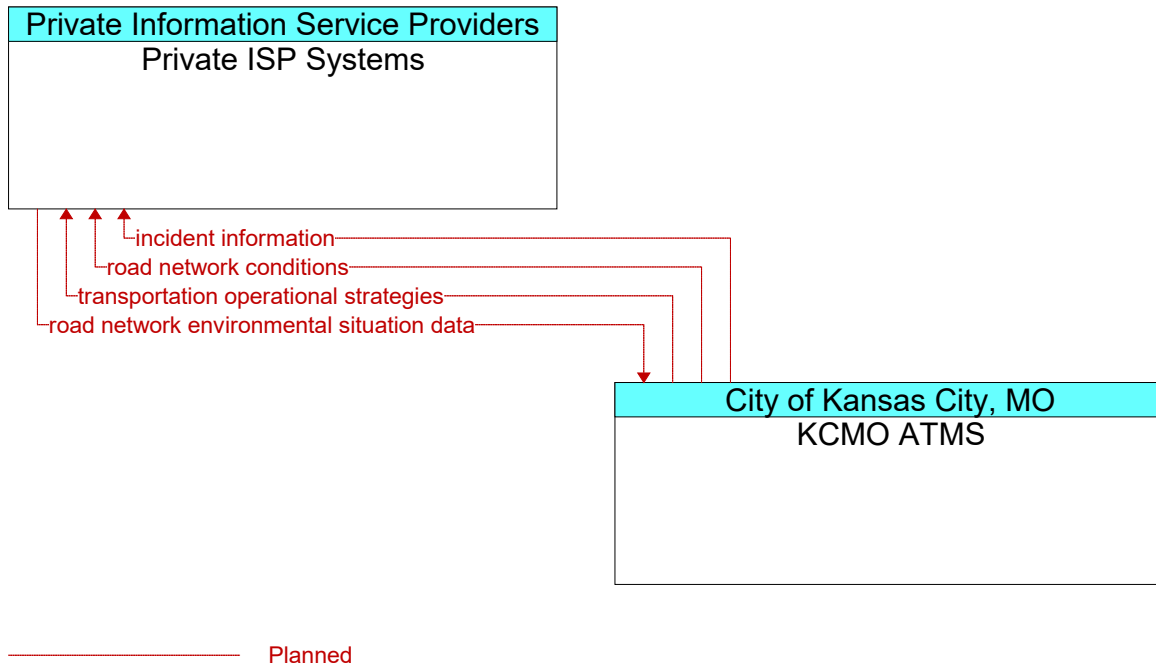
**Figure 693: KCMO ATMS - Operation Green Light Interface**



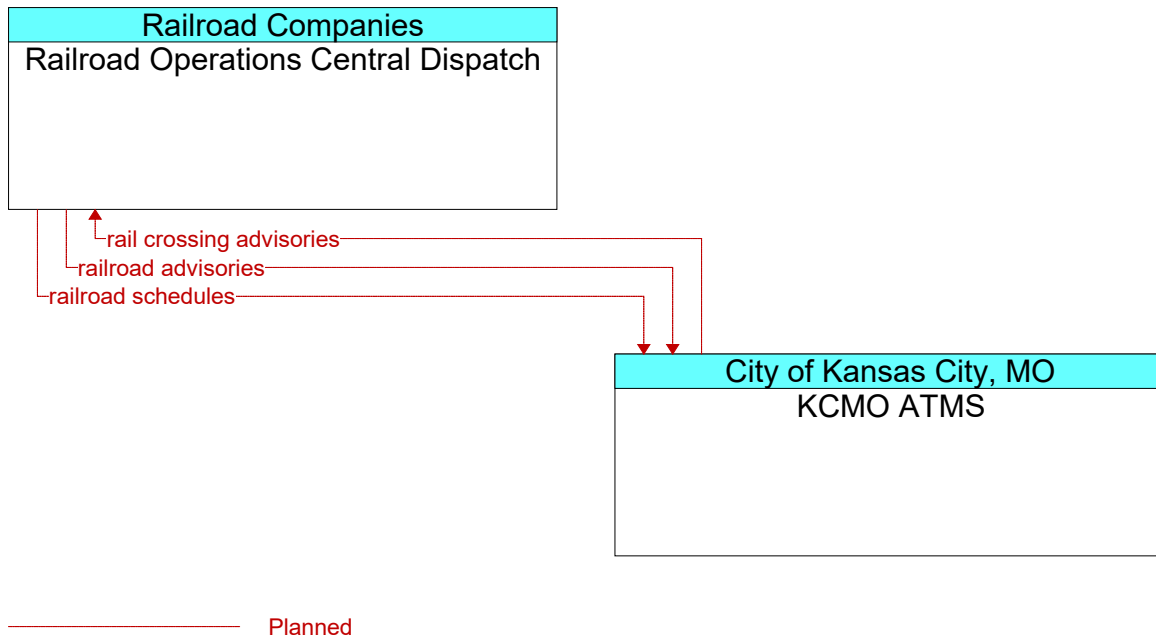
**Figure 694: KCMO ATMS - Operation Green Light Field Equipment Interface**



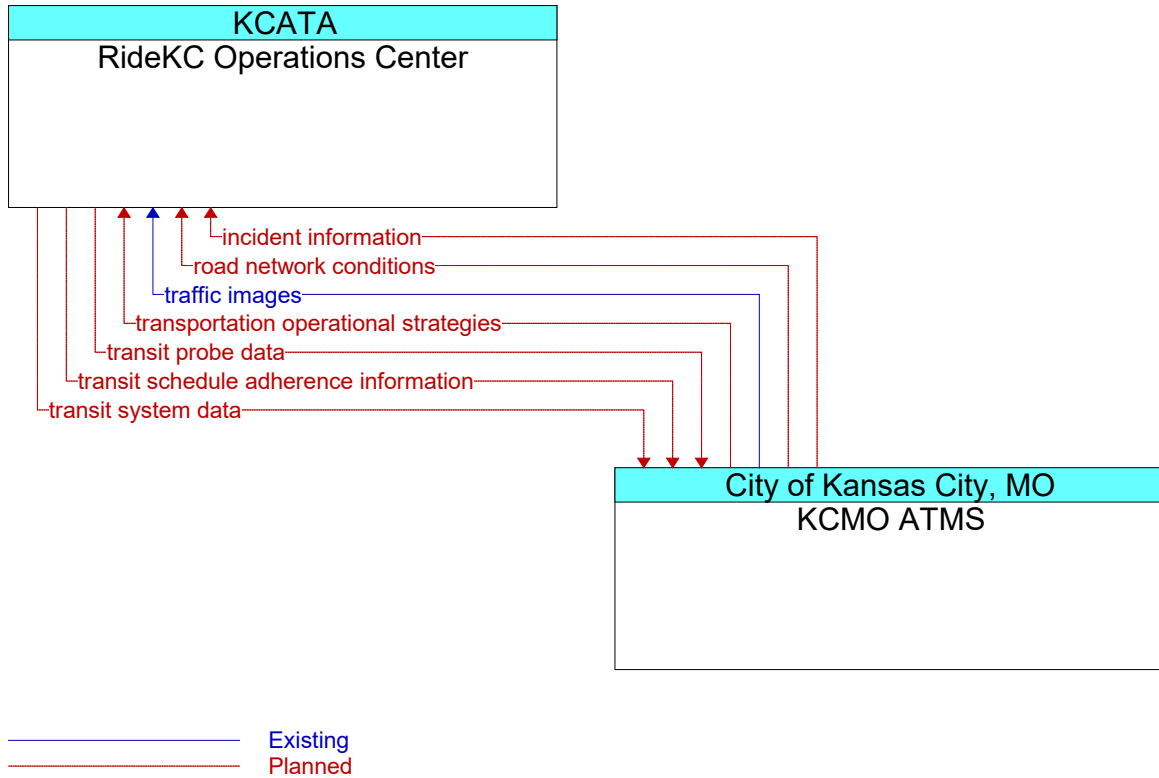
**Figure 695: KCMO ATMS - Other Traffic Management Interface**



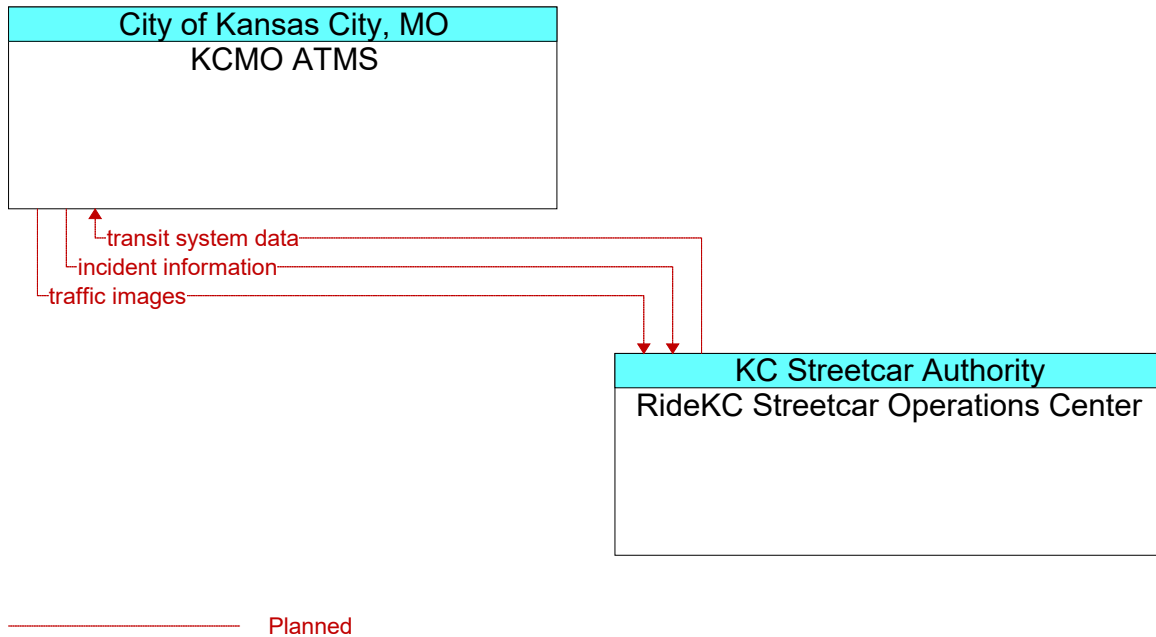
**Figure 696: KCMO ATMS - Private ISP Systems Interface**



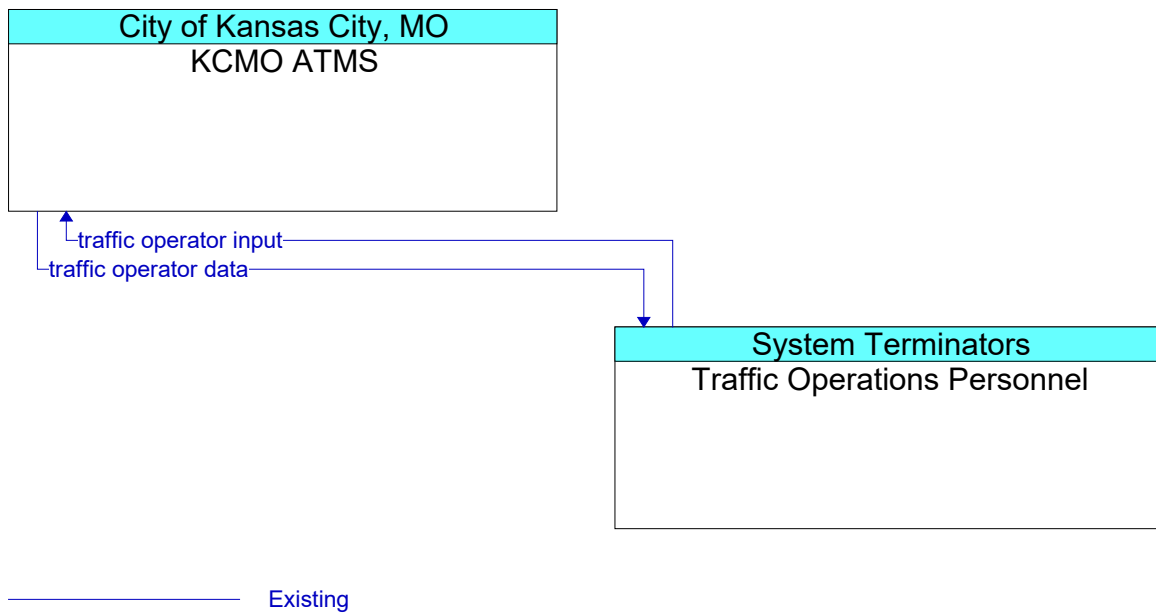
**Figure 697: KCMO ATMS - Railroad Operations Central Dispatch Interface**



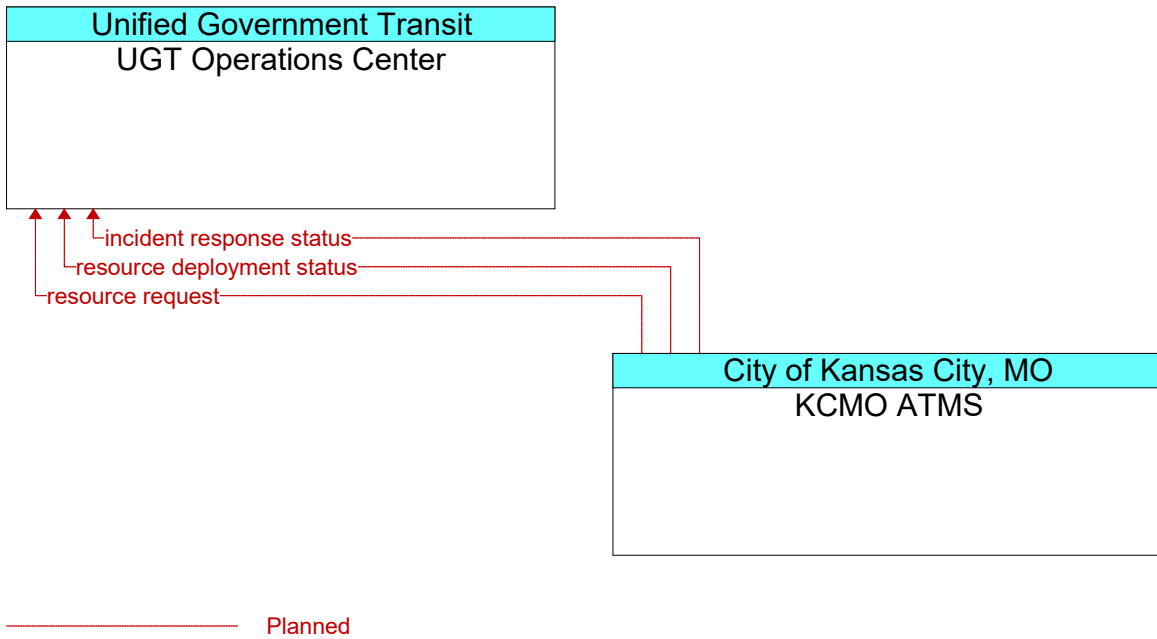
**Figure 698: KCMO ATMS - RideKC Operations Center Interface**



**Figure 699: KCMO ATMS - RideKC Streetcar Operations Center Interface**

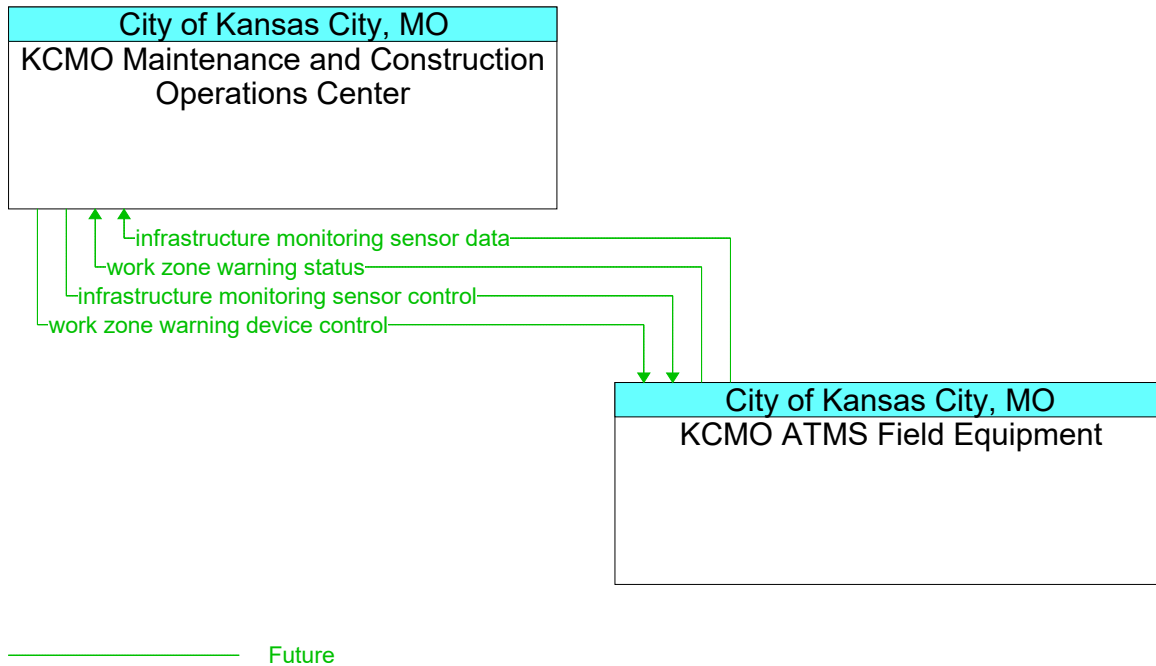


**Figure 700: KCMO ATMS - Traffic Operations Personnel Interface**

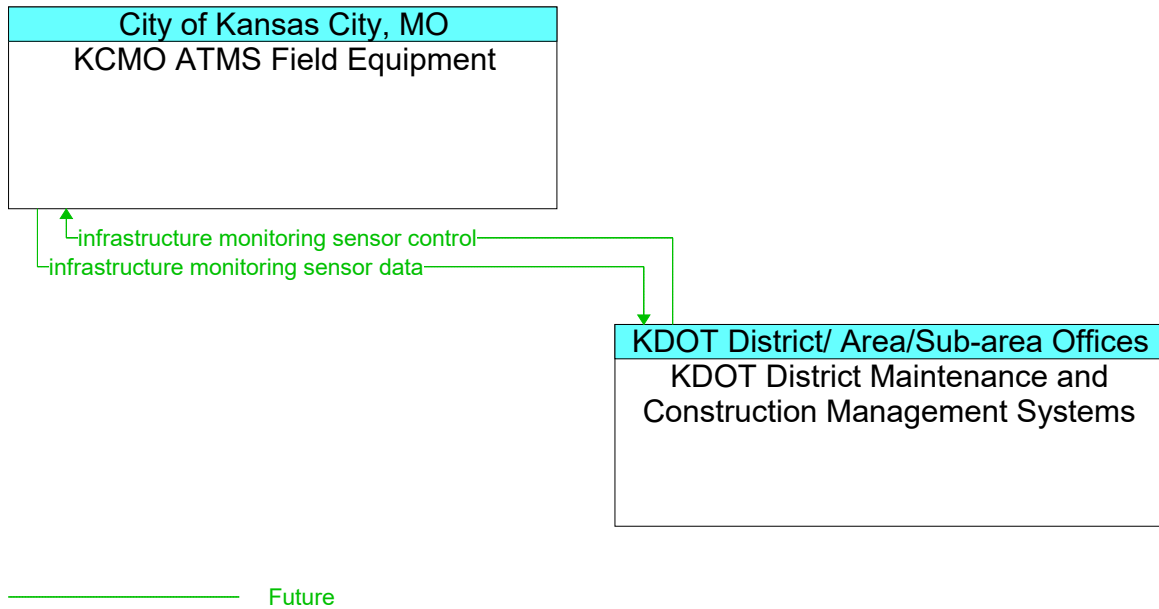


**Figure 701: KCMO ATMS - UGT Operations Center Interface**

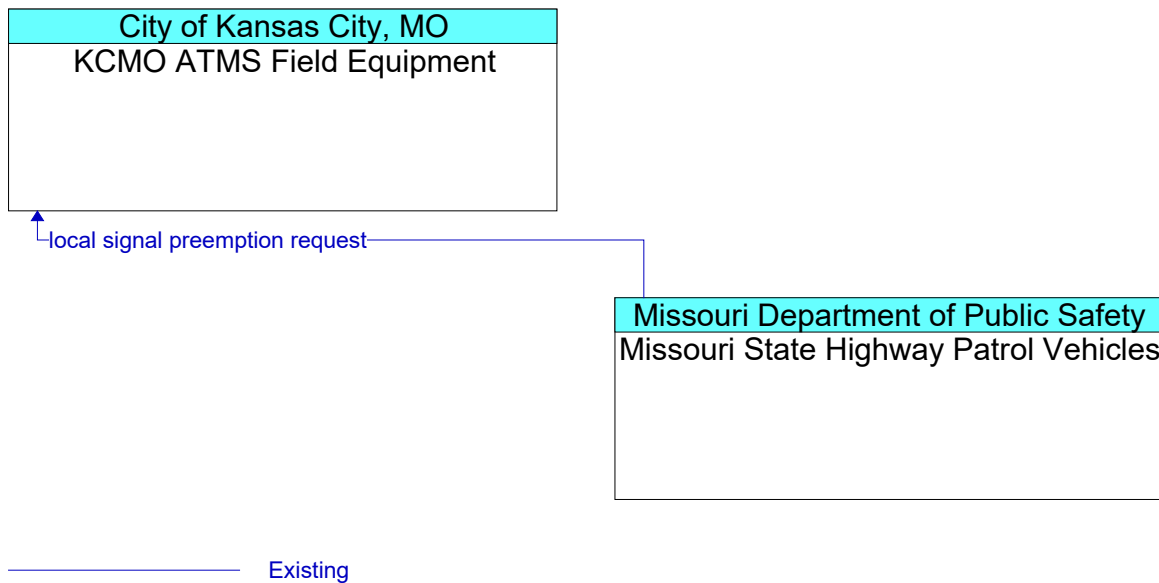




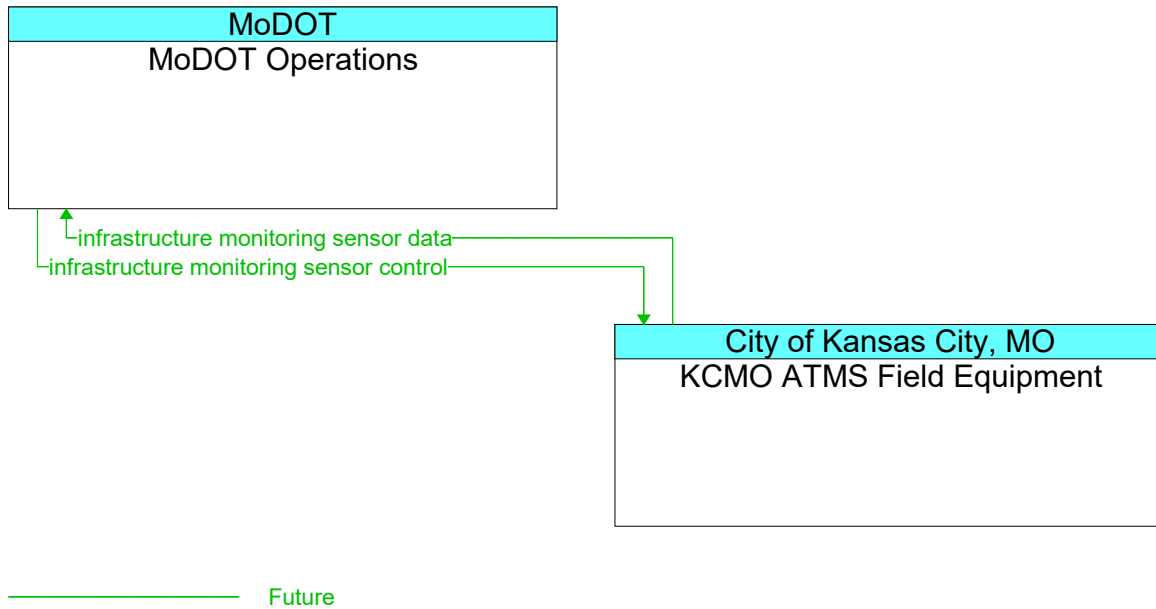
**Figure 702: KCMO ATMS Field Equipment - KCMO Maintenance and Construction Operations Center Interface**



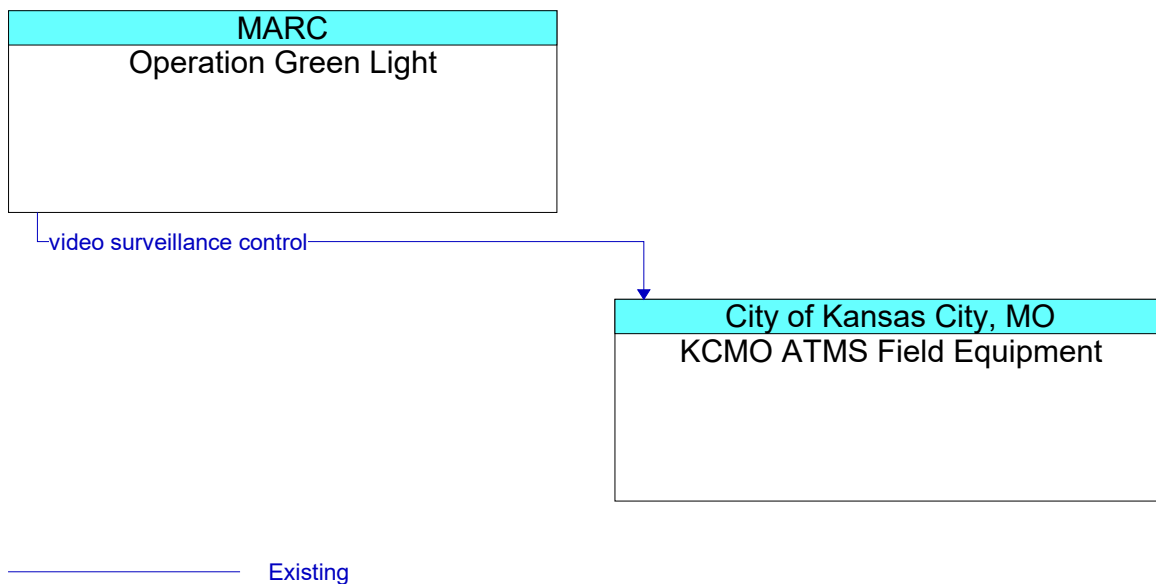
**Figure 703: KCMO ATMS Field Equipment - KDOT District Maintenance and Construction Management Systems Interface**



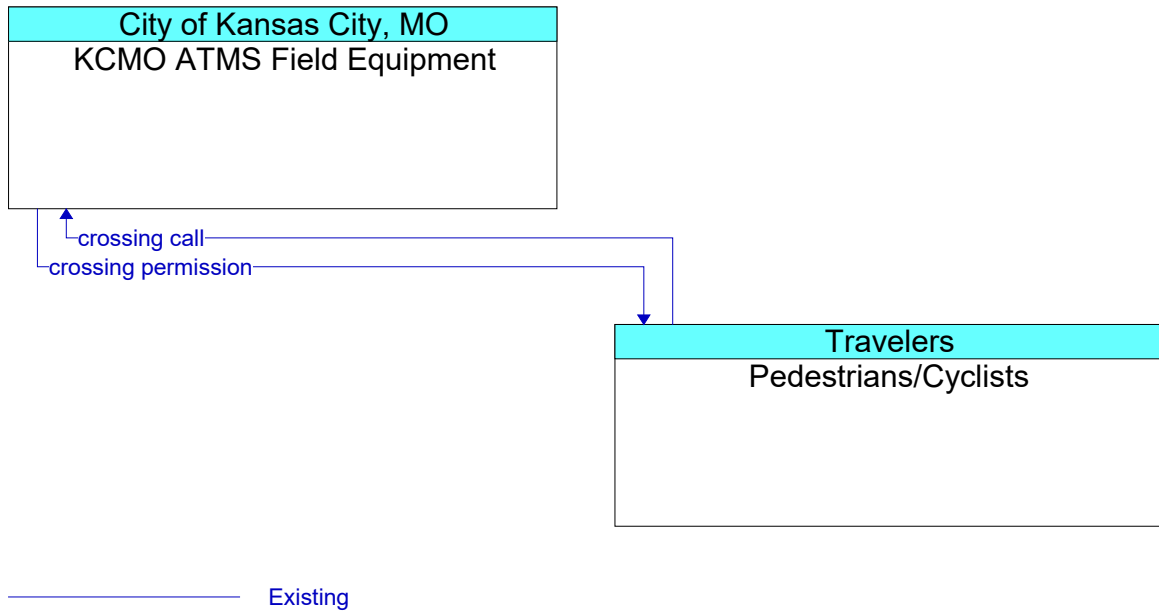
**Figure 704: KCMO ATMS Field Equipment - Missouri State Highway Patrol Vehicles Interface**



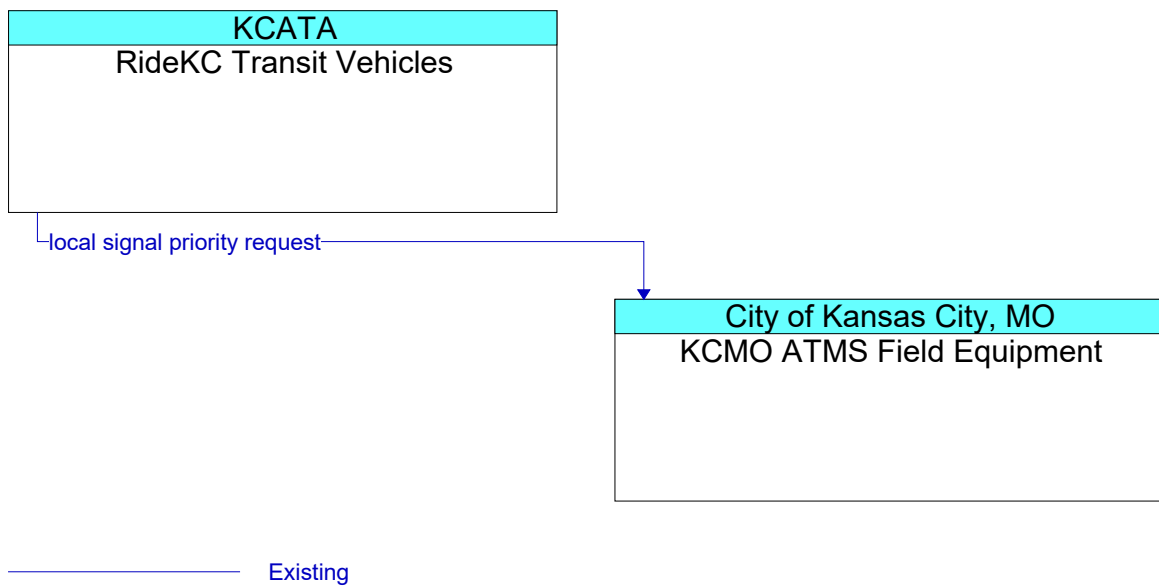
**Figure 705: KCMO ATMS Field Equipment - MoDOT Operations Interface**



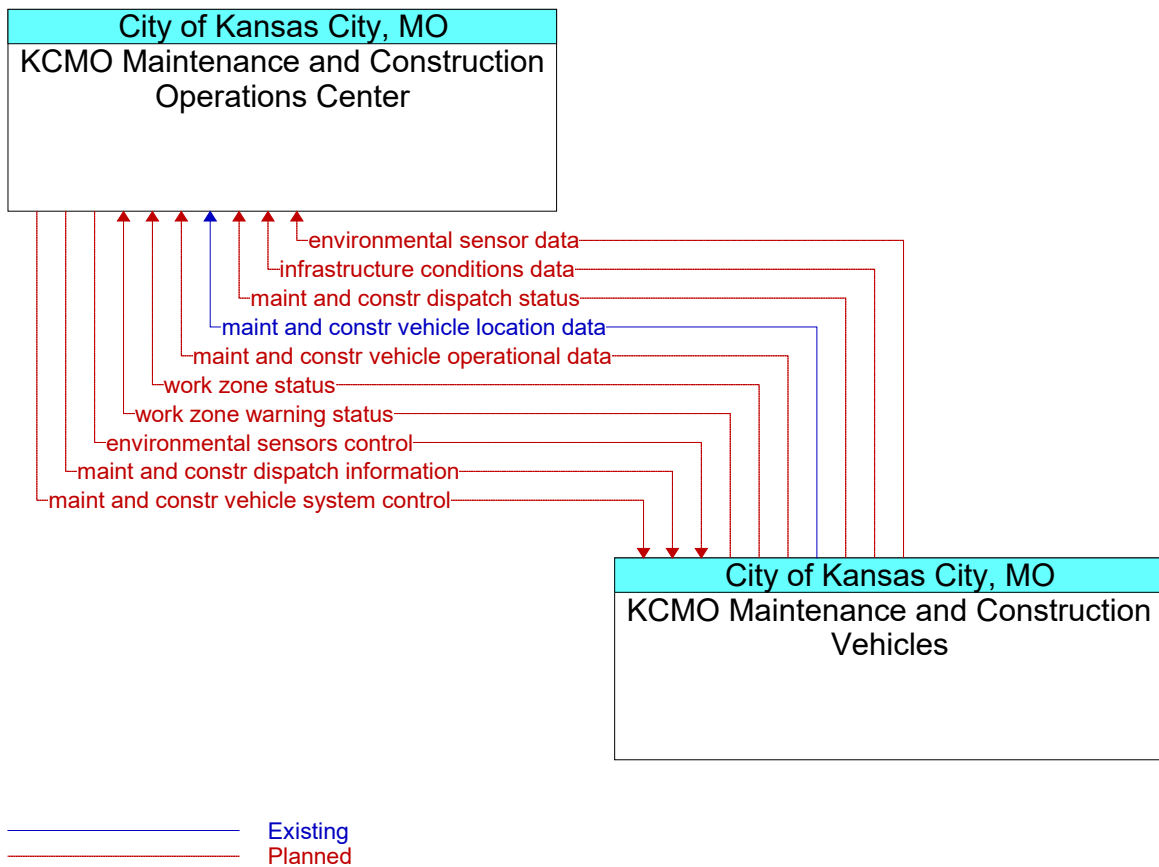
**Figure 706: KCMO ATMS Field Equipment - Operation Green Light Interface**



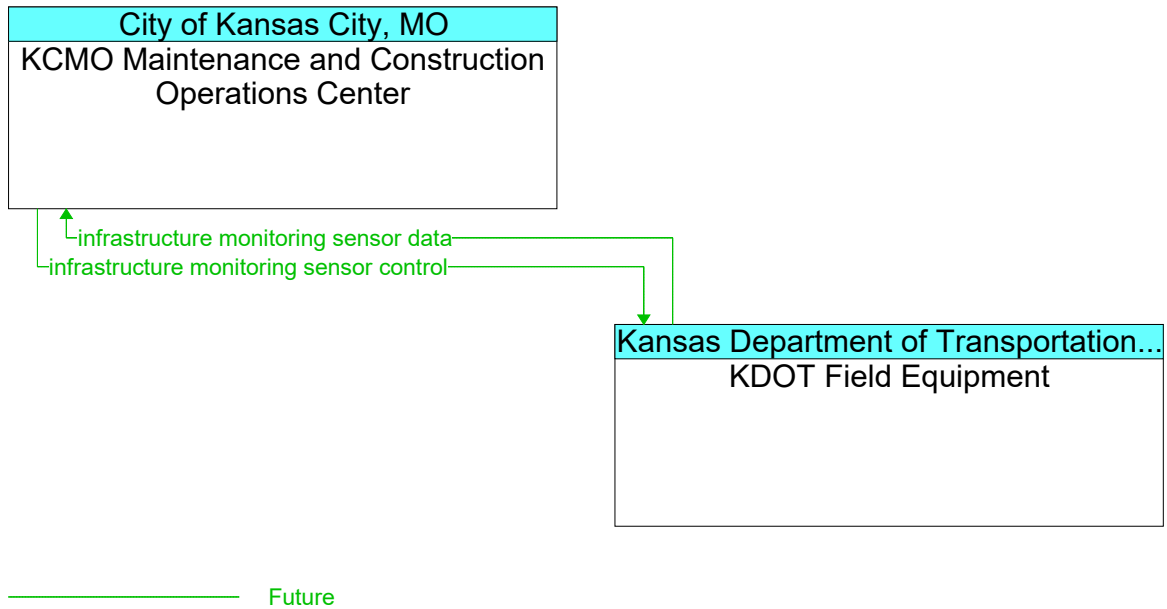
**Figure 707: KCMO ATMS Field Equipment - Pedestrians/Cyclists Interface**



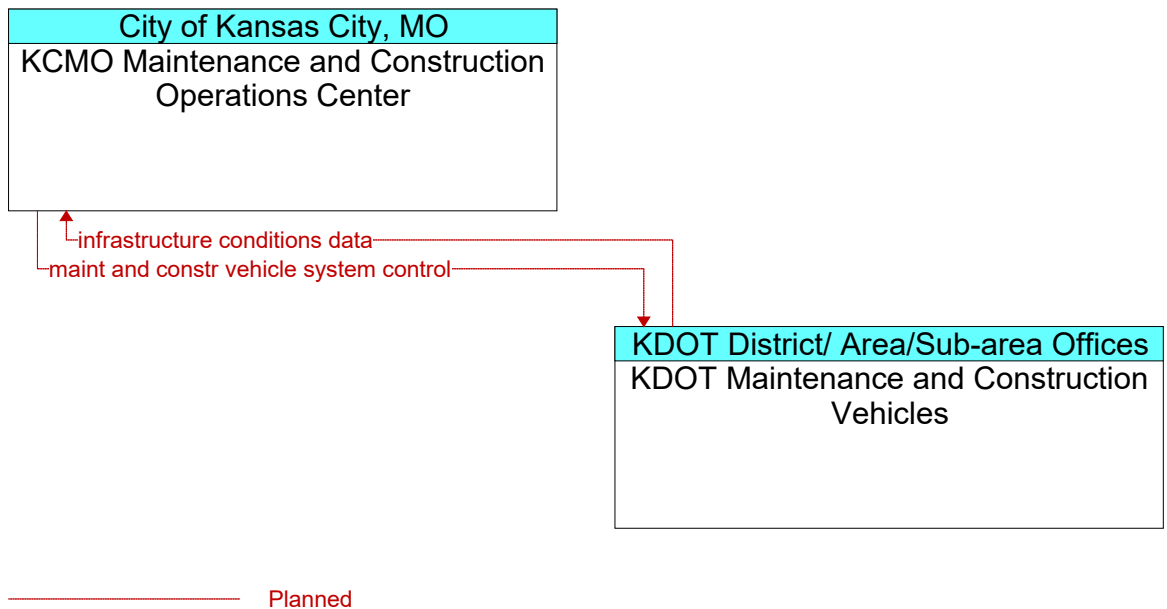
**Figure 708: KCMO ATMS Field Equipment - RideKC Transit Vehicles Interface**



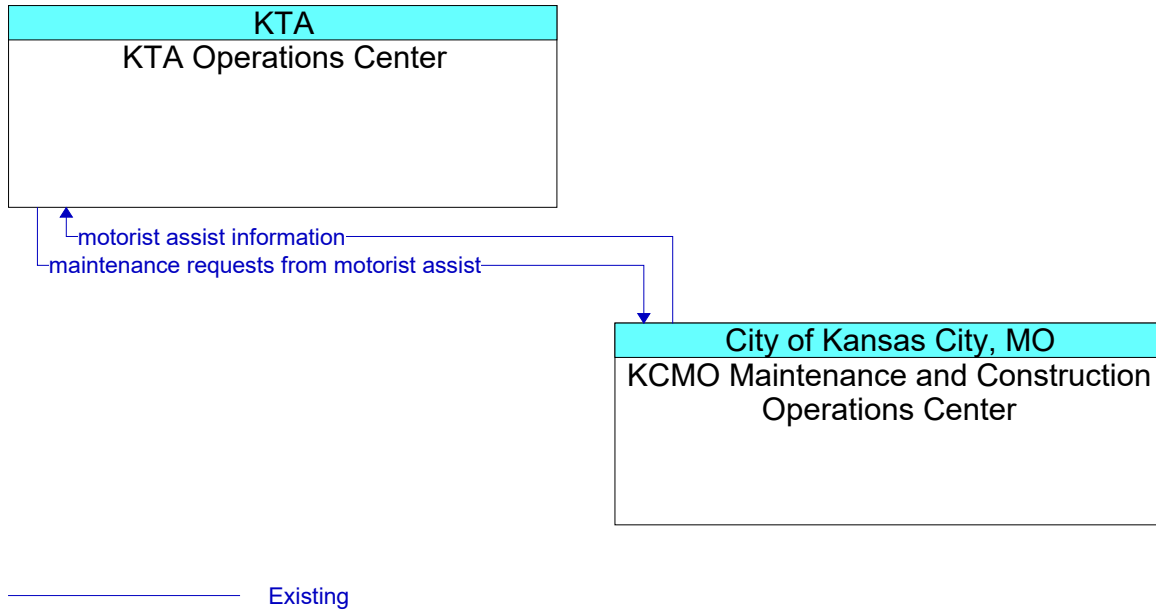
**Figure 709: KCMO Maintenance and Construction Operations Center - KCMO Maintenance and Construction Vehicles Interface**



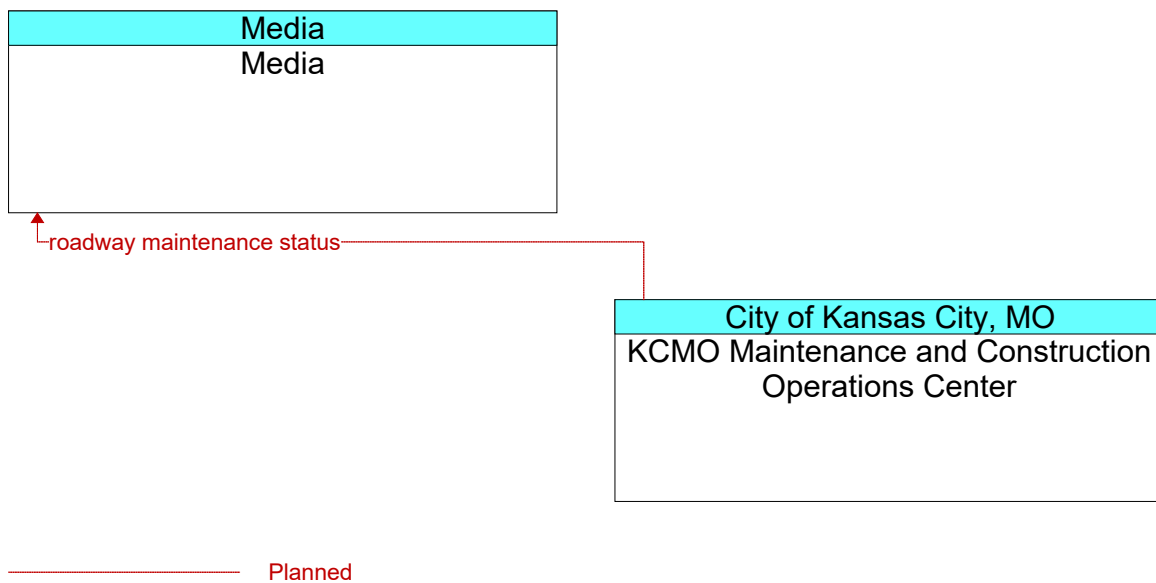
**Figure 710: KCMO Maintenance and Construction Operations Center - KDOT Field Equipment Interface**



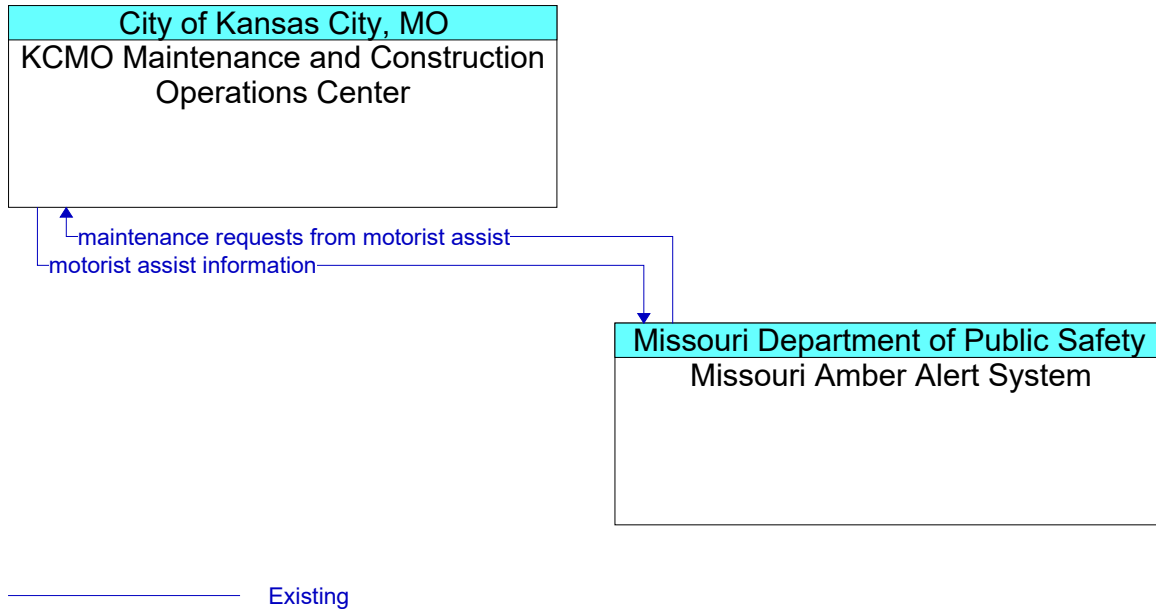
**Figure 711: KCMO Maintenance and Construction Operations Center - KDOT Maintenance and Construction Vehicles Interface**



**Figure 712: KCMO Maintenance and Construction Operations Center - KTA Operations Center Interface**

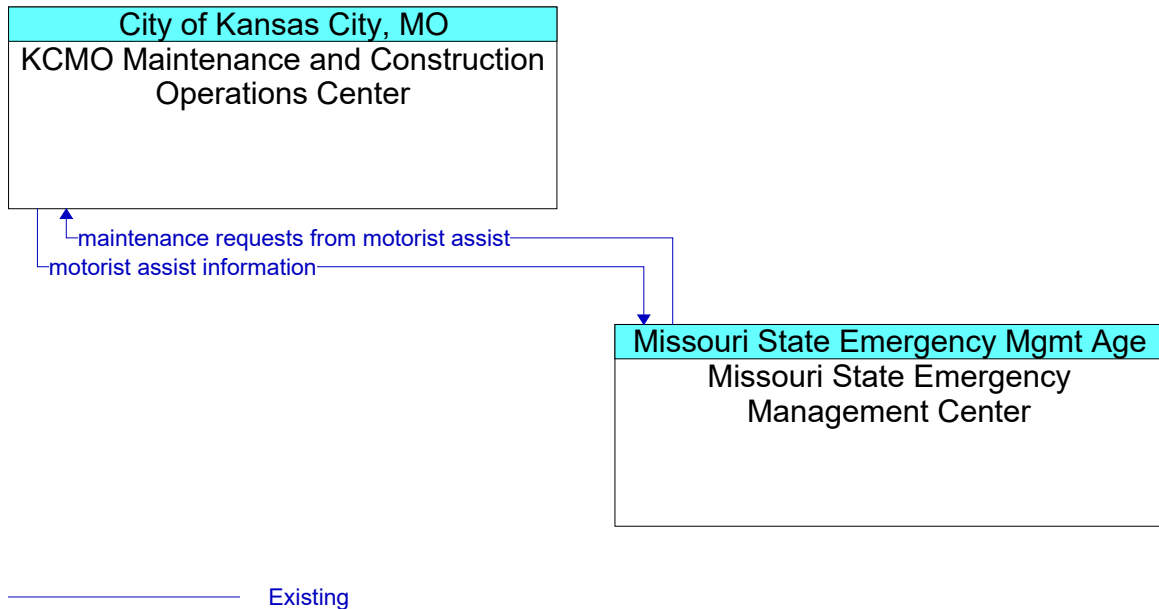


**Figure 713: KCMO Maintenance and Construction Operations Center - Media Interface**

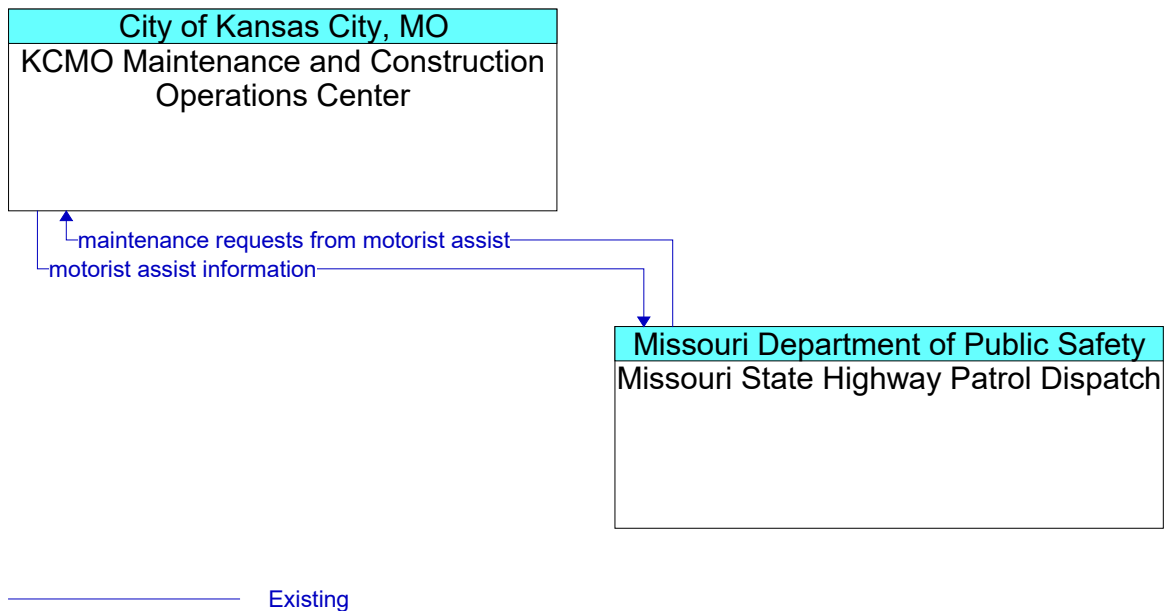


**Figure 714: KCMO Maintenance and Construction Operations Center - Missouri Amber Alert System Interface**

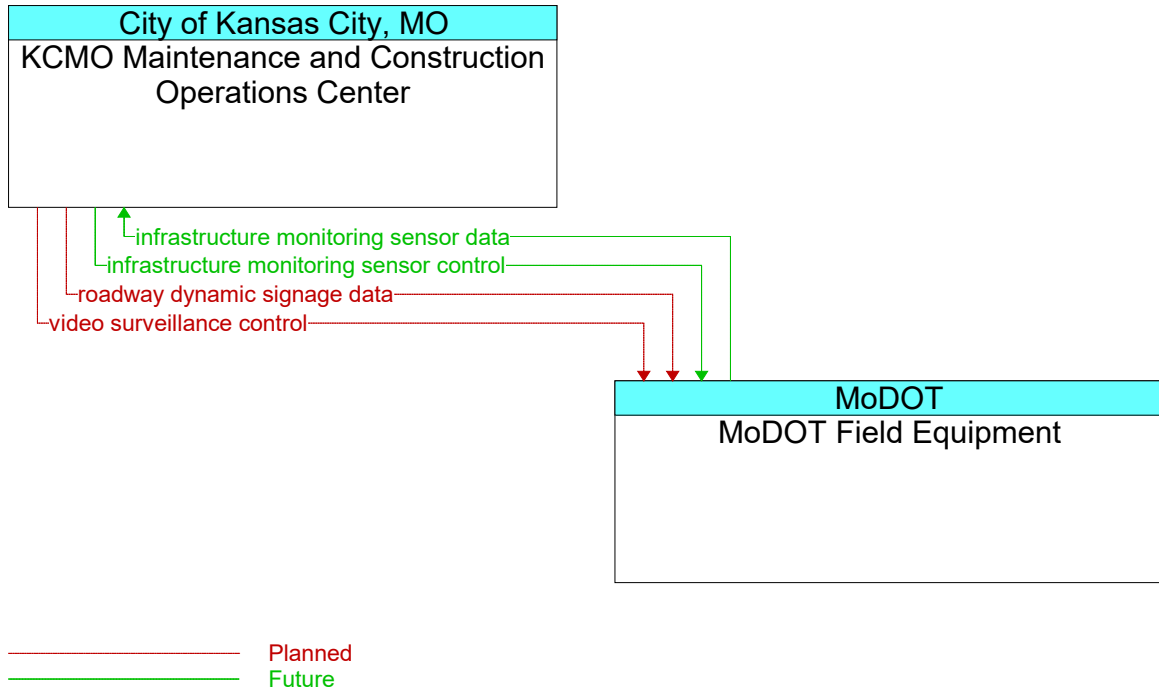




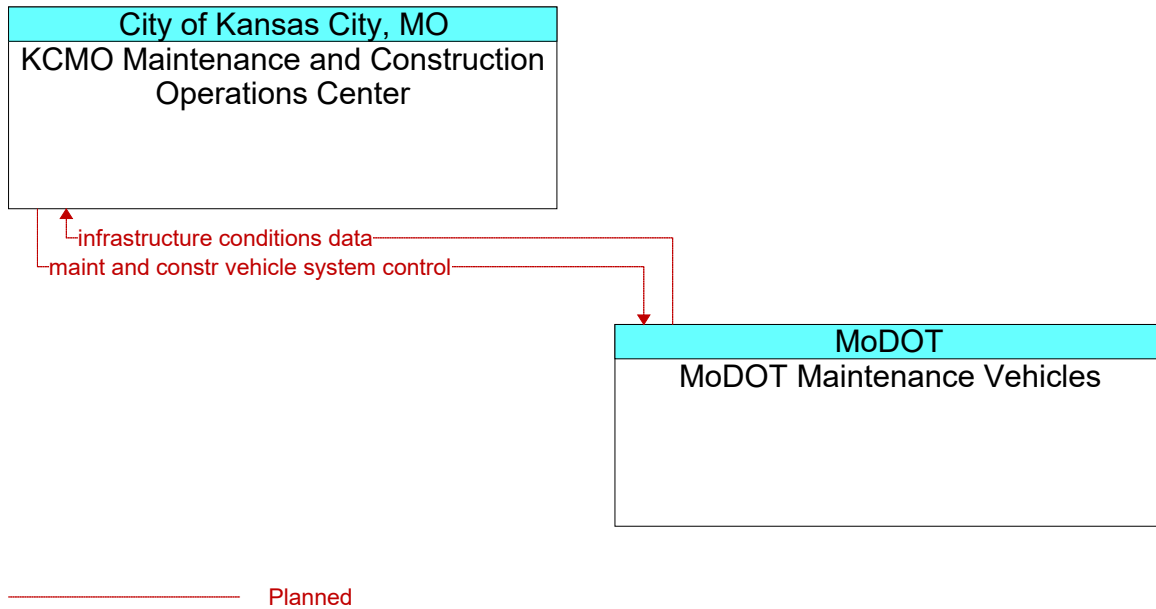
**Figure 715: KCMO Maintenance and Construction Operations Center - Missouri State Emergency Management Center Interface**



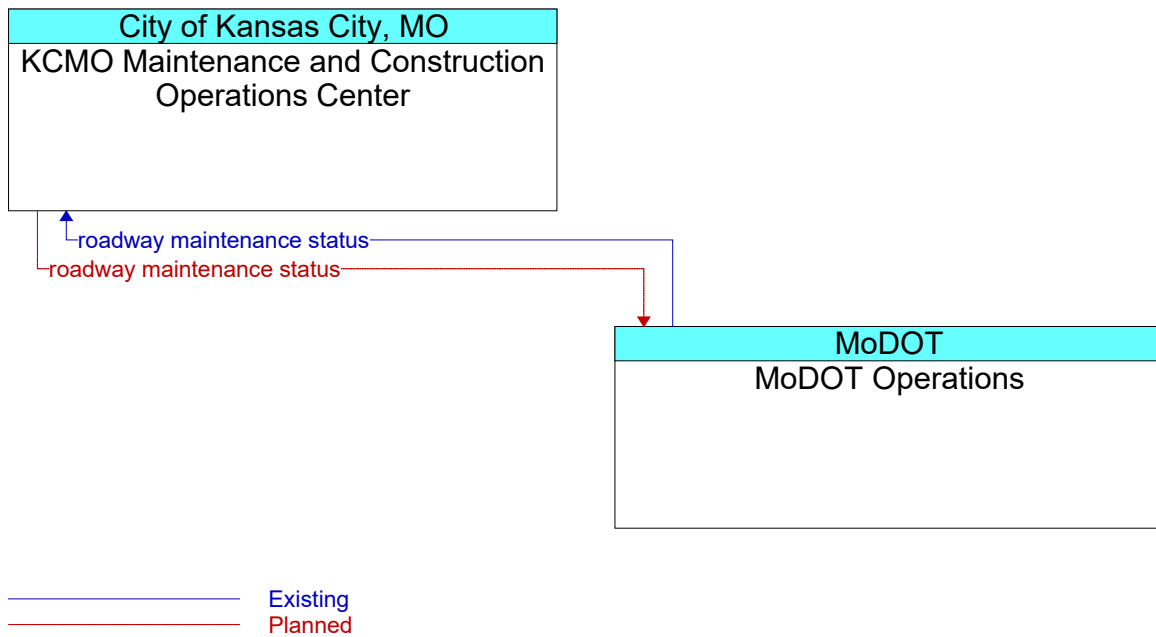
**Figure 716: KCMO Maintenance and Construction Operations Center - Missouri State Highway Patrol Dispatch Interface**



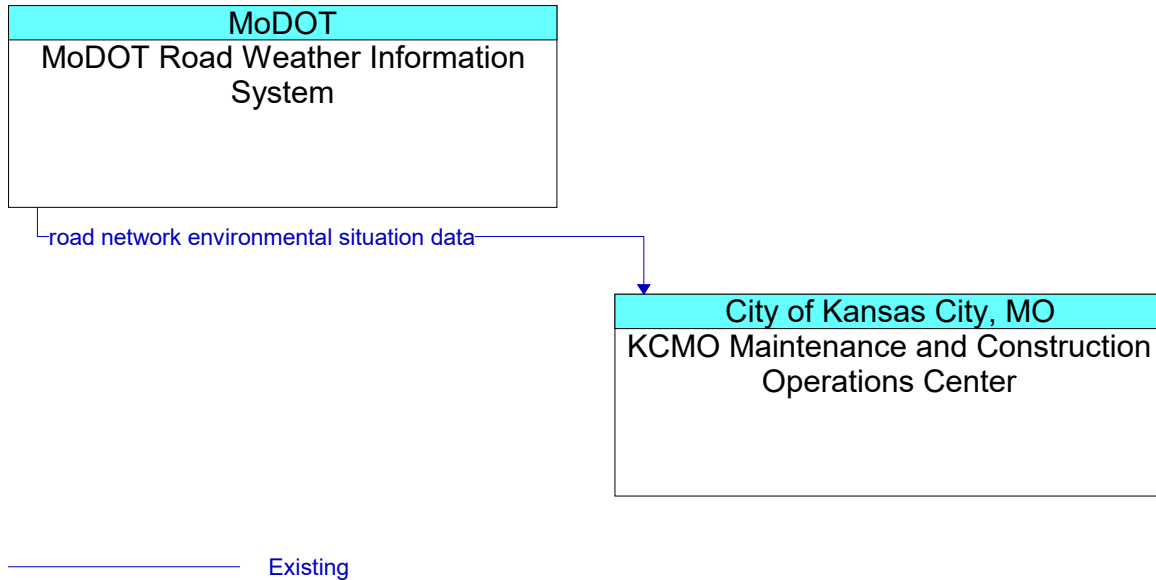
**Figure 717: KCMO Maintenance and Construction Operations Center - MoDOT Field Equipment Interface**



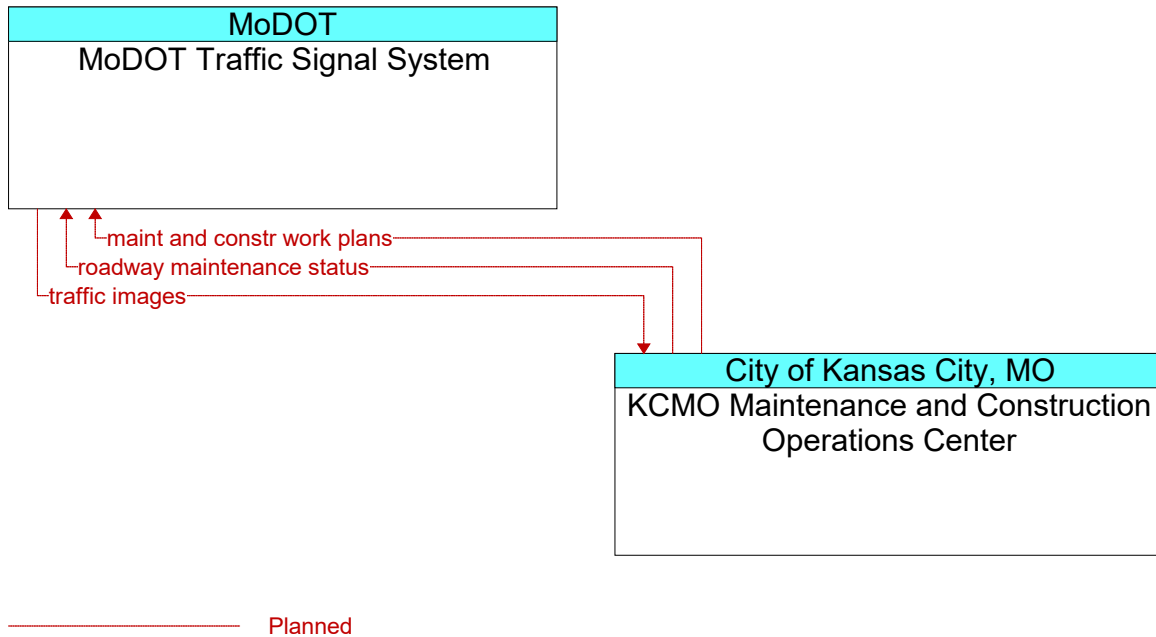
**Figure 718: KCMO Maintenance and Construction Operations Center - MoDOT Maintenance Vehicles Interface**



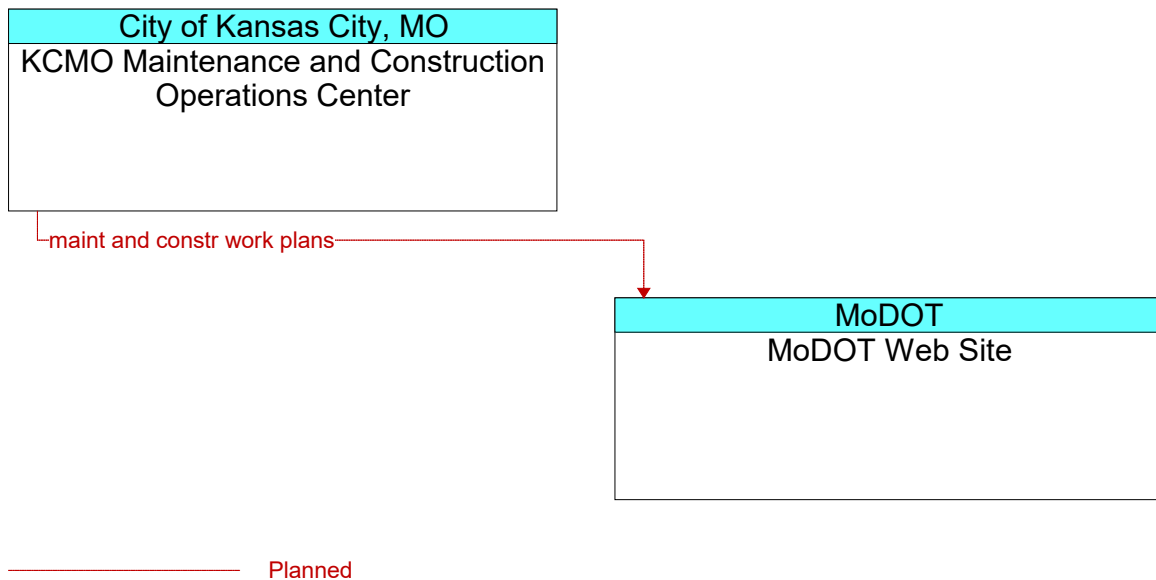
**Figure 719: KCMO Maintenance and Construction Operations Center - MoDOT Operations Interface**



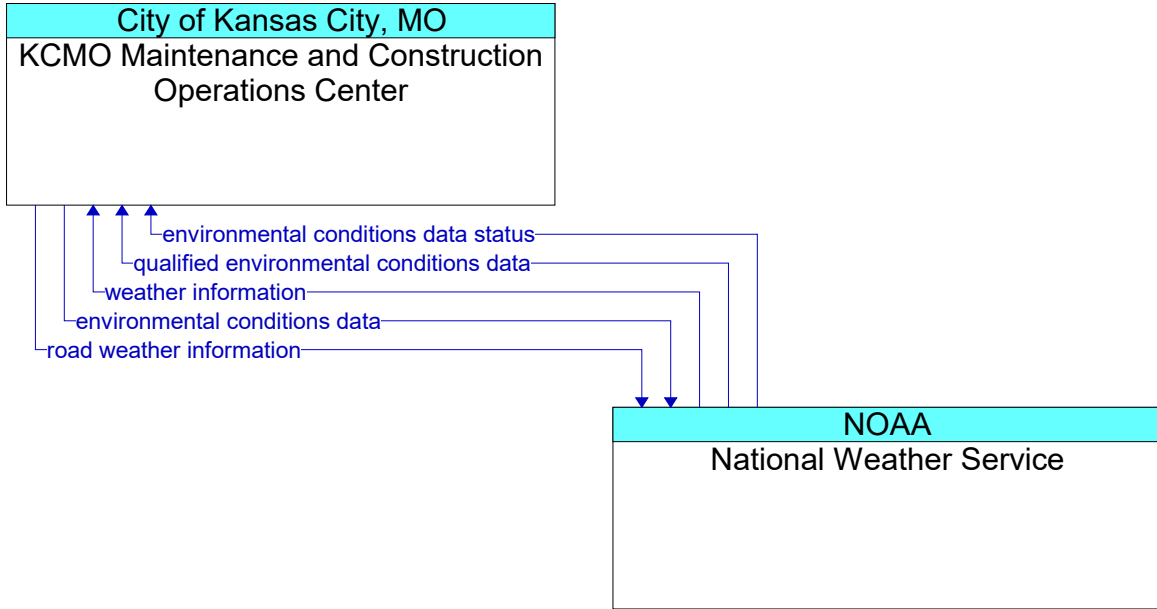
**Figure 720: KCMO Maintenance and Construction Operations Center - MoDOT Road Weather Information System Interface**



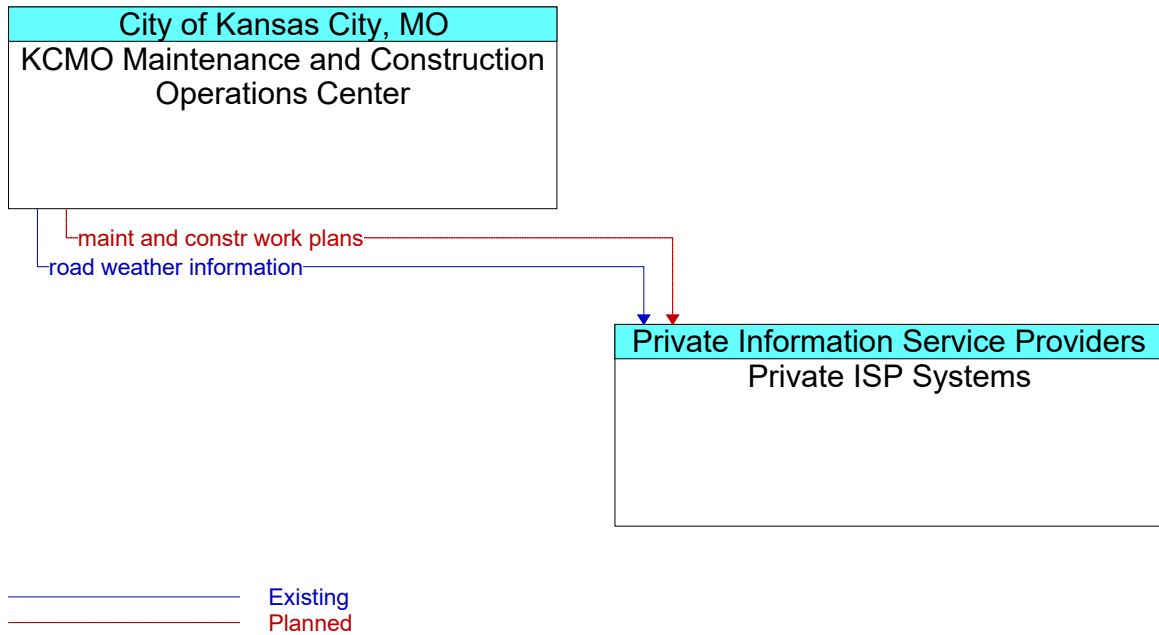
**Figure 721: KCMO Maintenance and Construction Operations Center - MoDOT Traffic Signal System Interface**



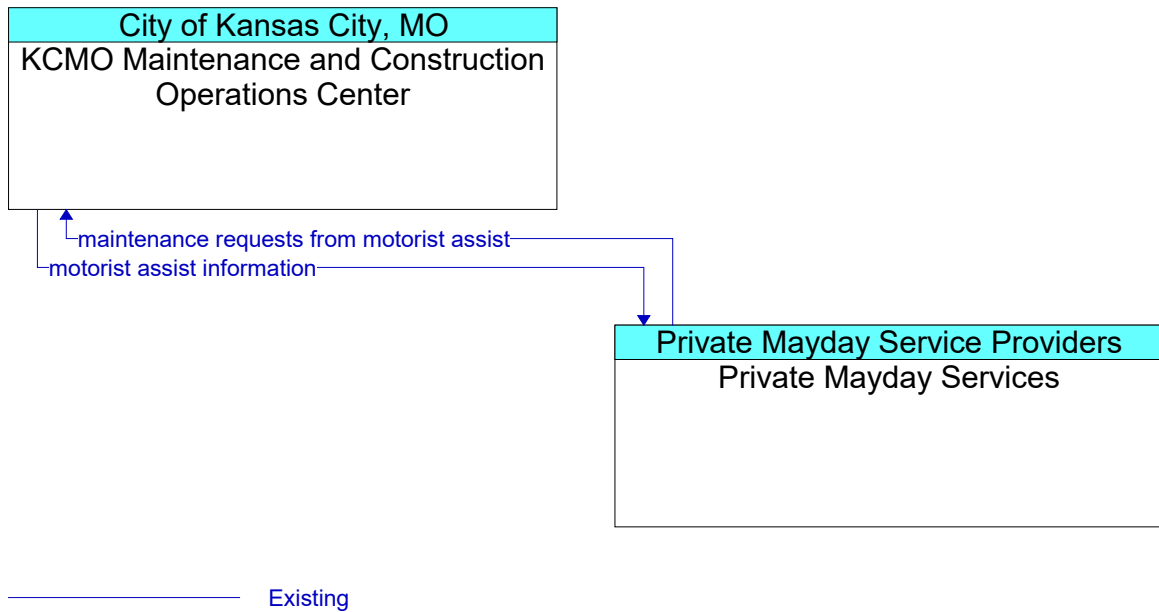
**Figure 722: KCMO Maintenance and Construction Operations Center - MoDOT Web Site Interface**



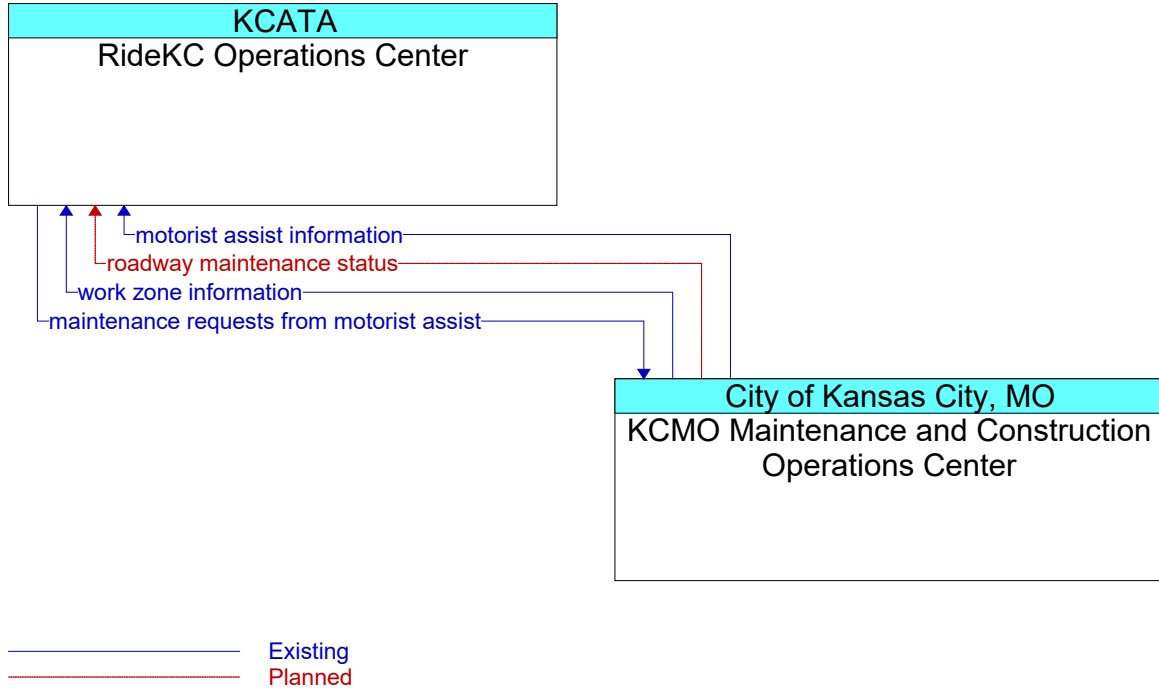
**Figure 723: KCMO Maintenance and Construction Operations Center - National Weather Service Interface**



**Figure 724: KCMO Maintenance and Construction Operations Center - Private ISP Systems Interface**

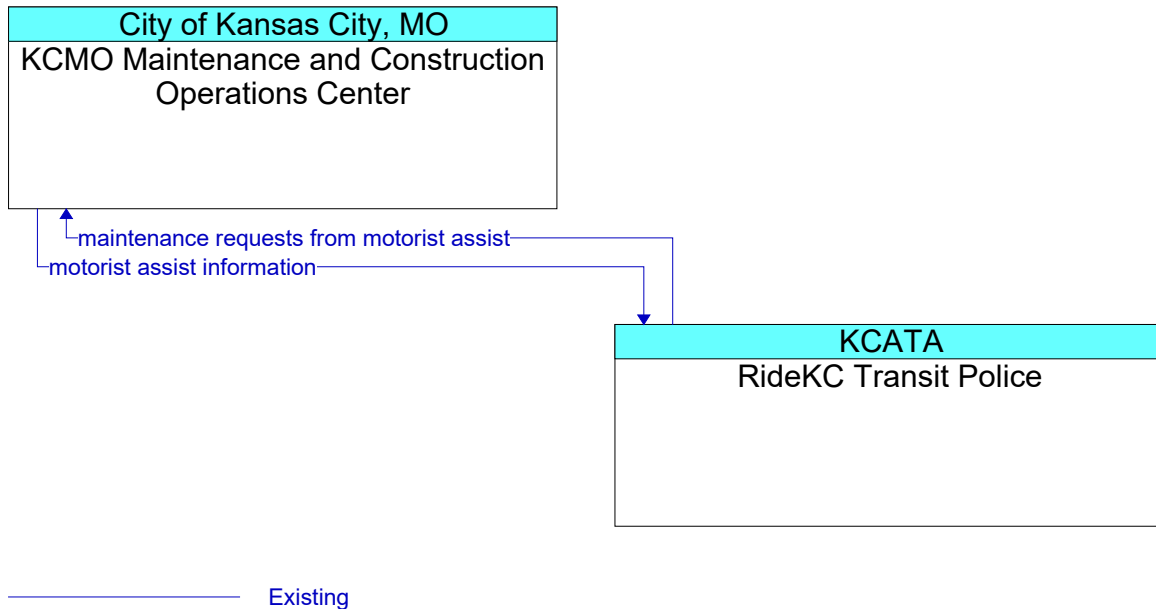


**Figure 725: KCMO Maintenance and Construction Operations Center - Private Mayday Services Interface**

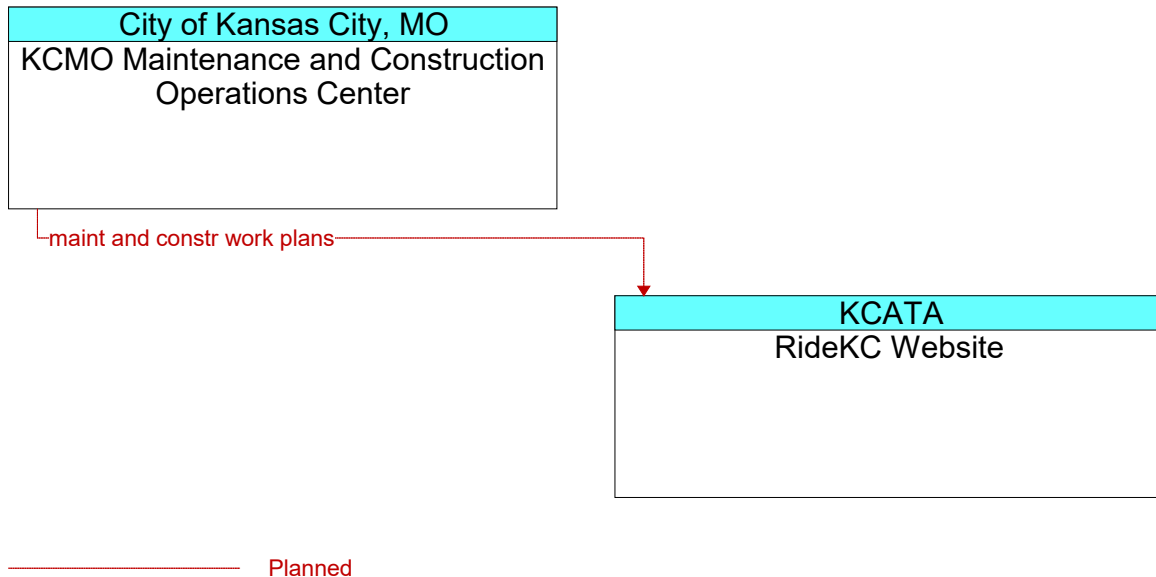


**Figure 726: KCMO Maintenance and Construction Operations Center - RideKC Operations Center Interface**

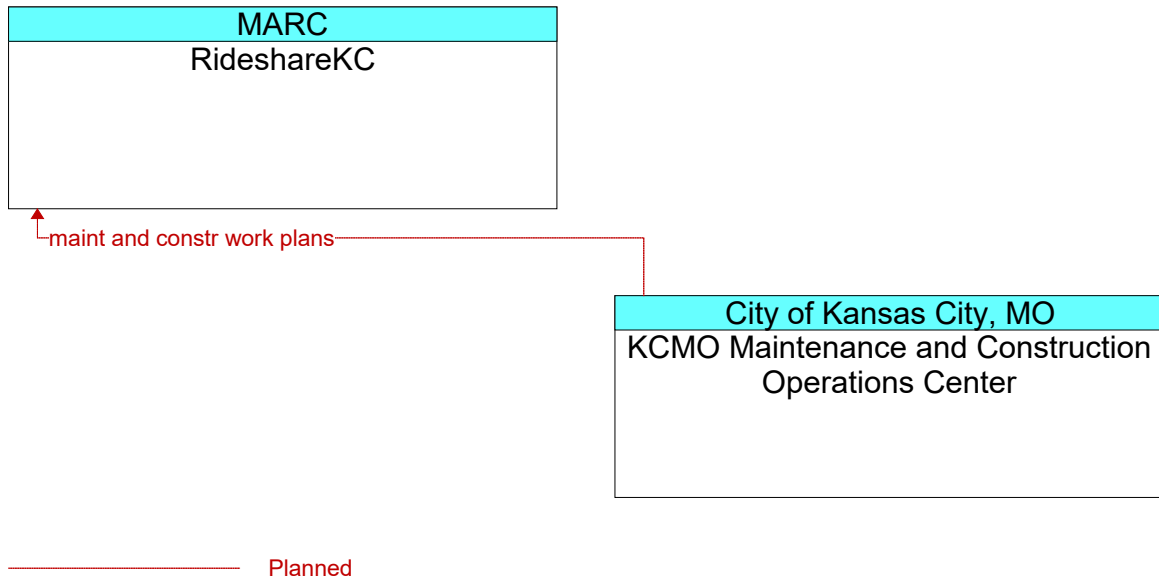




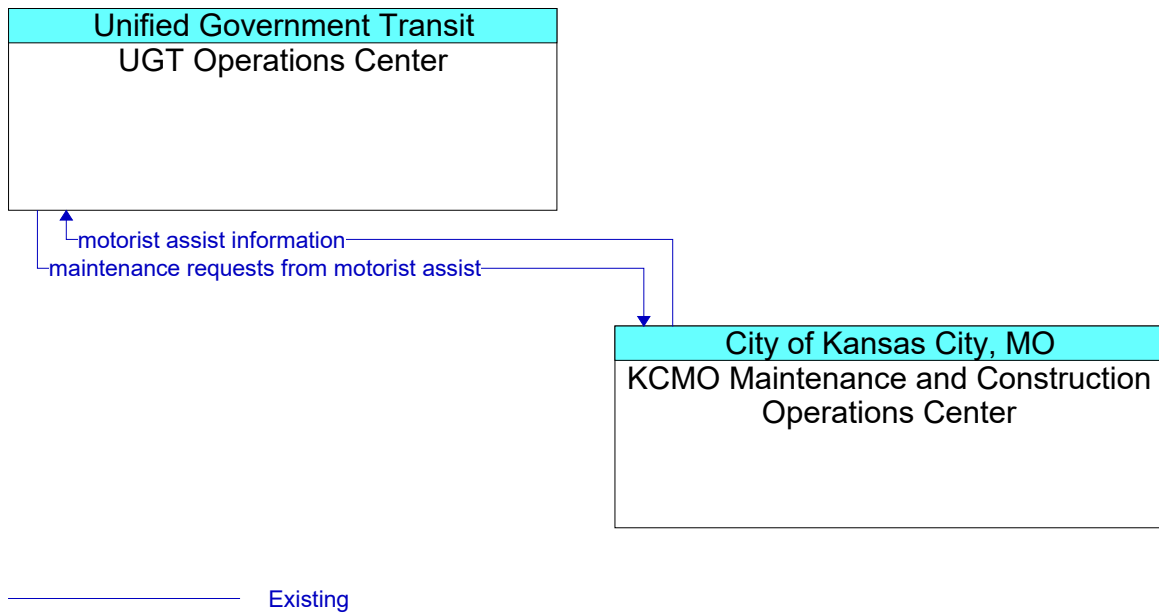
**Figure 727: KCMO Maintenance and Construction Operations Center - RideKC Transit Police Interface**



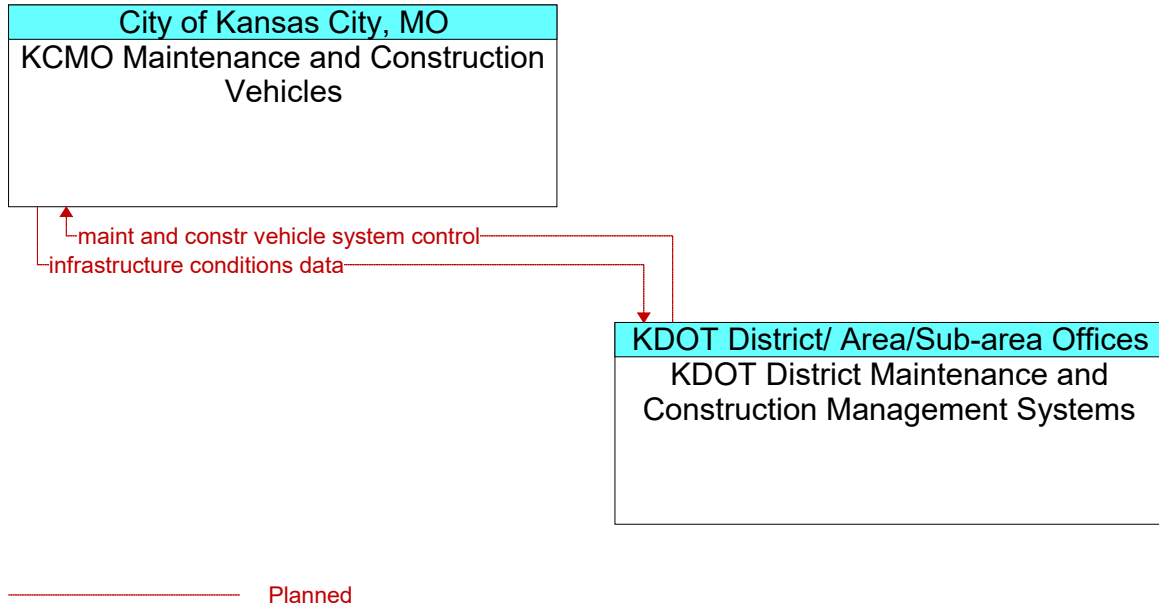
**Figure 728: KCMO Maintenance and Construction Operations Center - RideKC Website Interface**



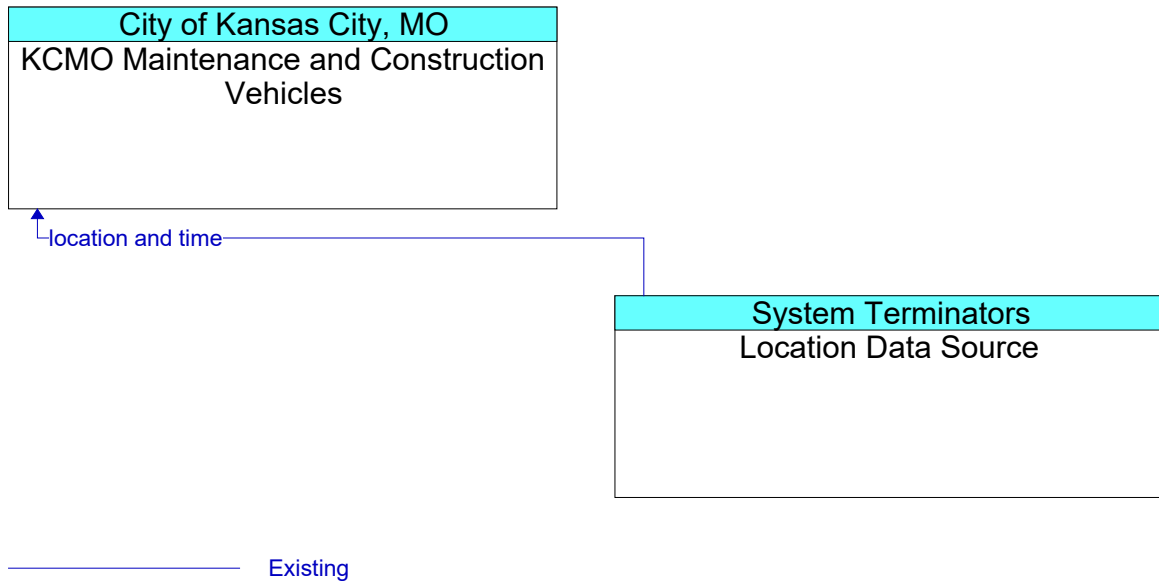
**Figure 729: KCMO Maintenance and Construction Operations Center - RideshareKC Interface**



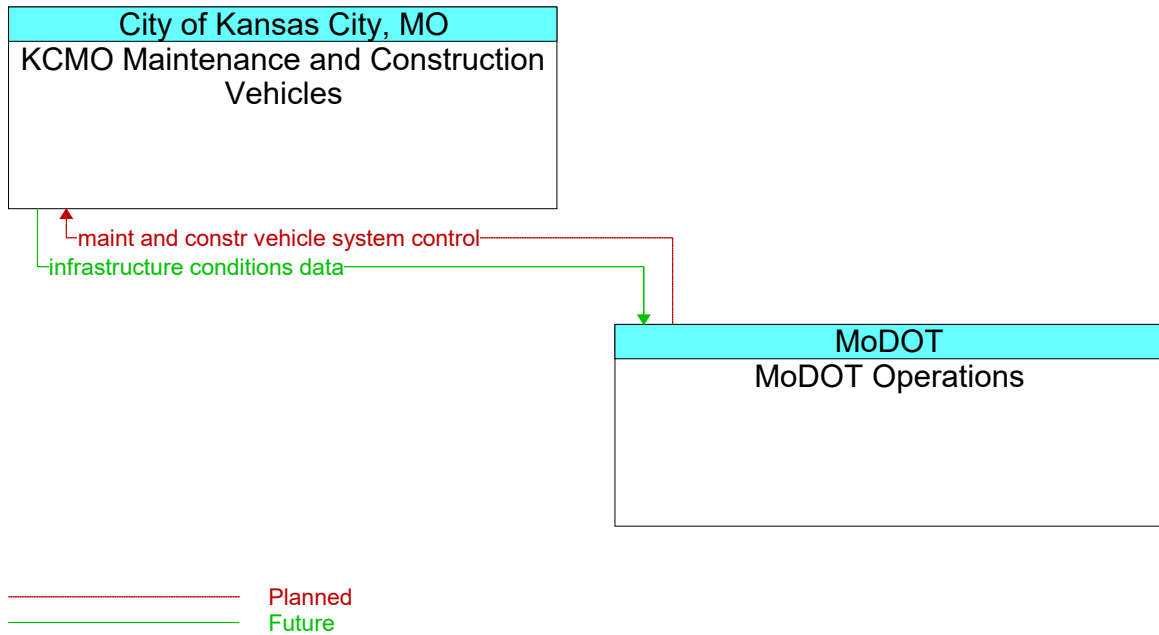
**Figure 730: KCMO Maintenance and Construction Operations Center - UGT Operations Center Interface**



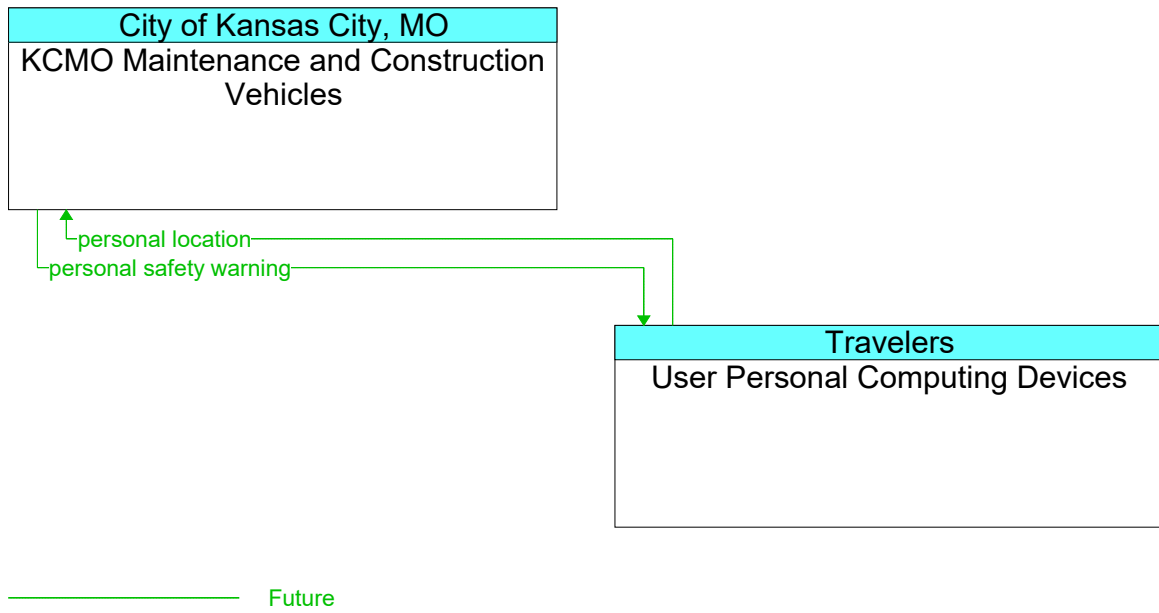
**Figure 731: KCMO Maintenance and Construction Vehicles - KDOT District Maintenance and Construction Management Systems Interface**



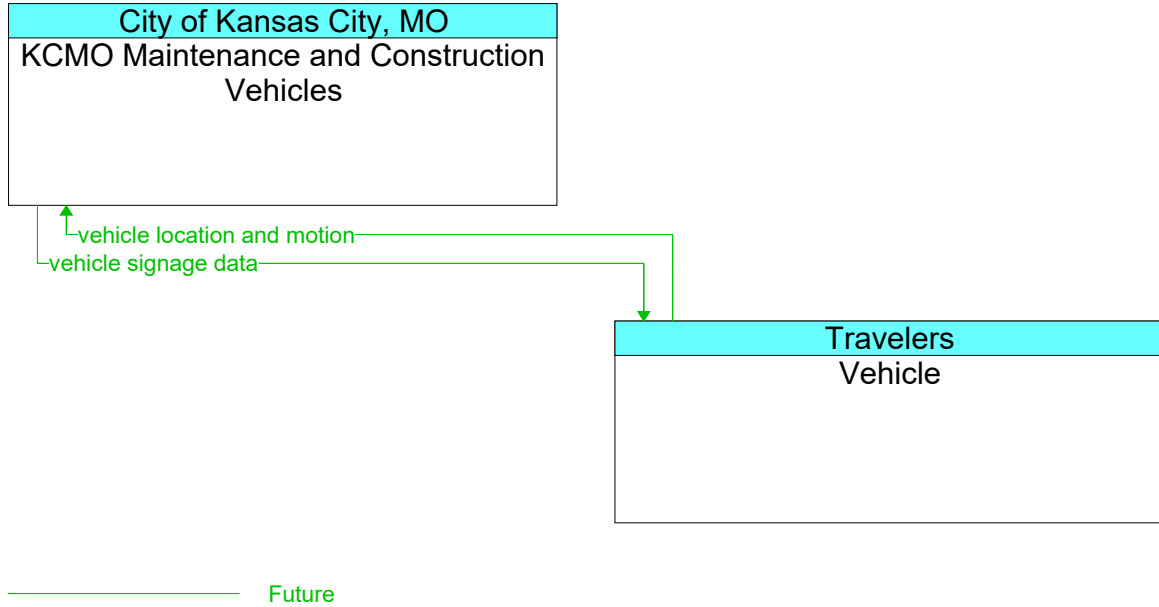
**Figure 732: KCMO Maintenance and Construction Vehicles - Location Data Source Interface**



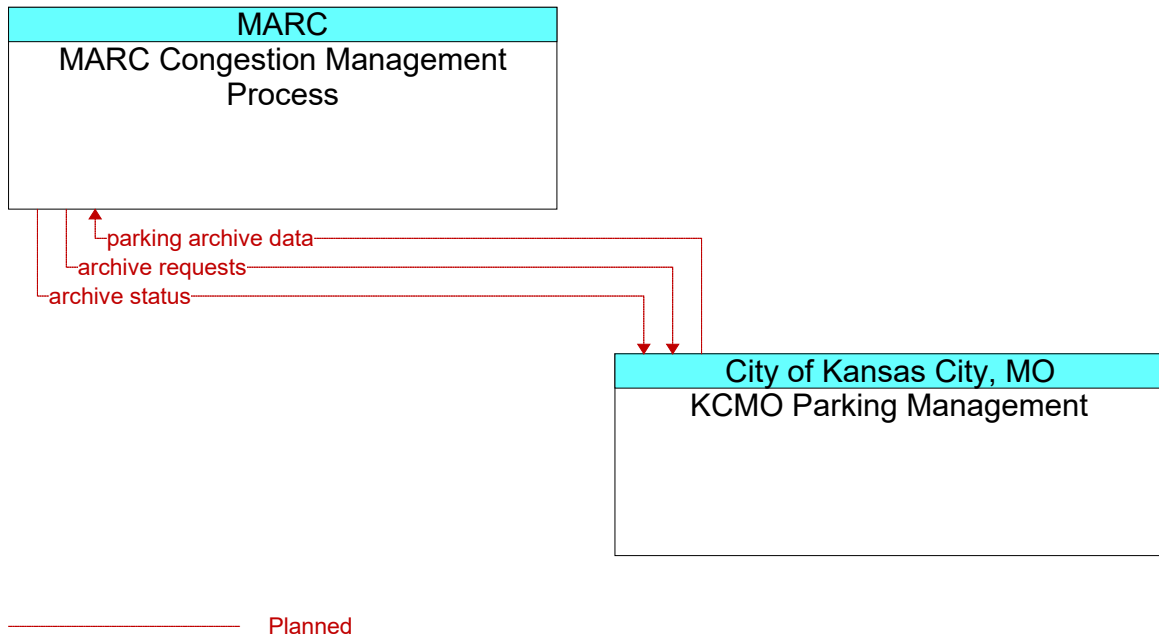
**Figure 733: KCMO Maintenance and Construction Vehicles - MoDOT Operations Interface**



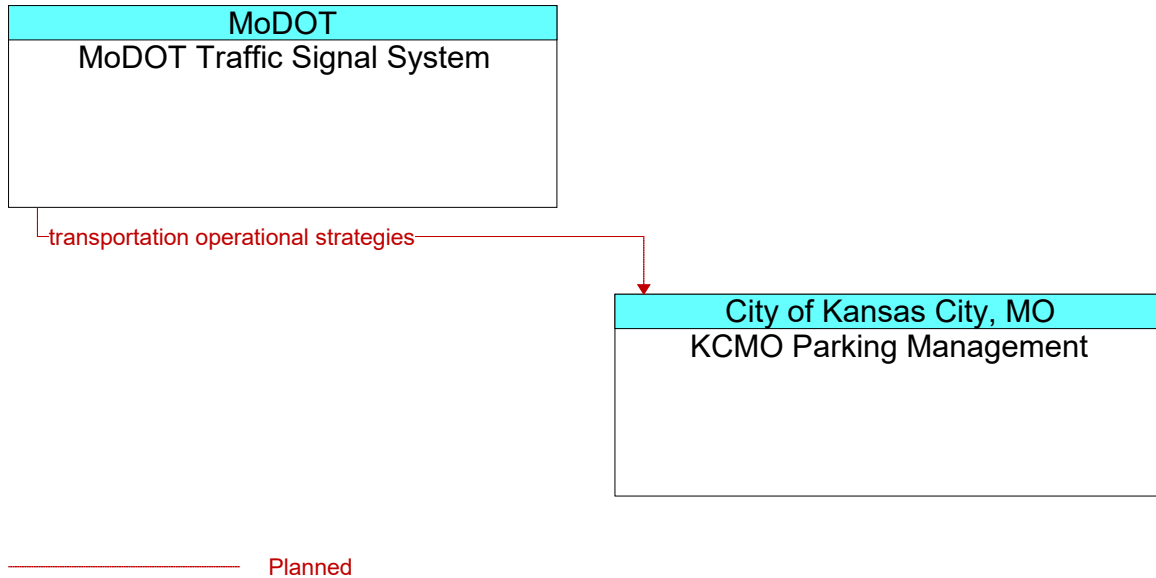
**Figure 734: KCMO Maintenance and Construction Vehicles - User Personal Computing Devices Interface**



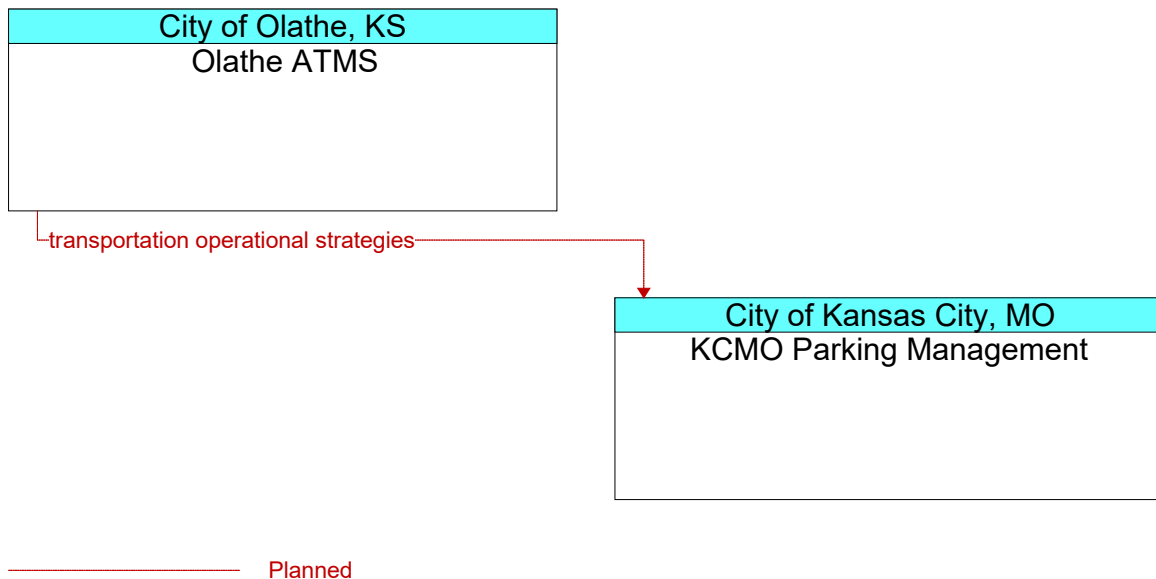
**Figure 735: KCMO Maintenance and Construction Vehicles - Vehicle Interface**



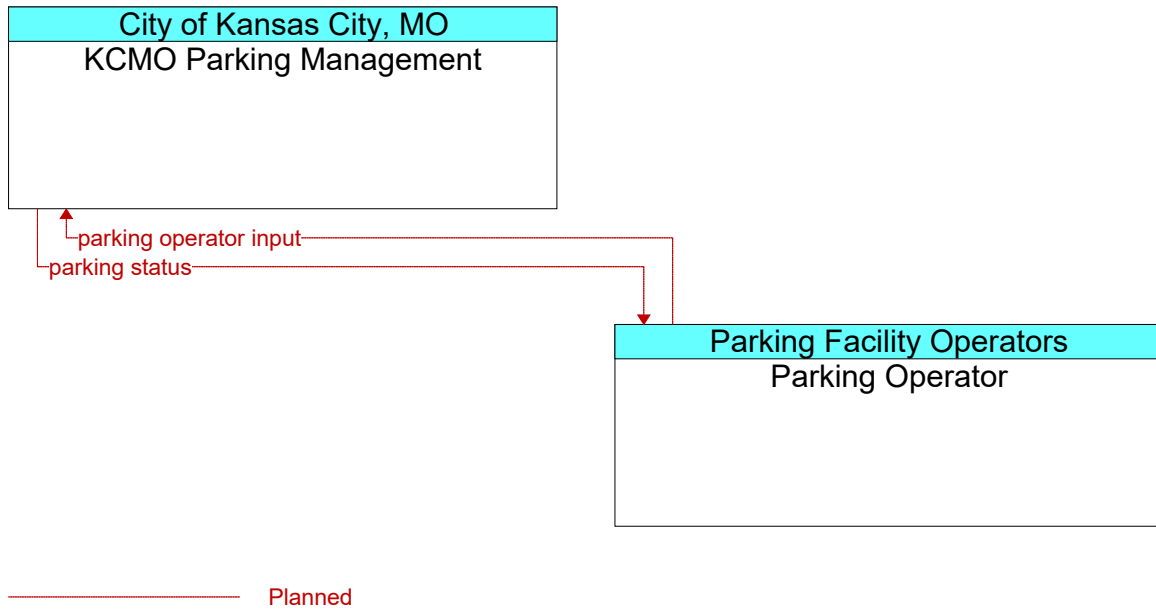
**Figure 736: KCMO Parking Management - MARC Congestion Management Process Interface**



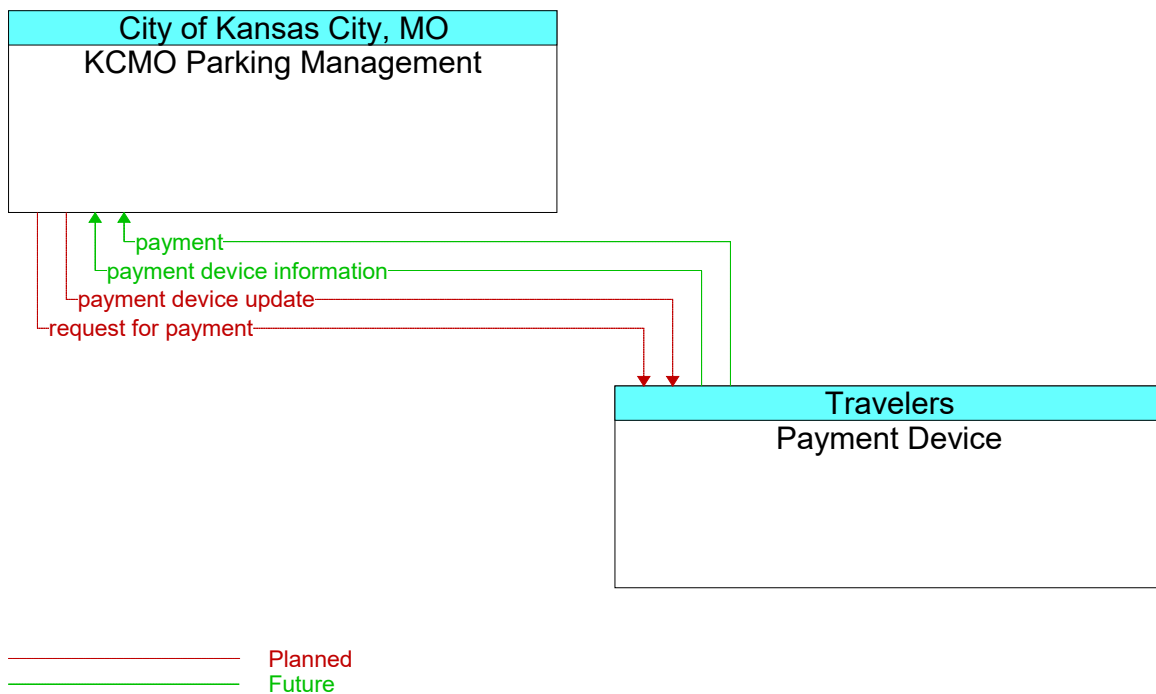
**Figure 737: KCMO Parking Management - MoDOT Traffic Signal System Interface**



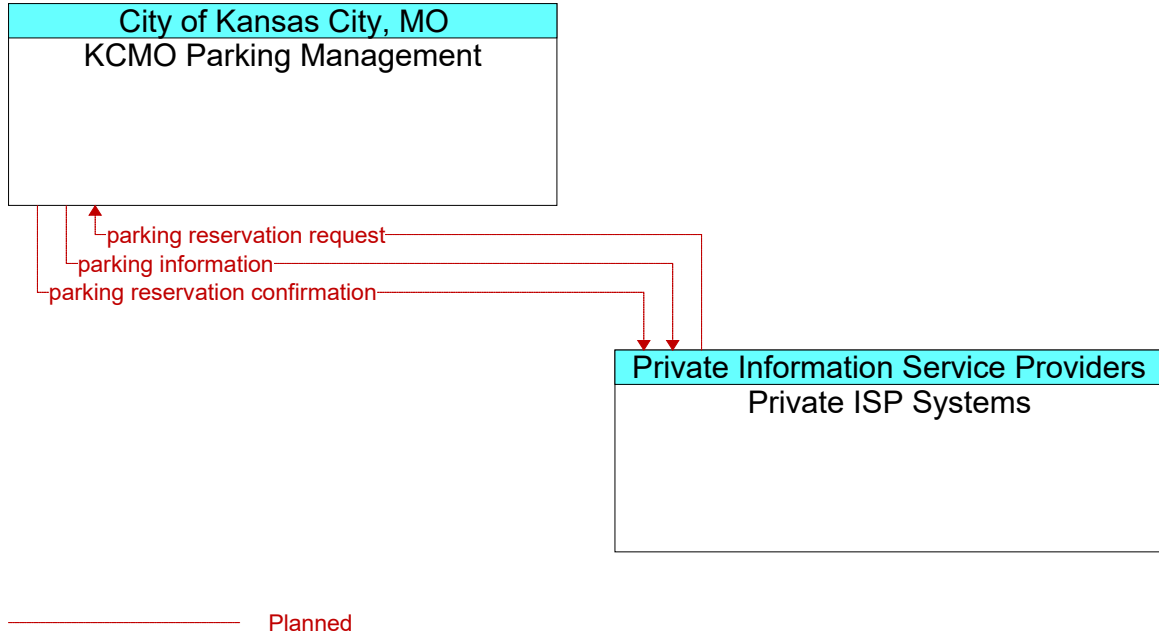
**Figure 738: KCMO Parking Management - Olathe ATMS Interface**



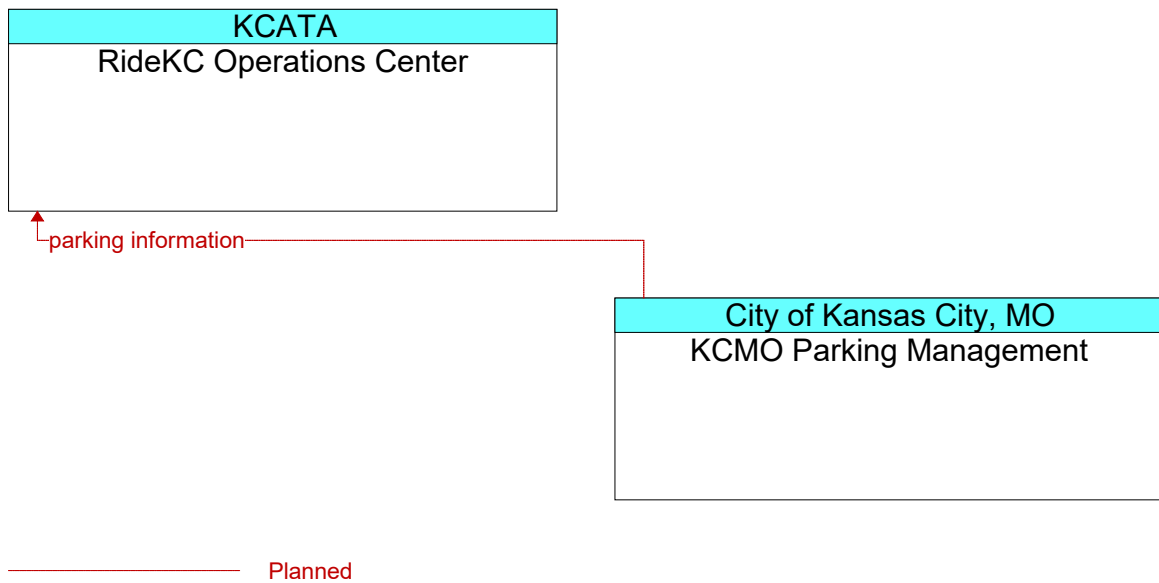
**Figure 739: KCMO Parking Management - Parking Operator Interface**



**Figure 740: KCMO Parking Management - Payment Device Interface**

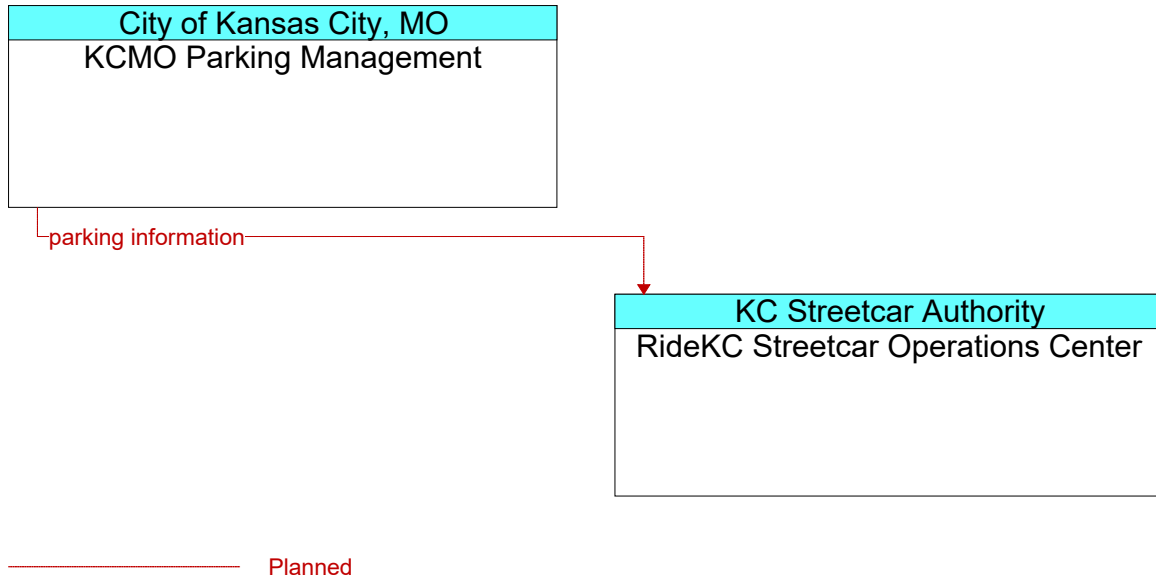


**Figure 741: KCMO Parking Management - Private ISP Systems Interface**

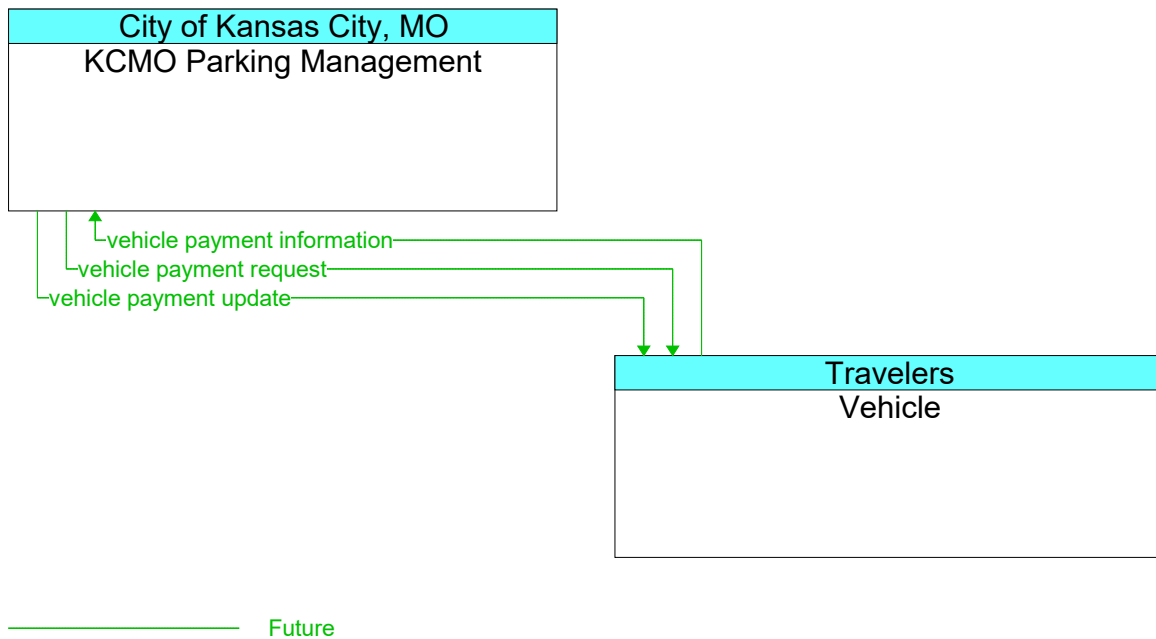


**Figure 742: KCMO Parking Management - RideKC Operations Center Interface**

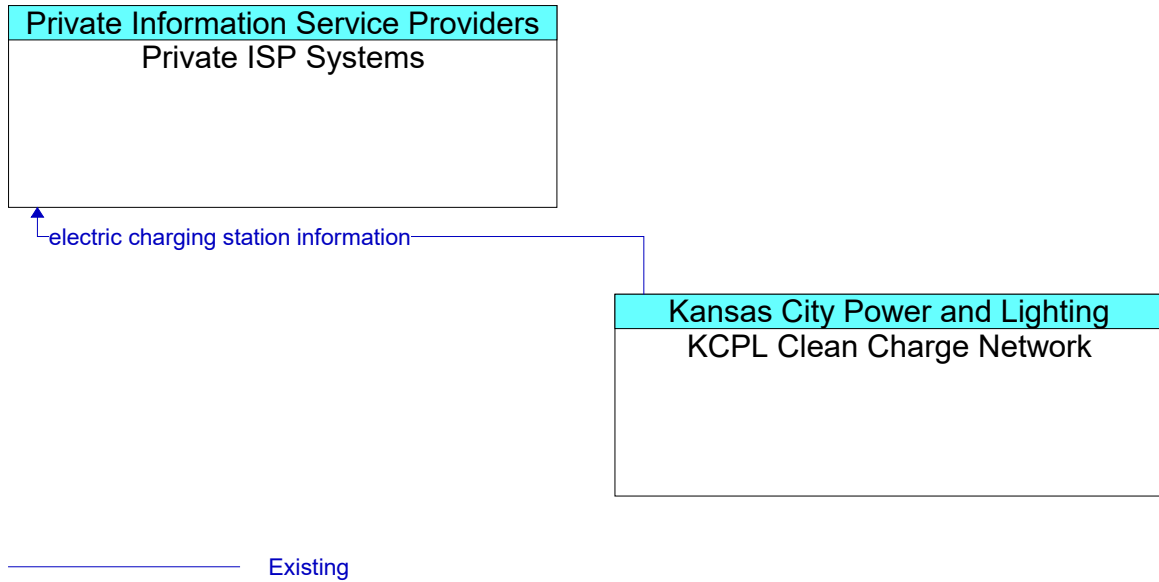




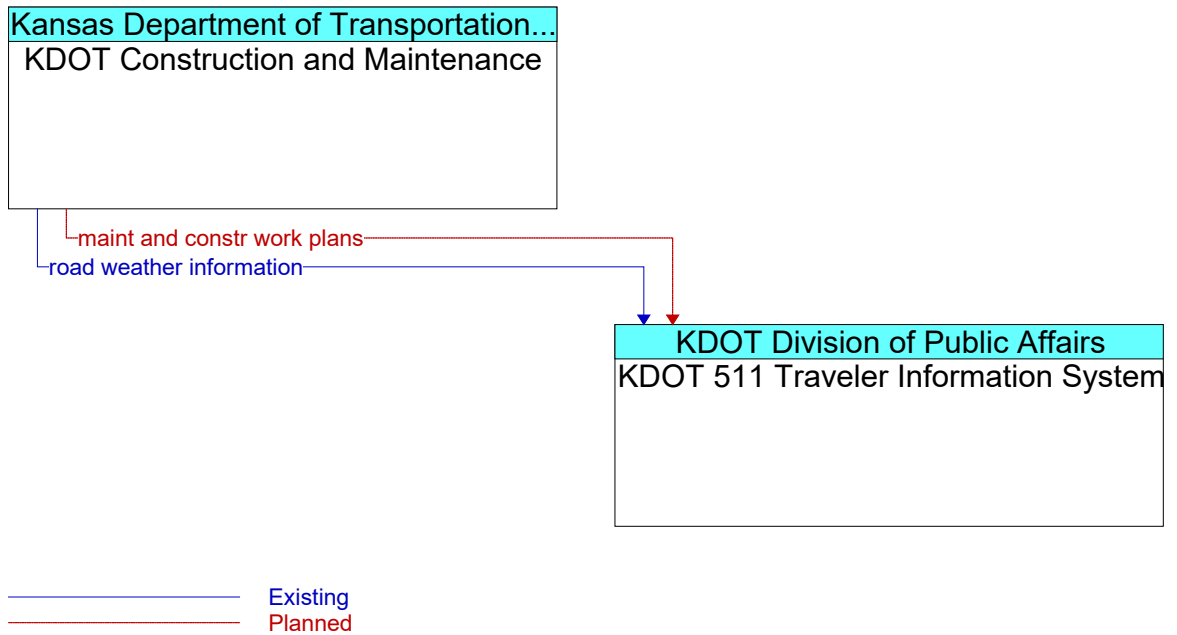
**Figure 743: KCMO Parking Management - RideKC Streetcar Operations Center Interface**



**Figure 744: KCMO Parking Management - Vehicle Interface**



**Figure 745: KCPL Clean Charge Network - Private ISP Systems Interface**



**Figure 746: KDOT 511 Traveler Information System - KDOT Construction and Maintenance Interface**

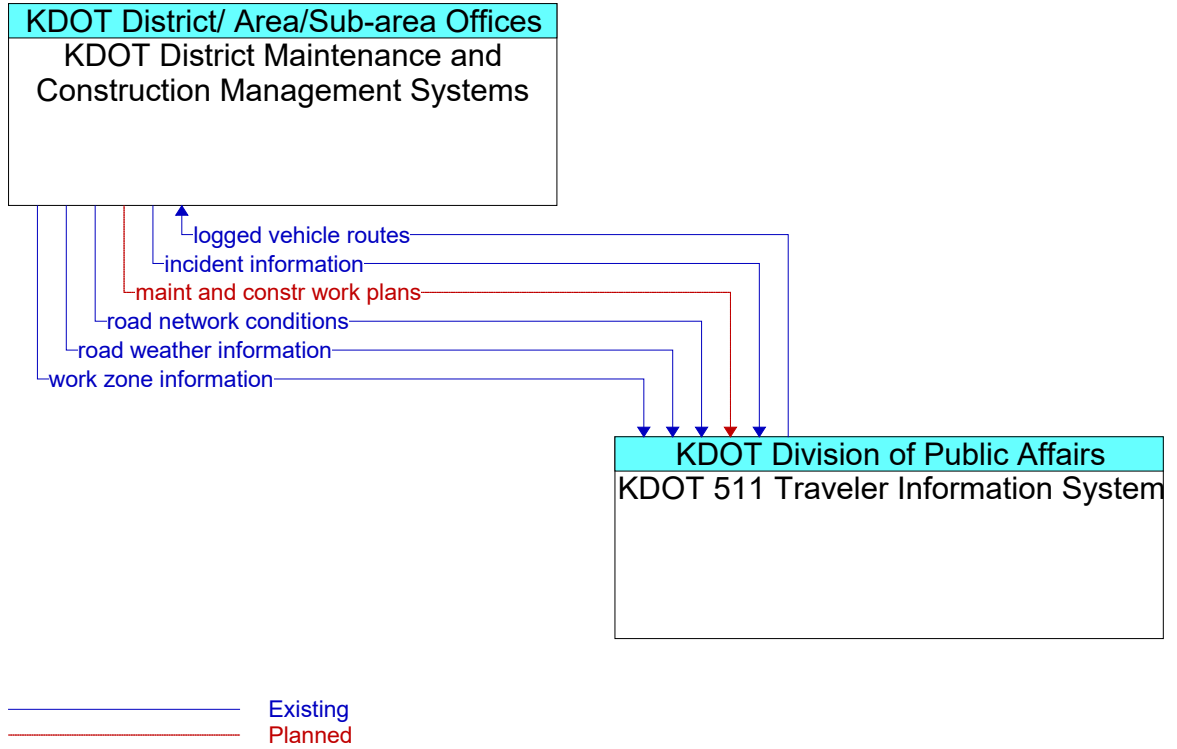
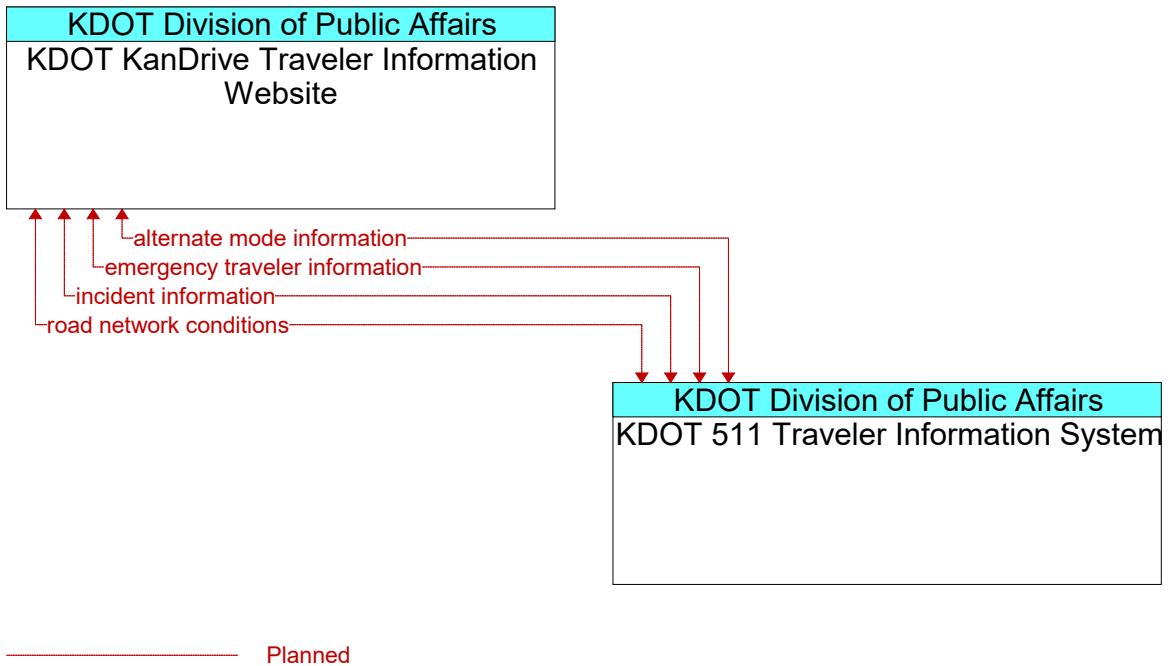
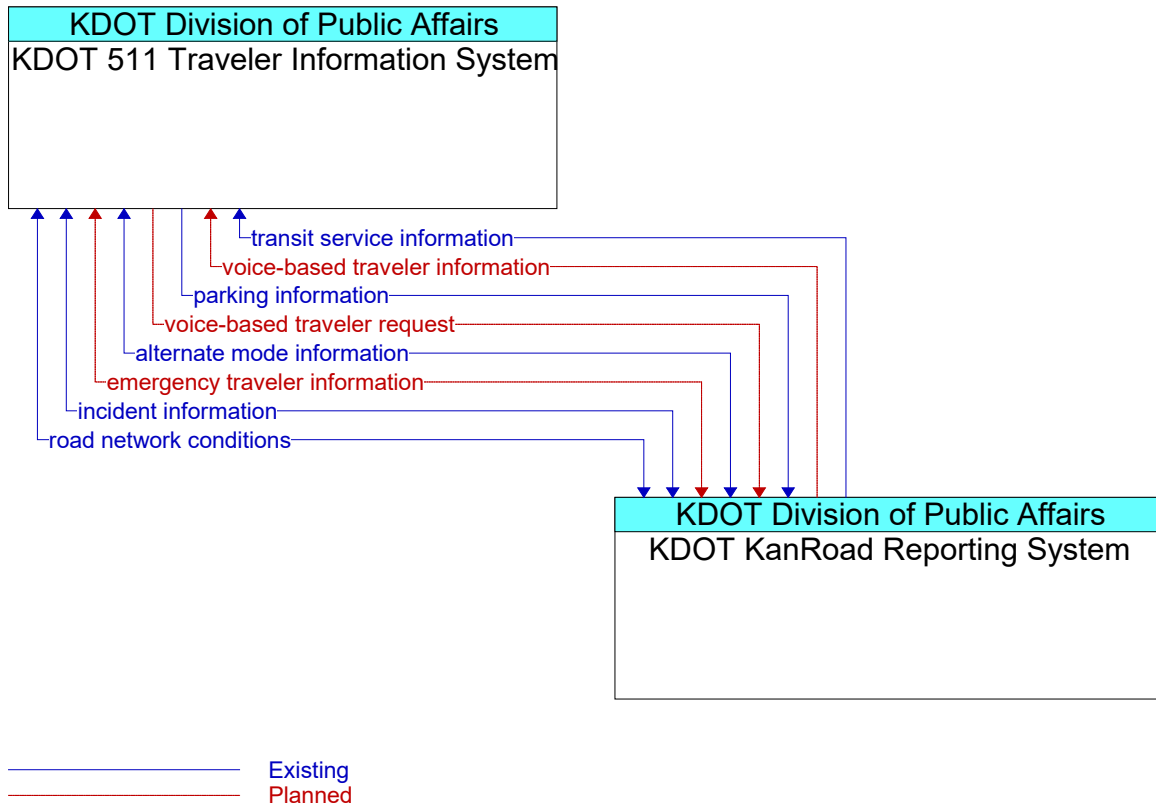


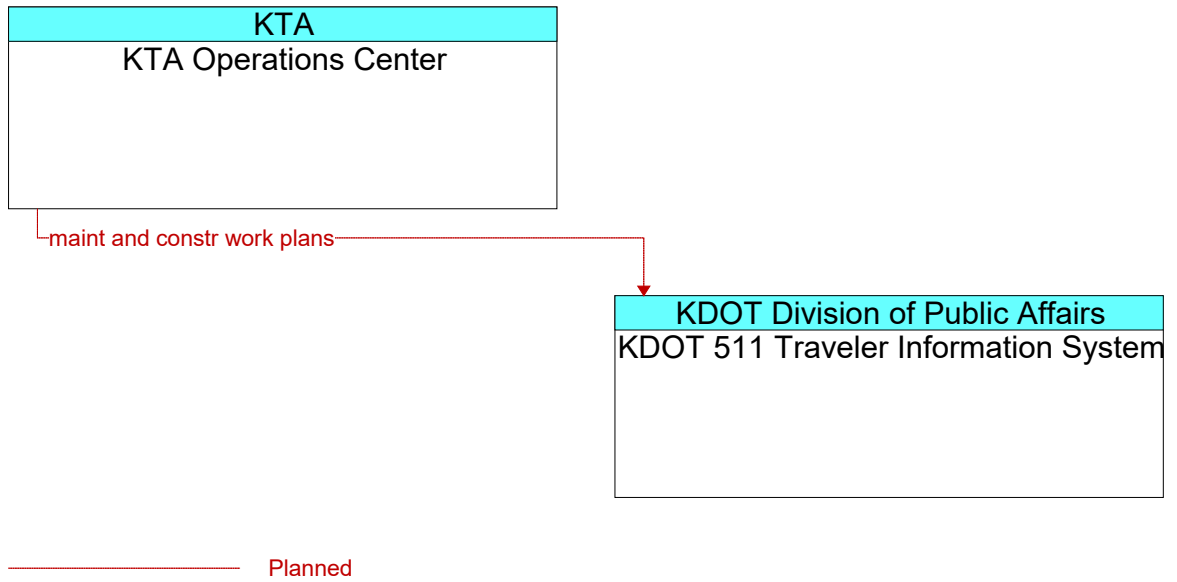
Figure 747: KDOT 511 Traveler Information System - KDOT District Maintenance and Construction Management Systems Interface



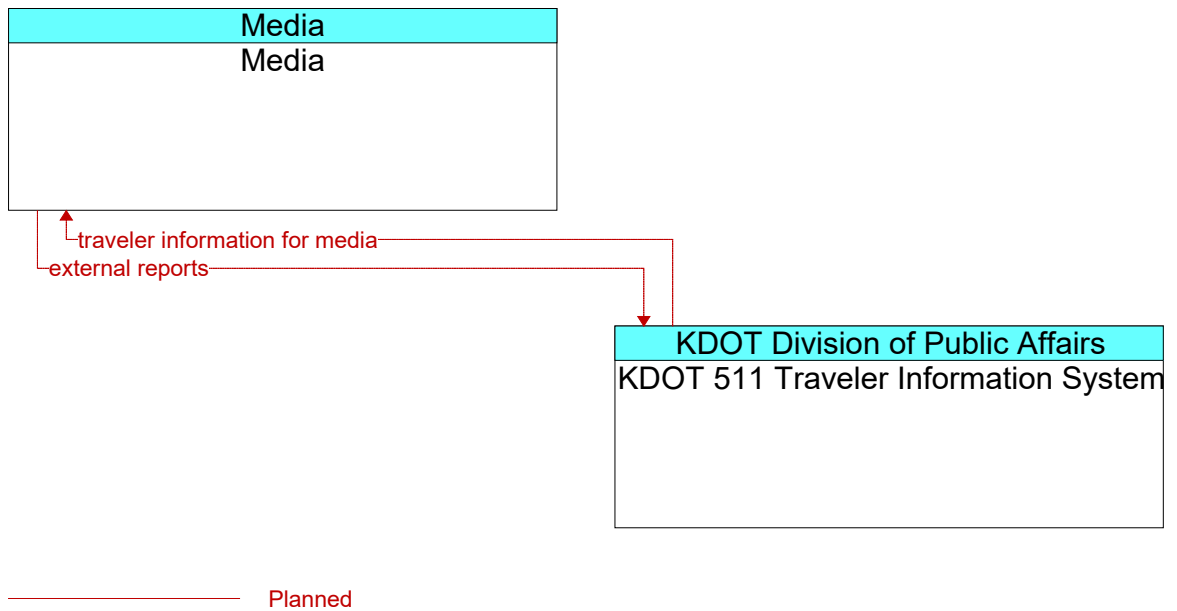
**Figure 748: KDOT 511 Traveler Information System - KDOT KanDrive Traveler Information Website Interface**



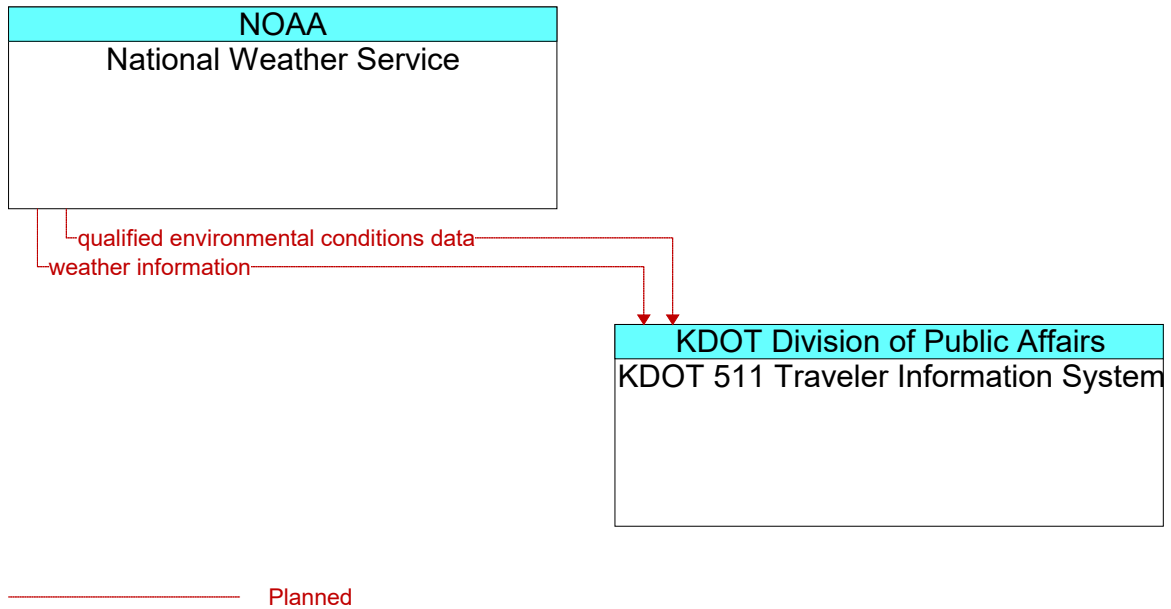
**Figure 749: KDOT 511 Traveler Information System - KDOT KanRoad Reporting System Interface**



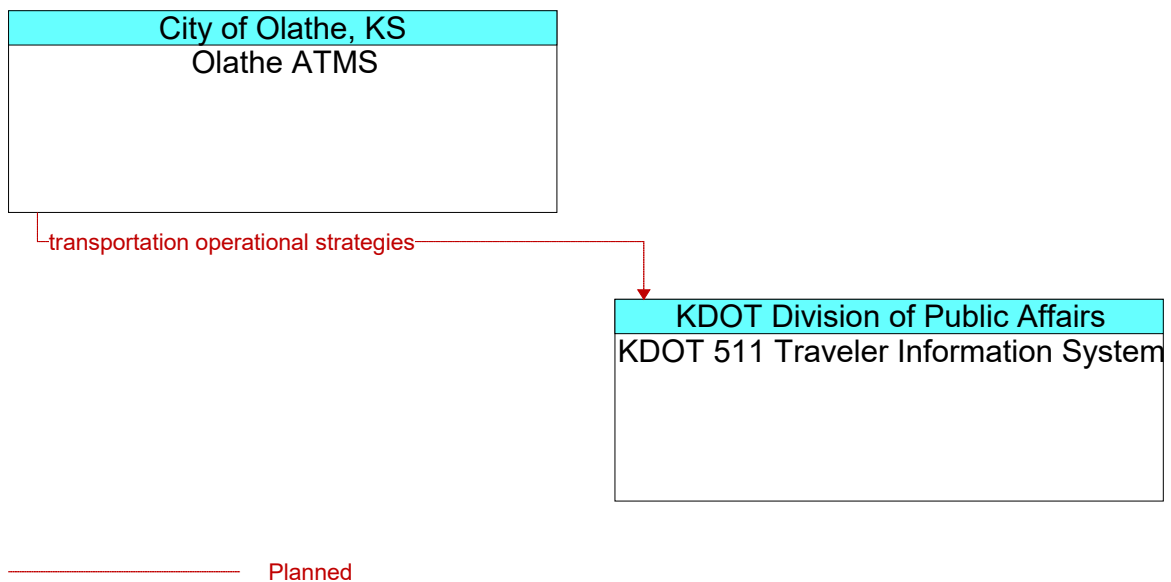
**Figure 750: KDOT 511 Traveler Information System - KTA Operations Center Interface**



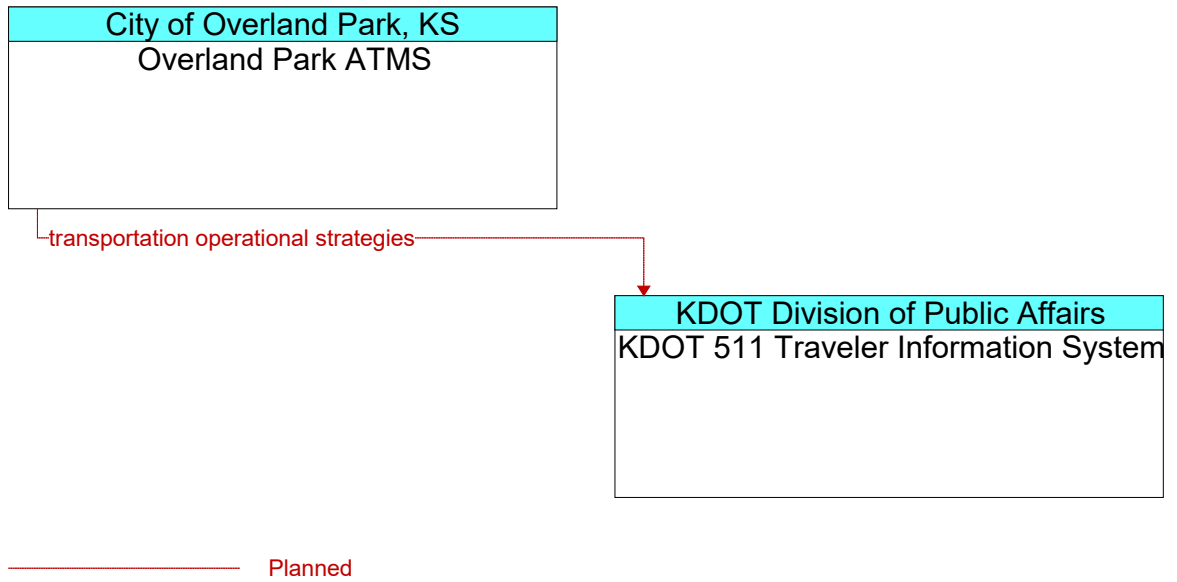
**Figure 751: KDOT 511 Traveler Information System - Media Interface**



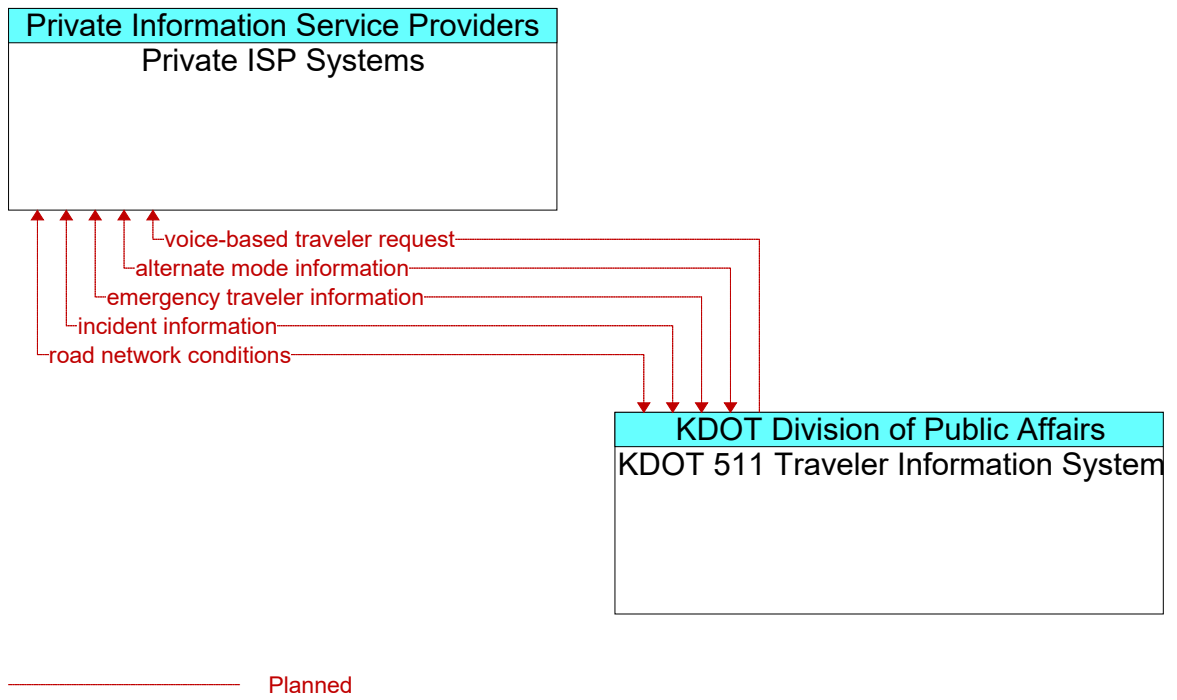
**Figure 752: KDOT 511 Traveler Information System - National Weather Service Interface**



**Figure 753: KDOT 511 Traveler Information System - Olathe ATMS Interface**

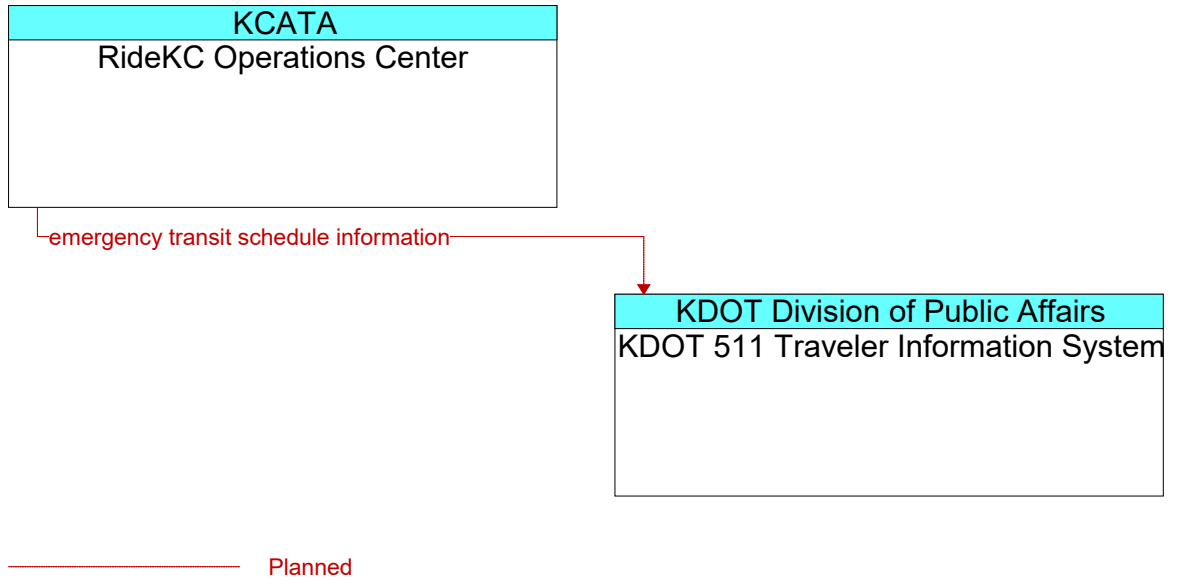


**Figure 754: KDOT 511 Traveler Information System - Overland Park ATMS Interface**

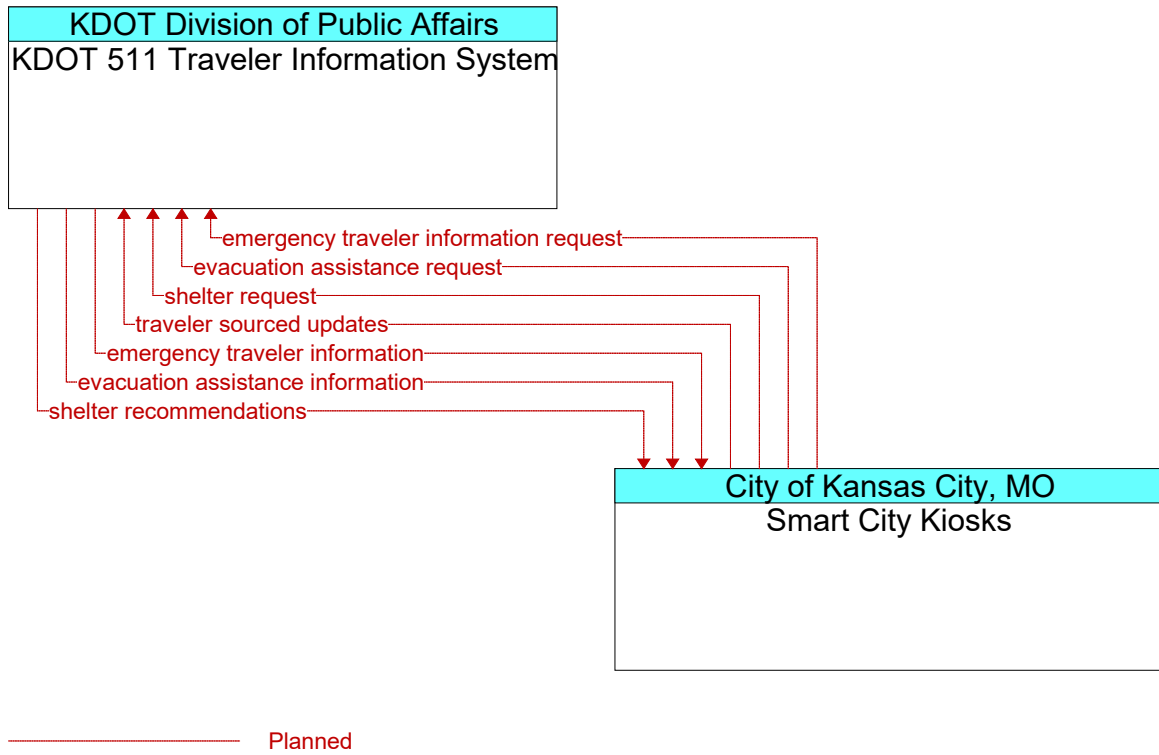


**Figure 755: KDOT 511 Traveler Information System - Private ISP Systems Interface**

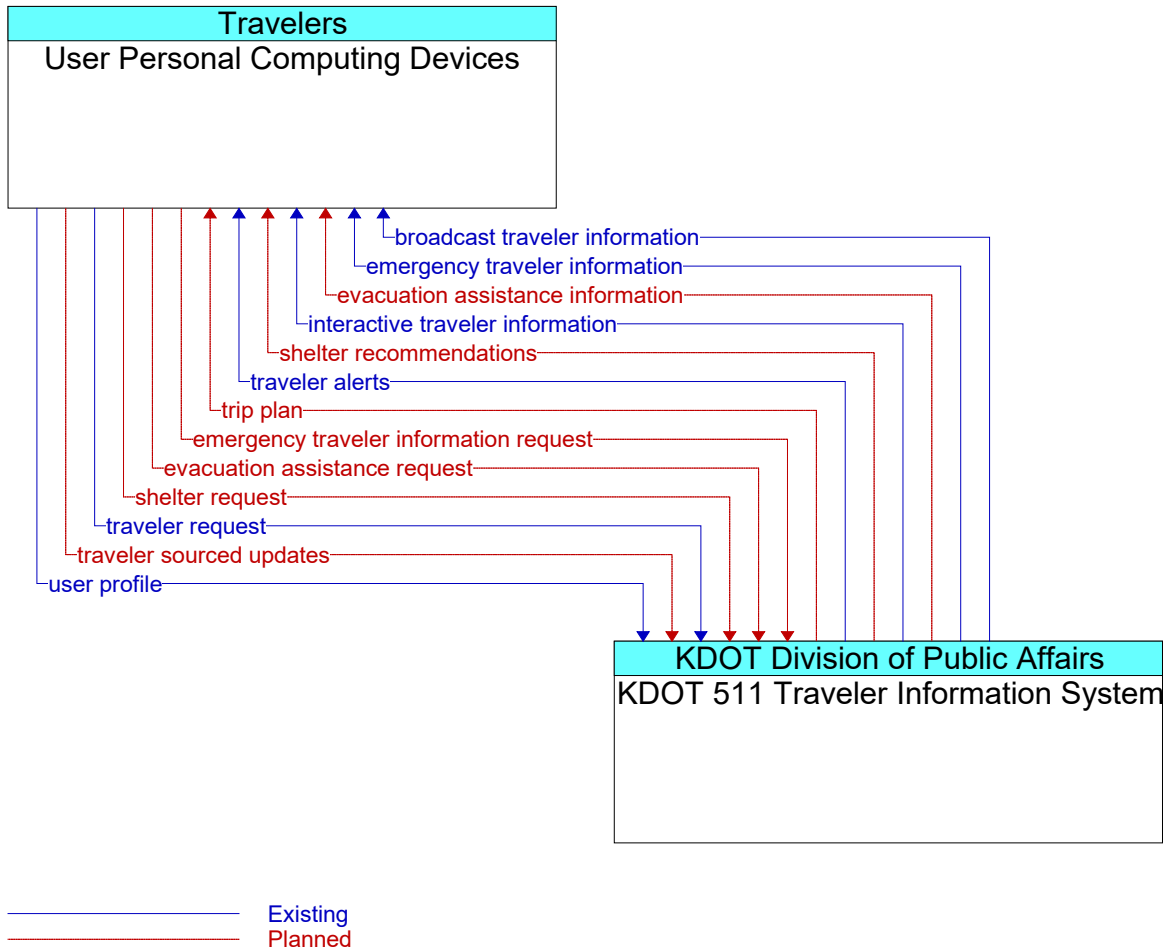




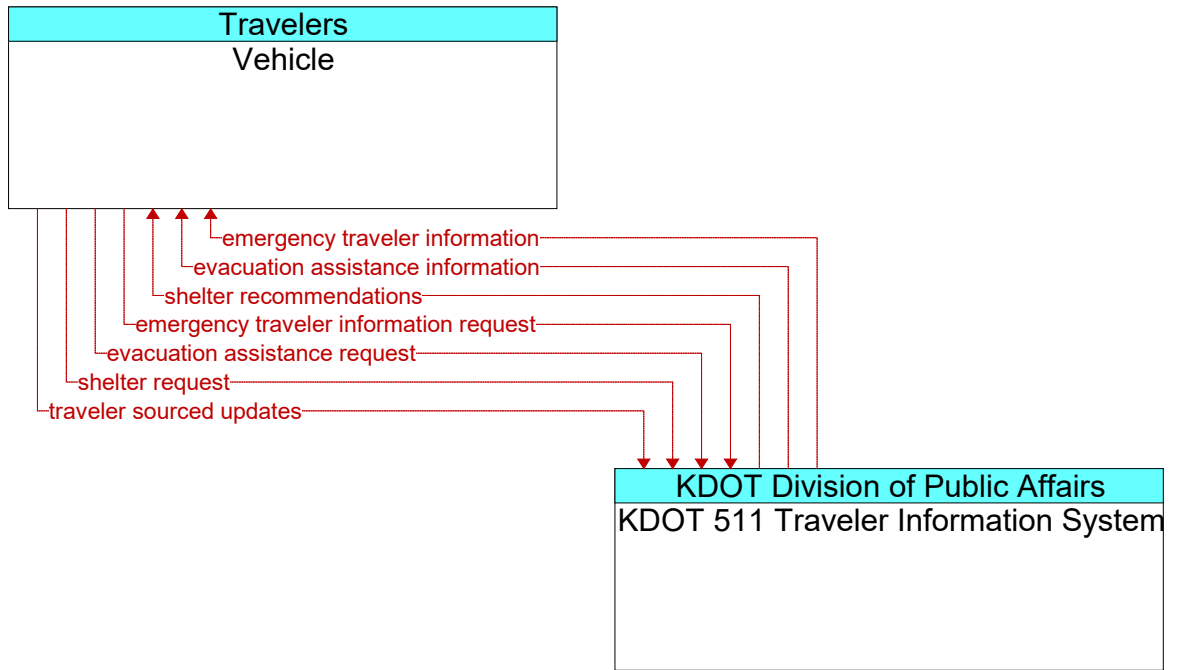
**Figure 756: KDOT 511 Traveler Information System - RideKC Operations Center Interface**



**Figure 757: KDOT 511 Traveler Information System - Smart City Kiosks Interface**

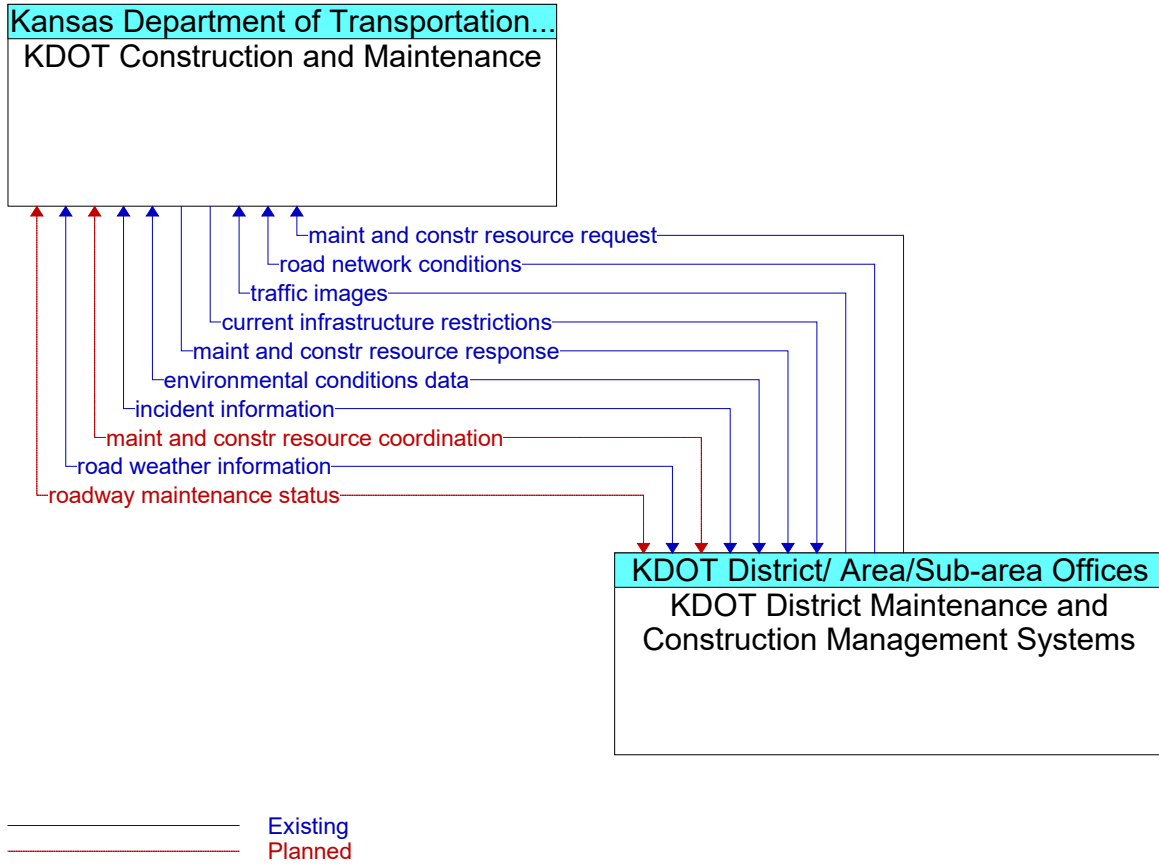


**Figure 758: KDOT 511 Traveler Information System - User Personal Computing Devices Interface**



Planned

**Figure 759: KDOT 511 Traveler Information System - Vehicle Interface**



**Figure 760: KDOT Construction and Maintenance - KDOT District Maintenance and Construction Management Systems Interface**

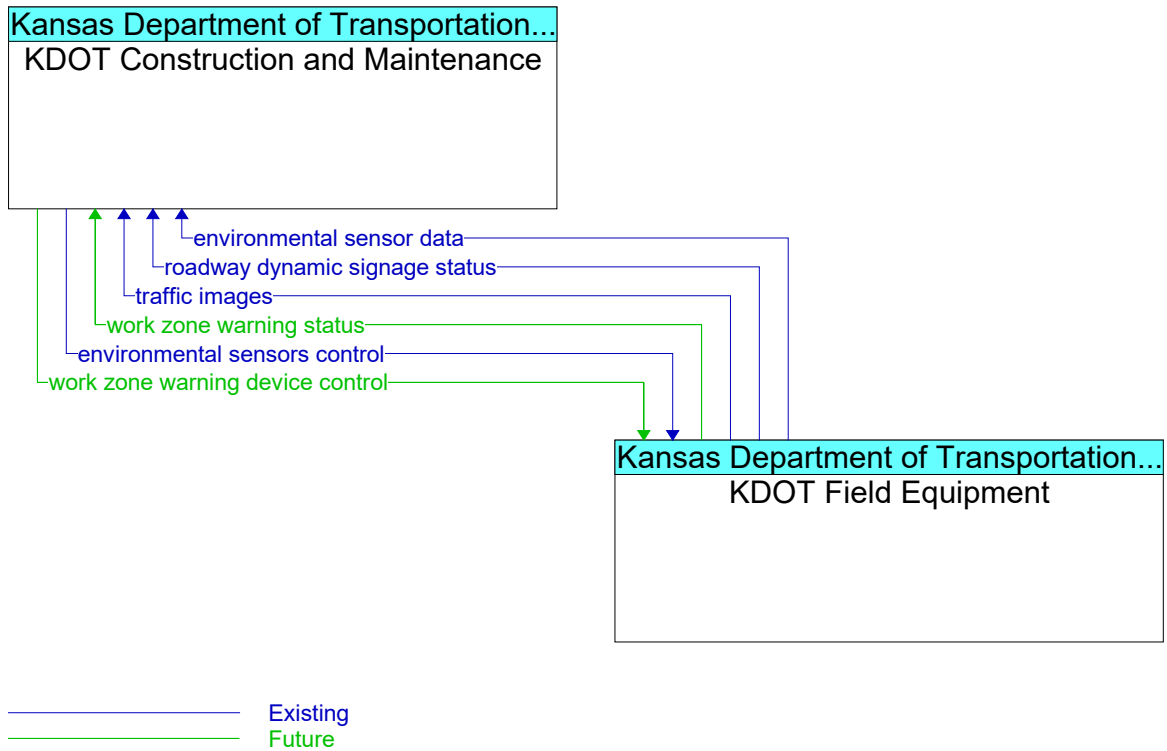


Figure 761: KDOT Construction and Maintenance - KDOT Field Equipment Interface

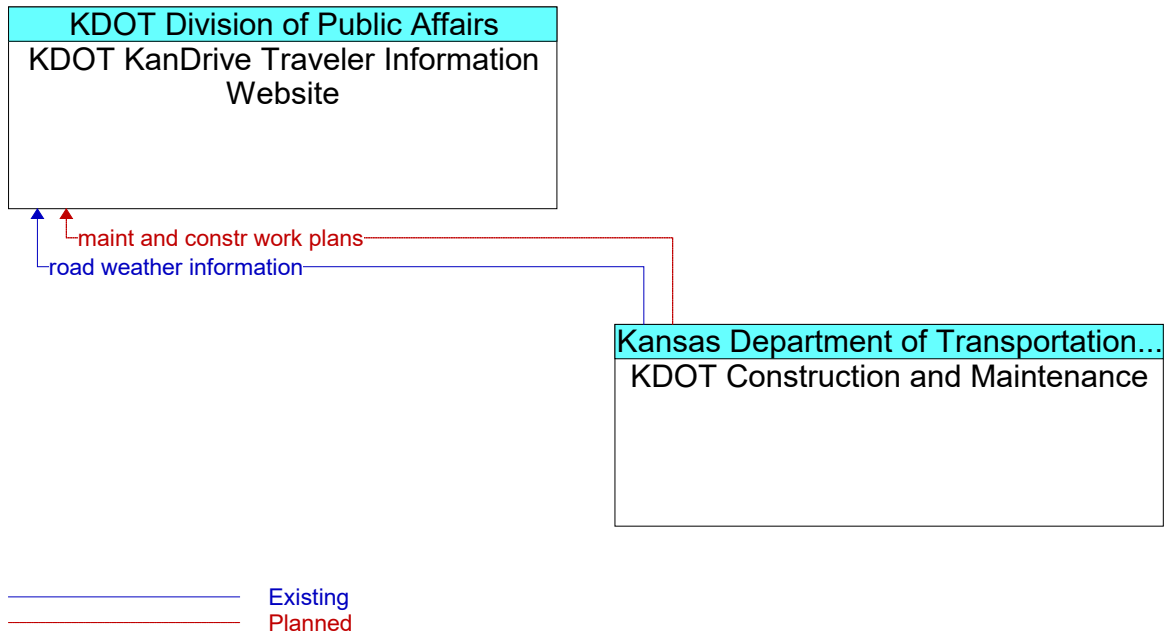
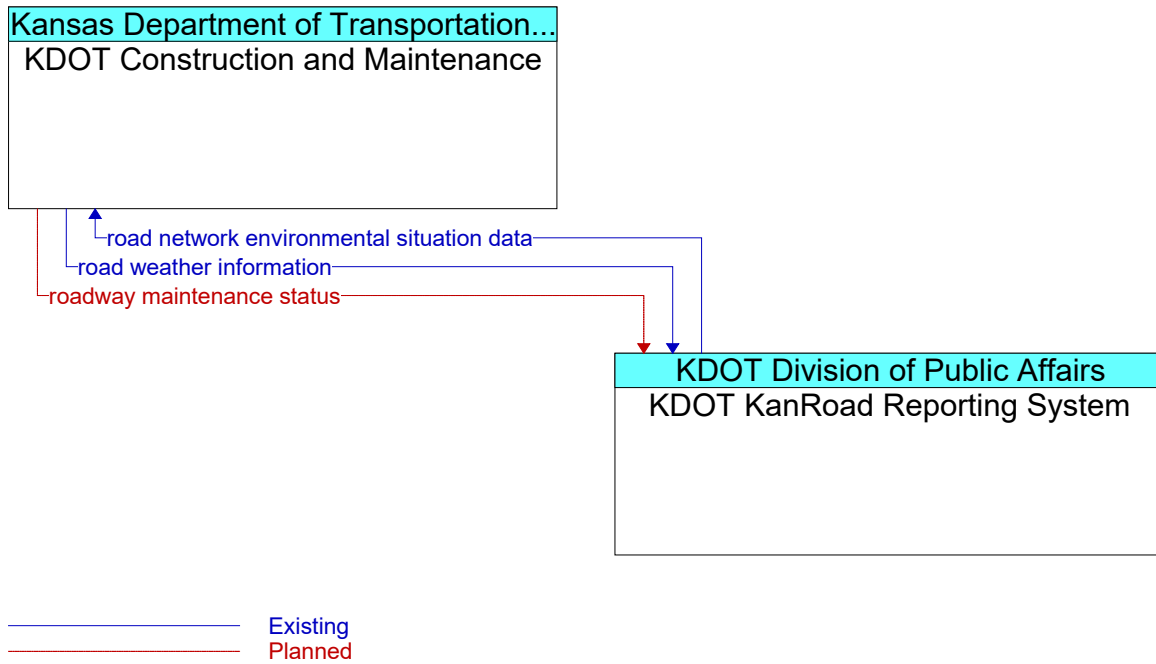
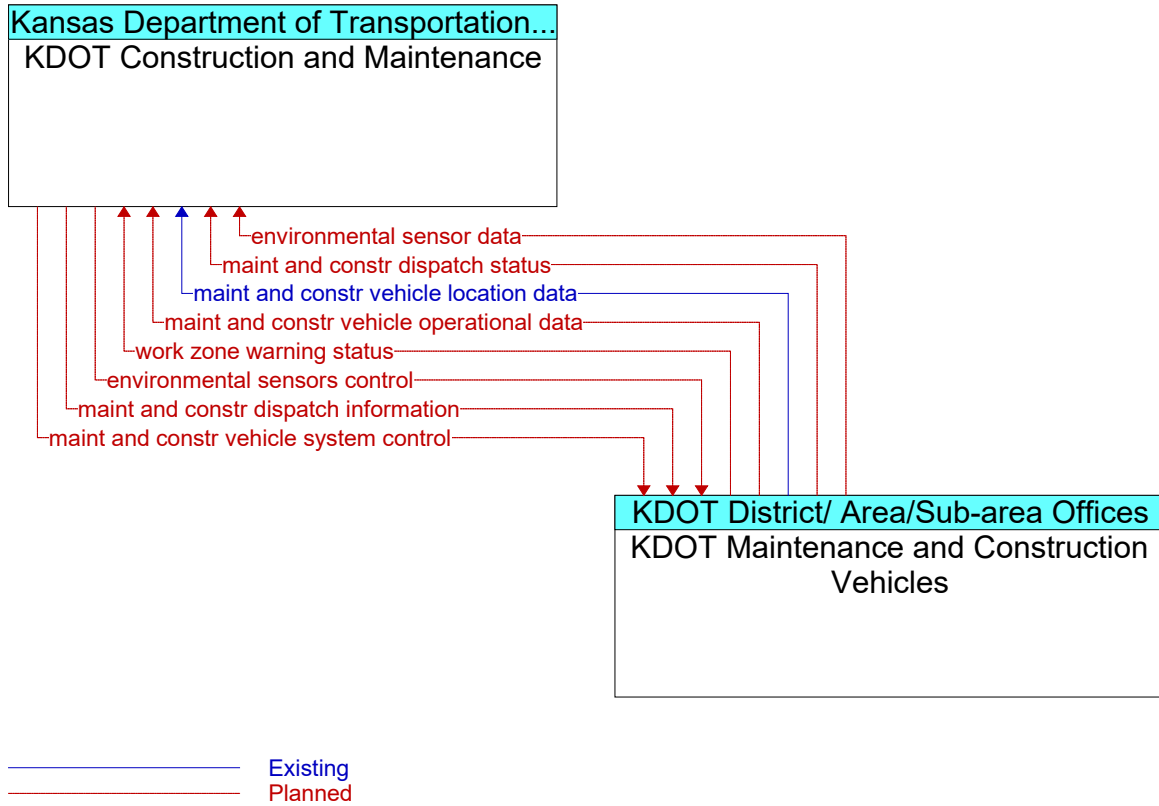


Figure 762: KDOT Construction and Maintenance - KDOT KanDrive Traveler Information Website Interface

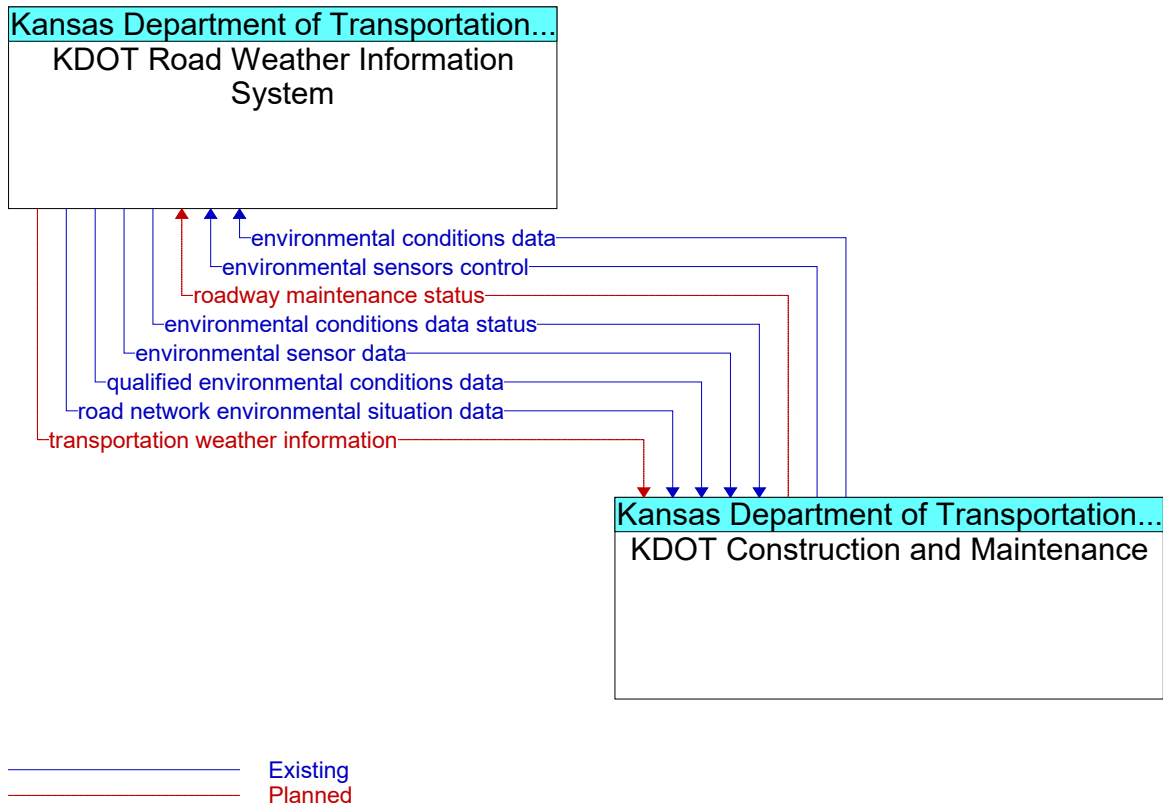


**Figure 763: KDOT Construction and Maintenance - KDOT KanRoad Reporting System Interface**





**Figure 764: KDOT Construction and Maintenance - KDOT Maintenance and Construction Vehicles Interface**



**Figure 765: KDOT Construction and Maintenance - KDOT Road Weather Information System Interface**

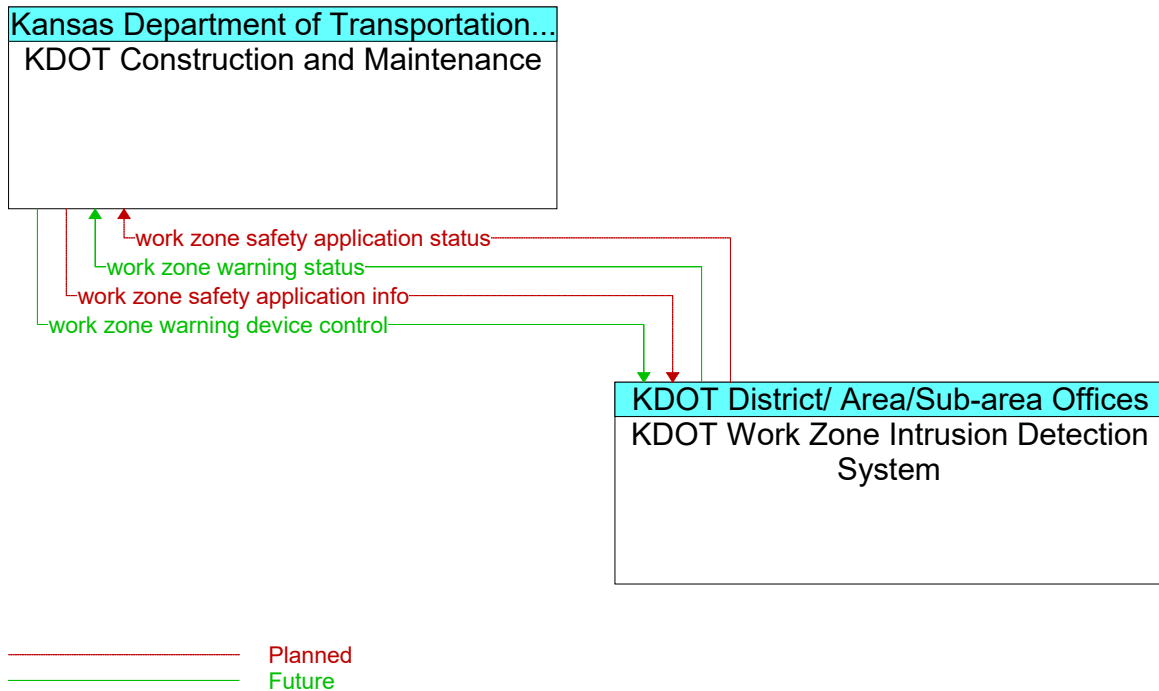


Figure 766: KDOT Construction and Maintenance - KDOT Work Zone Intrusion Detection System Interface

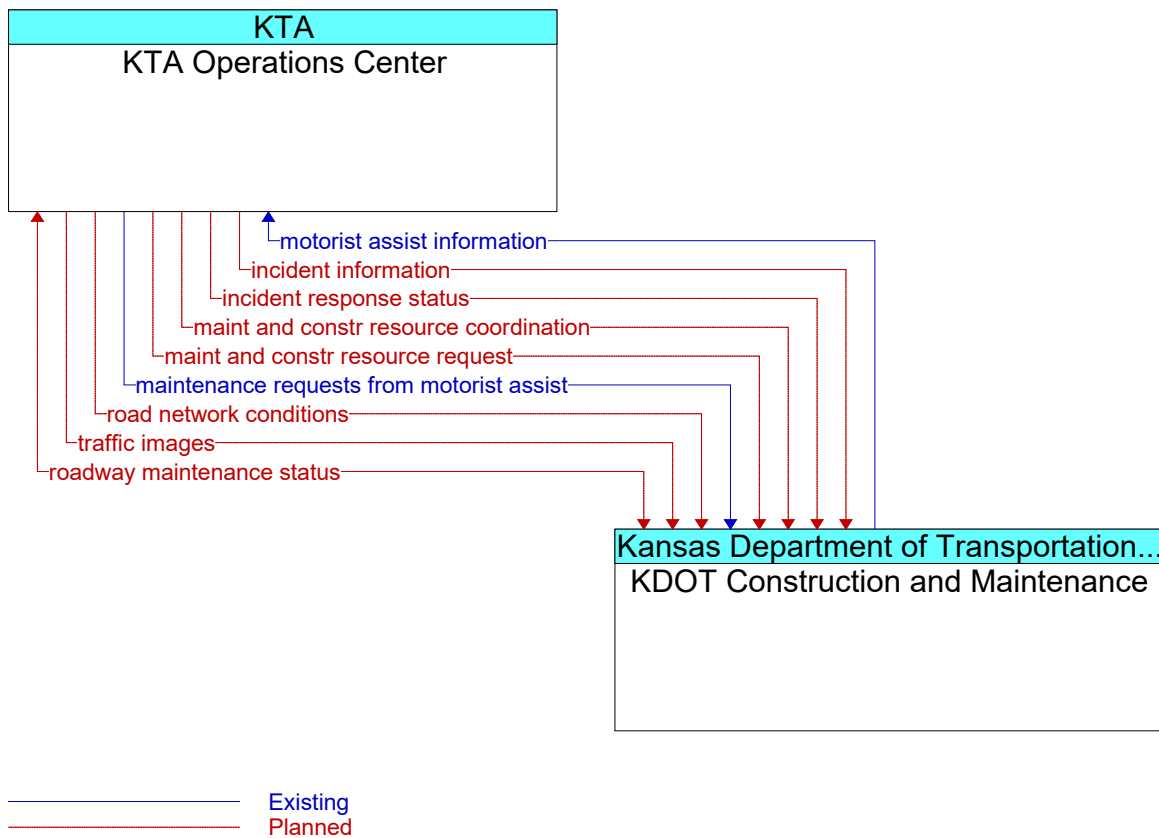
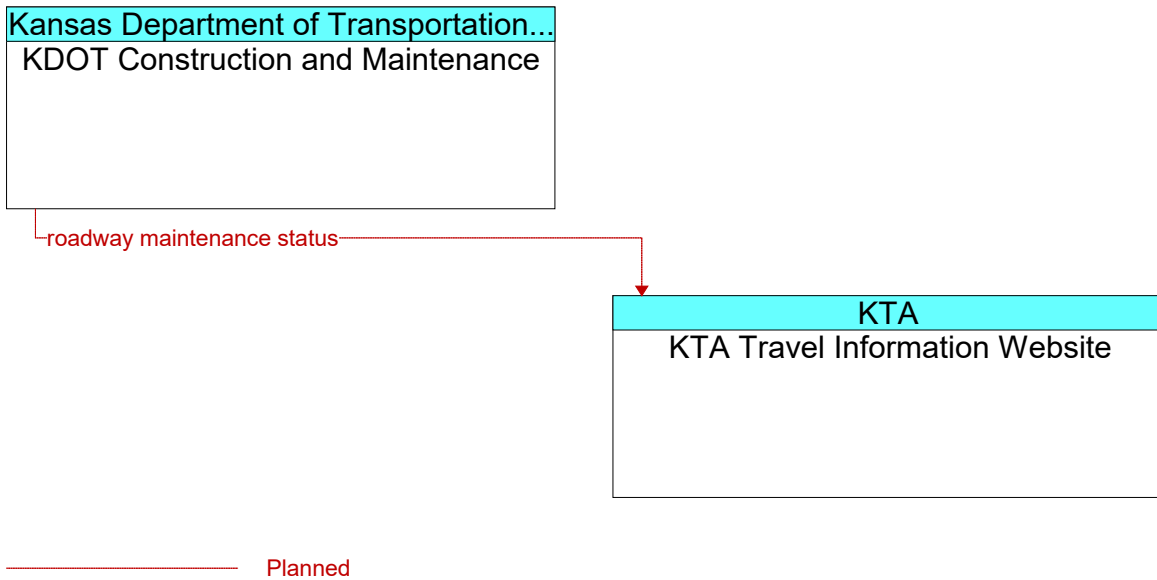
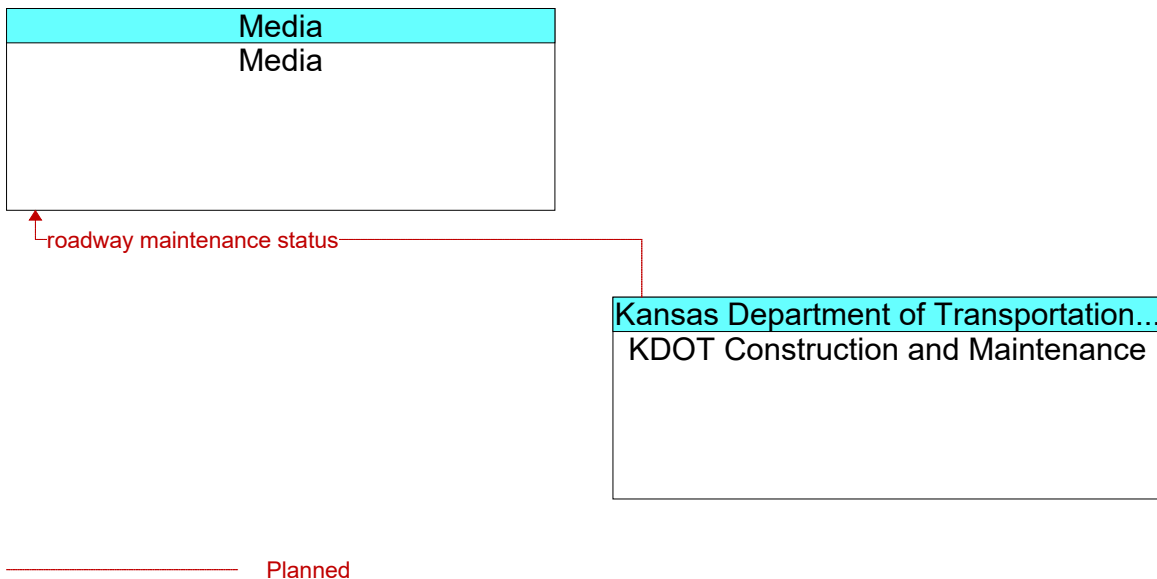


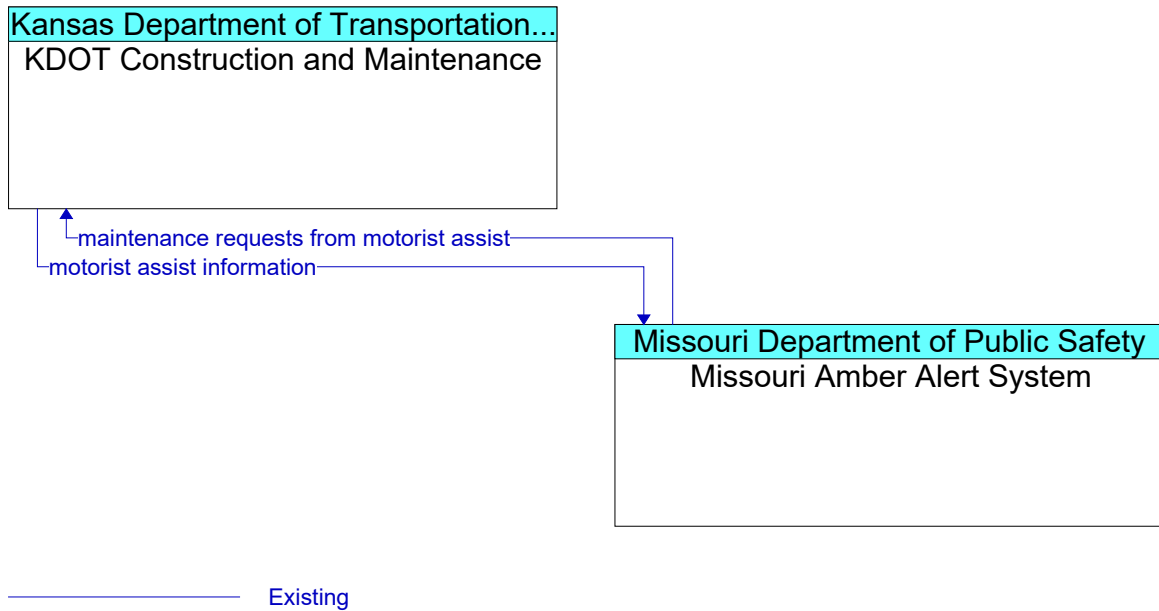
Figure 767: KDOT Construction and Maintenance - KTA Operations Center Interface



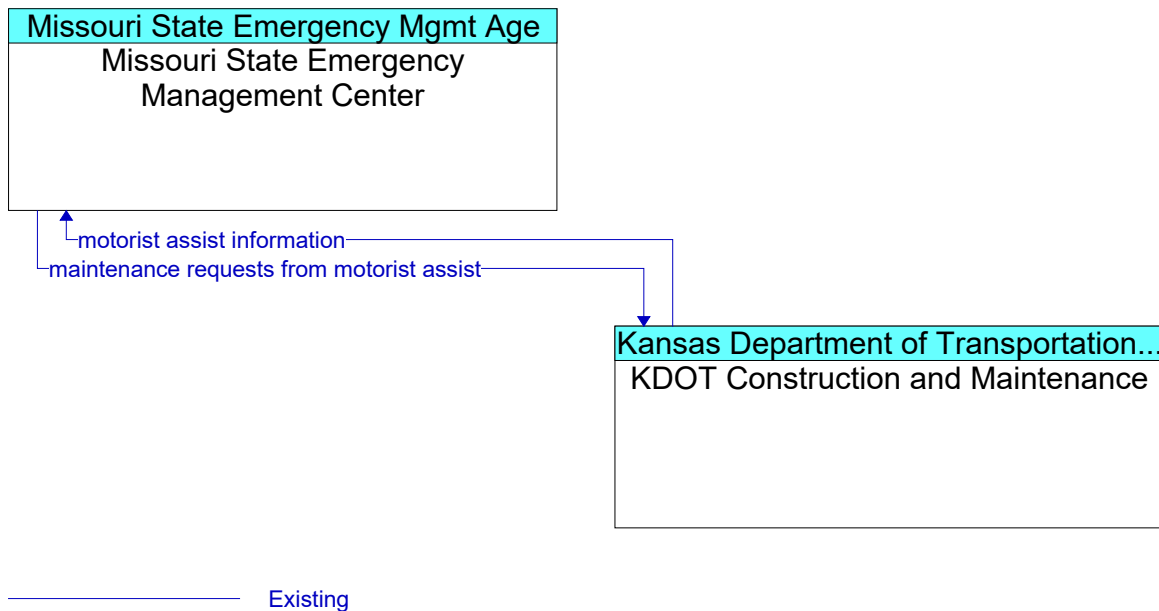
**Figure 768: KDOT Construction and Maintenance - KTA Travel Information Website Interface**



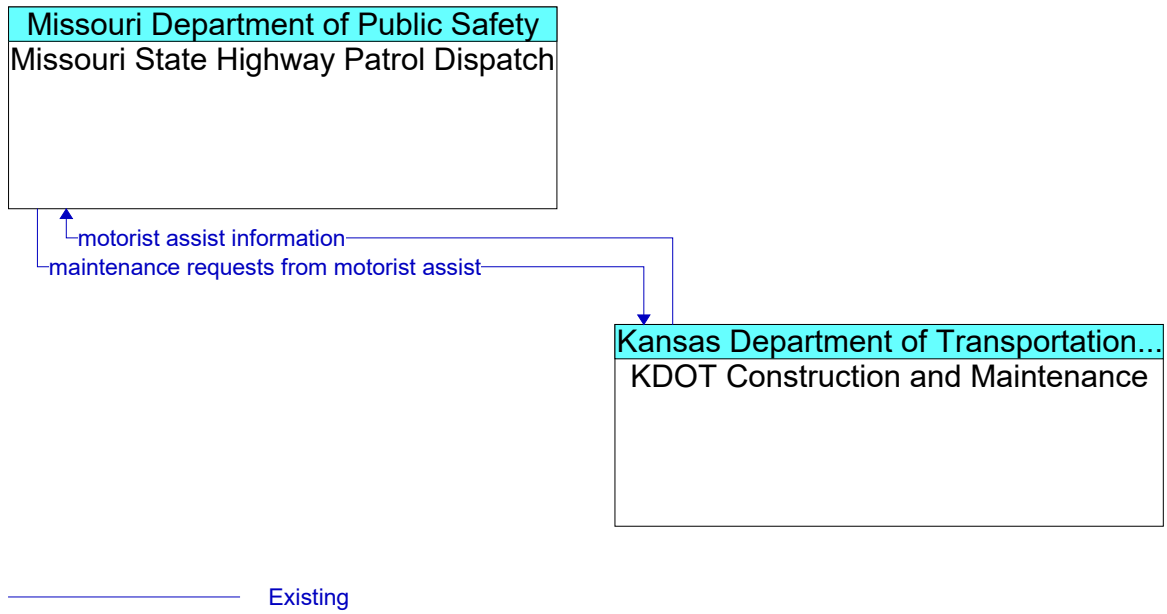
**Figure 769: KDOT Construction and Maintenance - Media Interface**



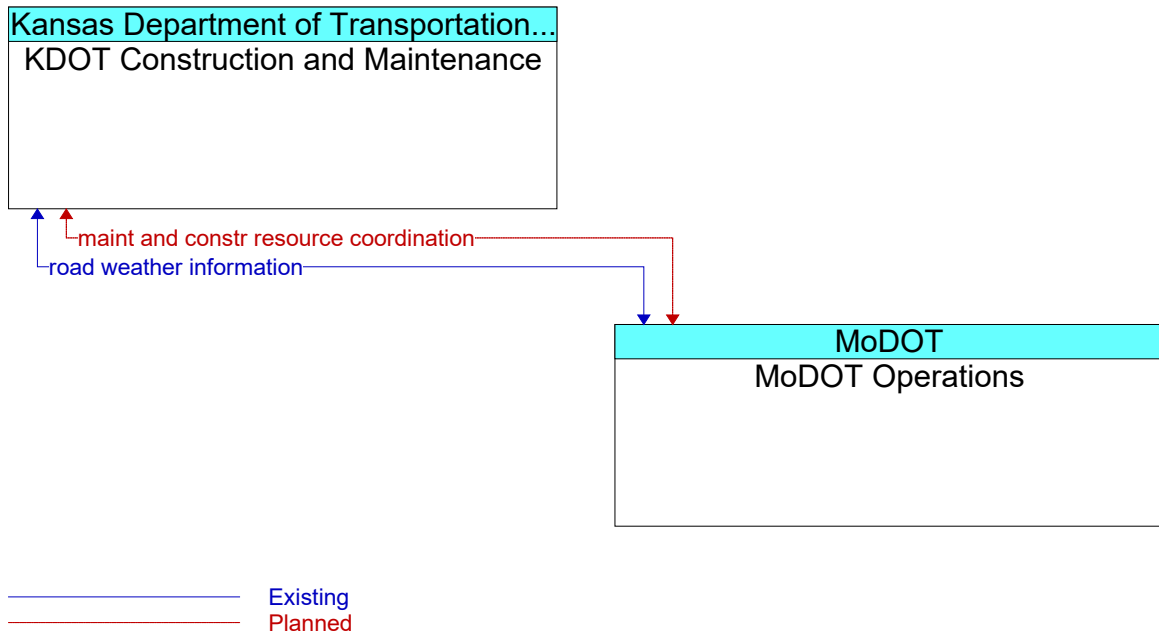
**Figure 770: KDOT Construction and Maintenance - Missouri Amber Alert System Interface**



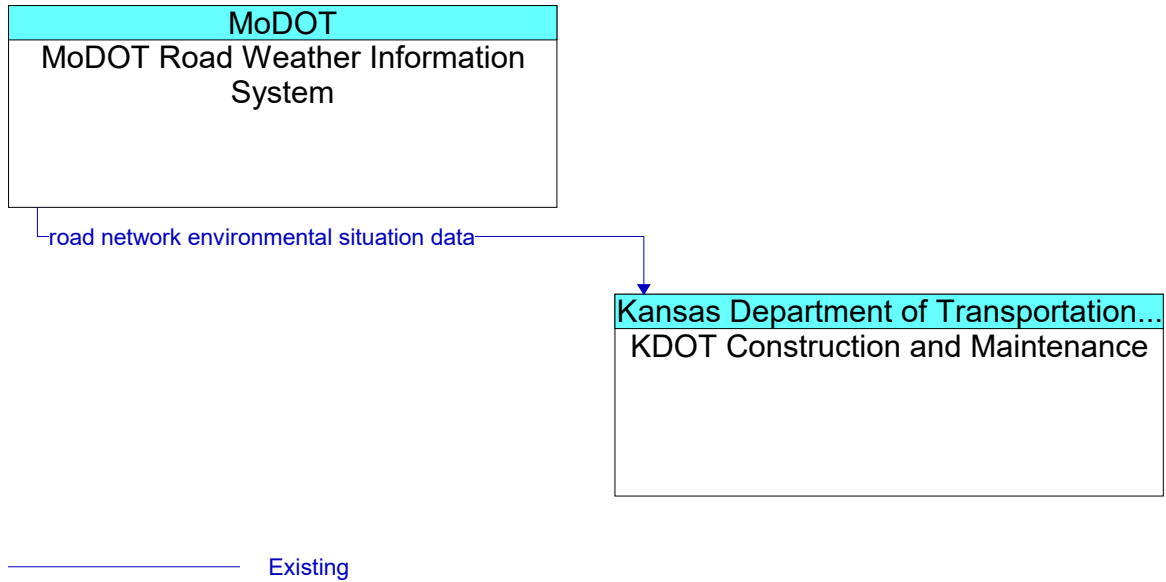
**Figure 771: KDOT Construction and Maintenance - Missouri State Emergency Management Center Interface**



**Figure 772: KDOT Construction and Maintenance - Missouri State Highway Patrol Dispatch Interface**

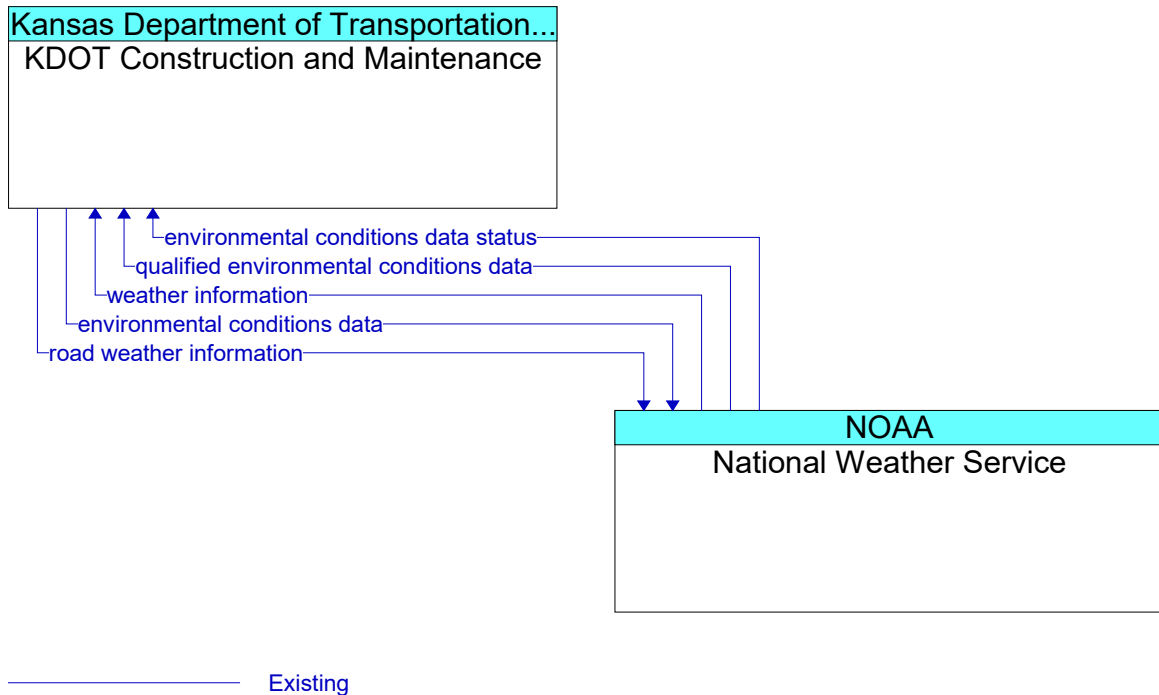


**Figure 773: KDOT Construction and Maintenance - MoDOT Operations Interface**

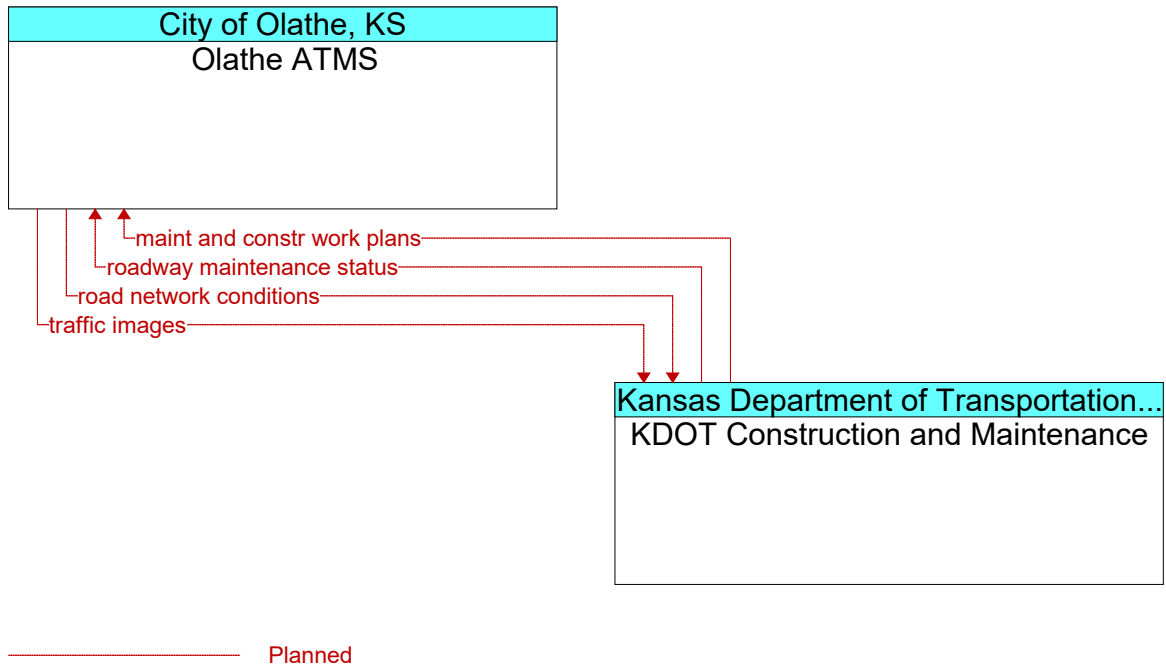


**Figure 774: KDOT Construction and Maintenance - MoDOT Road Weather Information System Interface**

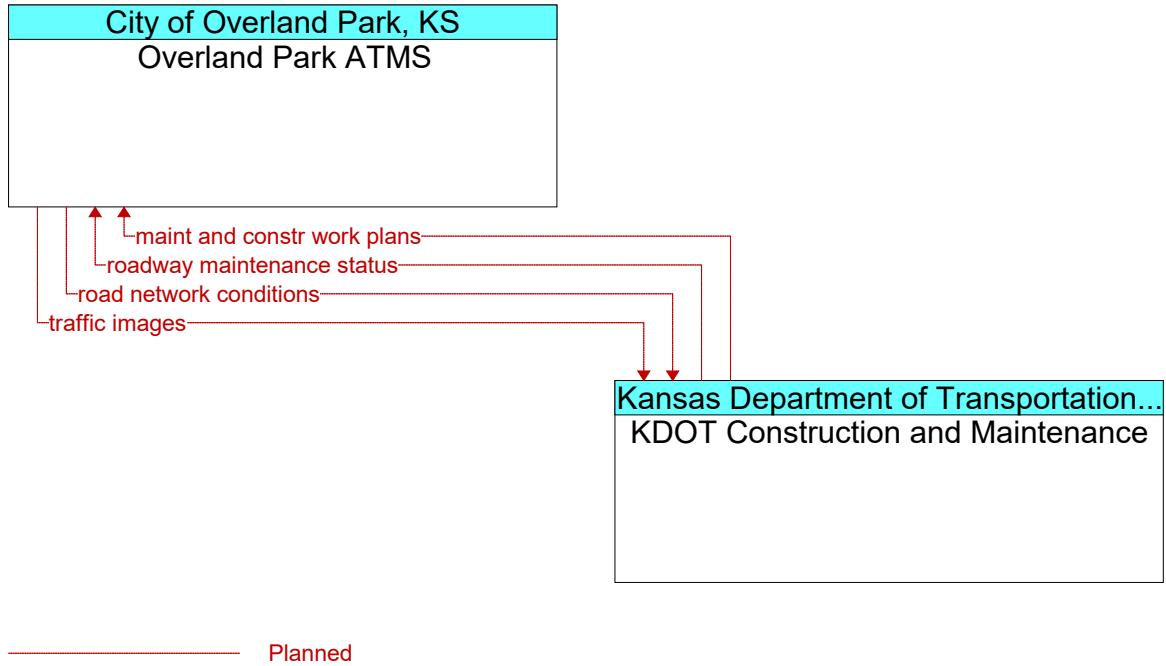




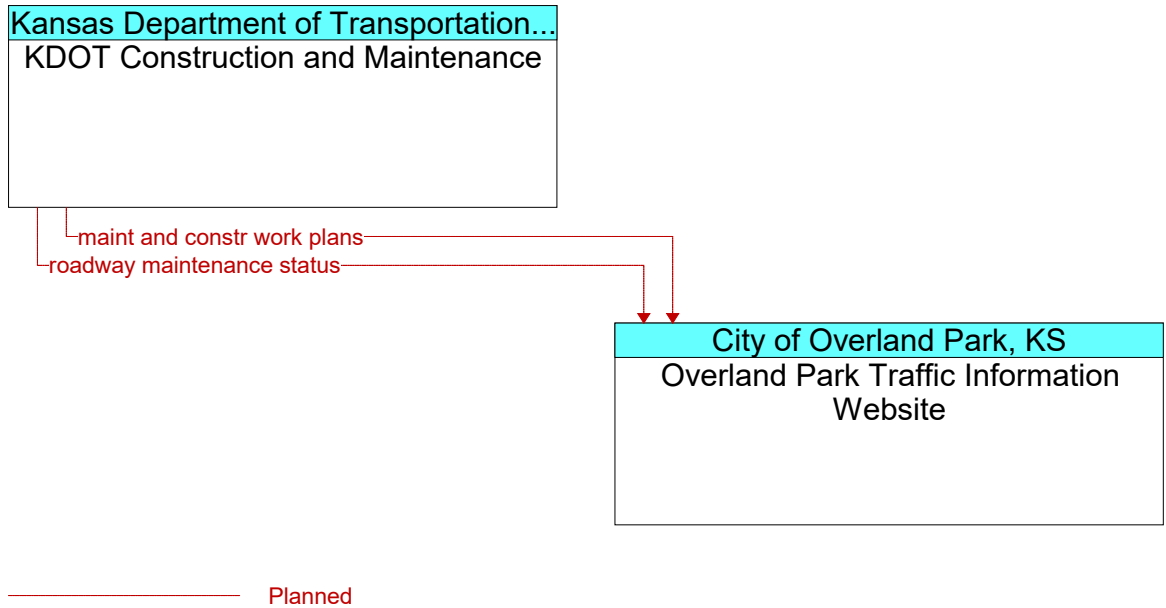
**Figure 775: KDOT Construction and Maintenance - National Weather Service Interface**



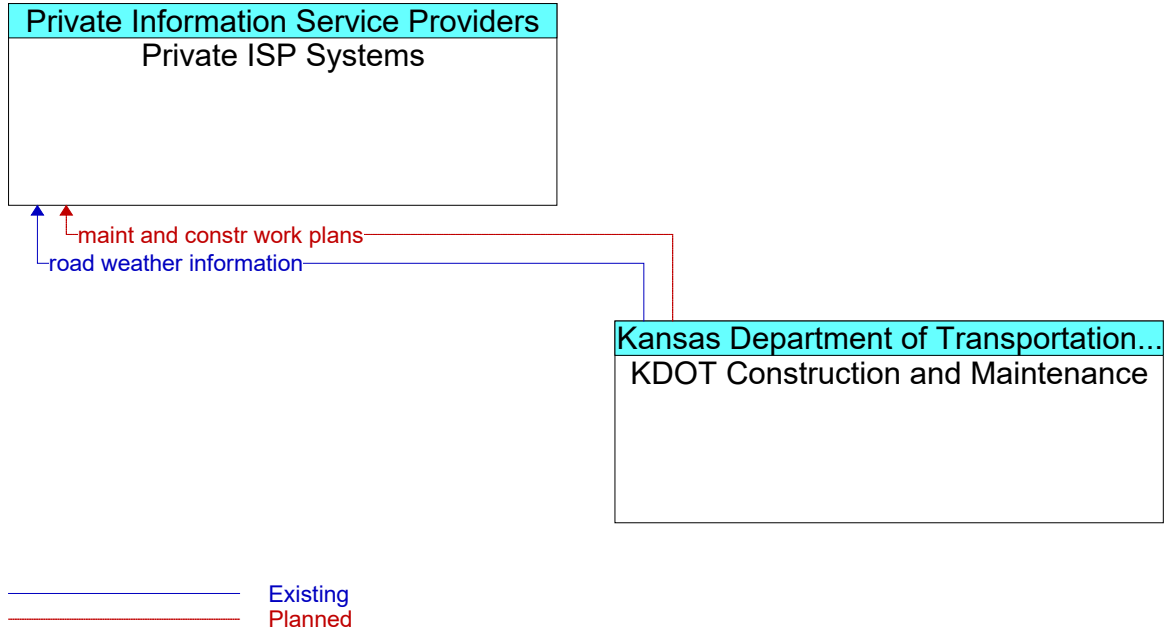
**Figure 776: KDOT Construction and Maintenance - Olathe ATMS Interface**



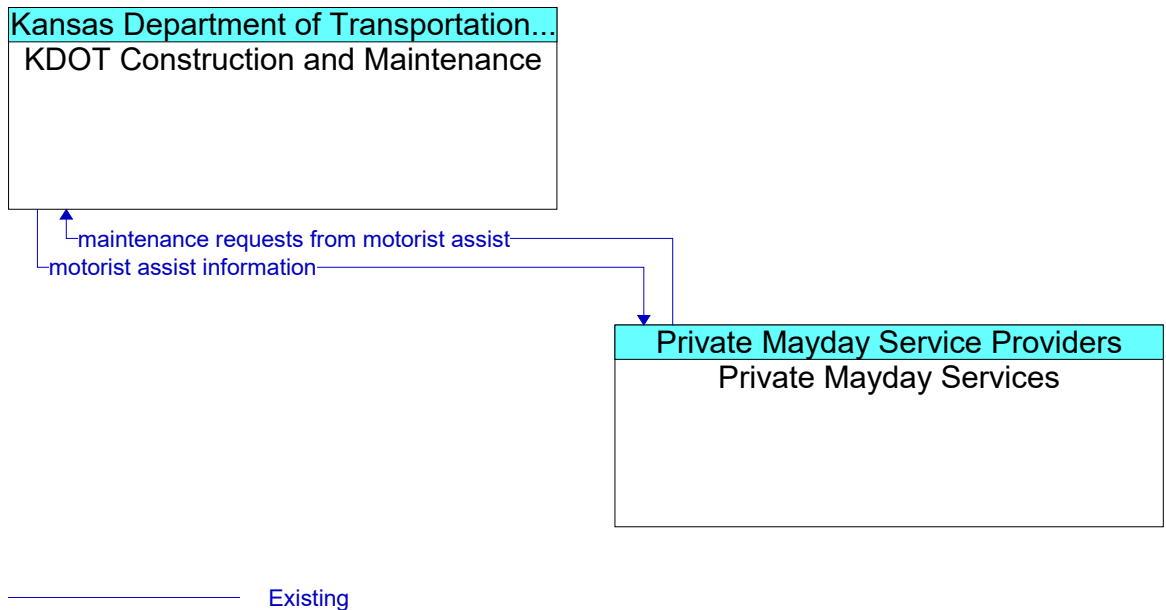
**Figure 777: KDOT Construction and Maintenance - Overland Park ATMS Interface**



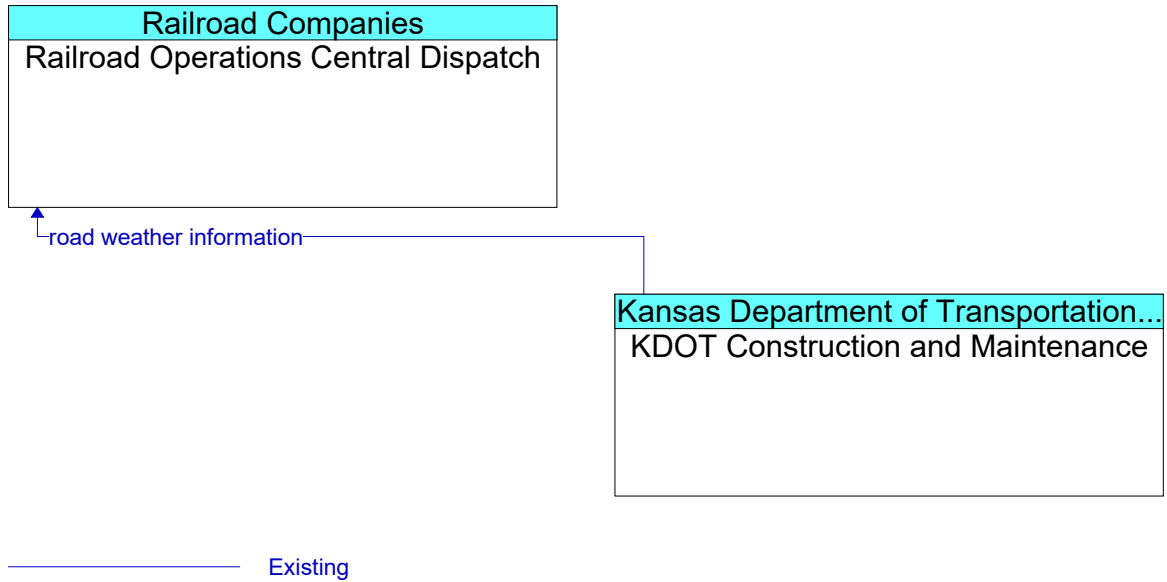
**Figure 778: KDOT Construction and Maintenance - Overland Park Traffic Information Website Interface**



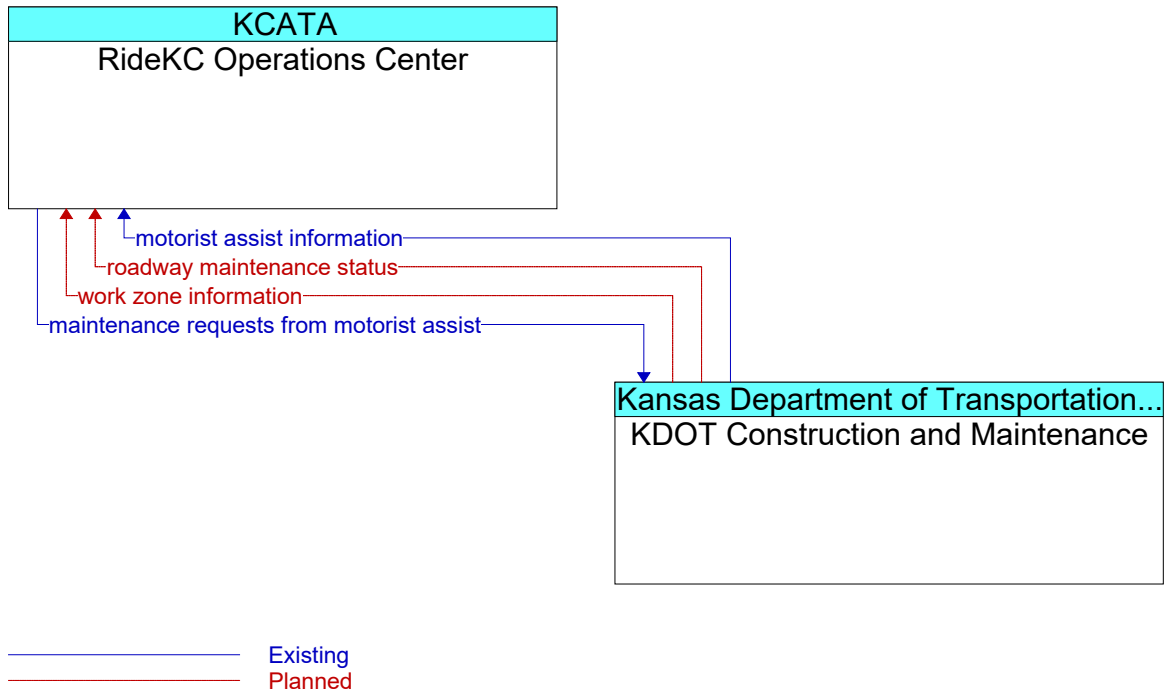
**Figure 779: KDOT Construction and Maintenance - Private ISP Systems Interface**



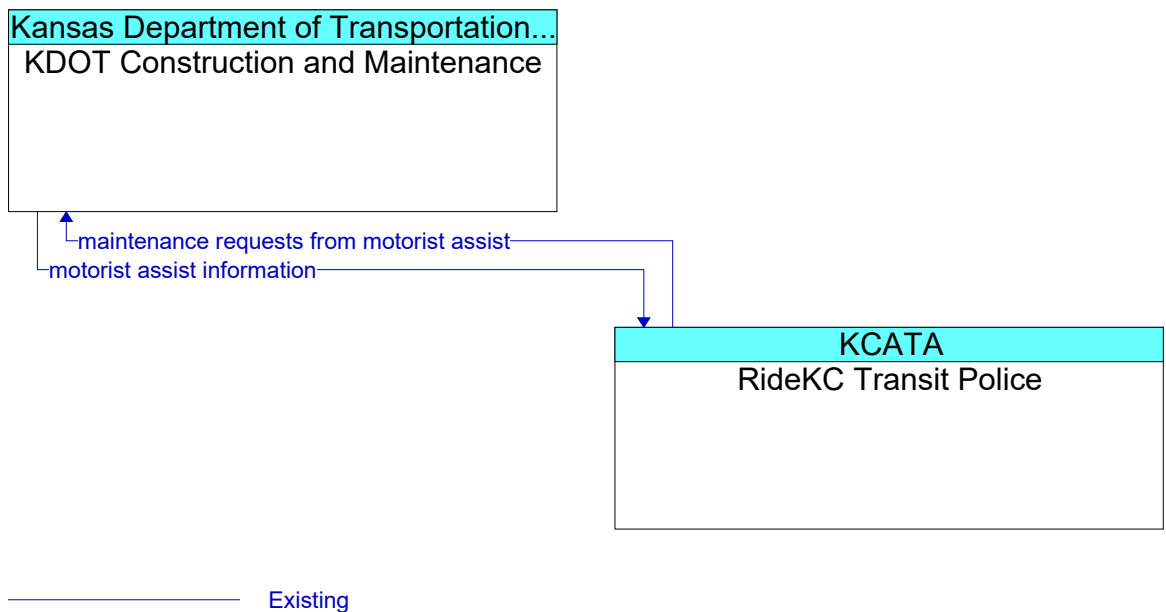
**Figure 780: KDOT Construction and Maintenance - Private Mayday Services Interface**



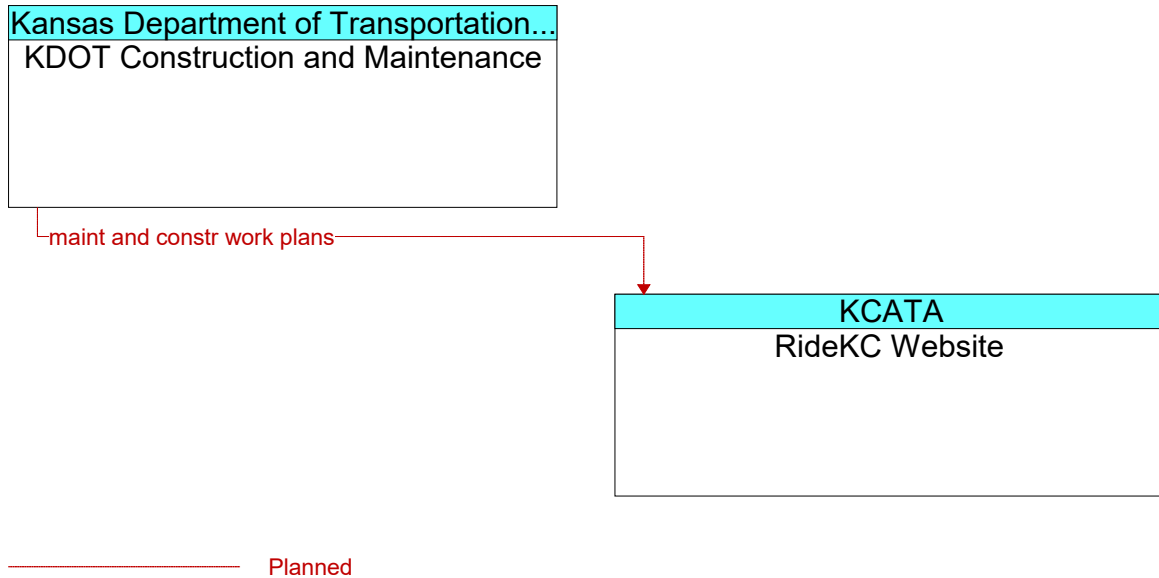
**Figure 781: KDOT Construction and Maintenance - Railroad Operations Central Dispatch Interface**



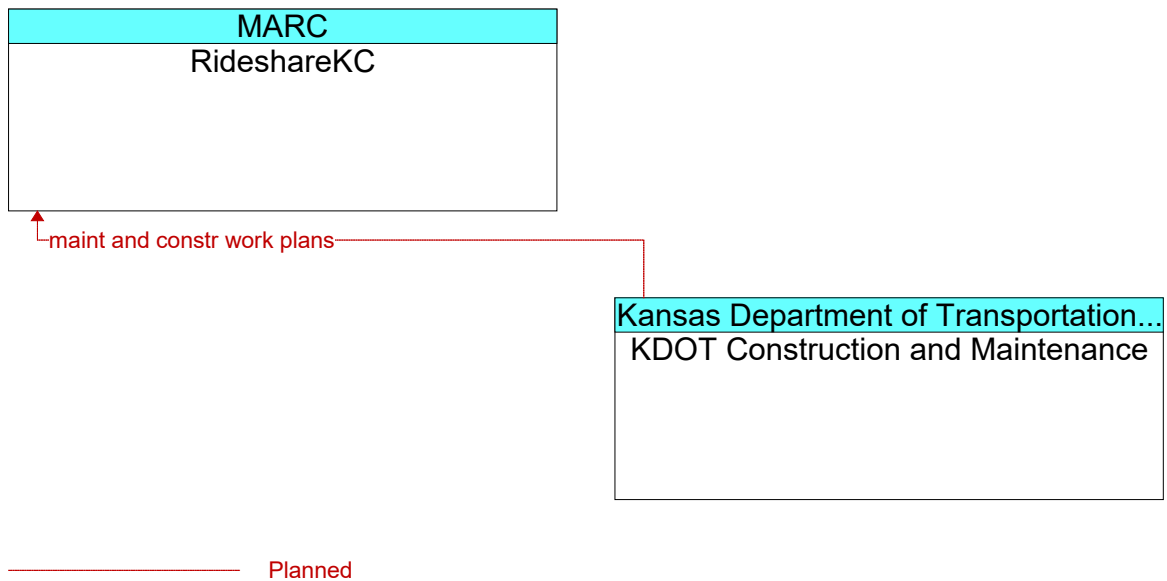
**Figure 782: KDOT Construction and Maintenance - RideKC Operations Center Interface**



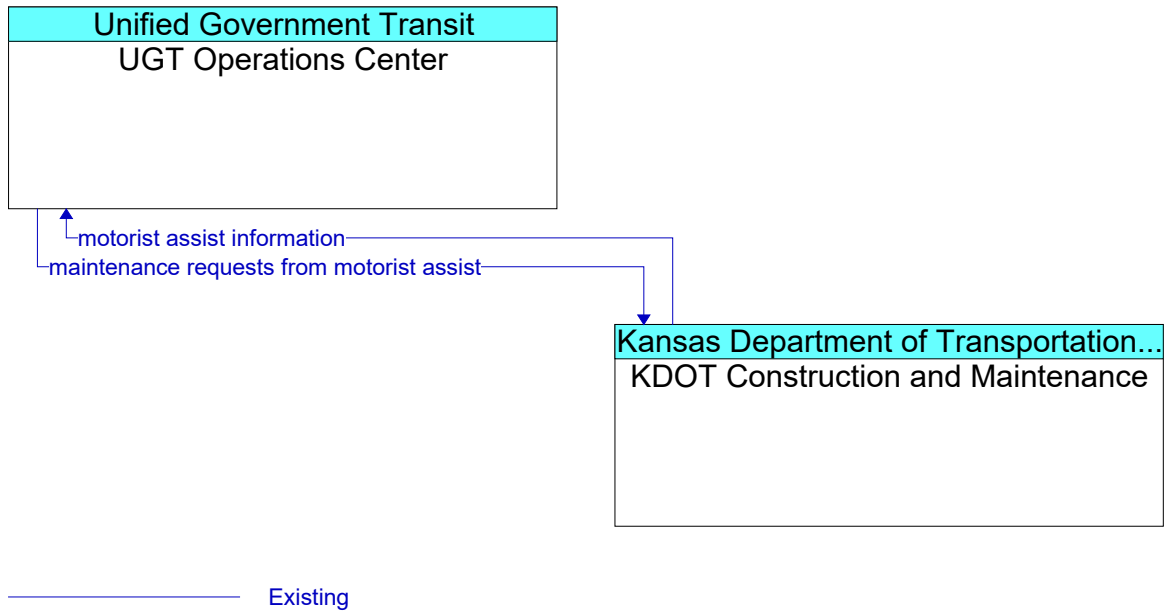
**Figure 783: KDOT Construction and Maintenance - RideKC Transit Police Interface**



**Figure 784: KDOT Construction and Maintenance - RideKC Website Interface**

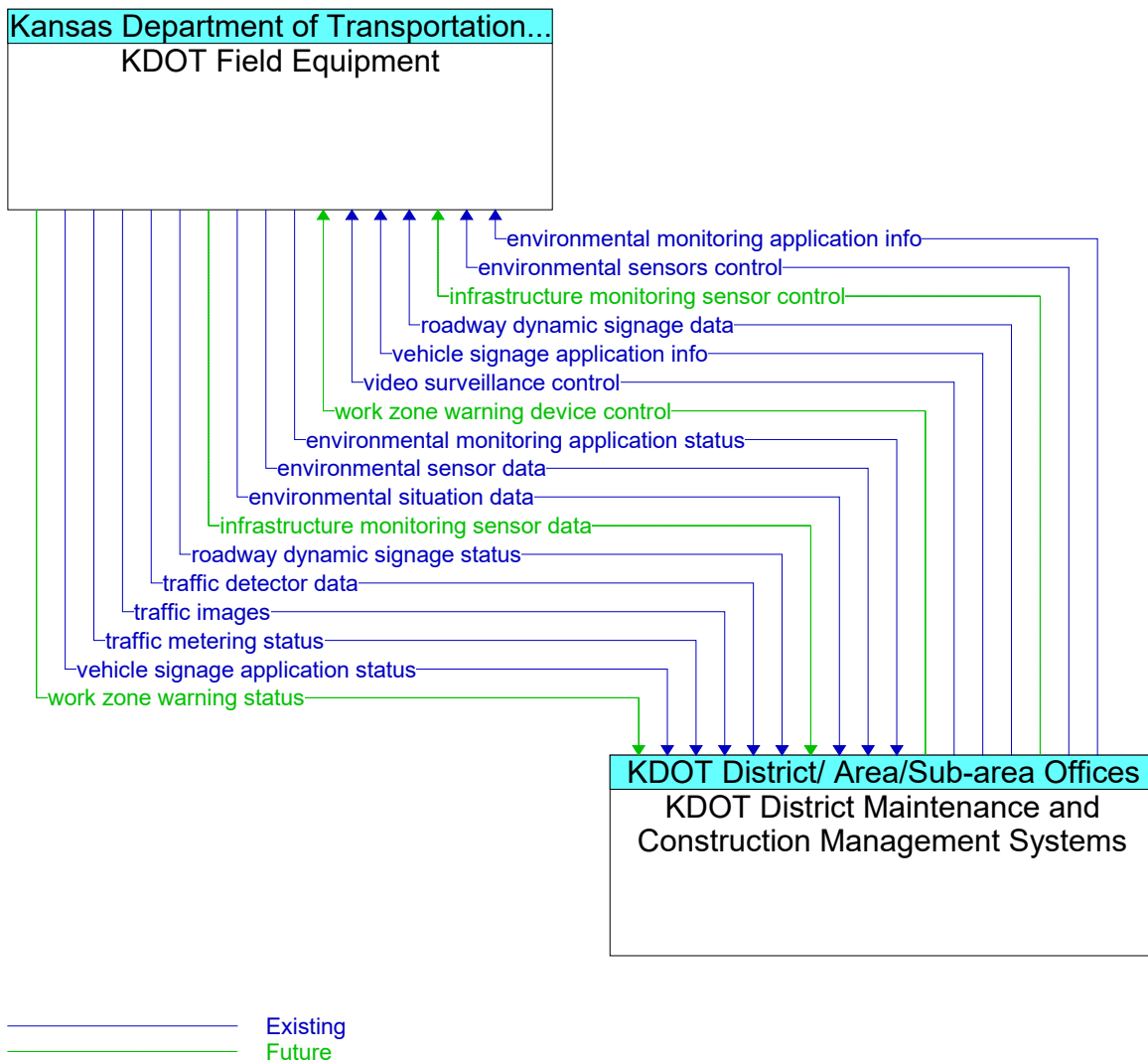


**Figure 785: KDOT Construction and Maintenance - RideshareKC Interface**

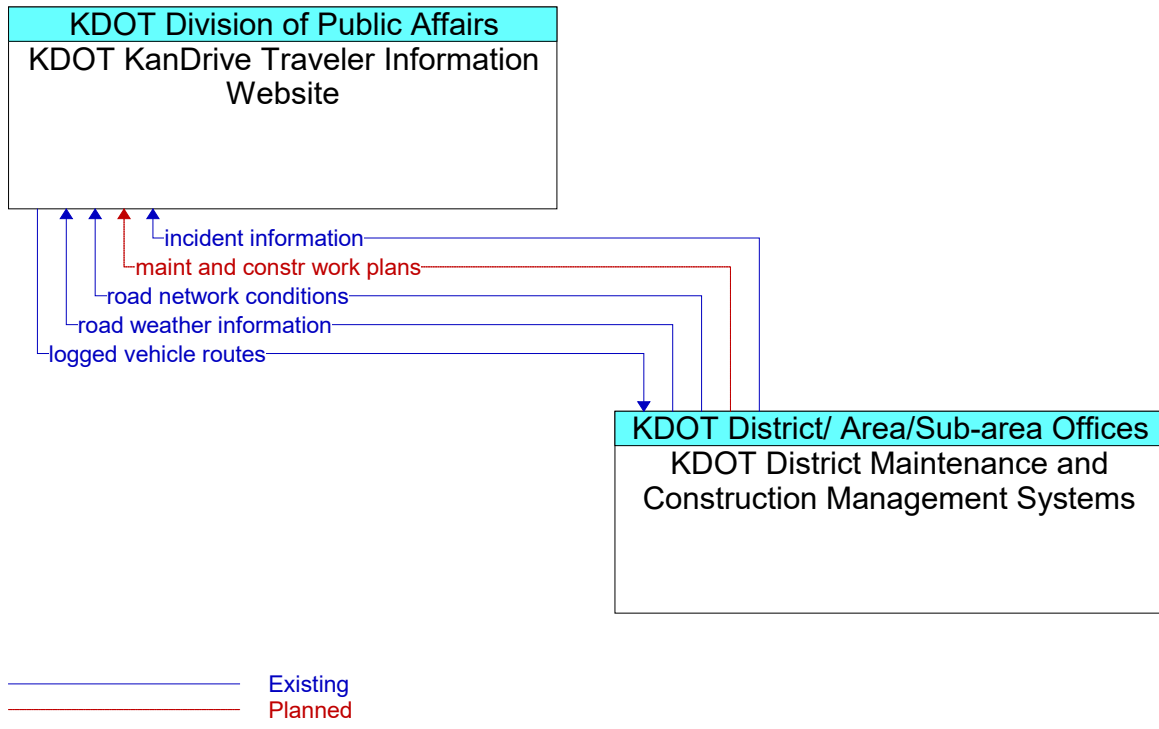


**Figure 786: KDOT Construction and Maintenance - UGT Operations Center Interface**

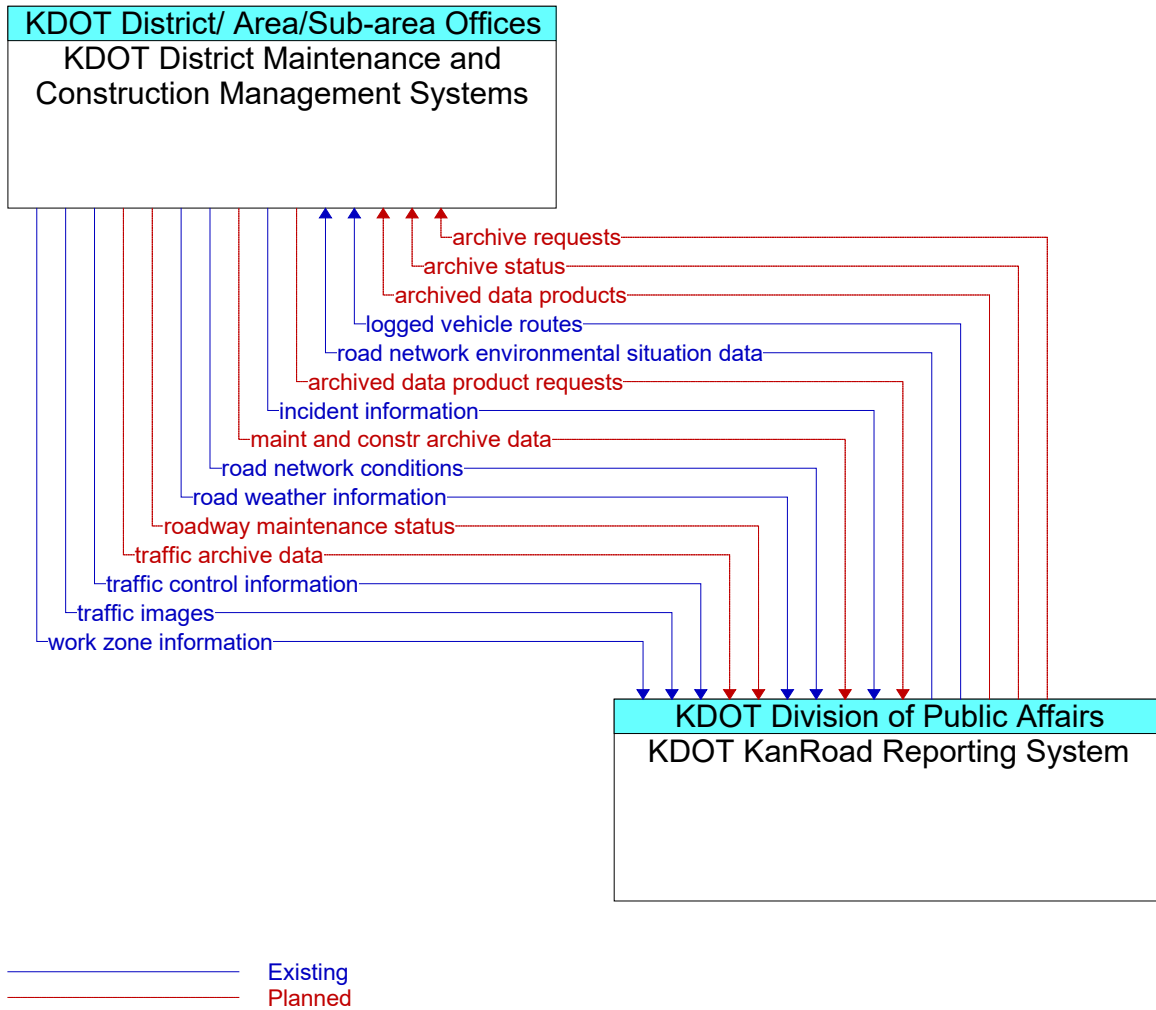




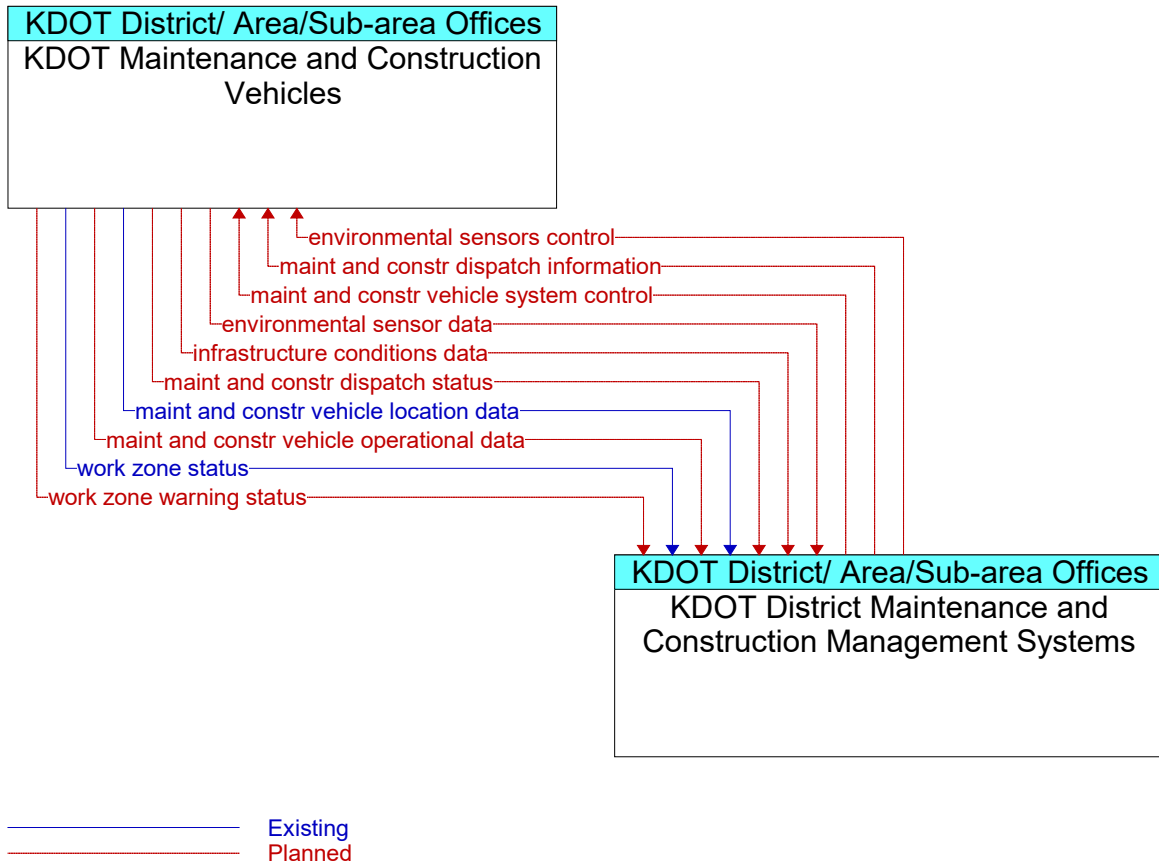
**Figure 787: KDOT District Maintenance and Construction Management Systems - KDOT Field Equipment Interface**



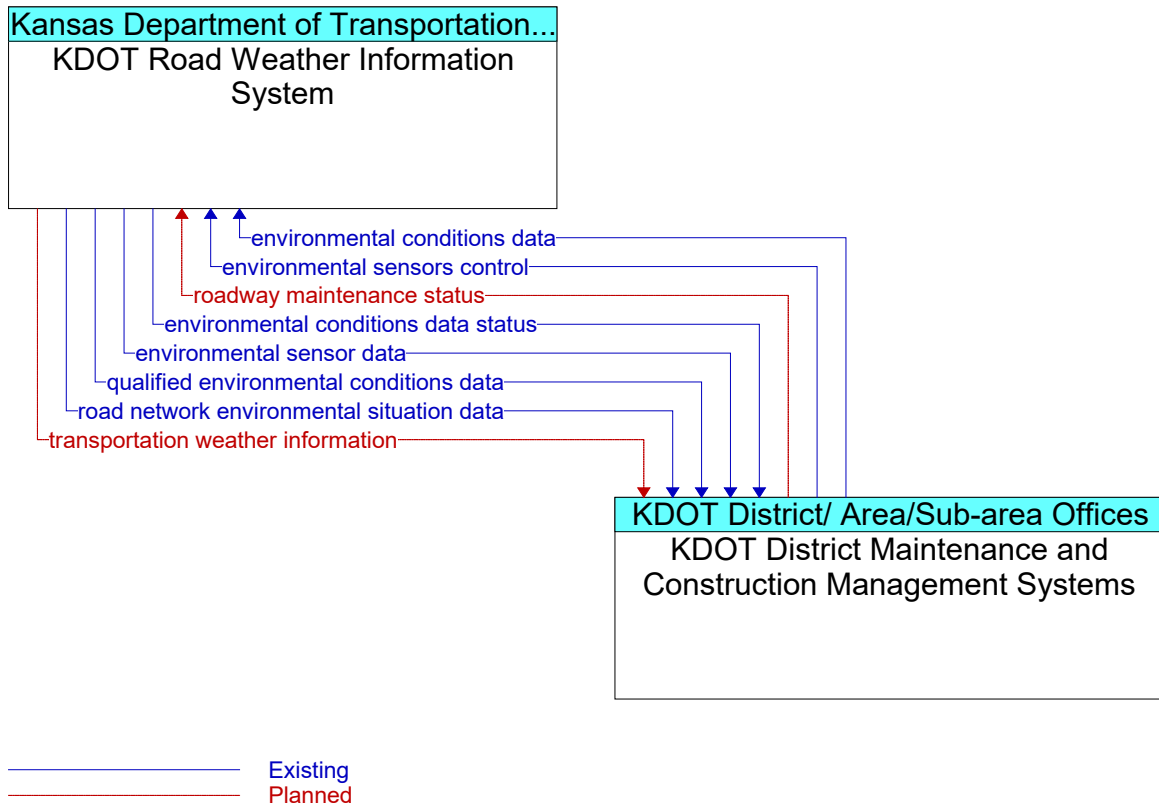
**Figure 788: KDOT District Maintenance and Construction Management Systems - KDOT KanDrive Traveler Information Website Interface**



**Figure 789: KDOT District Maintenance and Construction Management Systems - KDOT KanRoad Reporting System Interface**



**Figure 790: KDOT District Maintenance and Construction Management Systems - KDOT Maintenance and Construction Vehicles Interface**



**Figure 791: KDOT District Maintenance and Construction Management Systems - KDOT Road Weather Information System Interface**

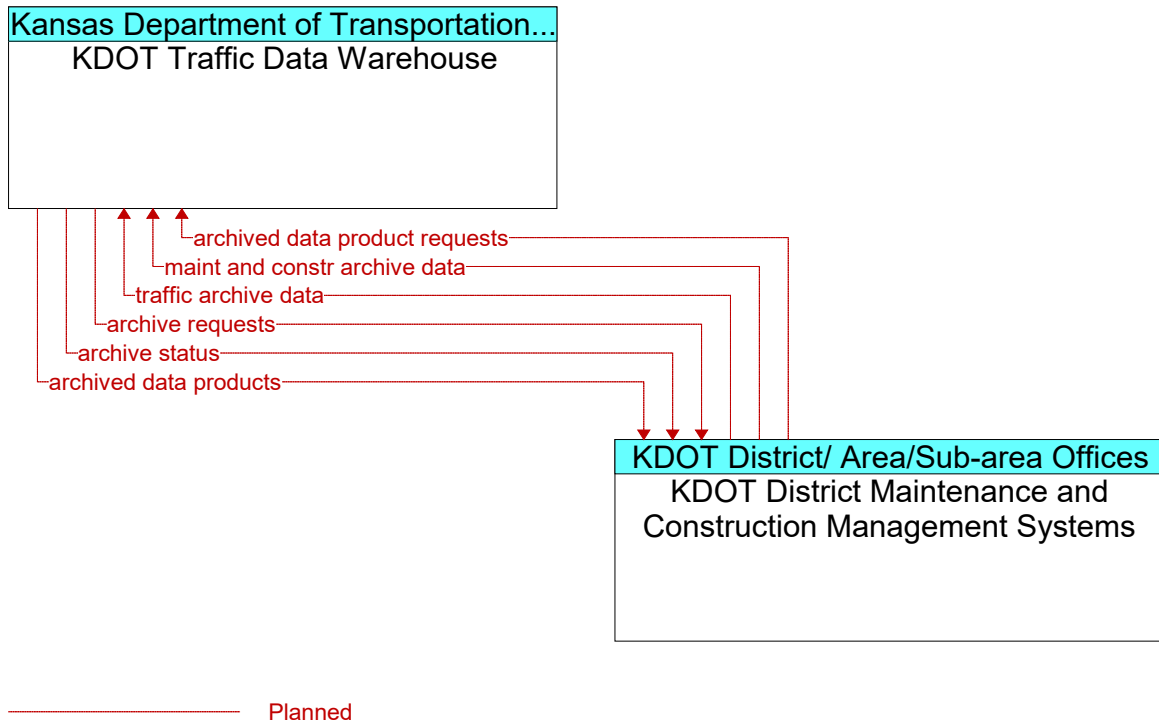
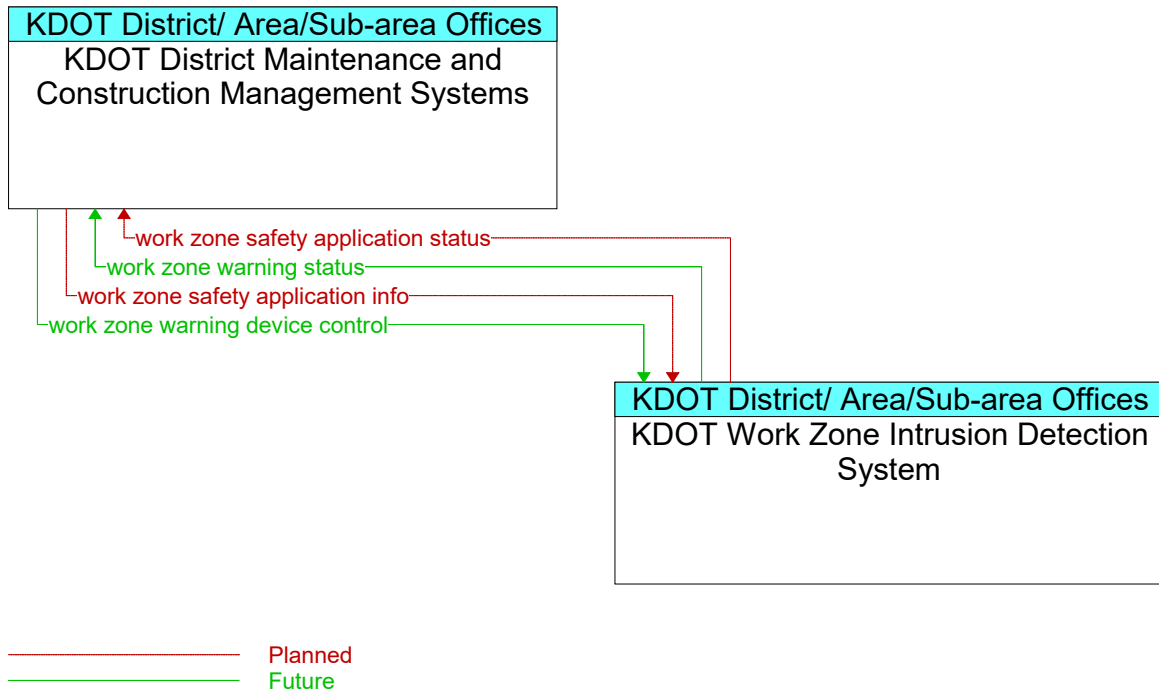
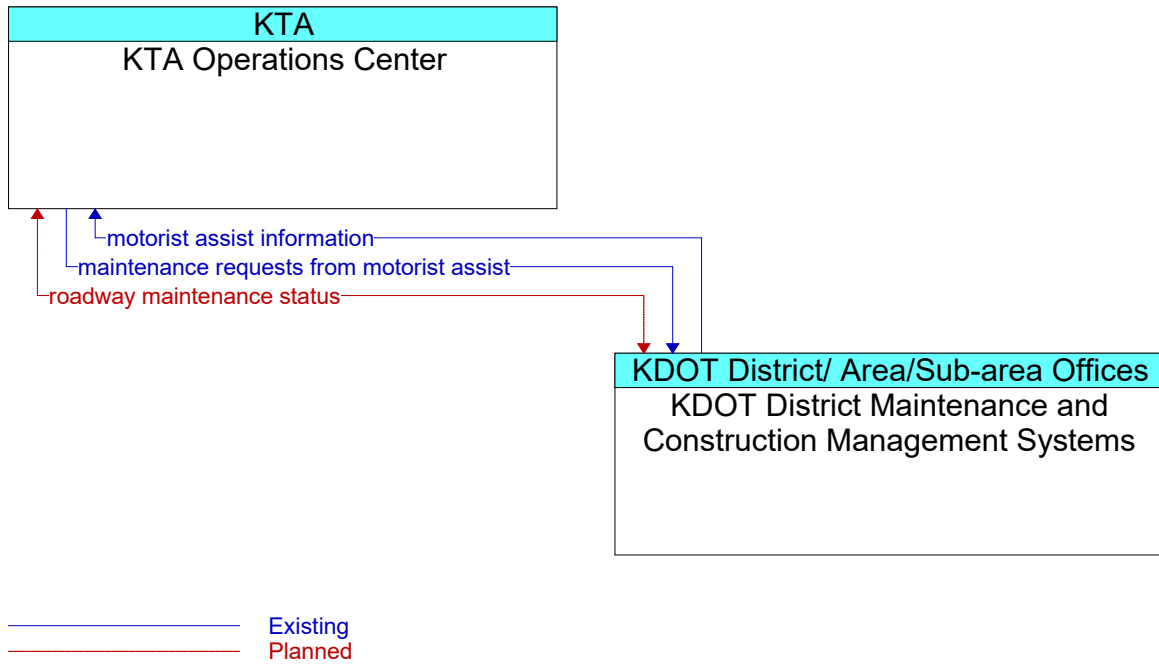


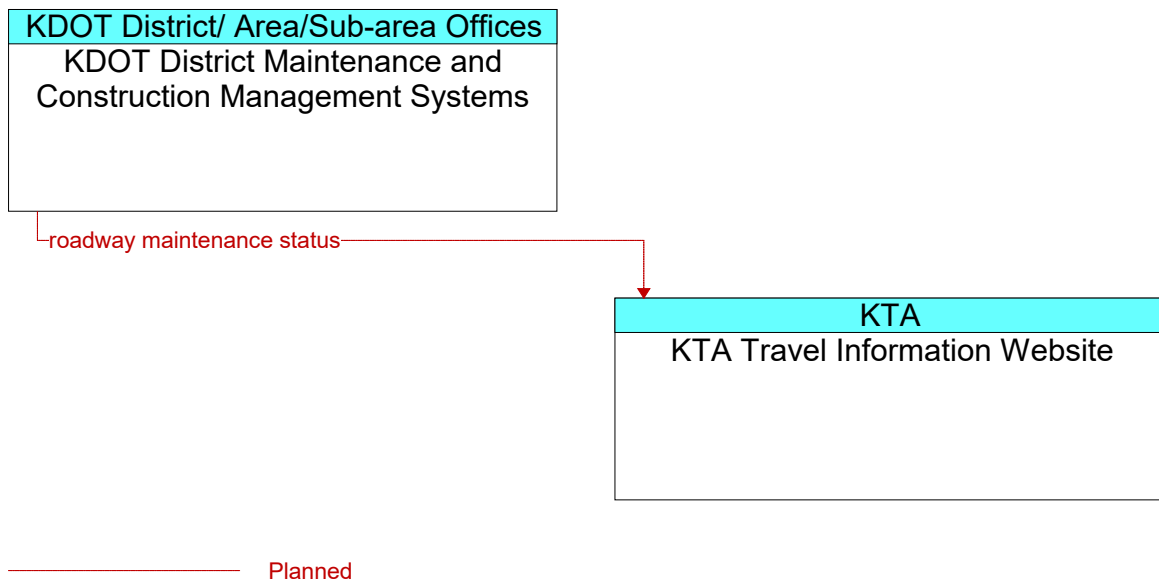
Figure 792: KDOT District Maintenance and Construction Management Systems - KDOT Traffic Data Warehouse Interface



**Figure 793: KDOT District Maintenance and Construction Management Systems - KDOT Work Zone Intrusion Detection System Interface**

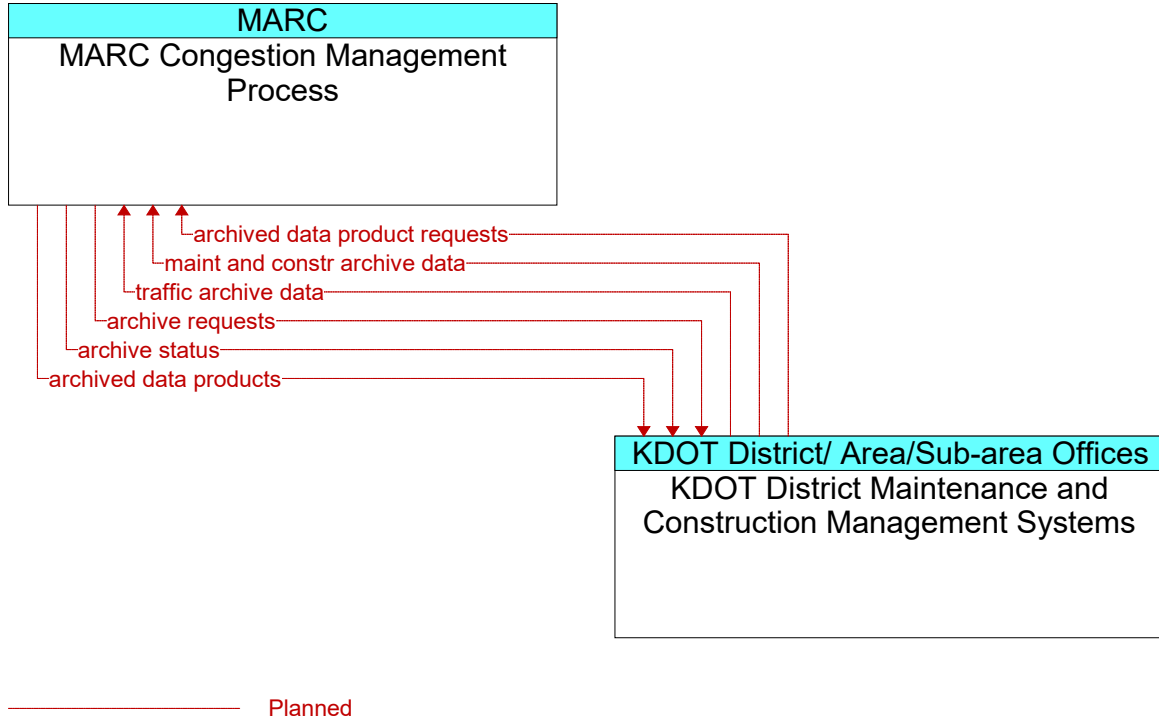


**Figure 794: KDOT District Maintenance and Construction Management Systems - KTA Operations Center Interface**

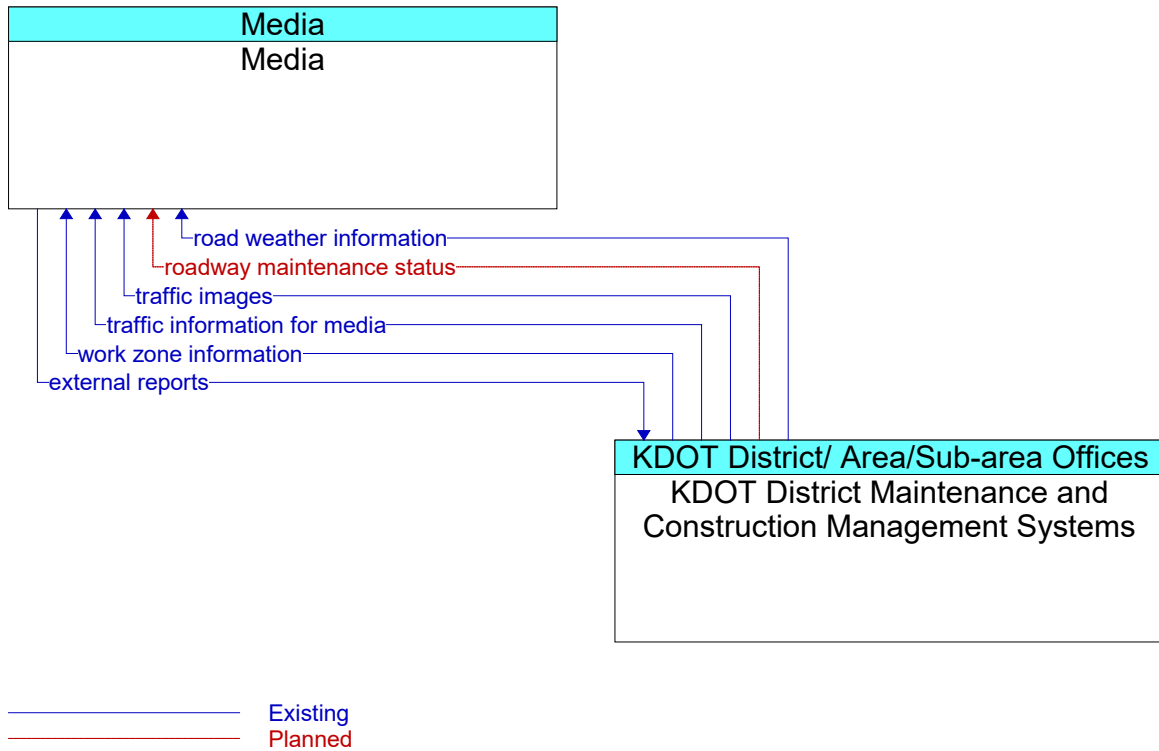


**Figure 795: KDOT District Maintenance and Construction Management Systems - KTA Travel Information Website Interface**

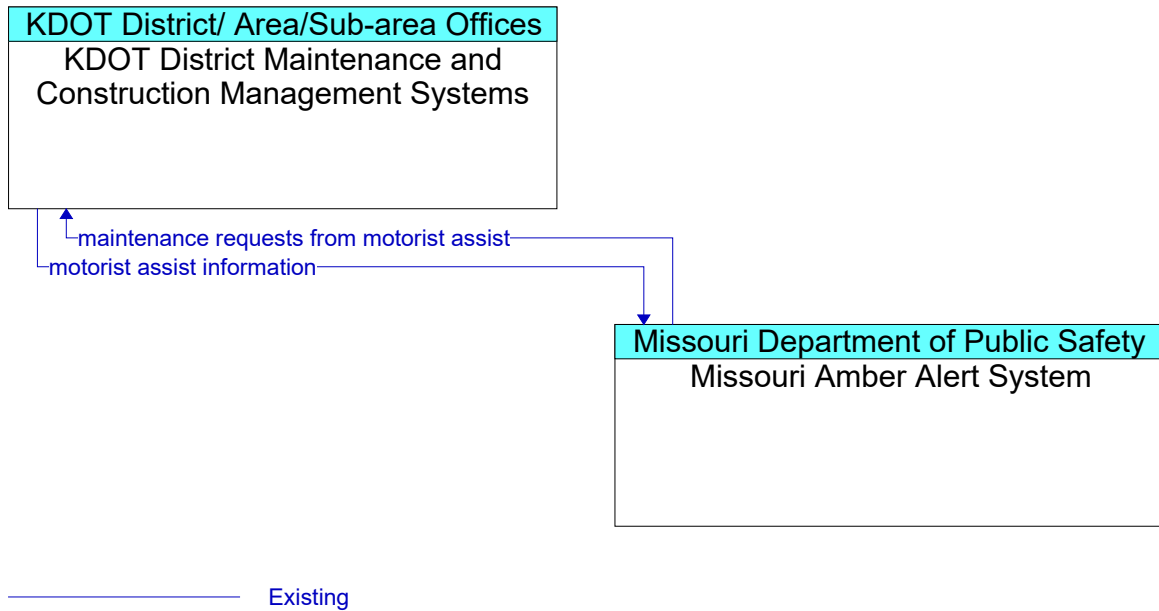




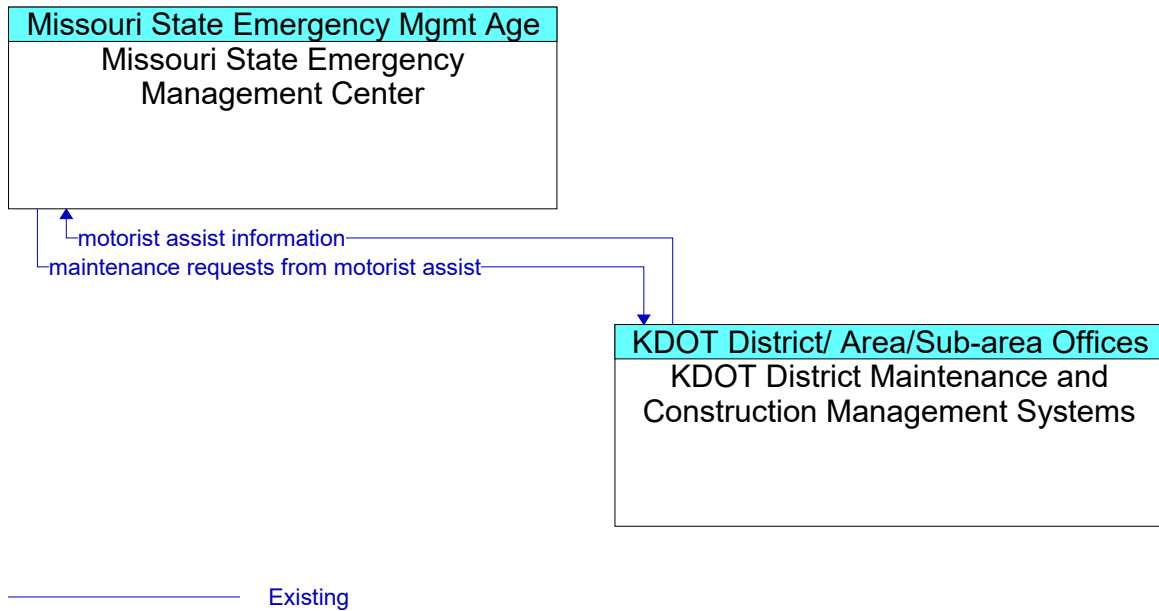
**Figure 796: KDOT District Maintenance and Construction Management Systems - MARC Congestion Management Process Interface**



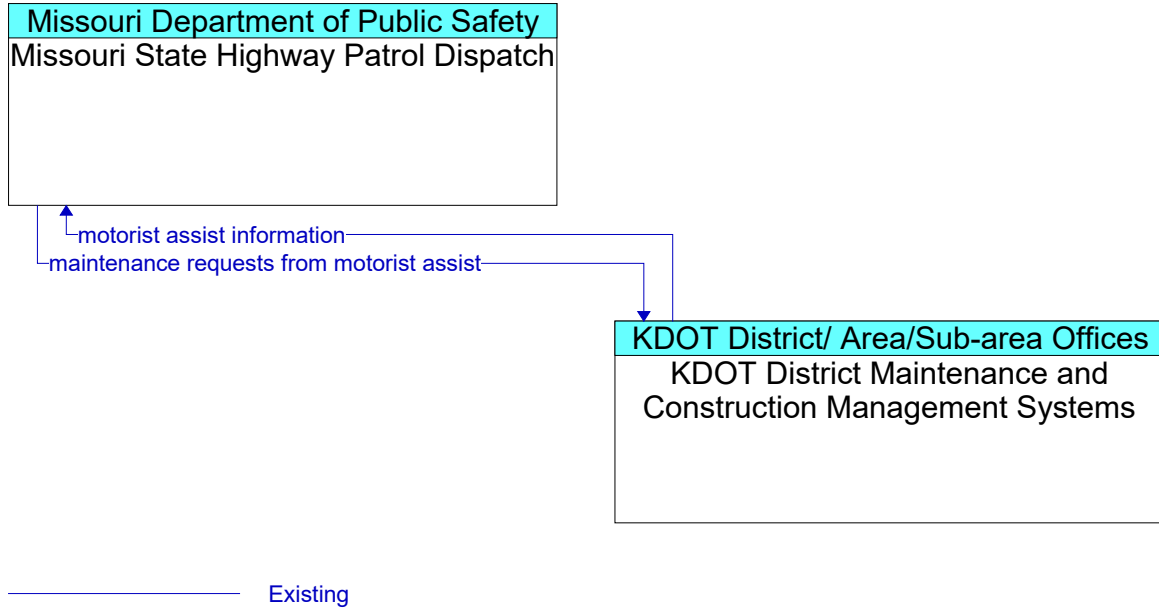
**Figure 797: KDOT District Maintenance and Construction Management Systems - Media Interface**



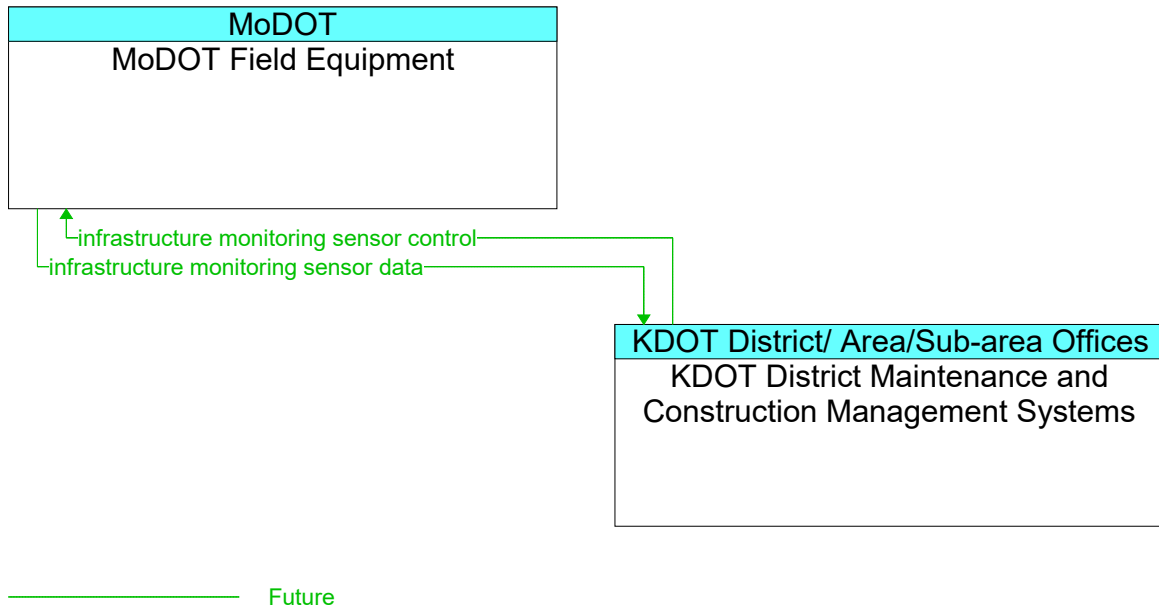
**Figure 798: KDOT District Maintenance and Construction Management Systems - Missouri Amber Alert System Interface**



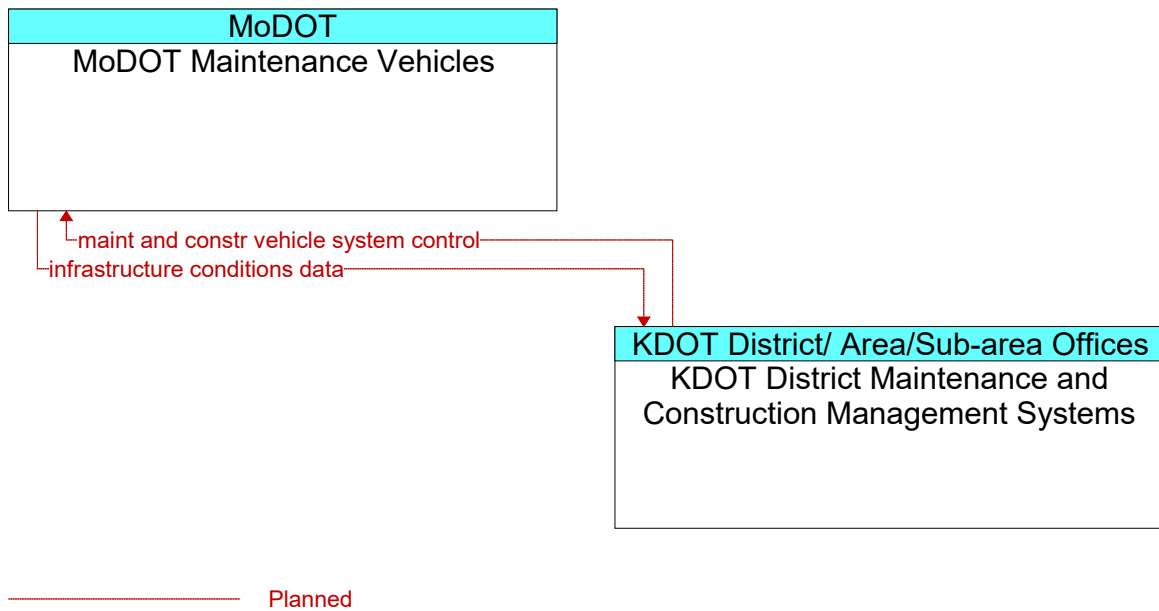
**Figure 799: KDOT District Maintenance and Construction Management Systems - Missouri State Emergency Management Center Interface**



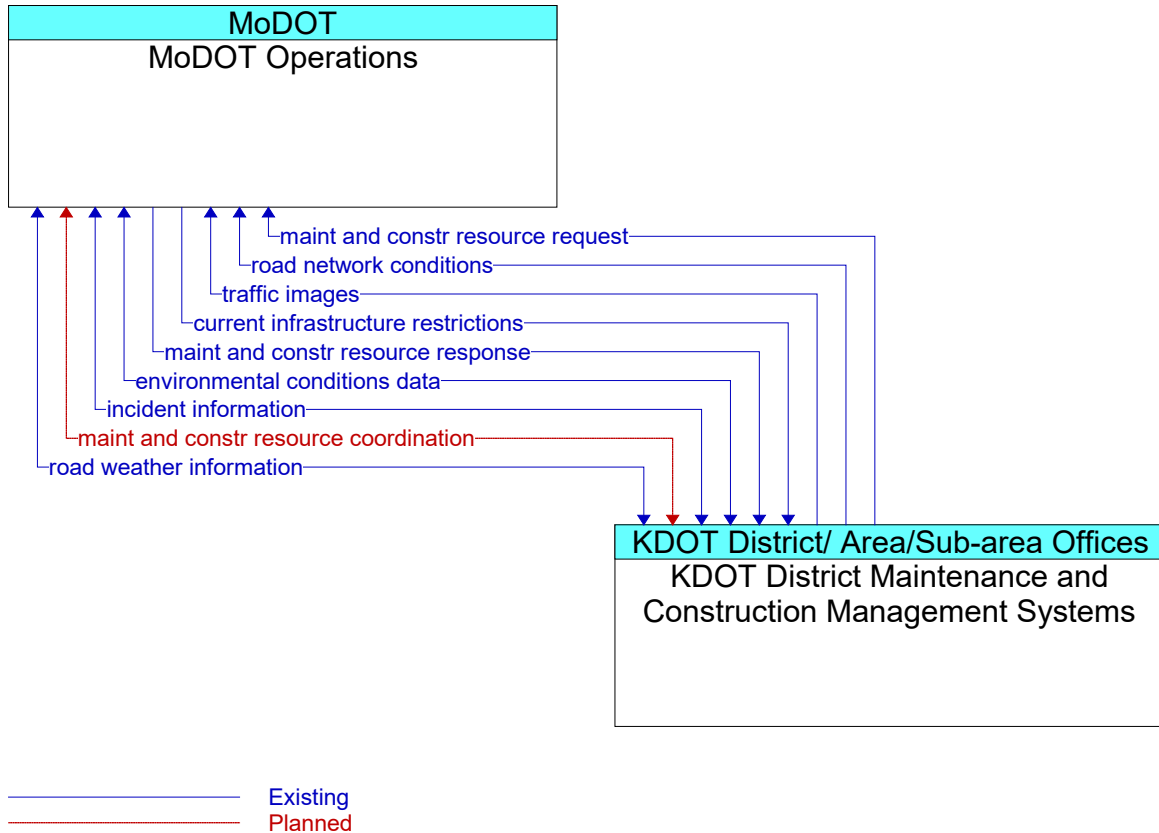
**Figure 800: KDOT District Maintenance and Construction Management Systems - Missouri State Highway Patrol Dispatch Interface**



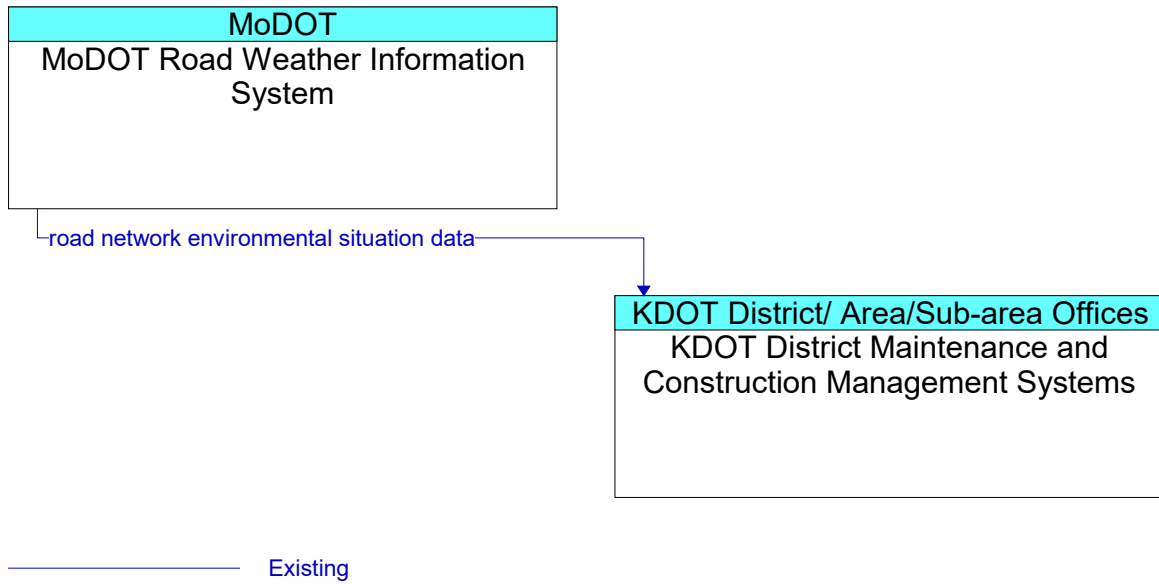
**Figure 801: KDOT District Maintenance and Construction Management Systems - MoDOT Field Equipment Interface**



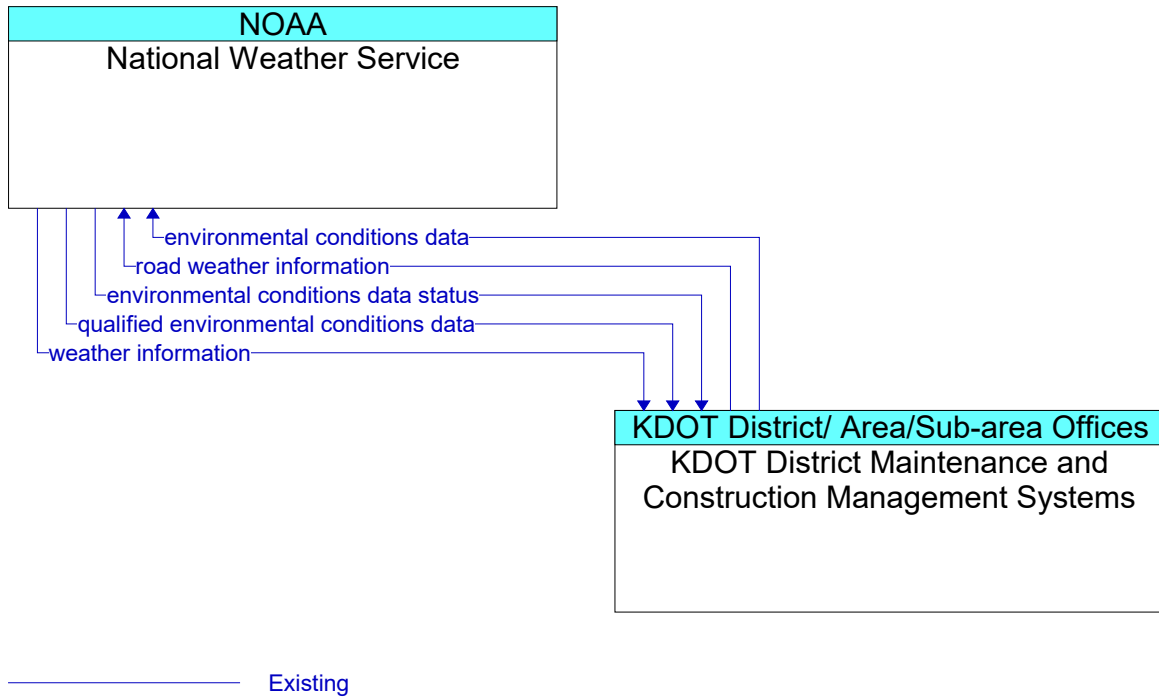
**Figure 802: KDOT District Maintenance and Construction Management Systems - MoDOT Maintenance Vehicles Interface**



**Figure 803: KDOT District Maintenance and Construction Management Systems - MoDOT Operations Interface**

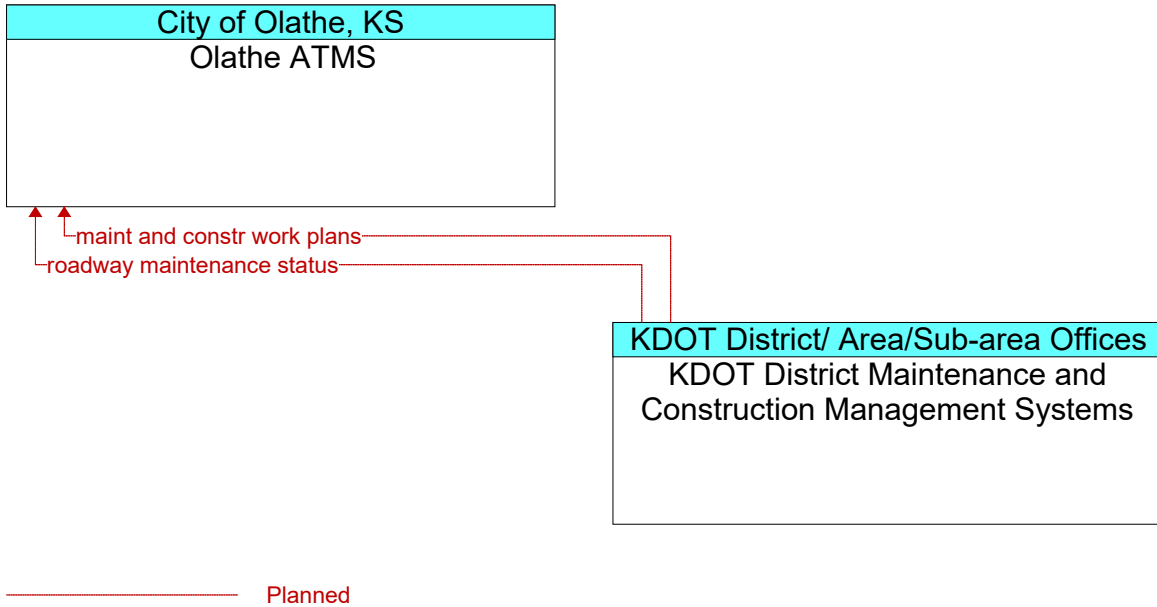


**Figure 804: KDOT District Maintenance and Construction Management Systems - MoDOT Road Weather Information System Interface**

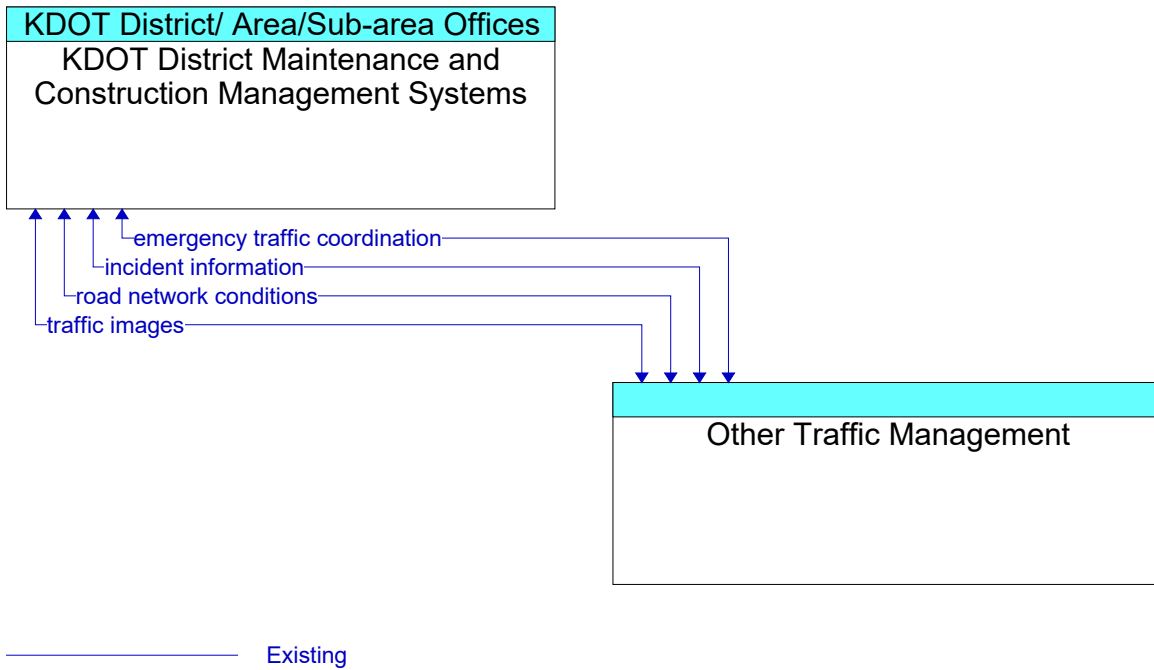


**Figure 805: KDOT District Maintenance and Construction Management Systems - National Weather Service Interface**

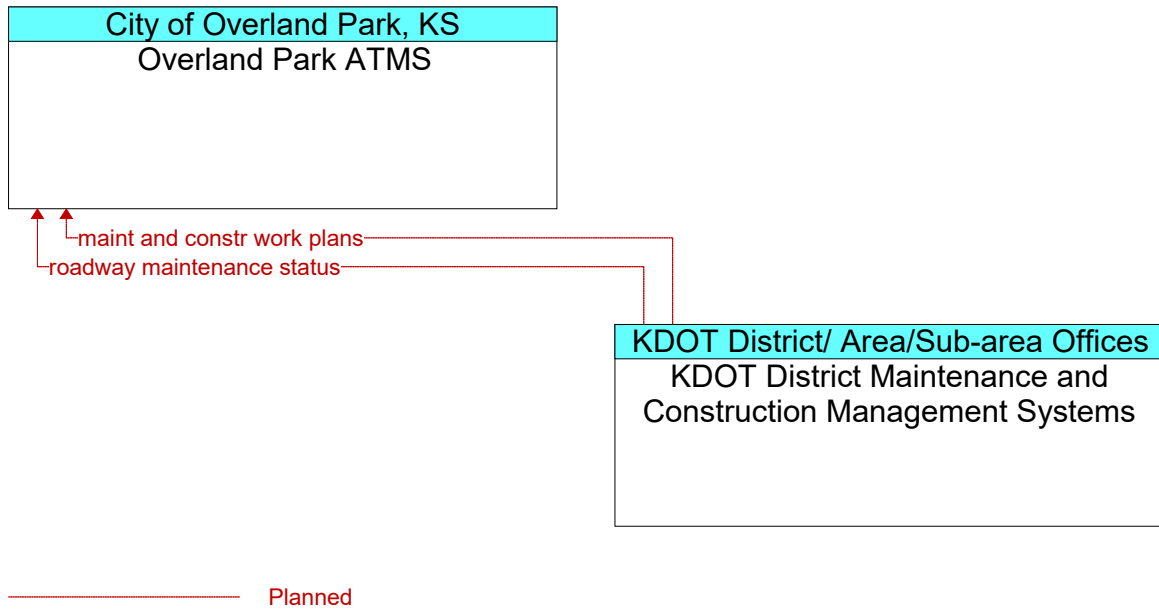




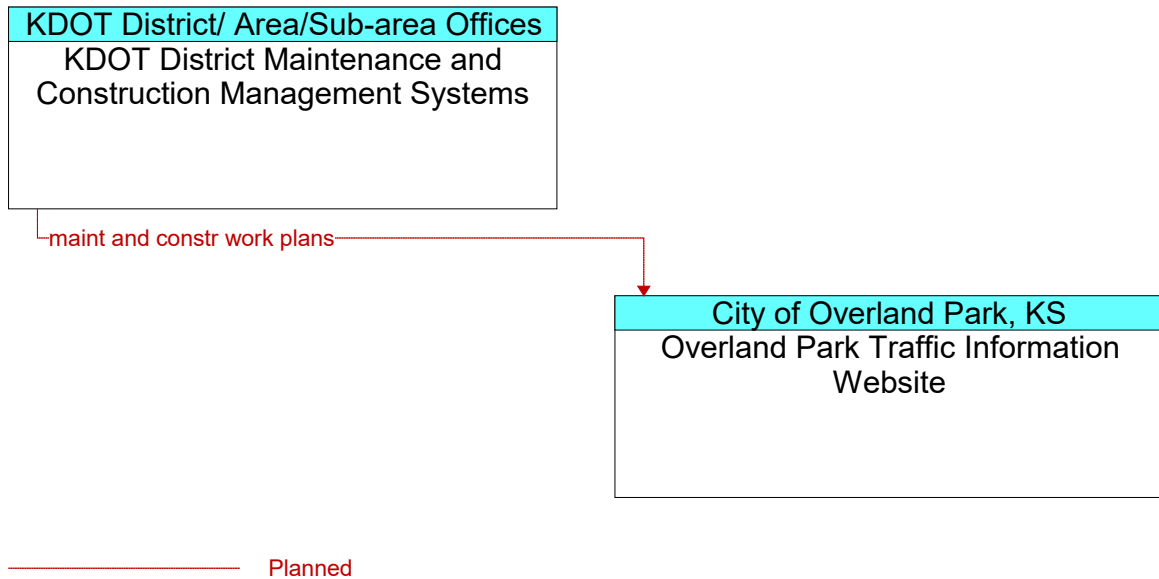
**Figure 806: KDOT District Maintenance and Construction Management Systems - Olathe ATMS Interface**



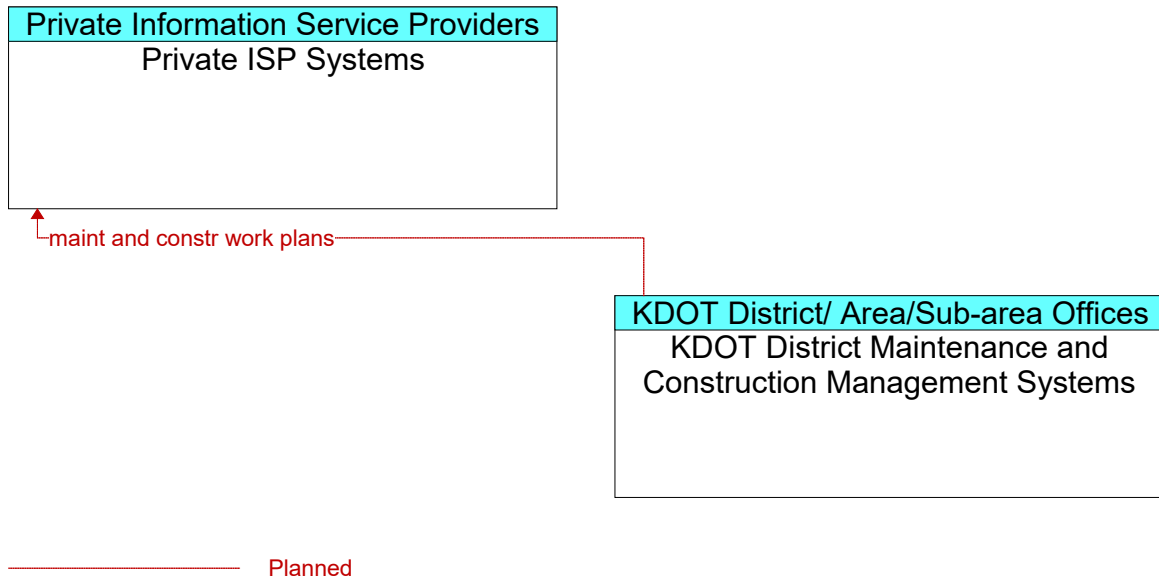
**Figure 807: KDOT District Maintenance and Construction Management Systems - Other Traffic Management Interface**



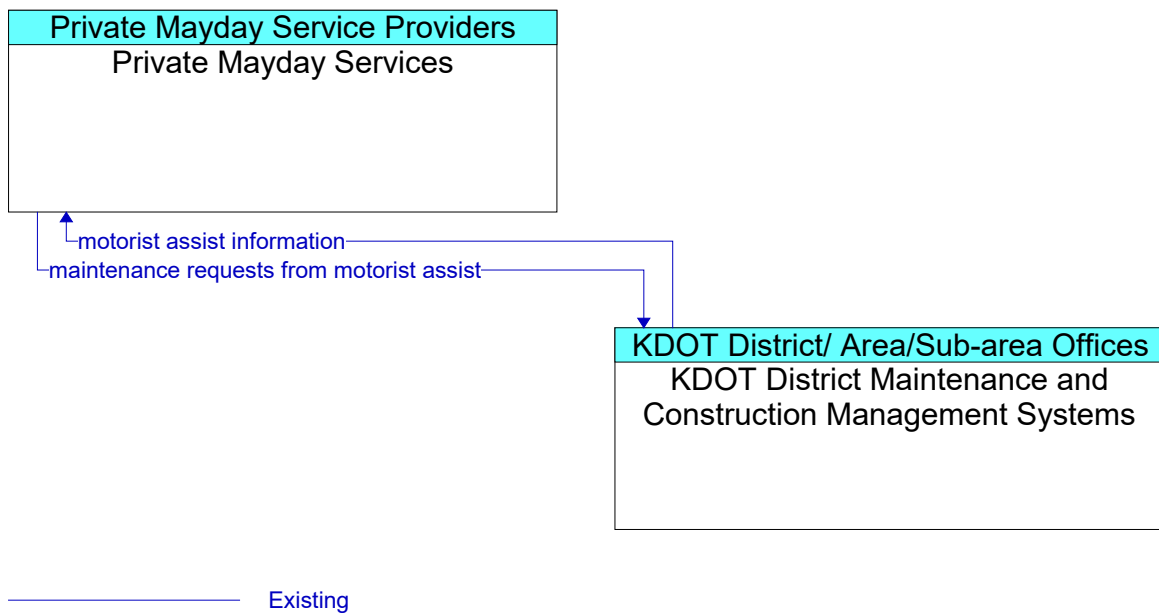
**Figure 808: KDOT District Maintenance and Construction Management Systems - Overland Park ATMS Interface**



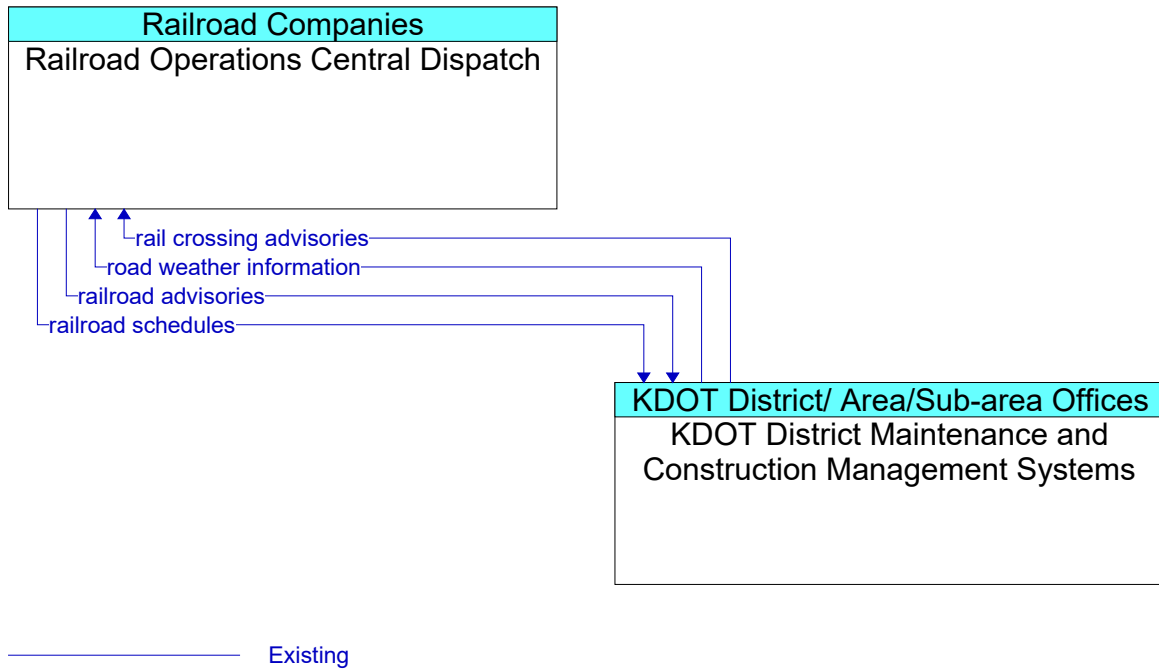
**Figure 809: KDOT District Maintenance and Construction Management Systems - Overland Park Traffic Information Website Interface**



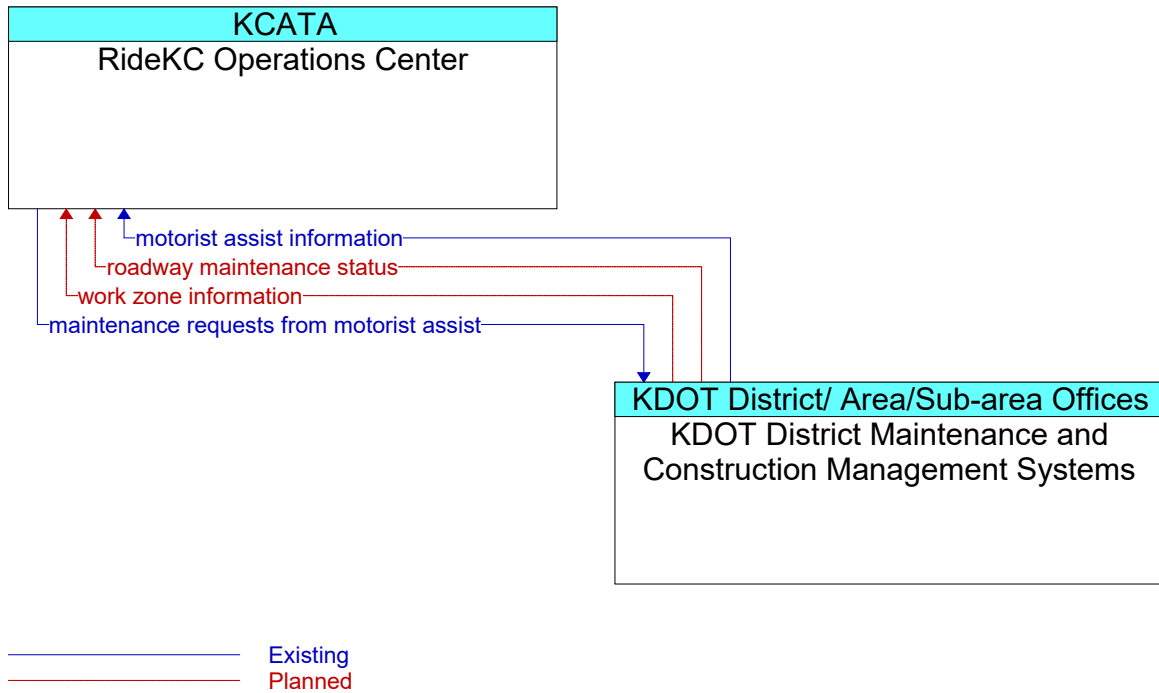
**Figure 810: KDOT District Maintenance and Construction Management Systems - Private ISP Systems Interface**



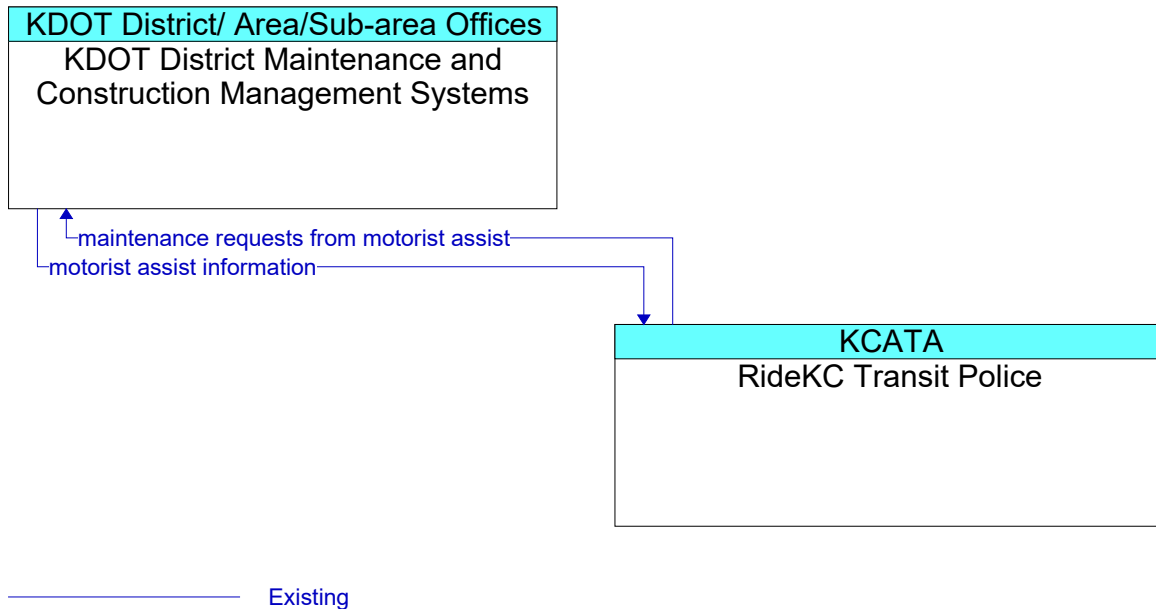
**Figure 811: KDOT District Maintenance and Construction Management Systems - Private Mayday Services Interface**



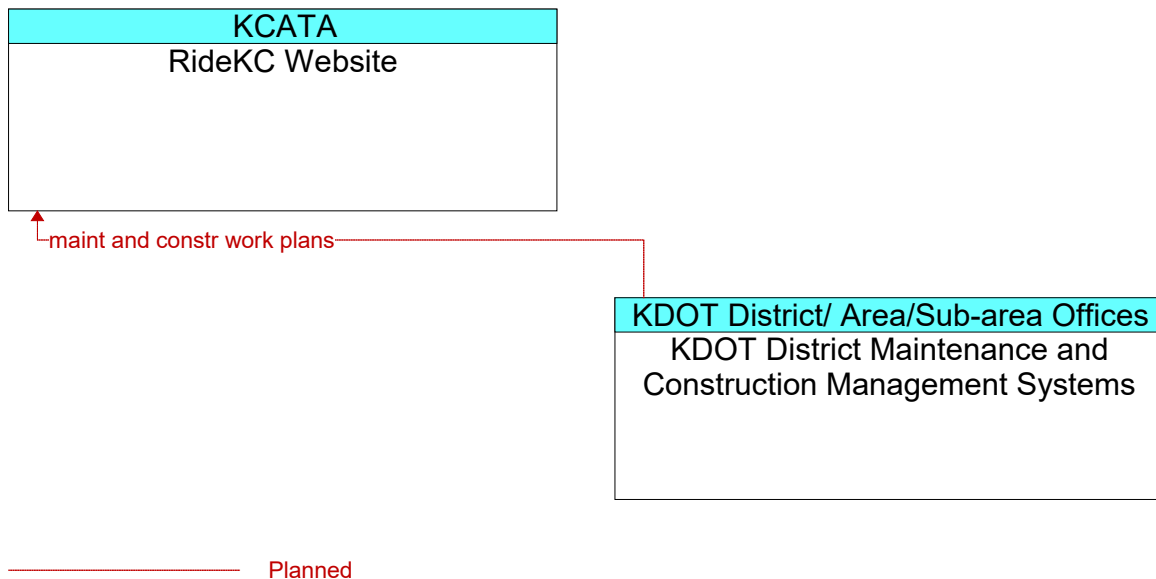
**Figure 812: KDOT District Maintenance and Construction Management Systems - Railroad Operations Central Dispatch Interface**



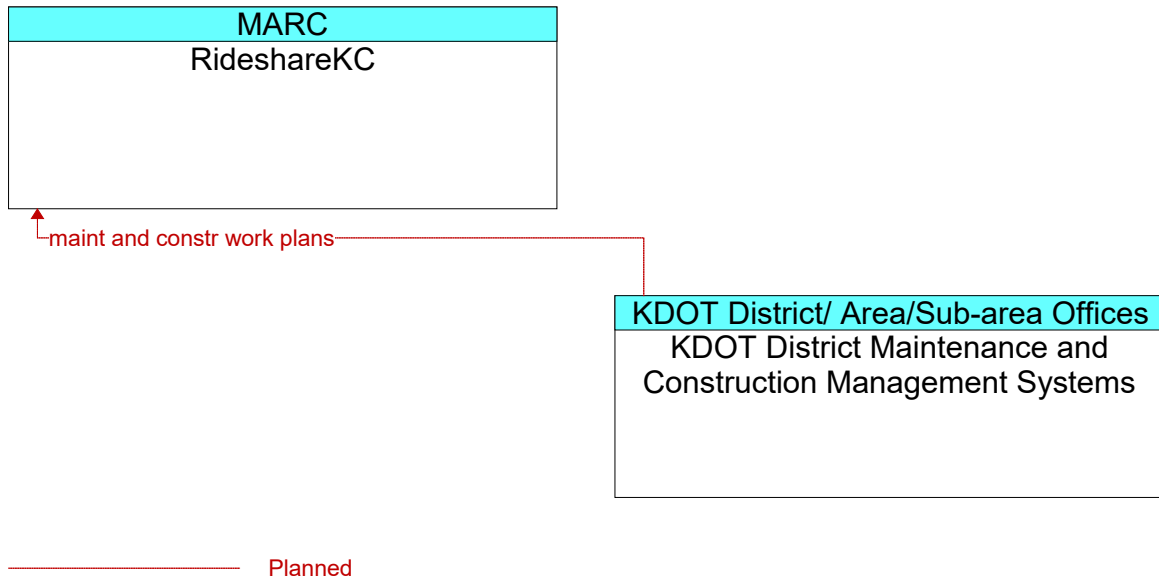
**Figure 813: KDOT District Maintenance and Construction Management Systems - RideKC Operations Center Interface**



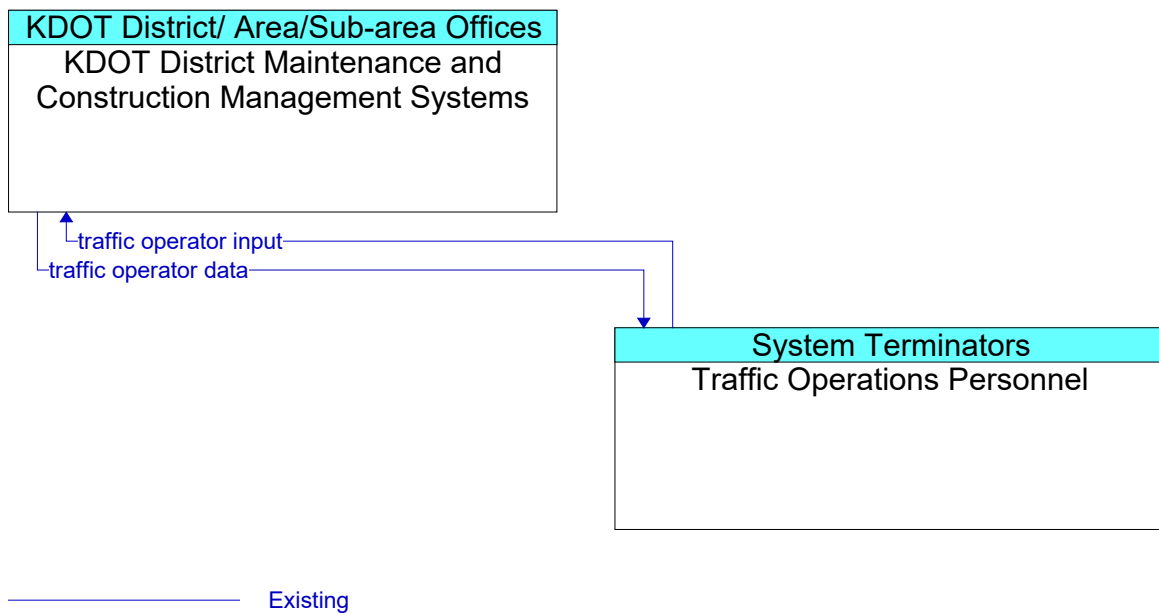
**Figure 814: KDOT District Maintenance and Construction Management Systems - RideKC Transit Police Interface**



**Figure 815: KDOT District Maintenance and Construction Management Systems - RideKC Website Interface**

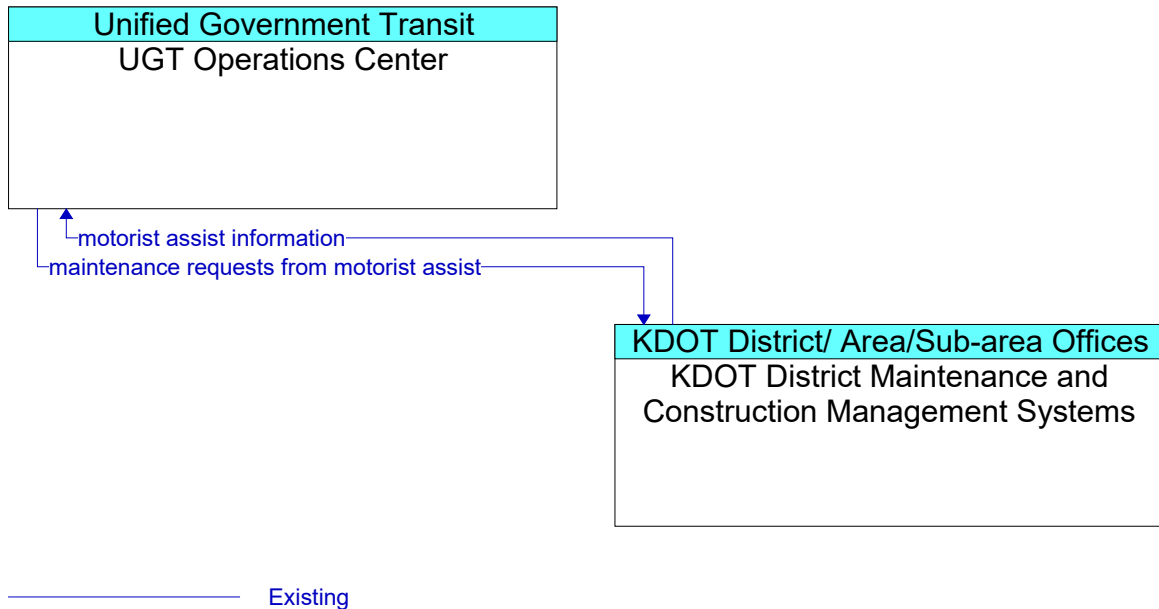


**Figure 816: KDOT District Maintenance and Construction Management Systems - RideshareKC Interface**

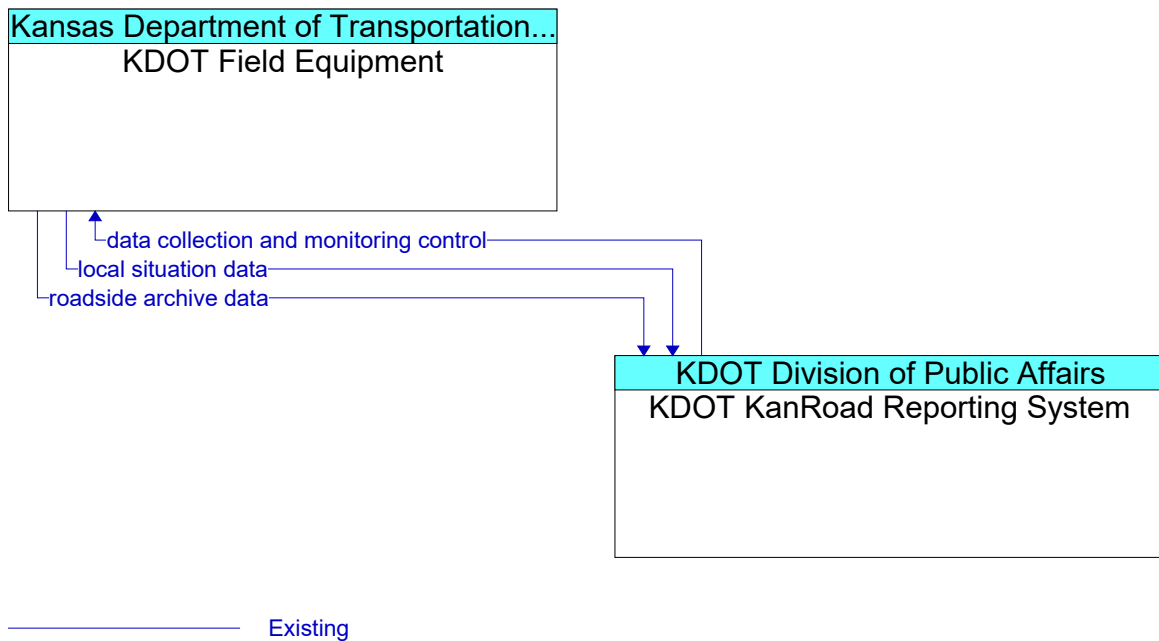


**Figure 817: KDOT District Maintenance and Construction Management Systems - Traffic Operations Personnel Interface**

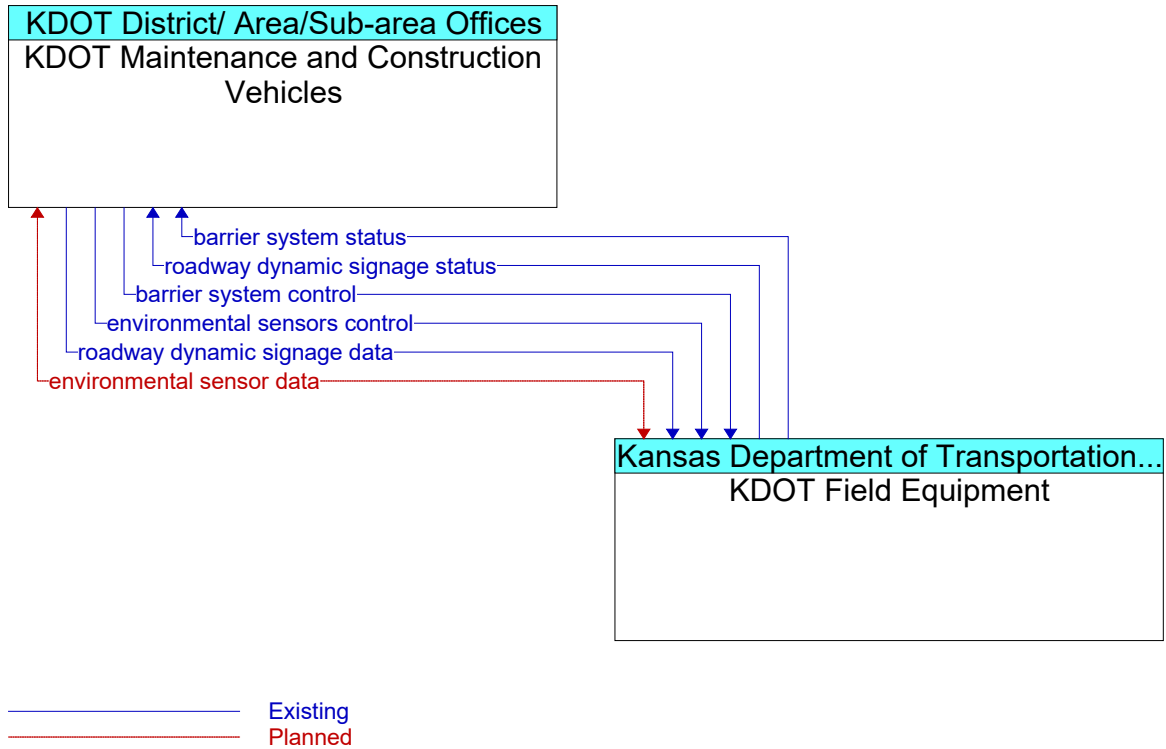




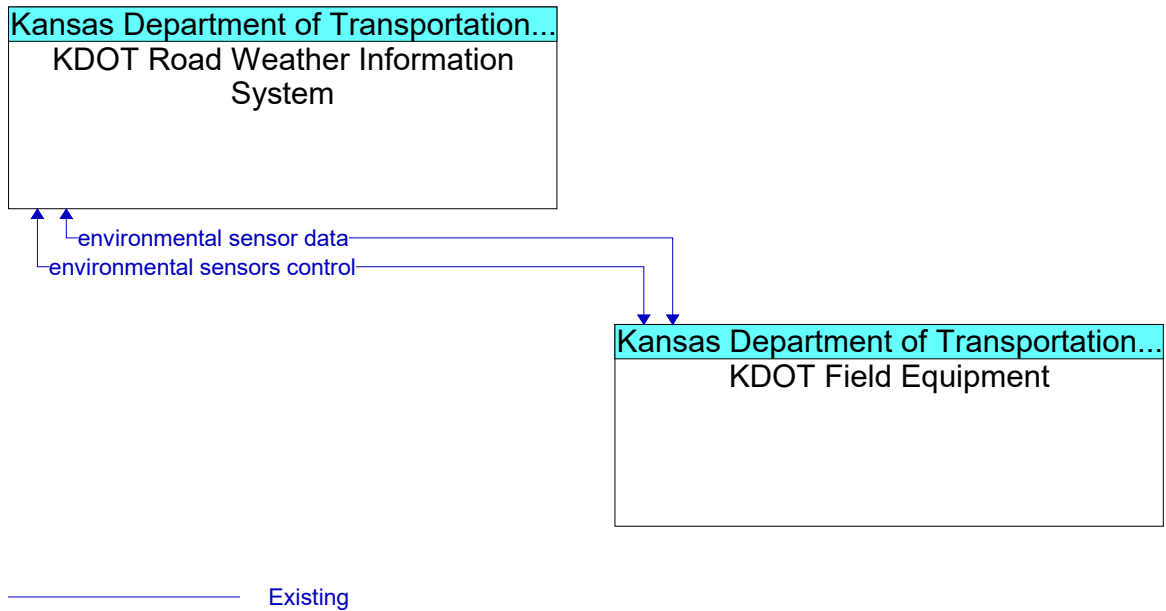
**Figure 818: KDOT District Maintenance and Construction Management Systems - UGT Operations Center Interface**



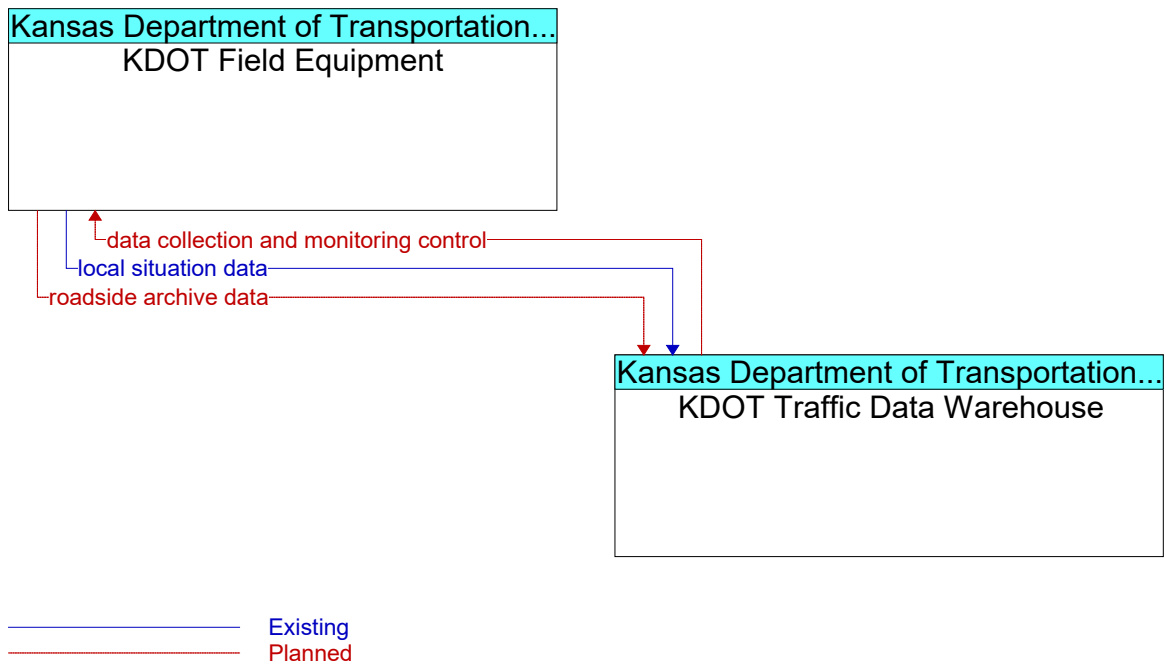
**Figure 819: KDOT Field Equipment - KDOT KanRoad Reporting System Interface**



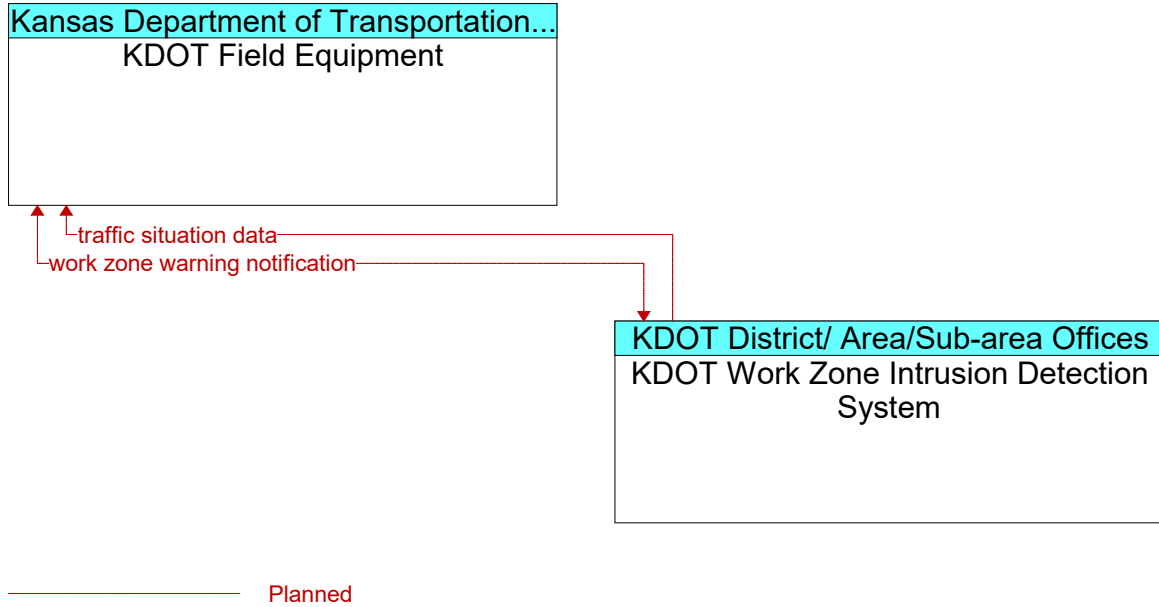
**Figure 820: KDOT Field Equipment - KDOT Maintenance and Construction Vehicles Interface**



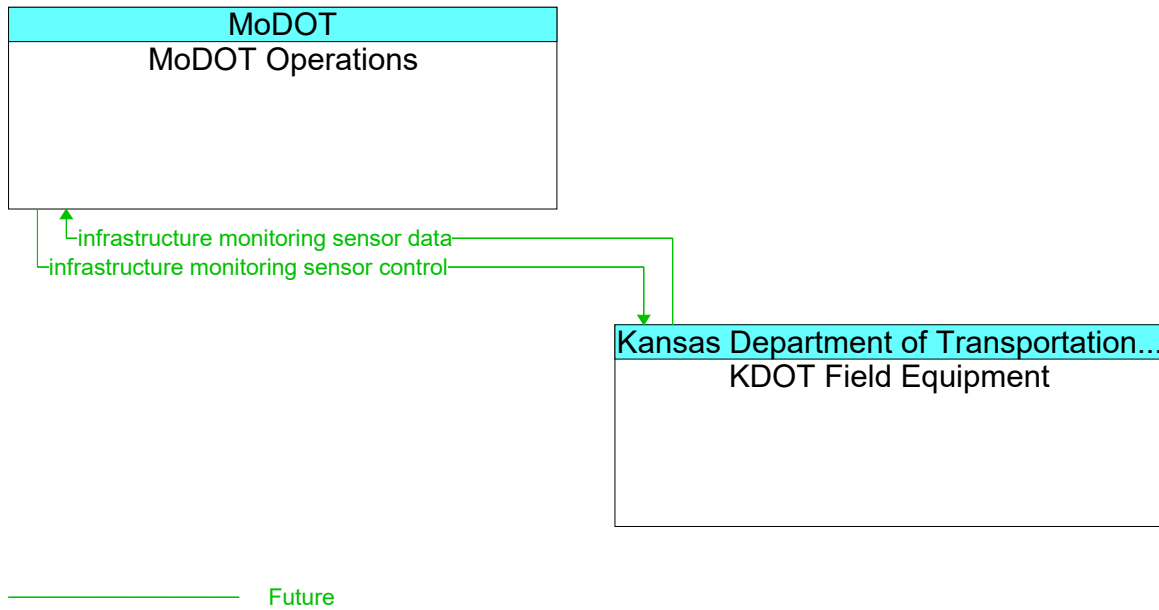
**Figure 821: KDOT Field Equipment - KDOT Road Weather Information System Interface**



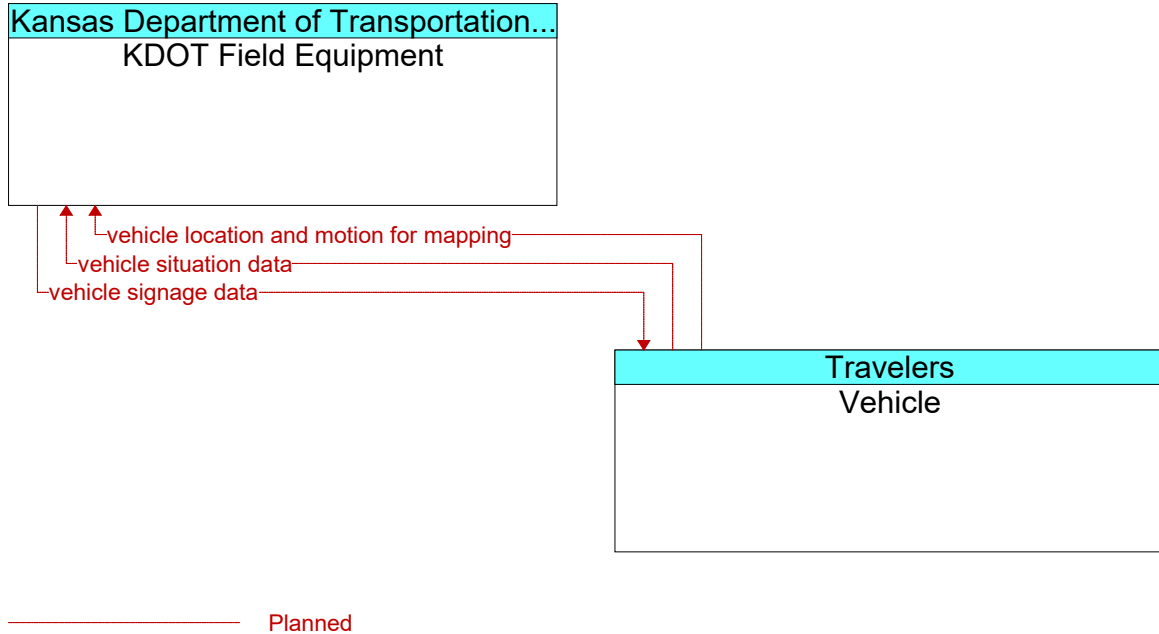
**Figure 822: KDOT Field Equipment - KDOT Traffic Data Warehouse Interface**



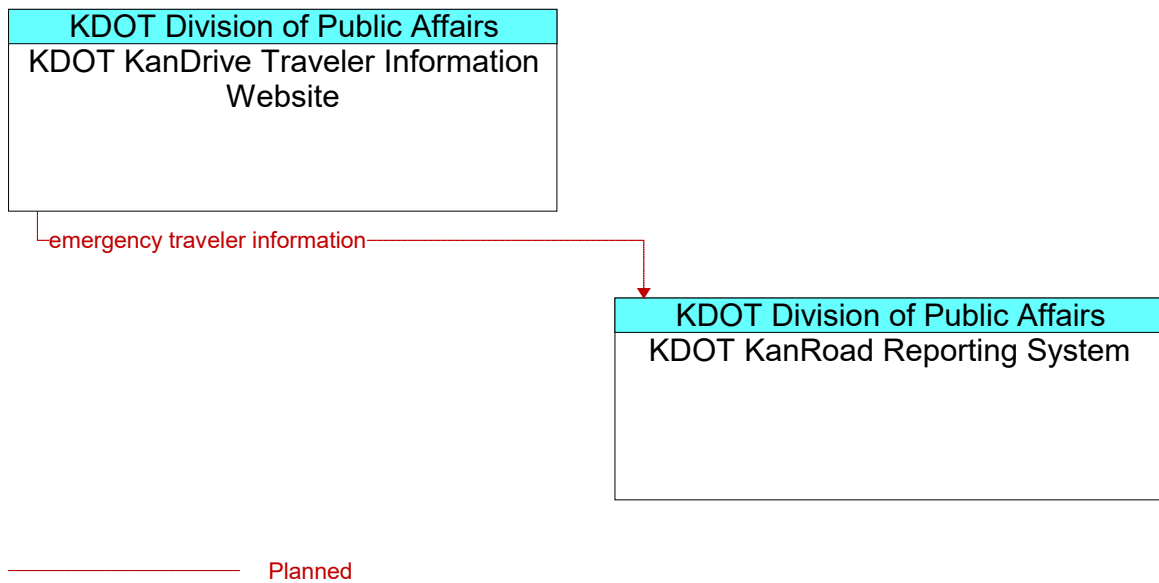
**Figure 823: KDOT Field Equipment - KDOT Work Zone Intrusion Detection System Interface**



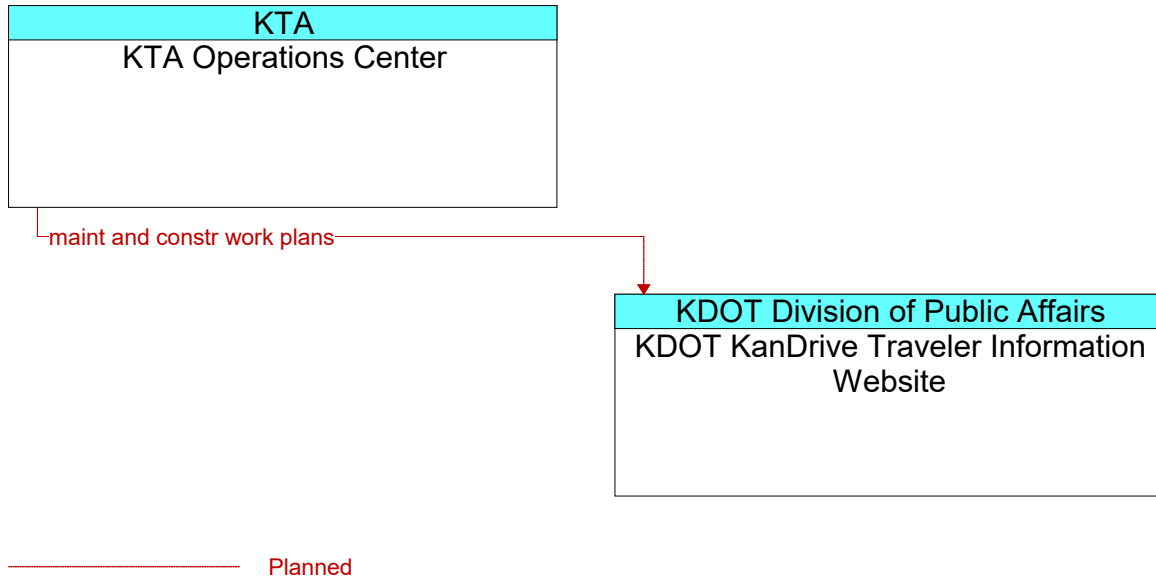
**Figure 824: KDOT Field Equipment - MoDOT Operations Interface**



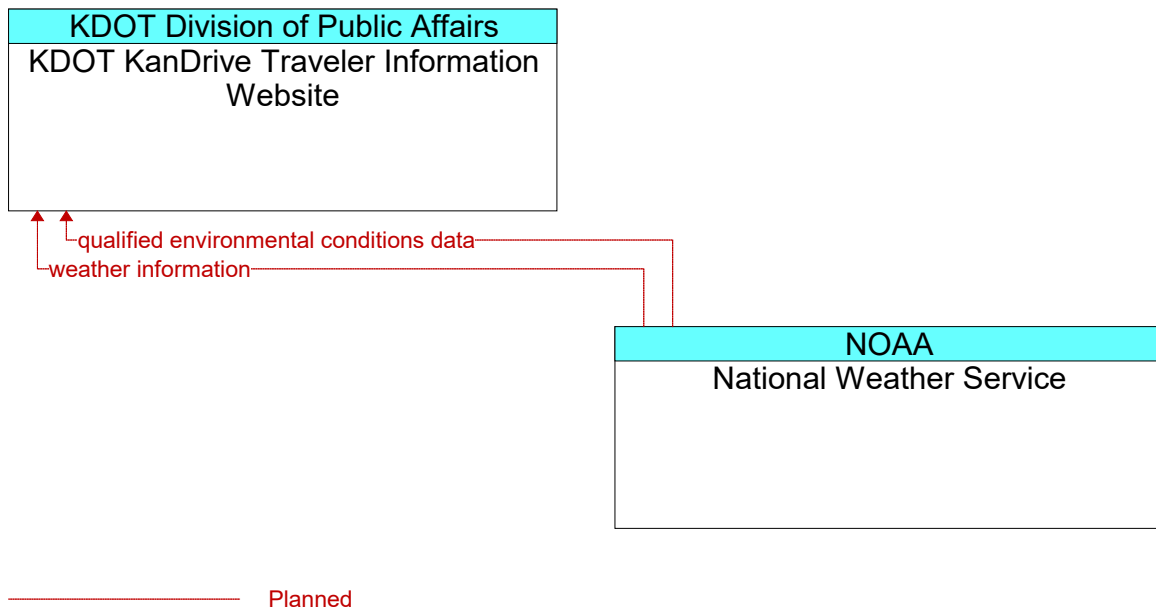
**Figure 825: KDOT Field Equipment - Vehicle Interface**



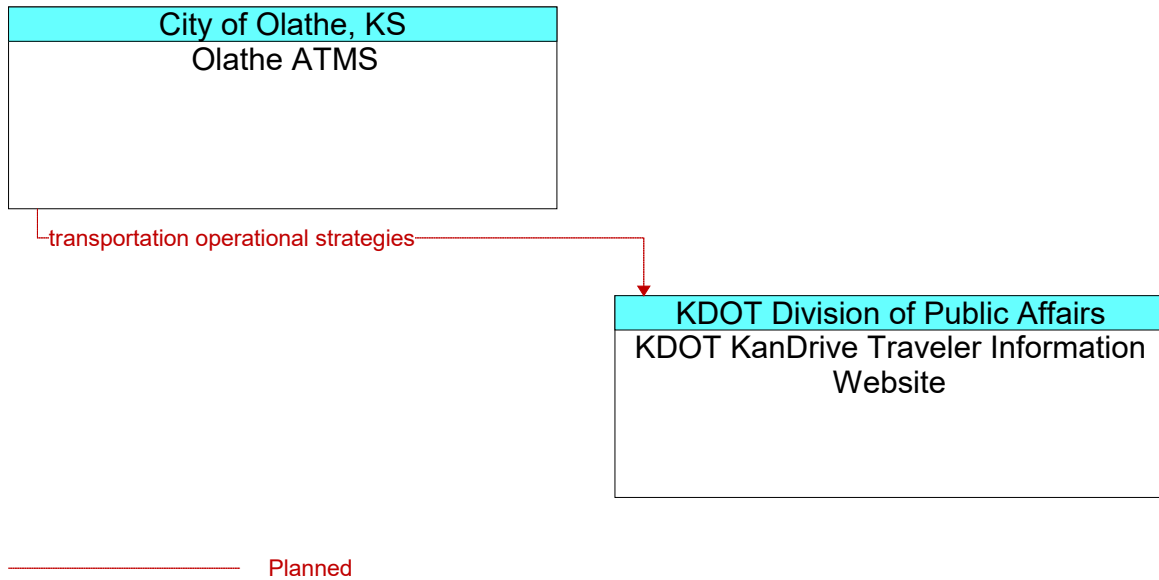
**Figure 826: KDOT KanDrive Traveler Information Website - KDOT KanRoad Reporting System Interface**



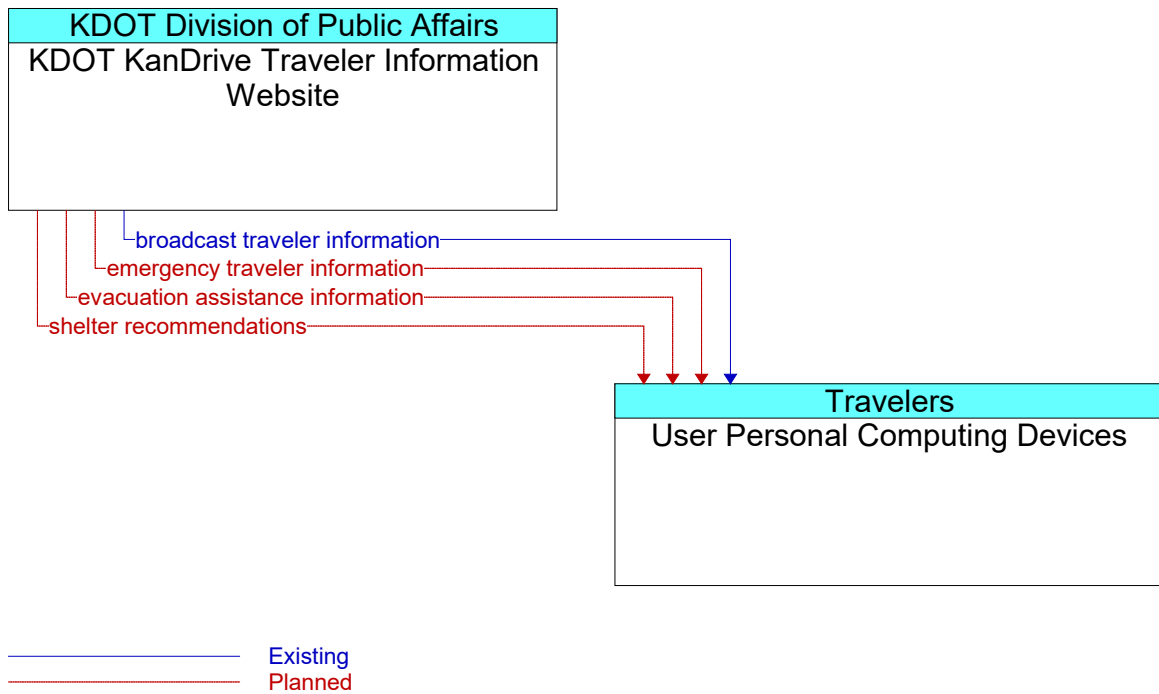
**Figure 827: KDOT KanDrive Traveler Information Website - KTA Operations Center Interface**



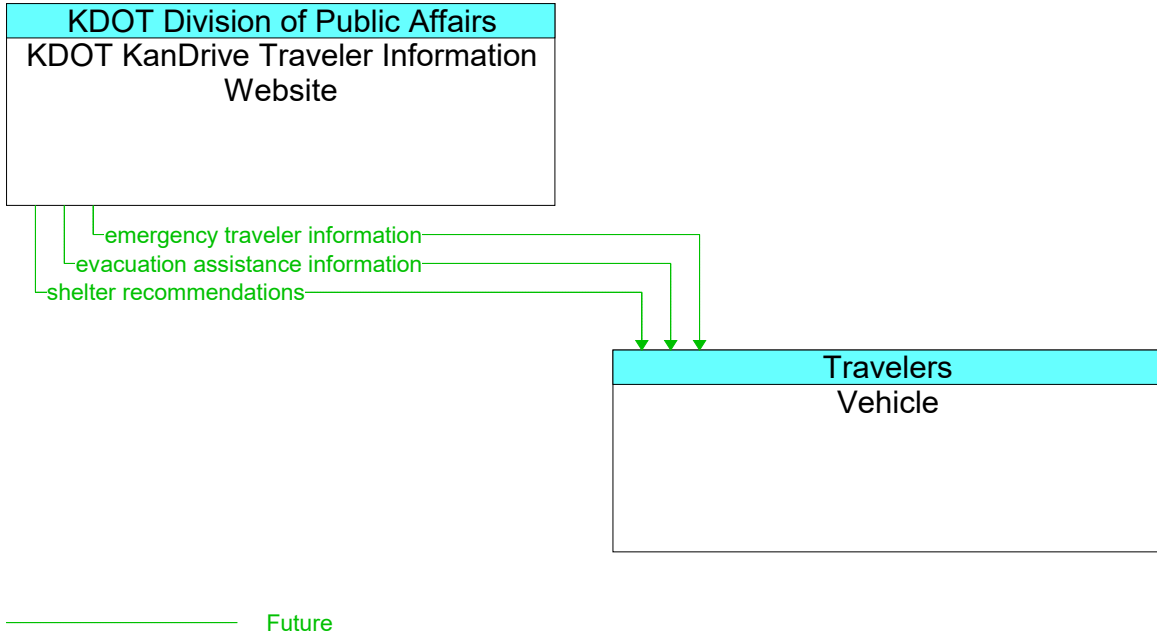
**Figure 828: KDOT KanDrive Traveler Information Website - National Weather Service Interface**



**Figure 829: KDOT KanDrive Traveler Information Website - Olathe ATMS Interface**



**Figure 830: KDOT KanDrive Traveler Information Website - User Personal Computing Devices Interface**



**Figure 831: KDOT KanDrive Traveler Information Website - Vehicle Interface**



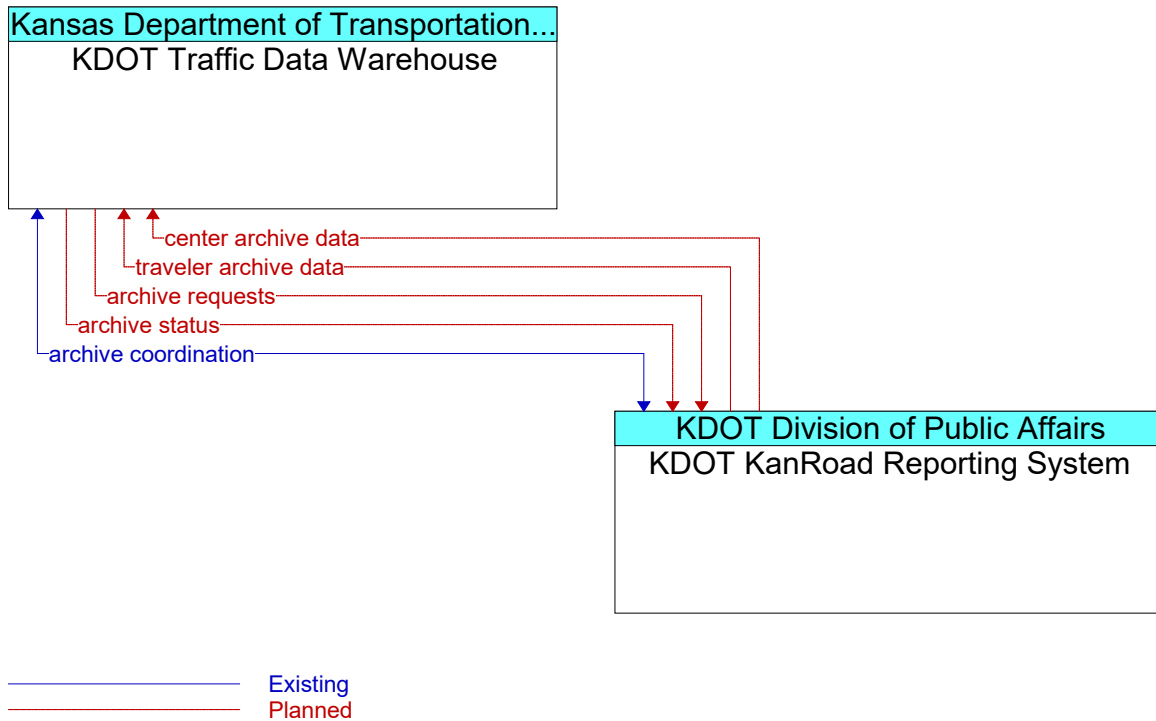
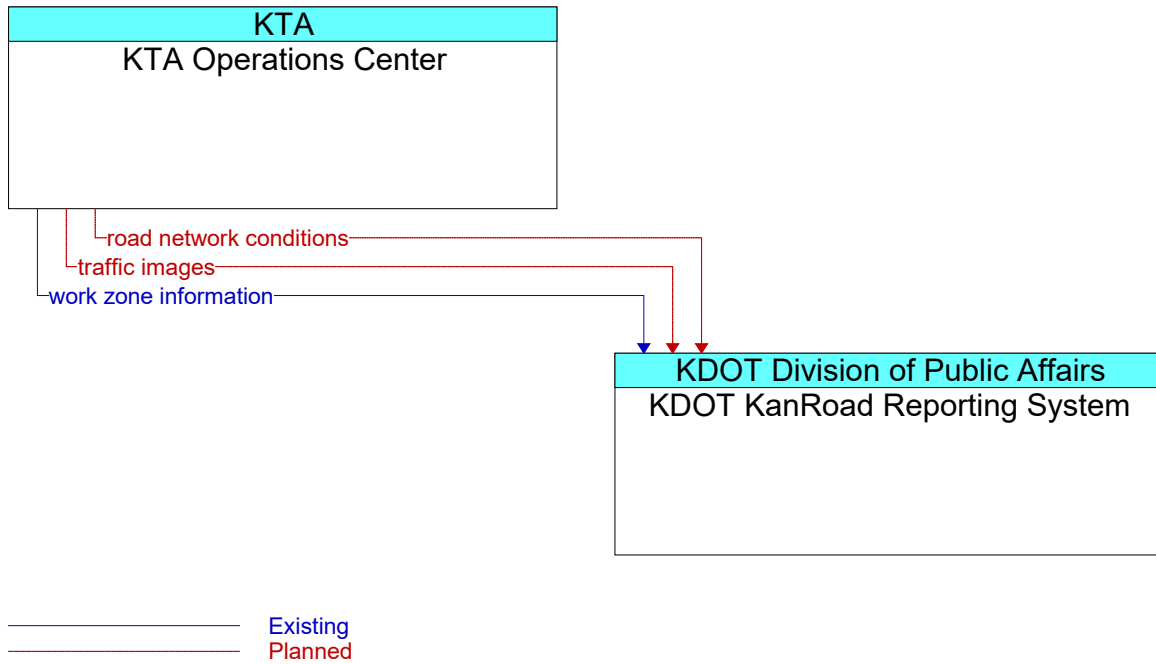
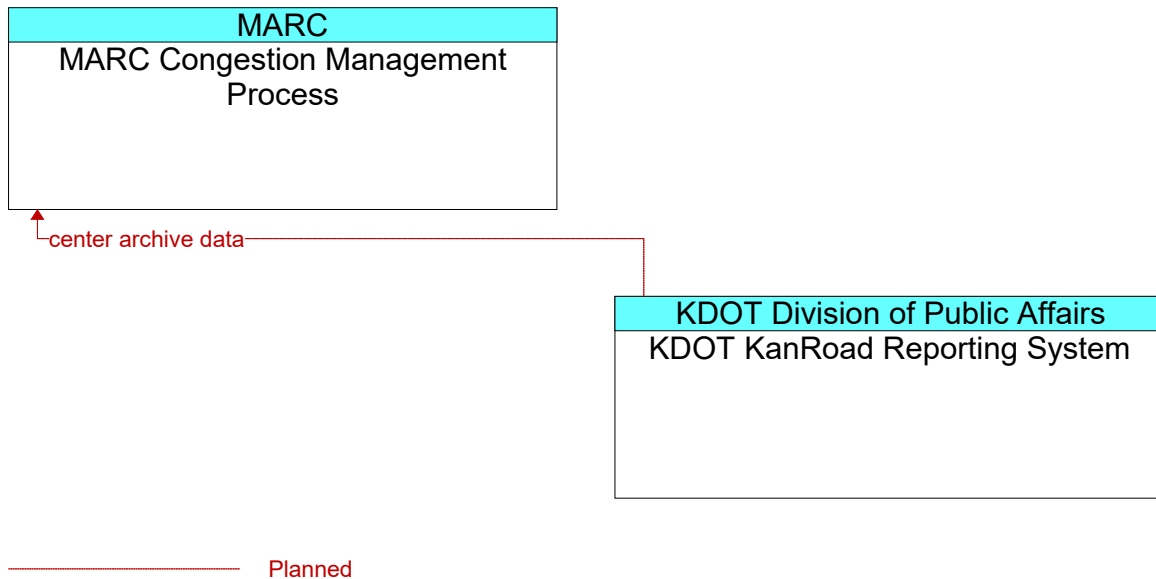


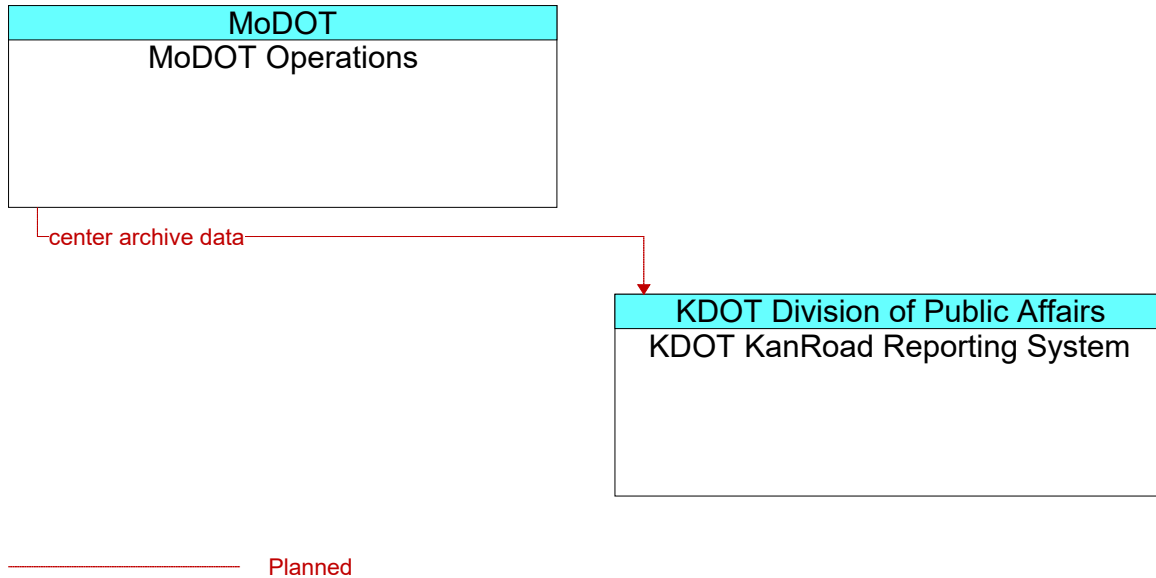
Figure 832: KDOT KanRoad Reporting System - KDOT Traffic Data Warehouse Interface



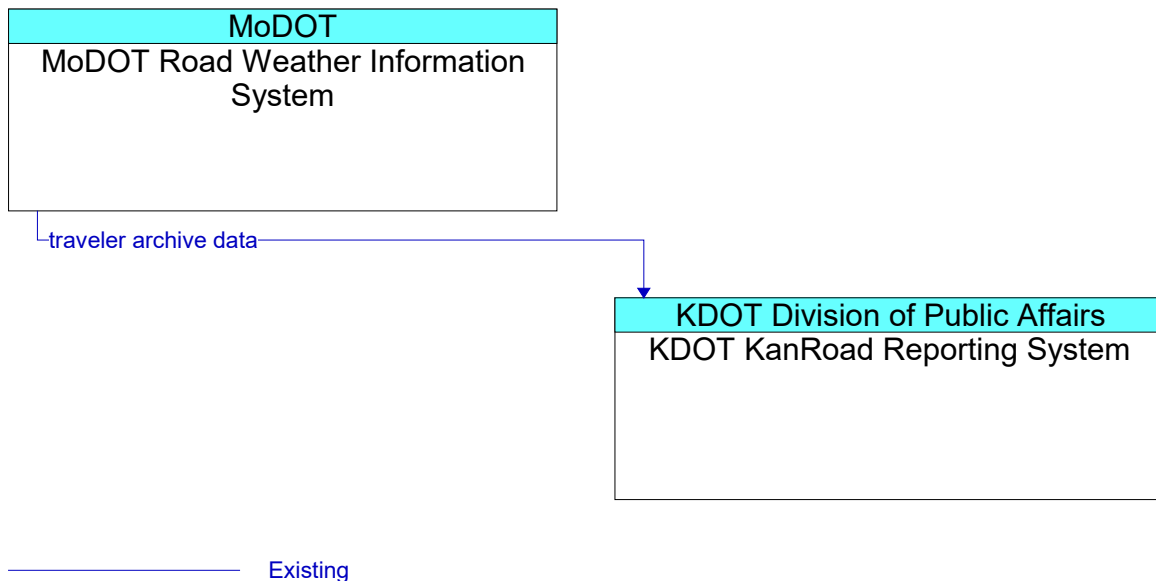
**Figure 833: KDOT KanRoad Reporting System - KTA Operations Center Interface**



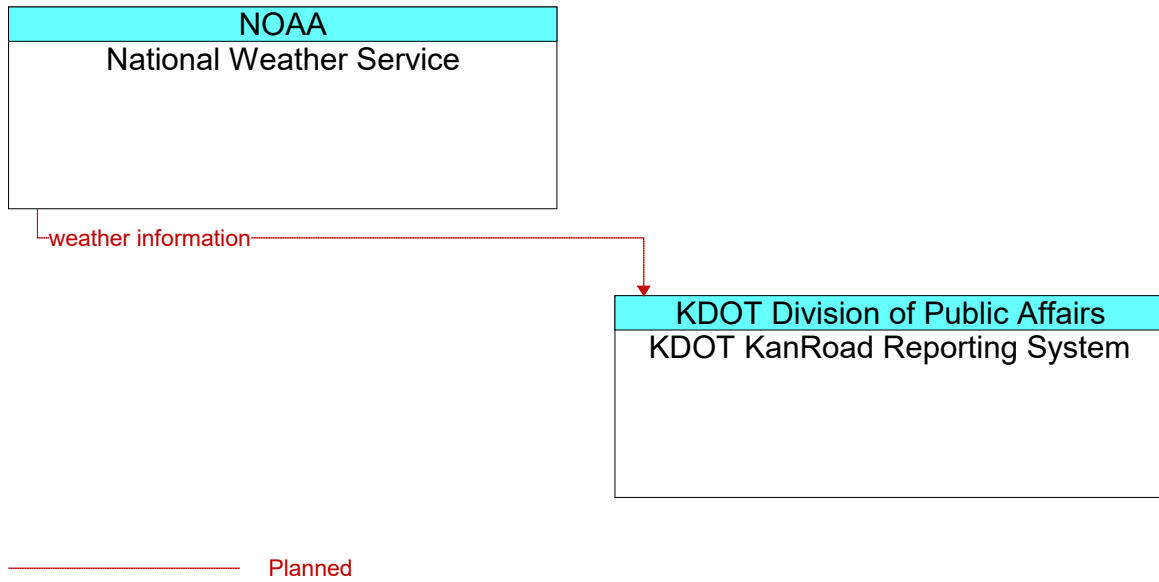
**Figure 834: KDOT KanRoad Reporting System - MARC Congestion Management Process Interface**



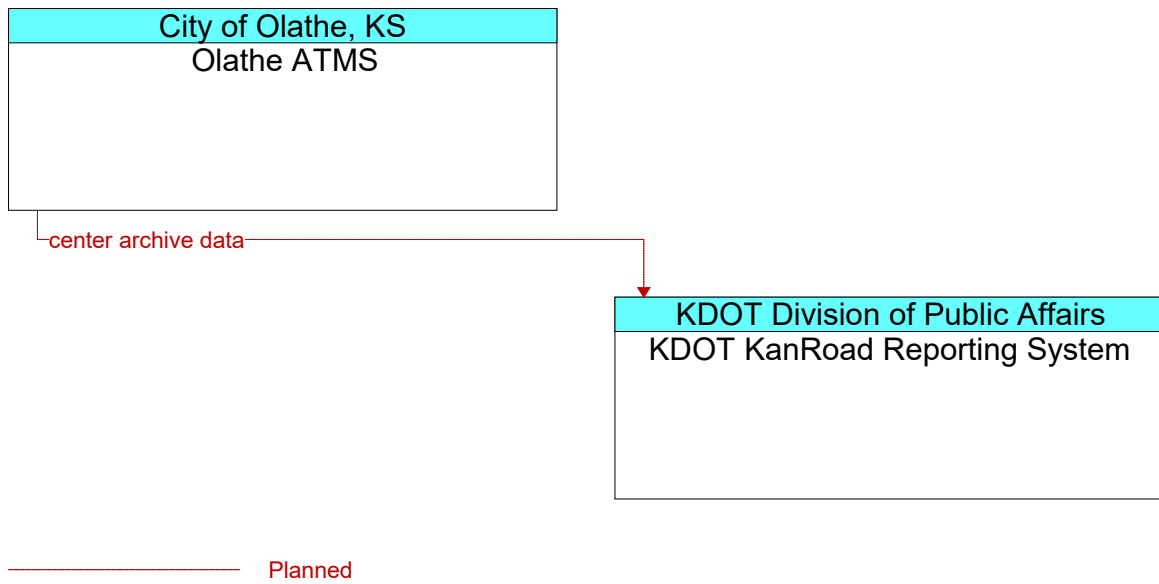
**Figure 835: KDOT KanRoad Reporting System - MoDOT Operations Interface**



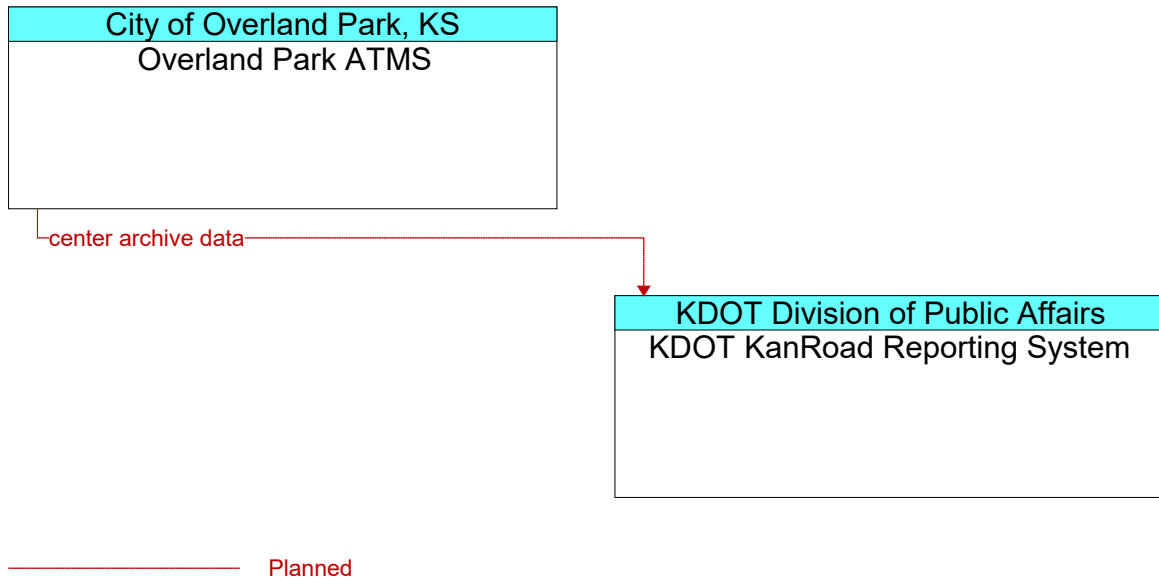
**Figure 836: KDOT KanRoad Reporting System - MoDOT Road Weather Information System Interface**



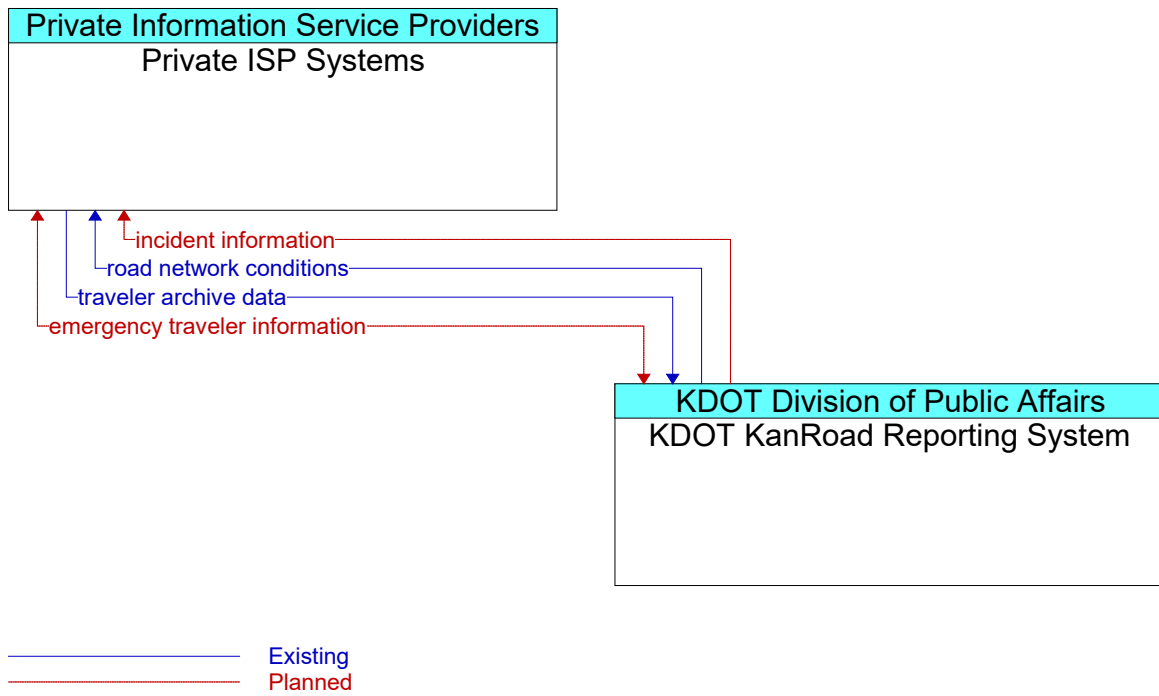
**Figure 837: KDOT KanRoad Reporting System - National Weather Service Interface**



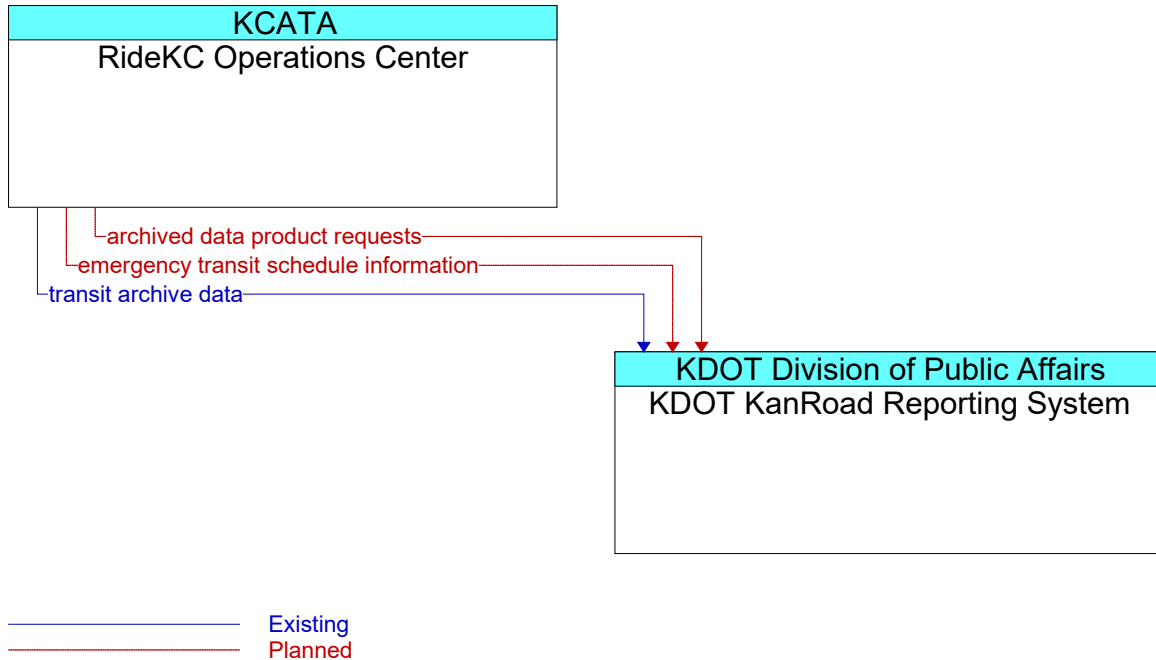
**Figure 838: KDOT KanRoad Reporting System - Olathe ATMS Interface**



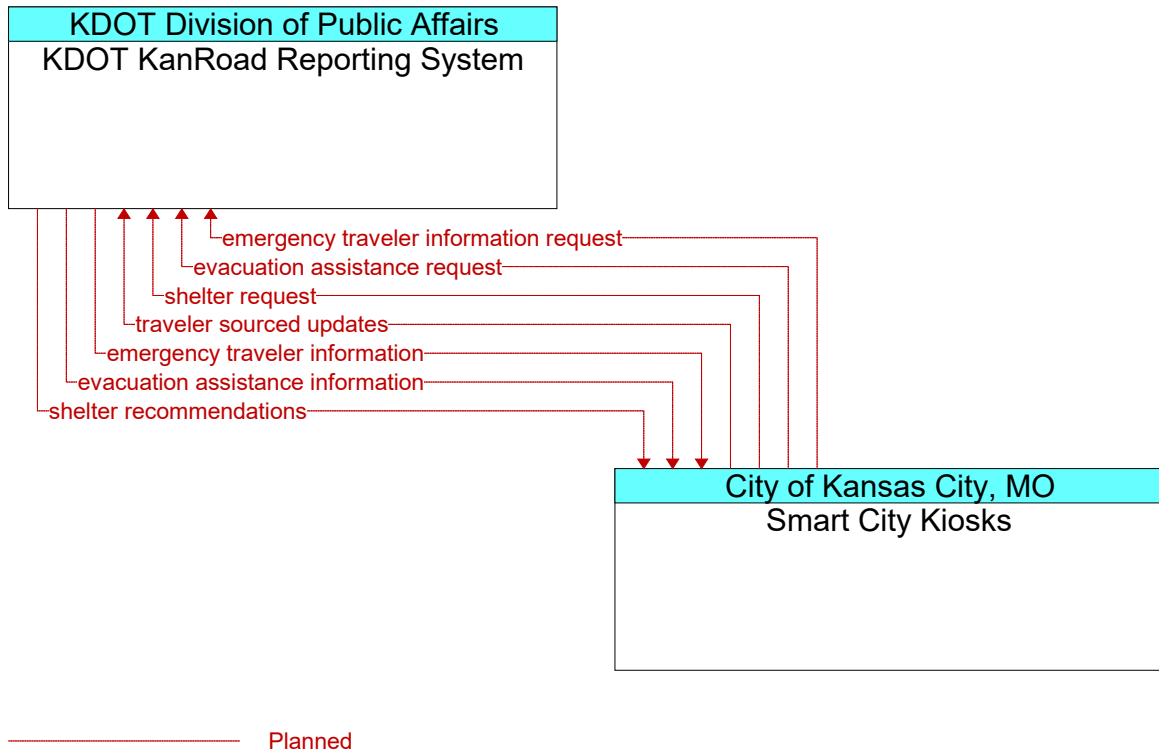
**Figure 839: KDOT KanRoad Reporting System - Overland Park ATMS Interface**



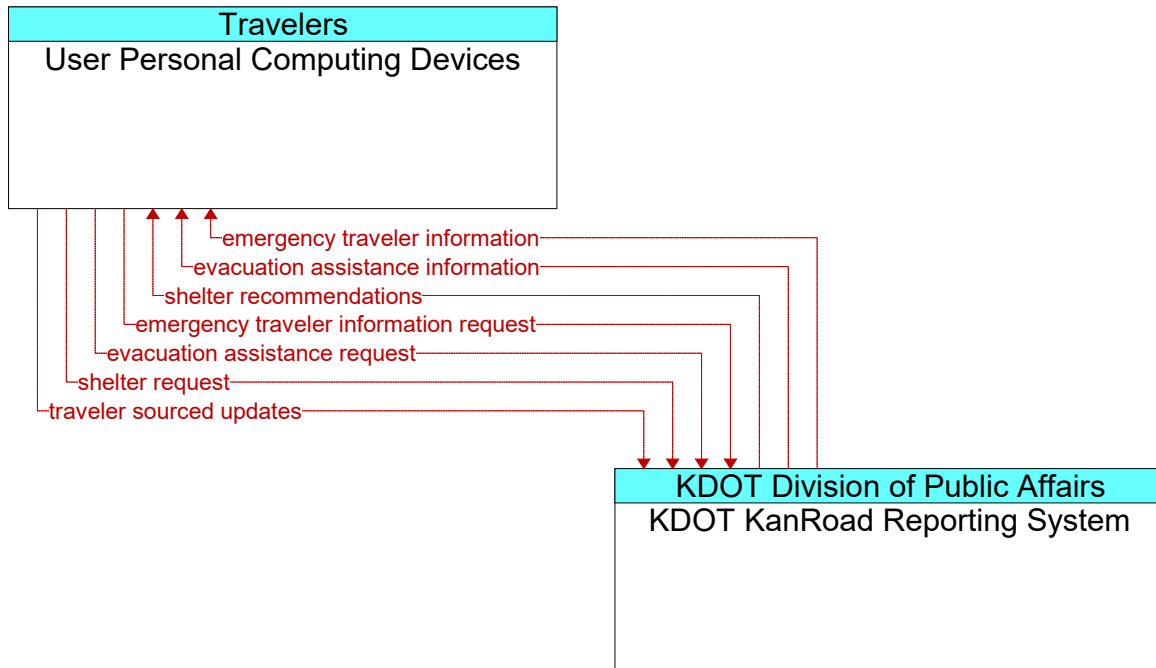
**Figure 840: KDOT KanRoad Reporting System - Private ISP Systems Interface**



**Figure 841: KDOT KanRoad Reporting System - RideKC Operations Center Interface**



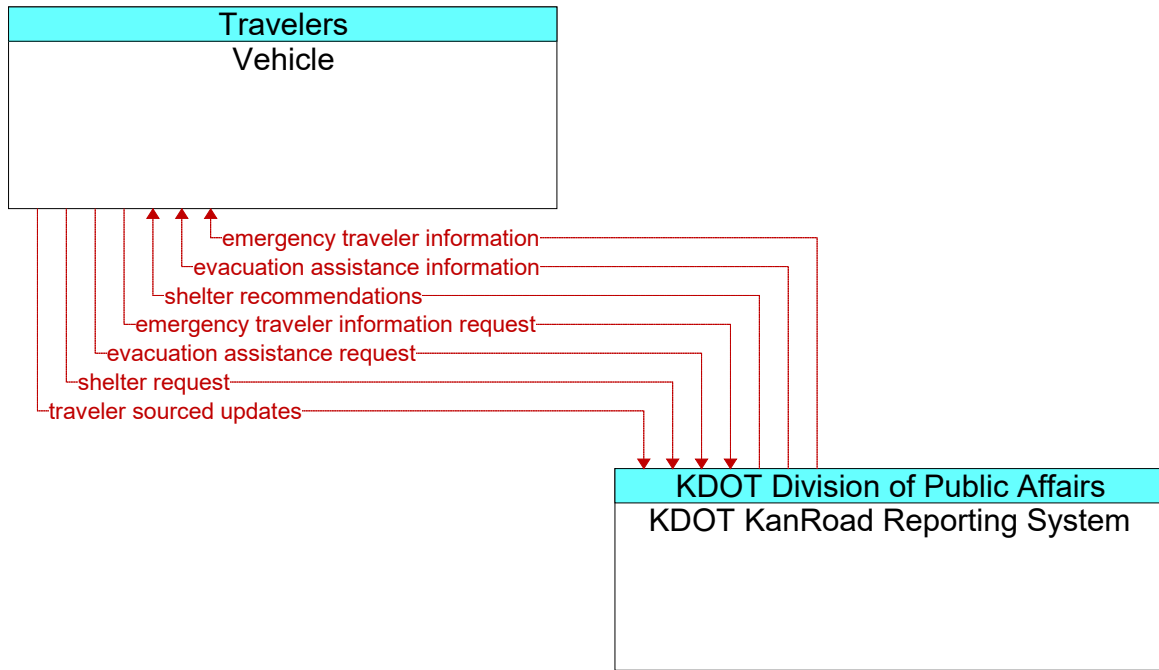
**Figure 842: KDOR KanRoad Reporting System - Smart City Kiosks Interface**



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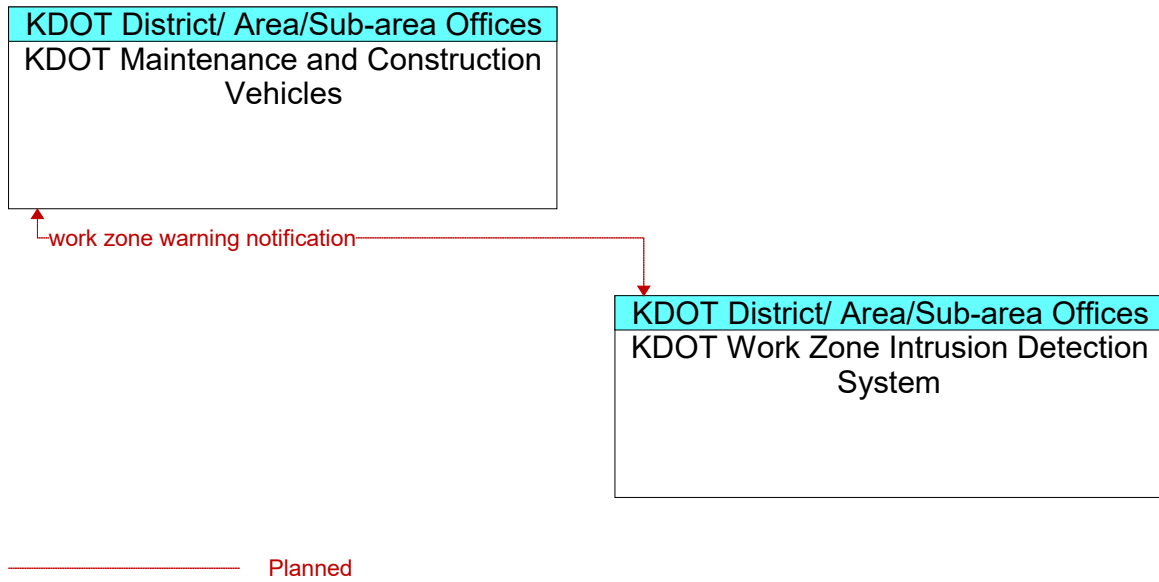
**Figure 843: KDOT KanRoad Reporting System - User Personal Computing Devices Interface**



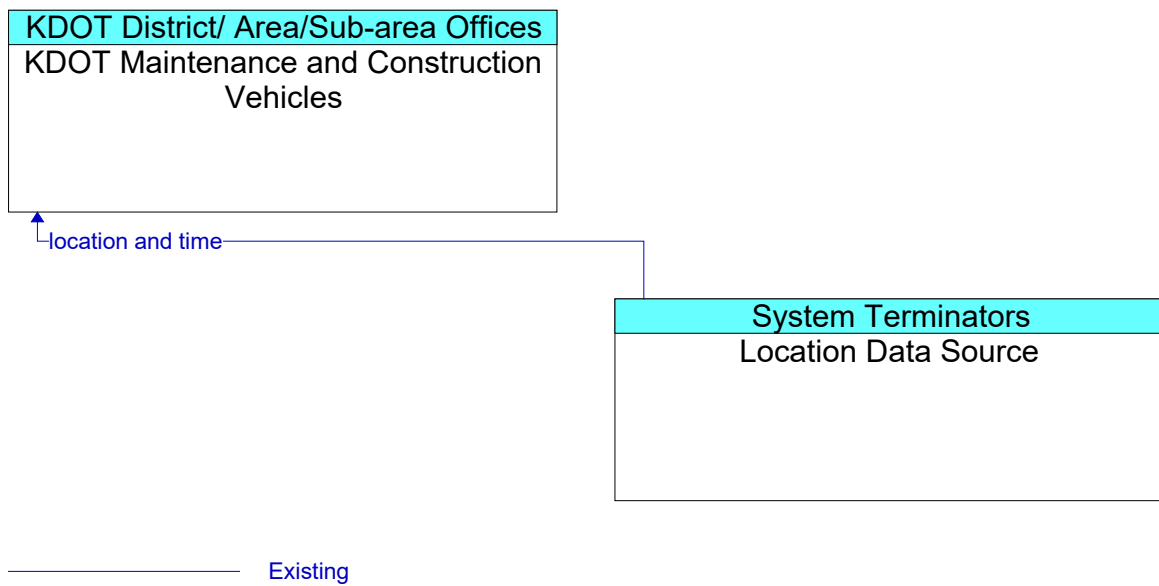


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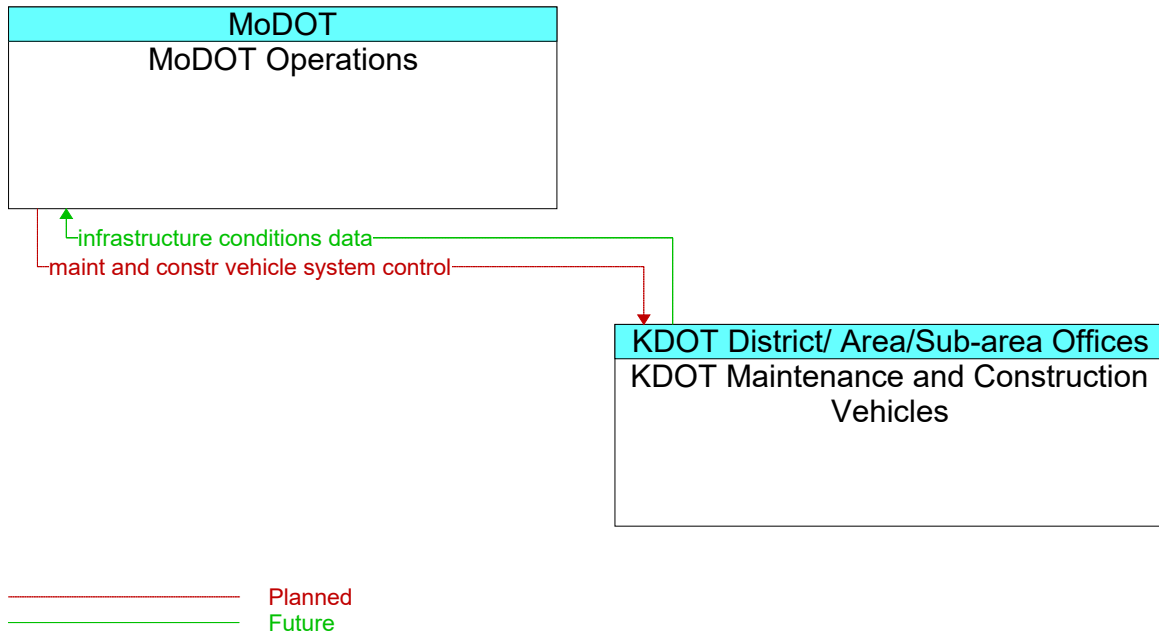
**Figure 844: KDOT KanRoad Reporting System - Vehicle Interface**



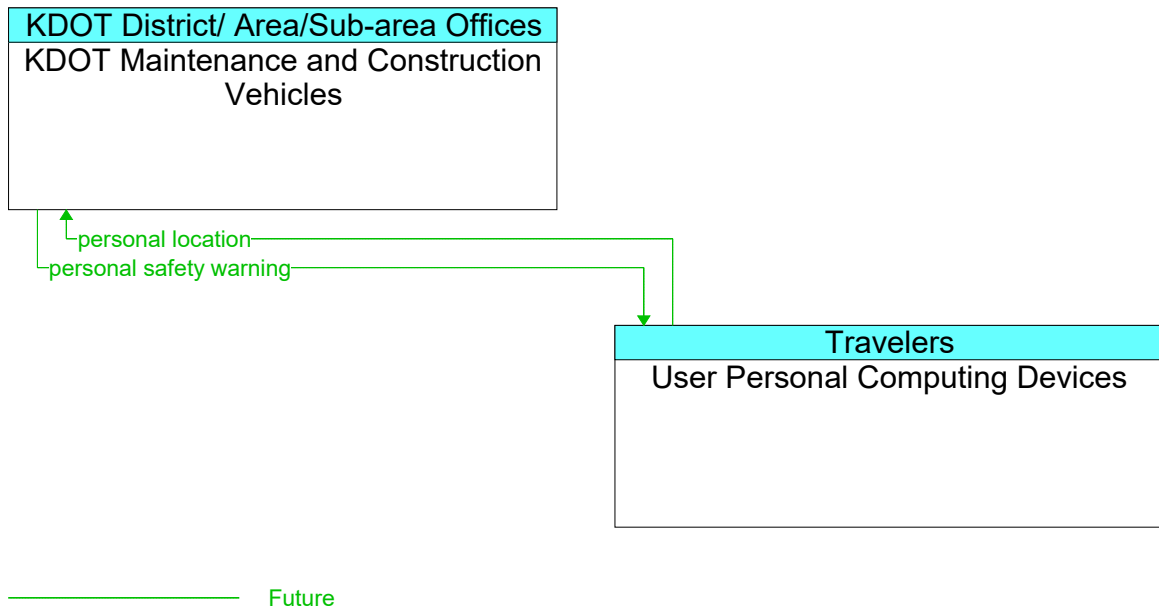
**Figure 845: KDOT Maintenance and Construction Vehicles - KDOT Work Zone Intrusion Detection System Interface**



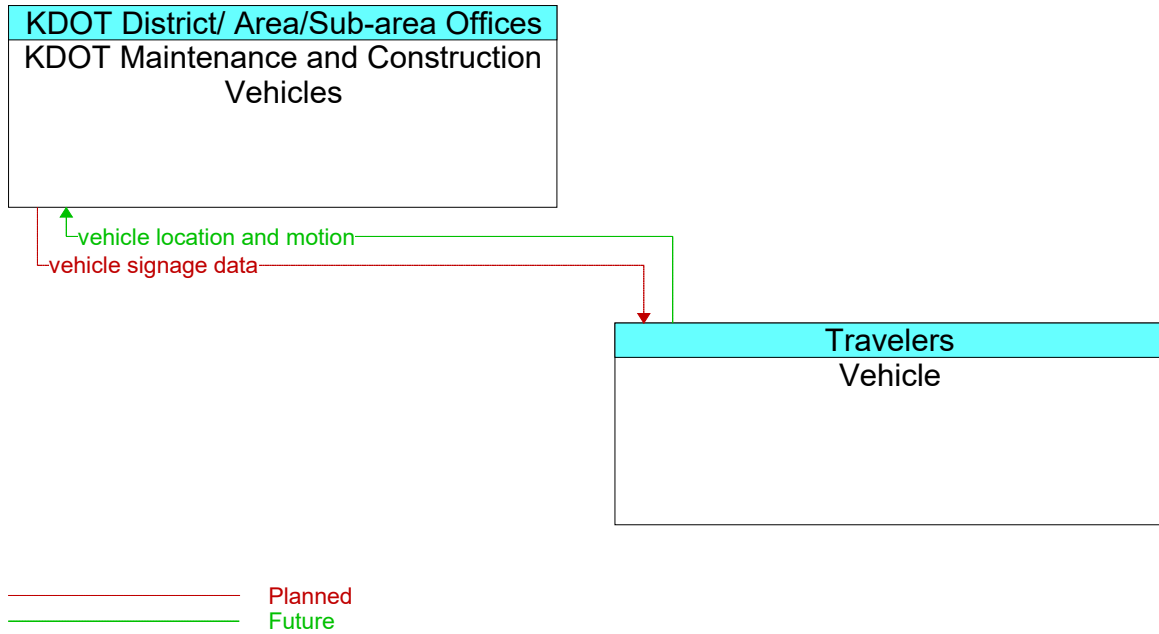
**Figure 846: KDOT Maintenance and Construction Vehicles - Location Data Source Interface**



**Figure 847: KDOT Maintenance and Construction Vehicles - MoDOT Operations Interface**



**Figure 848: KDOT Maintenance and Construction Vehicles - User Personal Computing Devices Interface**



**Figure 849: KDOT Maintenance and Construction Vehicles - Vehicle Interface**

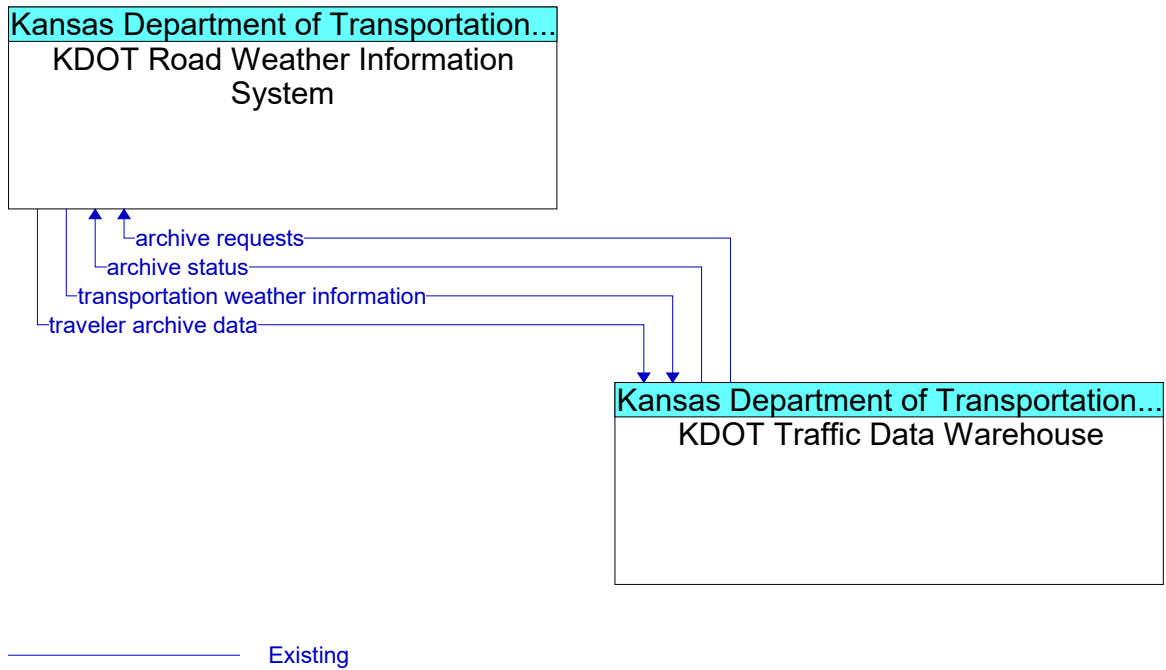
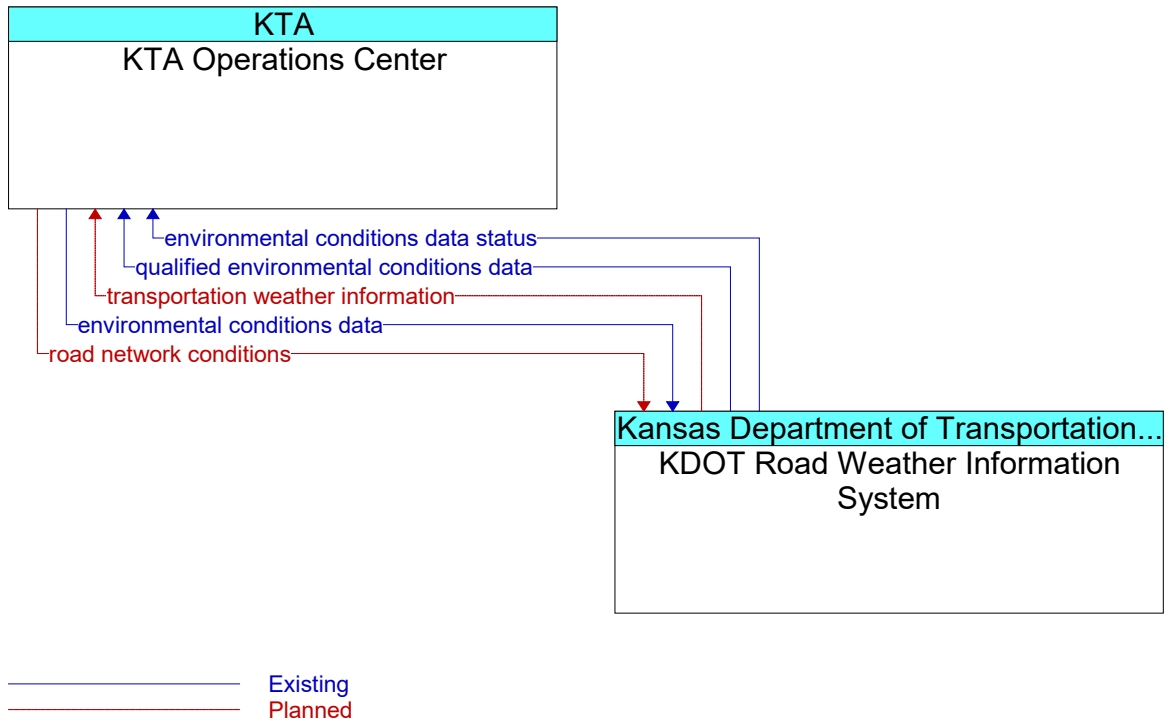
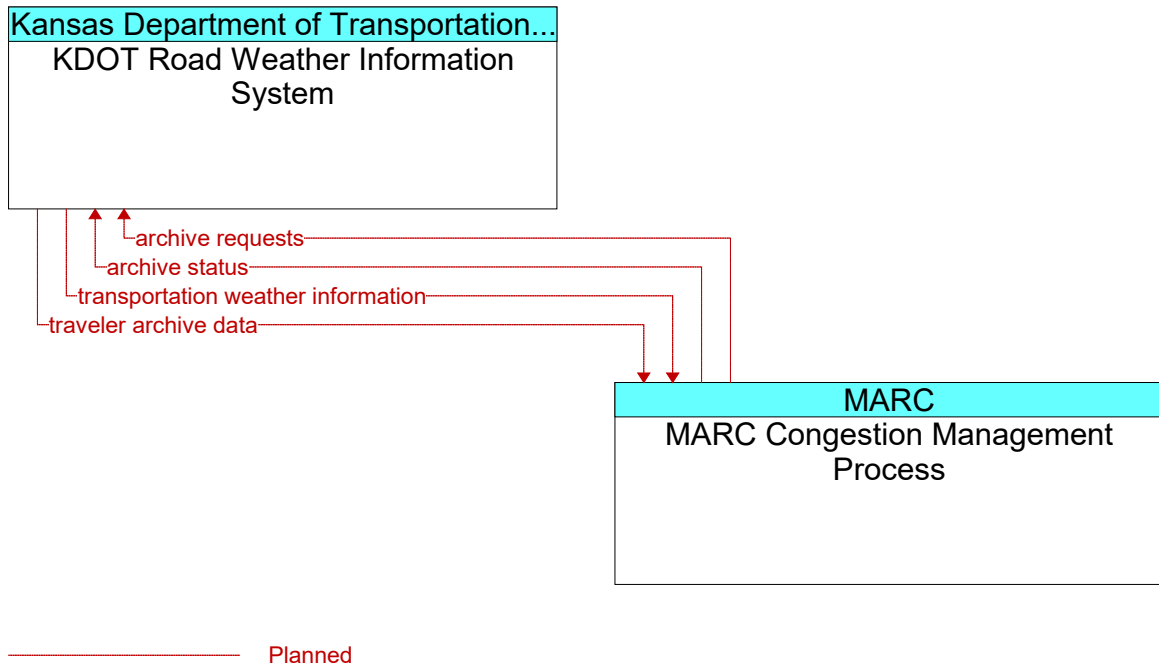


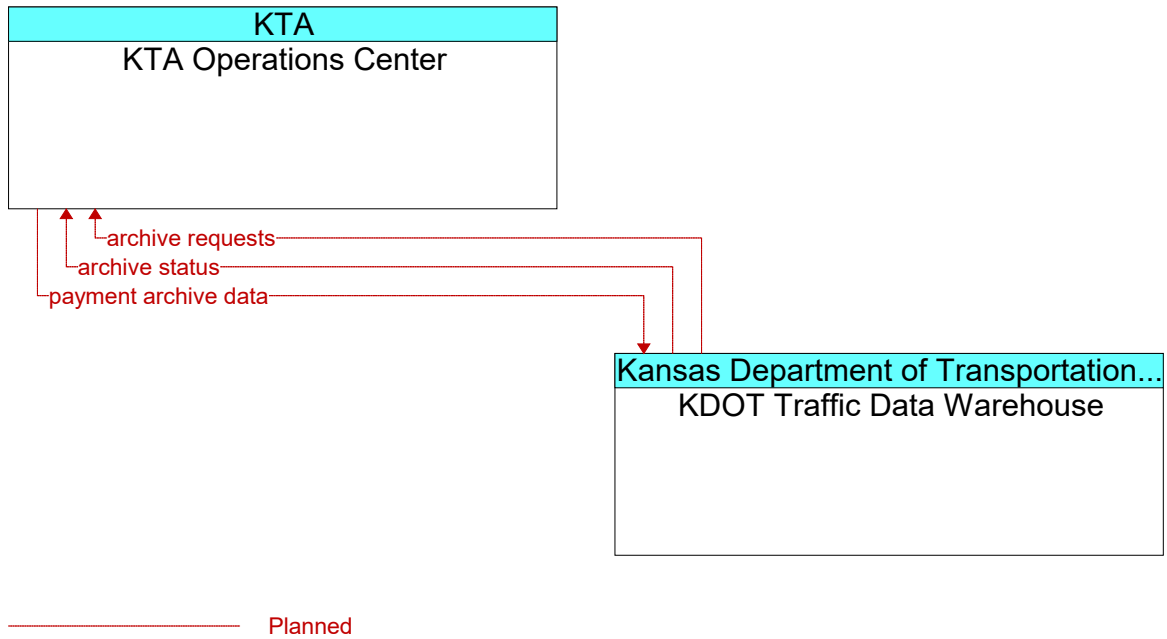
Figure 850: KDOT Road Weather Information System - KDOT Traffic Data Warehouse Interface



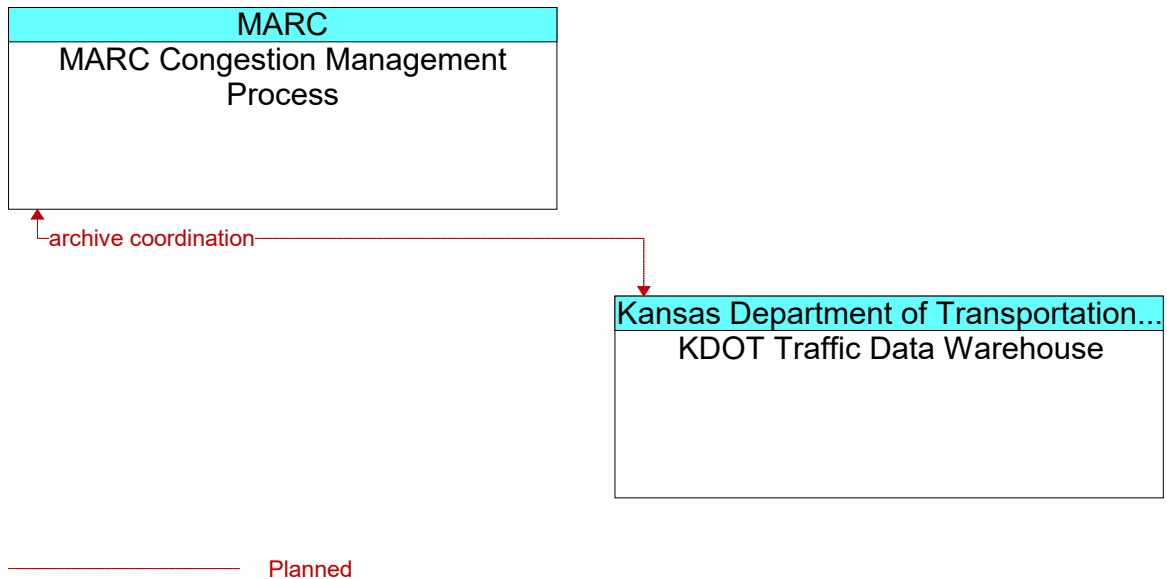
**Figure 851: KDOT Road Weather Information System - KTA Operations Center Interface**



**Figure 852: KDOT Road Weather Information System - MARC Congestion Management Process Interface**

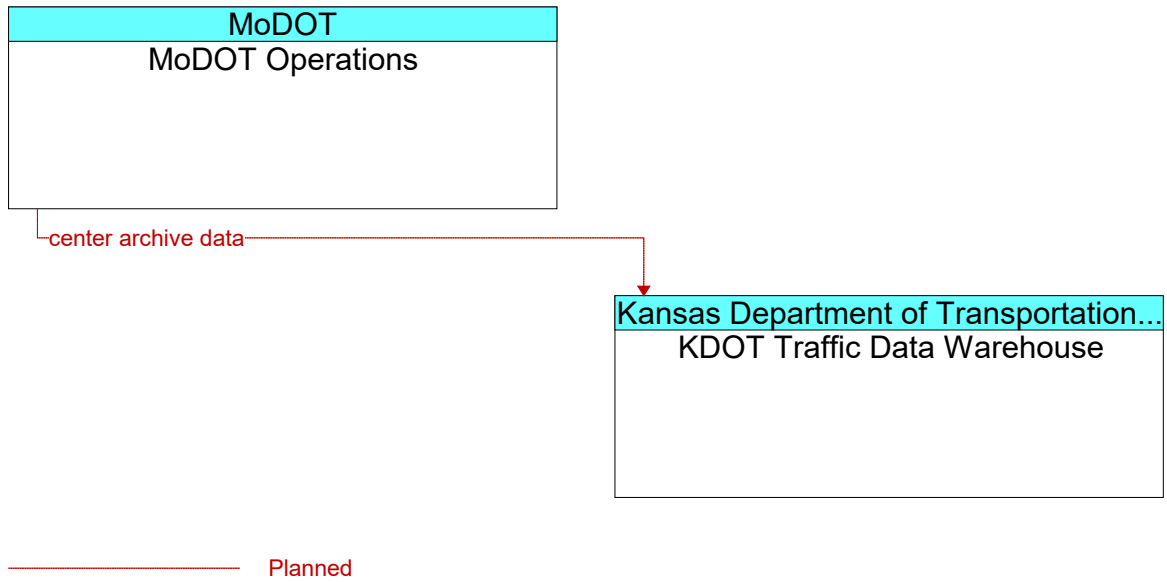


**Figure 853: KDOT Traffic Data Warehouse - KTA Operations Center Interface**

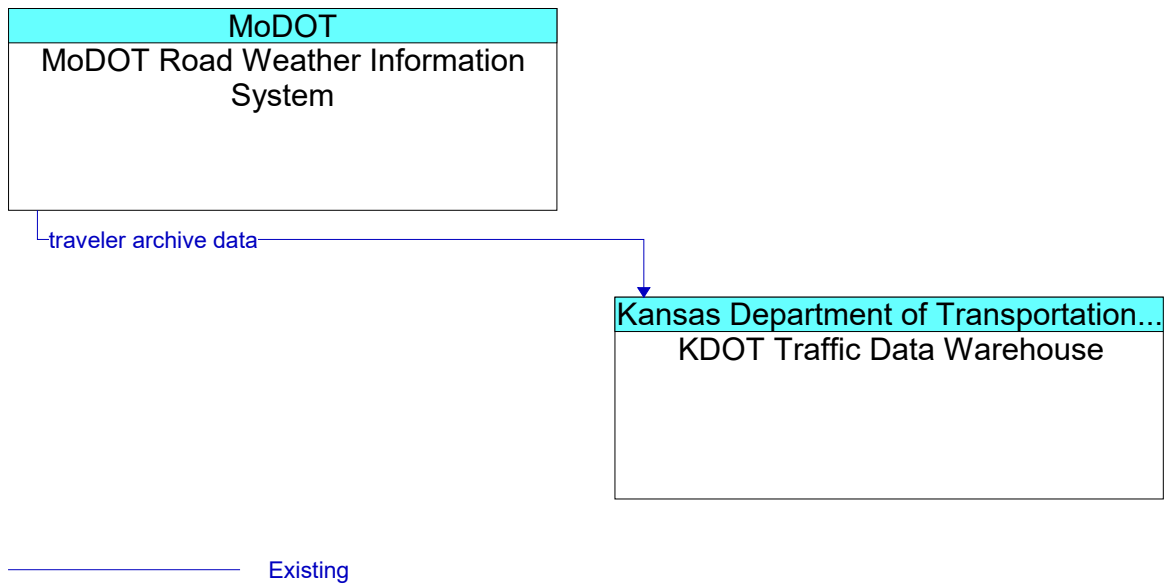


**Figure 854: KDOT Traffic Data Warehouse - MARC Congestion Management Process Interface**

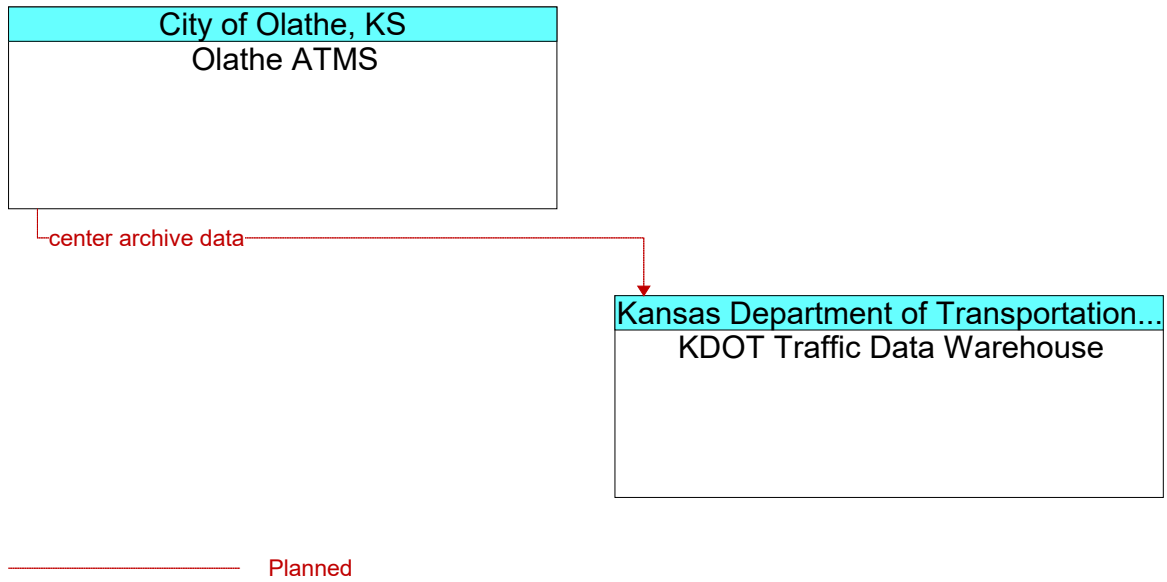




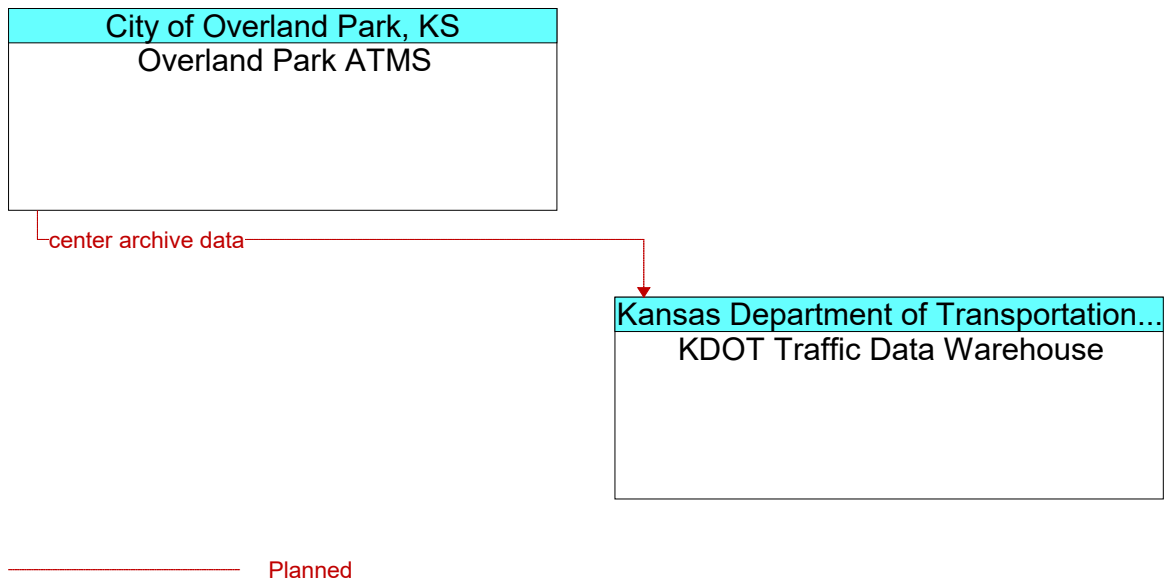
**Figure 855: KDOT Traffic Data Warehouse - MoDOT Operations Interface**



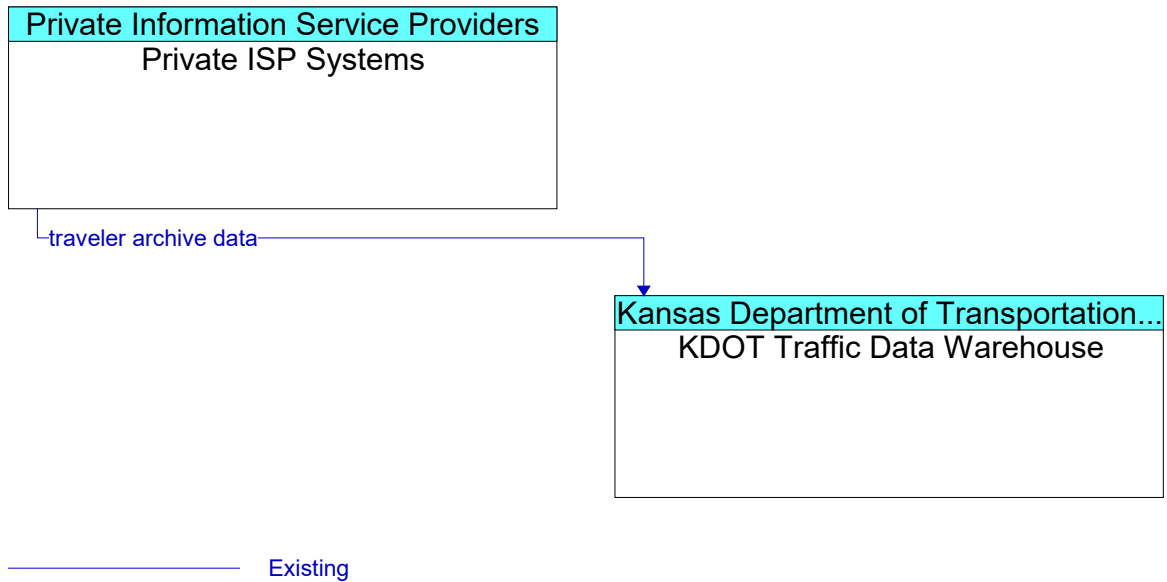
**Figure 856: KDOT Traffic Data Warehouse - MoDOT Road Weather Information System Interface**



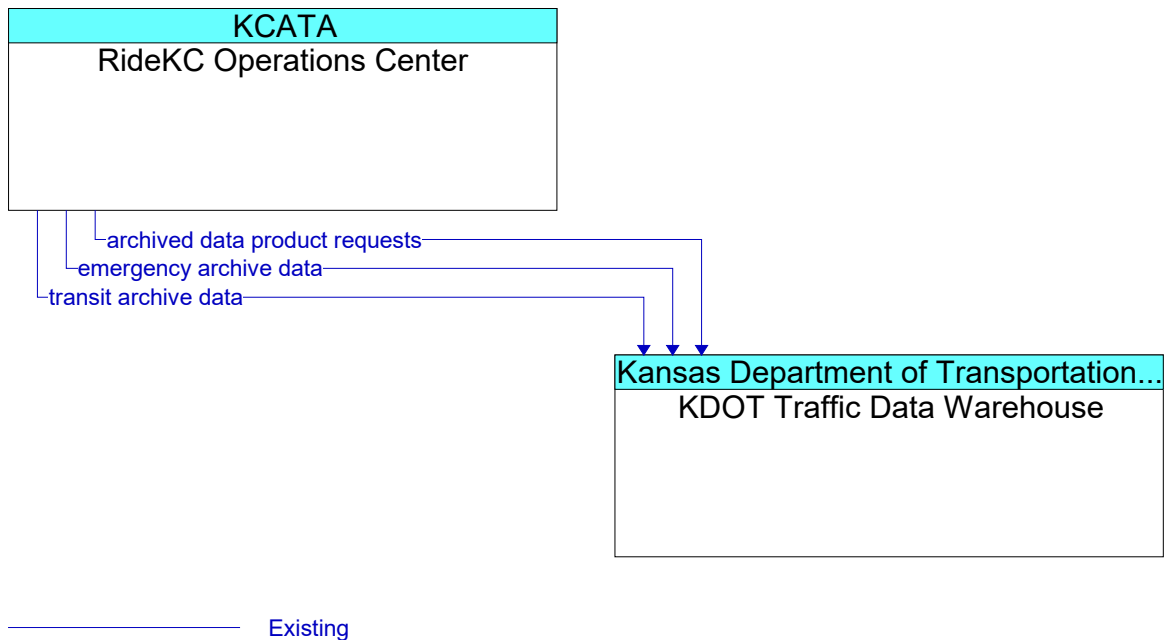
**Figure 857: KDOT Traffic Data Warehouse - Olathe ATMS Interface**



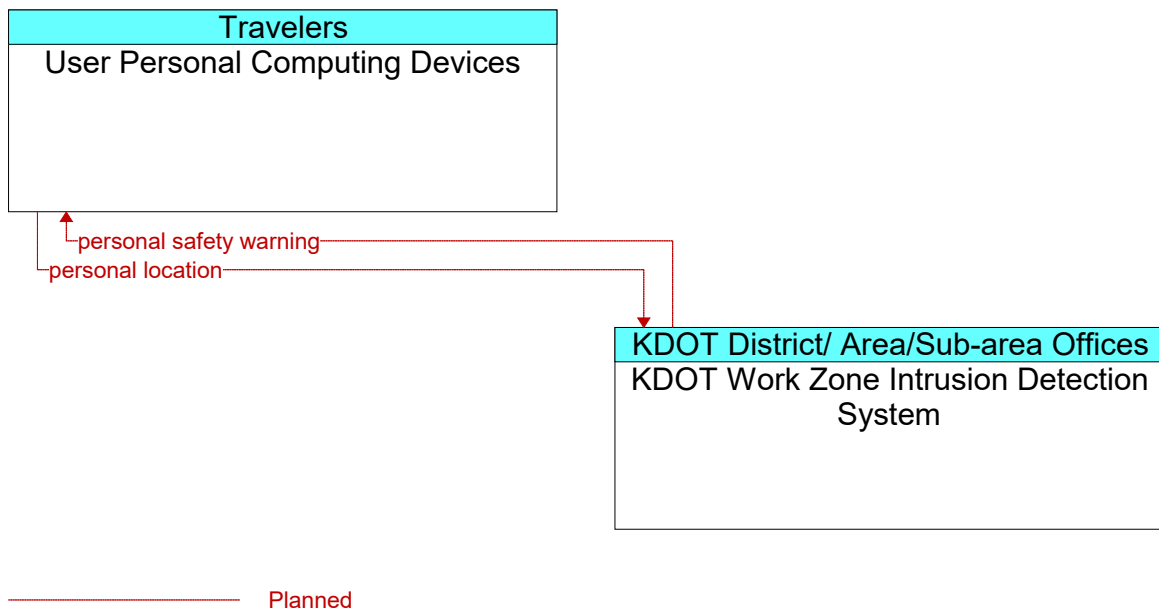
**Figure 858: KDOT Traffic Data Warehouse - Overland Park ATMS Interface**



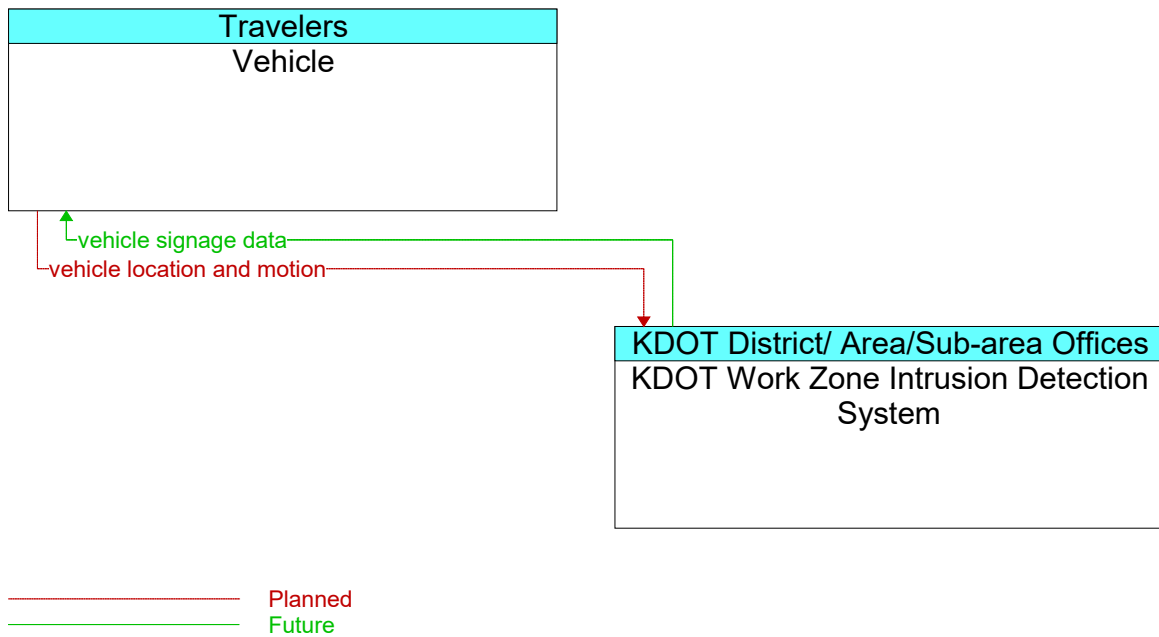
**Figure 859: KDOT Traffic Data Warehouse - Private ISP Systems Interface**



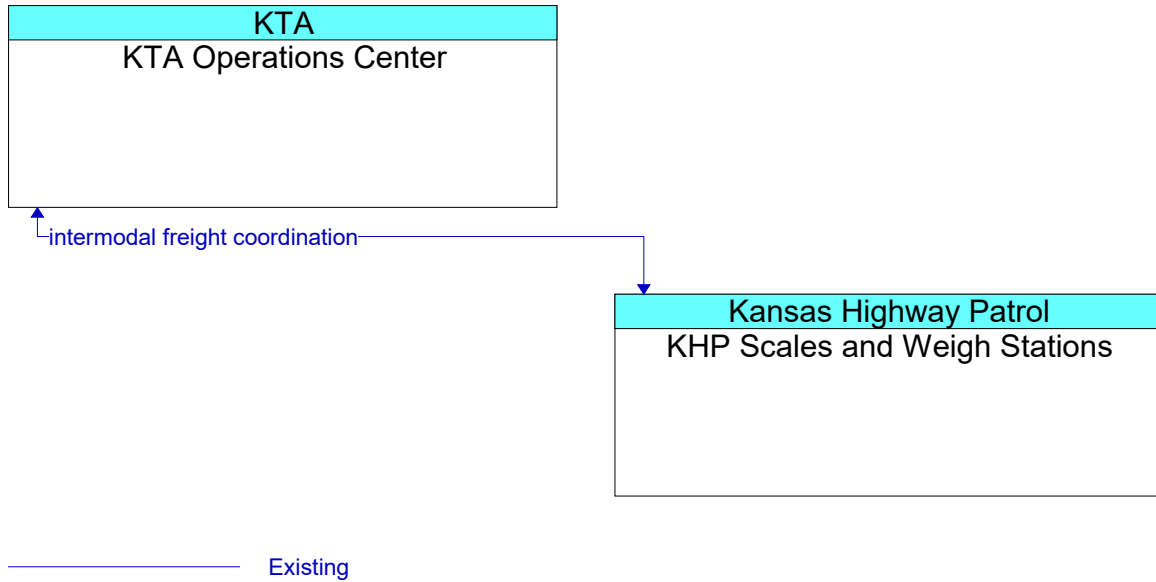
**Figure 860: KDOT Traffic Data Warehouse - RideKC Operations Center Interface**



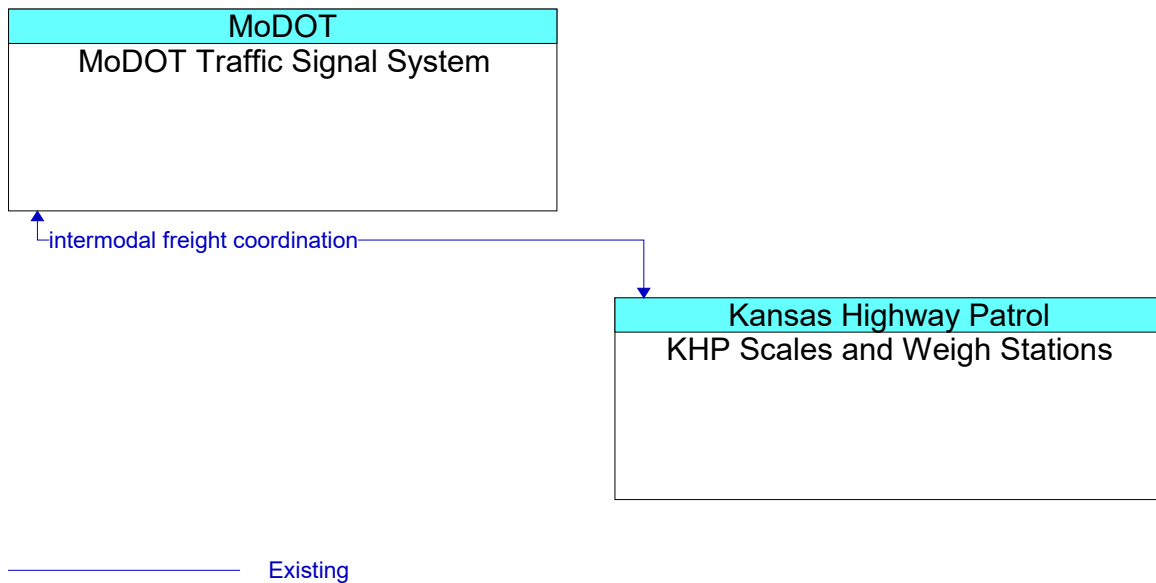
**Figure 861: KDOT Work Zone Intrusion Detection System - User Personal Computing Devices Interface**



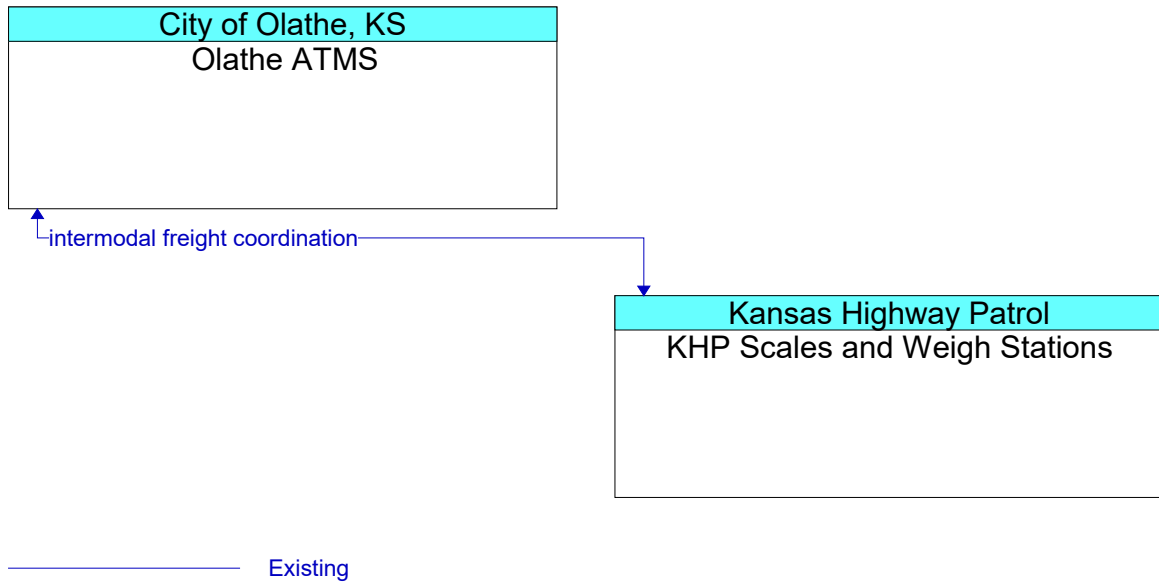
**Figure 862: KDOT Work Zone Intrusion Detection System - Vehicle Interface**



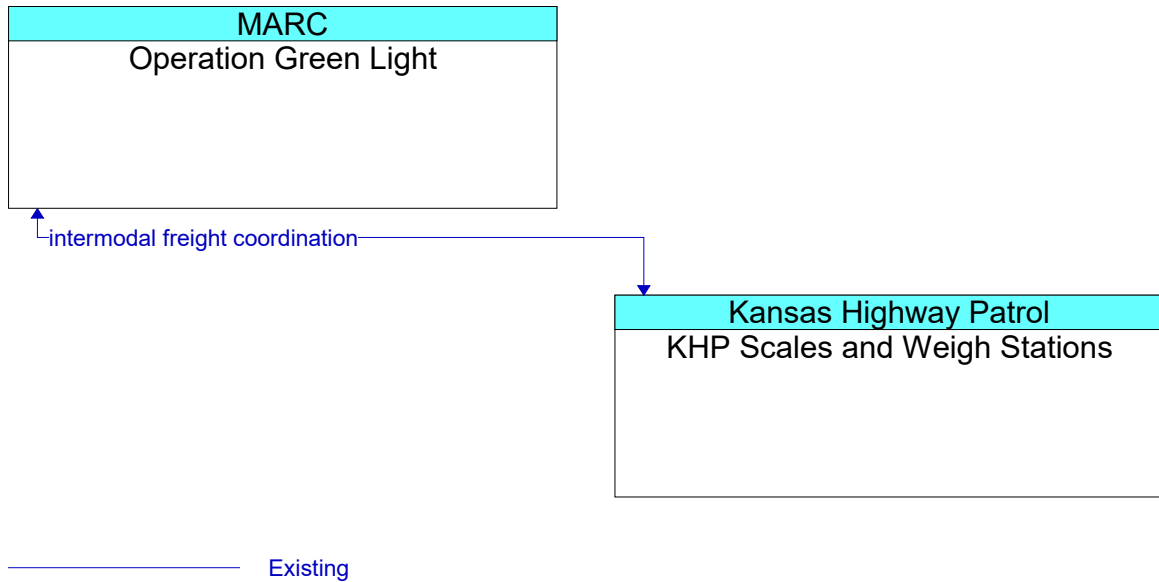
**Figure 863: KHP Scales and Weigh Stations - KTA Operations Center Interface**



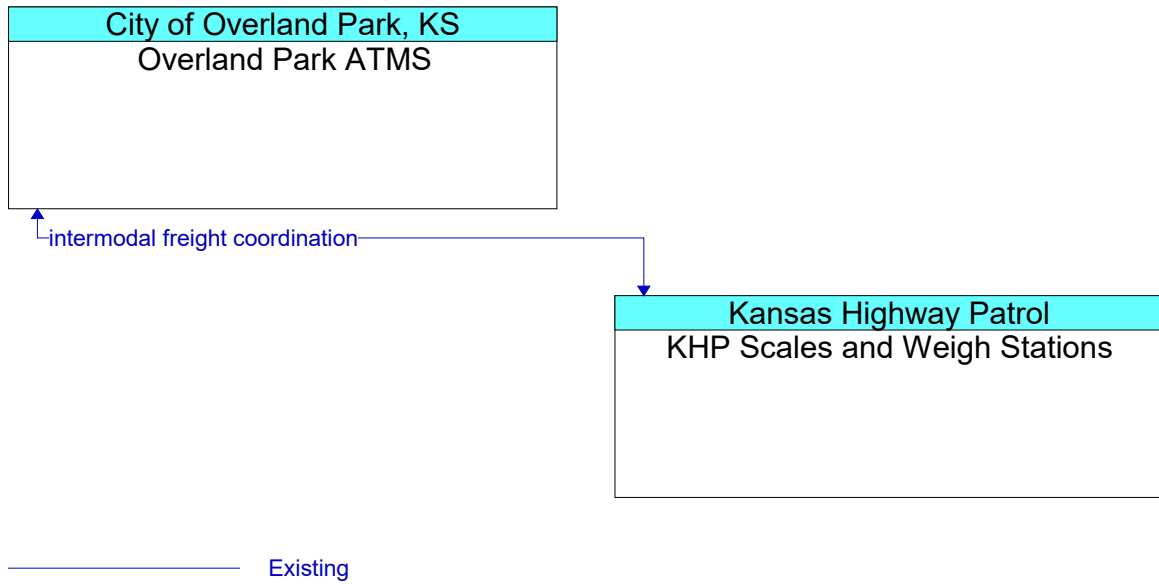
**Figure 864: KHP Scales and Weigh Stations - MoDOT Traffic Signal System Interface**



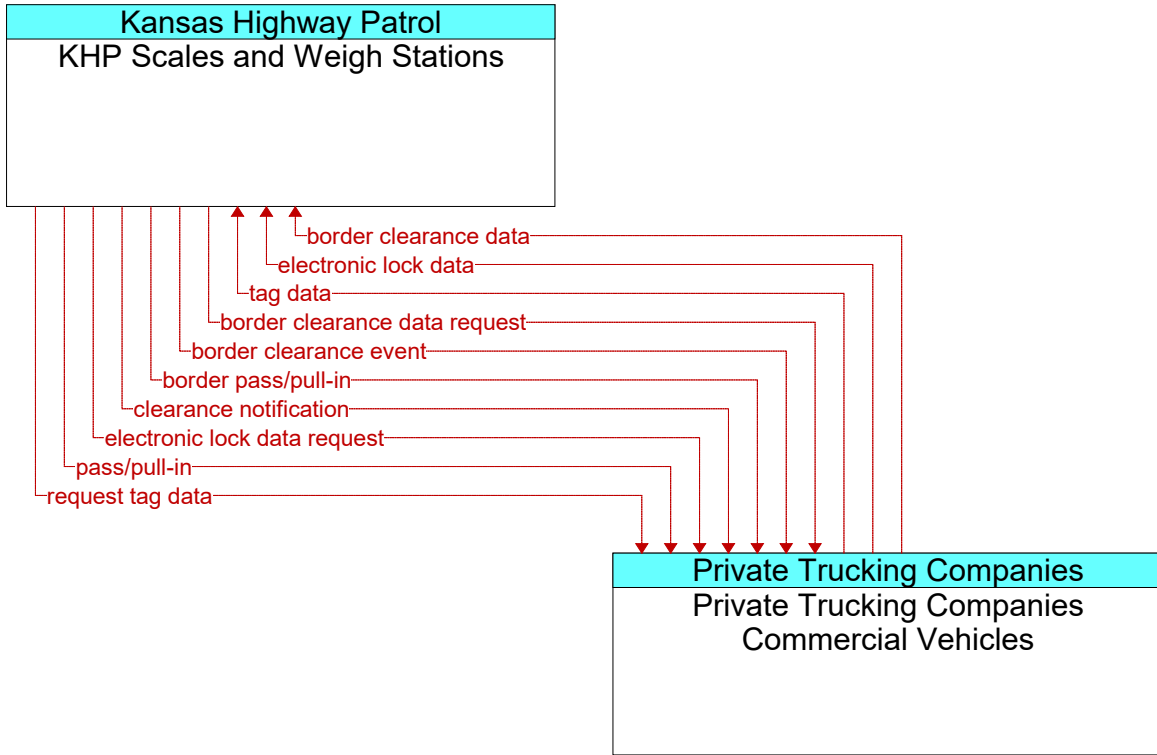
**Figure 865: KHP Scales and Weigh Stations - Olathe ATMS Interface**



**Figure 866: KHP Scales and Weigh Stations - Operation Green Light Interface**



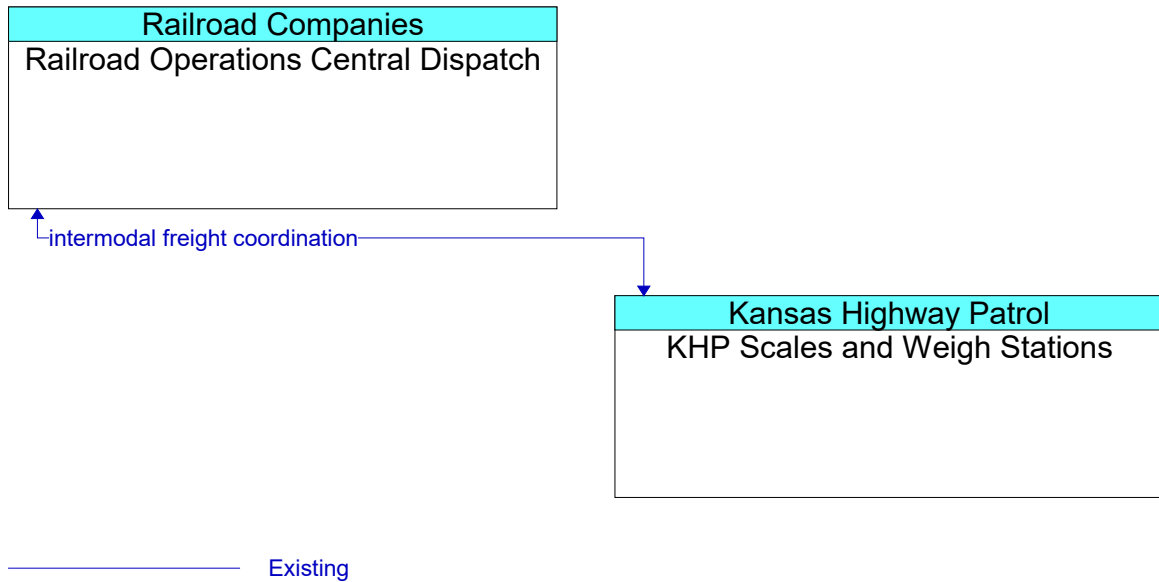
**Figure 867: KHP Scales and Weigh Stations - Overland Park ATMS Interface**



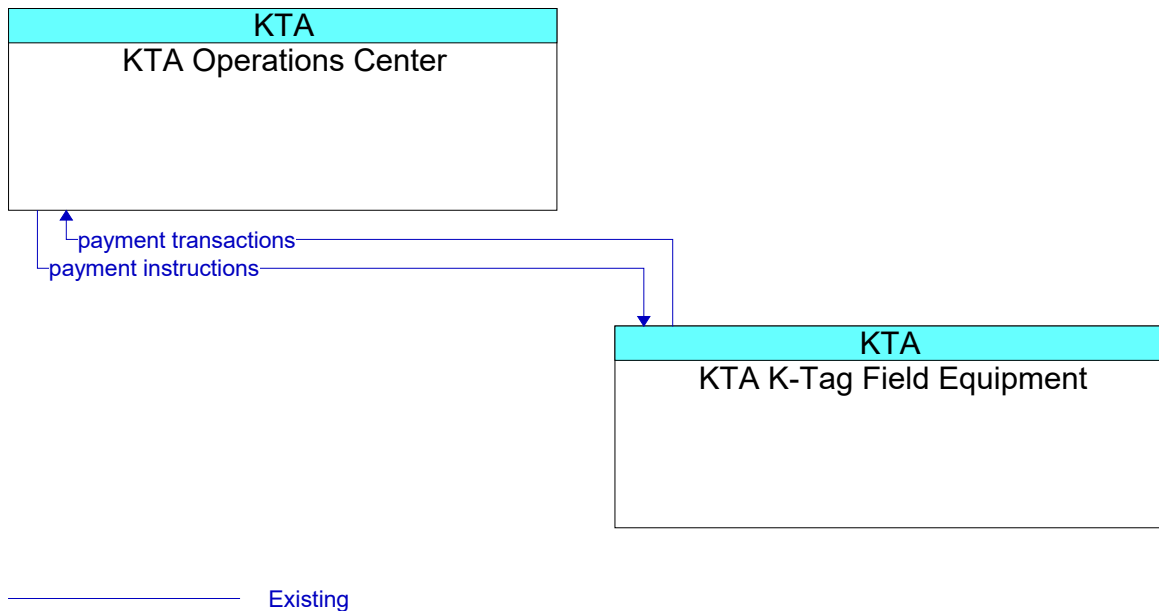
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**Figure 868: KHP Scales and Weigh Stations - Private Trucking Companies Commercial Vehicles Interface**

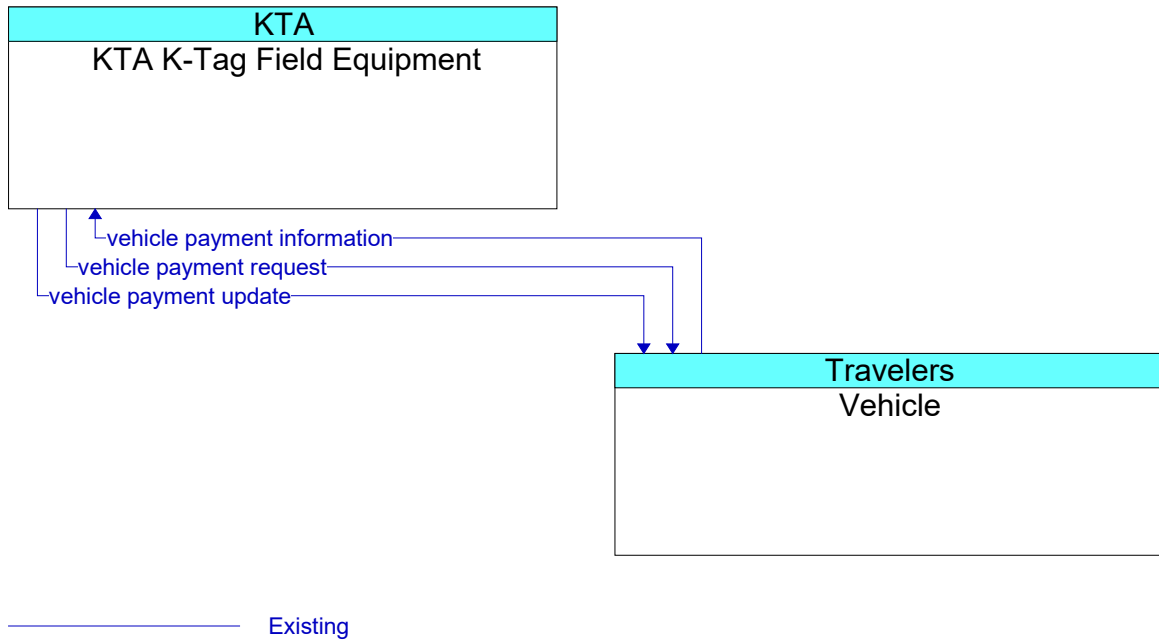




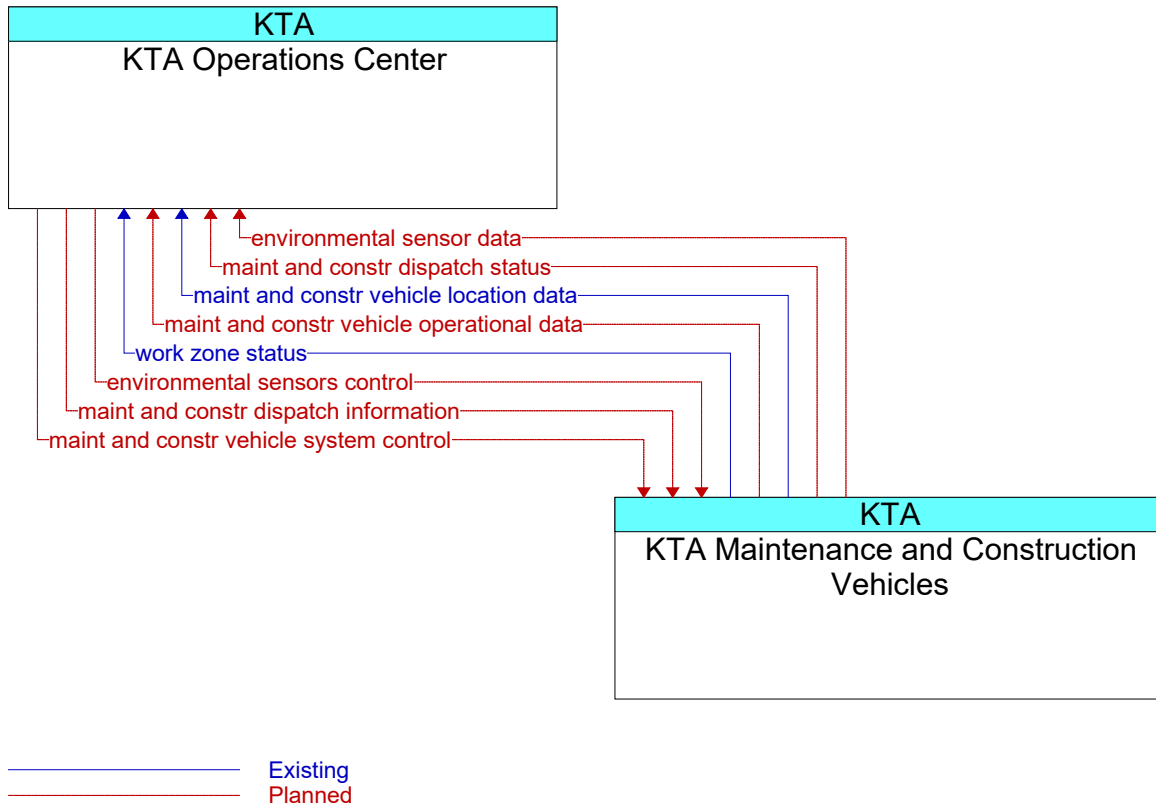
**Figure 869: KHP Scales and Weigh Stations - Railroad Operations Central Dispatch Interface**



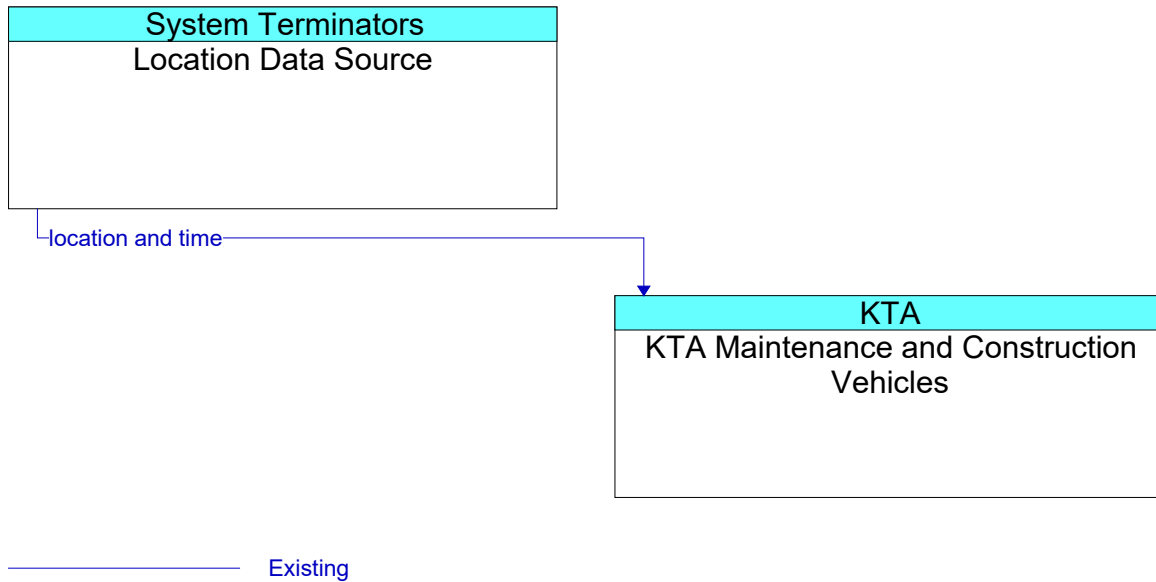
**Figure 870: KTA K-Tag Field Equipment - KTA Operations Center Interface**



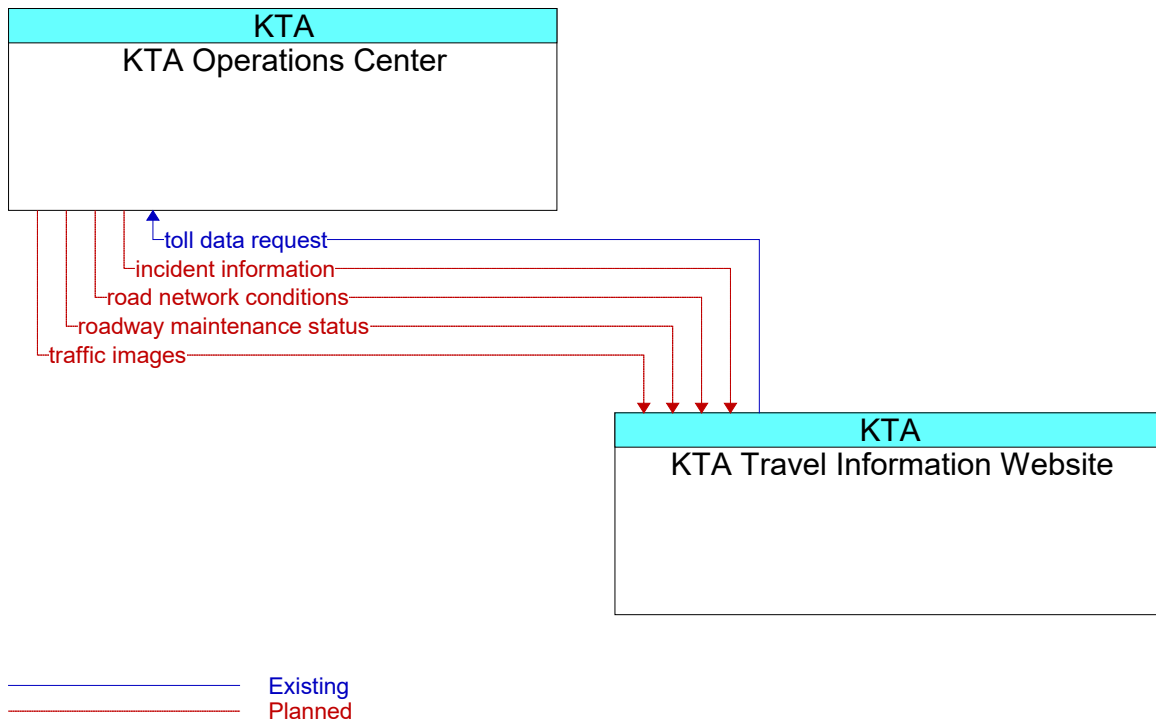
**Figure 871: KTA K-Tag Field Equipment - Vehicle Interface**



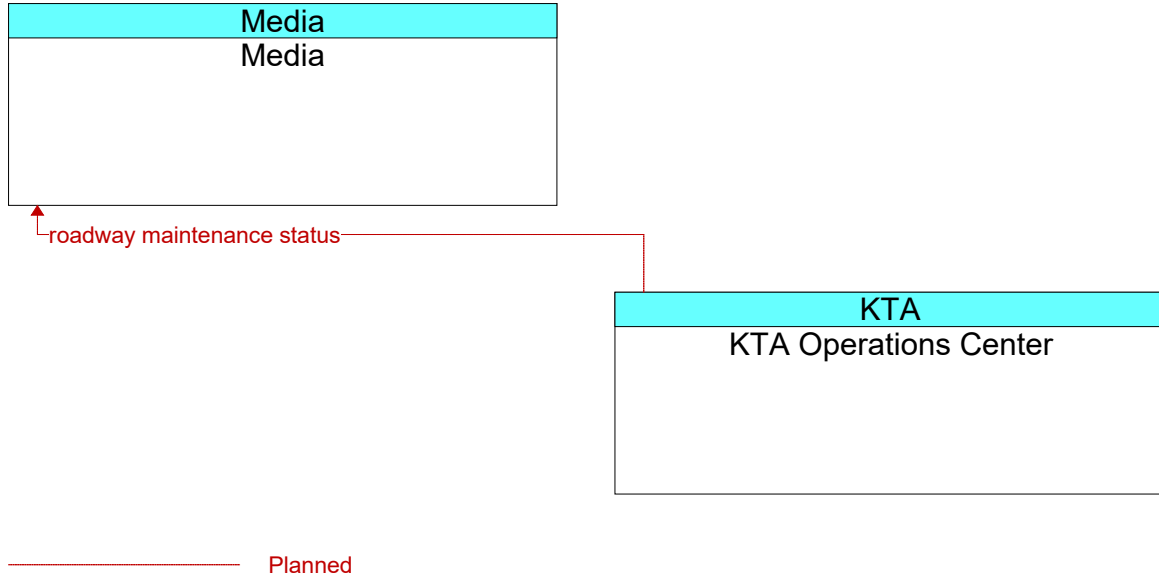
**Figure 872: KTA Maintenance and Construction Vehicles - KTA Operations Center Interface**



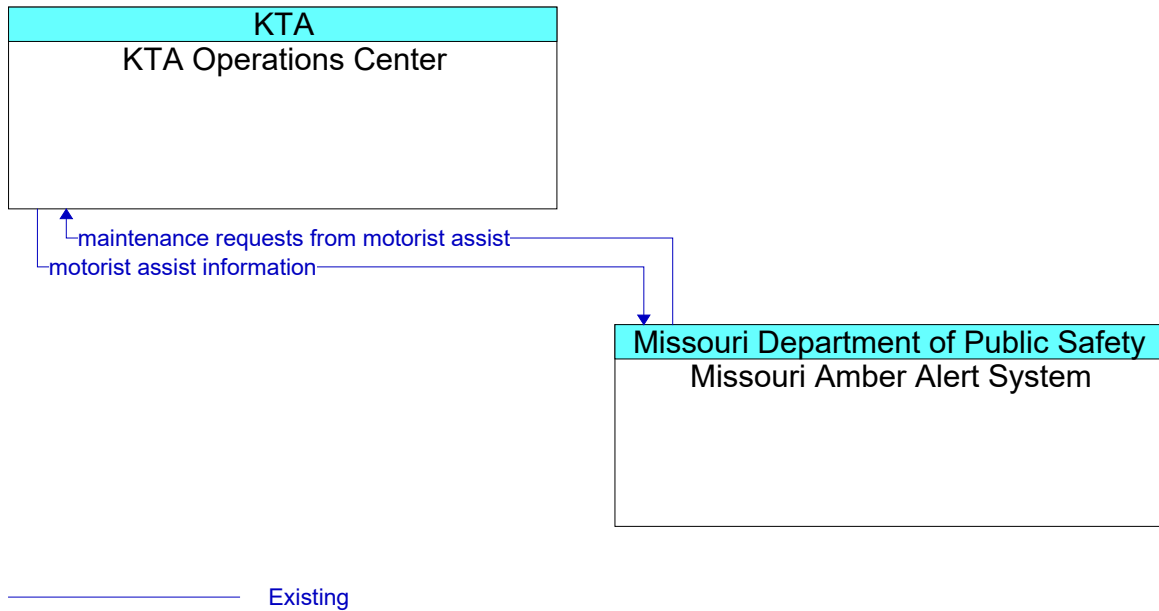
**Figure 873: KTA Maintenance and Construction Vehicles - Location Data Source Interface**



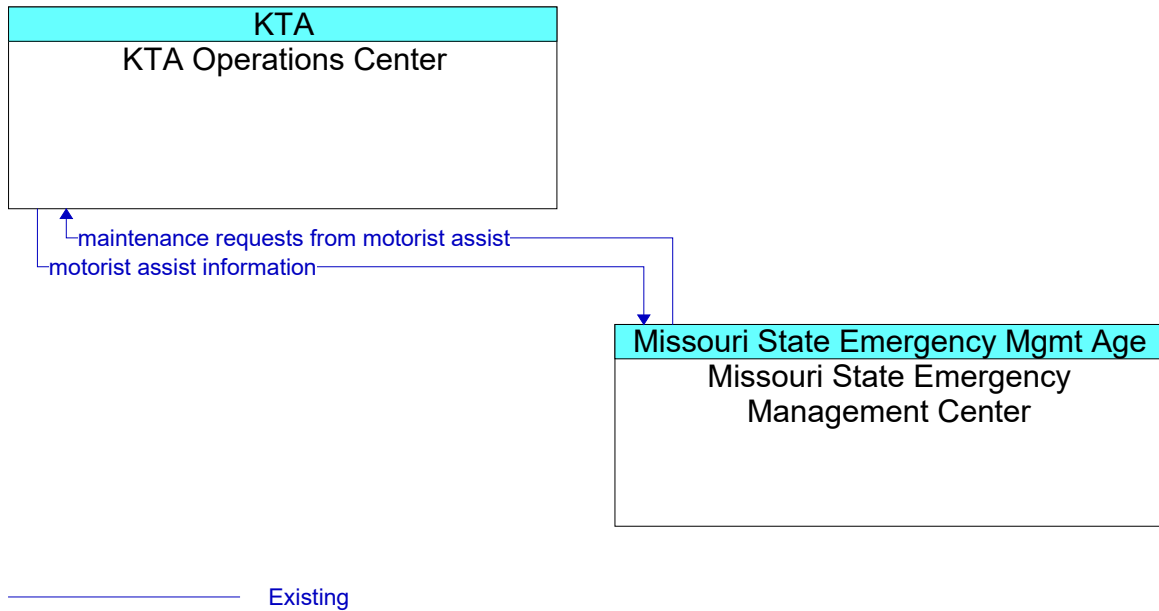
**Figure 874: KTA Operations Center - KTA Travel Information Website Interface**



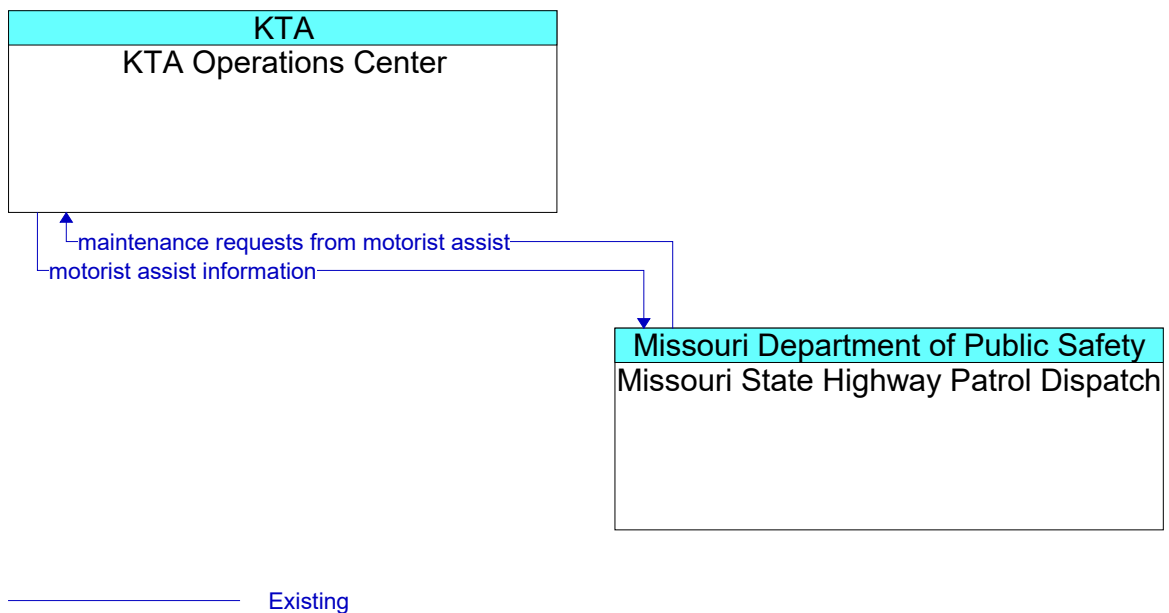
**Figure 875: KTA Operations Center - Media Interface**



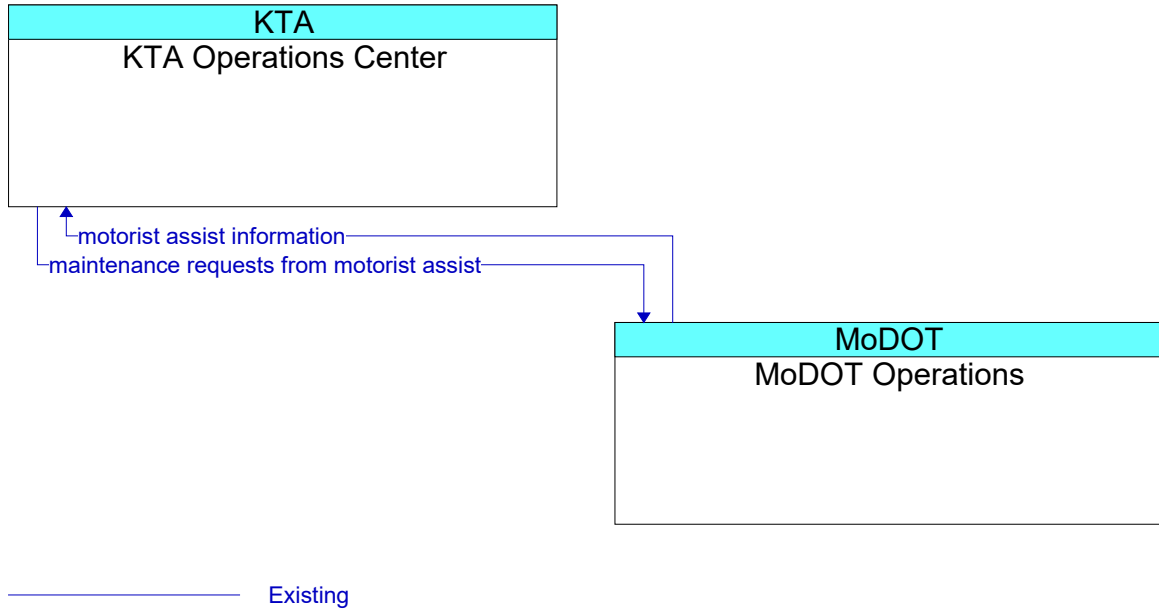
**Figure 876: KTA Operations Center - Missouri Amber Alert System Interface**



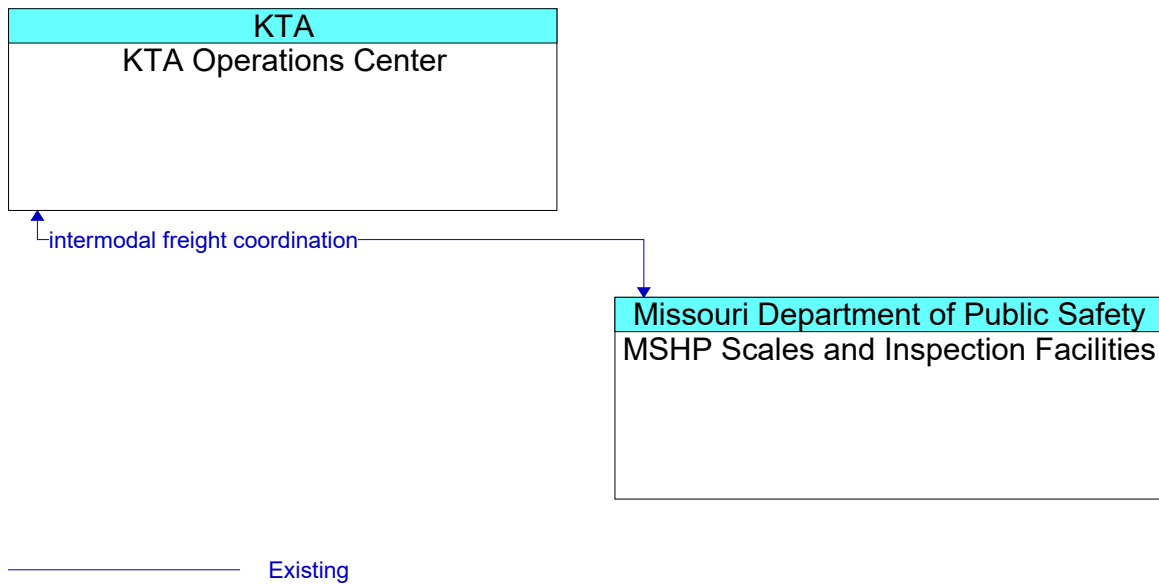
**Figure 877: KTA Operations Center - Missouri State Emergency Management Center Interface**



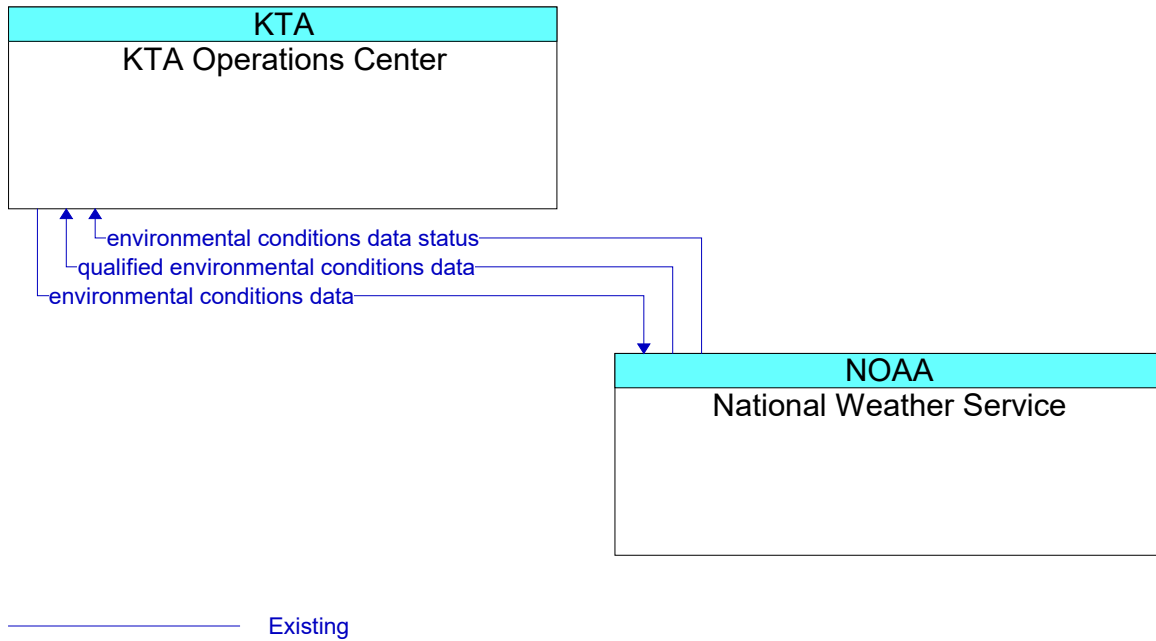
**Figure 878: KTA Operations Center - Missouri State Highway Patrol Dispatch Interface**



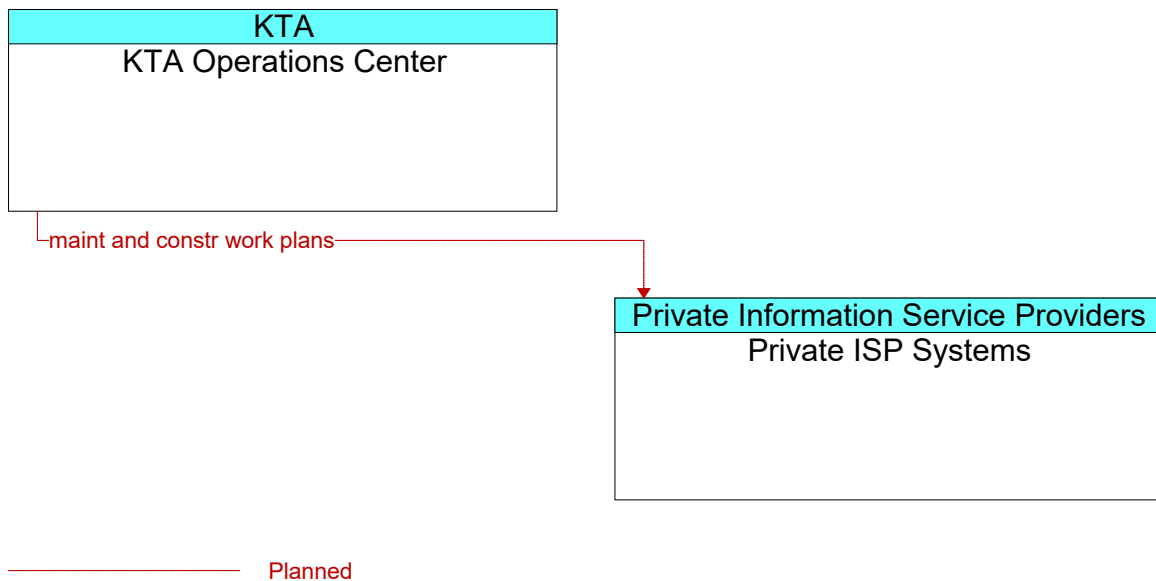
**Figure 879: KTA Operations Center - MoDOT Operations Interface**



**Figure 880: KTA Operations Center - MSHP Scales and Inspection Facilities Interface**

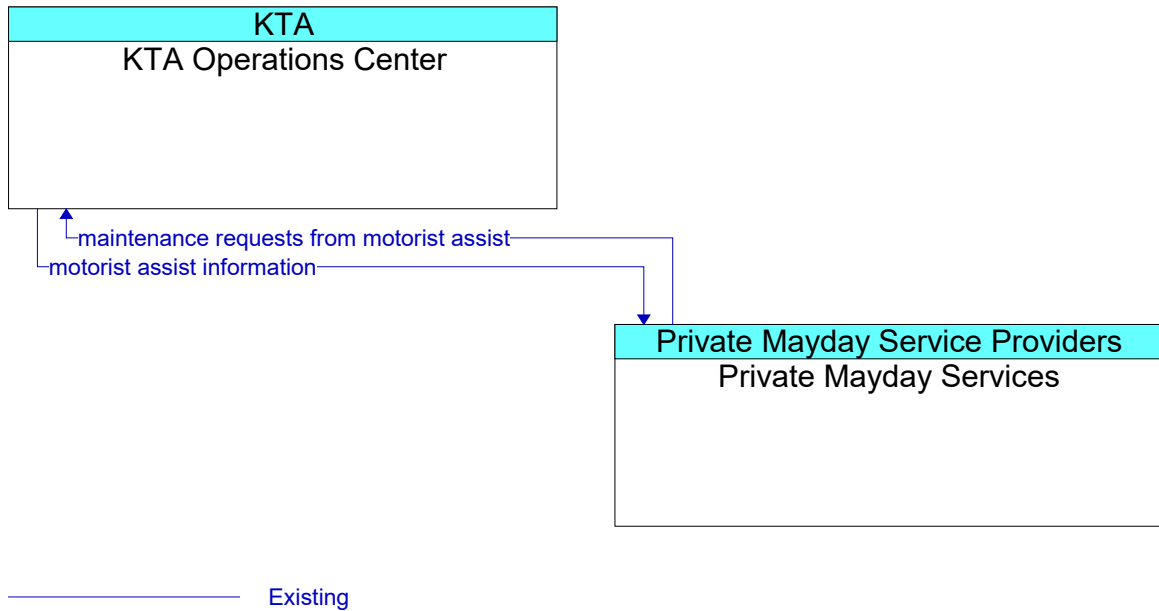


**Figure 881: KTA Operations Center - National Weather Service Interface**

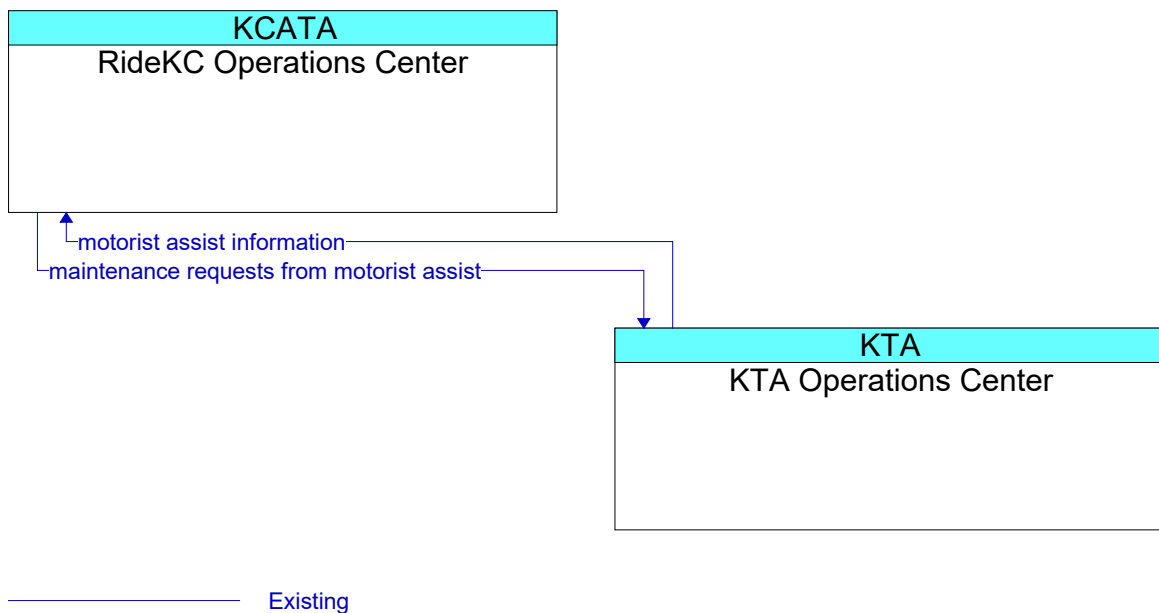


**Figure 882: KTA Operations Center - Private ISP Systems Interface**

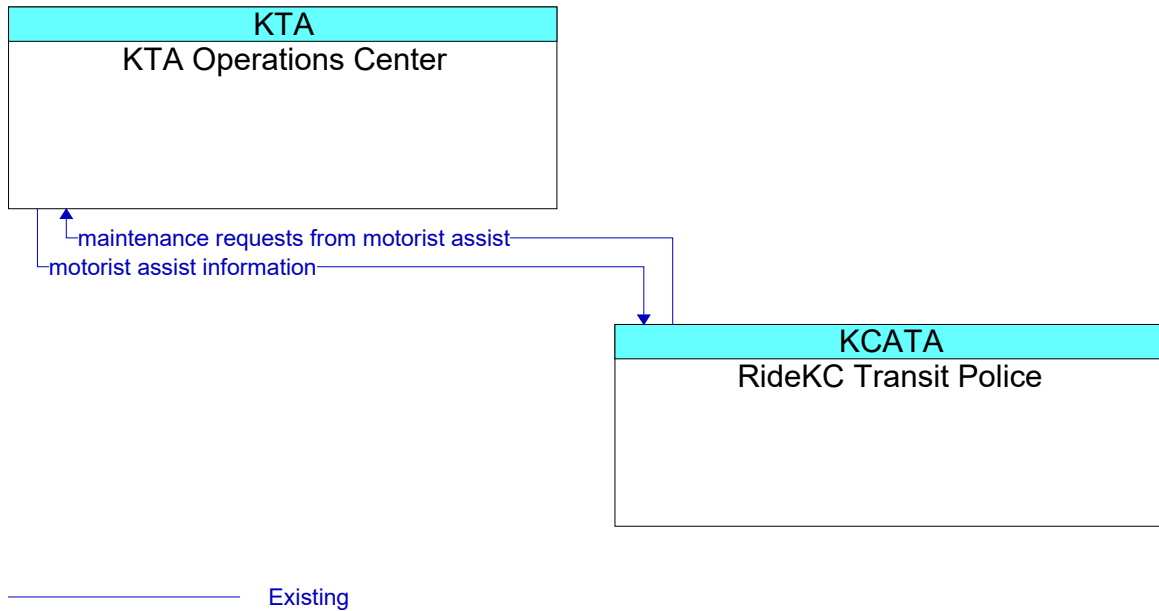




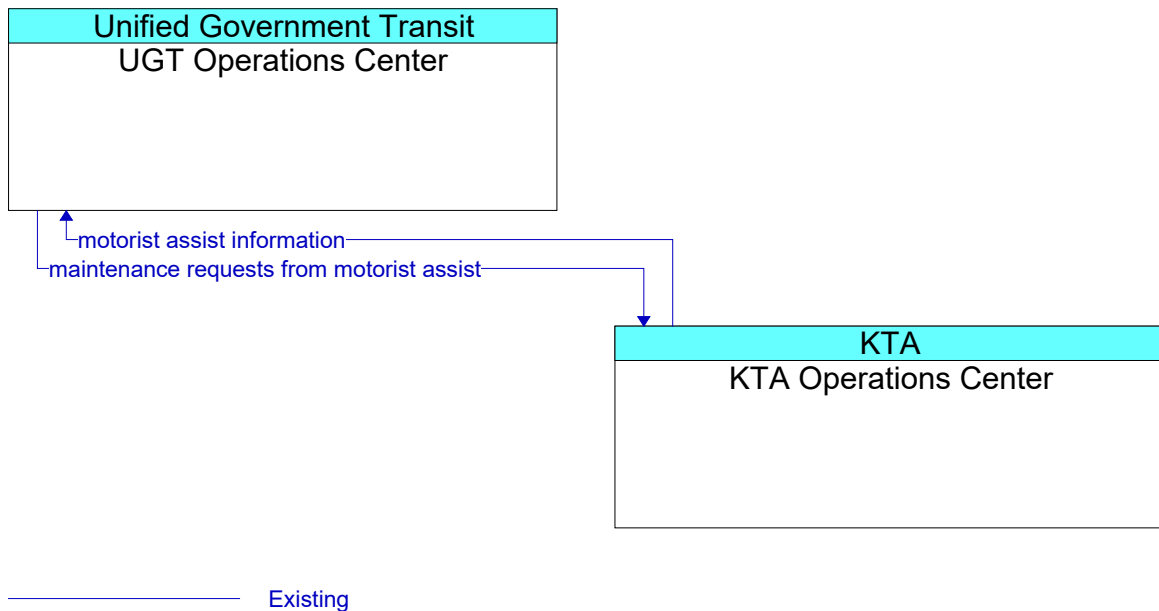
**Figure 883: KTA Operations Center - Private Mayday Services Interface**



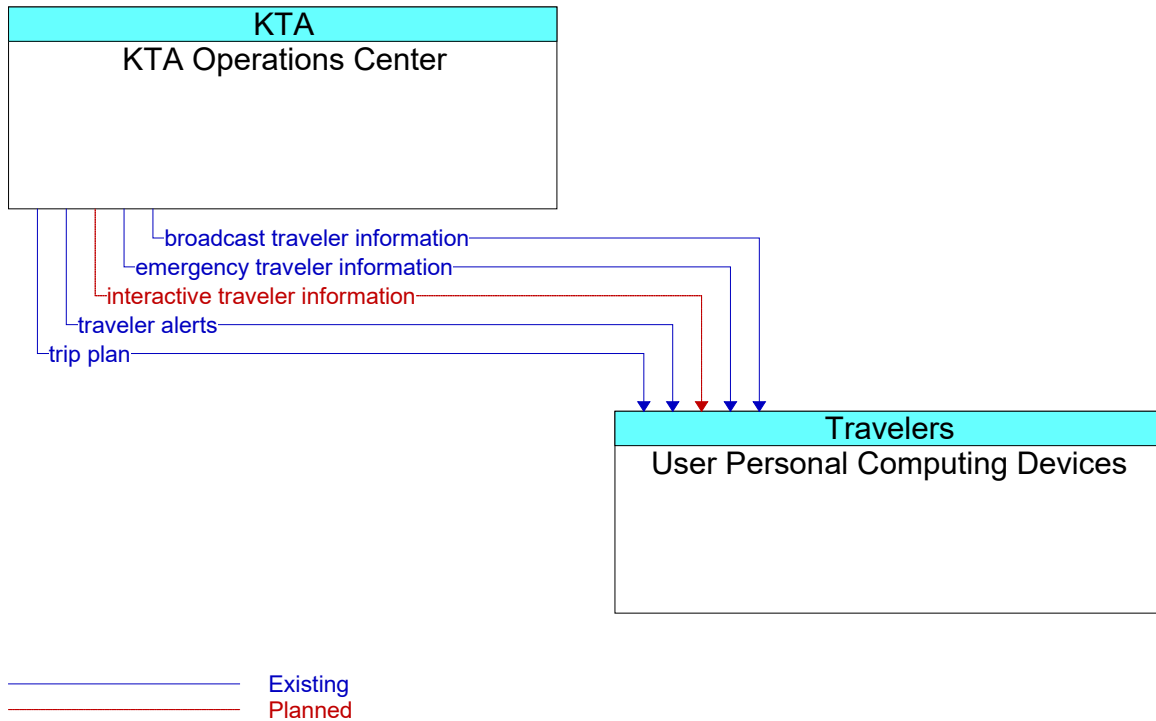
**Figure 884: KTA Operations Center - RideKC Operations Center Interface**



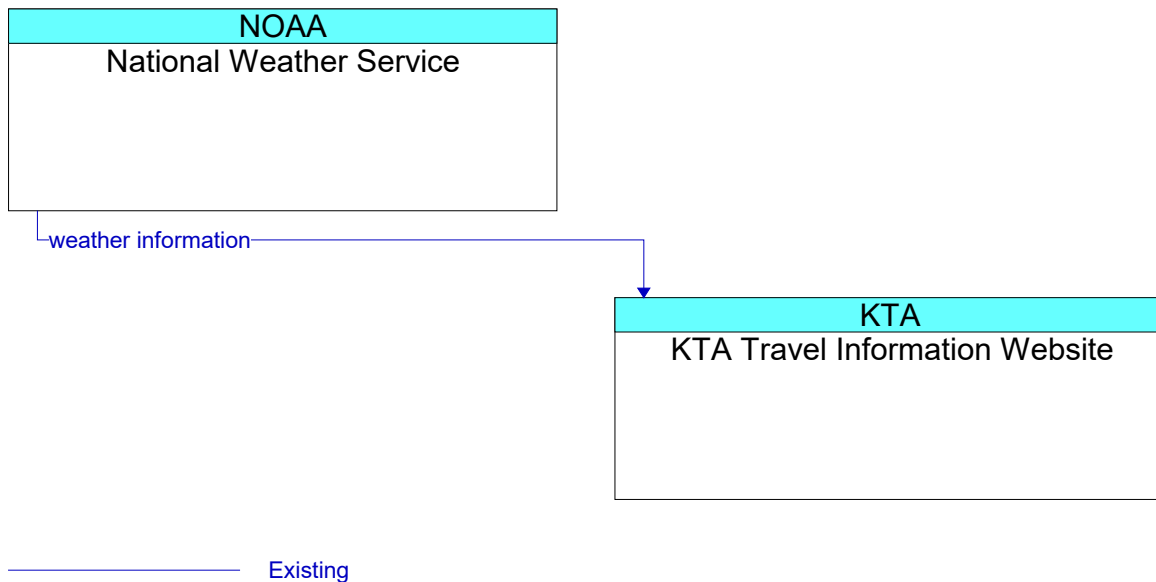
**Figure 885: KTA Operations Center - RideKC Transit Police Interface**



**Figure 886: KTA Operations Center - UGT Operations Center Interface**



**Figure 887: KTA Operations Center - User Personal Computing Devices Interface**



**Figure 888: KTA Travel Information Website - National Weather Service Interface**

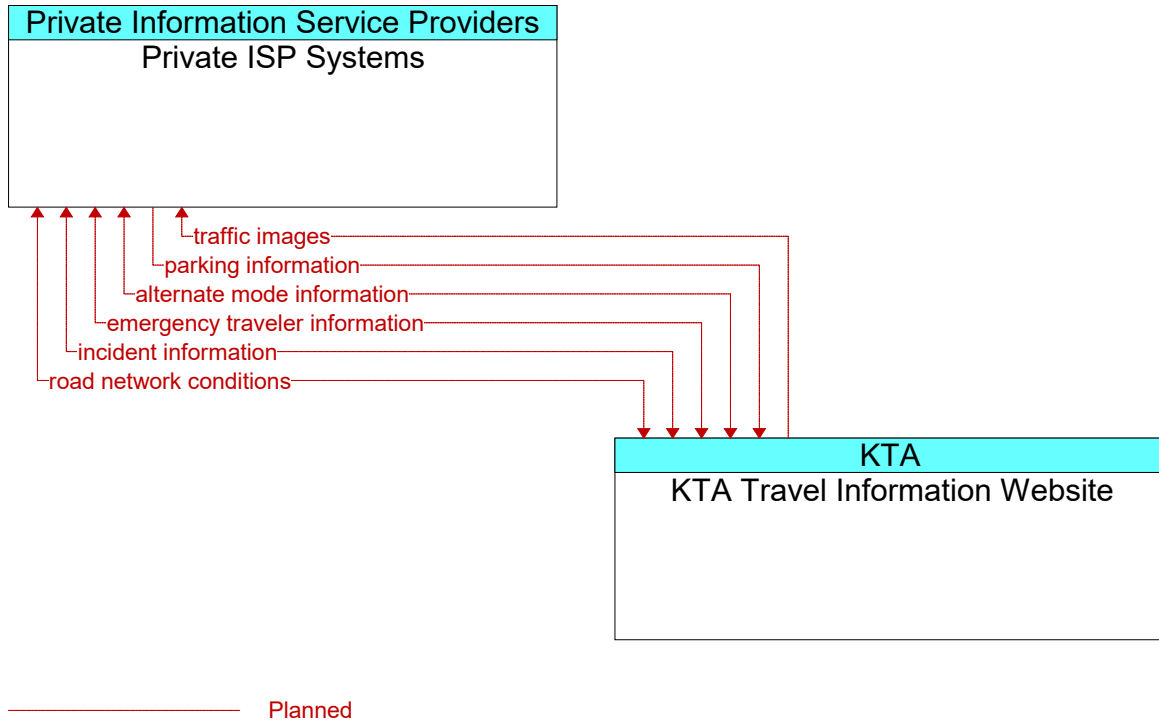
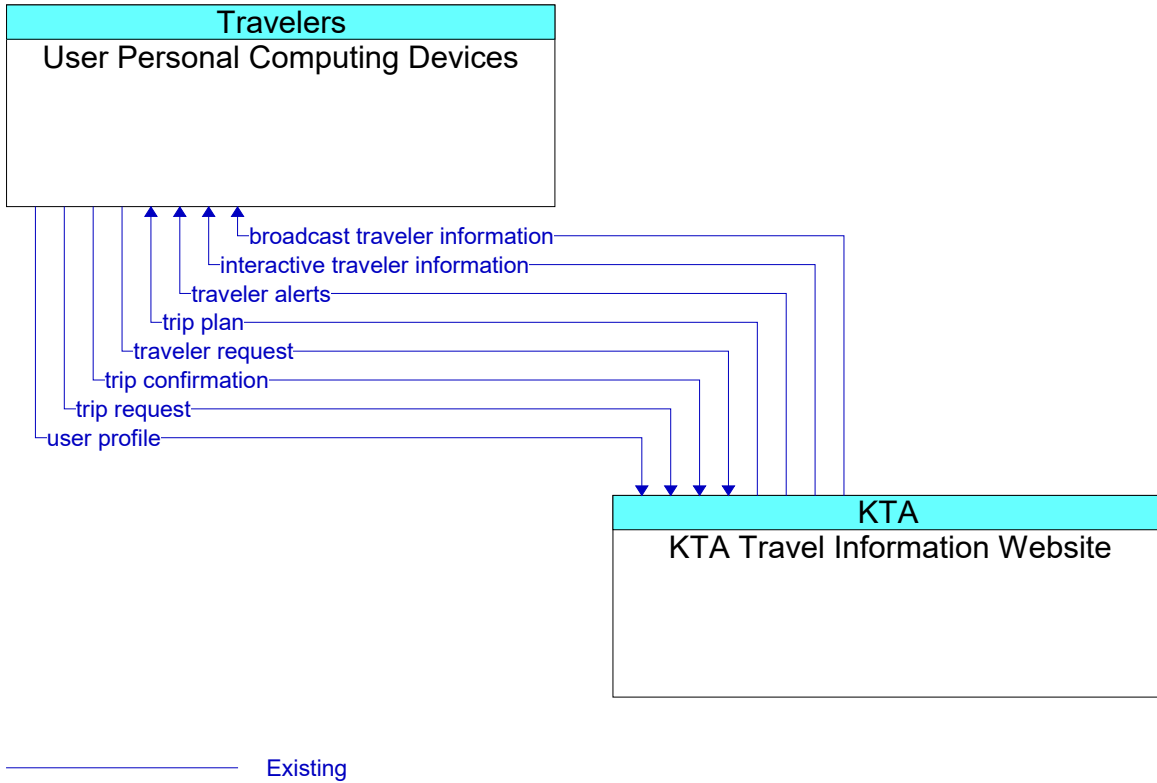
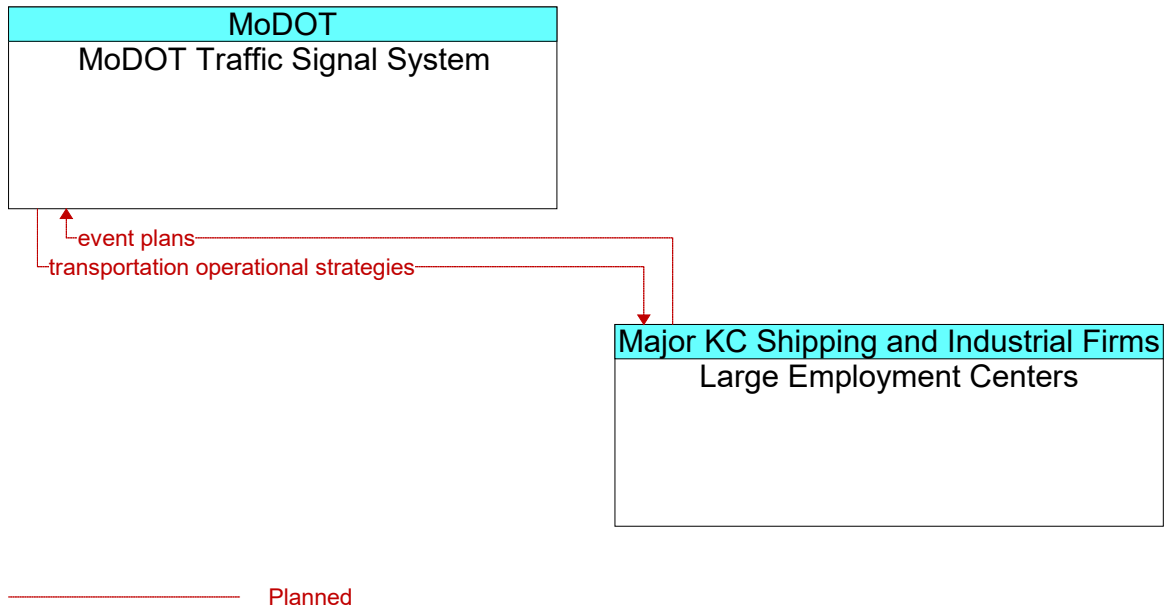


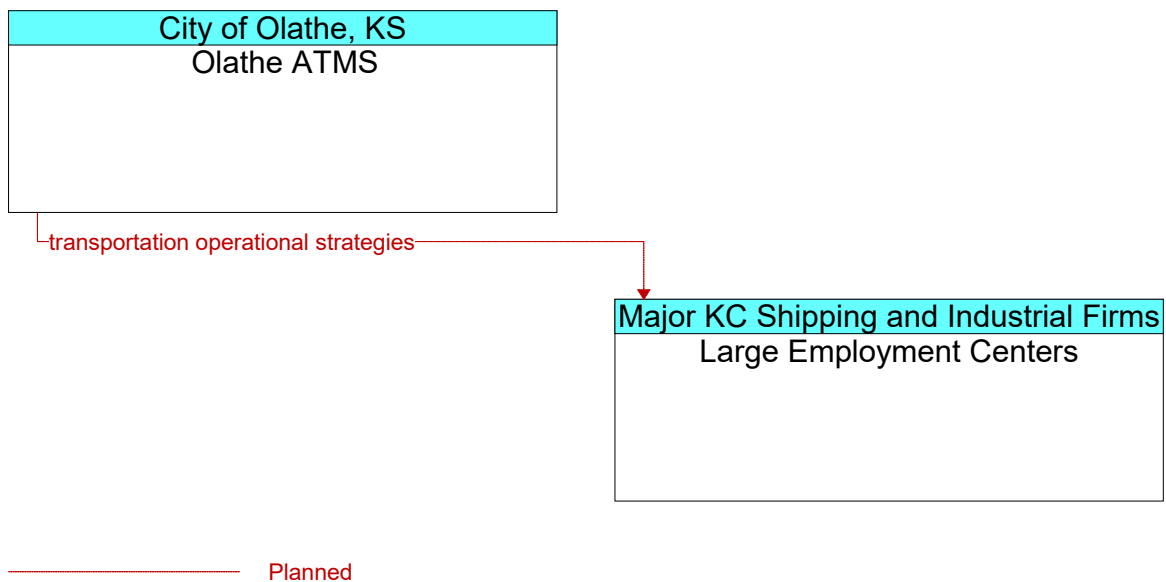
Figure 889: KTA Travel Information Website - Private ISP Systems Interface



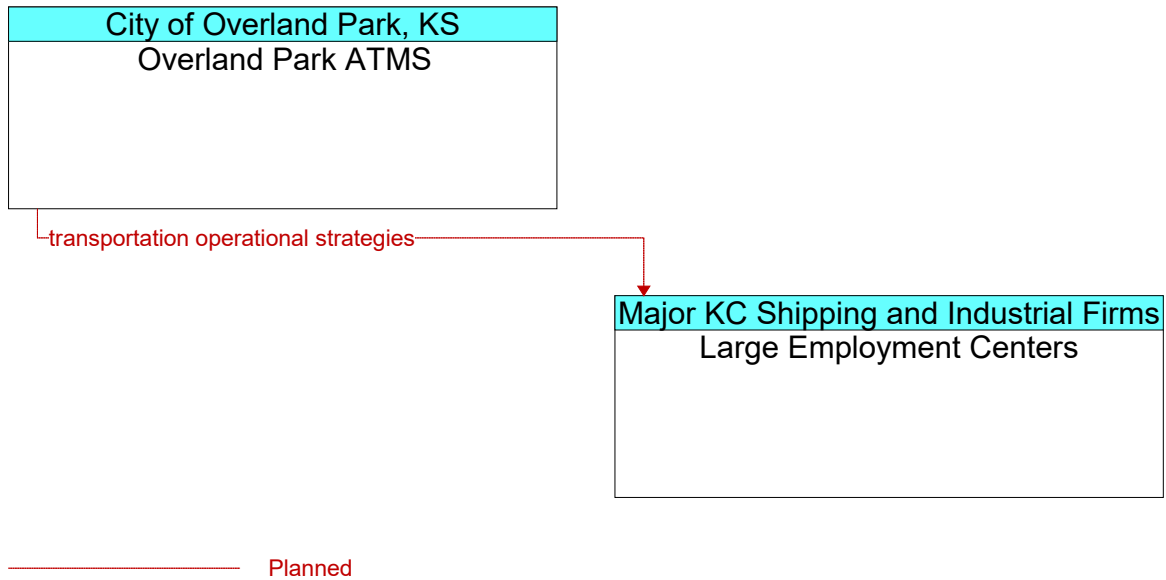
**Figure 890: KTA Travel Information Website - User Personal Computing Devices Interface**



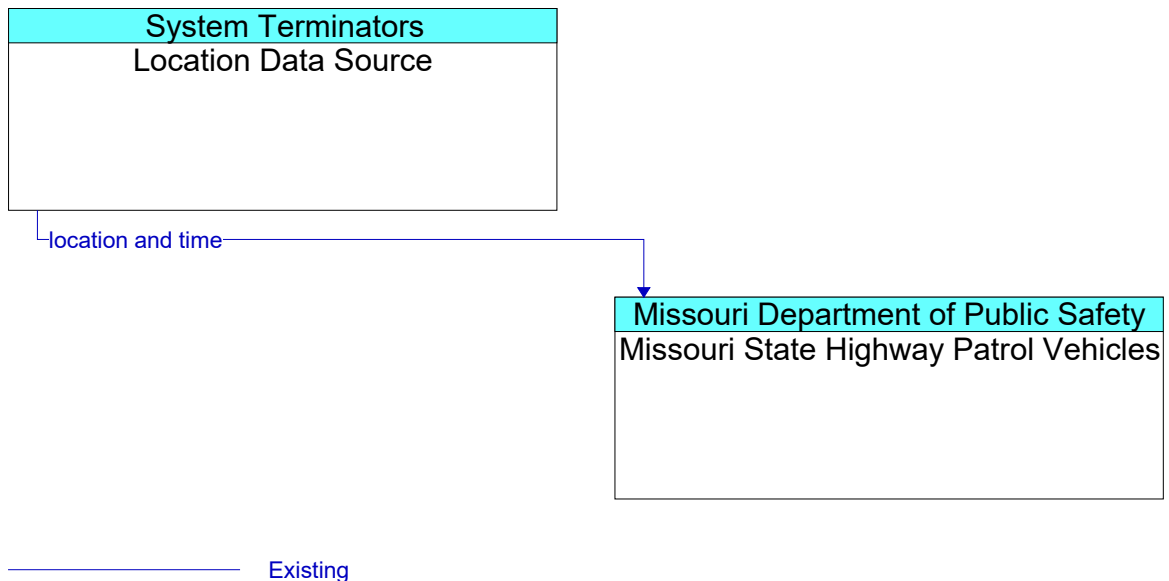
**Figure 891: Large Employment Centers - MoDOT Traffic Signal System Interface**



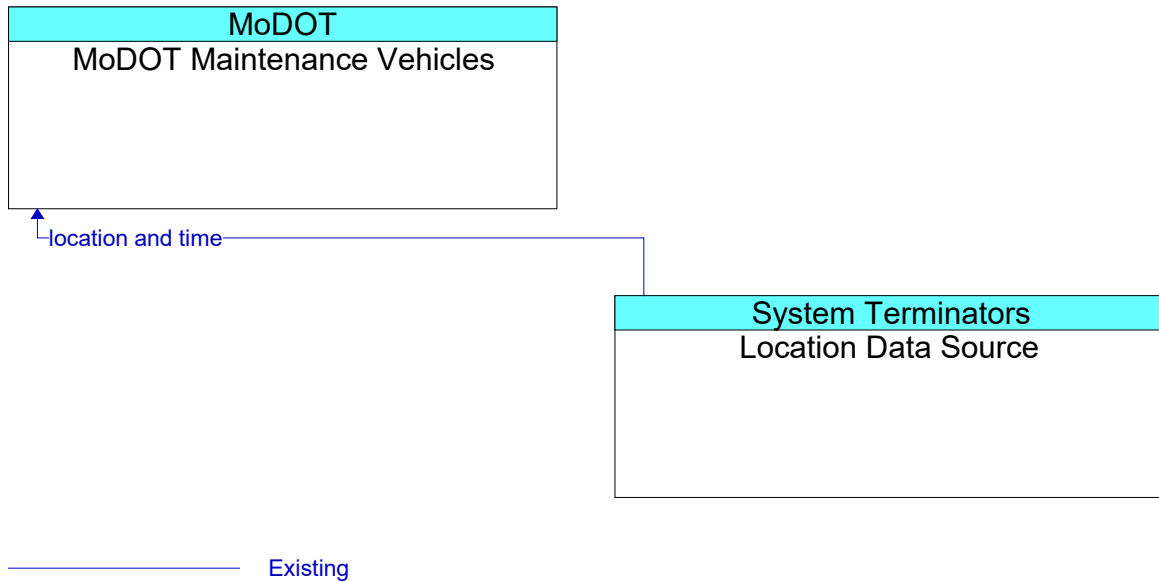
**Figure 892: Large Employment Centers - Olathe ATMS Interface**



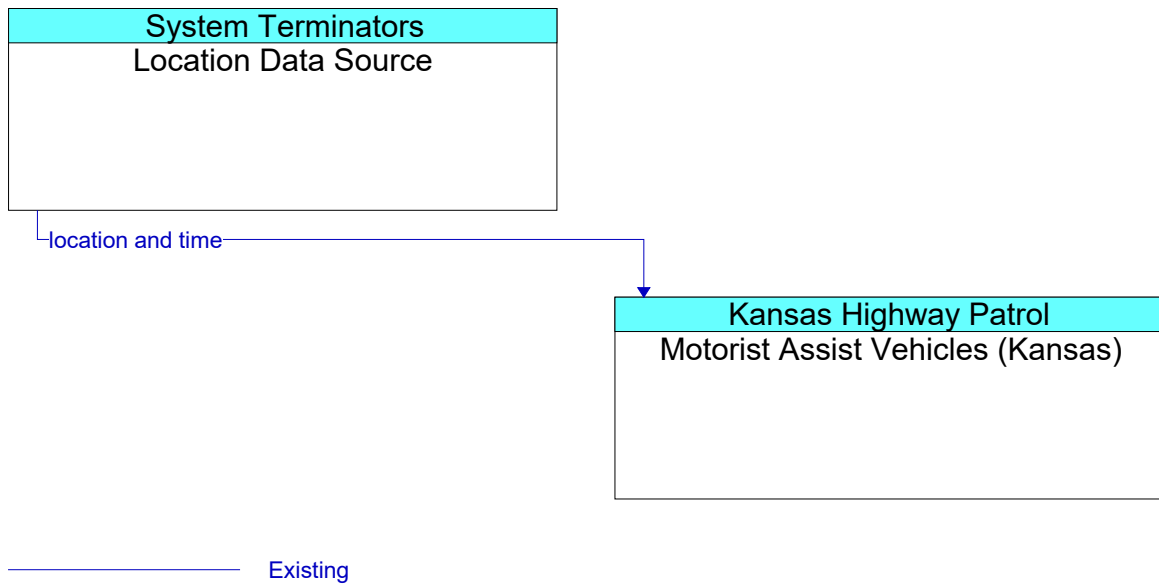
**Figure 893: Large Employment Centers - Overland Park ATMS Interface**



**Figure 894: Location Data Source - Missouri State Highway Patrol Vehicles Interface**

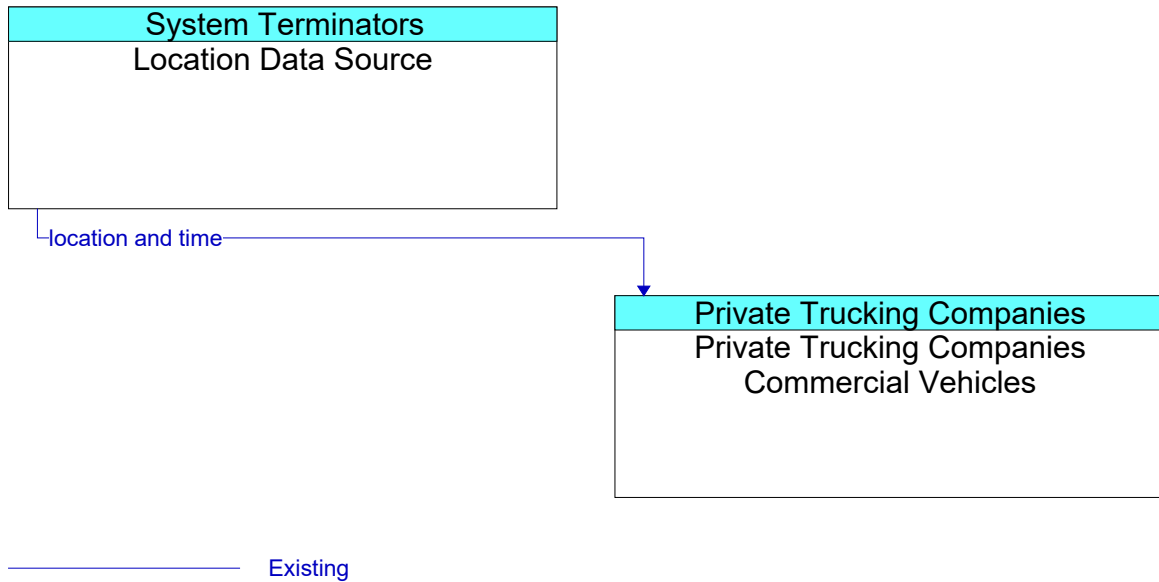


**Figure 895: Location Data Source - MoDOT Maintenance Vehicles Interface**

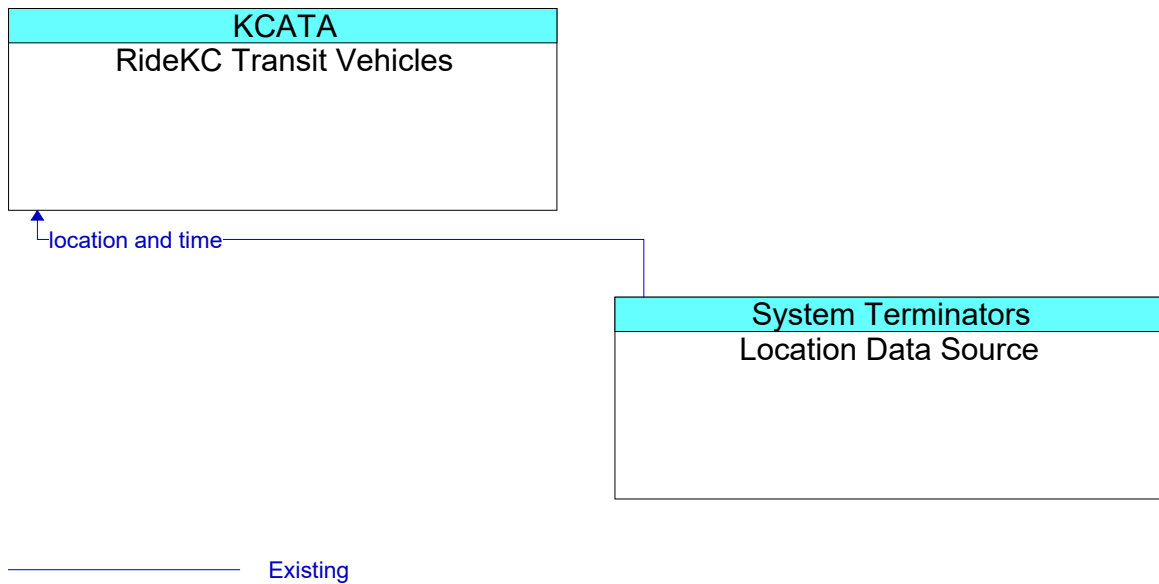


**Figure 896: Location Data Source - Motorist Assist Vehicles (Kansas) Interface**

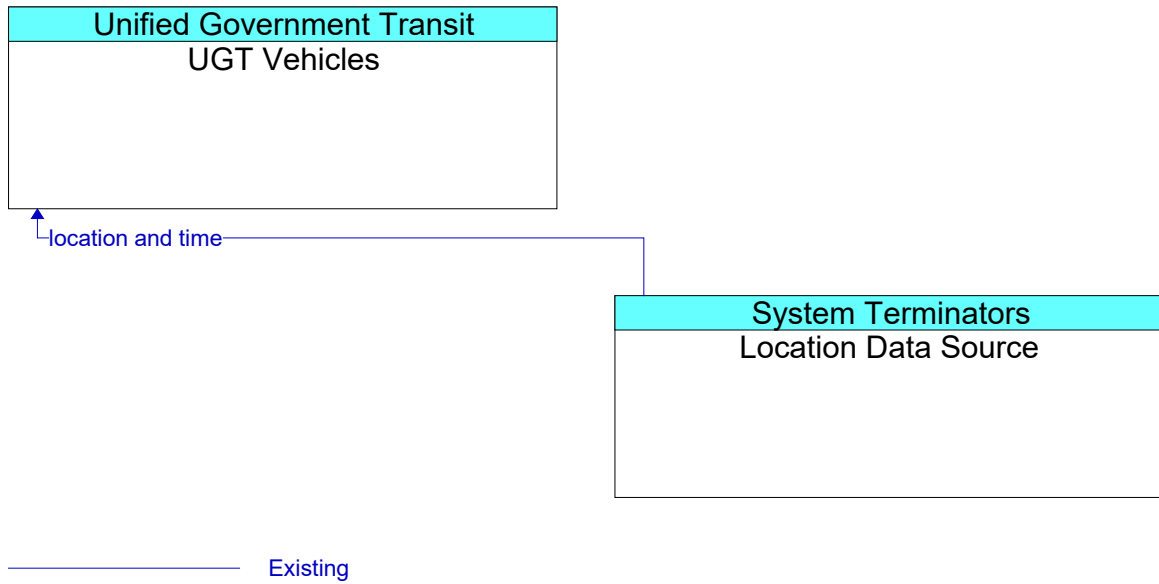




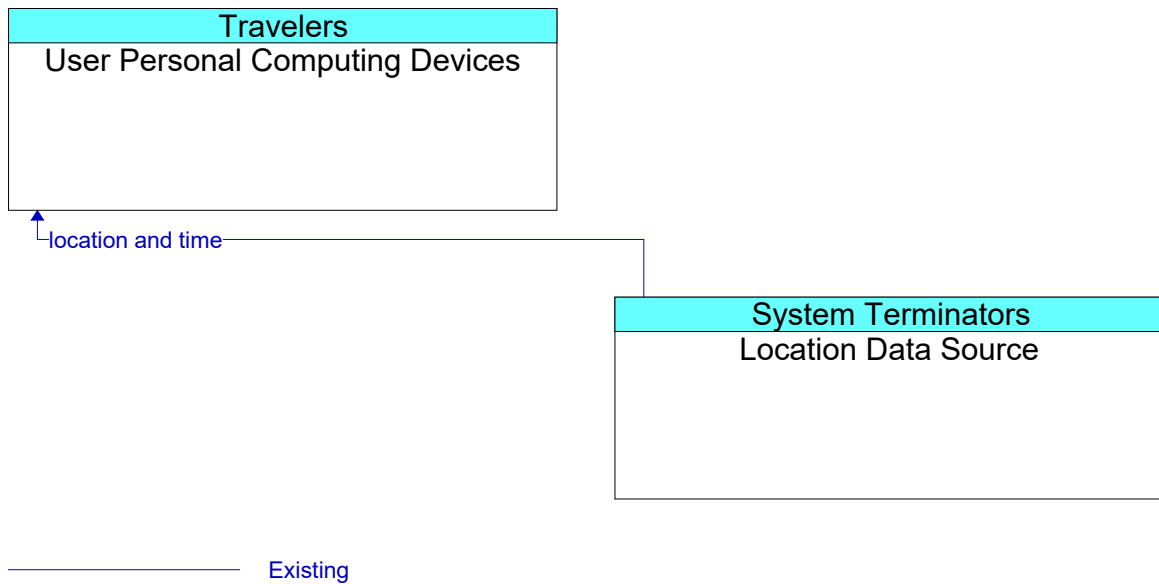
**Figure 897: Location Data Source - Private Trucking Companies Commercial Vehicles Interface**



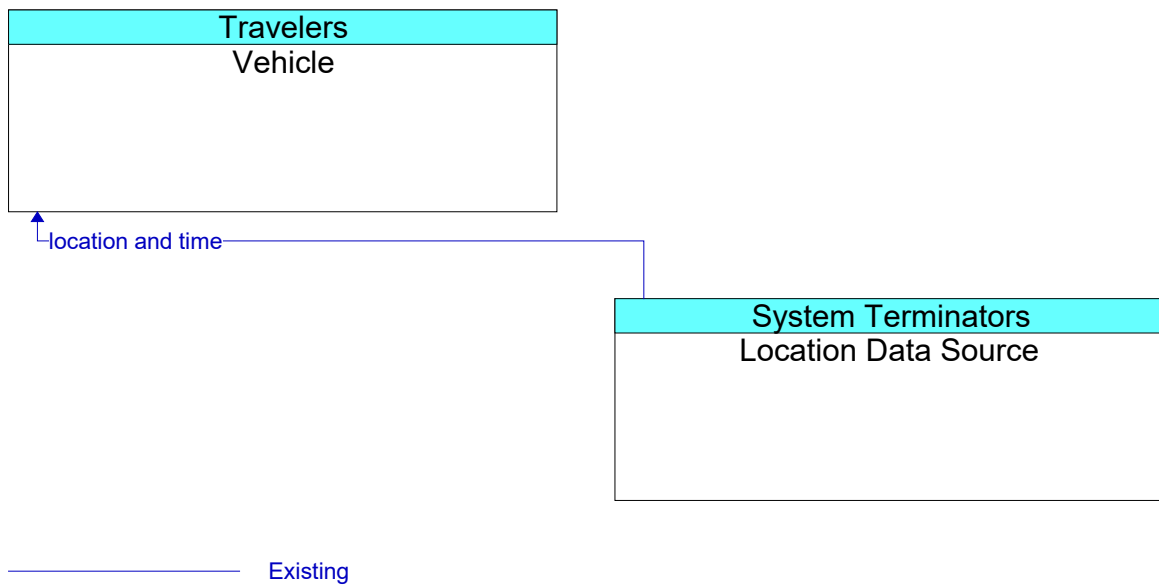
**Figure 898: Location Data Source - RideKC Transit Vehicles Interface**



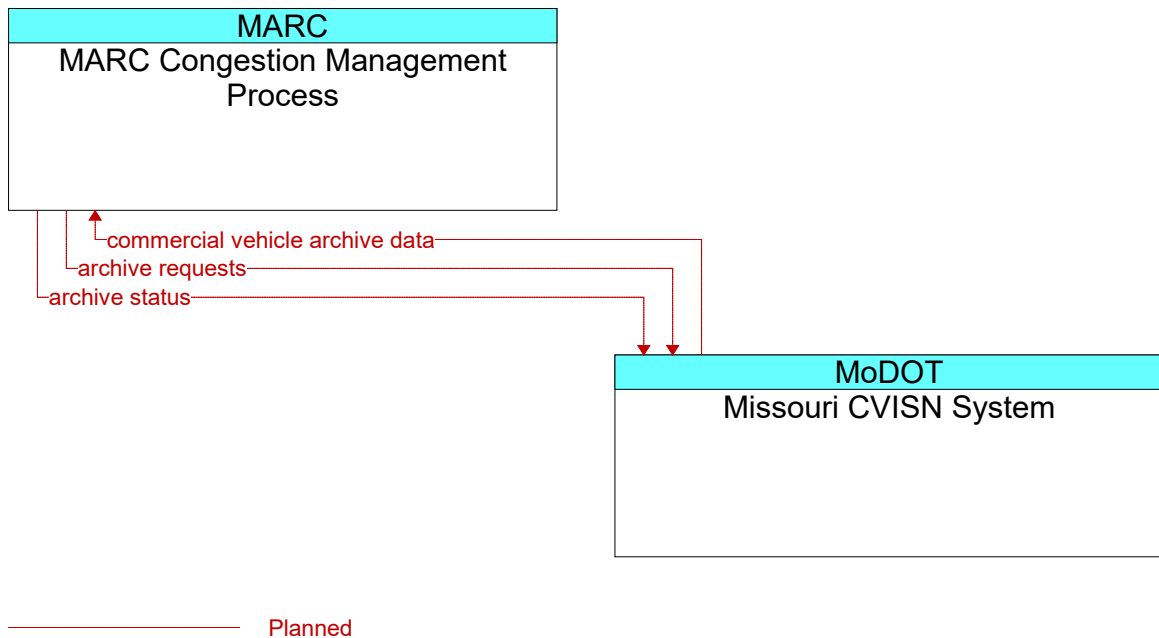
**Figure 899: Location Data Source - UGT Vehicles Interface**



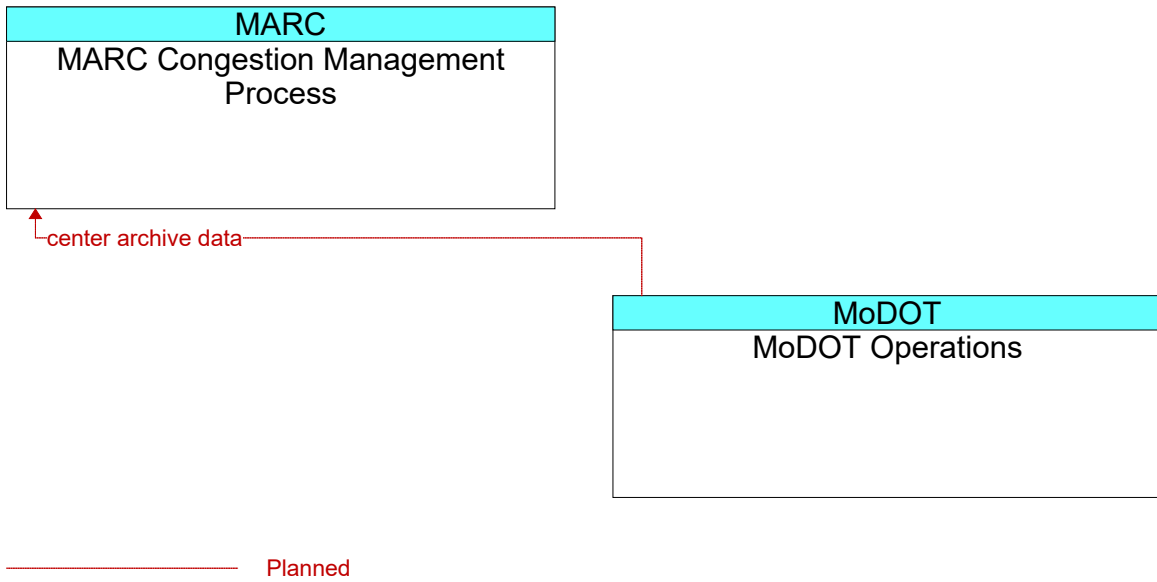
**Figure 900: Location Data Source - User Personal Computing Devices Interface**



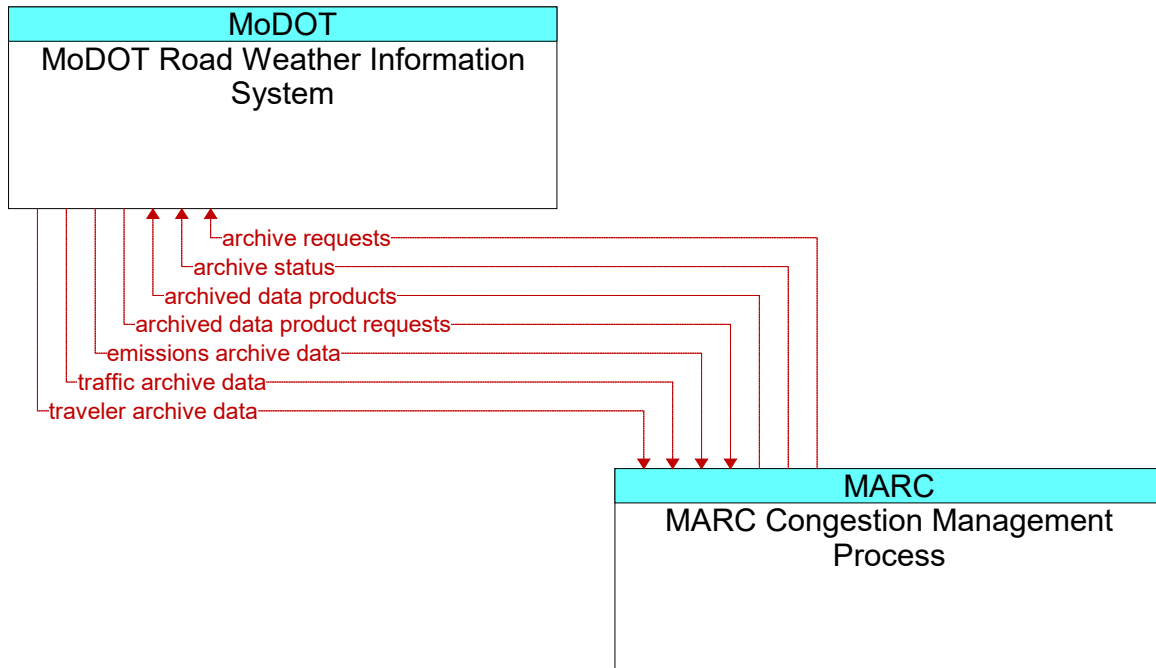
**Figure 901: Location Data Source - Vehicle Interface**



**Figure 902: MARC Congestion Management Process - Missouri CVISN System Interface**

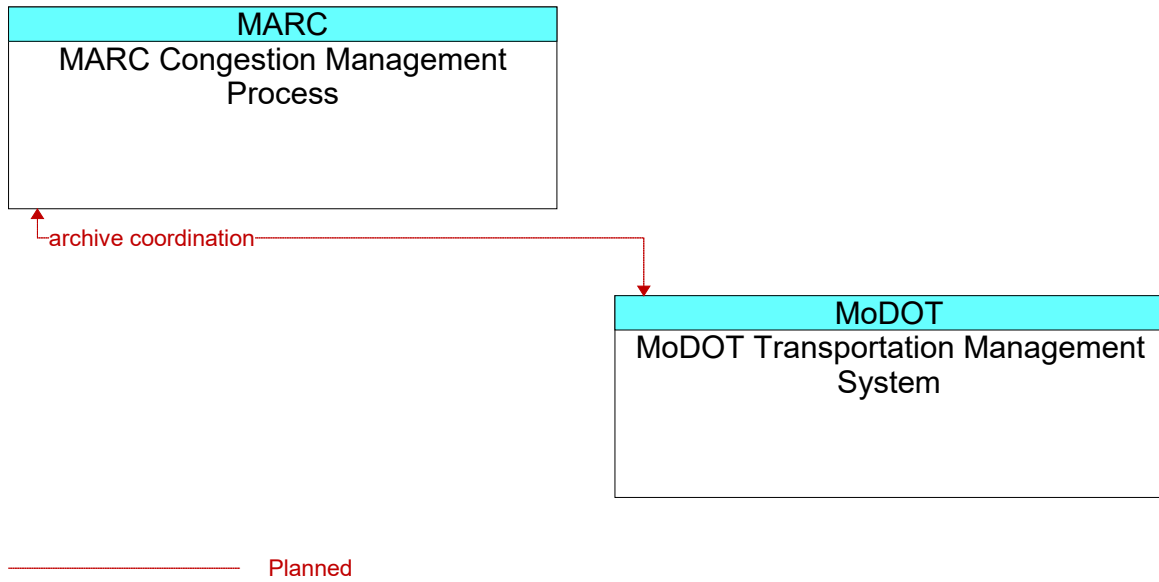


**Figure 903: MARC Congestion Management Process - MoDOT Operations Interface**

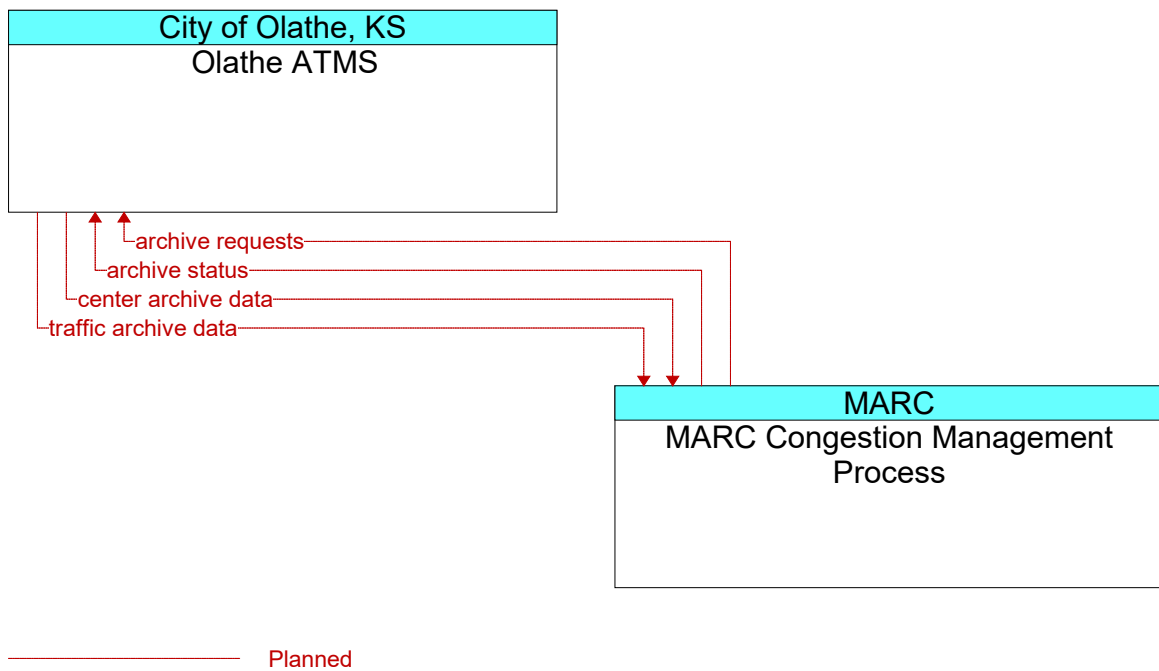


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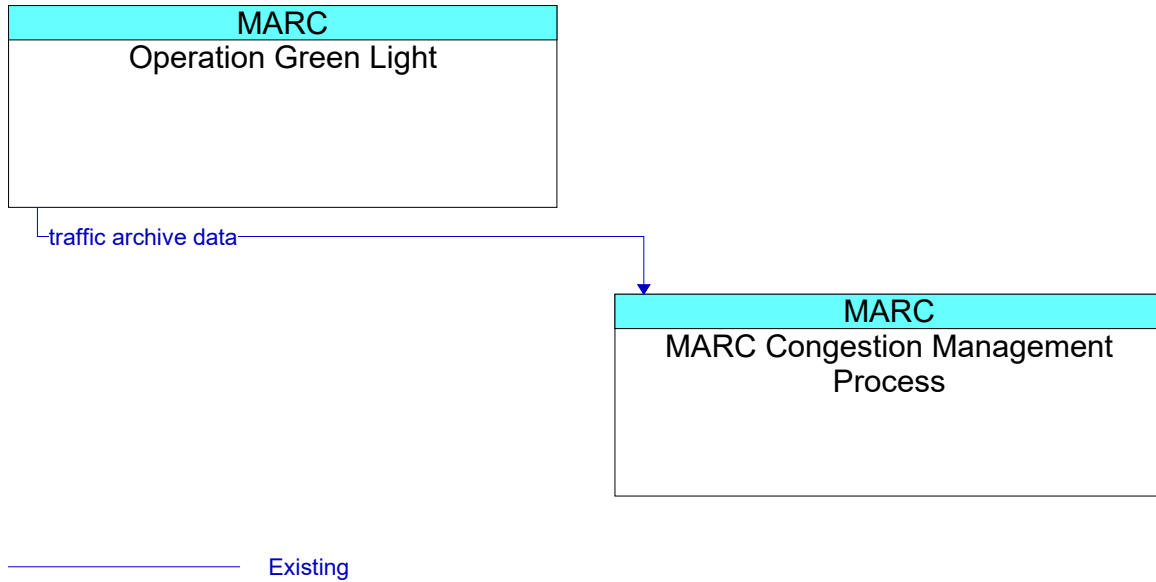
**Figure 904: MARC Congestion Management Process - MoDOT Road Weather Information System Interface**



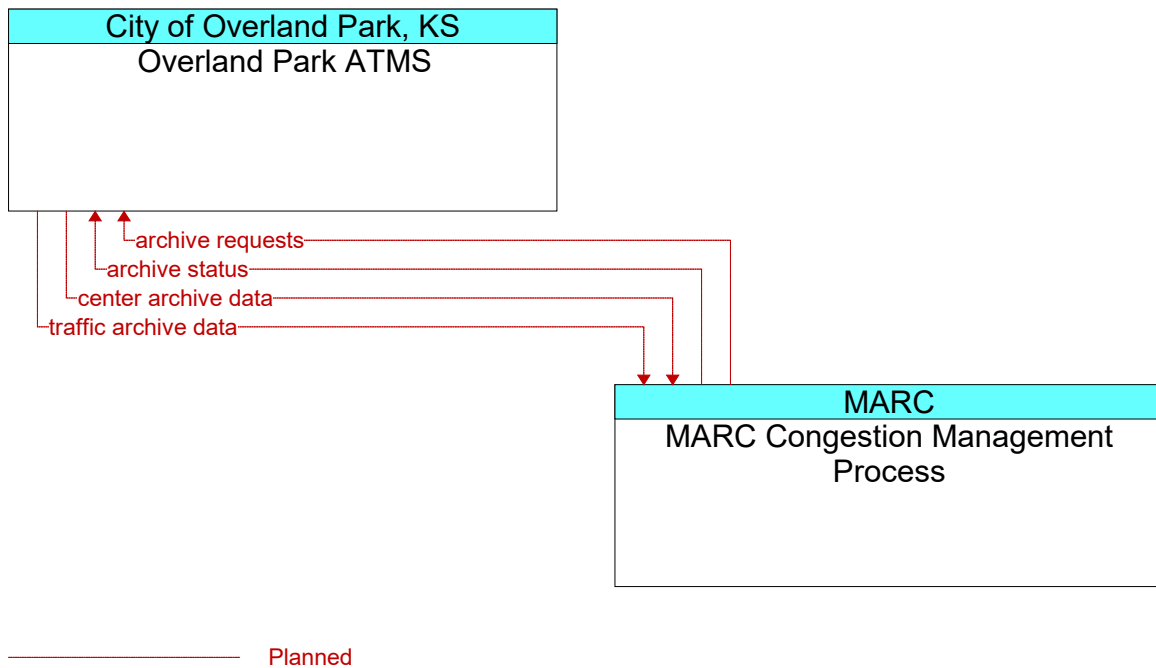
**Figure 905: MARC Congestion Management Process - MoDOT Transportation Management System Interface**



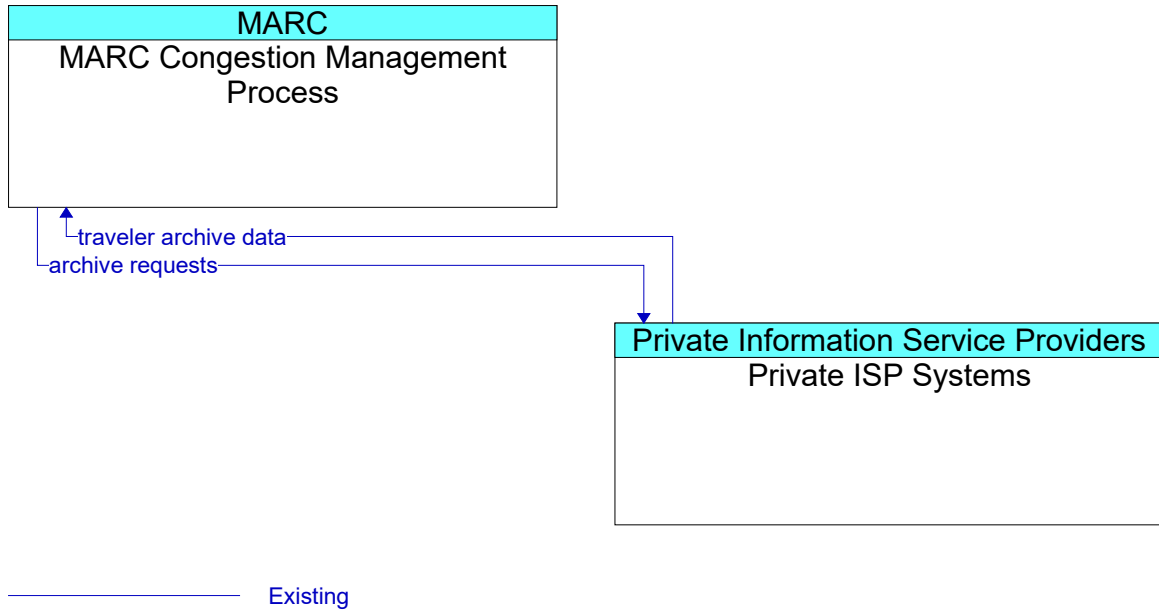
**Figure 906: MARC Congestion Management Process - Olathe ATMS Interface**



**Figure 907: MARC Congestion Management Process - Operation Green Light Interface**

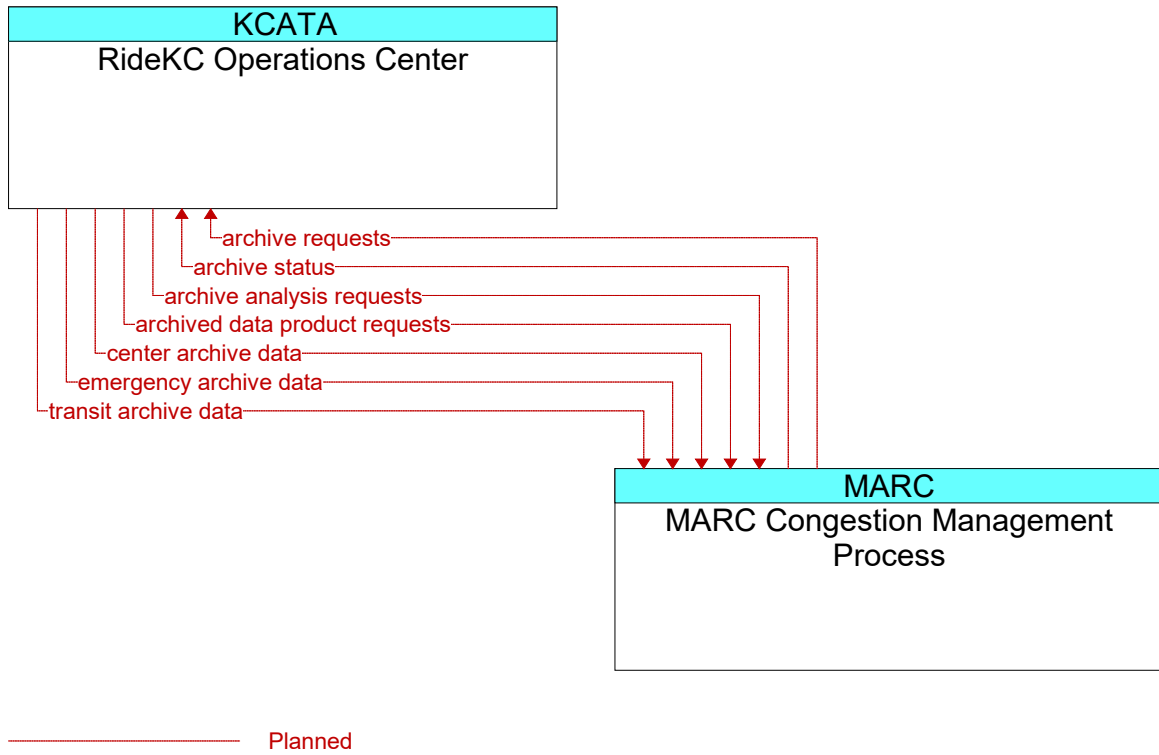


**Figure 908: MARC Congestion Management Process - Overland Park ATMS Interface**

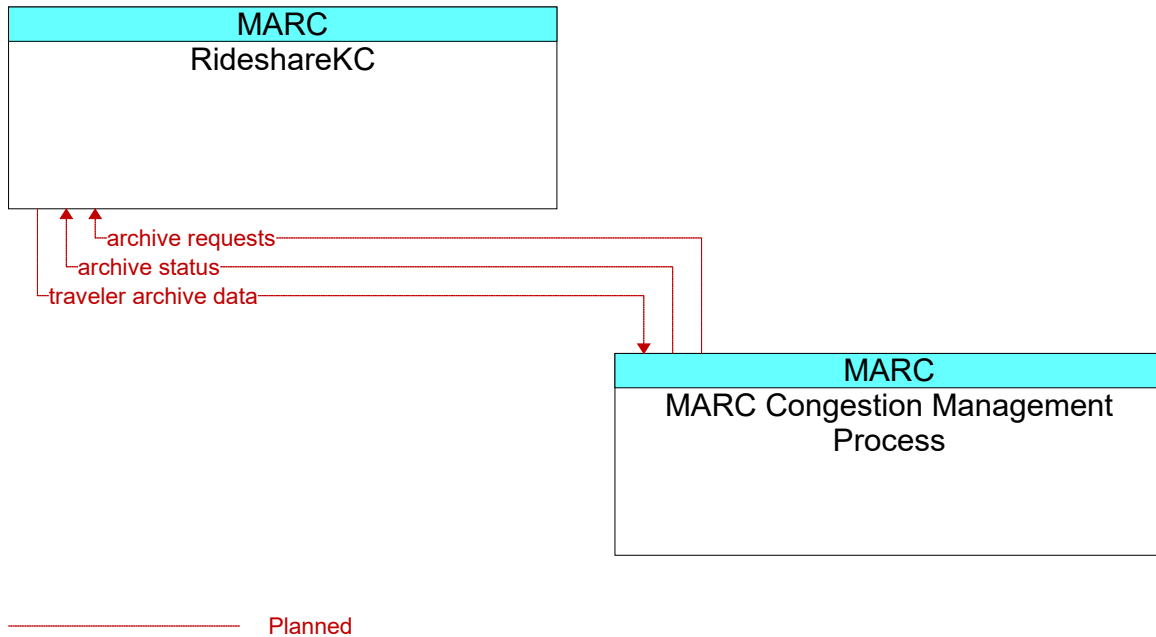


**Figure 909: MARC Congestion Management Process - Private ISP Systems Interface**

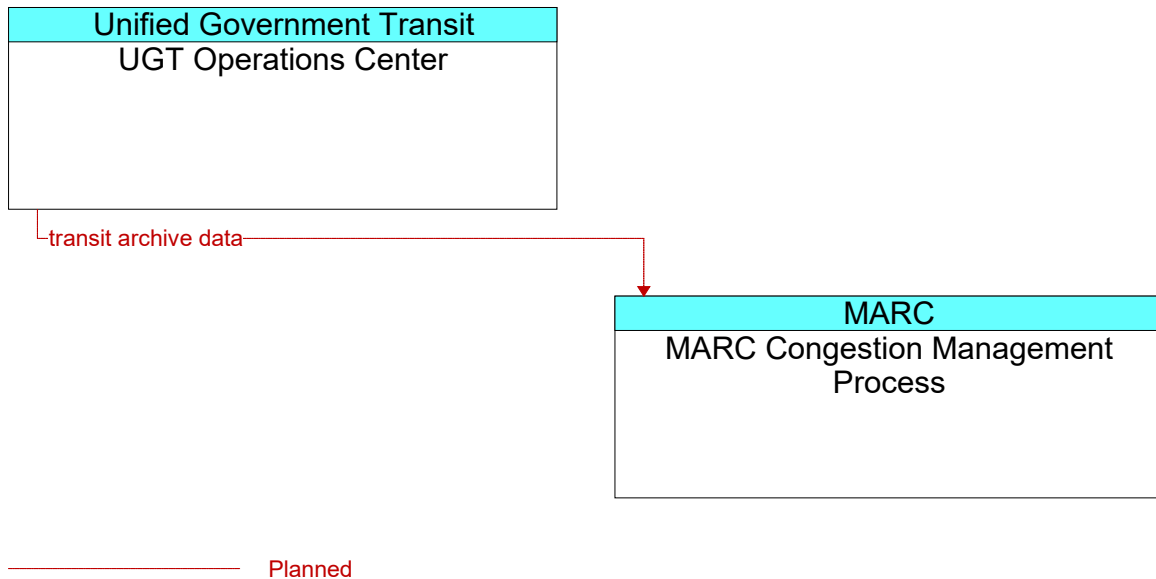




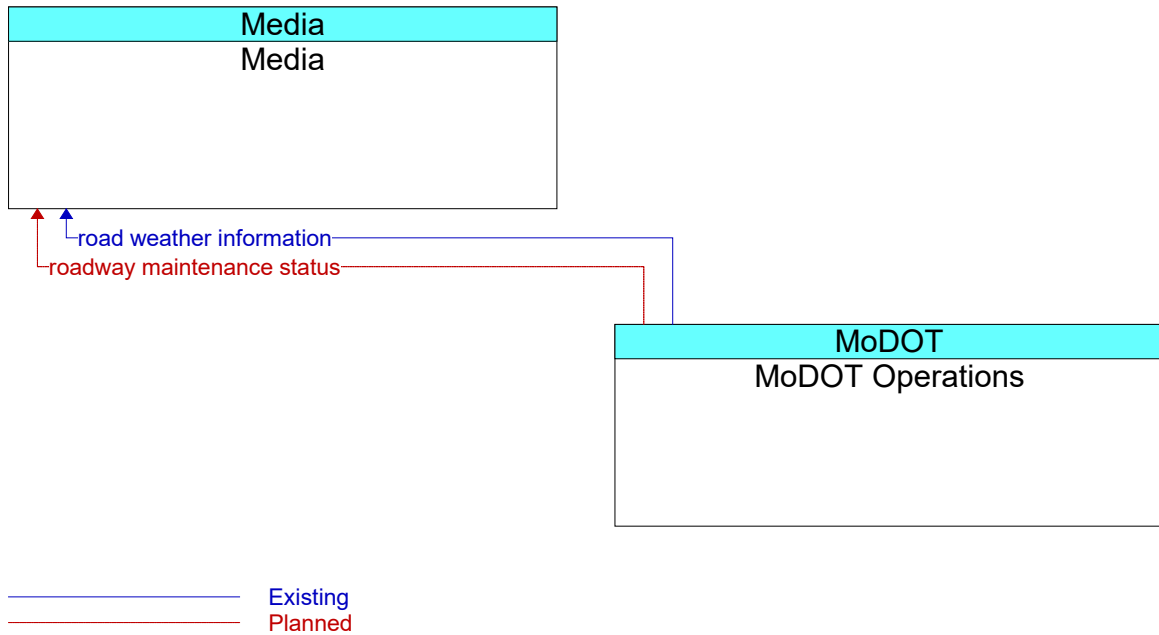
**Figure 910: MARC Congestion Management Process - RideKC Operations Center Interface**



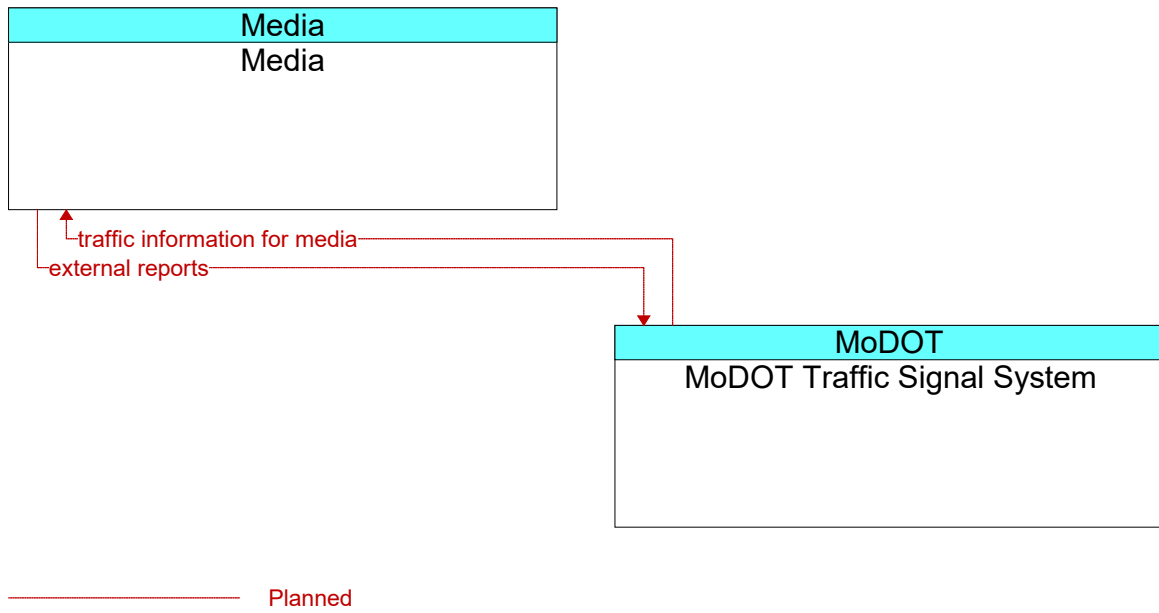
**Figure 911: MARC Congestion Management Process - RideshareKC Interface**



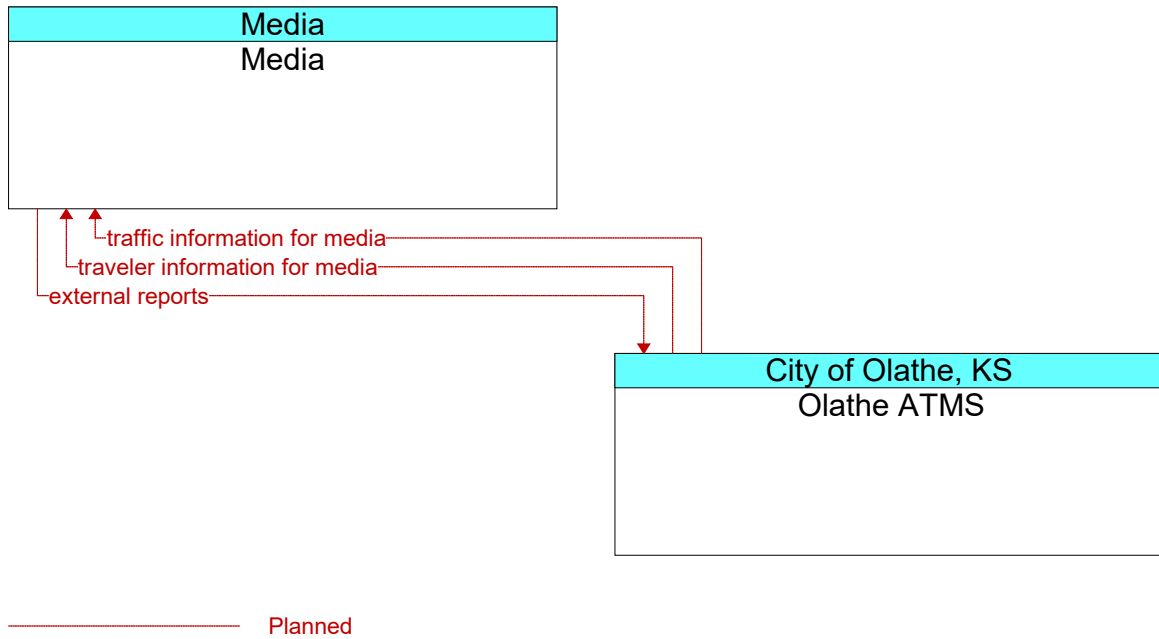
**Figure 912: MARC Congestion Management Process - UGT Operations Center Interface**



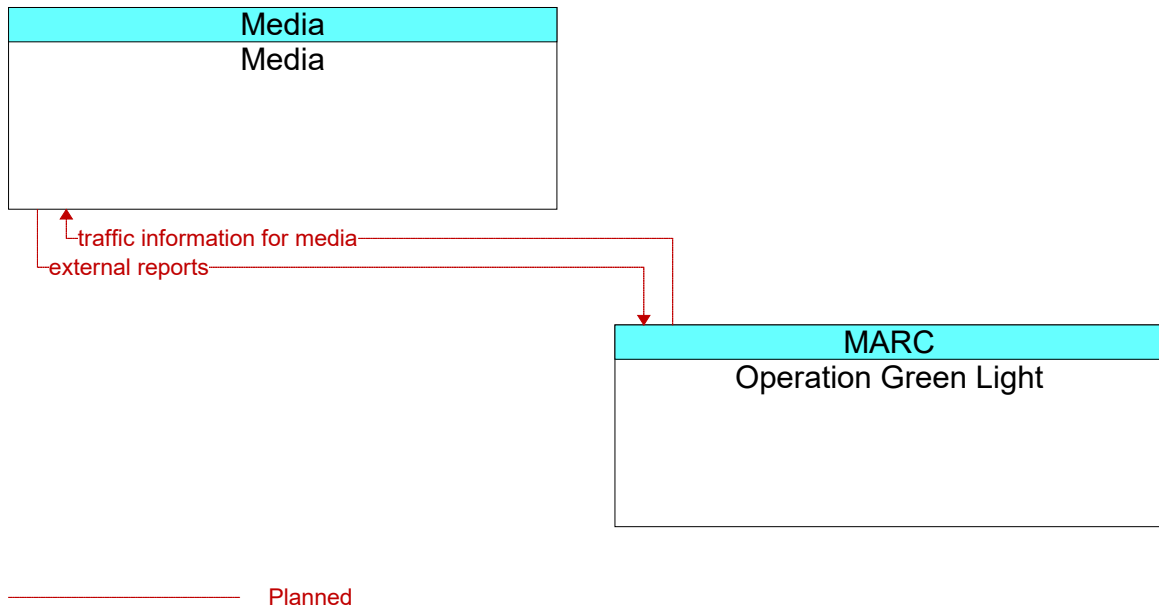
**Figure 913: Media - MoDOT Operations Interface**



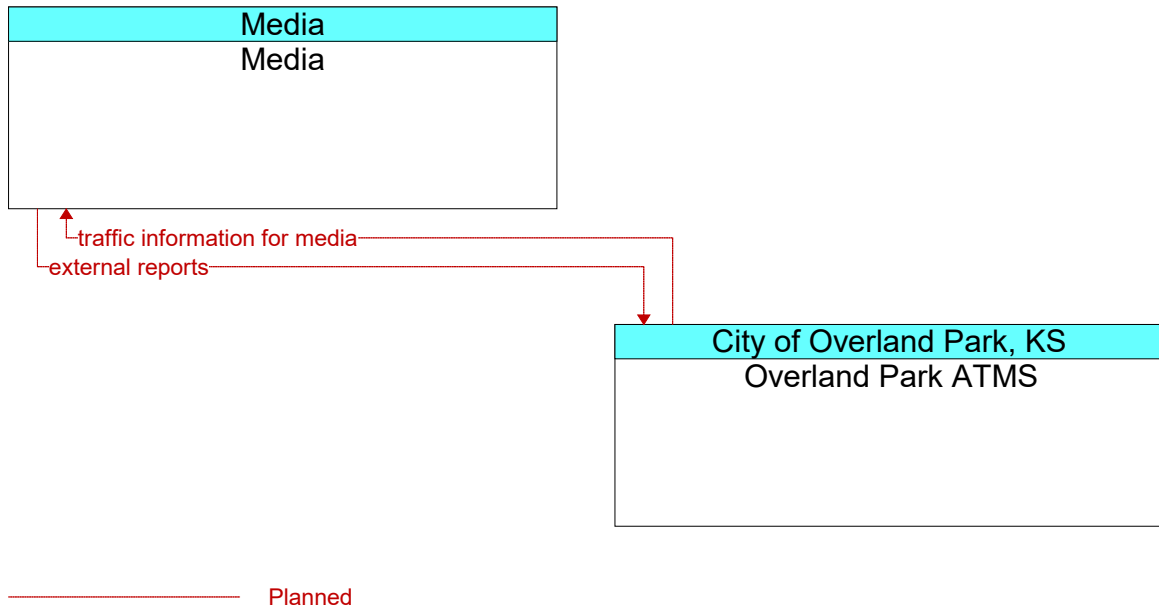
**Figure 914: Media - MoDOT Traffic Signal System Interface**



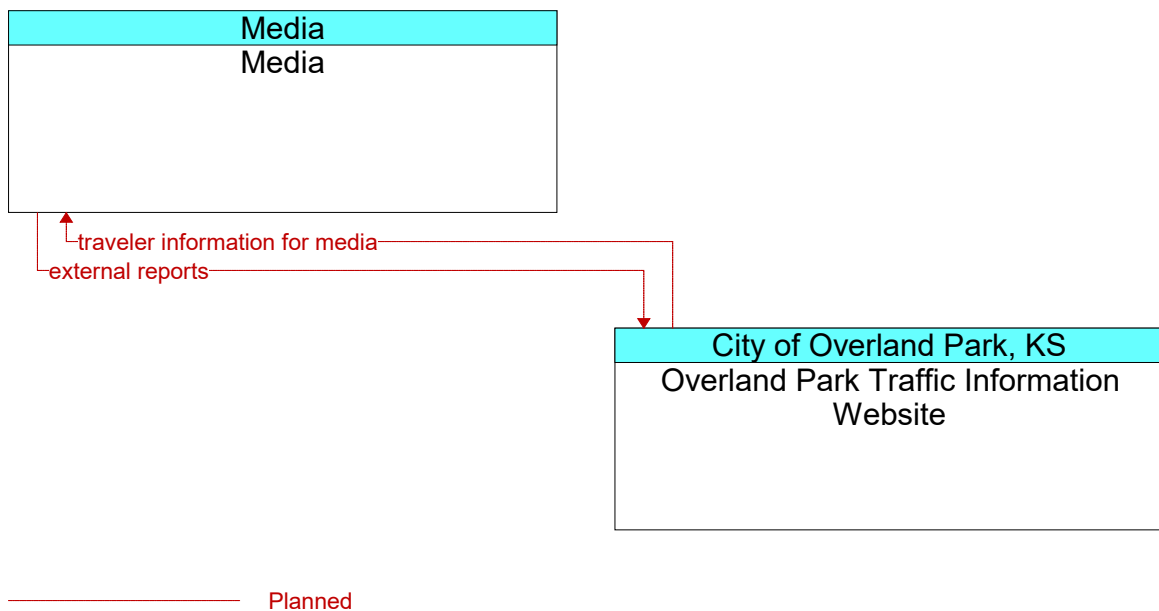
**Figure 915: Media - Olathe ATMS Interface**



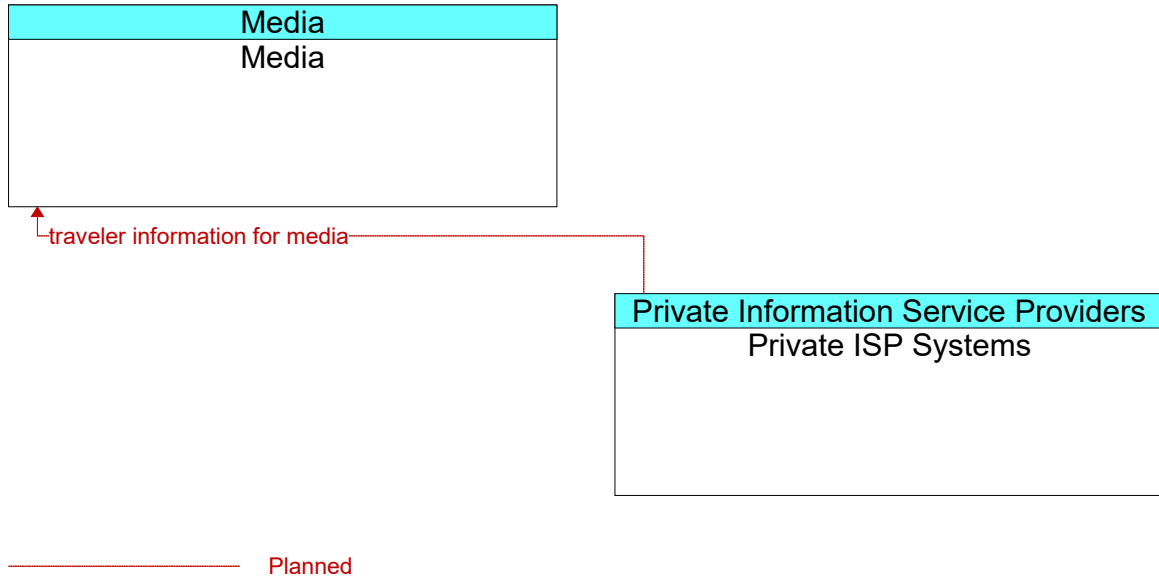
**Figure 916: Media - Operation Green Light Interface**



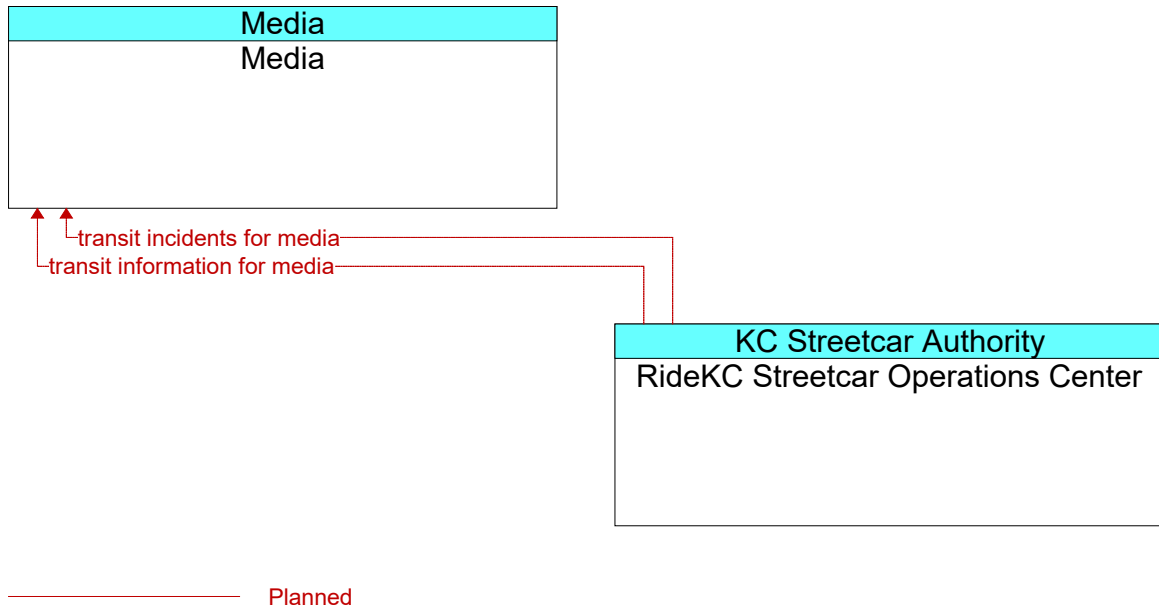
**Figure 917: Media - Overland Park ATMS Interface**



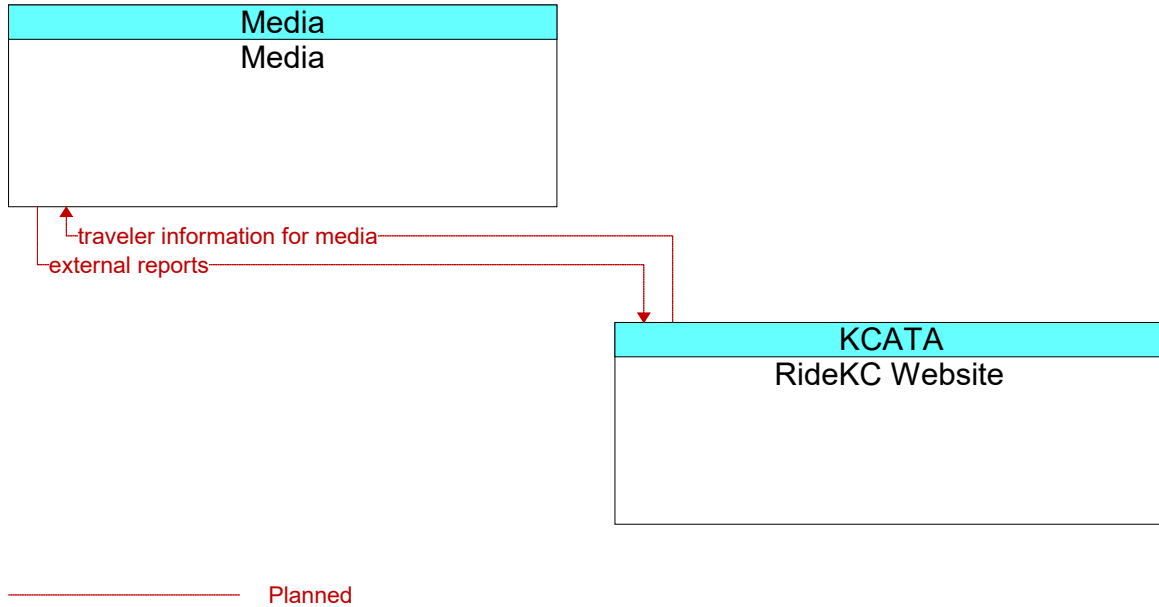
**Figure 918: Media - Overland Park Traffic Information Website Interface**



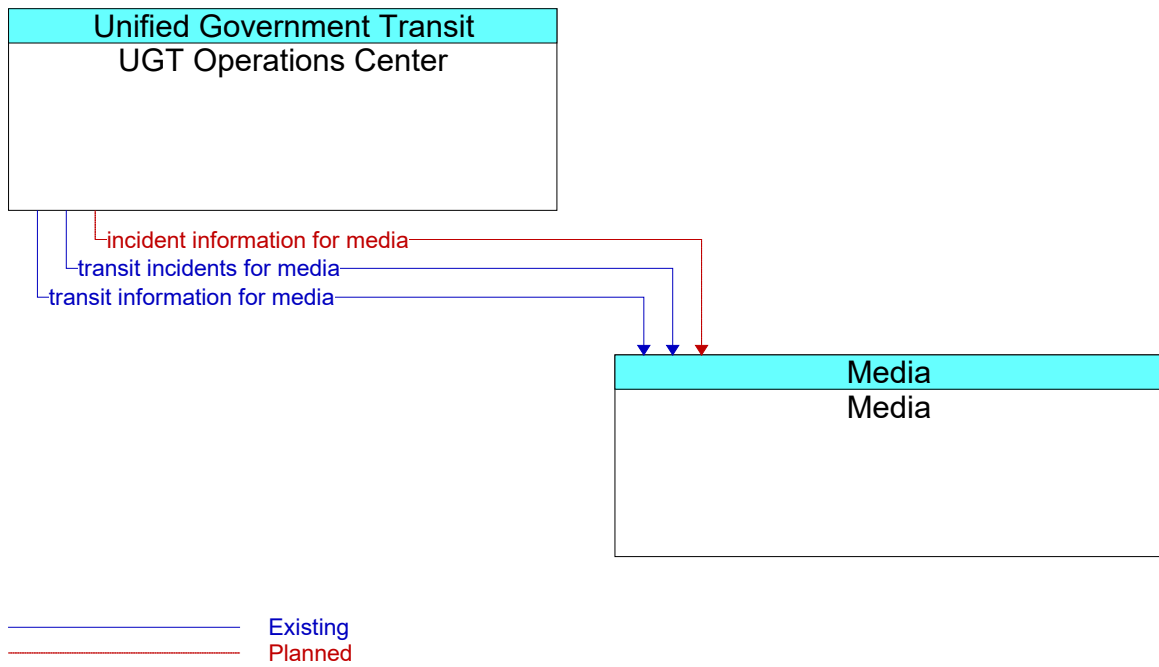
**Figure 919: Media - Private ISP Systems Interface**



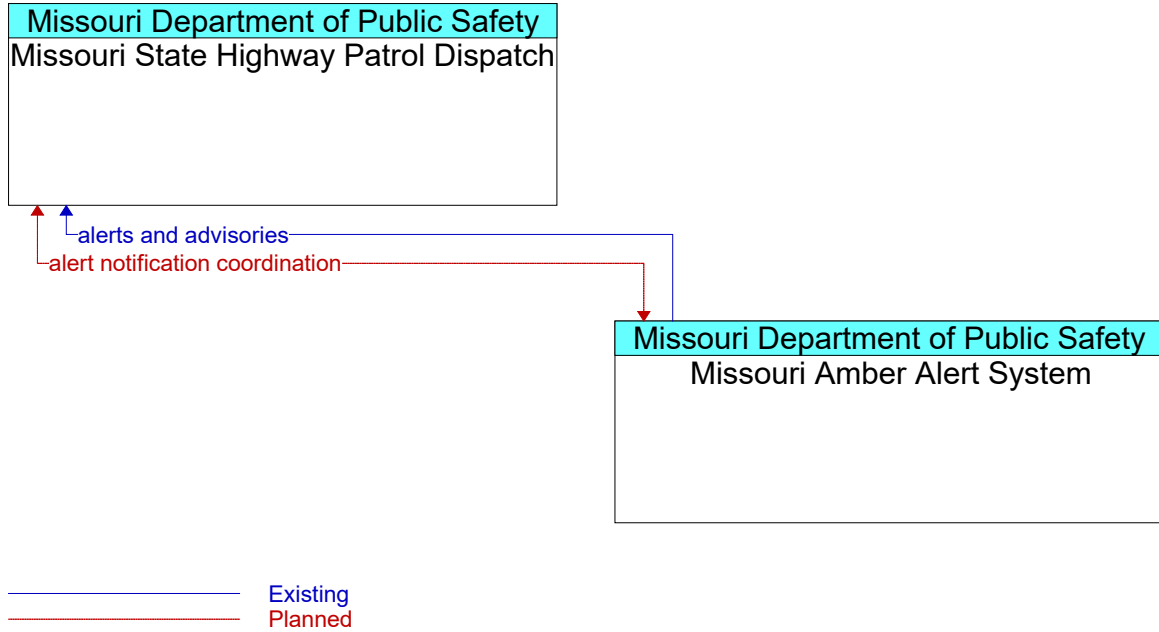
**Figure 920: Media - RideKC Streetcar Operations Center Interface**



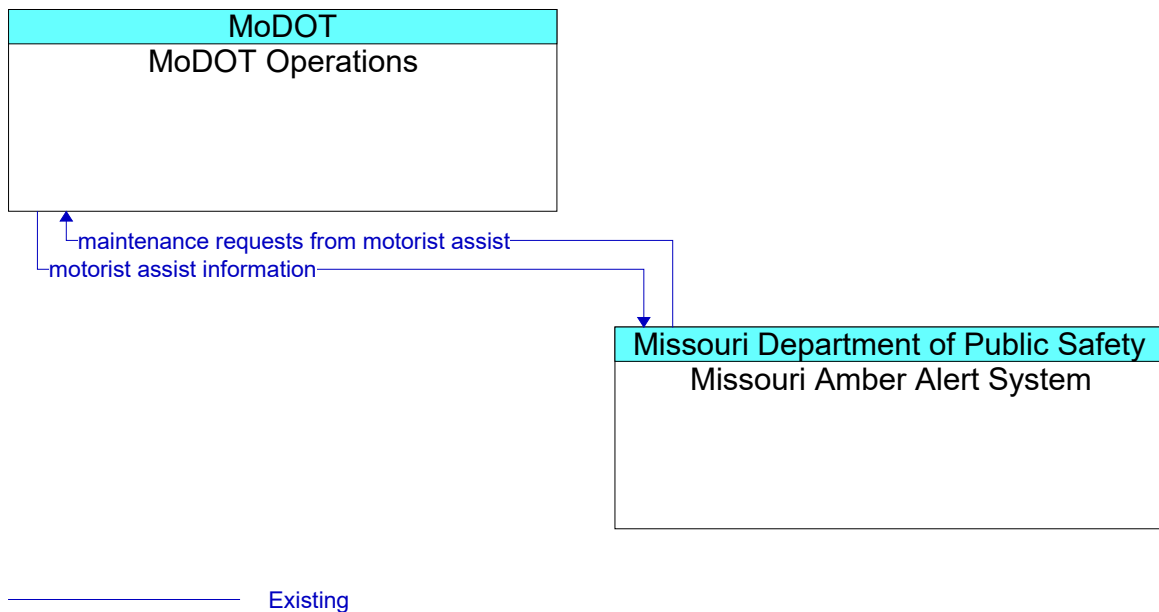
**Figure 921: Media - RideKC Website Interface**



**Figure 922: Media - UGT Operations Center Interface**

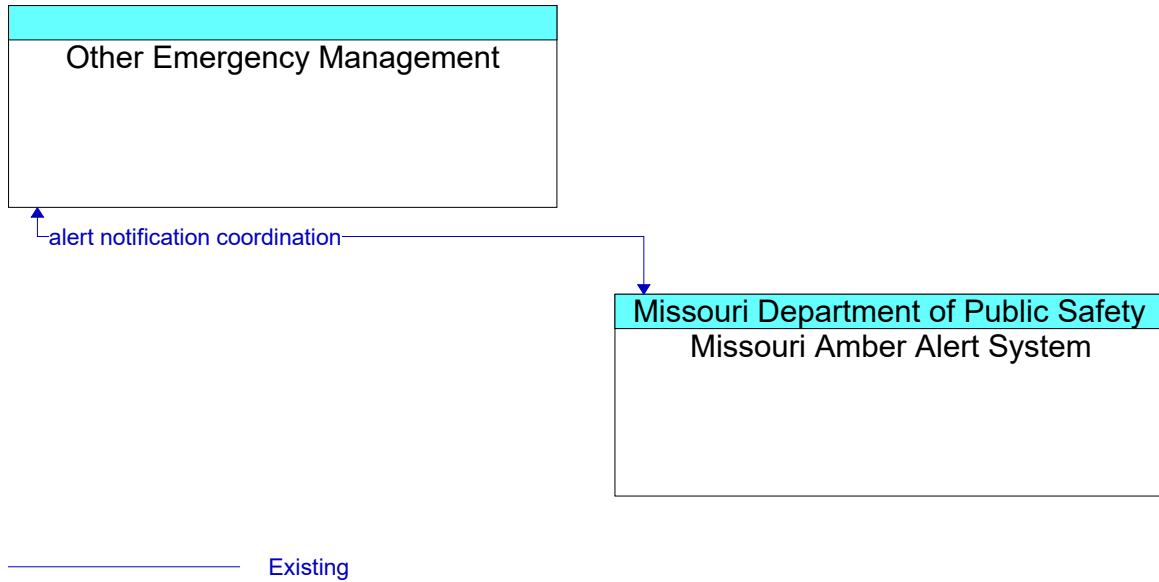


**Figure 923: Missouri Amber Alert System - Missouri State Highway Patrol Dispatch Interface**

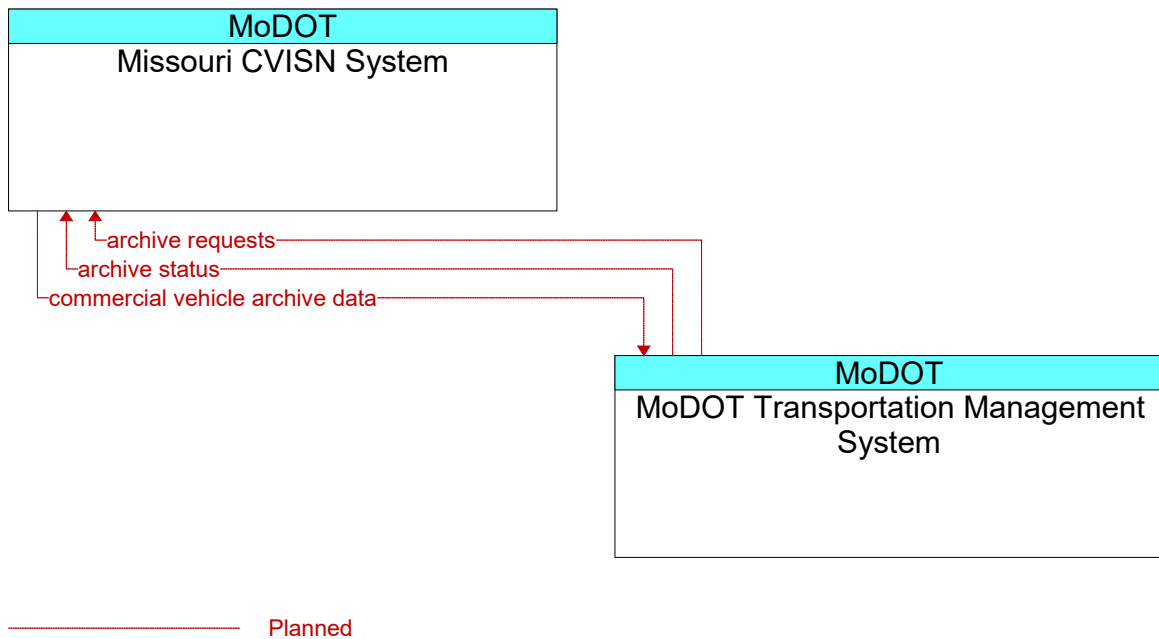


**Figure 924: Missouri Amber Alert System - MoDOT Operations Interface**

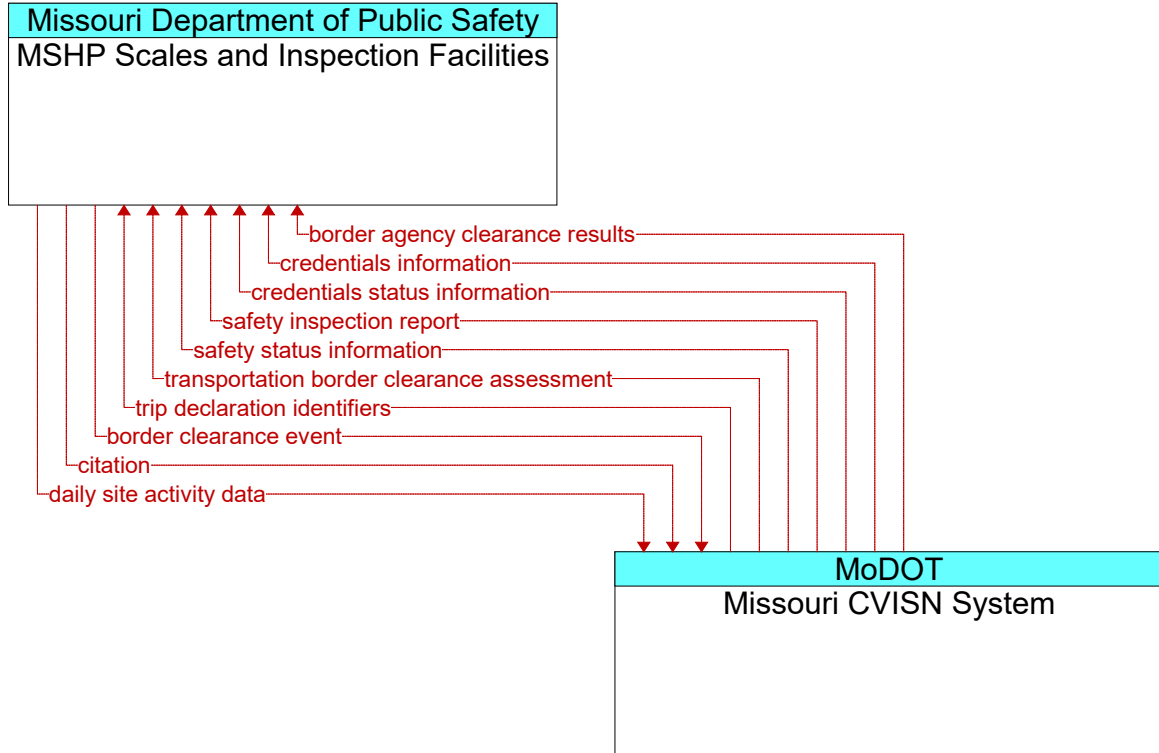




**Figure 925: Missouri Amber Alert System - Other Emergency Management Interface**

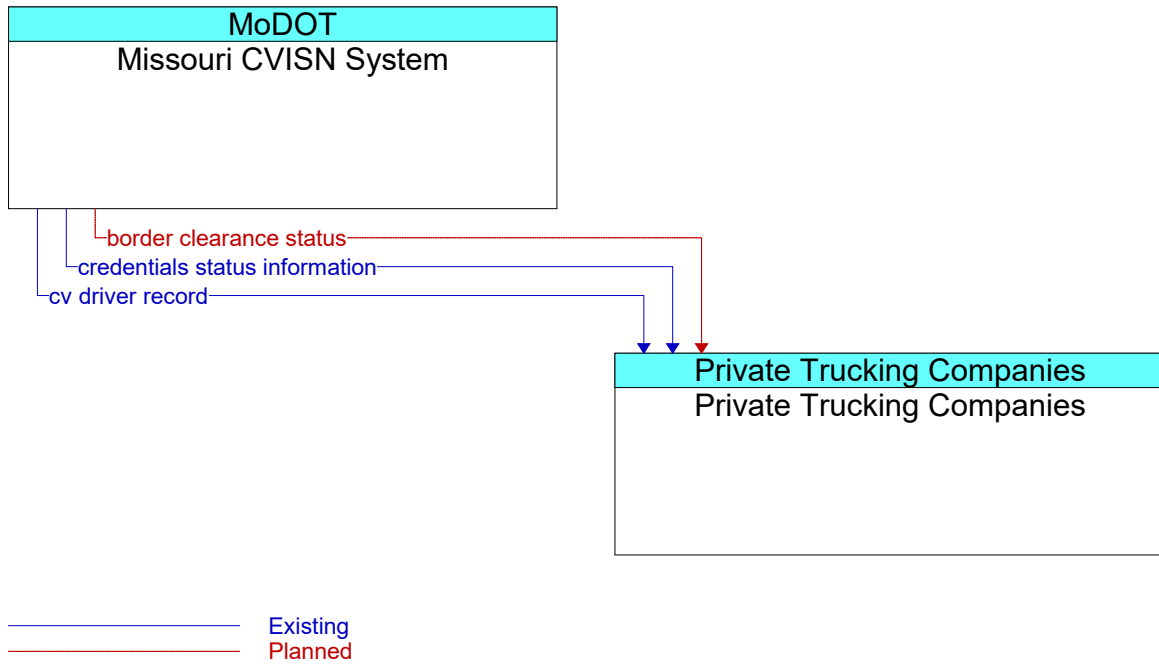


**Figure 926: Missouri CVISN System - MoDOT Transportation Management System Interface**

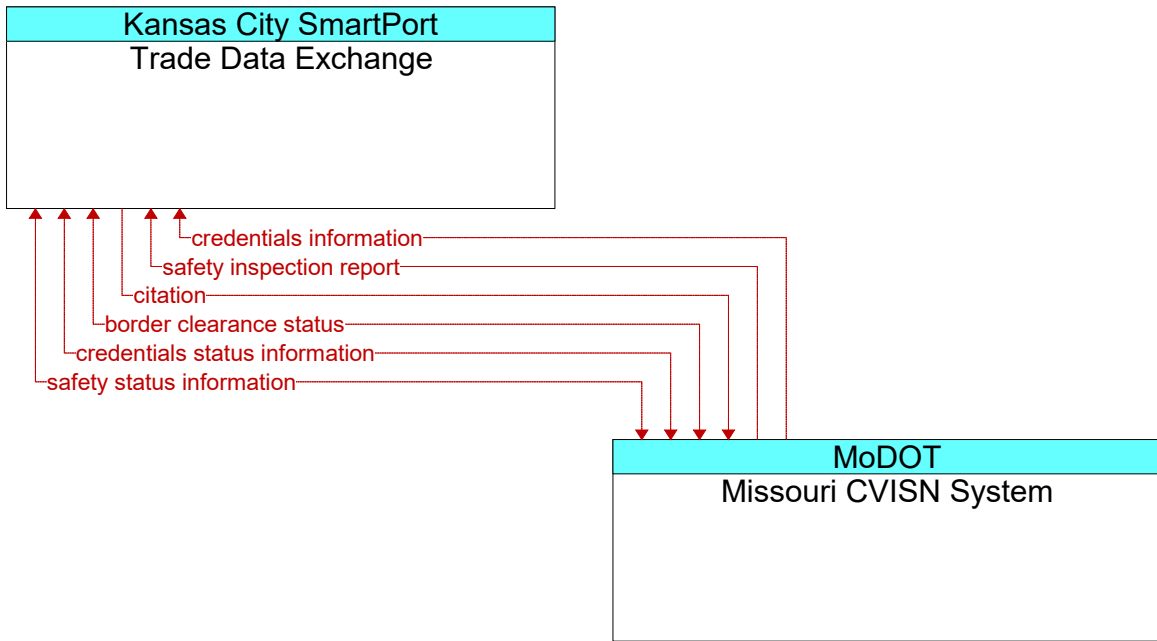


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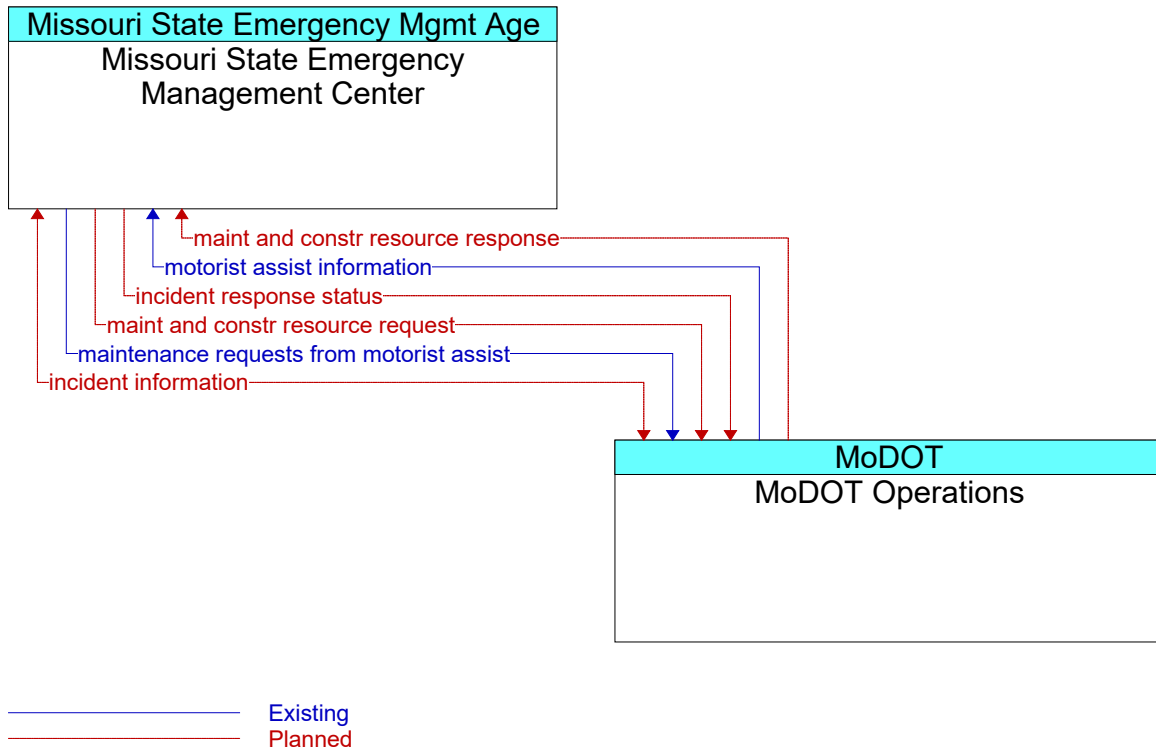
**Figure 927: Missouri CVISN System - MSHP Scales and Inspection Facilities Interface**



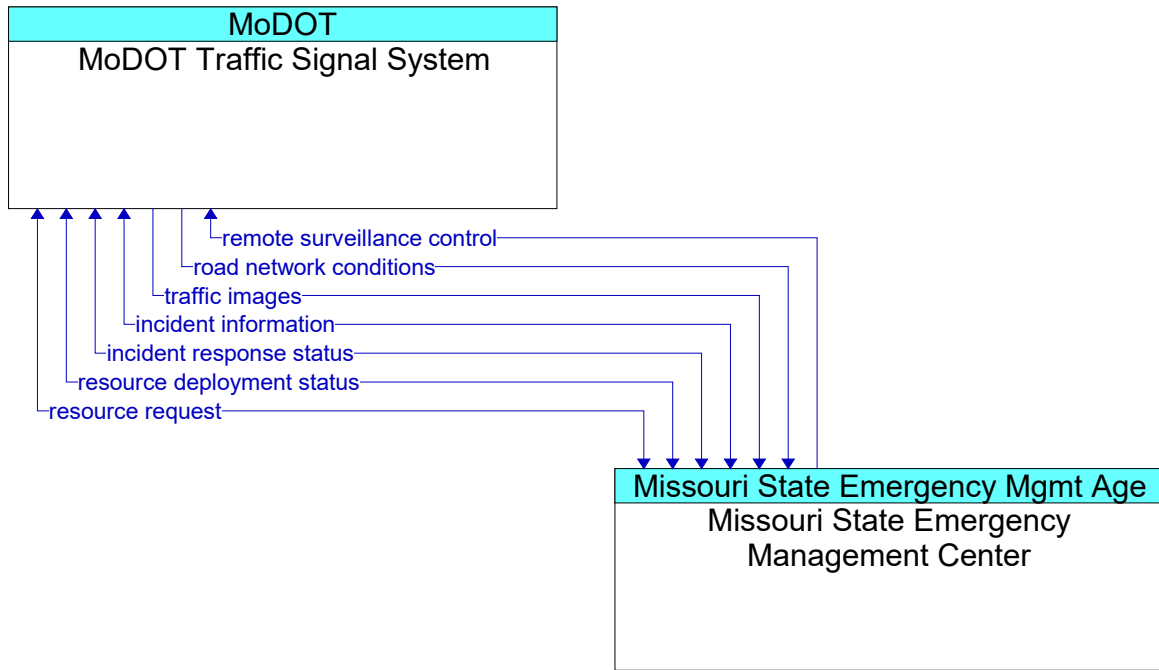
**Figure 928: Missouri CVISN System - Private Trucking Companies Interface**



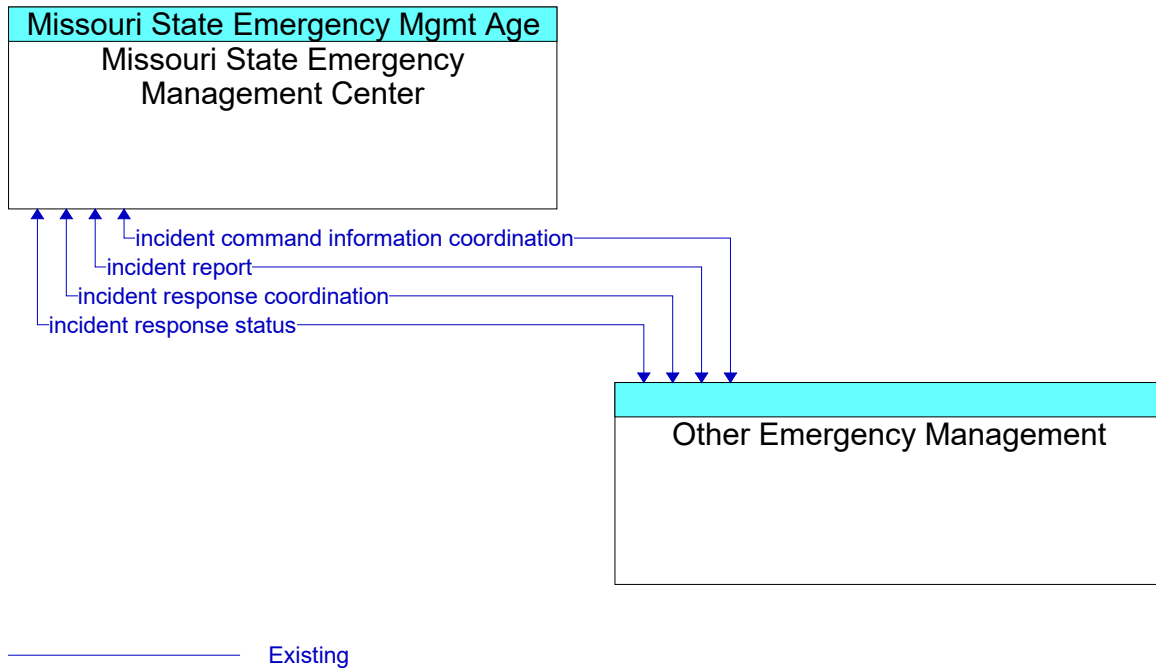
**Figure 929: Missouri CVISN System - Trade Data Exchange Interface**



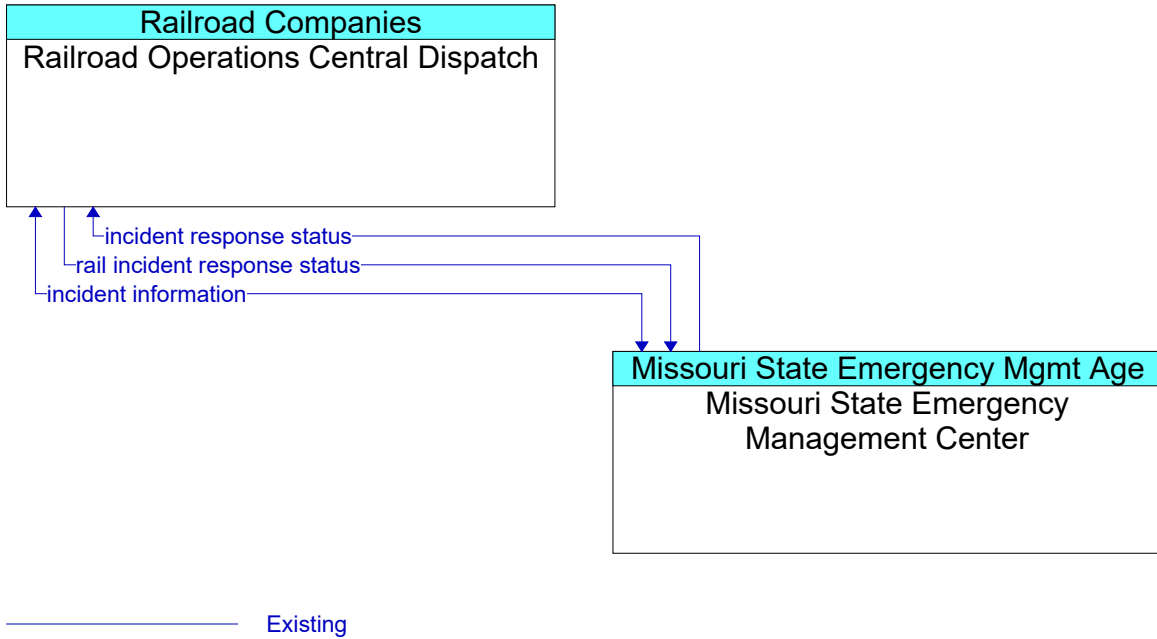
**Figure 930: Missouri State Emergency Management Center - MoDOT Operations Interface**



**Figure 931: Missouri State Emergency Management Center - MoDOT Traffic Signal System Interface**

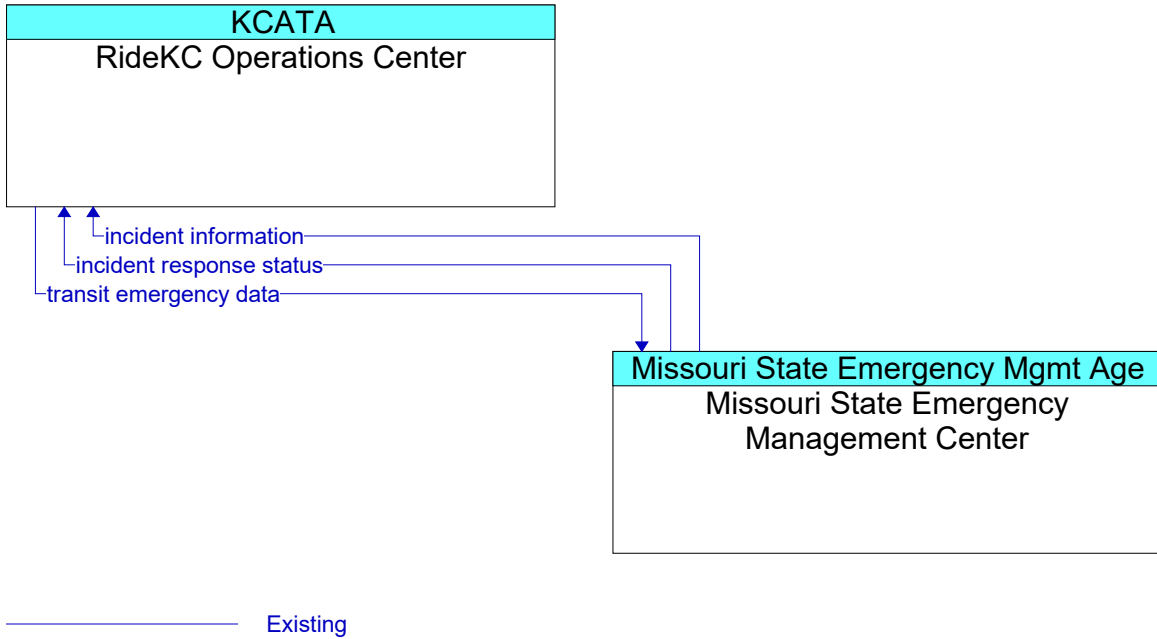


**Figure 932: Missouri State Emergency Management Center - Other Emergency Management Interface**

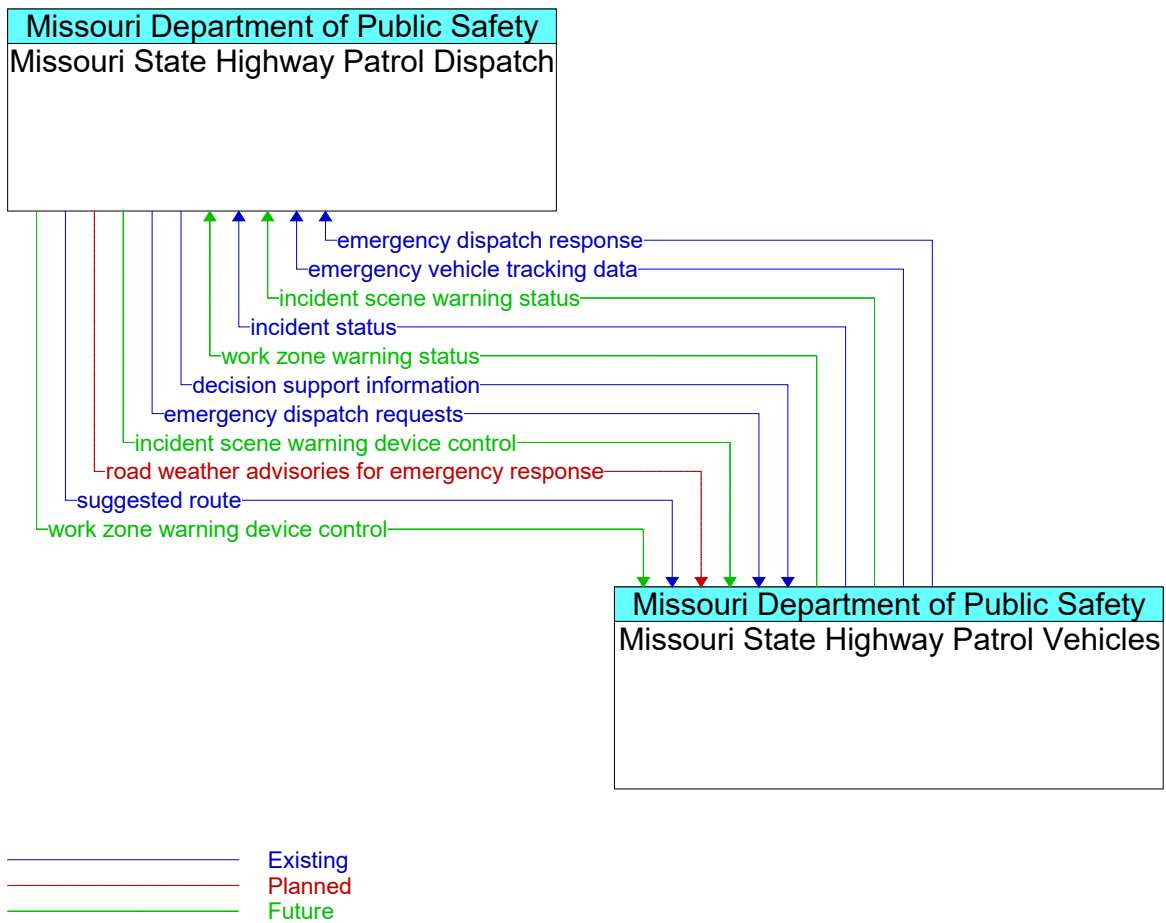


**Figure 933: Missouri State Emergency Management Center - Railroad Operations Central Dispatch Interface**

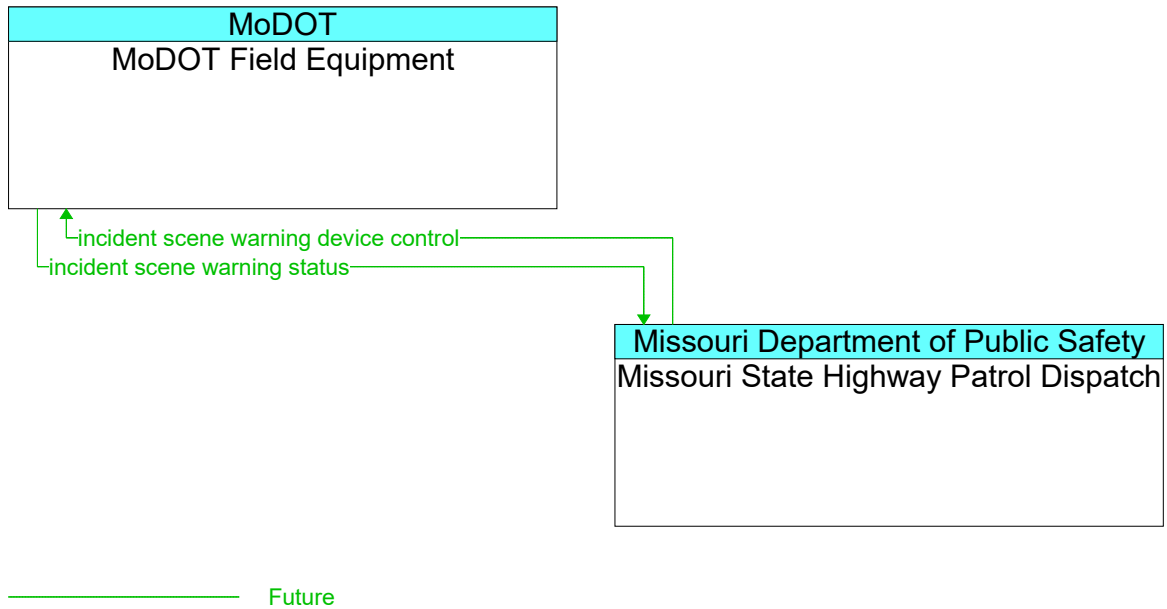




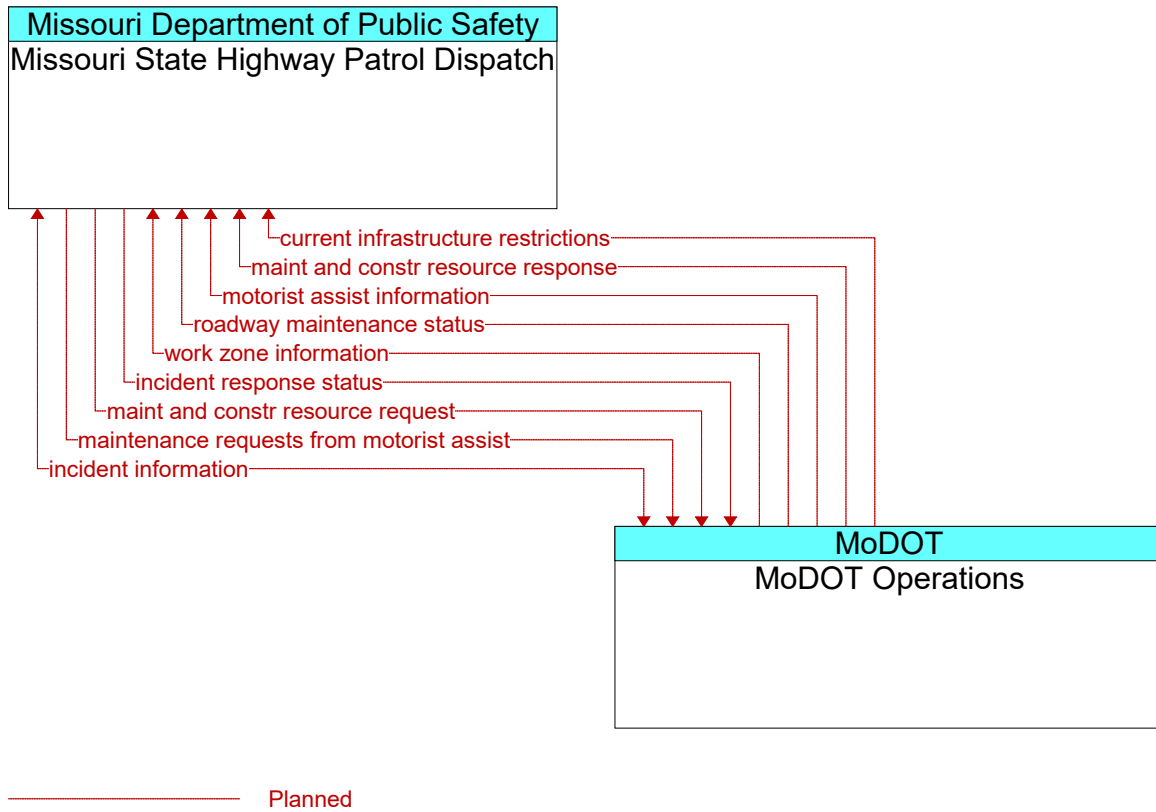
**Figure 934: Missouri State Emergency Management Center - RideKC Operations Center Interface**



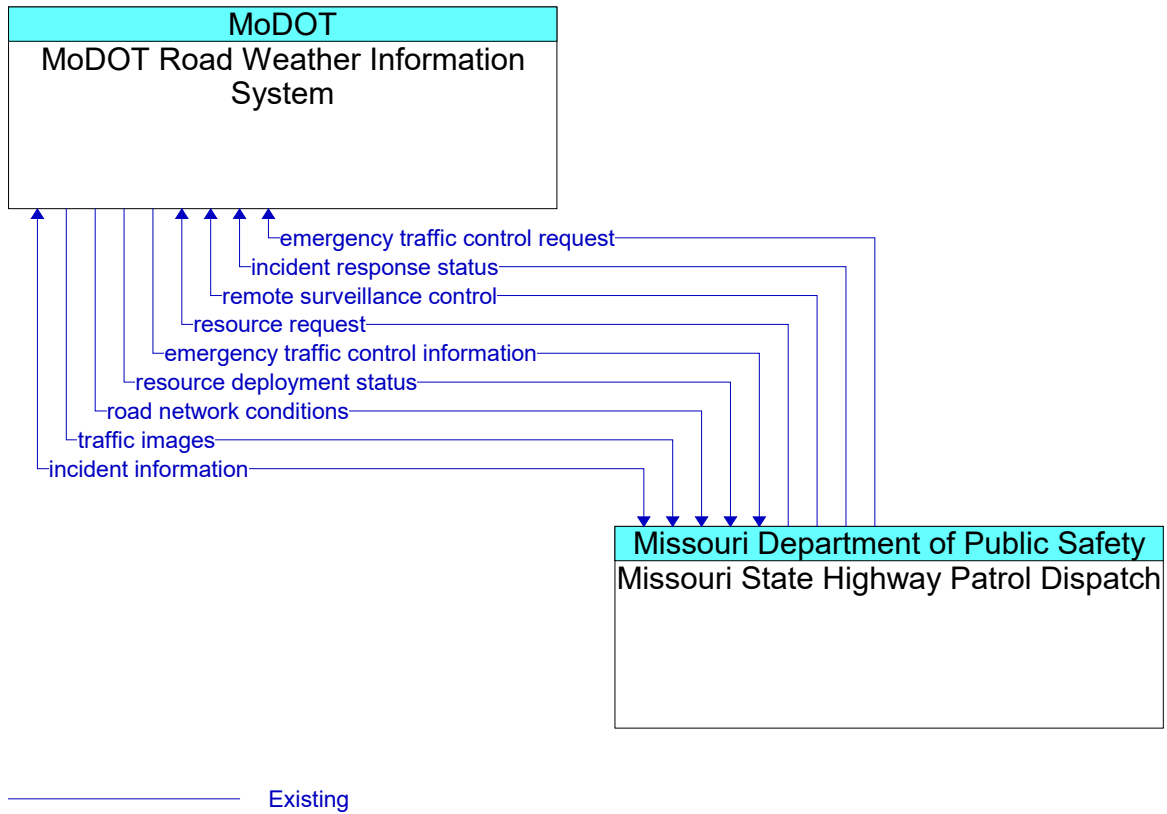
**Figure 935: Missouri State Highway Patrol Dispatch - Missouri State Highway Patrol Vehicles Interface**



**Figure 936: Missouri State Highway Patrol Dispatch - MoDOT Field Equipment Interface**



**Figure 937: Missouri State Highway Patrol Dispatch - MoDOT Operations Interface**



**Figure 938: Missouri State Highway Patrol Dispatch - MoDOT Road Weather Information System Interface**

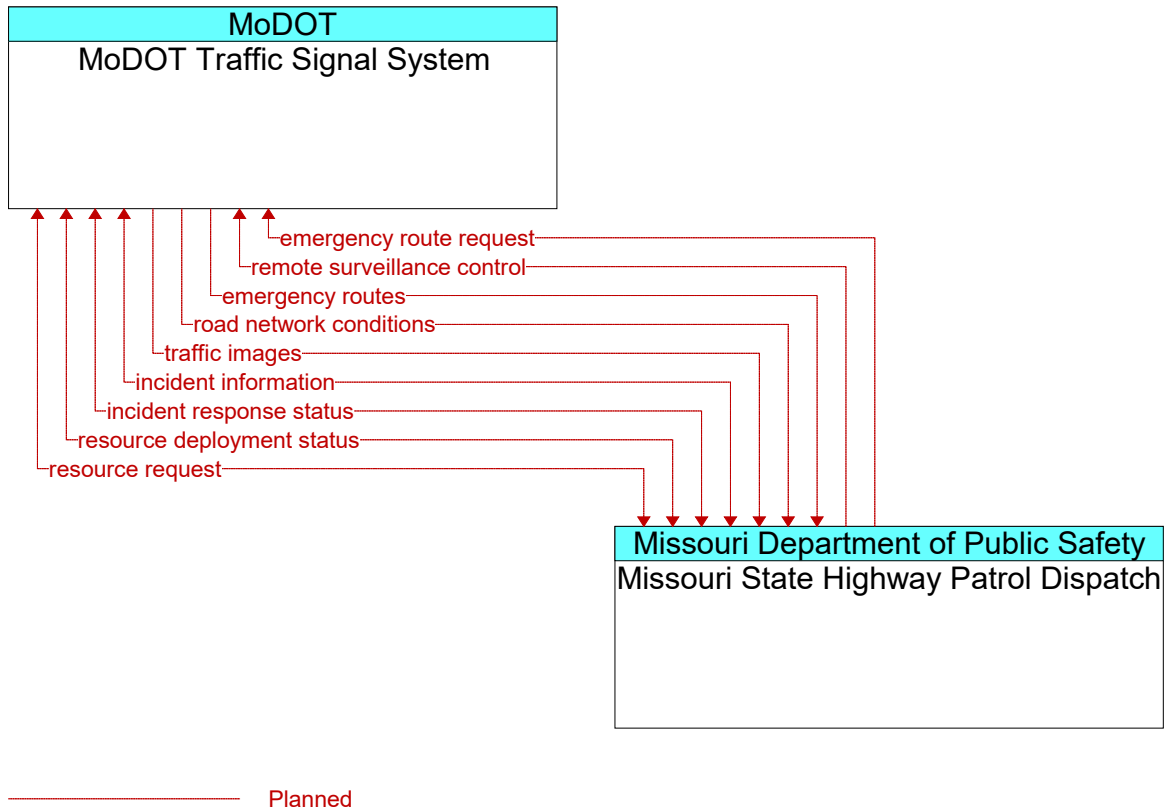
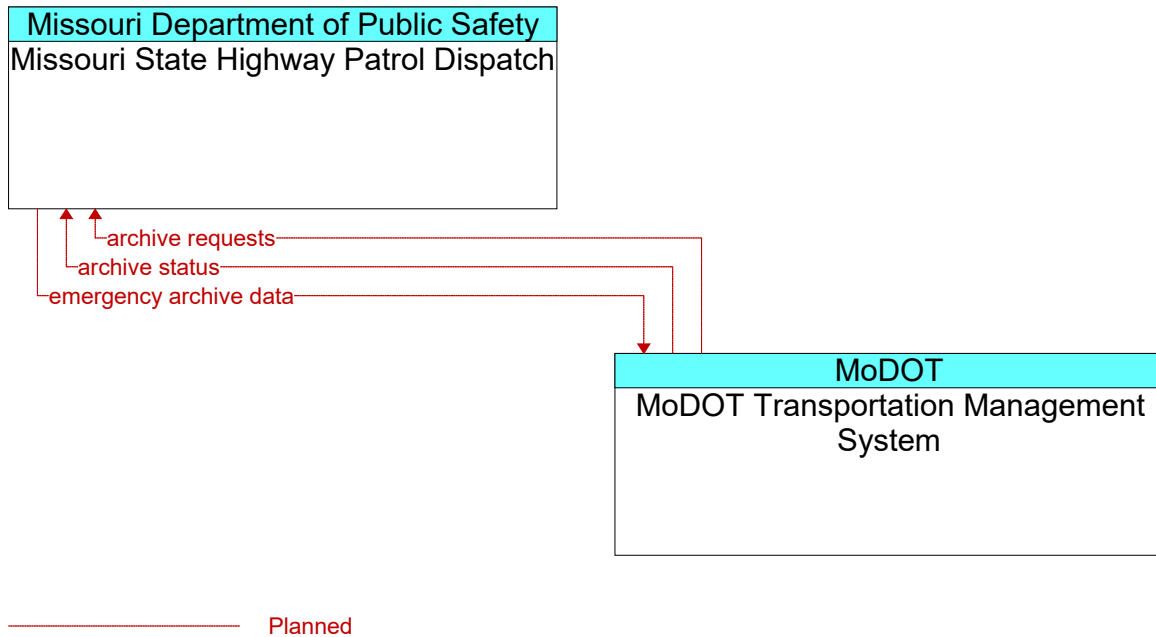
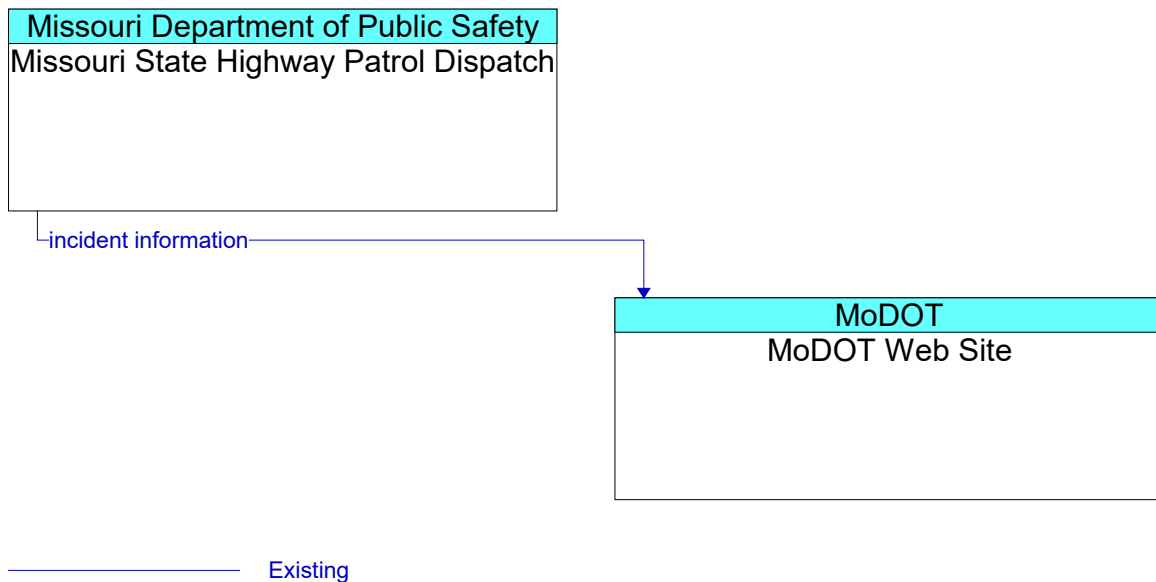


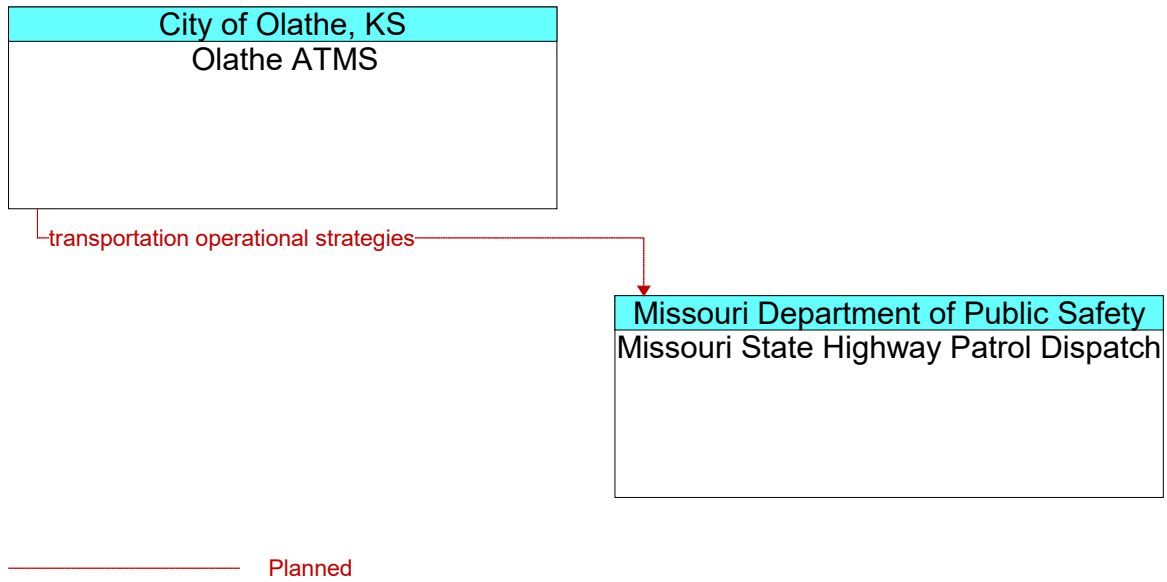
Figure 939: Missouri State Highway Patrol Dispatch - MoDOT Traffic Signal System Interface



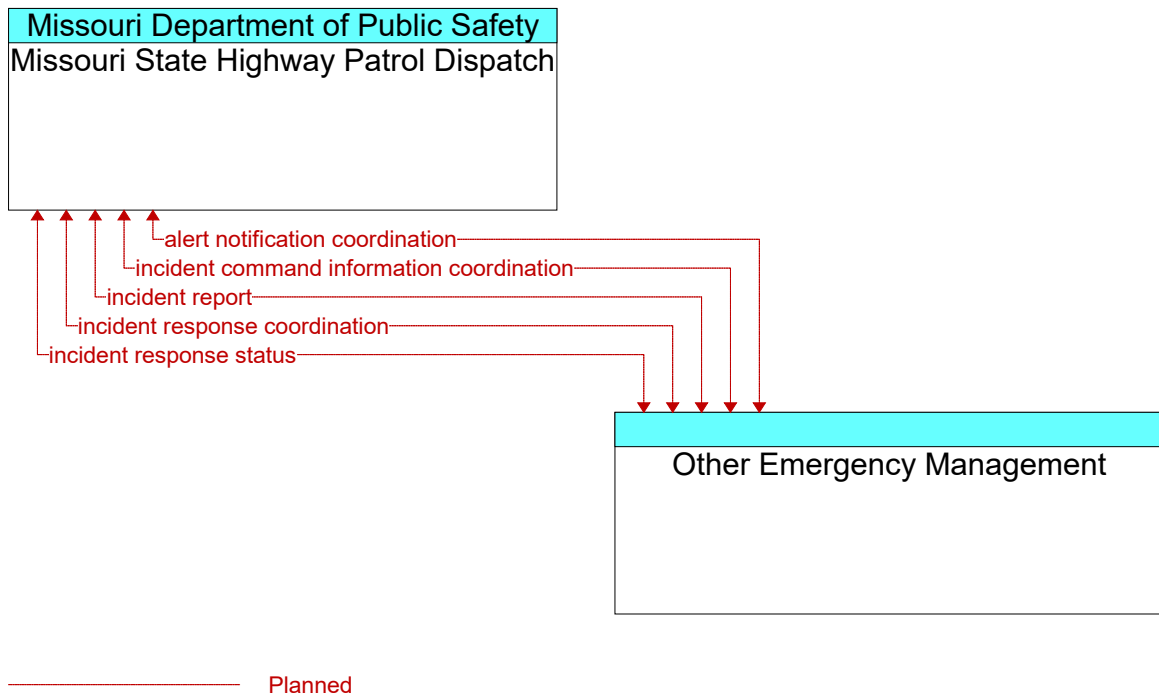
**Figure 940: Missouri State Highway Patrol Dispatch - MoDOT Transportation Management System Interface**



**Figure 941: Missouri State Highway Patrol Dispatch - MoDOT Web Site Interface**

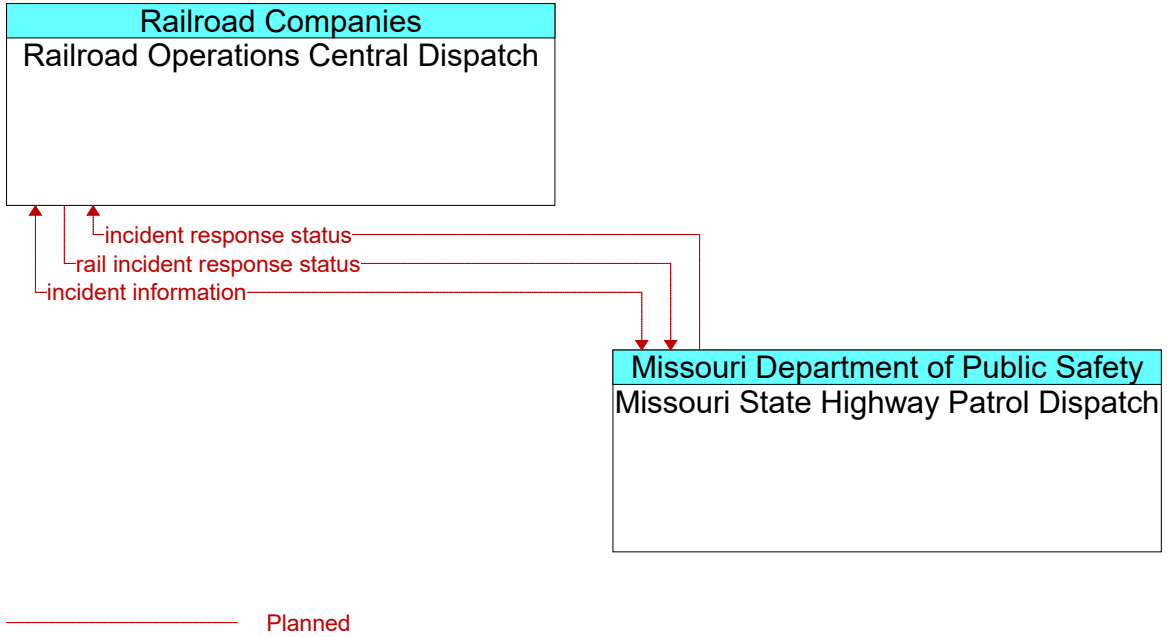


**Figure 942: Missouri State Highway Patrol Dispatch - Olathe ATMS Interface**

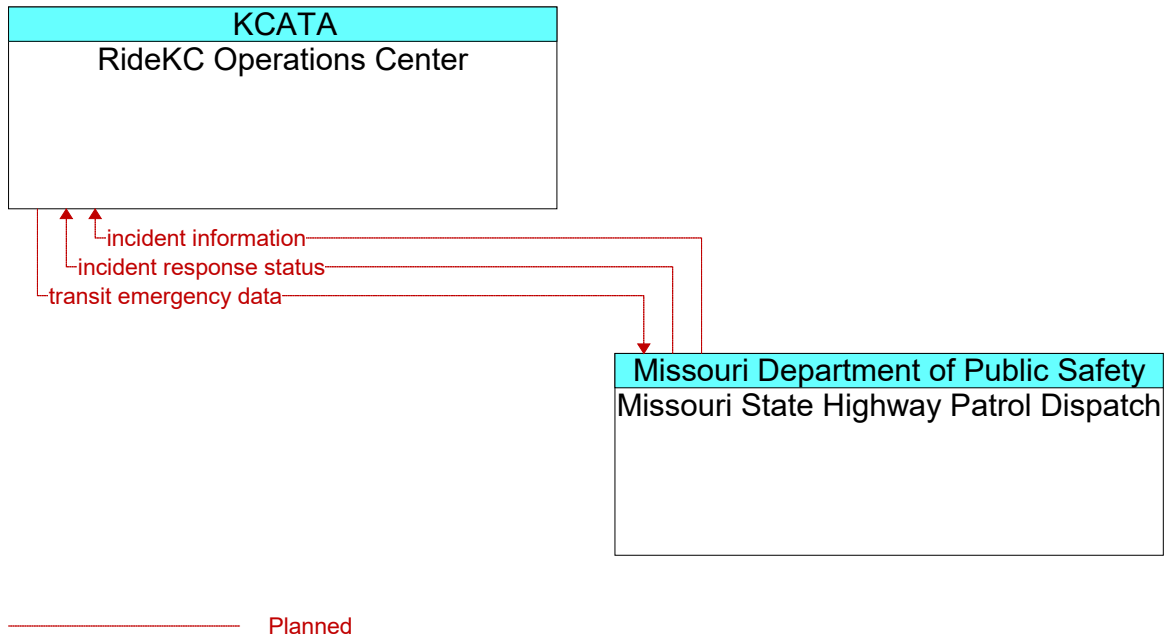


**Figure 943: Missouri State Highway Patrol Dispatch - Other Emergency Management Interface**

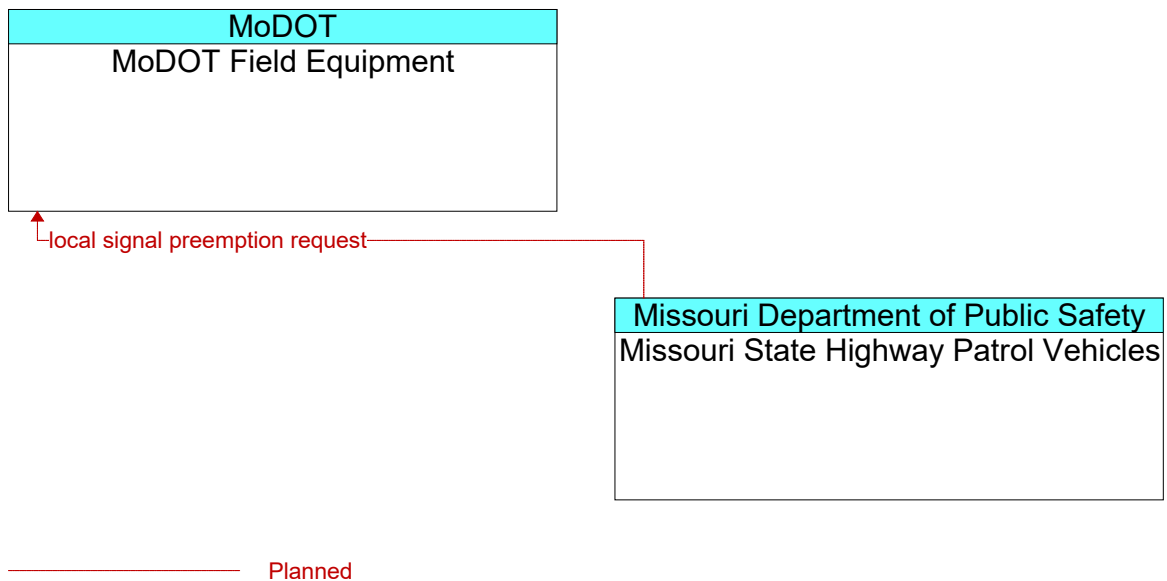




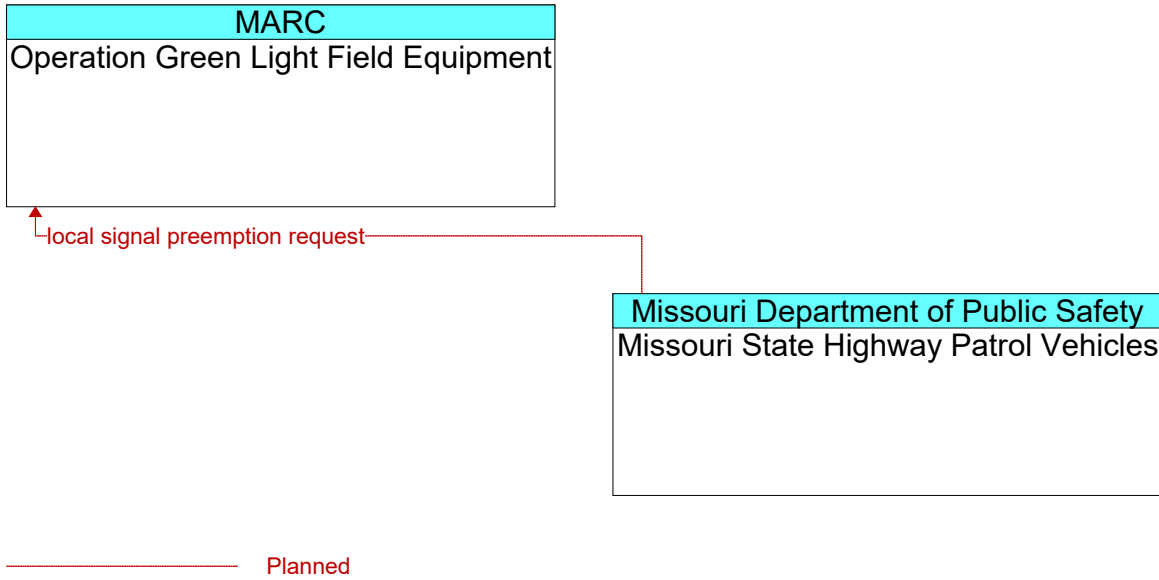
**Figure 944: Missouri State Highway Patrol Dispatch - Railroad Operations Central Dispatch Interface**



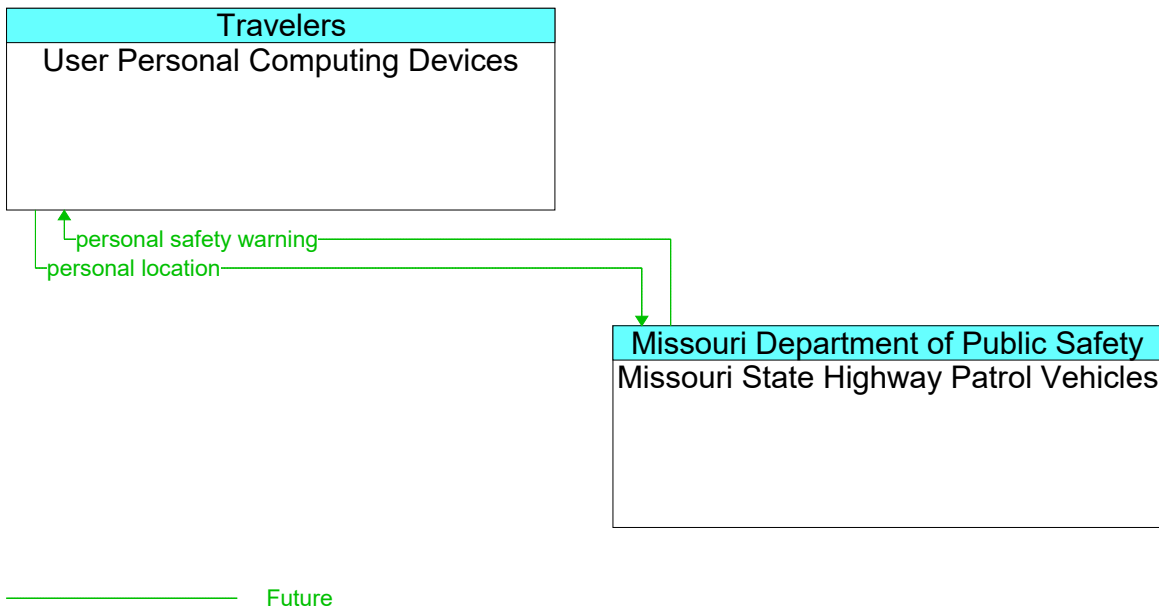
**Figure 945: Missouri State Highway Patrol Dispatch - RideKC Operations Center Interface**



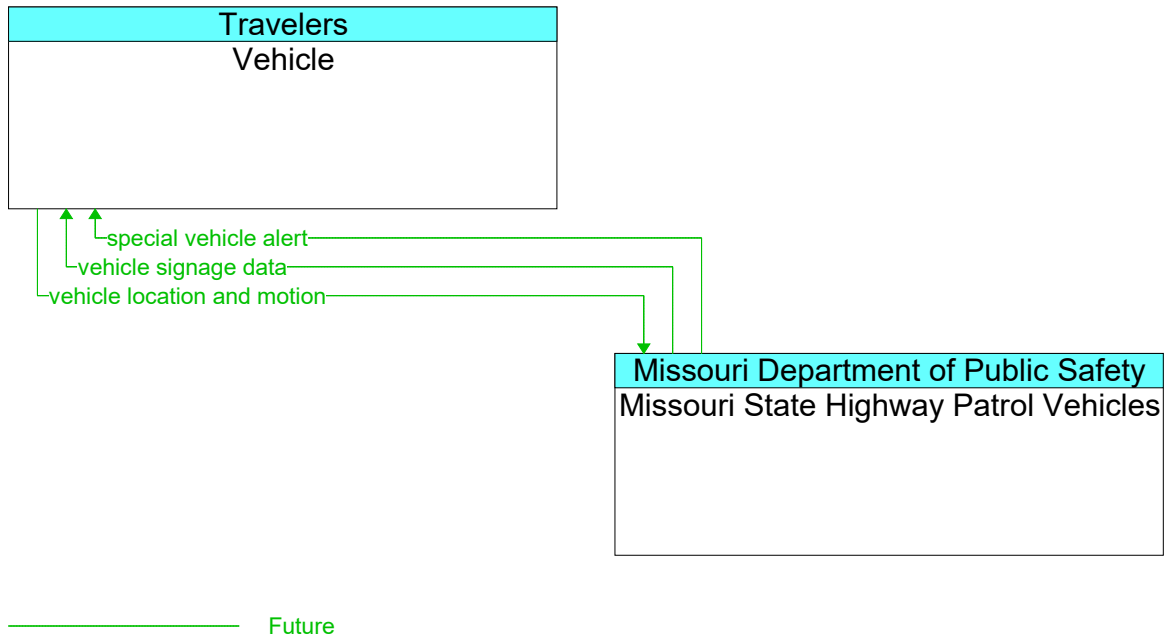
**Figure 946: Missouri State Highway Patrol Vehicles - MoDOT Field Equipment Interface**



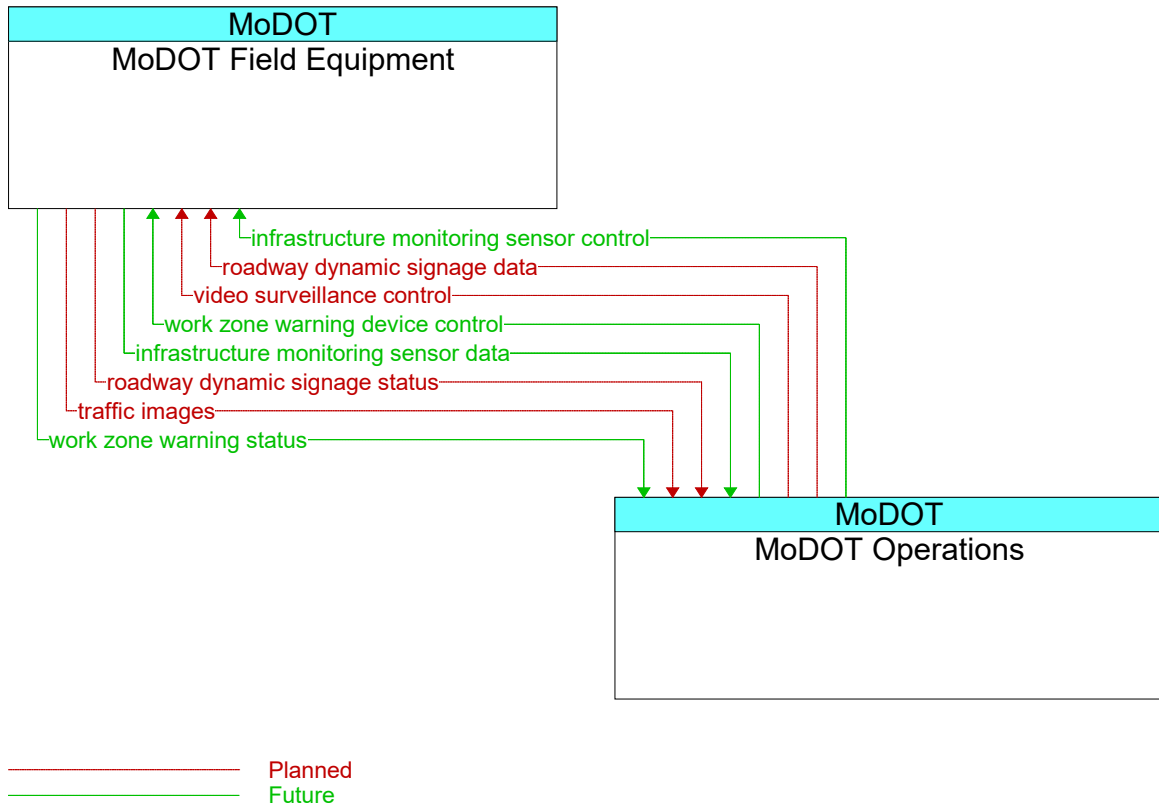
**Figure 947: Missouri State Highway Patrol Vehicles - Operation Green Light Field Equipment Interface**



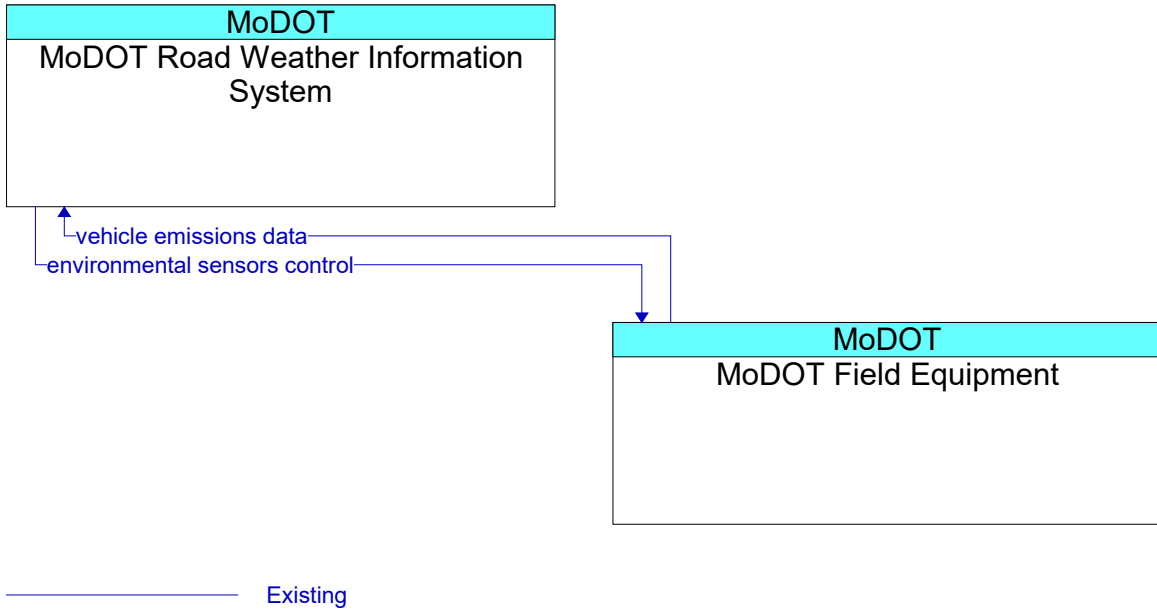
**Figure 948: Missouri State Highway Patrol Vehicles - User Personal Computing Devices Interface**



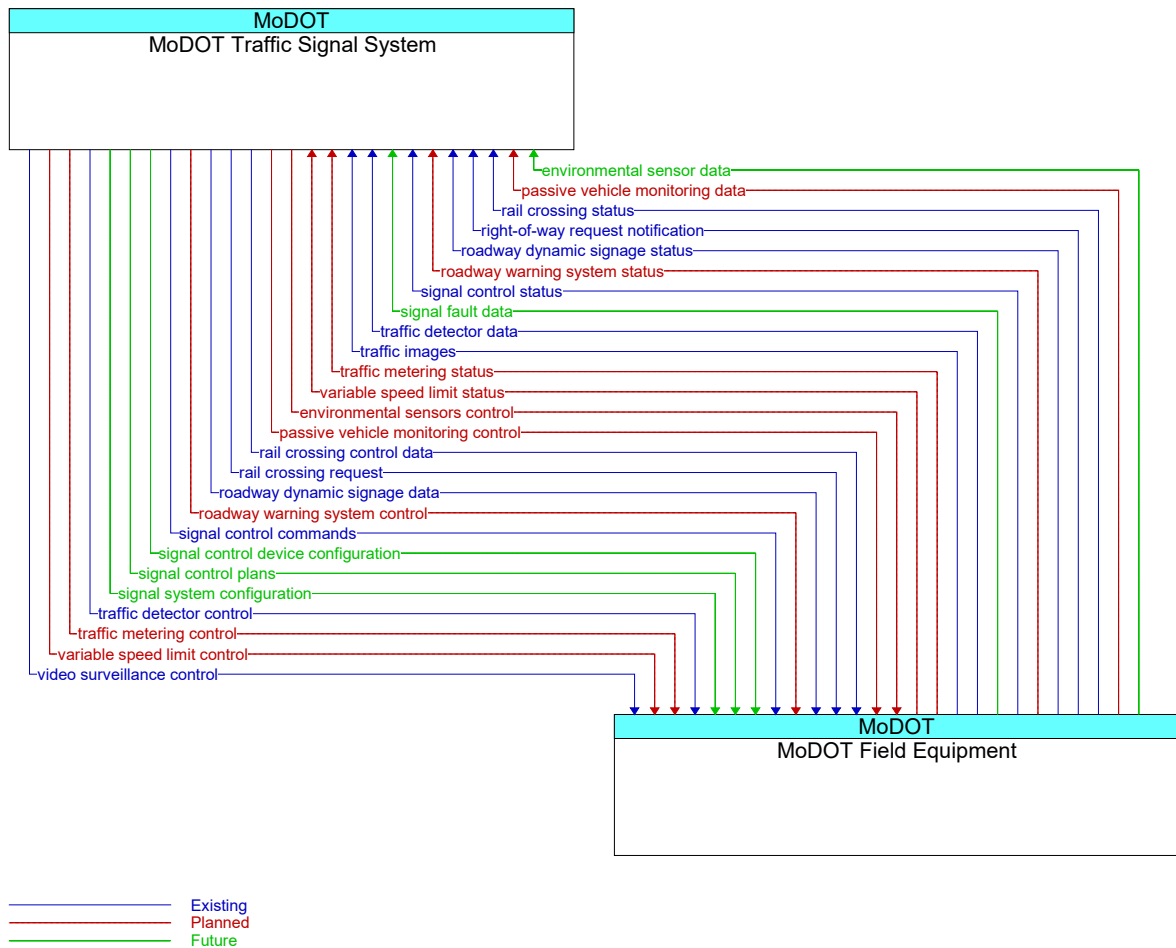
**Figure 949: Missouri State Highway Patrol Vehicles - Vehicle Interface**



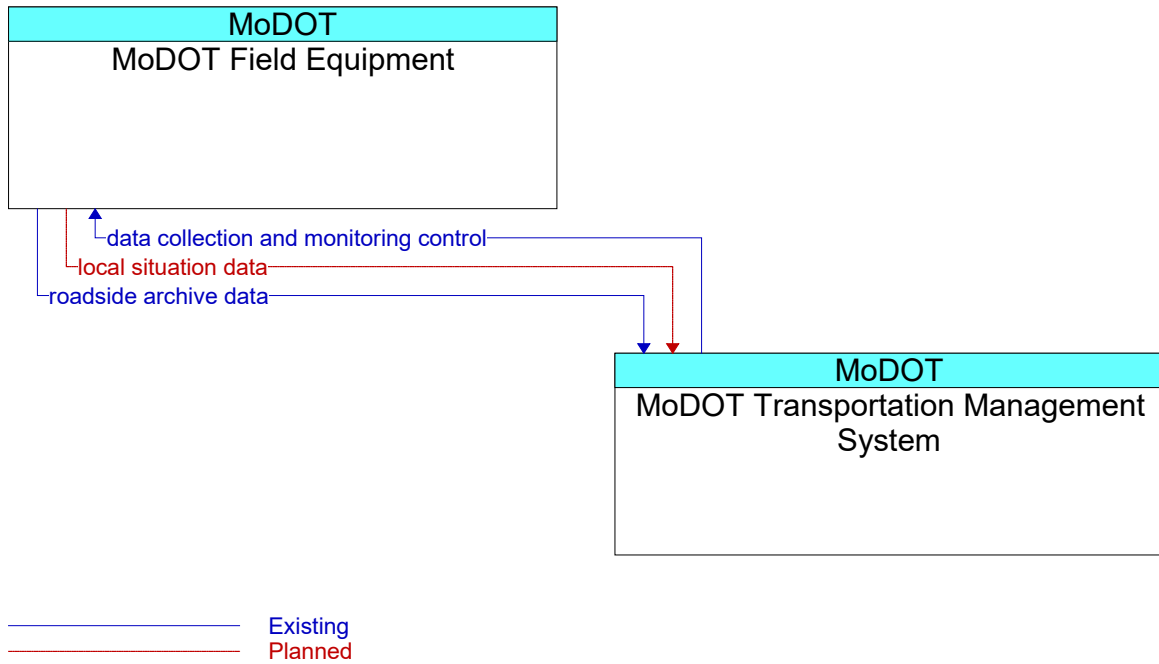
**Figure 950: MoDOT Field Equipment - MoDOT Operations Interface**



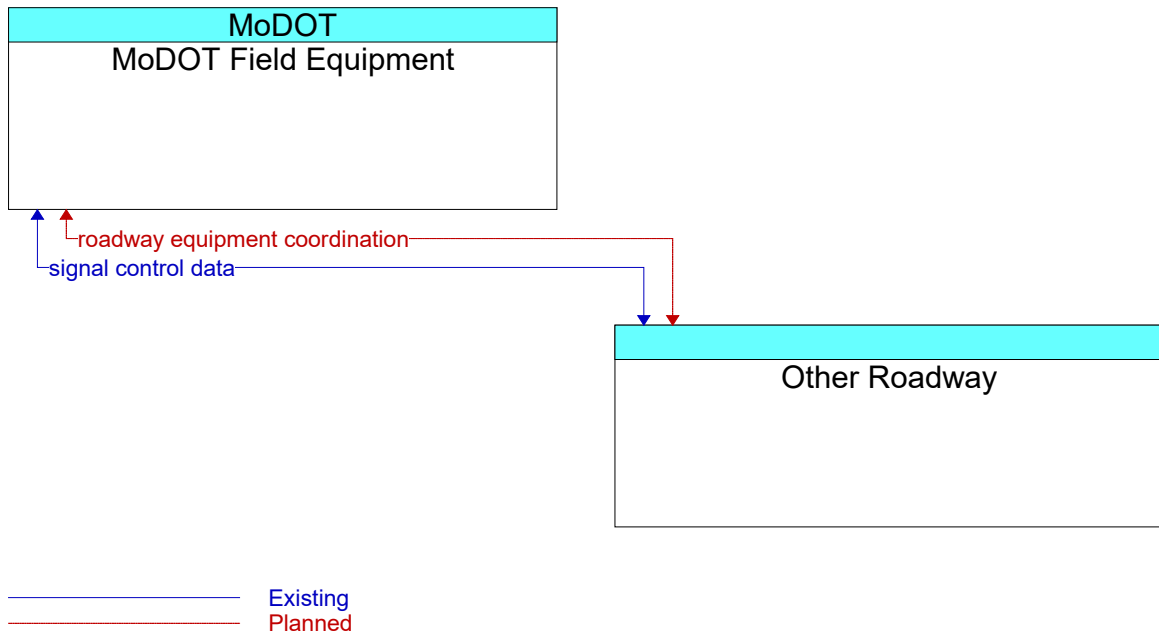
**Figure 951: MoDOT Field Equipment - MoDOT Road Weather Information System Interface**



**Figure 952: MoDOT Field Equipment - MoDOT Traffic Signal System Interface**

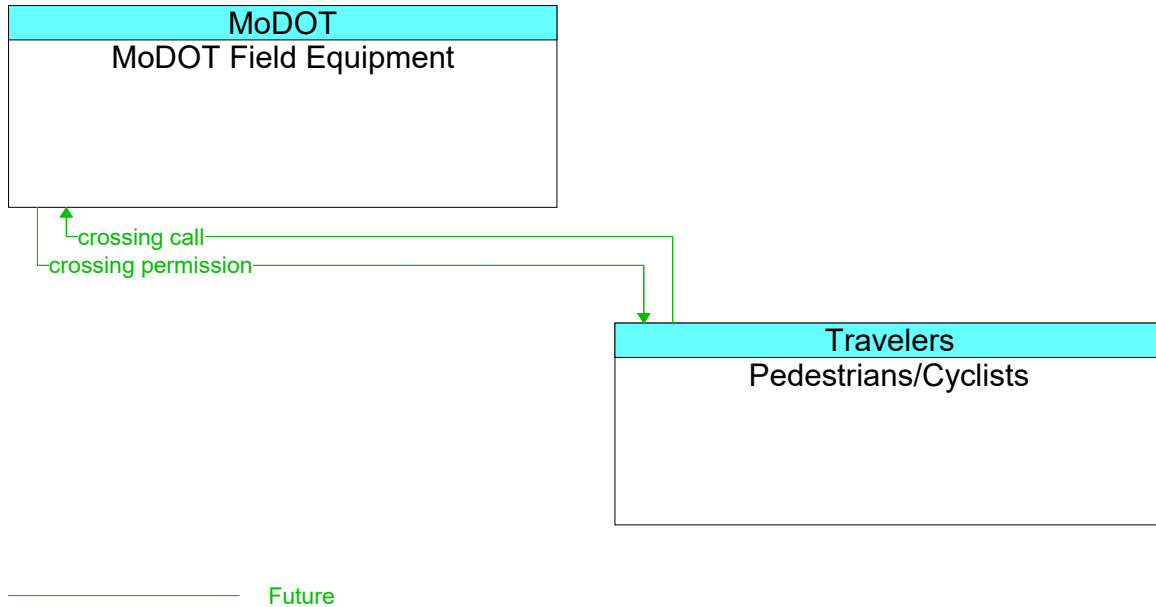


**Figure 953: MoDOT Field Equipment - MoDOT Transportation Management System Interface**

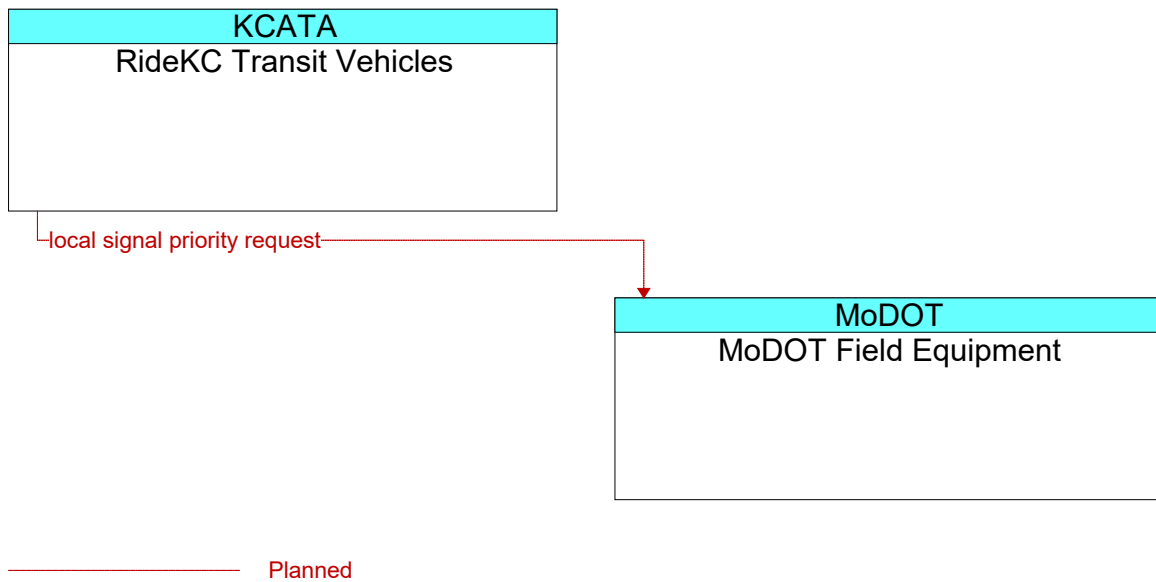


**Figure 954: MoDOT Field Equipment - Other Roadway Interface**

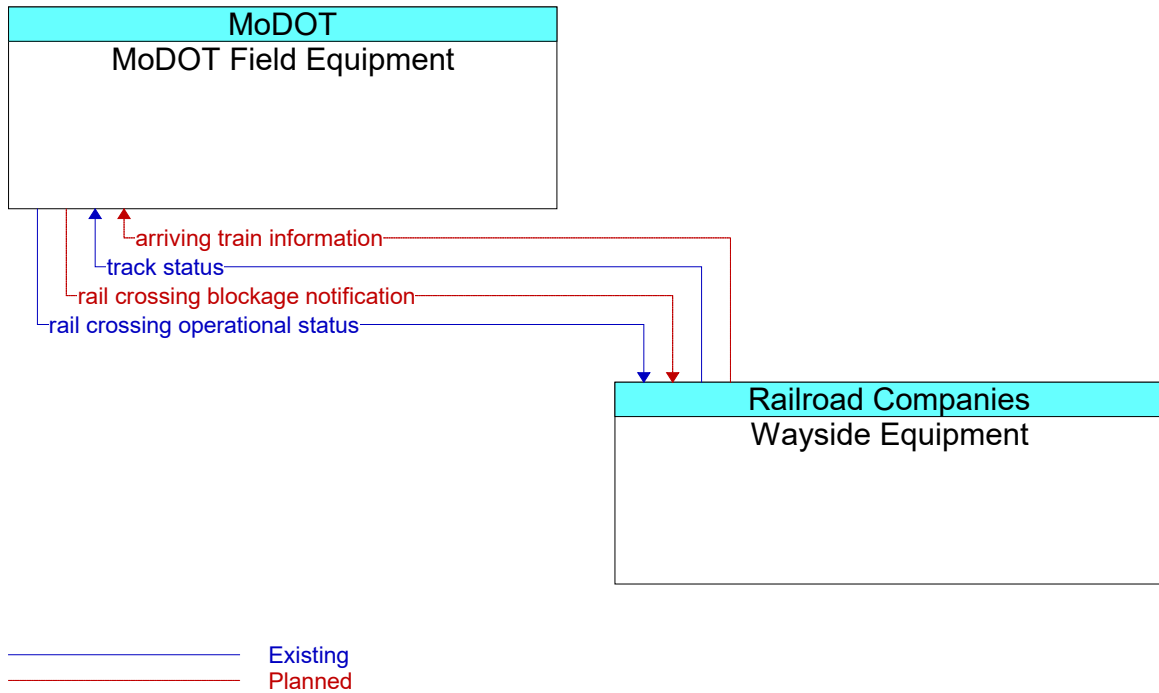




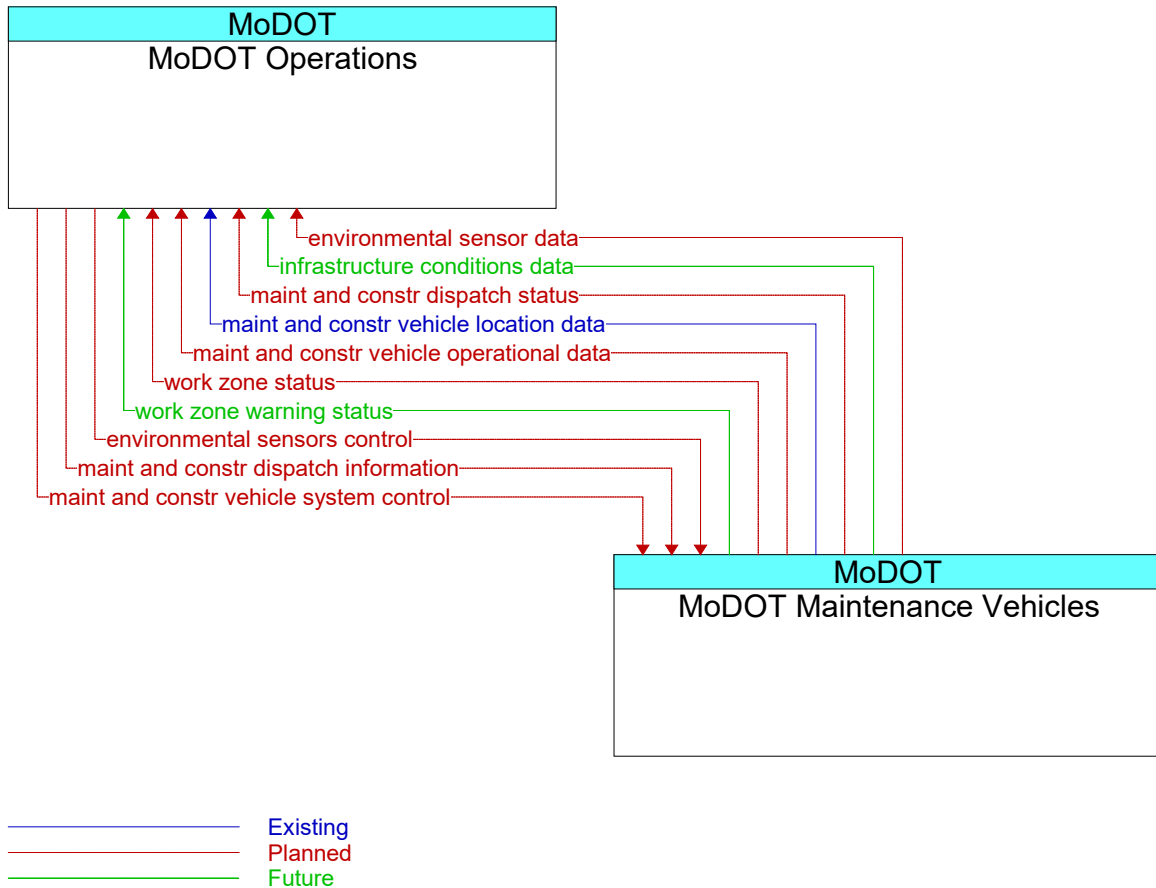
**Figure 955: MoDOT Field Equipment - Pedestrians/Cyclists Interface**



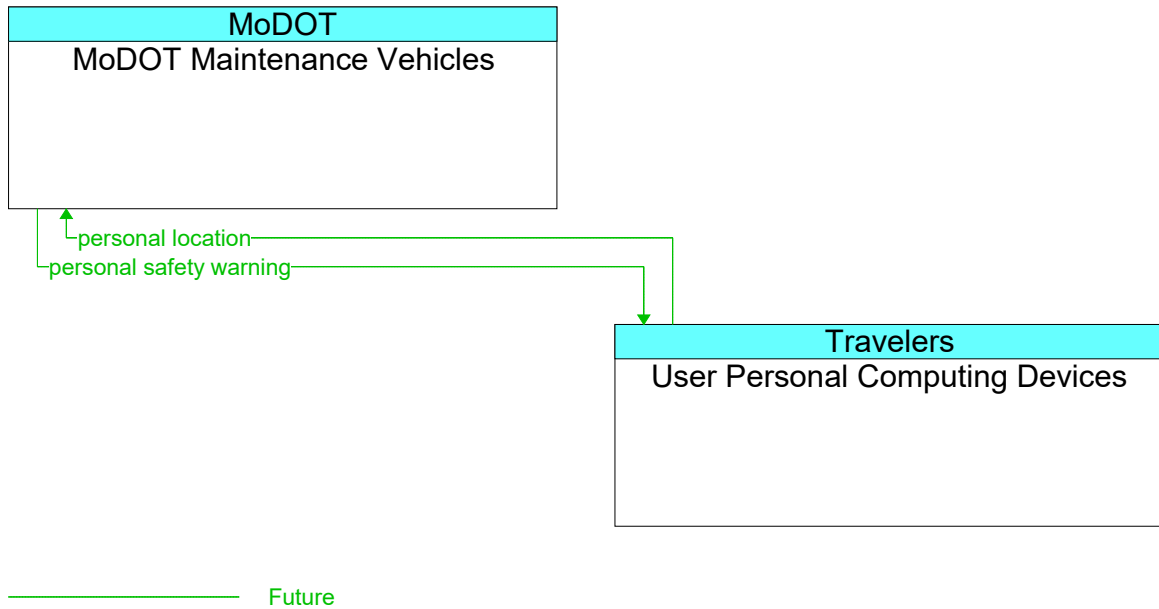
**Figure 956: MoDOT Field Equipment - RideKC Transit Vehicles Interface**



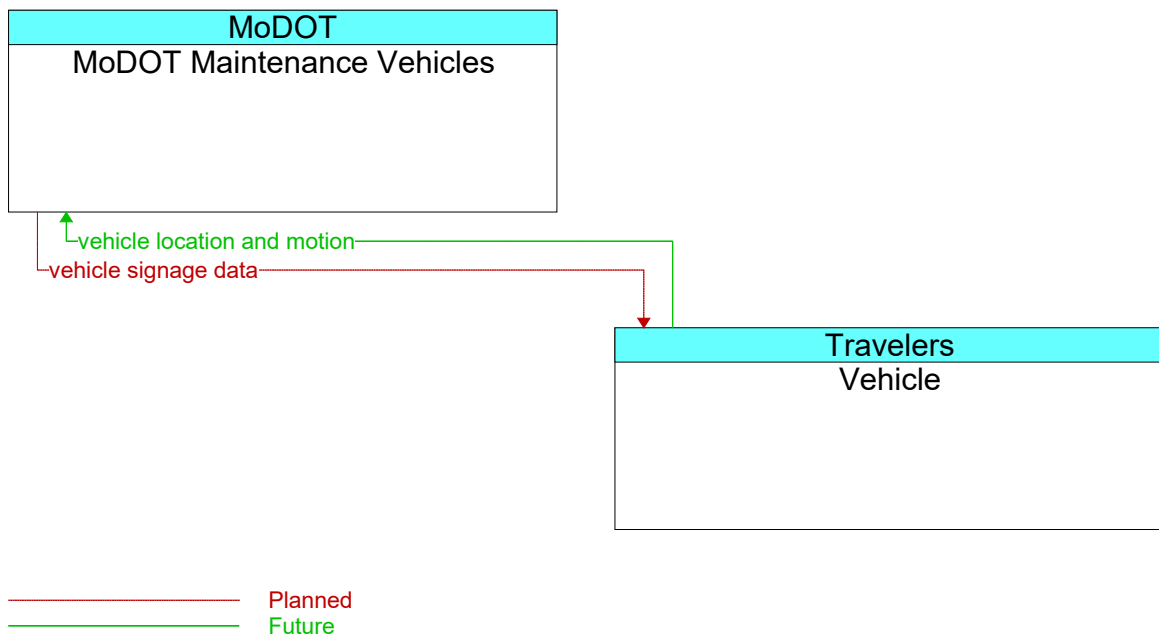
**Figure 957: MoDOT Field Equipment - Wayside Equipment Interface**



**Figure 958: MoDOT Maintenance Vehicles - MoDOT Operations Interface**



**Figure 959: MoDOT Maintenance Vehicles - User Personal Computing Devices Interface**



**Figure 960: MoDOT Maintenance Vehicles - Vehicle Interface**

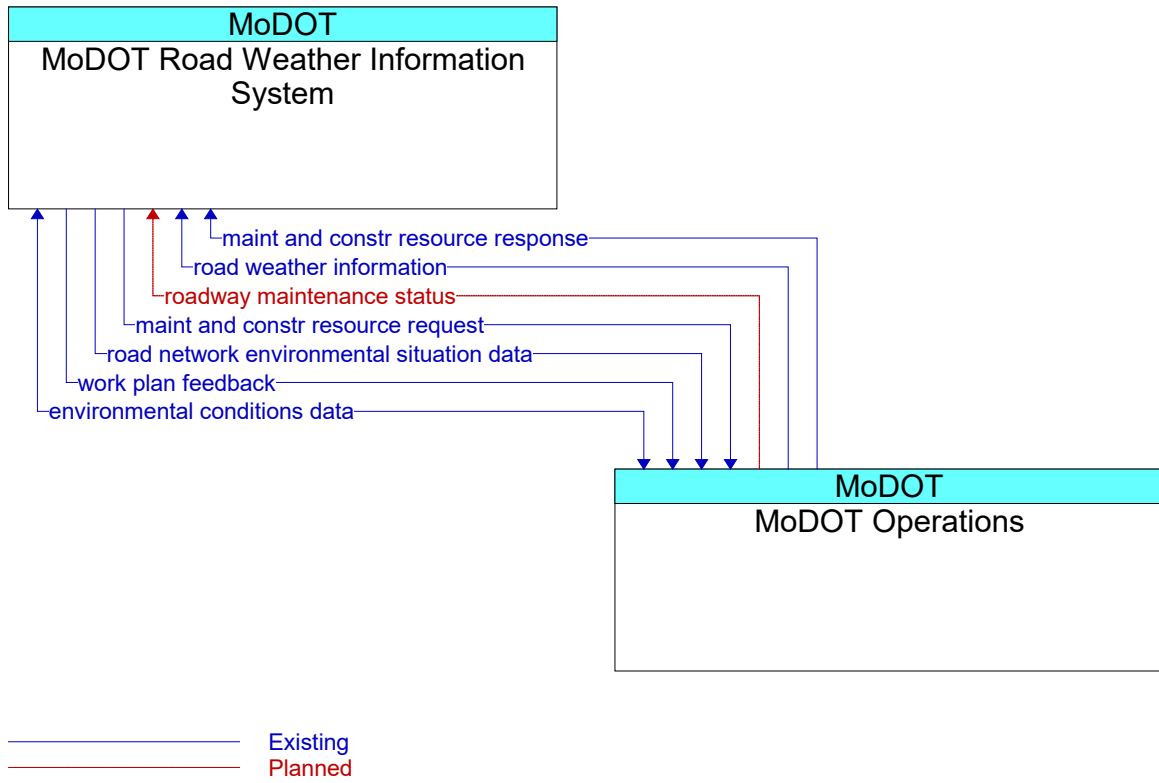
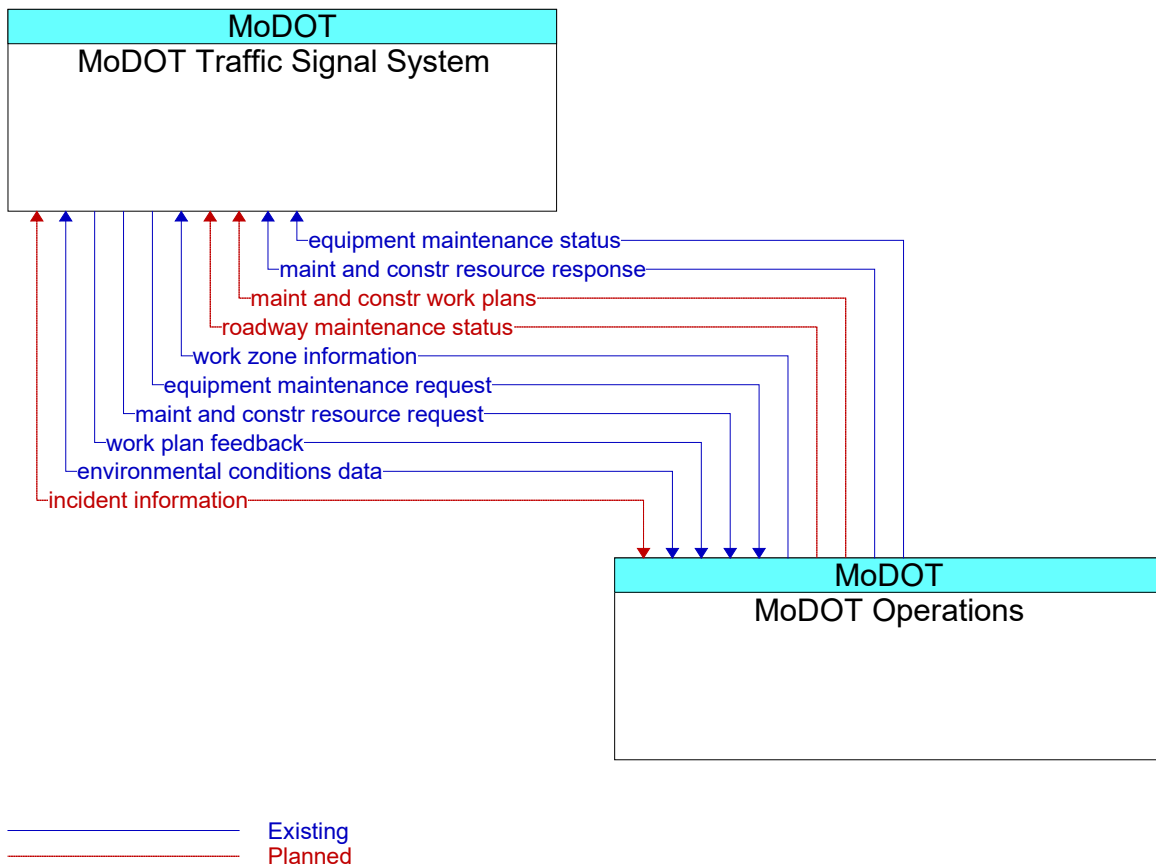
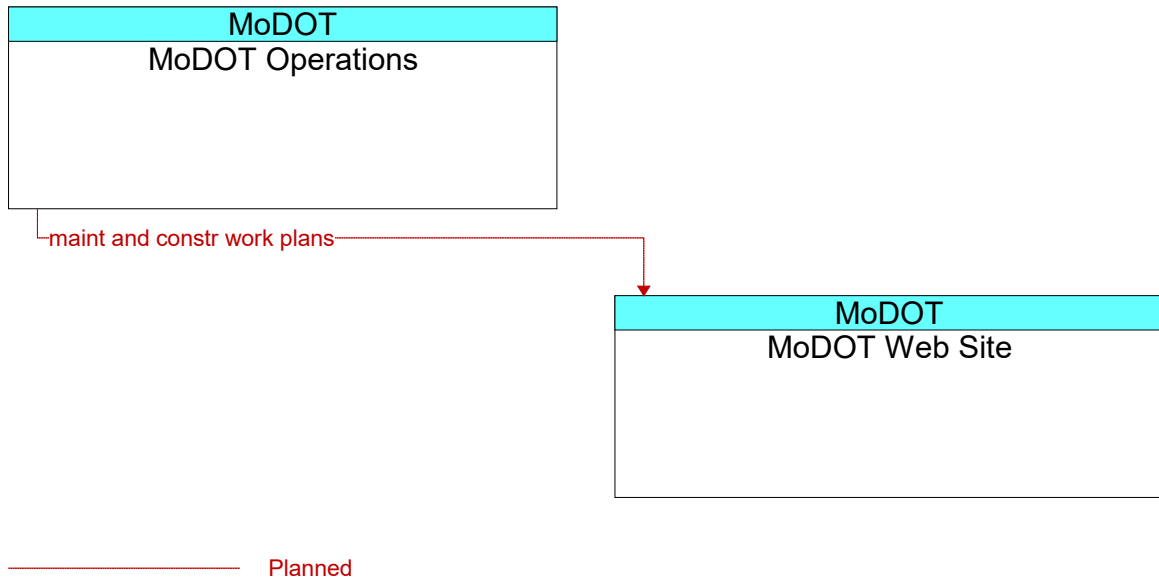


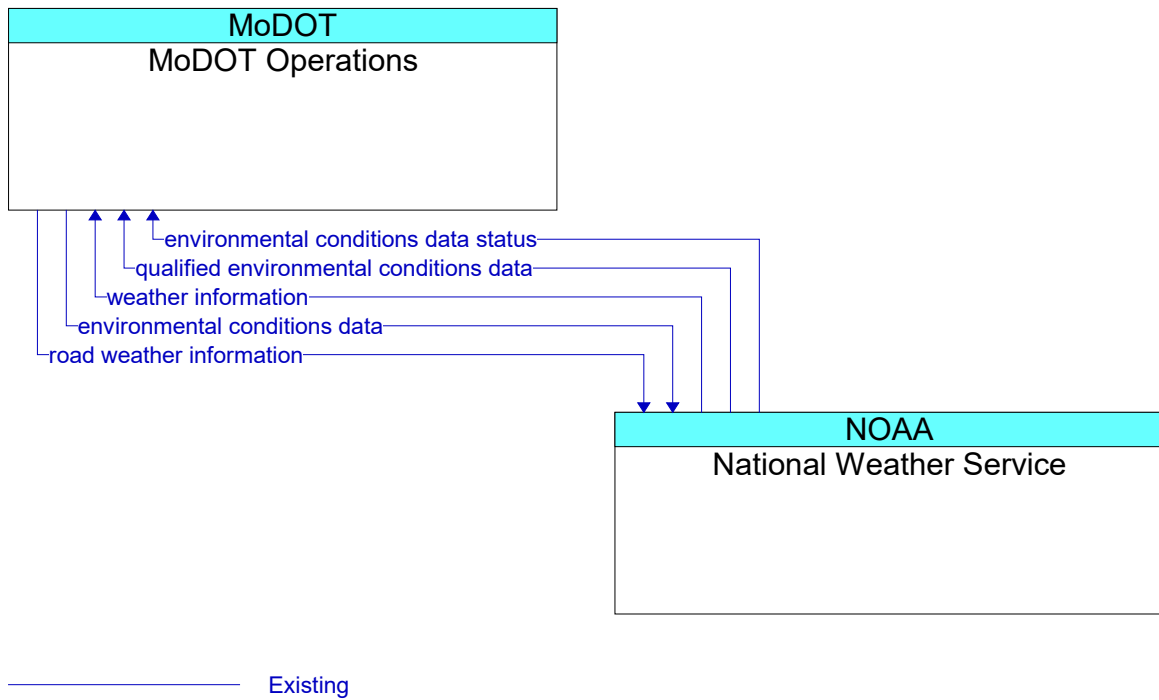
Figure 961: MoDOT Operations - MoDOT Road Weather Information System Interface



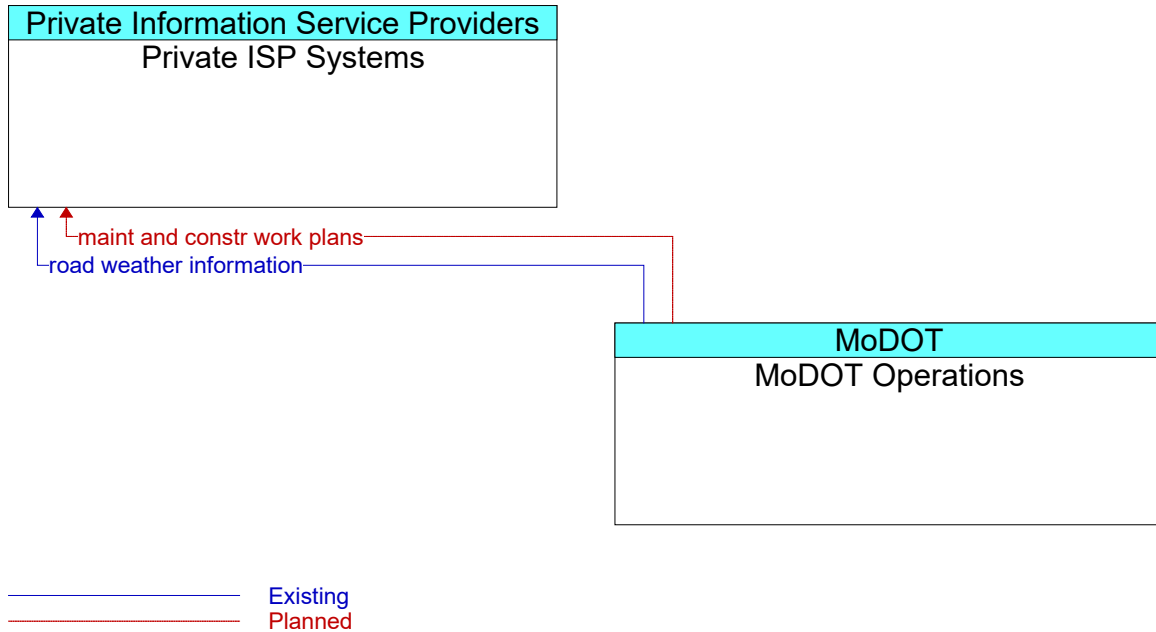
**Figure 962: MoDOT Operations - MoDOT Traffic Signal System Interface**



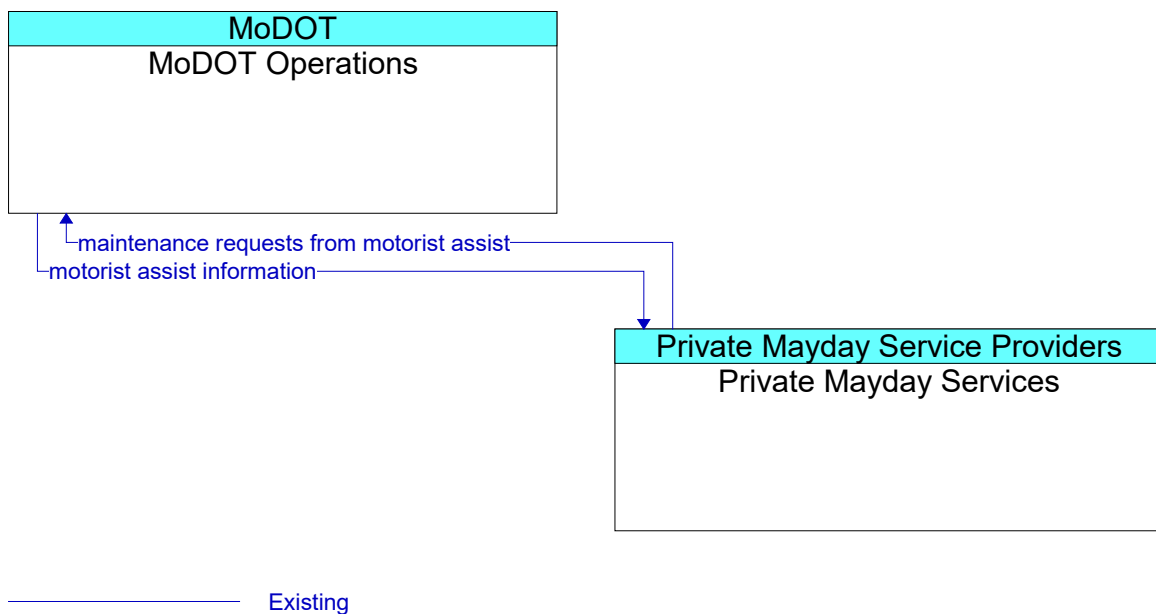
**Figure 963: MoDOT Operations - MoDOT Web Site Interface**



**Figure 964: MoDOT Operations - National Weather Service Interface**

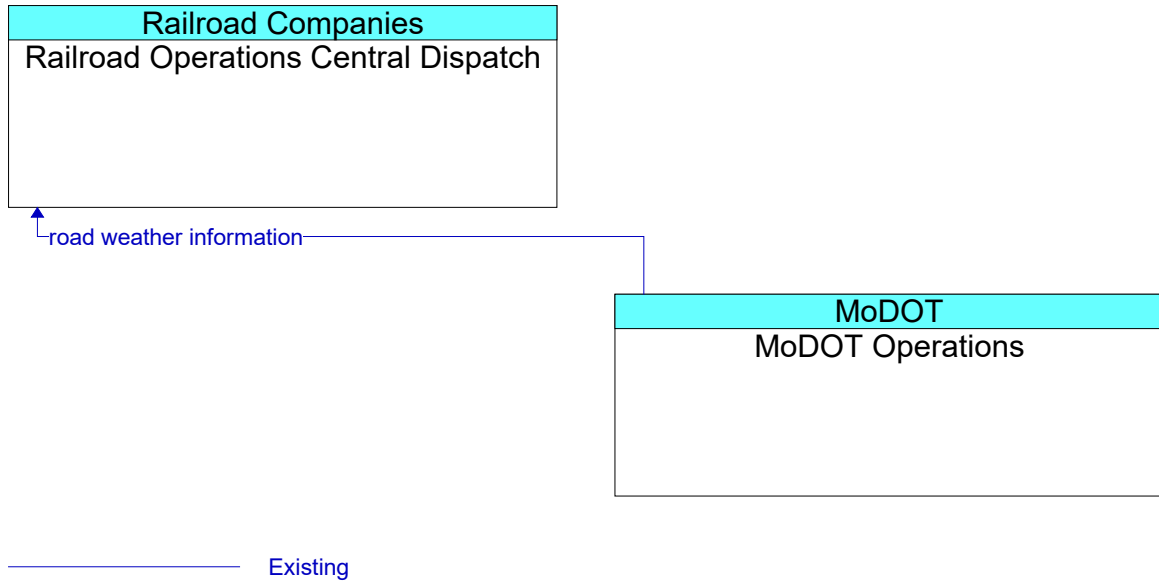


**Figure 965: MoDOT Operations - Private ISP Systems Interface**

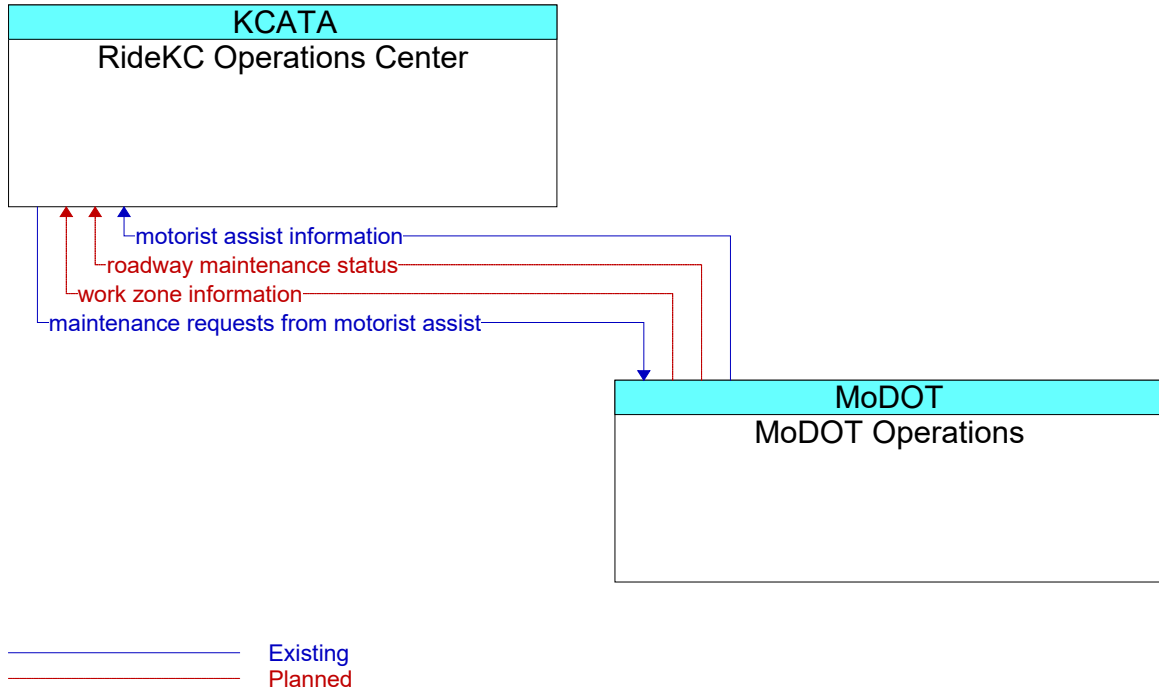


**Figure 966: MoDOT Operations - Private Mayday Services Interface**

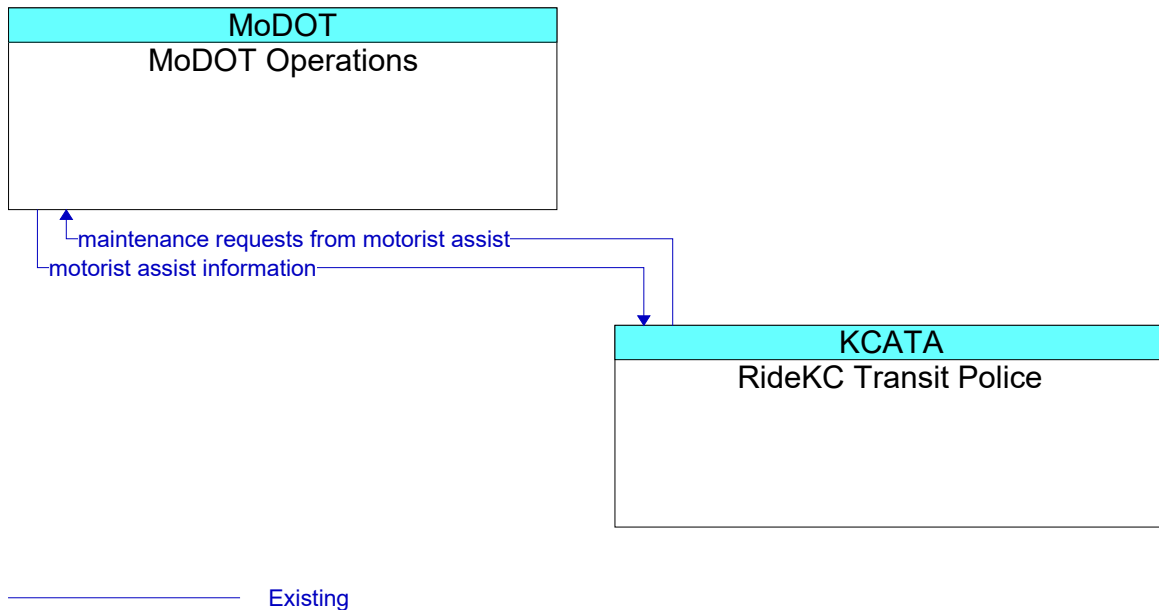




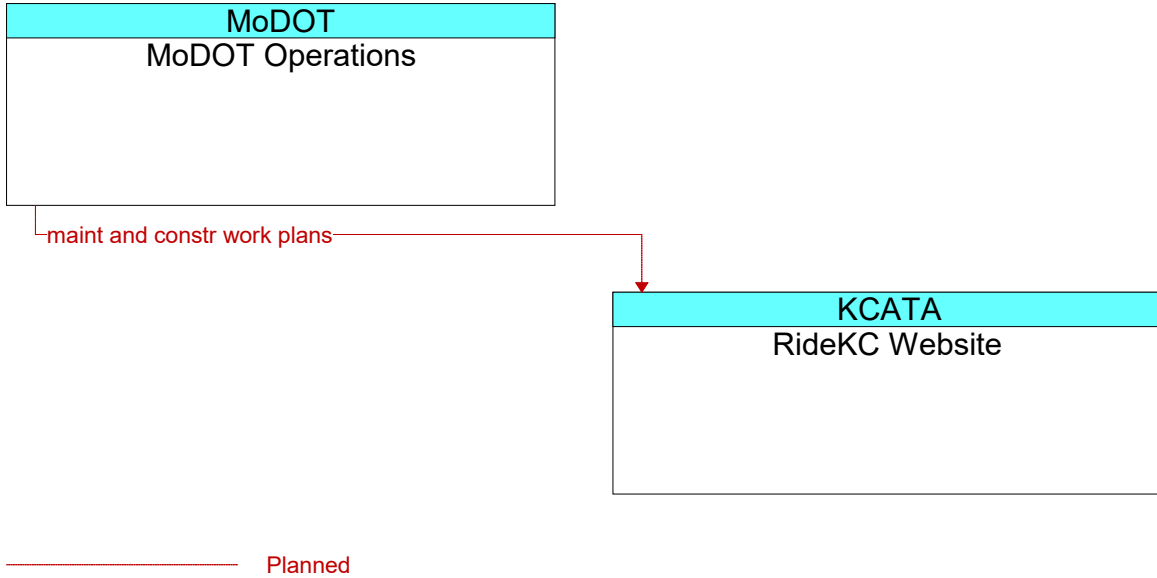
**Figure 967: MoDOT Operations - Railroad Operations Central Dispatch Interface**



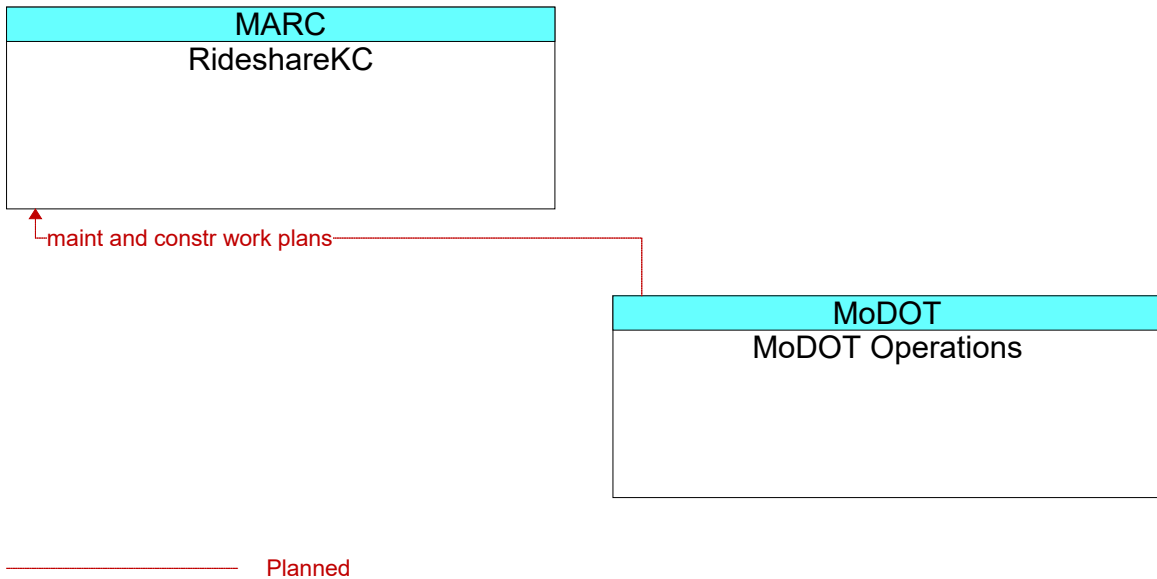
**Figure 968: MoDOT Operations - RideKC Operations Center Interface**



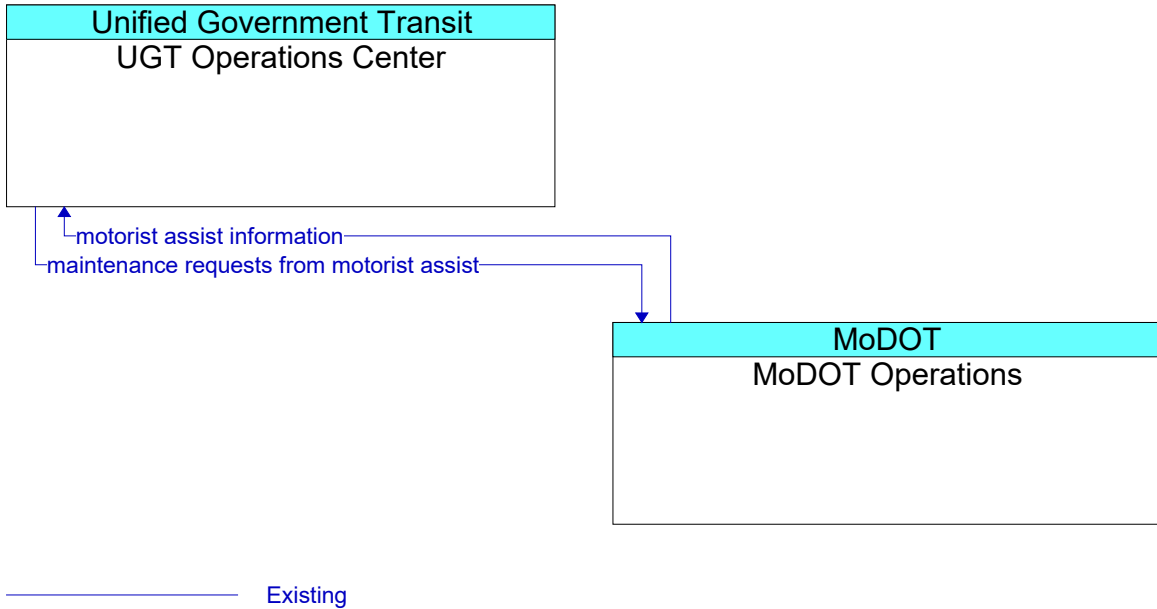
**Figure 969: MoDOT Operations - RideKC Transit Police Interface**



**Figure 970: MoDOT Operations - RideKC Website Interface**



**Figure 971: MoDOT Operations - RideshareKC Interface**



**Figure 972: MoDOT Operations - UGT Operations Center Interface**

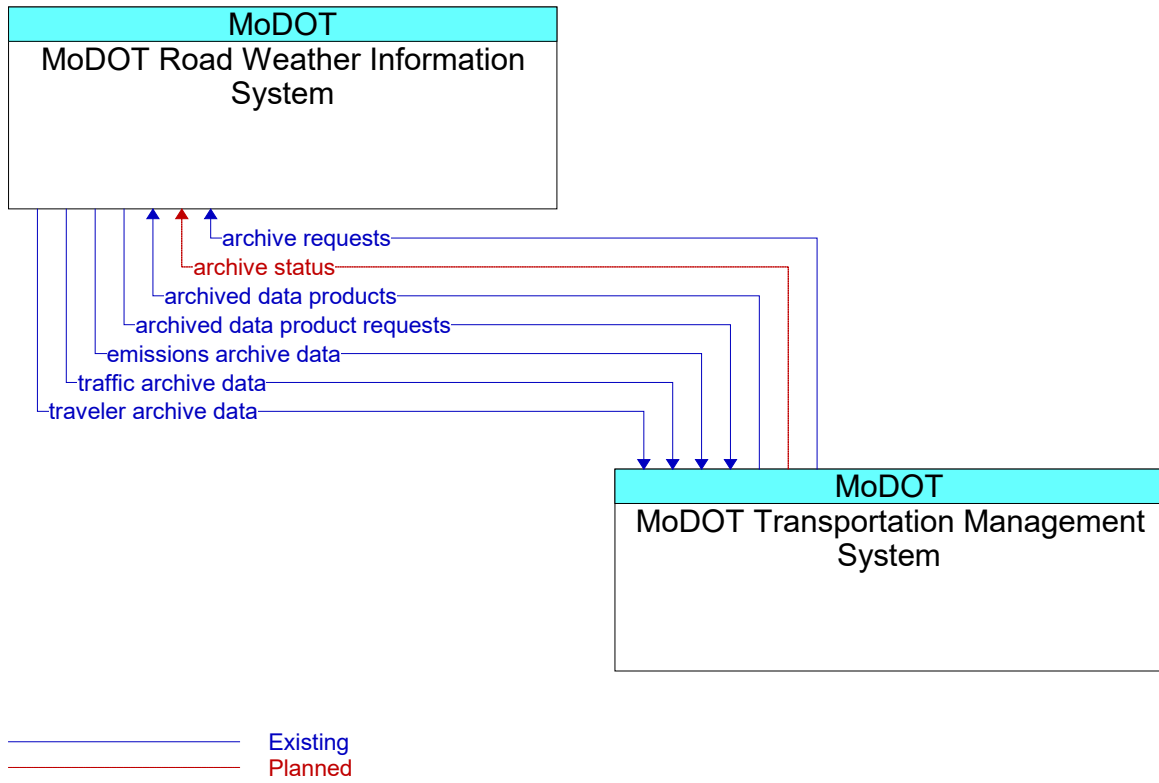
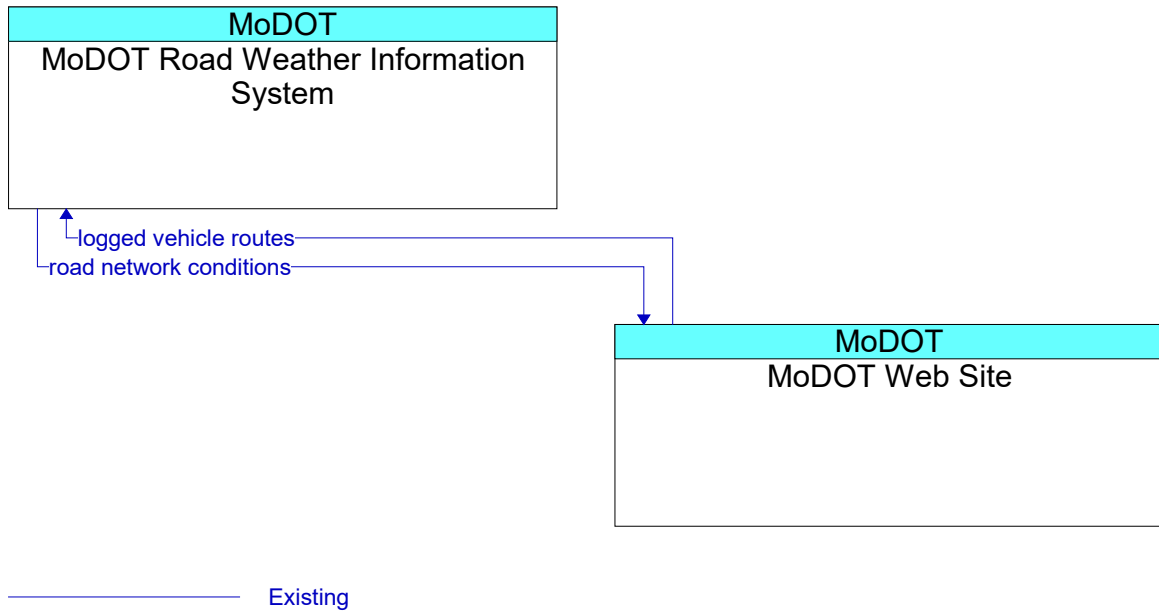
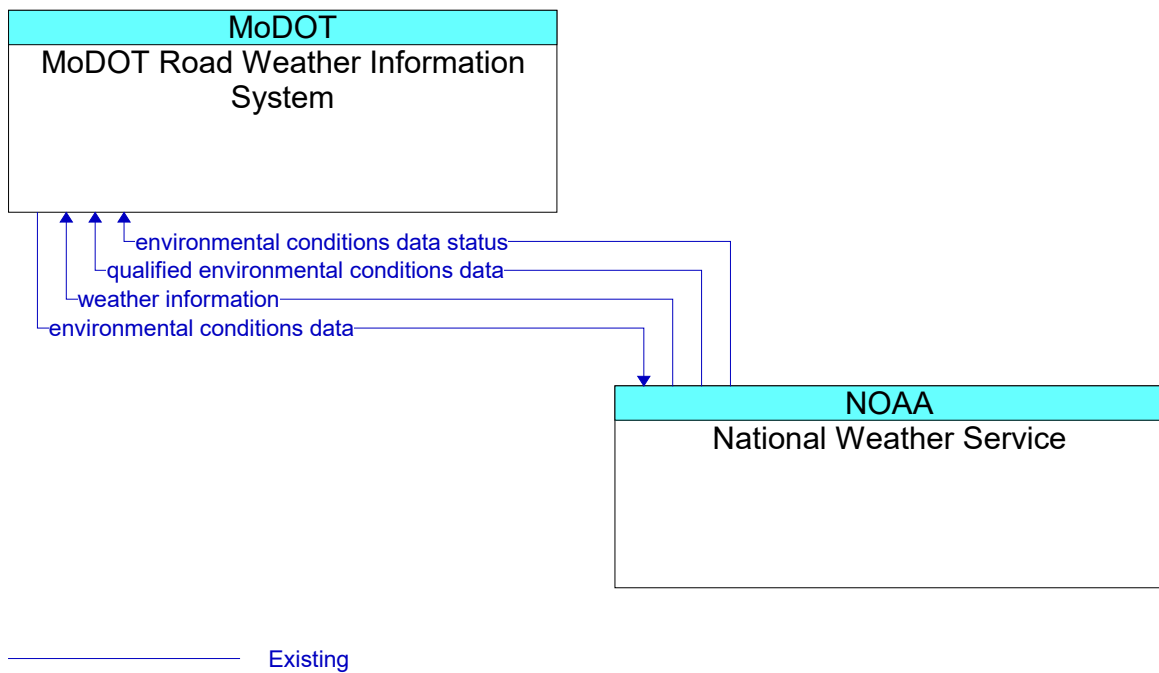


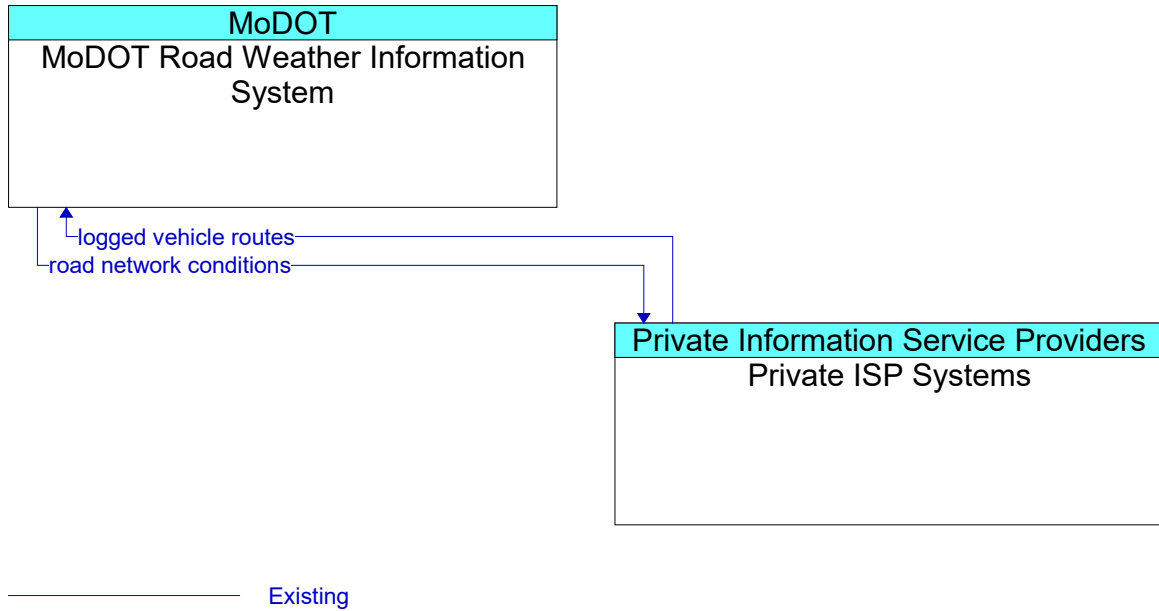
Figure 973: MoDOT Road Weather Information System - MoDOT Transportation Management System Interface



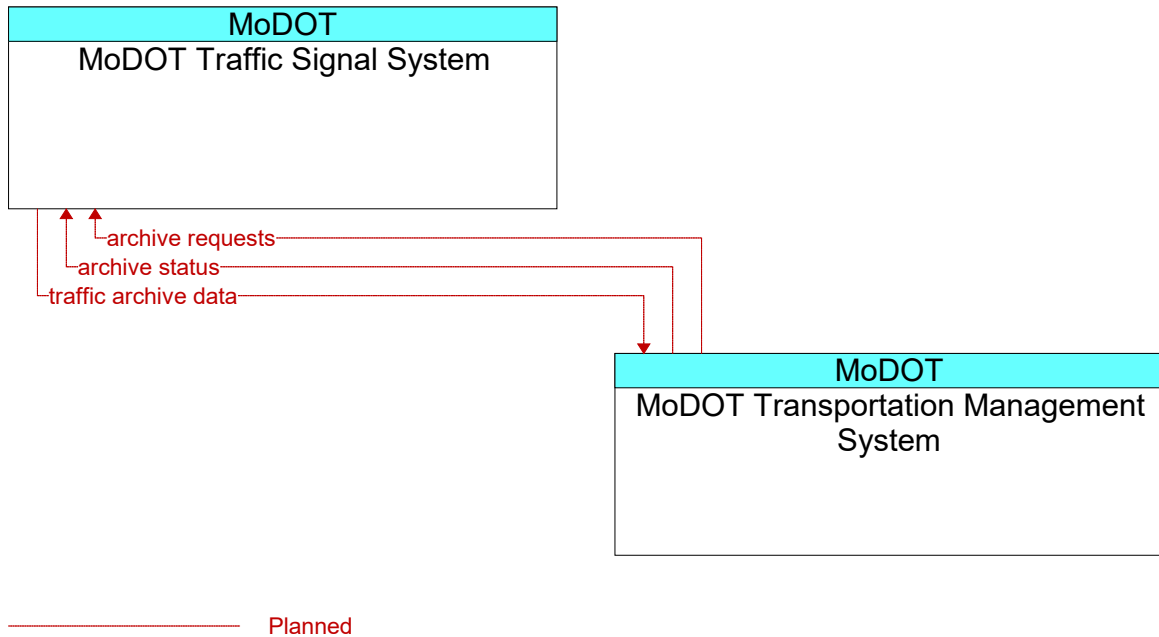
**Figure 974: MoDOT Road Weather Information System - MoDOT Web Site Interface**



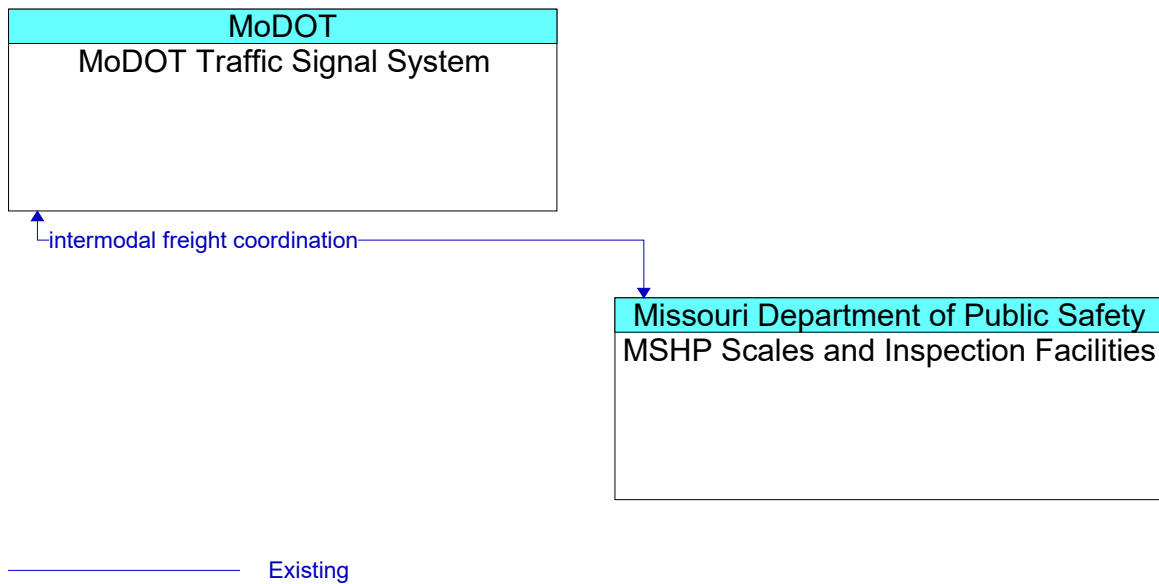
**Figure 975: MoDOT Road Weather Information System - National Weather Service Interface**



**Figure 976: MoDOT Road Weather Information System - Private ISP Systems Interface**

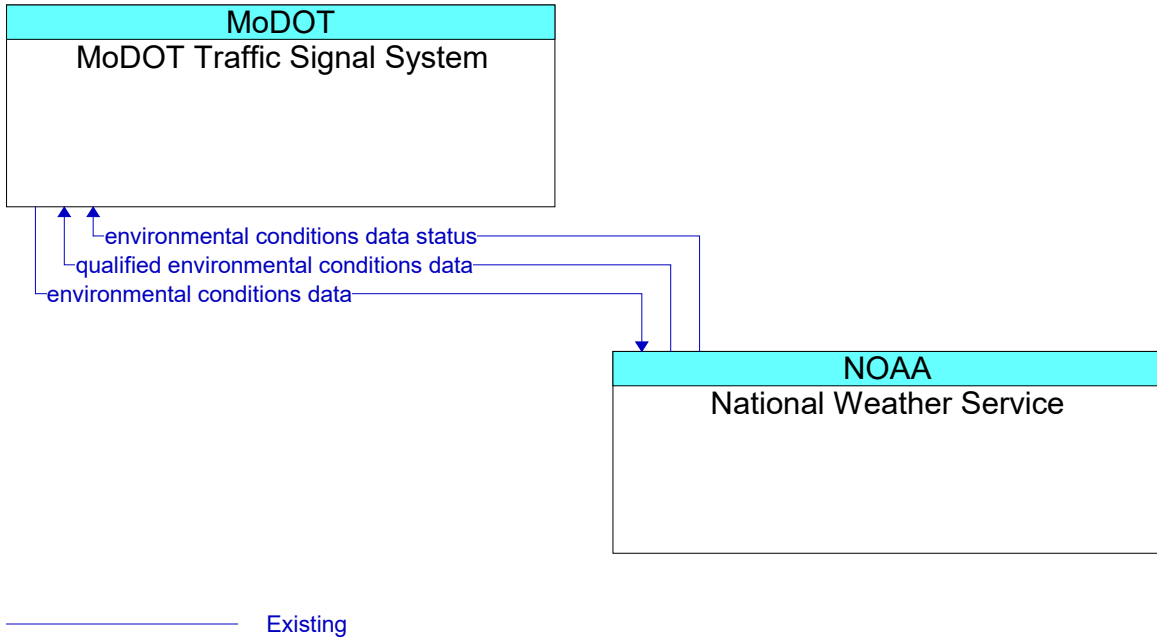


**Figure 977: MoDOT Traffic Signal System - MoDOT Transportation Management System Interface**

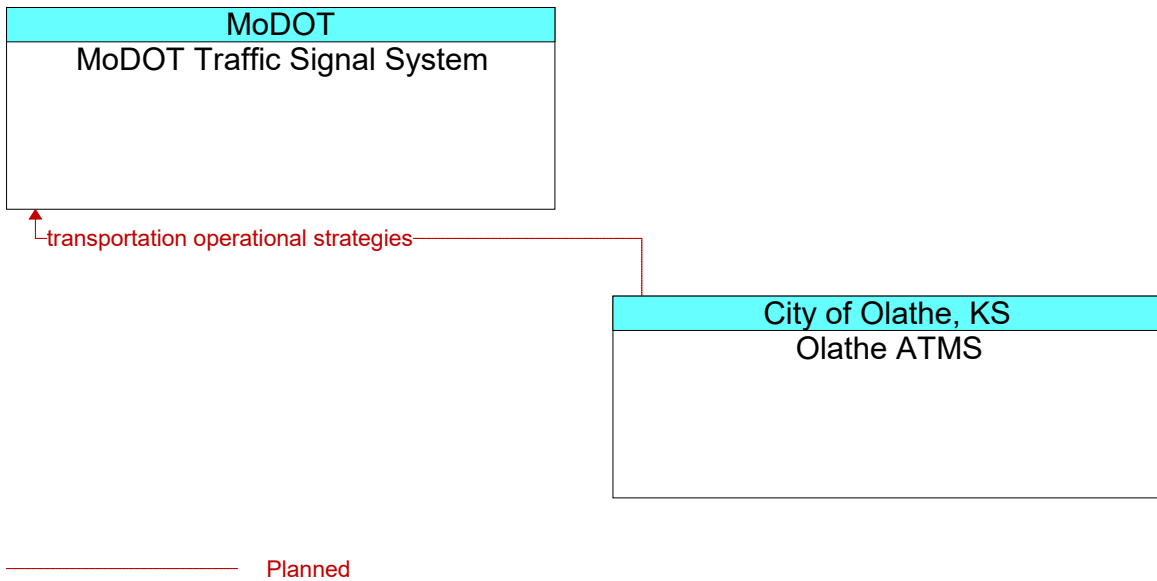


**Figure 978: MoDOT Traffic Signal System - MSHP Scales and Inspection Facilities Interface**

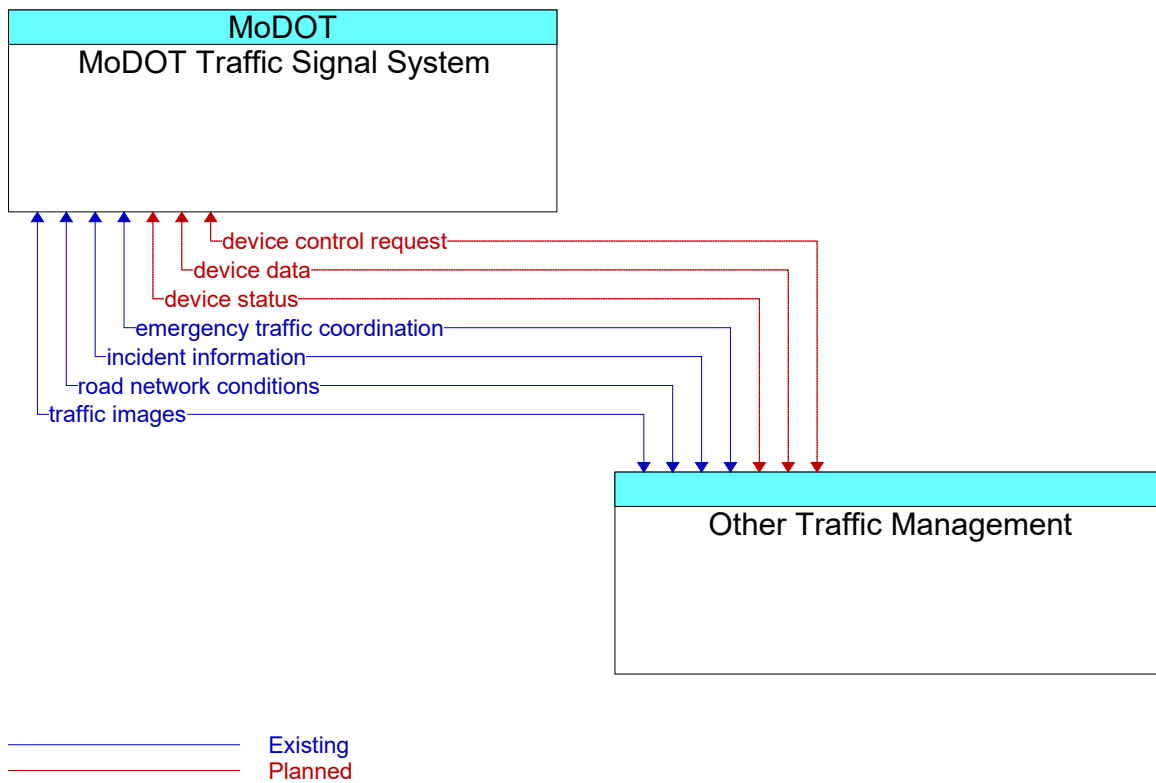




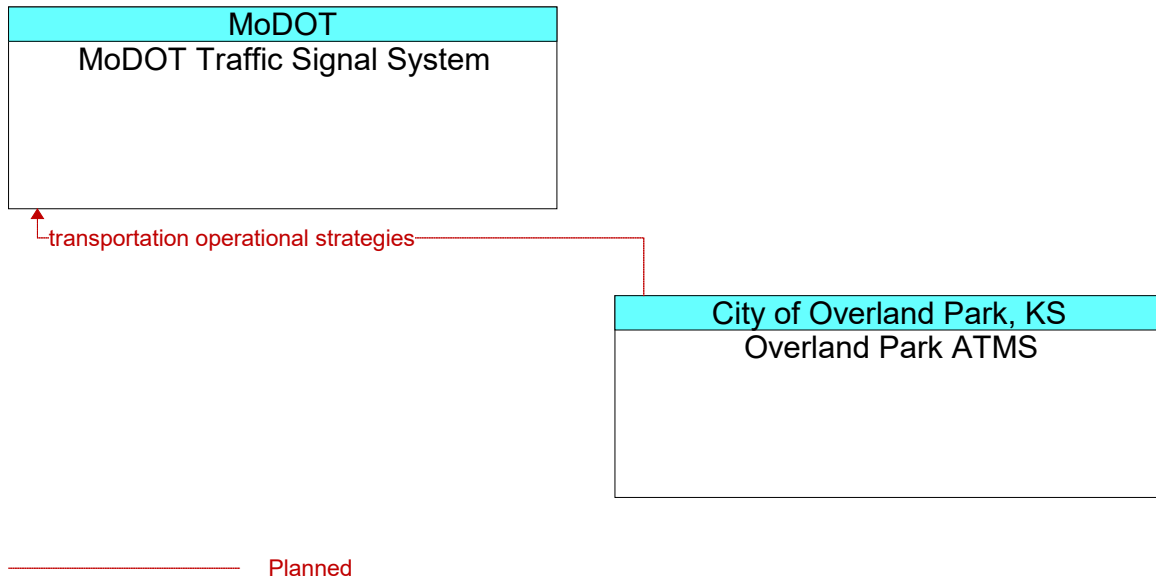
**Figure 979: MoDOT Traffic Signal System - National Weather Service Interface**



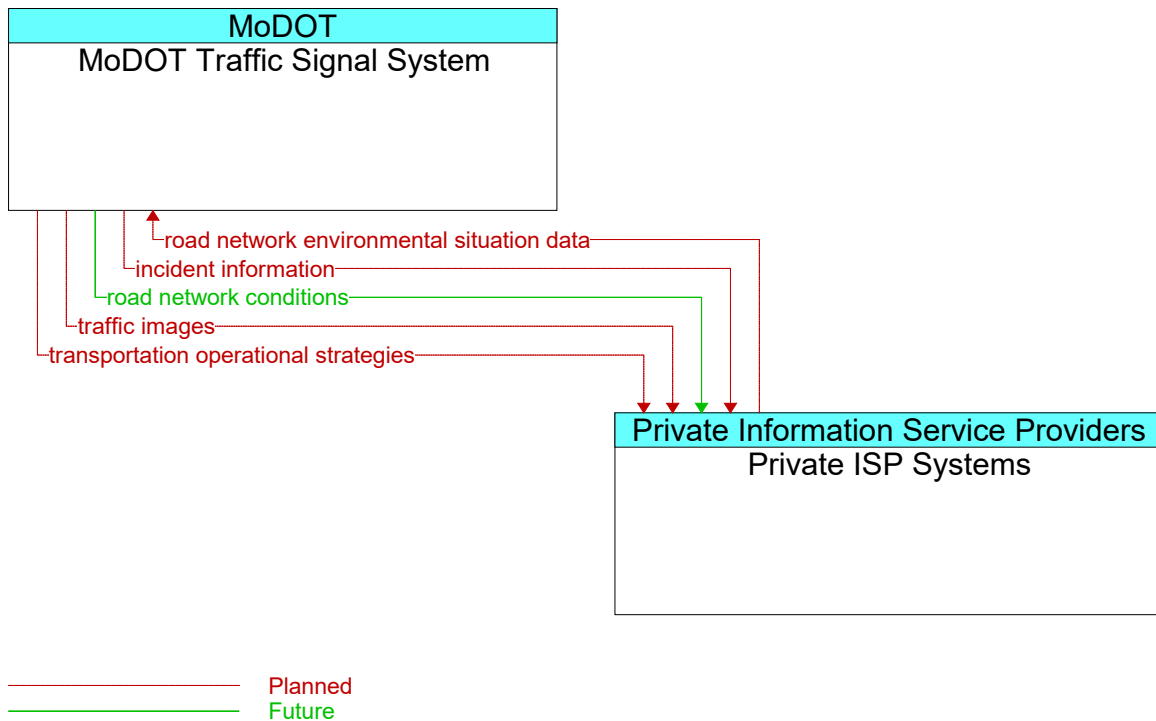
**Figure 980: MoDOT Traffic Signal System - Olathe ATMS Interface**



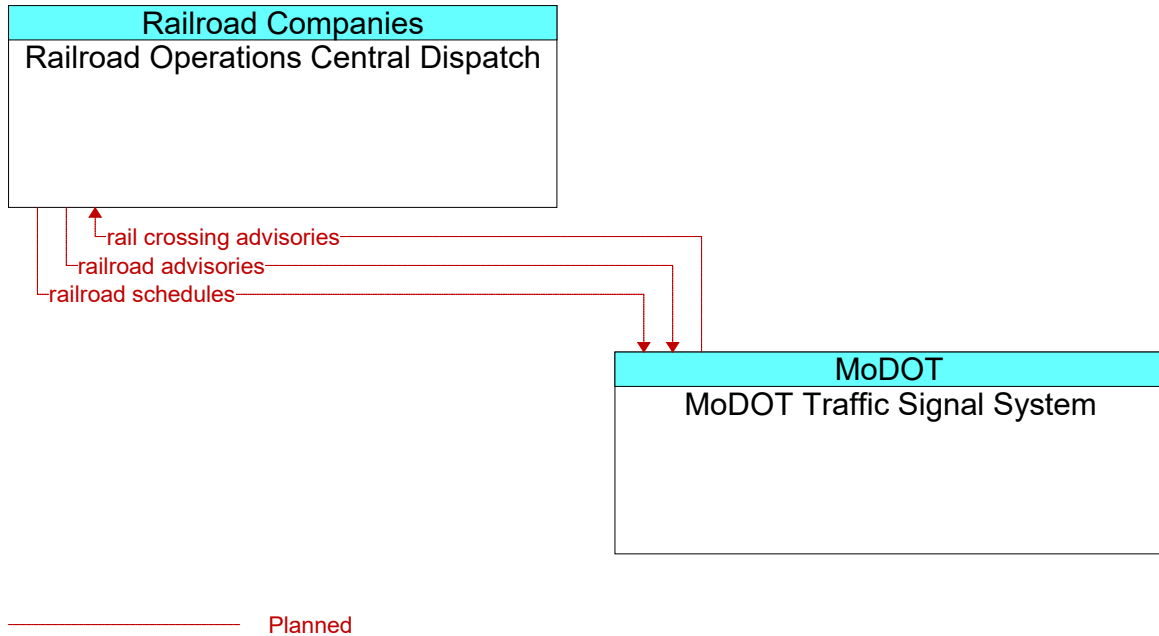
**Figure 981: MoDOT Traffic Signal System - Other Traffic Management Interface**



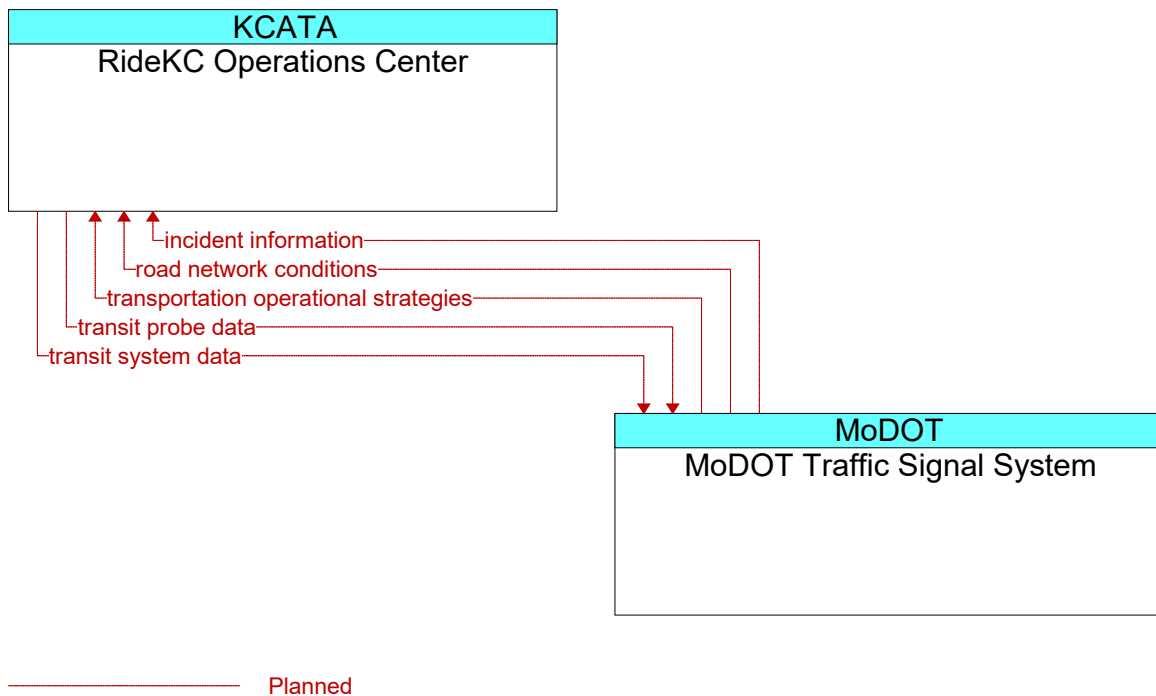
**Figure 982: MoDOT Traffic Signal System - Overland Park ATMS Interface**



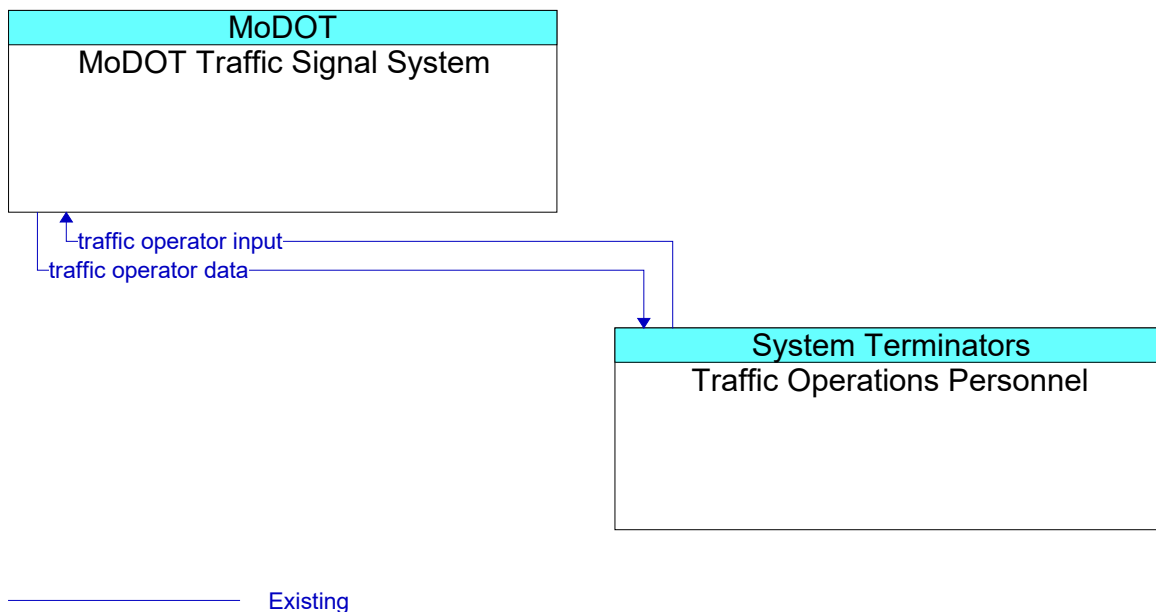
**Figure 983: MoDOT Traffic Signal System - Private ISP Systems Interface**



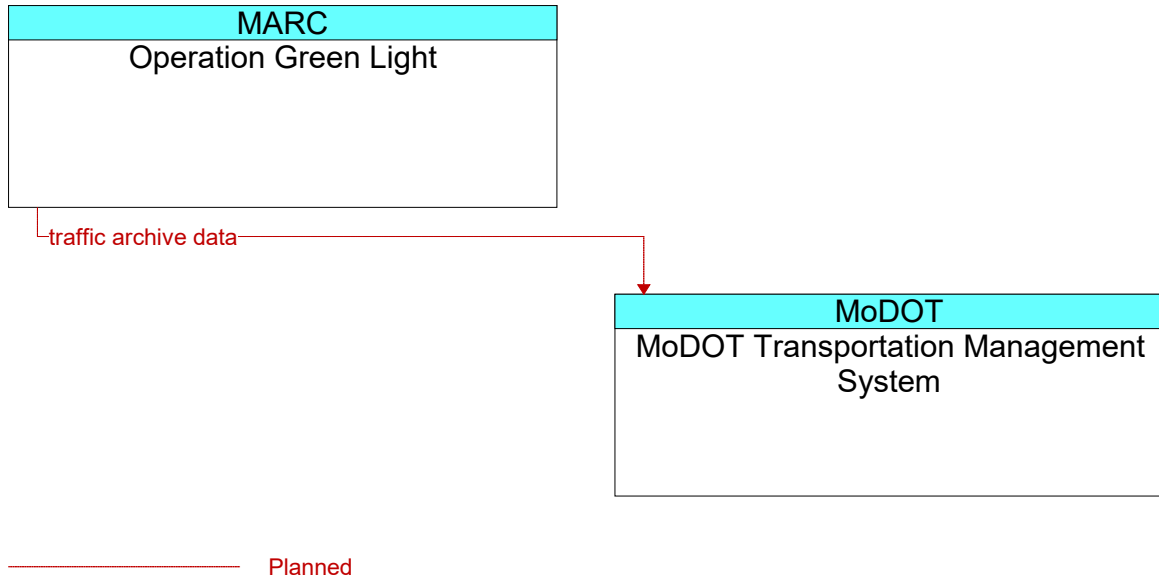
**Figure 984: MoDOT Traffic Signal System - Railroad Operations Central Dispatch Interface**



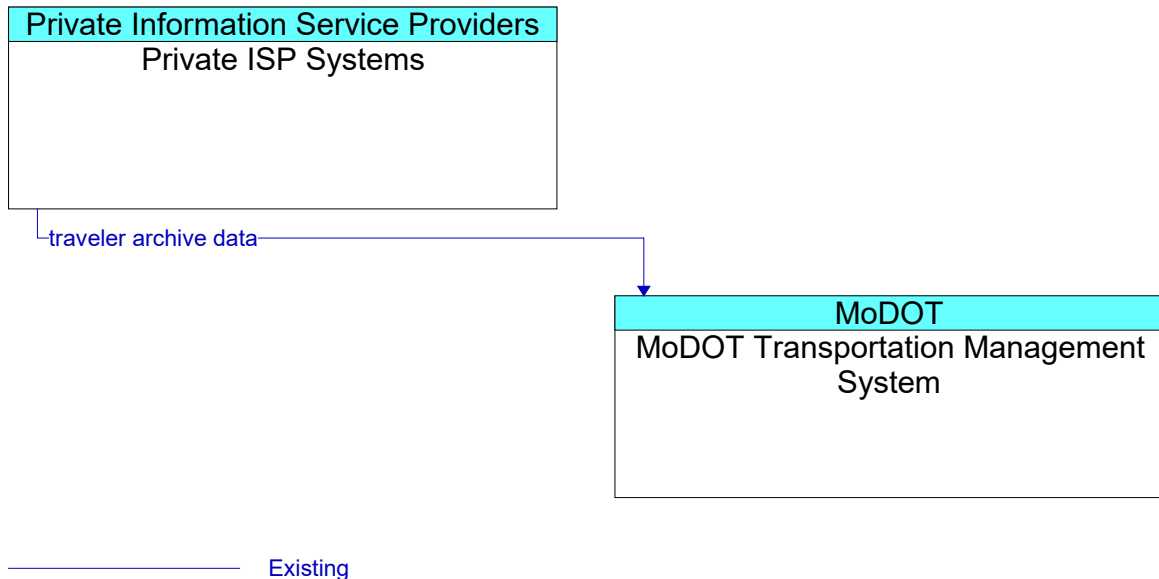
**Figure 985: MoDOT Traffic Signal System - RideKC Operations Center Interface**



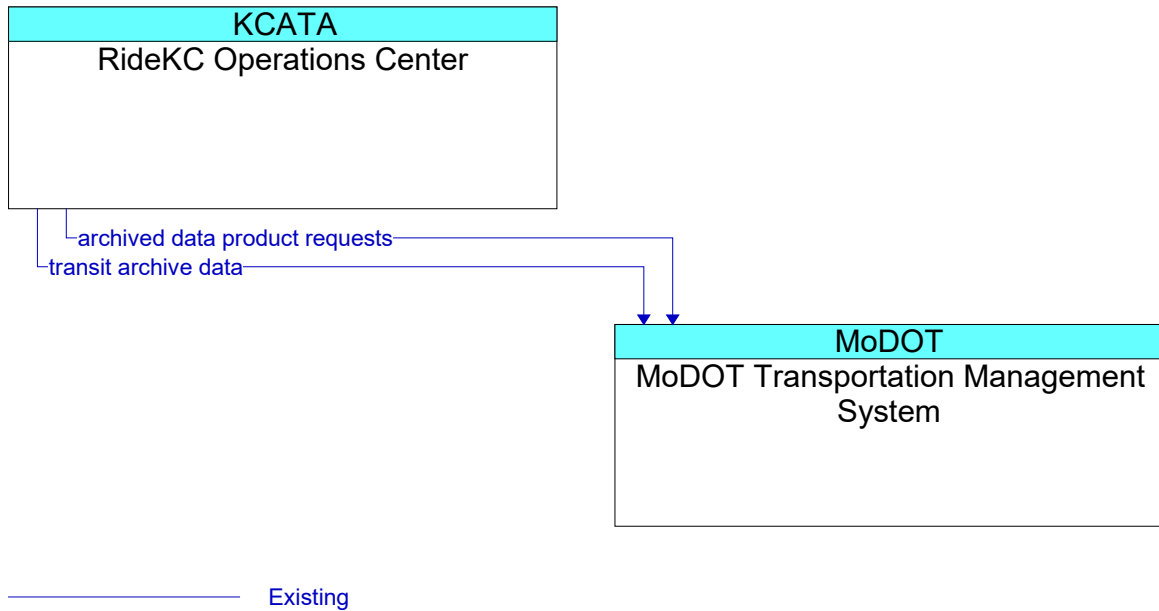
**Figure 986: MoDOT Traffic Signal System - Traffic Operations Personnel Interface**



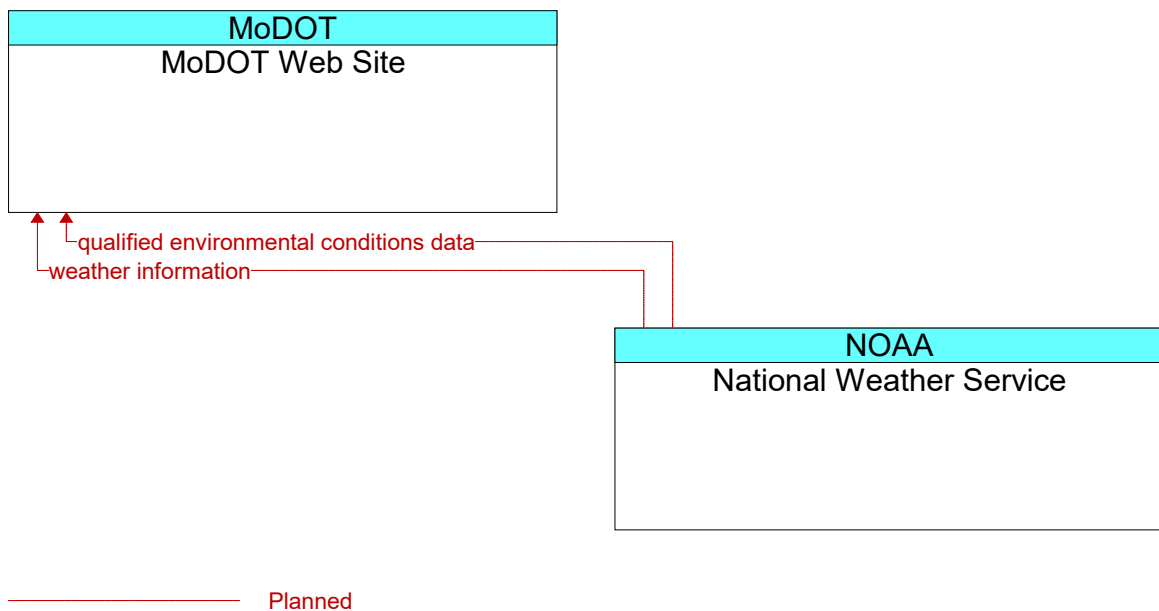
**Figure 987: MoDOT Transportation Management System - Operation Green Light Interface**



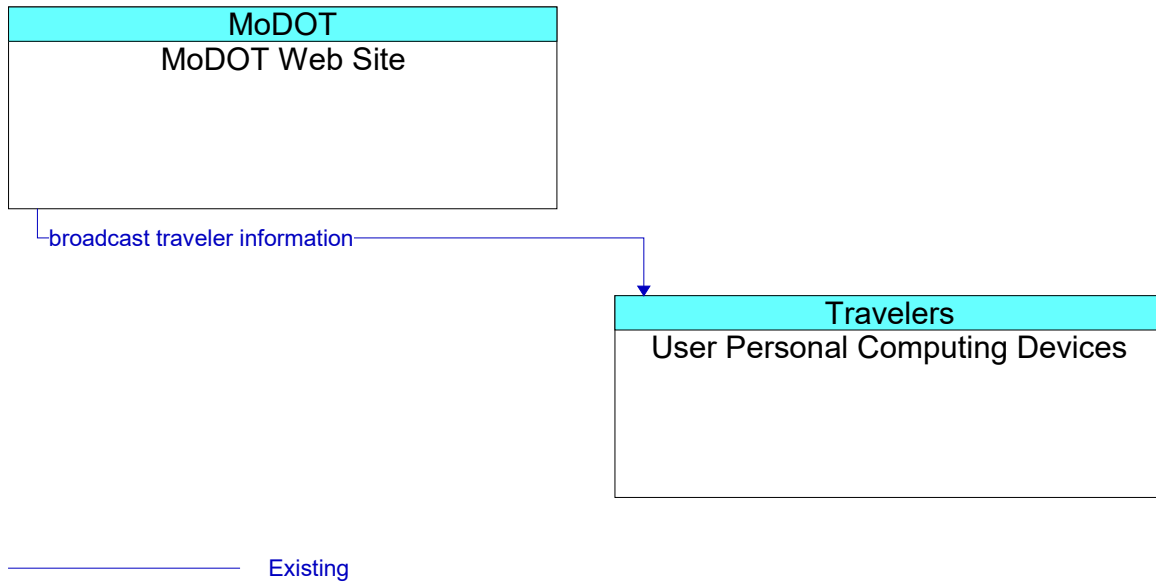
**Figure 988: MoDOT Transportation Management System - Private ISP Systems Interface**



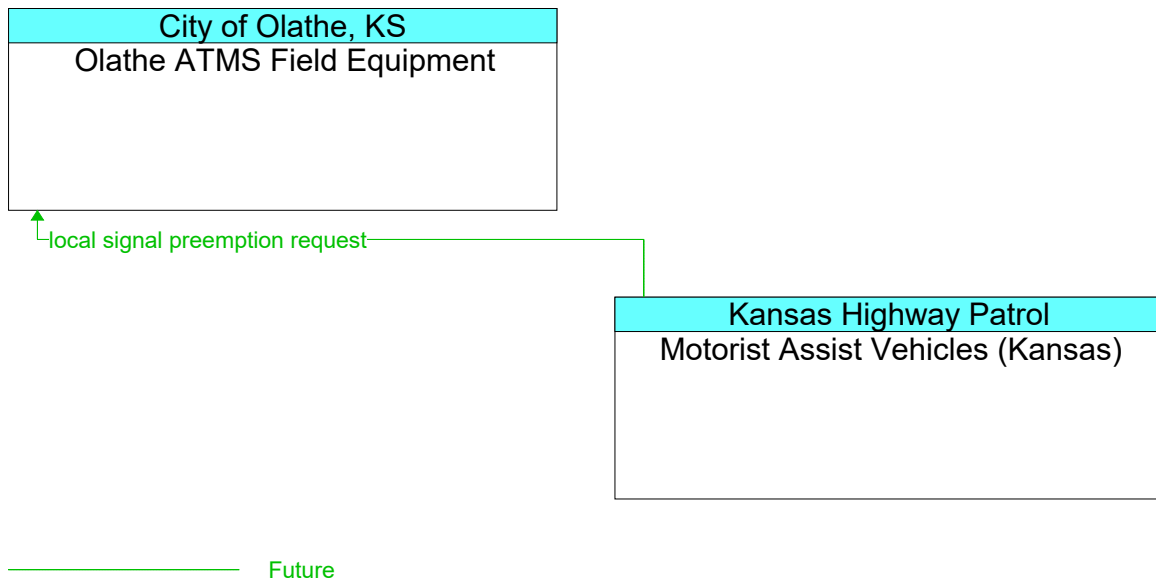
**Figure 989: MoDOT Transportation Management System - RideKC Operations Center Interface**



**Figure 990: MoDOT Web Site - National Weather Service Interface**

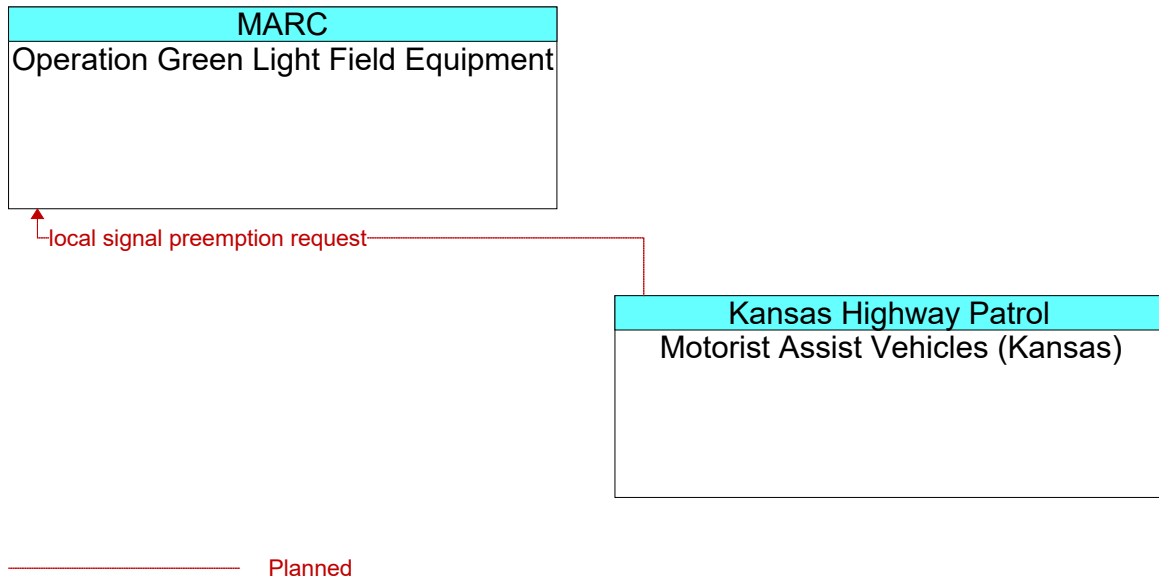


**Figure 991: MoDOT Web Site - User Personal Computing Devices Interface**

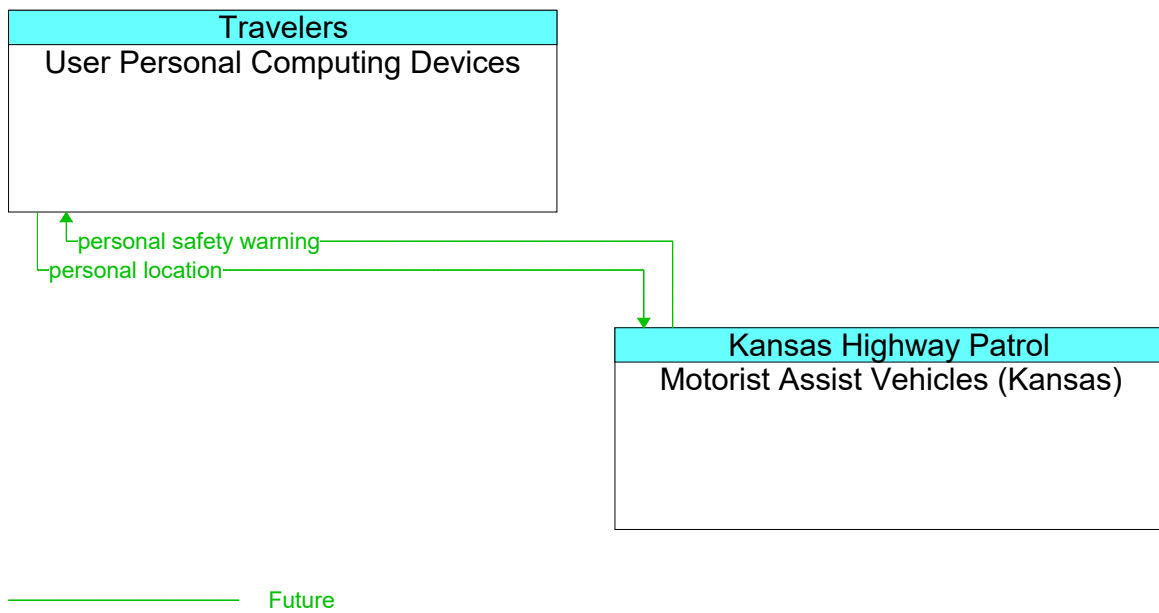


**Figure 992: Motorist Assist Vehicles (Kansas) - Olathe ATMS Field Equipment Interface**

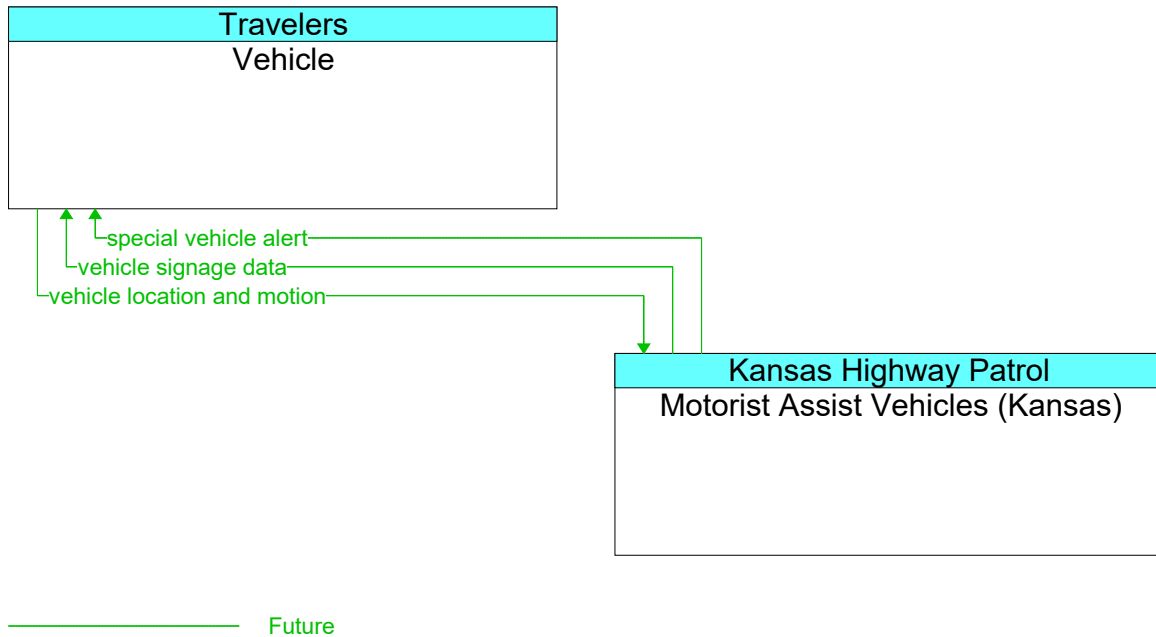




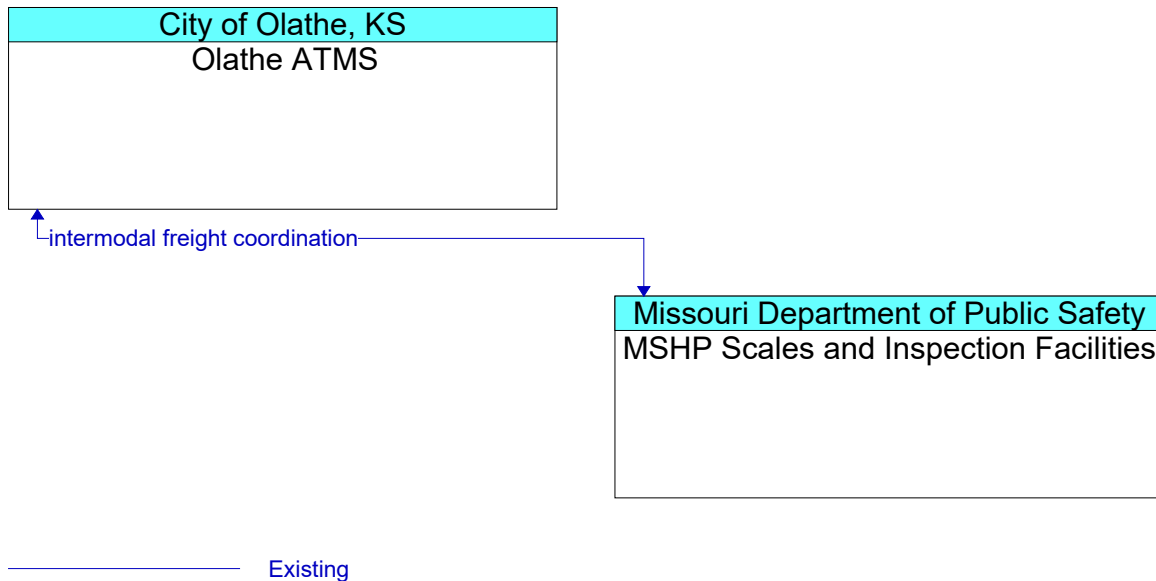
**Figure 993: Motorist Assist Vehicles (Kansas) - Operation Green Light Field Equipment Interface**



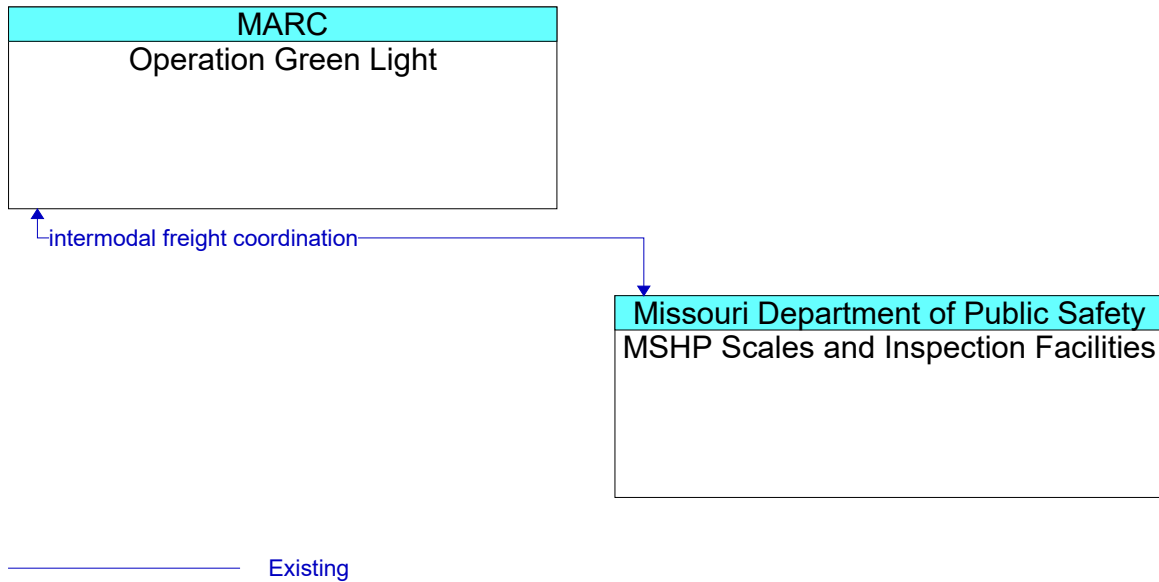
**Figure 994: Motorist Assist Vehicles (Kansas) - User Personal Computing Devices Interface**



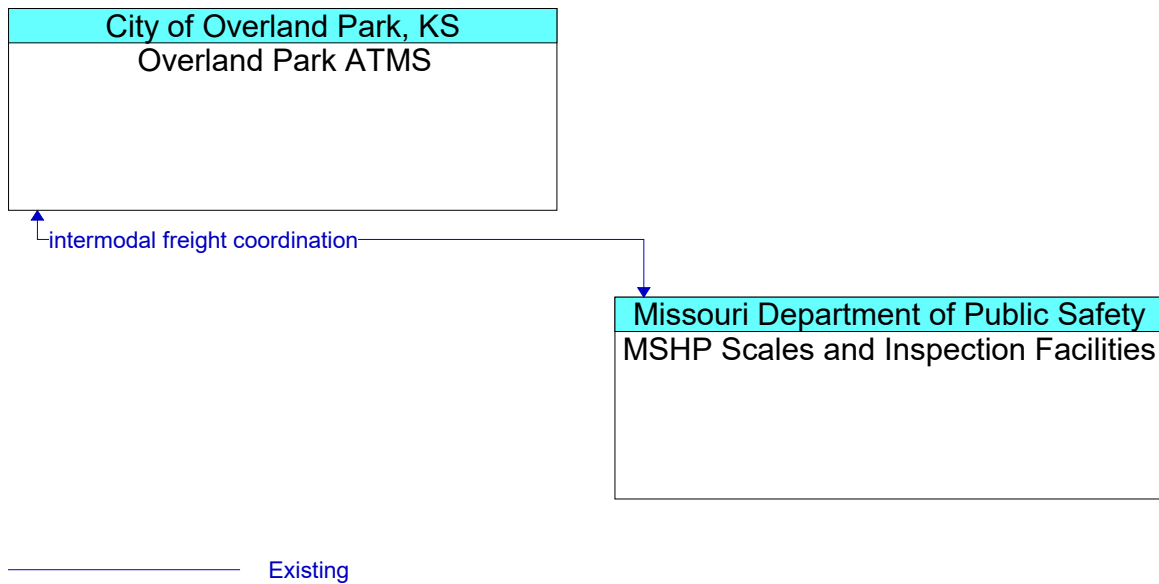
**Figure 995: Motorist Assist Vehicles (Kansas) - Vehicle Interface**



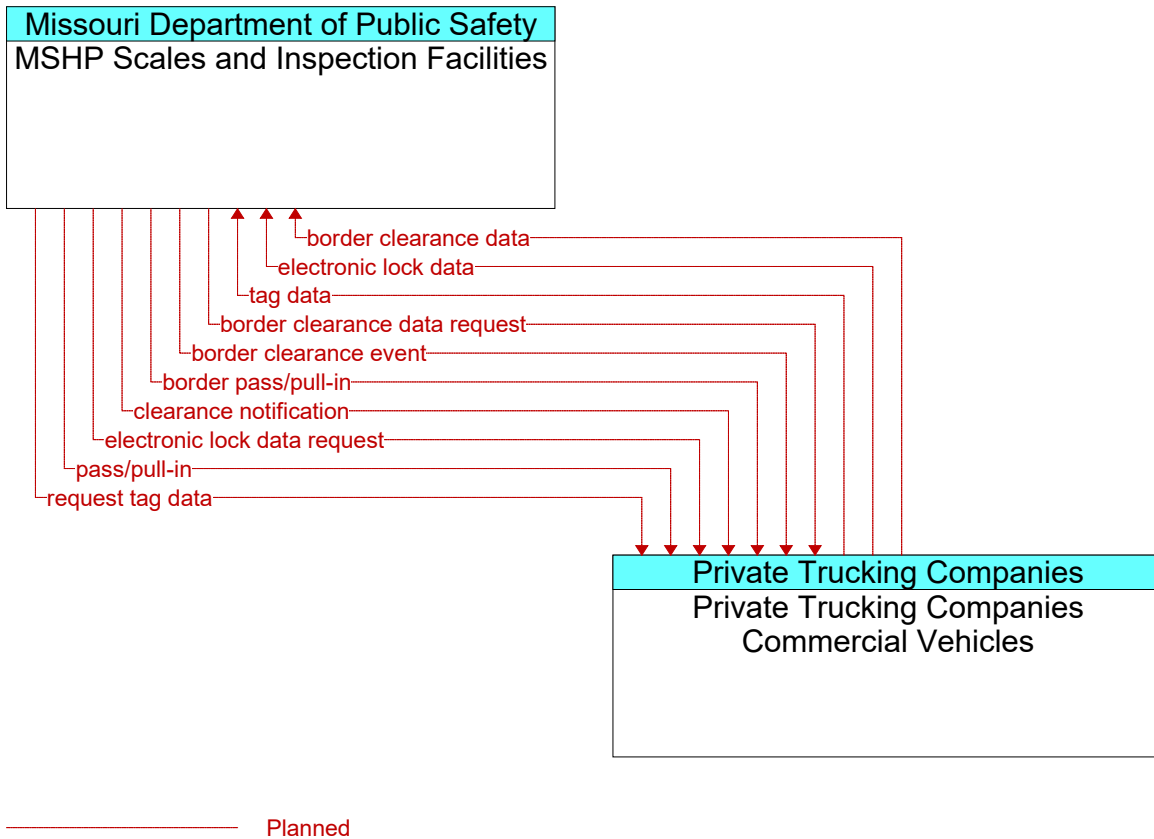
**Figure 996: MSHP Scales and Inspection Facilities - Olathe ATMS Interface**



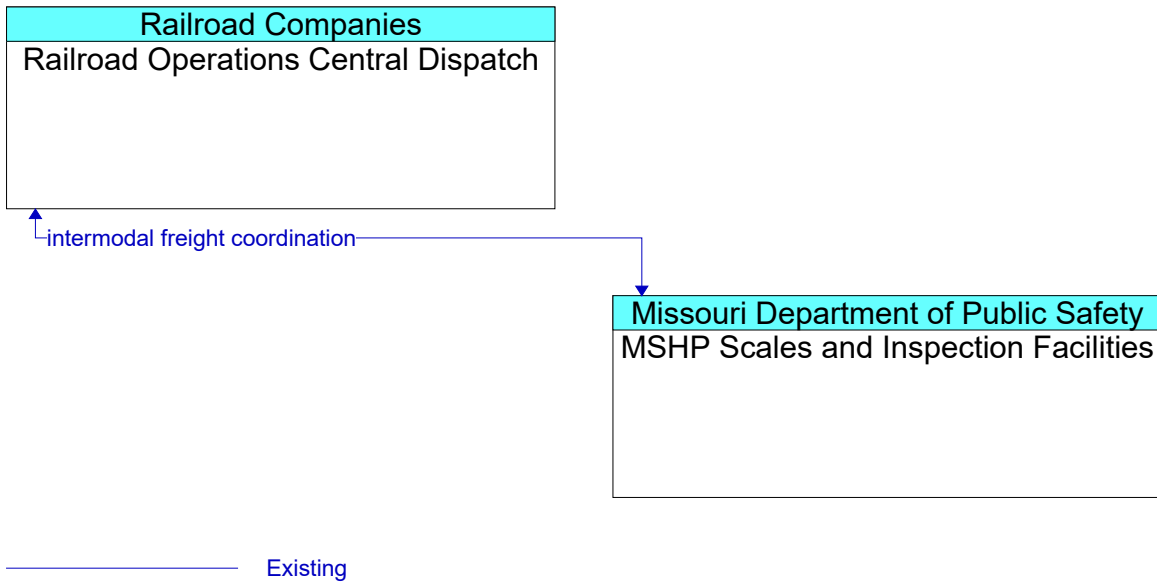
**Figure 997: MSHP Scales and Inspection Facilities - Operation Green Light Interface**



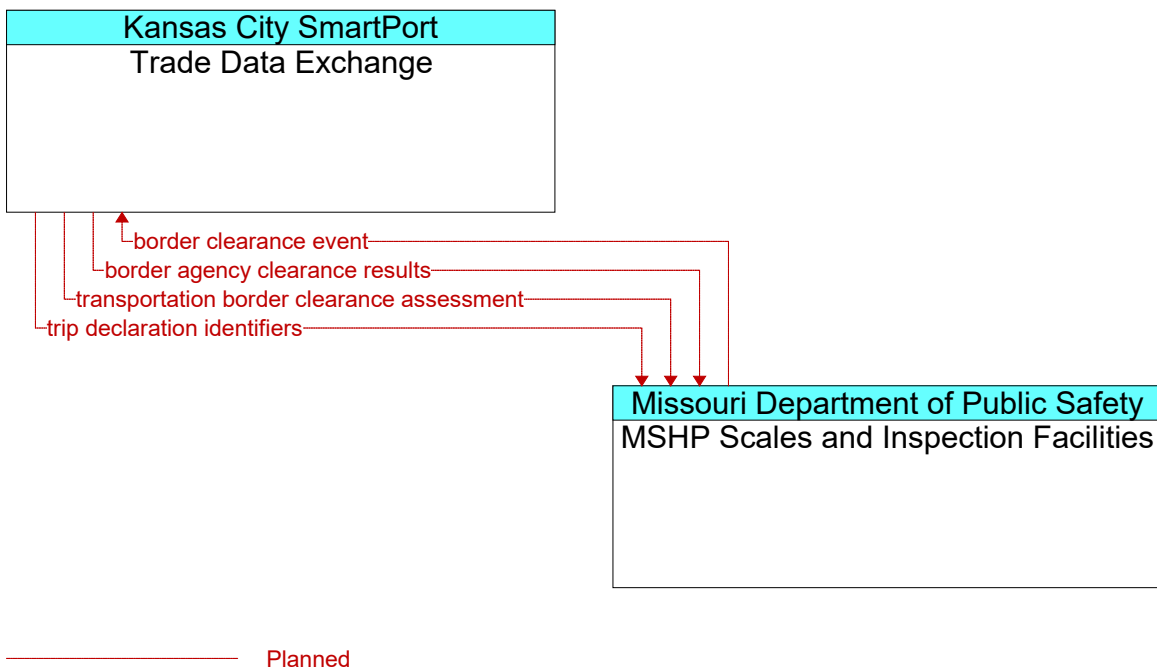
**Figure 998: MSHP Scales and Inspection Facilities - Overland Park ATMS Interface**



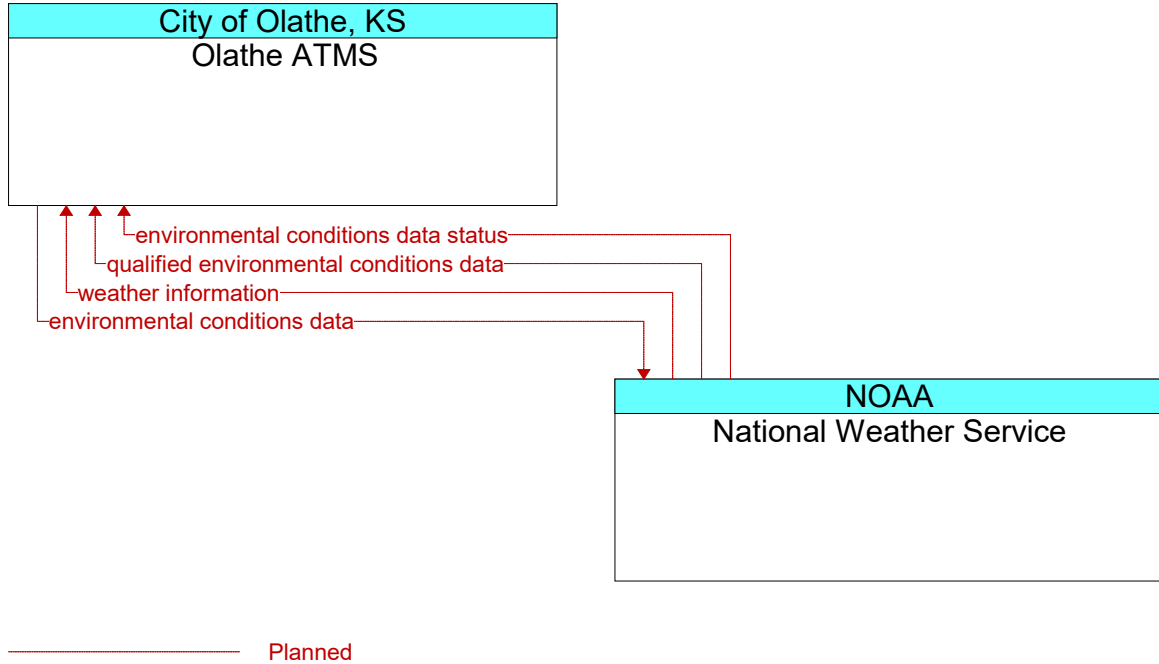
**Figure 999: MSHP Scales and Inspection Facilities - Private Trucking Companies Commercial Vehicles Interface**



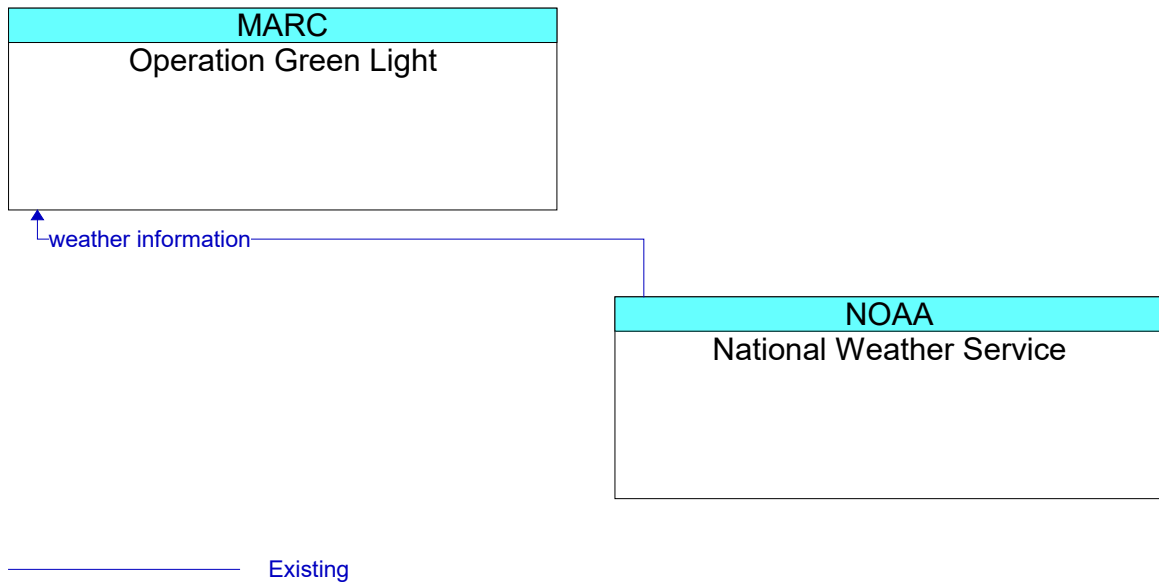
**Figure 1000: MSHP Scales and Inspection Facilities - Railroad Operations Central Dispatch Interface**



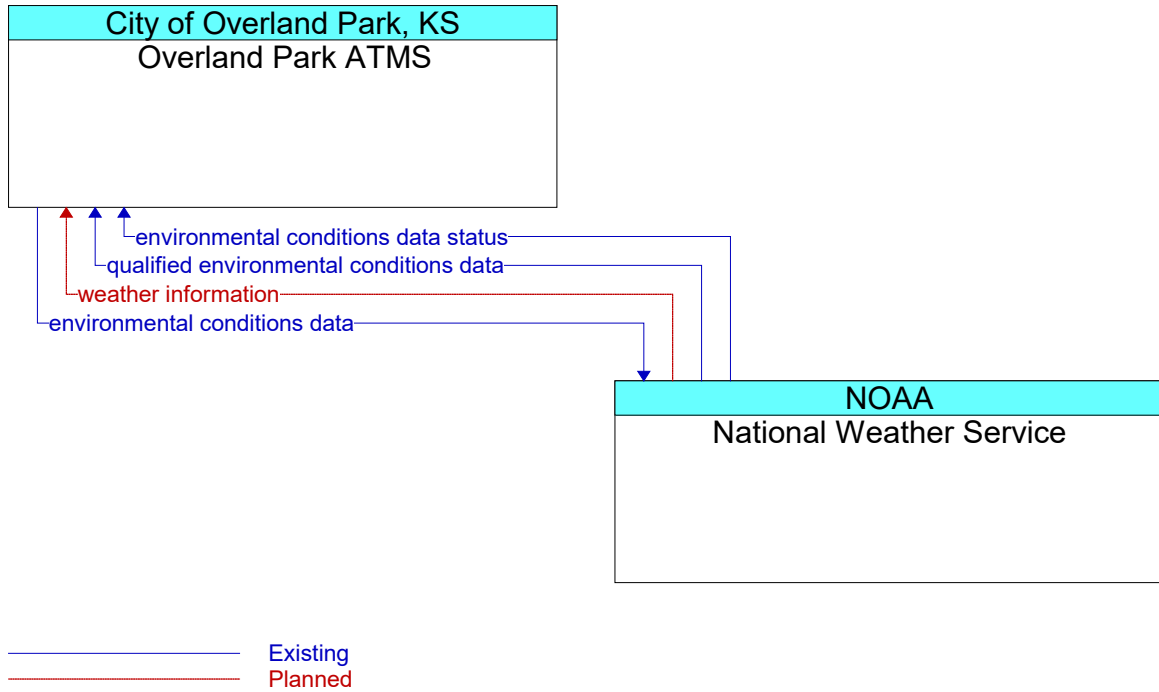
**Figure 1001: MSHP Scales and Inspection Facilities - Trade Data Exchange Interface**



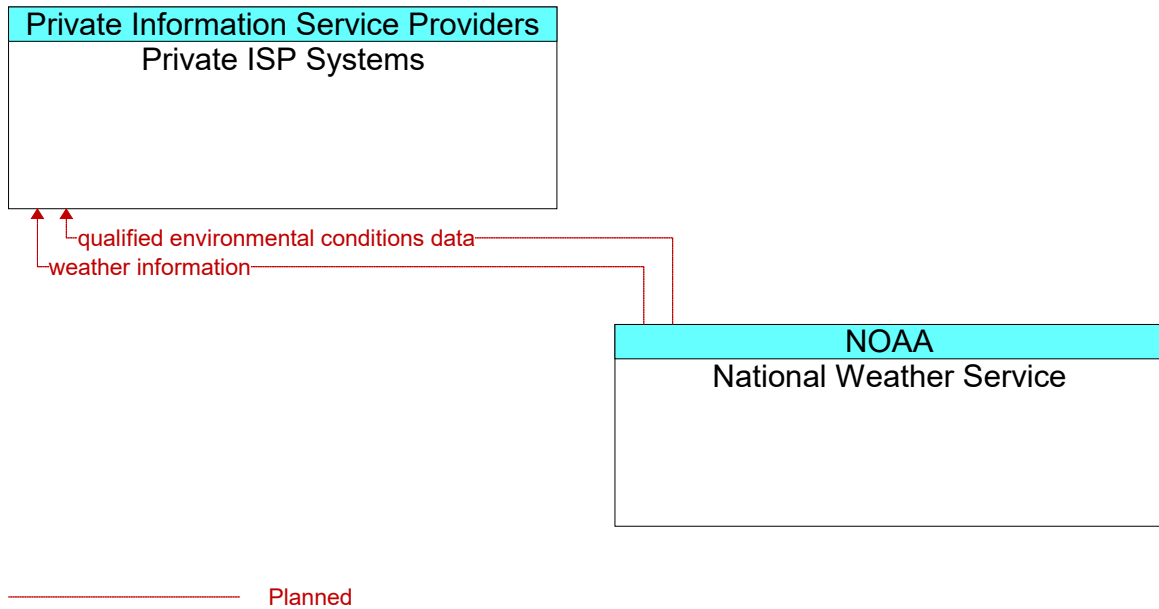
**Figure 1002: National Weather Service - Olathe ATMS Interface**



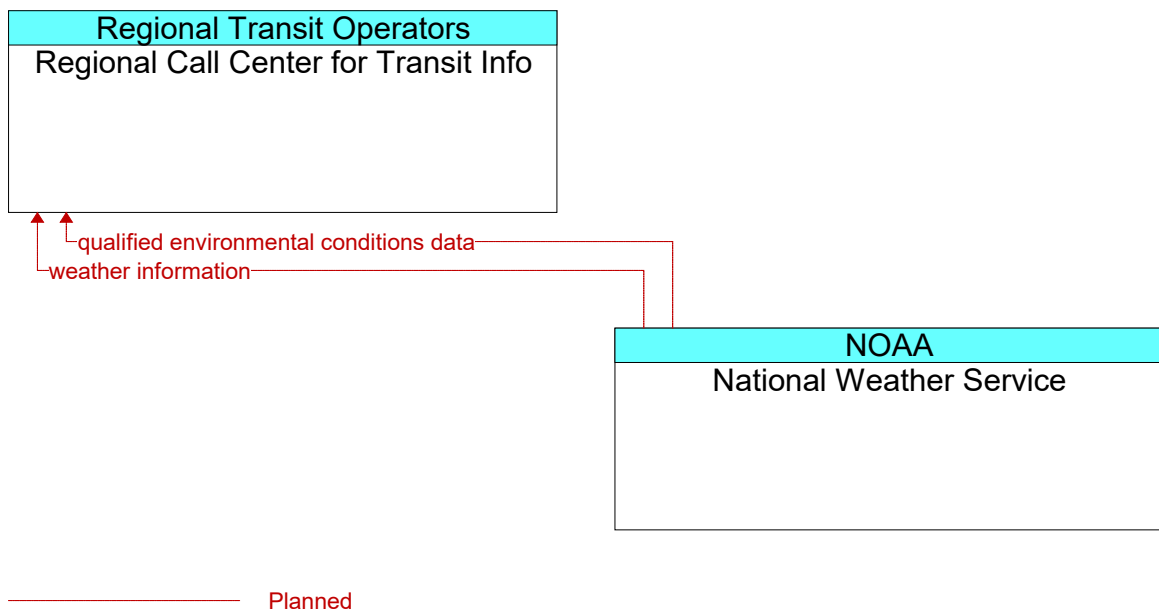
**Figure 1003: National Weather Service - Operation Green Light Interface**



**Figure 1004: National Weather Service - Overland Park ATMS Interface**

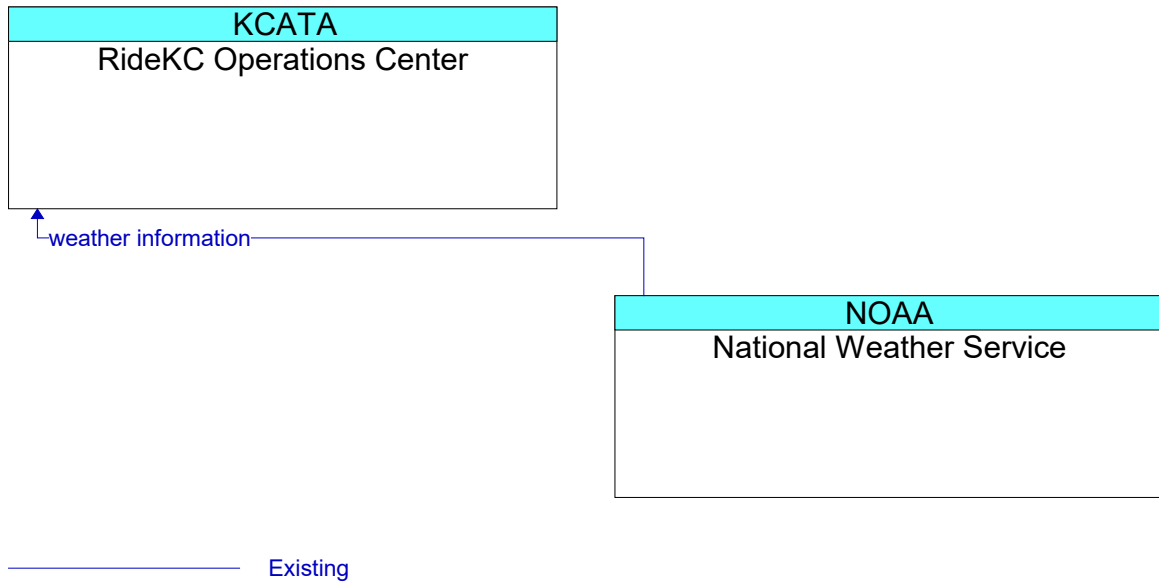


**Figure 1005: National Weather Service - Private ISP Systems Interface**

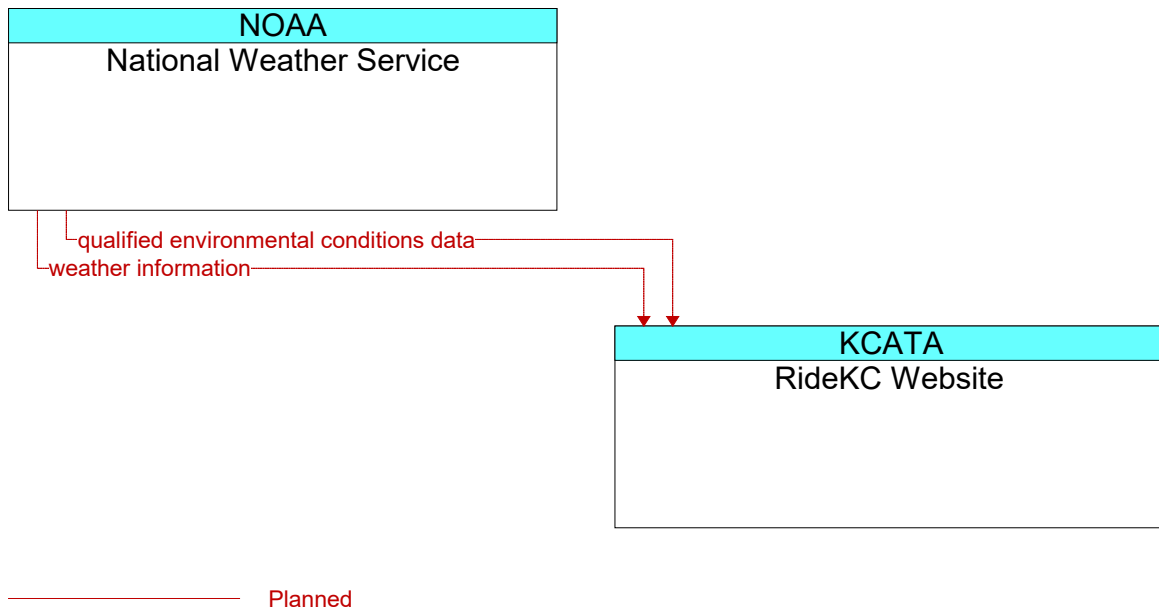


**Figure 1006: National Weather Service - Regional Call Center for Transit Info Interface**

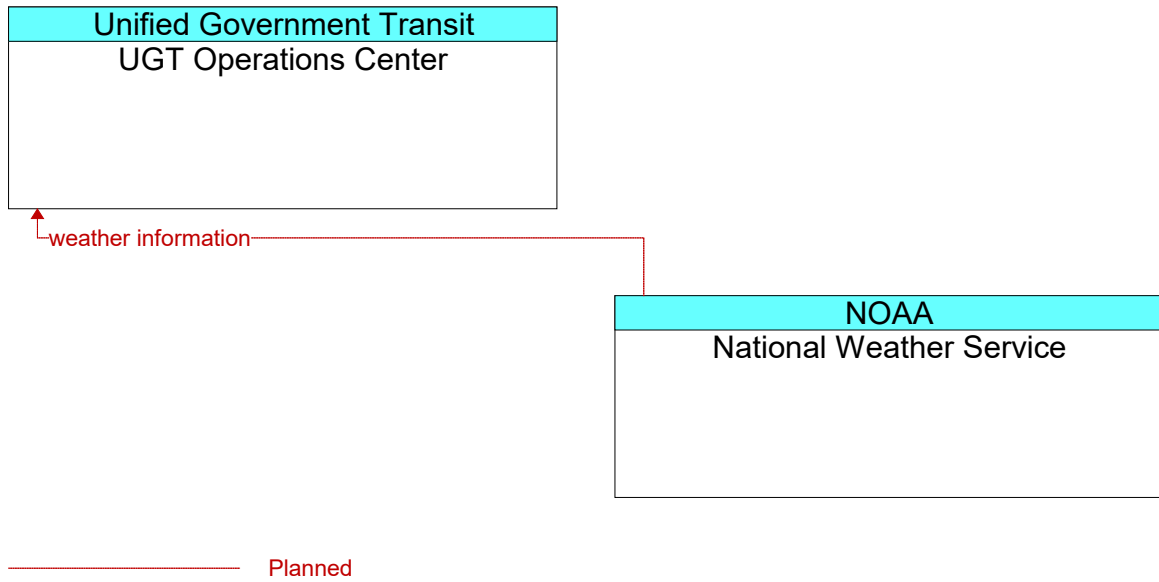




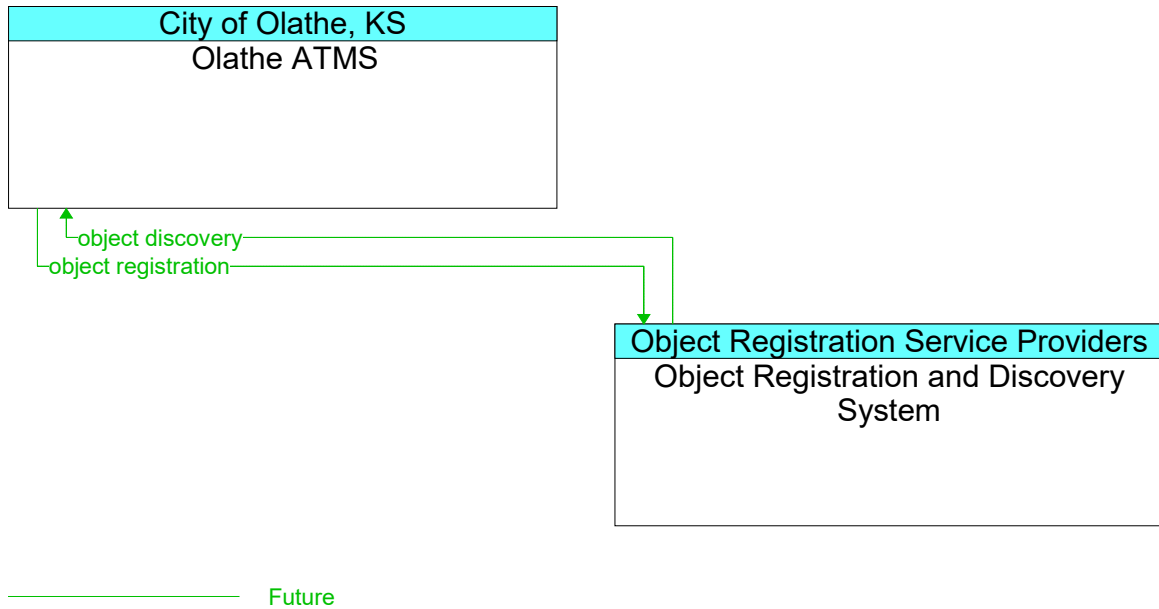
**Figure 1007: National Weather Service - RideKC Operations Center Interface**



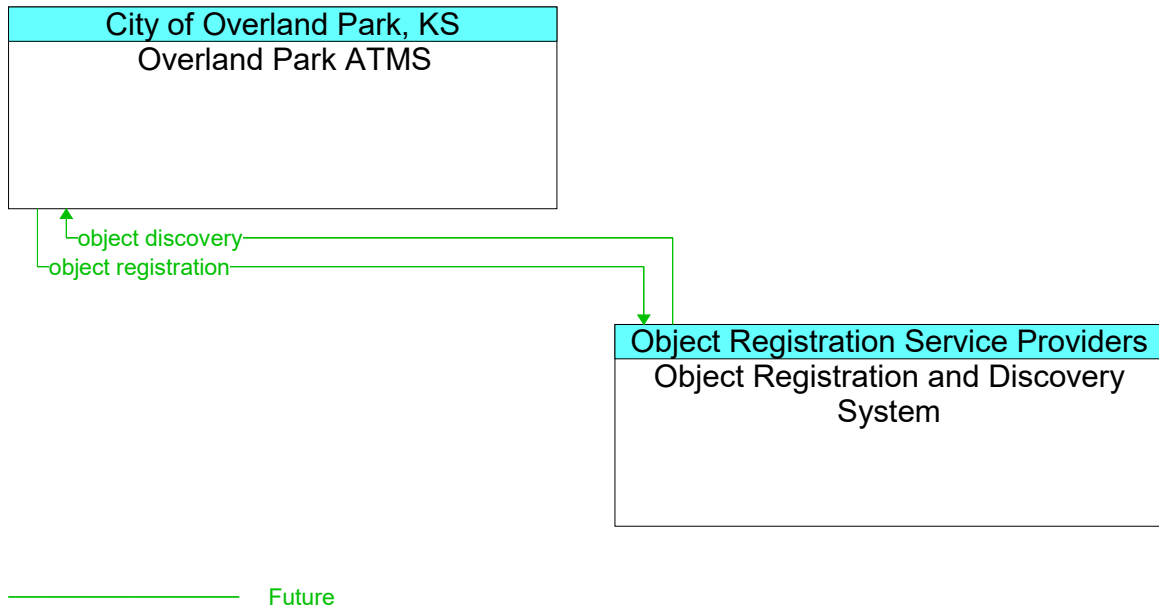
**Figure 1008: National Weather Service - RideKC Website Interface**



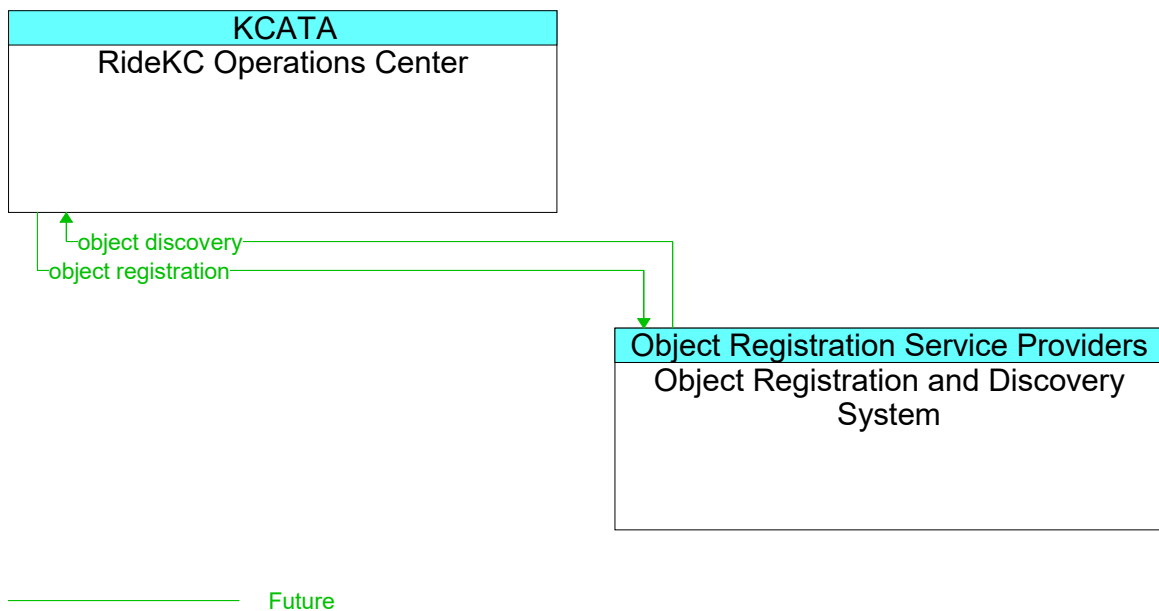
**Figure 1009: National Weather Service - UGT Operations Center Interface**



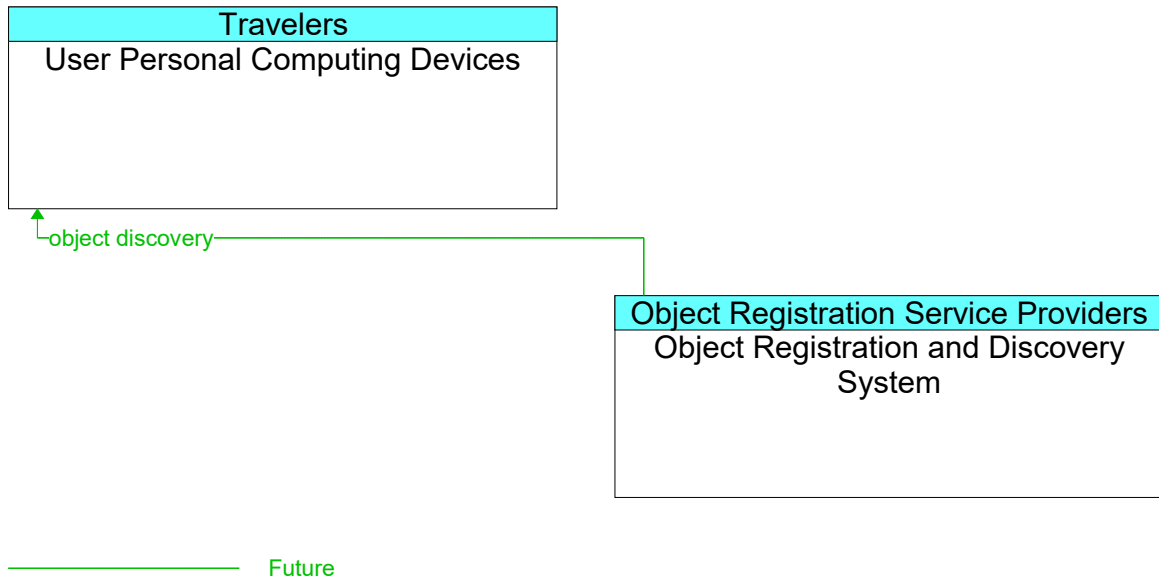
**Figure 1010: Object Registration and Discovery System - Olathe ATMS Interface**



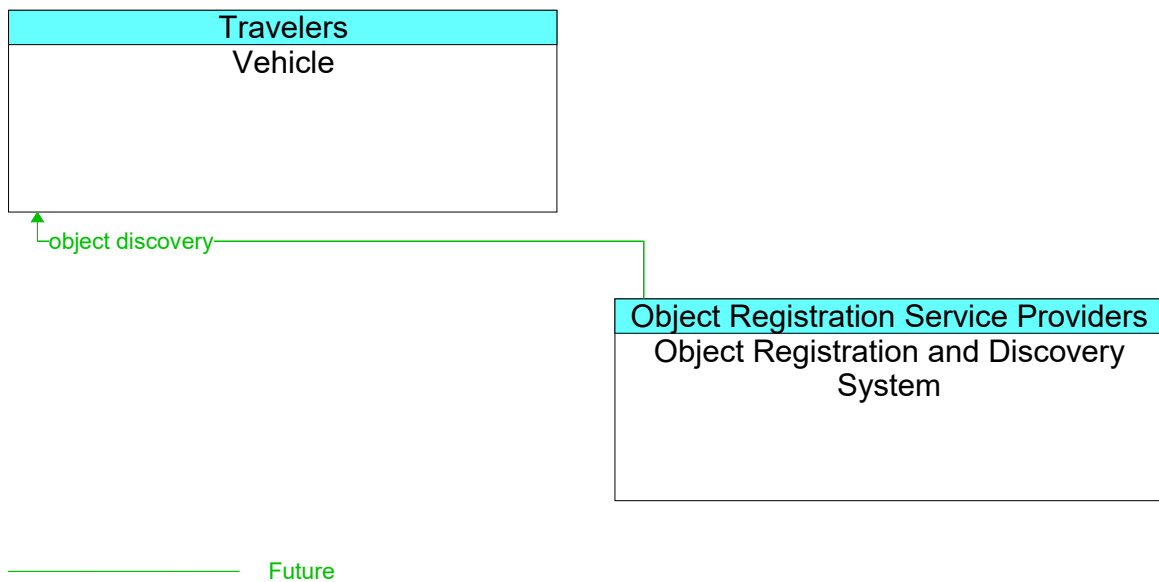
**Figure 1011: Object Registration and Discovery System - Overland Park ATMS Interface**



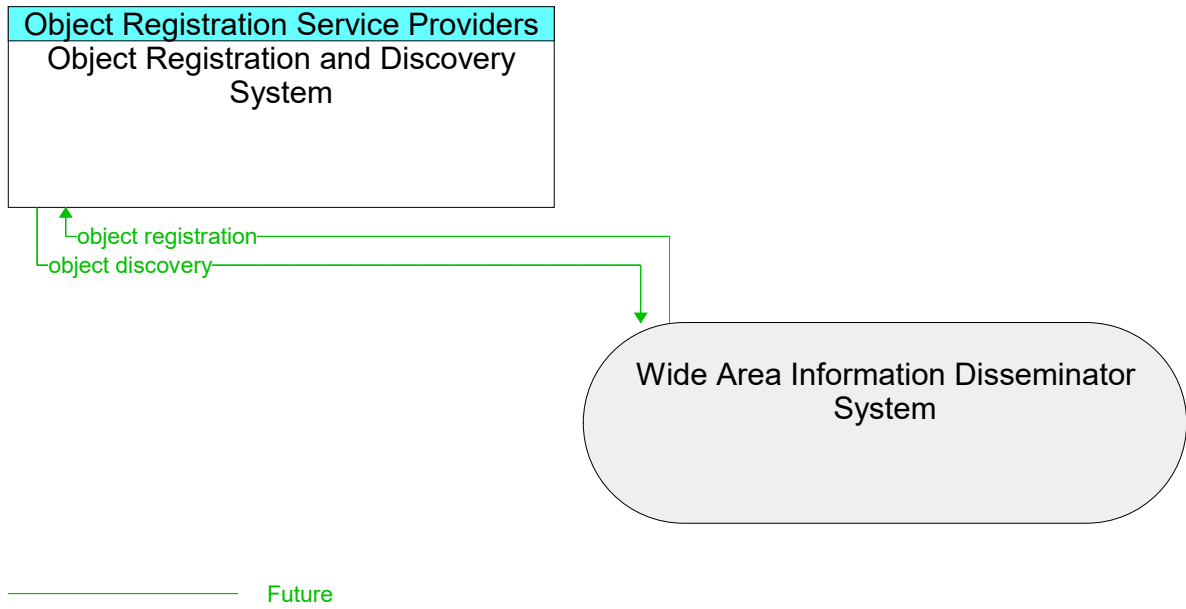
**Figure 1012: Object Registration and Discovery System - RideKC Operations Center Interface**



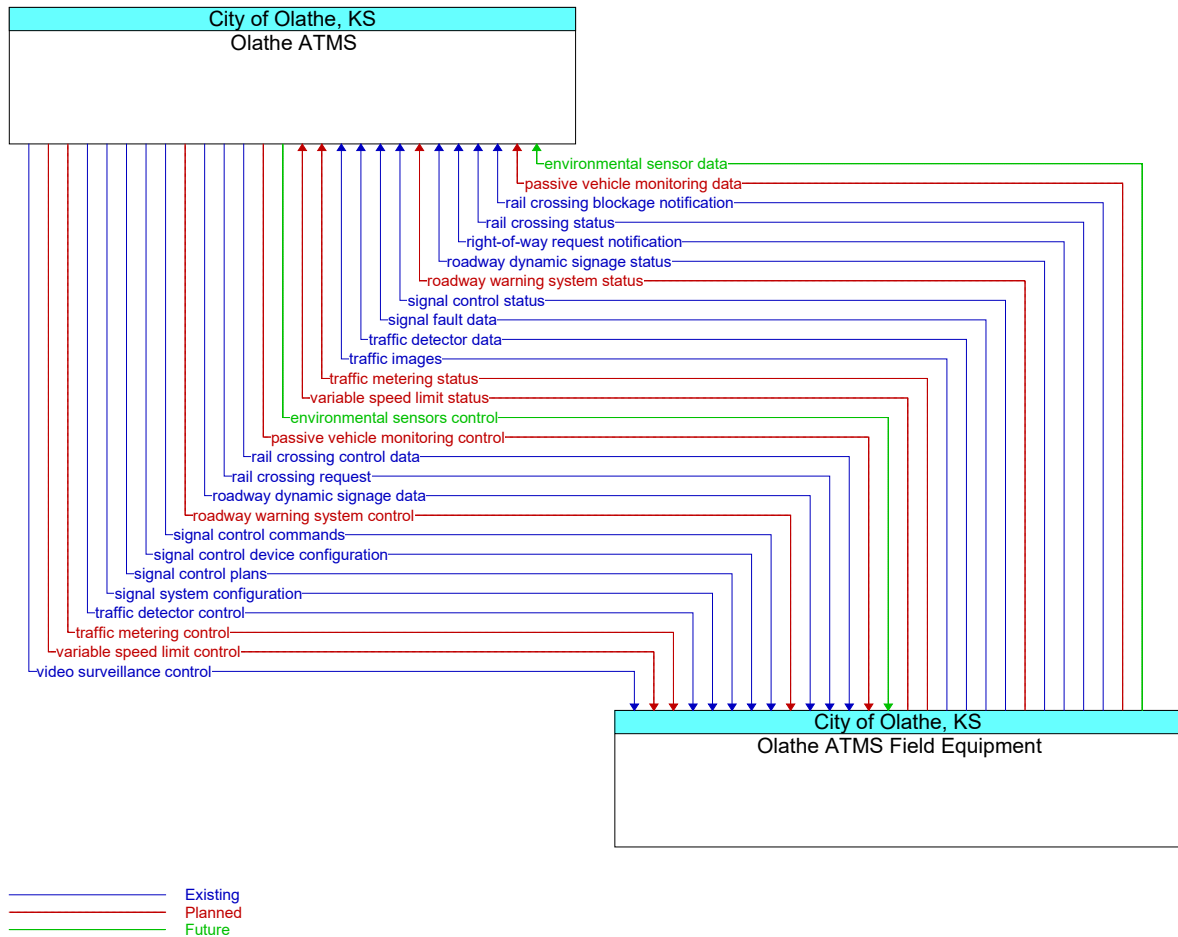
**Figure 1013: Object Registration and Discovery System - User Personal Computing Devices Interface**



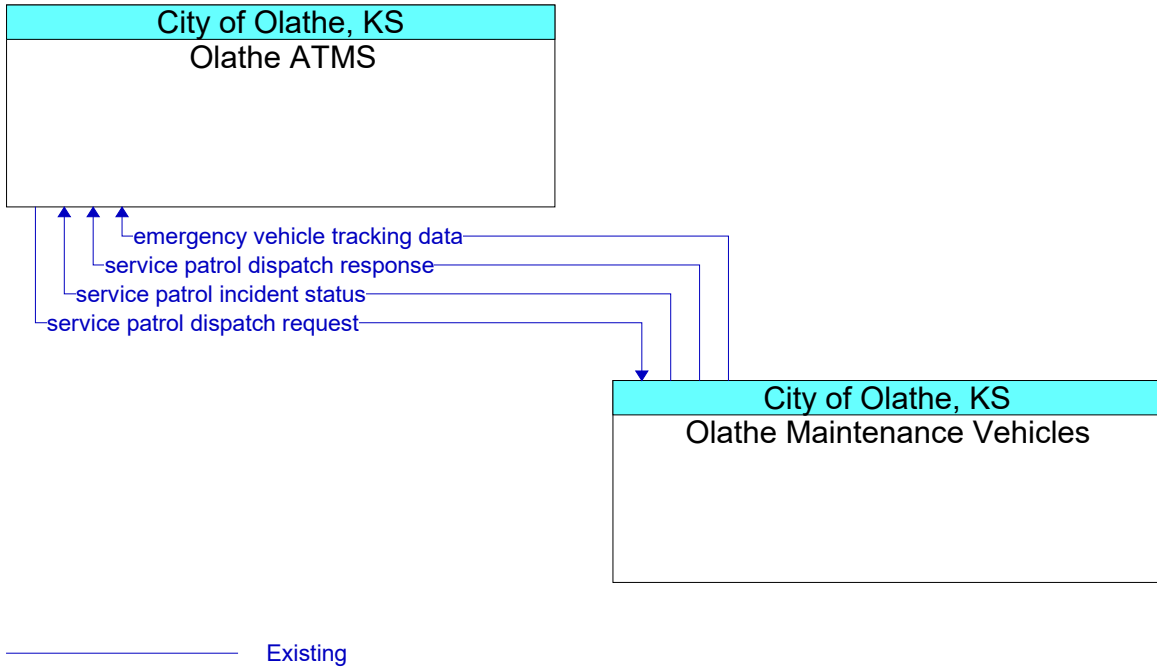
**Figure 1014: Object Registration and Discovery System - Vehicle Interface**



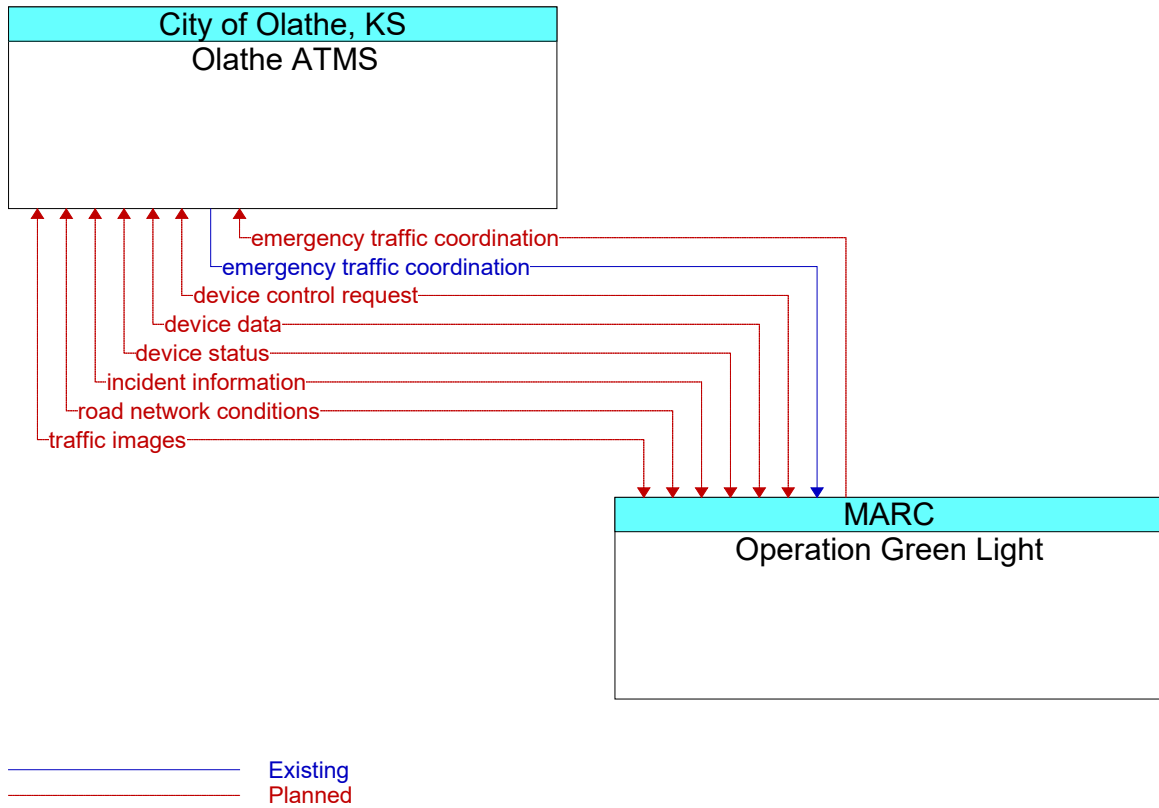
**Figure 1015: Object Registration and Discovery System - Wide Area Information Disseminator System Interface**



**Figure 1016: Olathe ATMS - Olathe ATMS Field Equipment Interface**

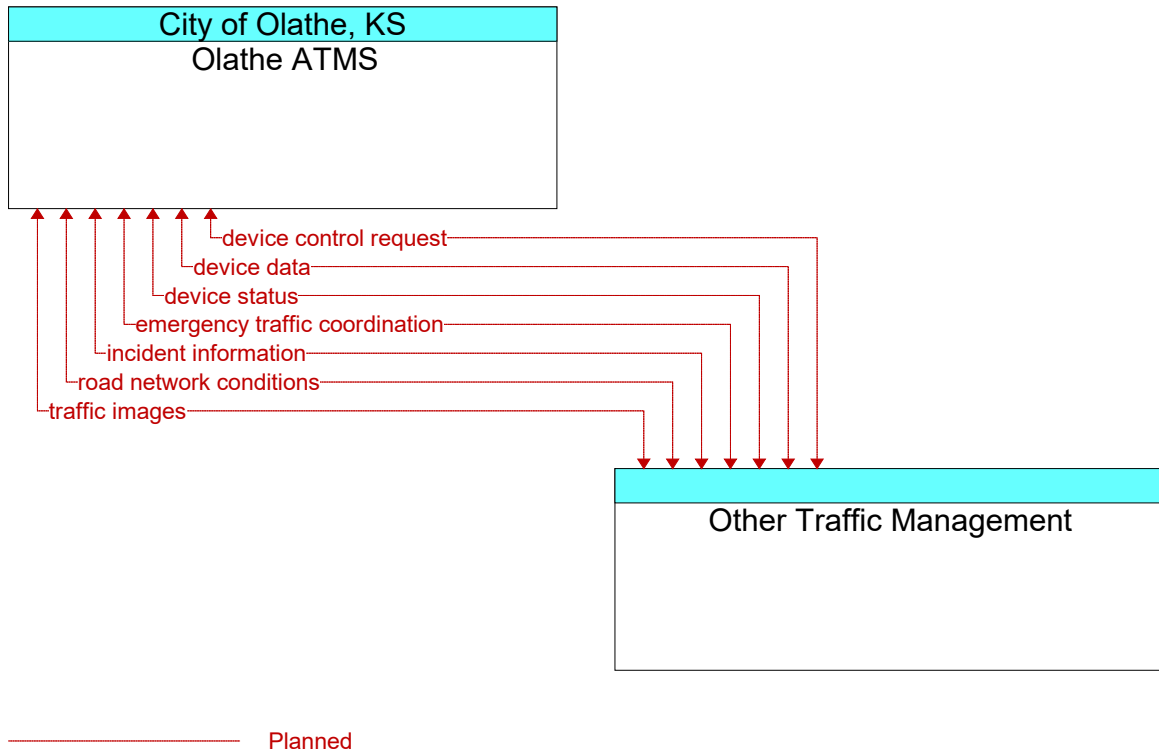


**Figure 1017: Olathe ATMS - Olathe Maintenance Vehicles Interface**

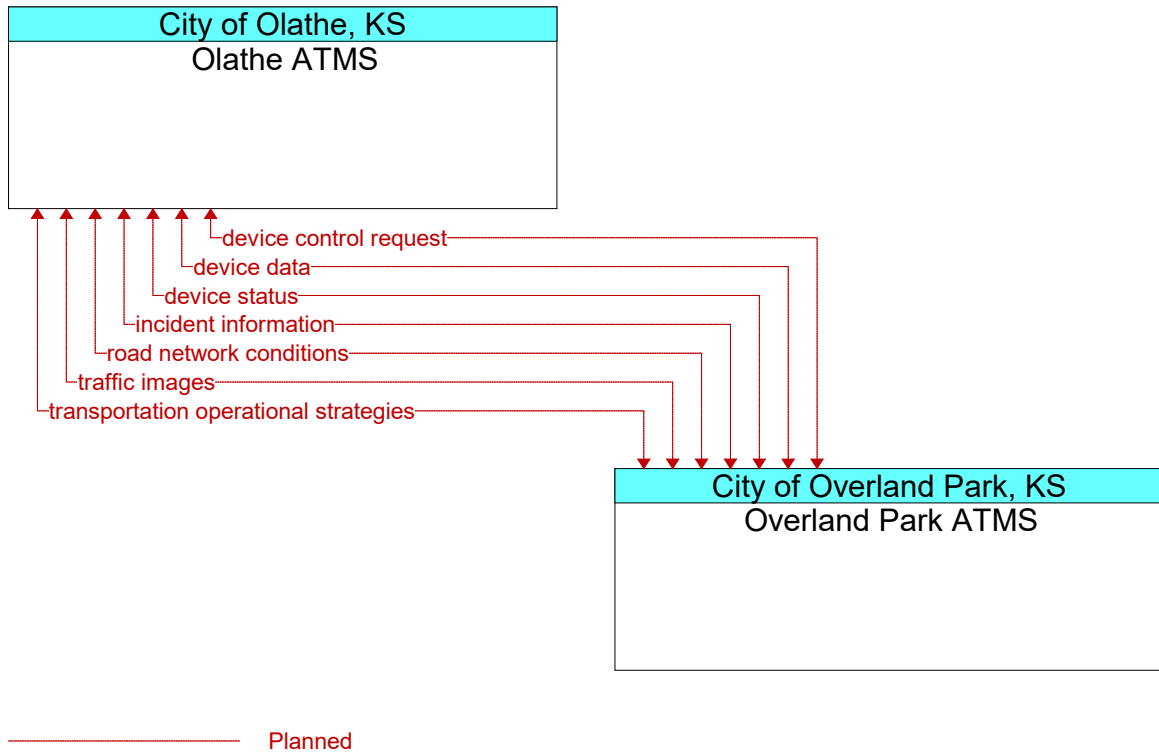


**Figure 1018: Olathe ATMS - Operation Green Light Interface**





**Figure 1019: Olathe ATMS - Other Traffic Management Interface**



**Figure 1020: Olathe ATMS - Overland Park ATMS Interface**

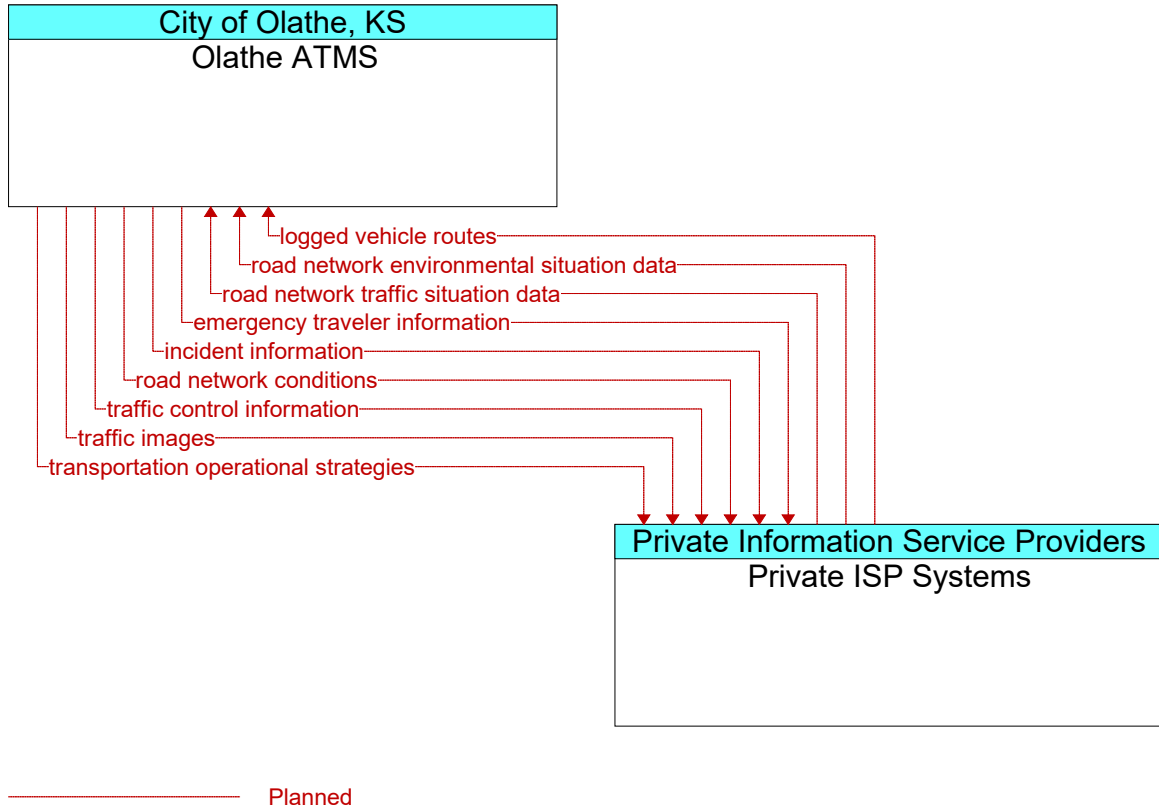
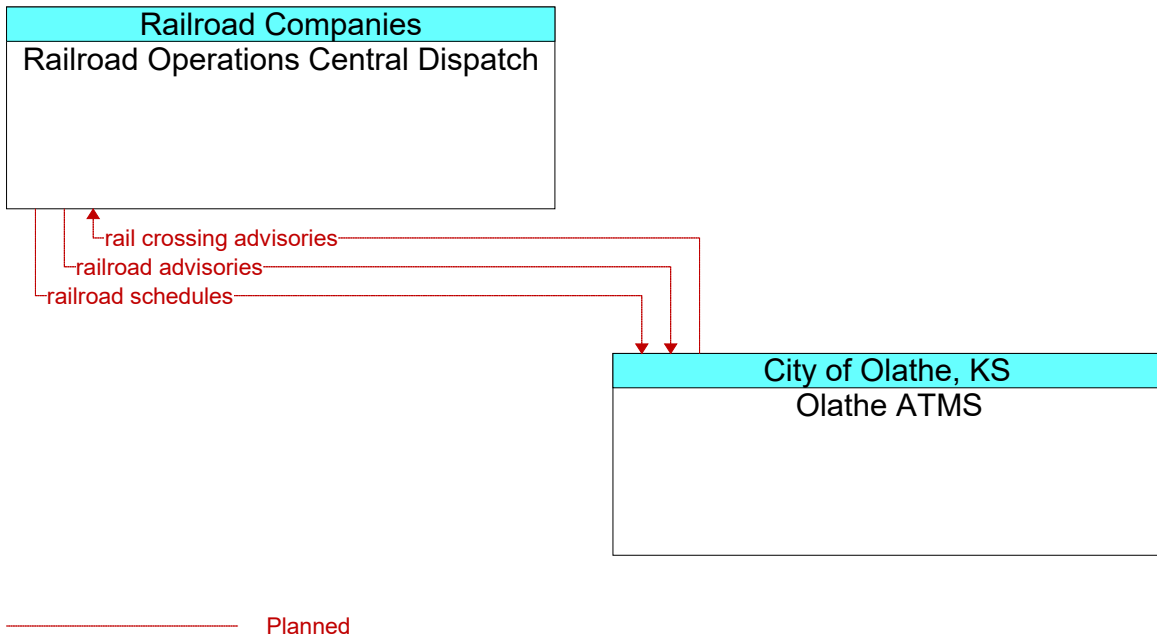
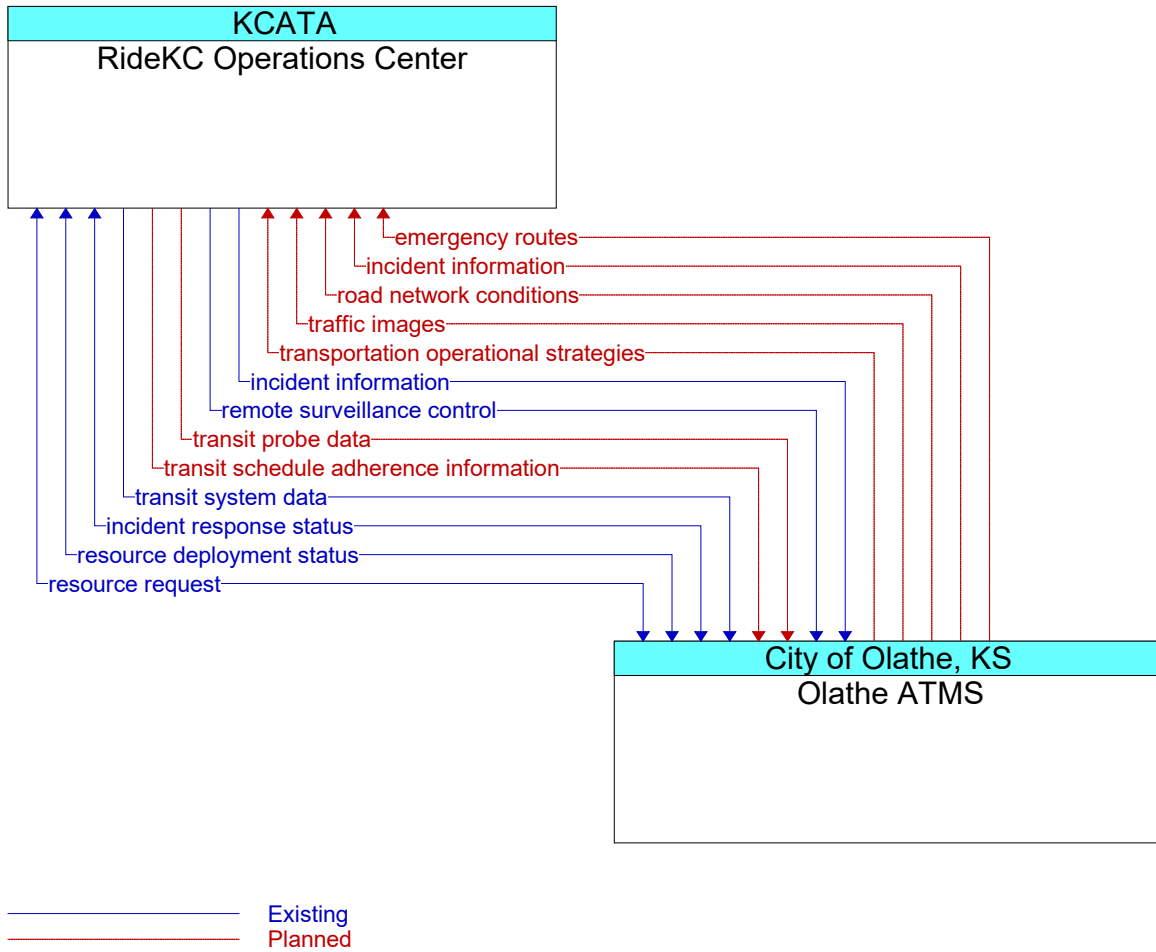


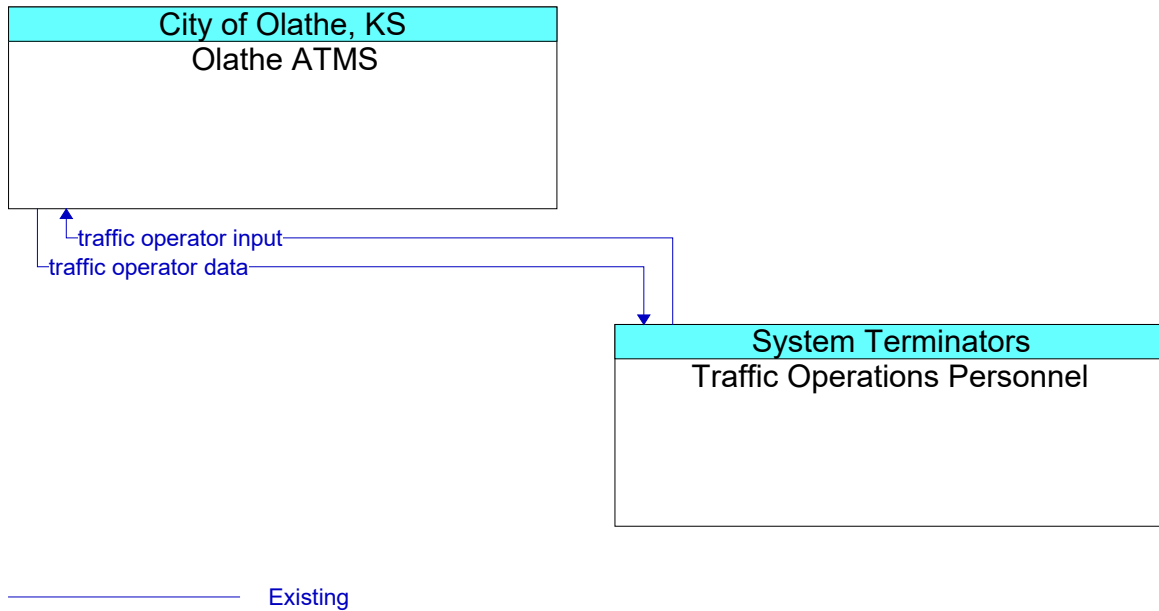
Figure 1021: Olathe ATMS - Private ISP Systems Interface



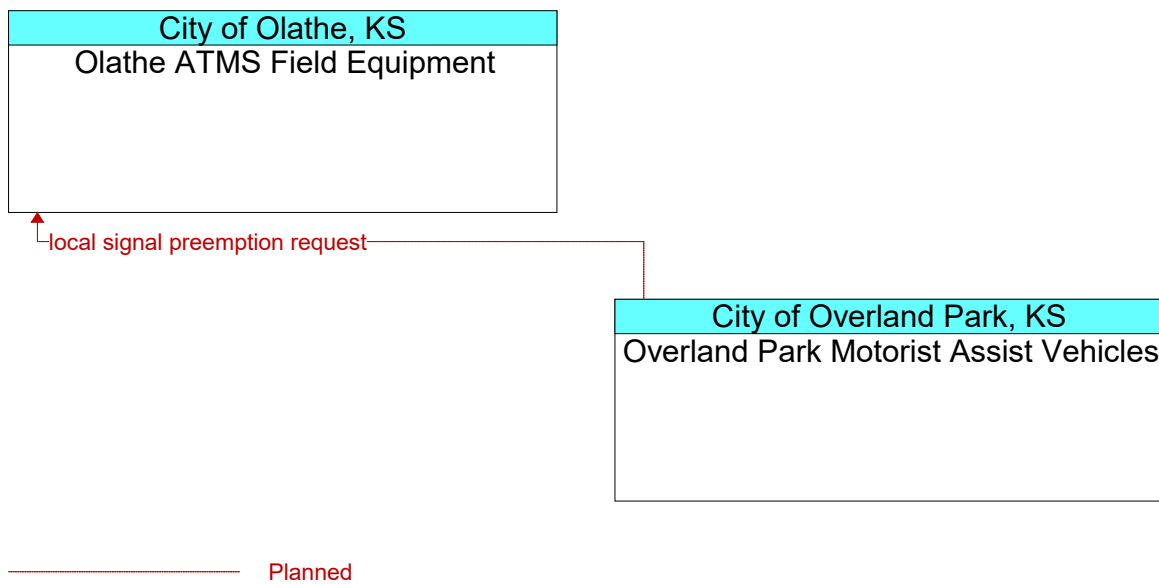
**Figure 1022: Olathe ATMS - Railroad Operations Central Dispatch Interface**



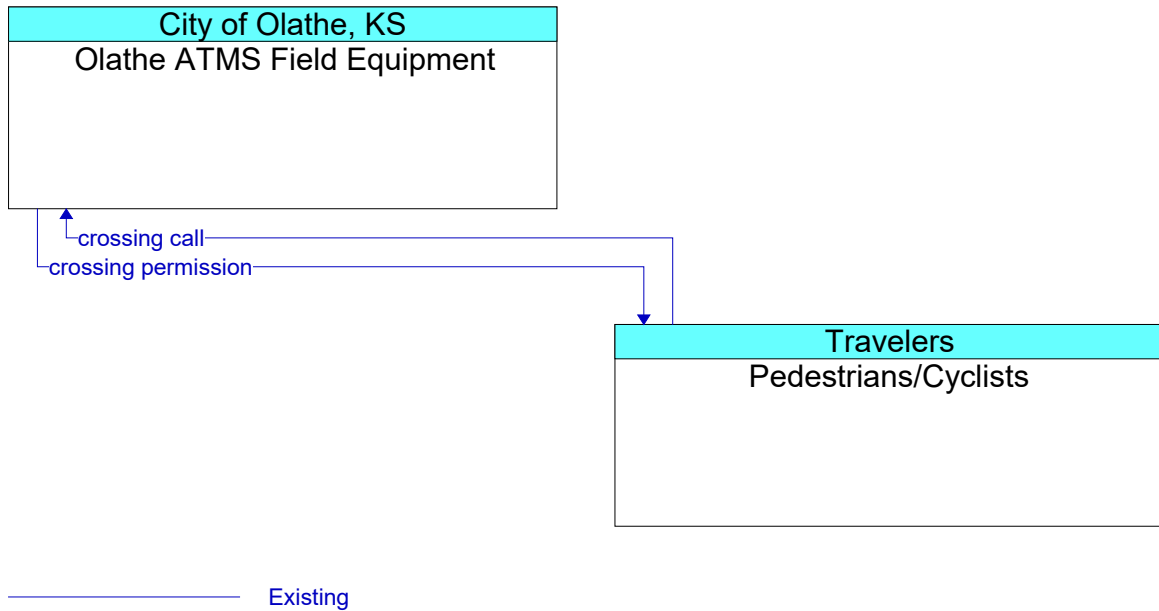
**Figure 1023: Olathe ATMS - RideKC Operations Center Interface**



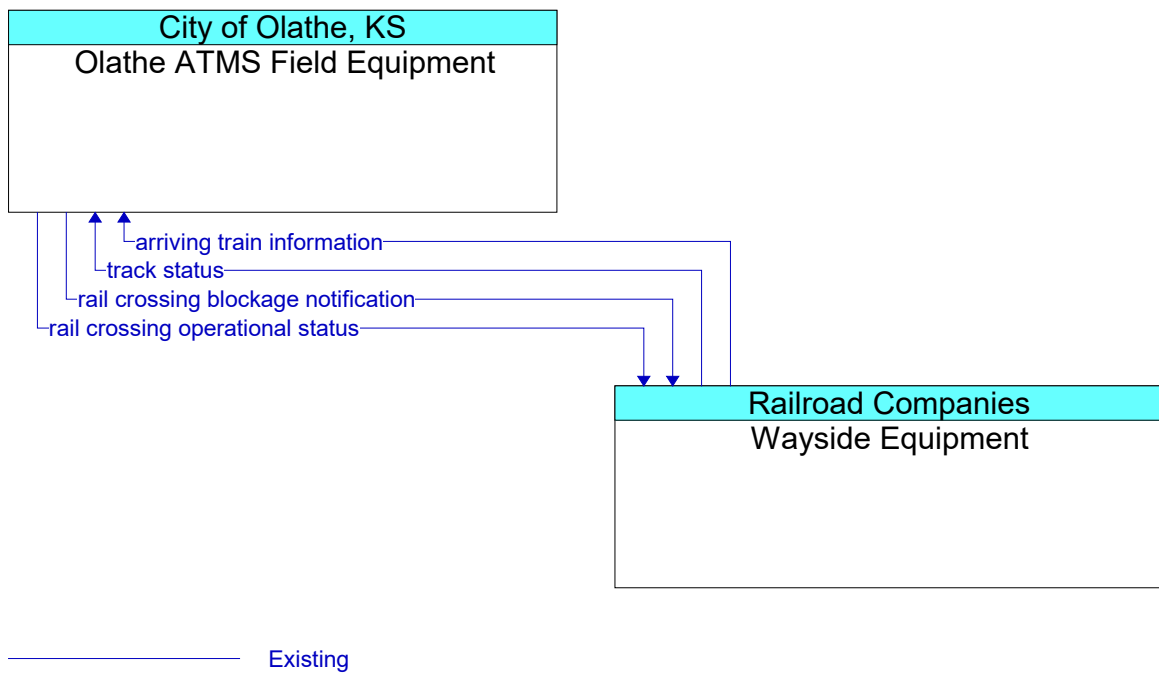
**Figure 1024: Olathe ATMS - Traffic Operations Personnel Interface**



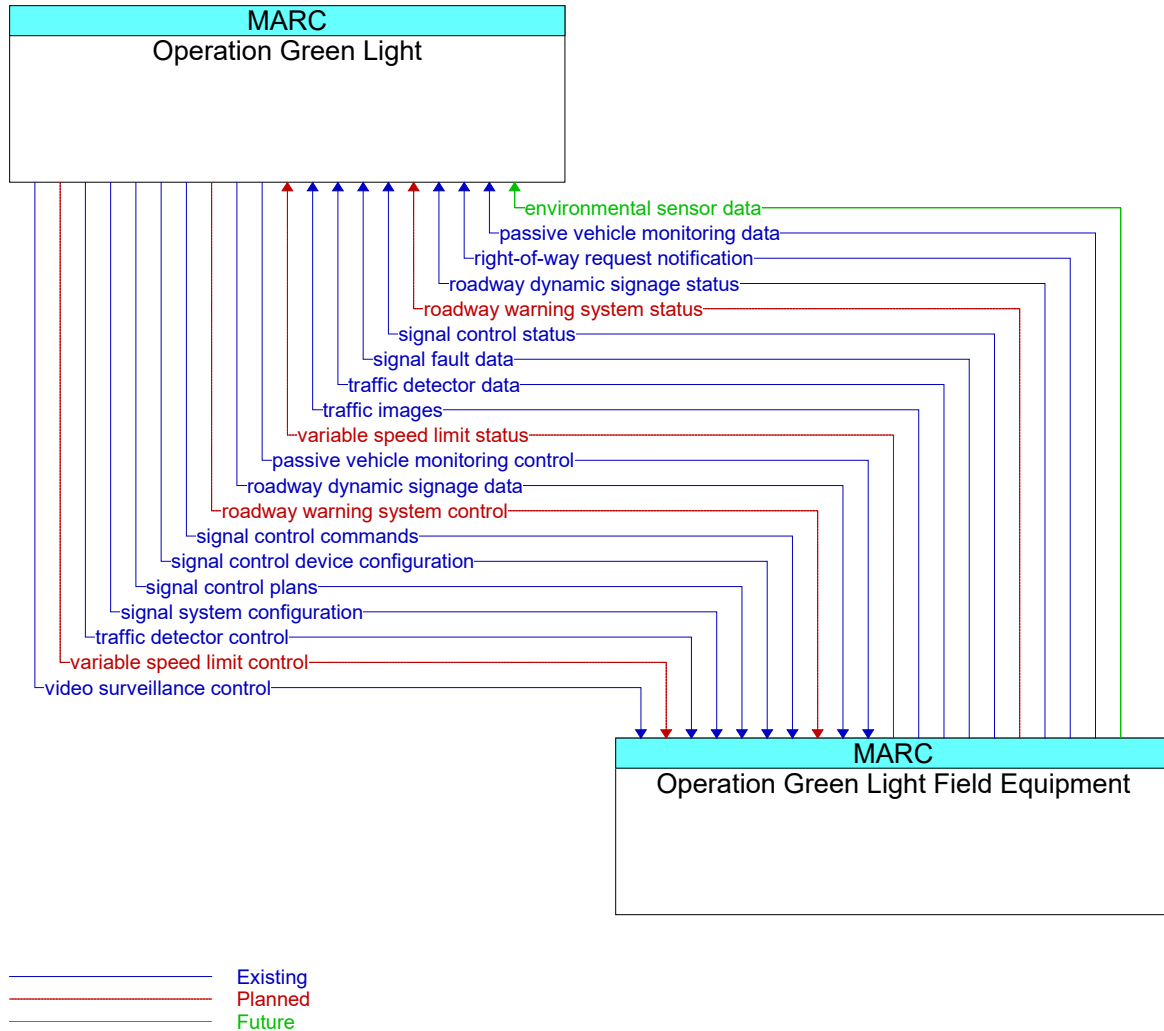
**Figure 1025: Olathe ATMS Field Equipment - Overland Park Motorist Assist Vehicles Interface**



**Figure 1026: Olathe ATMS Field Equipment - Pedestrians/Cyclists Interface**

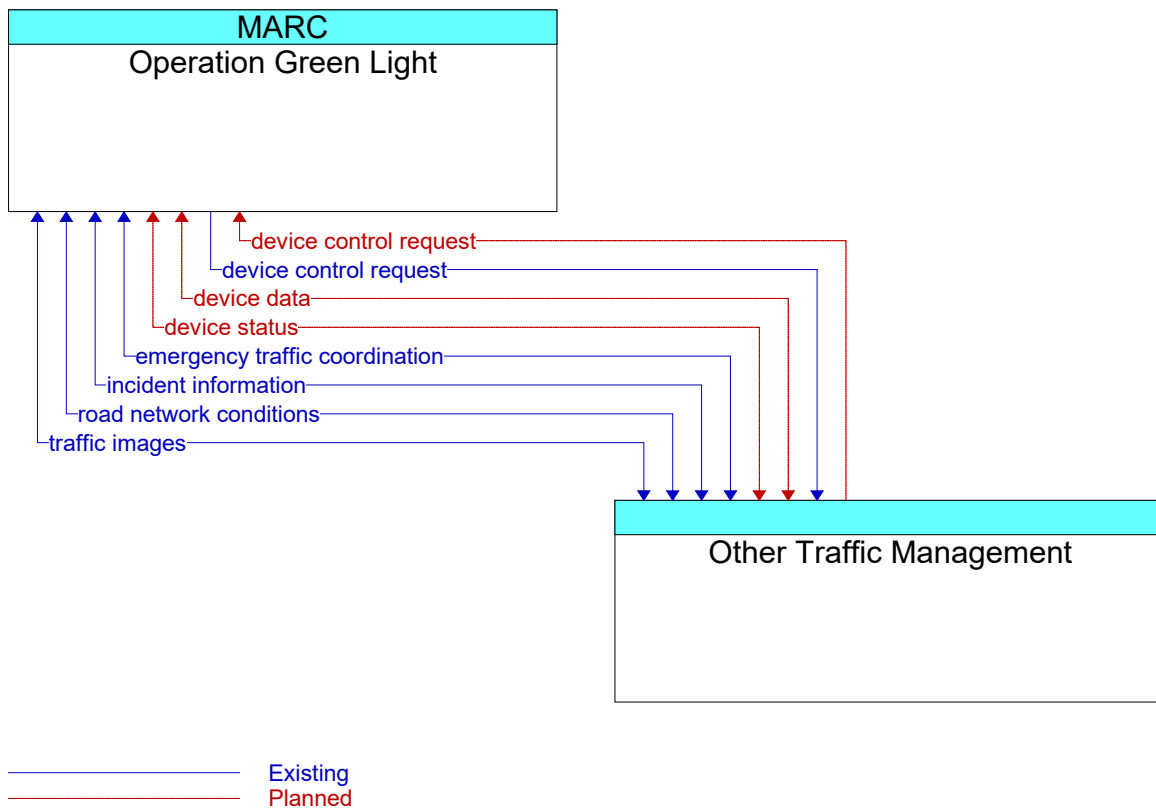


**Figure 1027: Olathe ATMS Field Equipment - Wayside Equipment Interface**

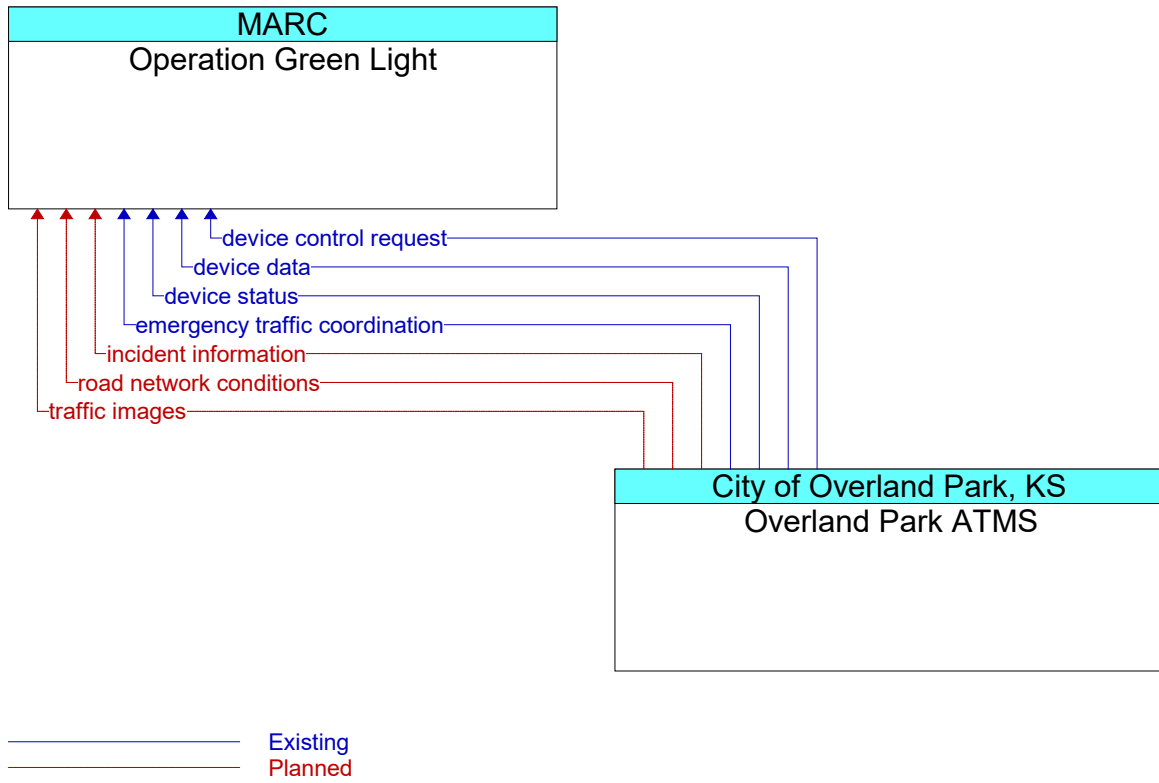


**Figure 1028: Operation Green Light - Operation Green Light Field Equipment Interface**

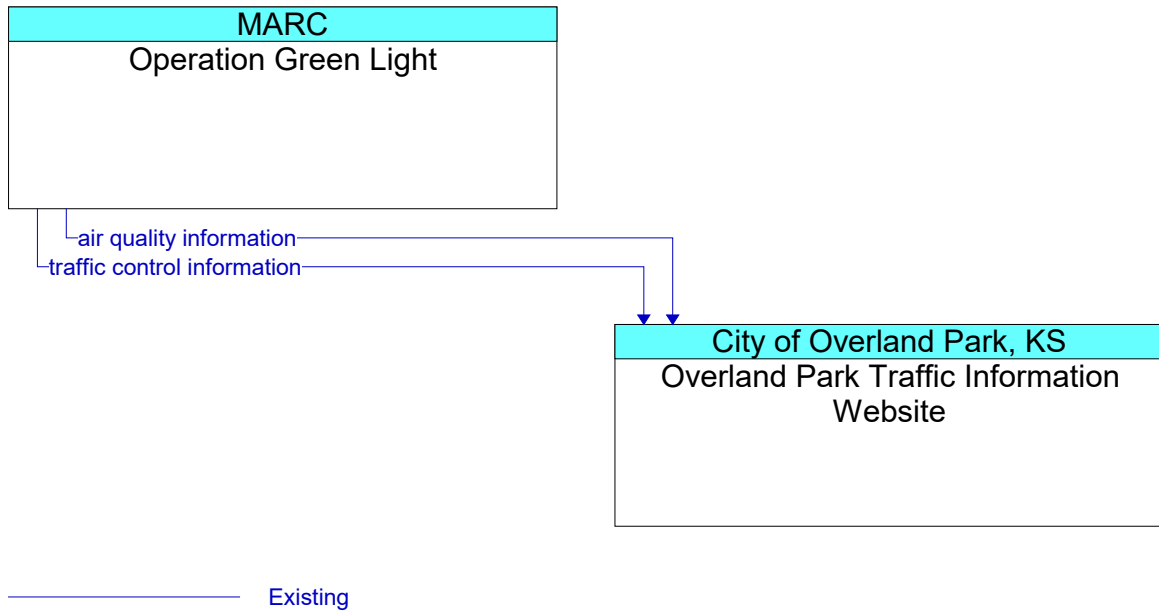




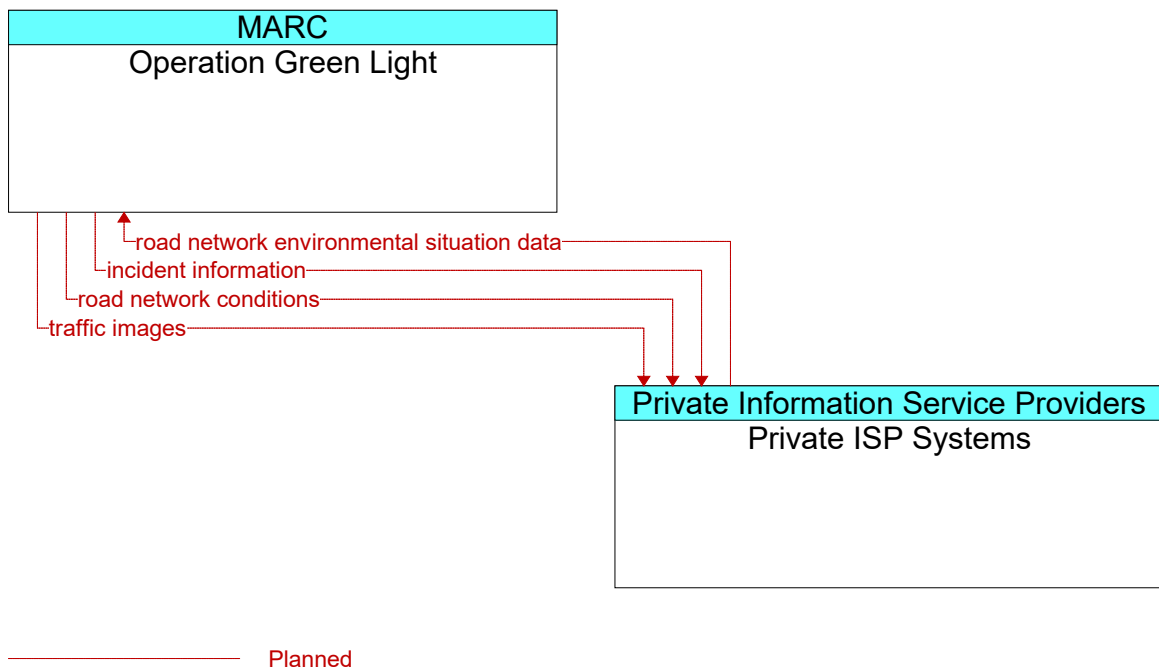
**Figure 1029: Operation Green Light - Other Traffic Management Interface**



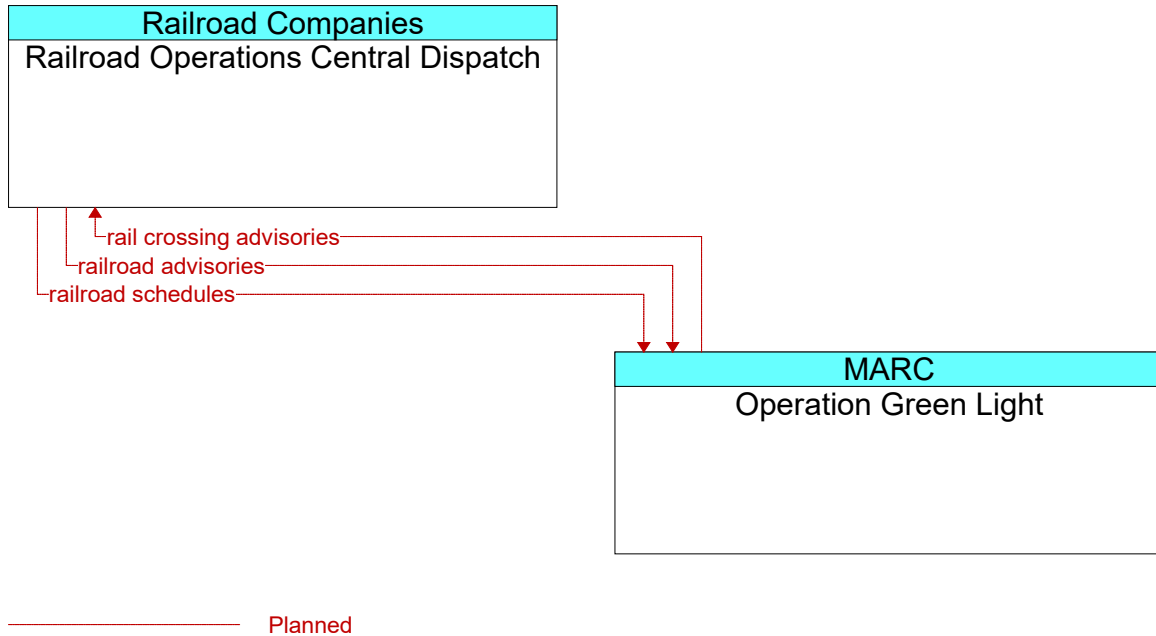
**Figure 1030: Operation Green Light - Overland Park ATMS Interface**



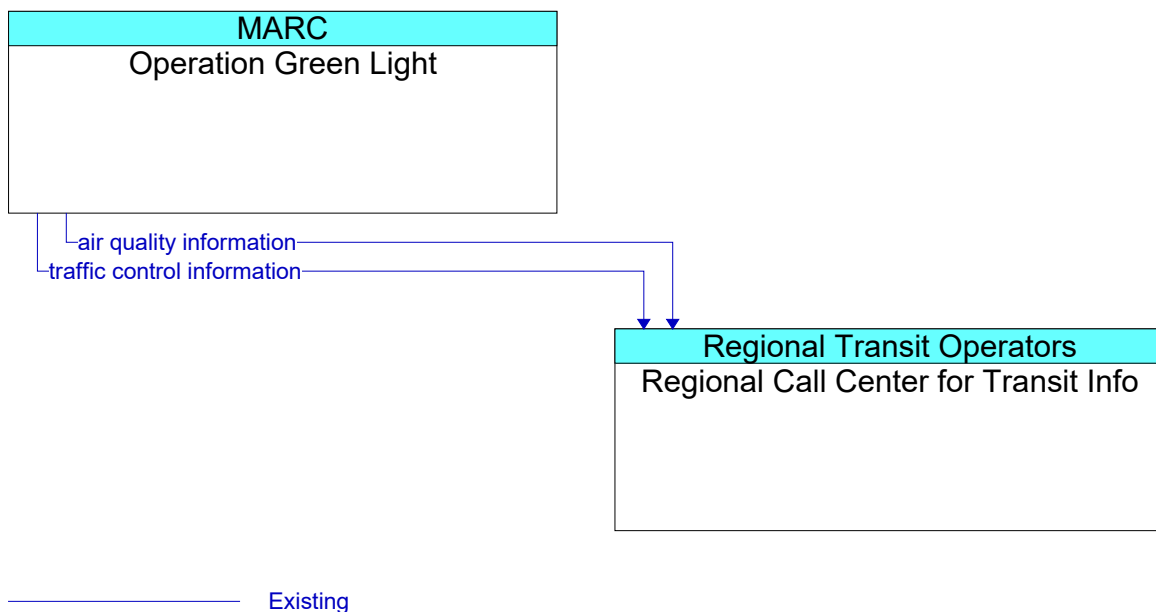
**Figure 1031: Operation Green Light - Overland Park Traffic Information Website Interface**



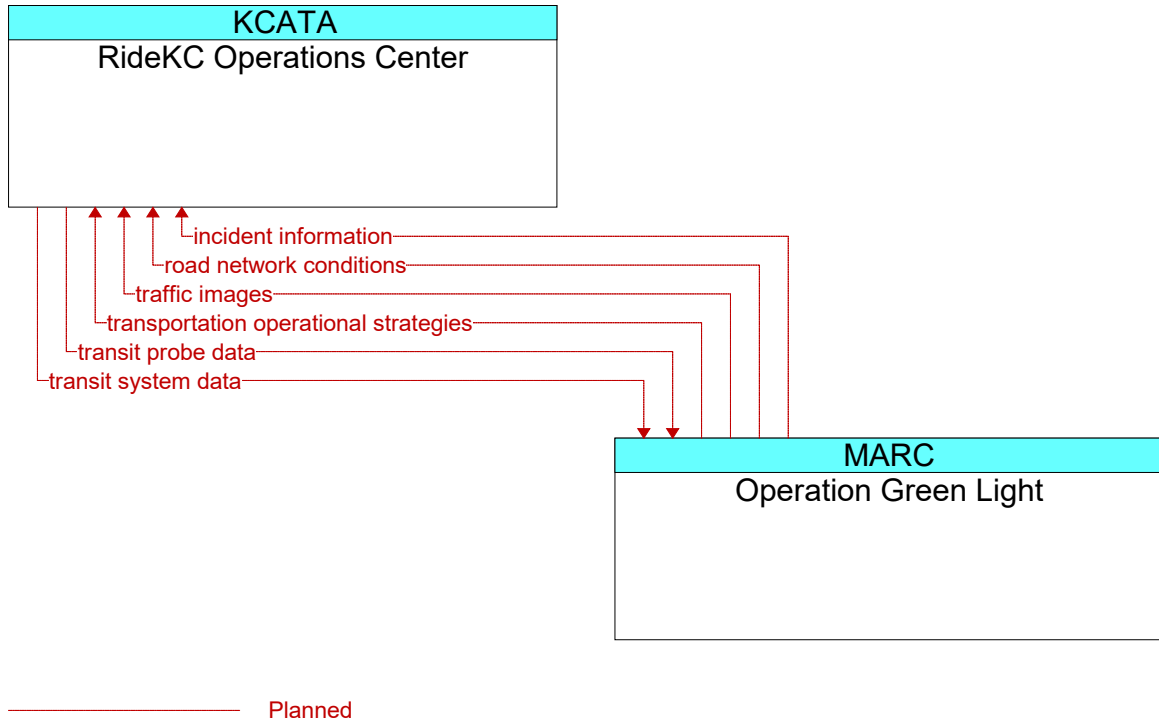
**Figure 1032: Operation Green Light - Private ISP Systems Interface**



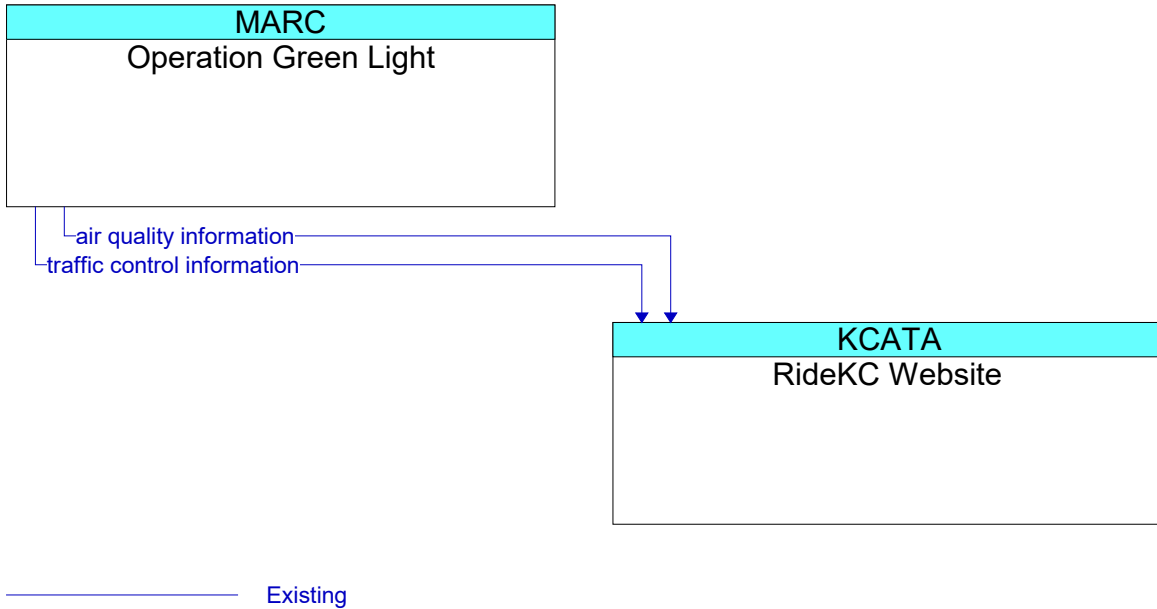
**Figure 1033: Operation Green Light - Railroad Operations Central Dispatch Interface**



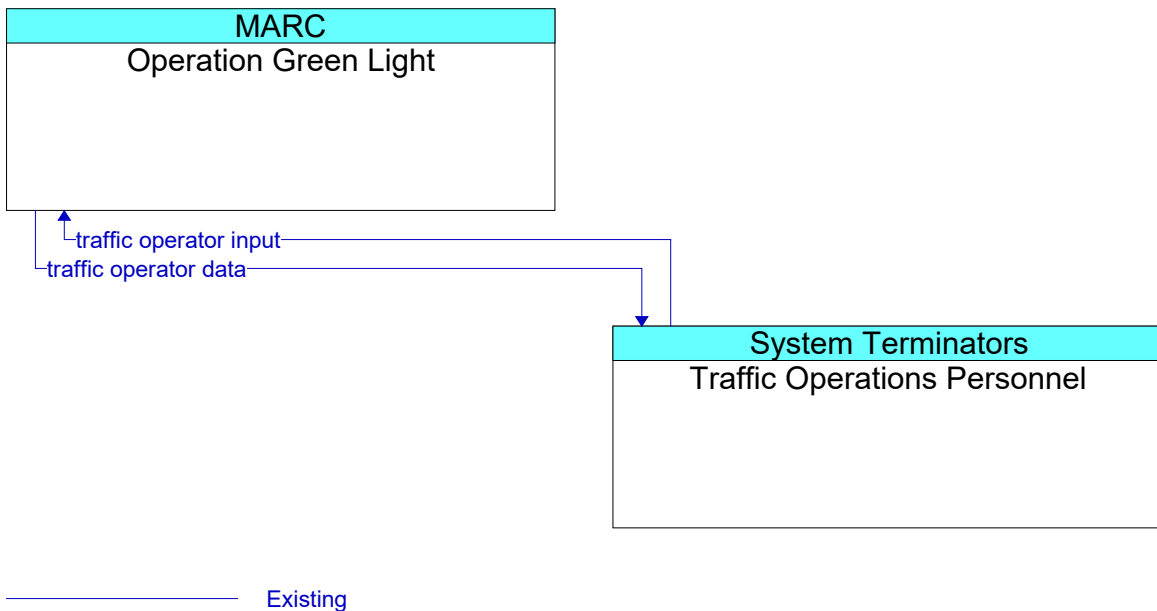
**Figure 1034: Operation Green Light - Regional Call Center for Transit Info Interface**



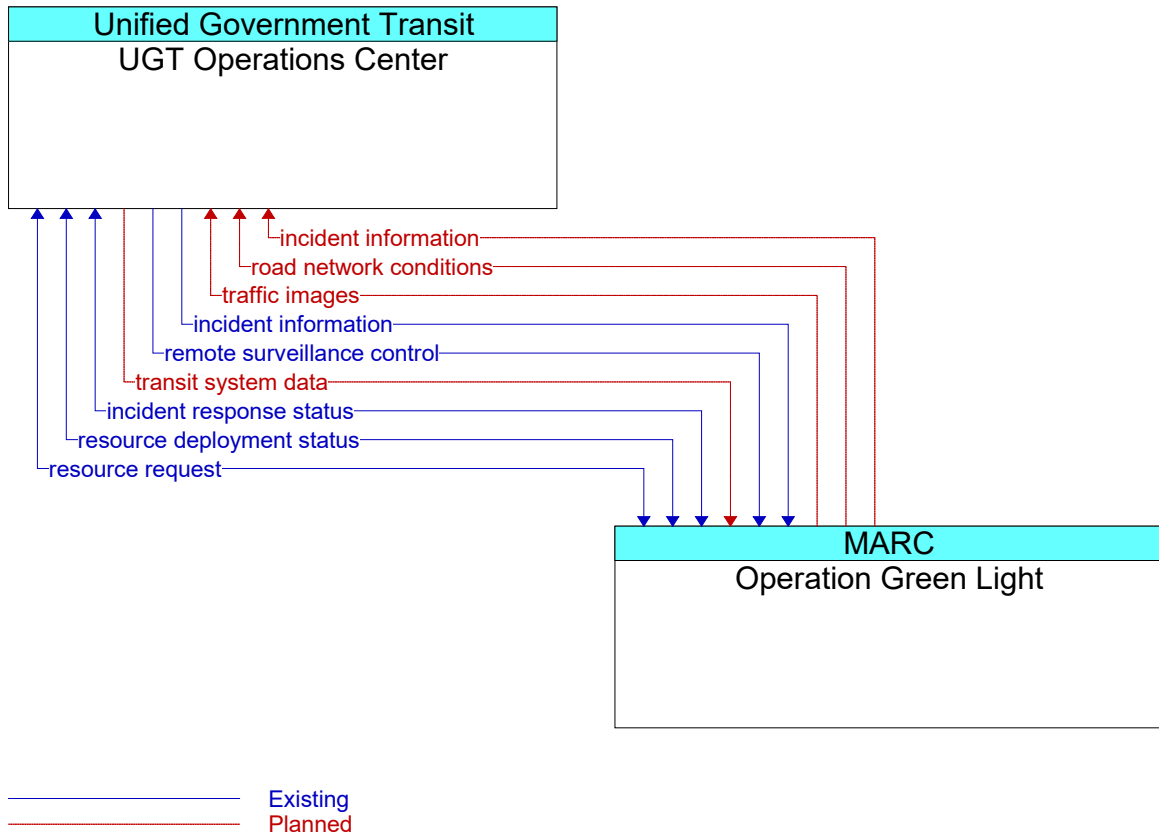
**Figure 1035: Operation Green Light - RideKC Operations Center Interface**



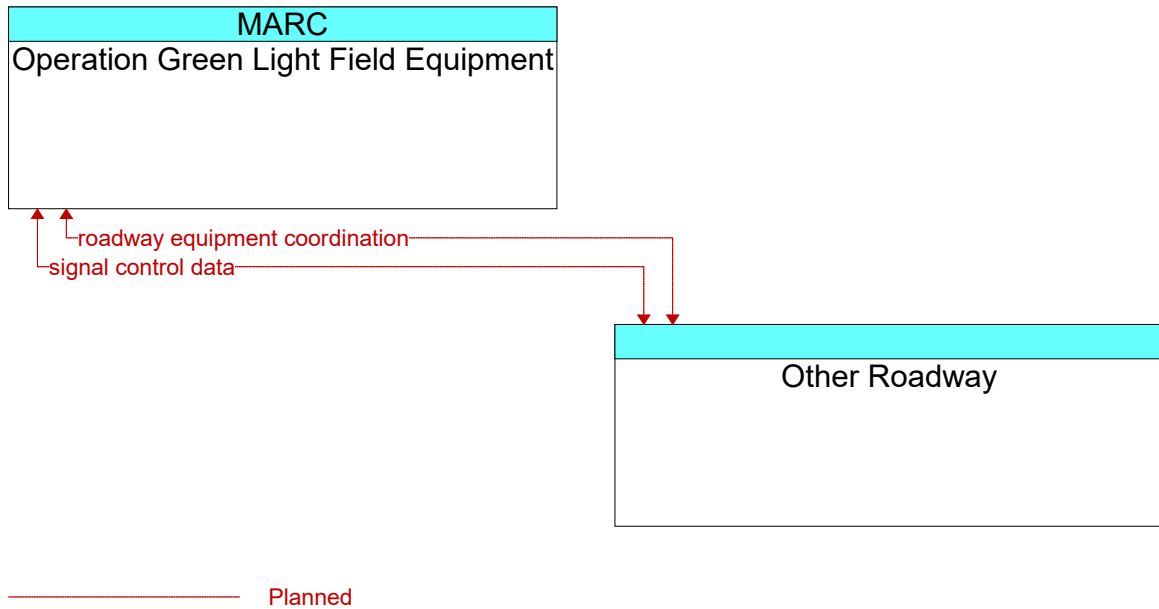
**Figure 1036: Operation Green Light - RideKC Website Interface**



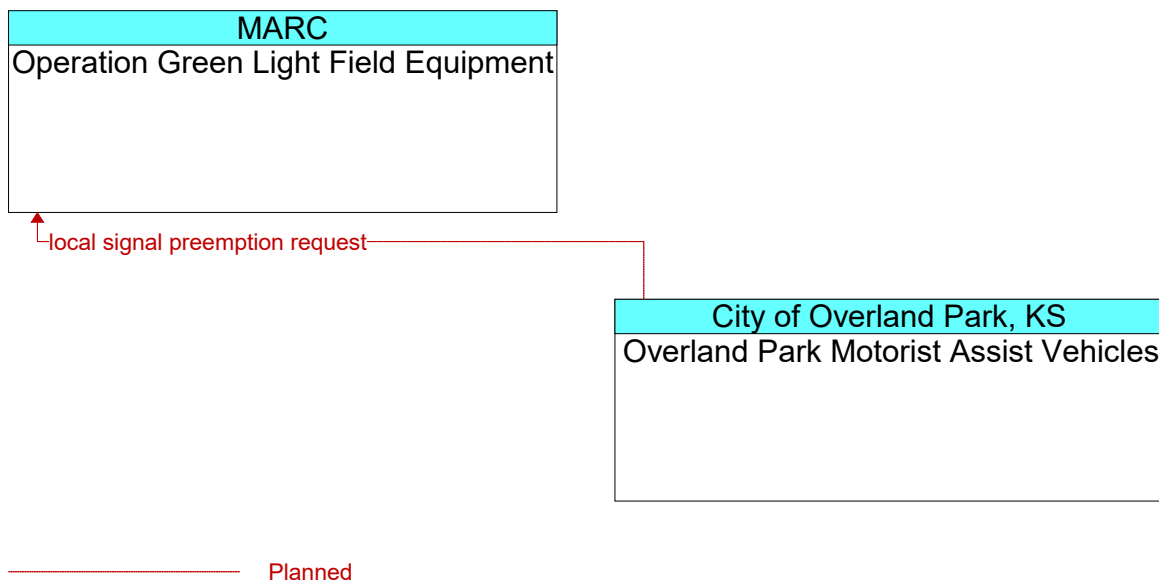
**Figure 1037: Operation Green Light - Traffic Operations Personnel Interface**



**Figure 1038: Operation Green Light - UGT Operations Center Interface**

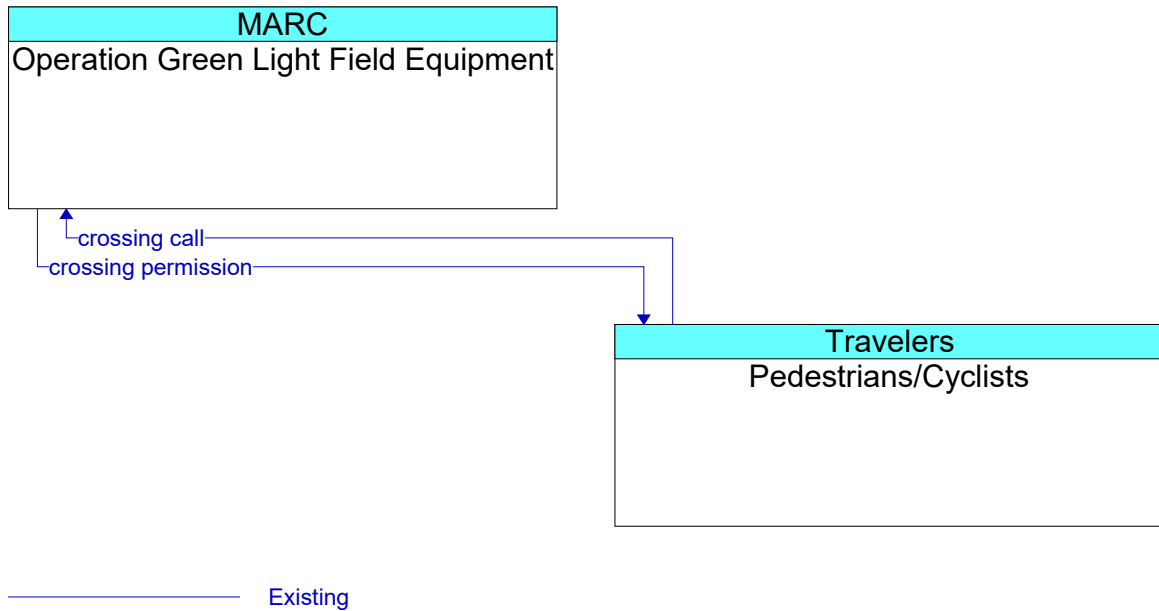


**Figure 1039: Operation Green Light Field Equipment - Other Roadway Interface**

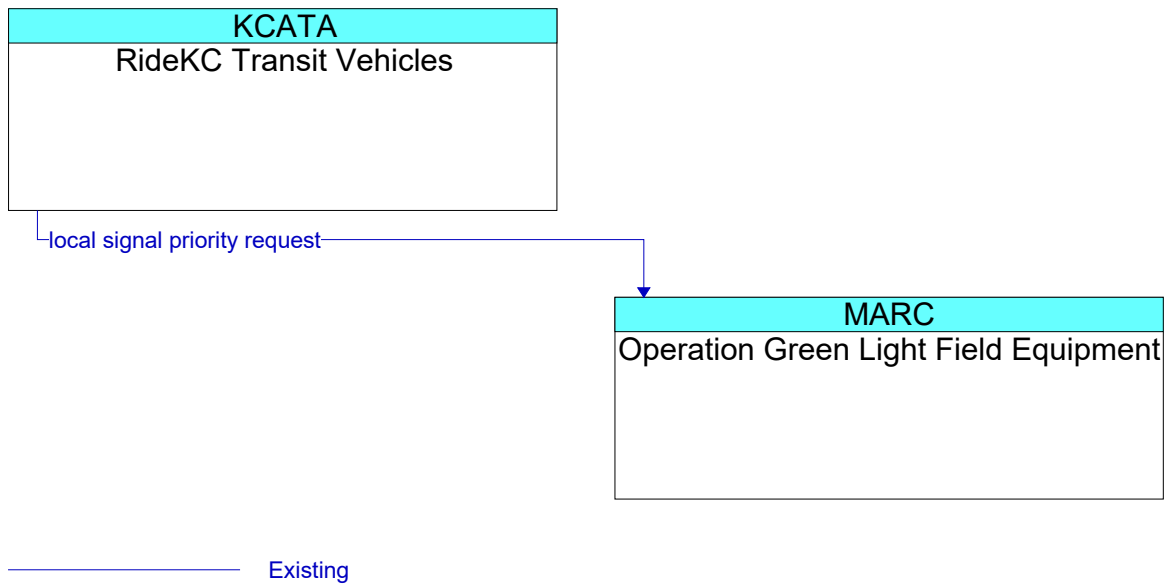


**Figure 1040: Operation Green Light Field Equipment - Overland Park Motorist Assist Vehicles Interface**

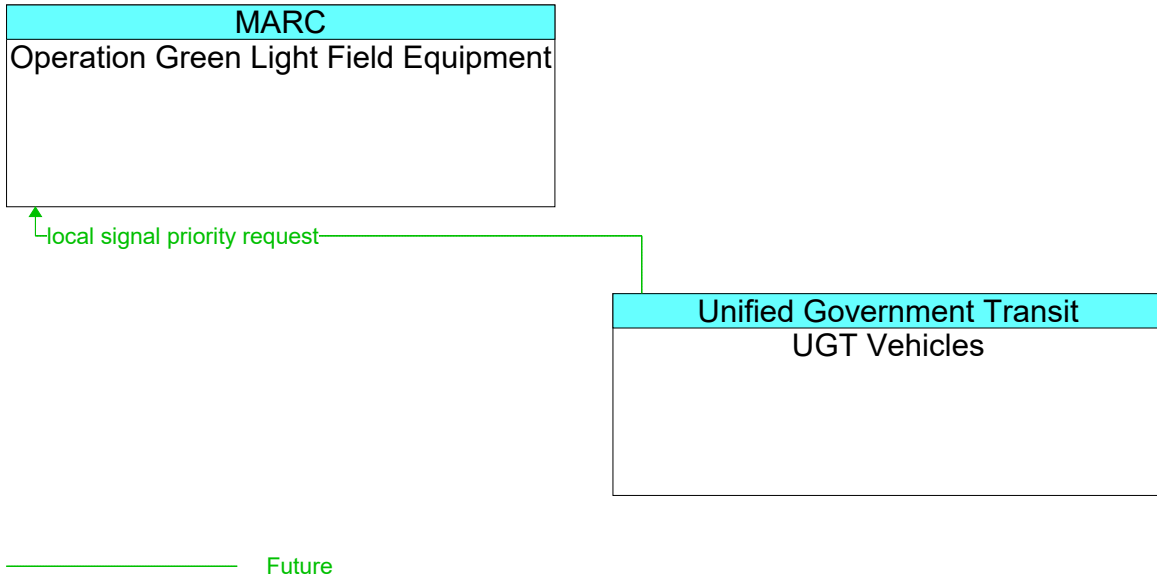




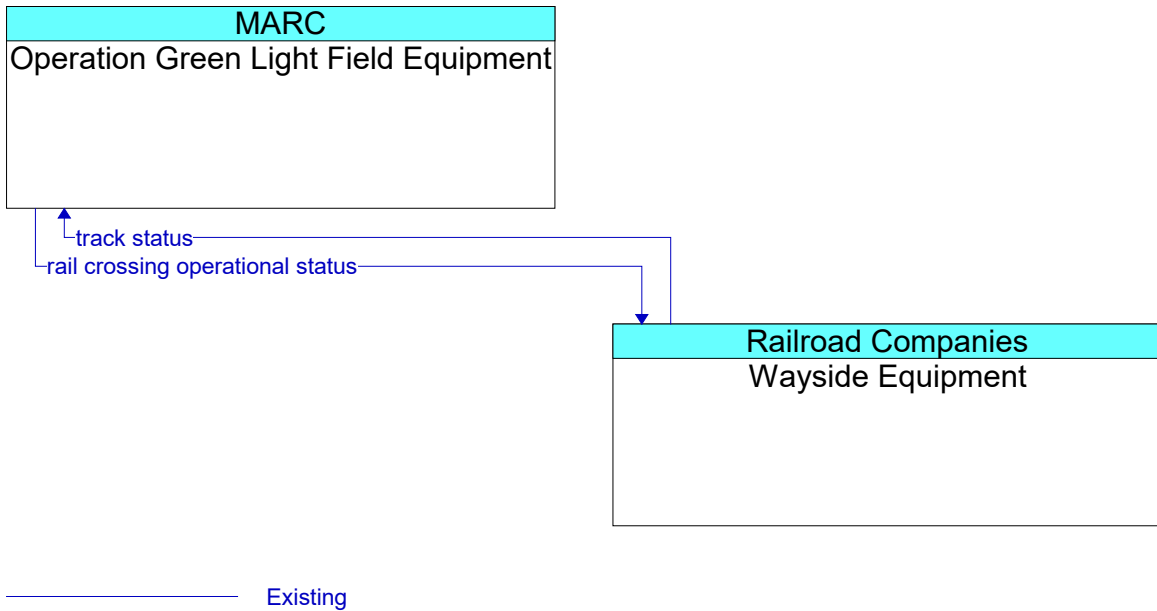
**Figure 1041: Operation Green Light Field Equipment - Pedestrians/Cyclists Interface**



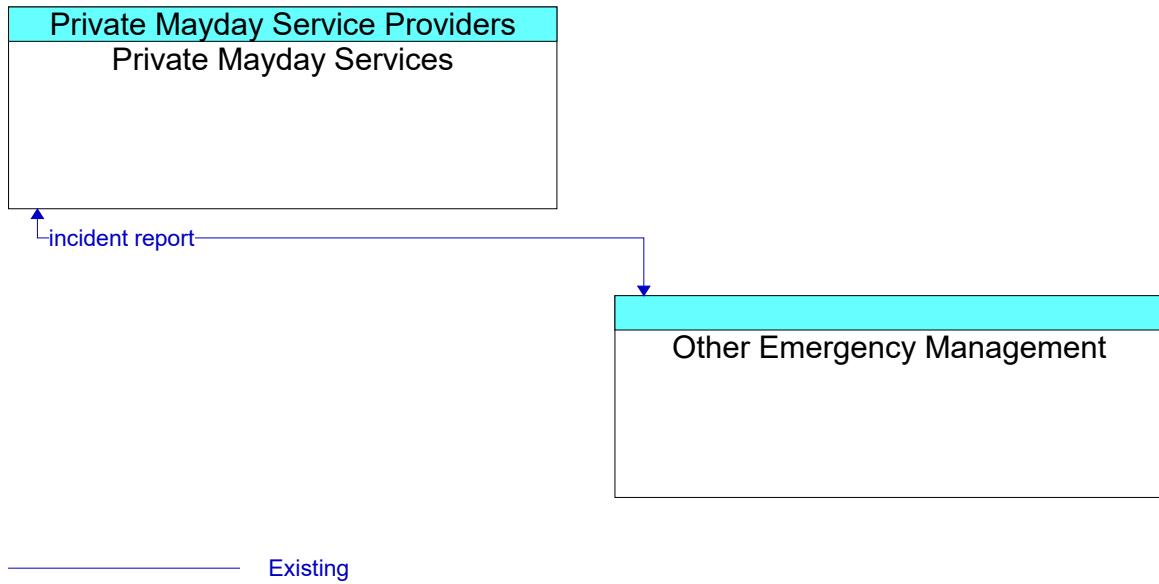
**Figure 1042: Operation Green Light Field Equipment - RideKC Transit Vehicles Interface**



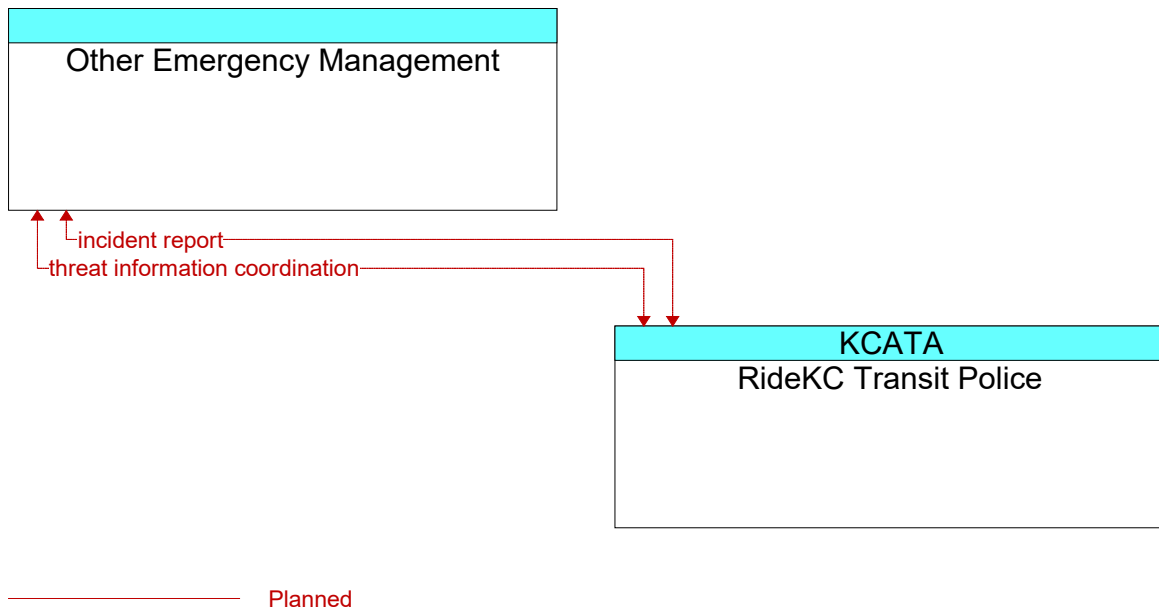
**Figure 1043: Operation Green Light Field Equipment - UGT Vehicles Interface**



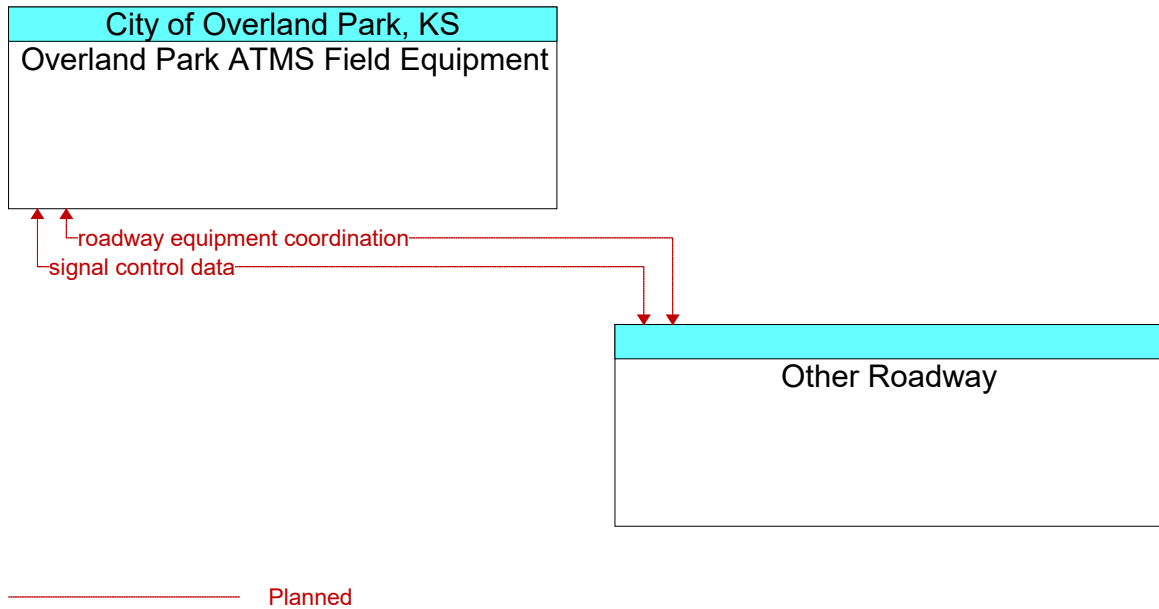
**Figure 1044: Operation Green Light Field Equipment - Wayside Equipment Interface**



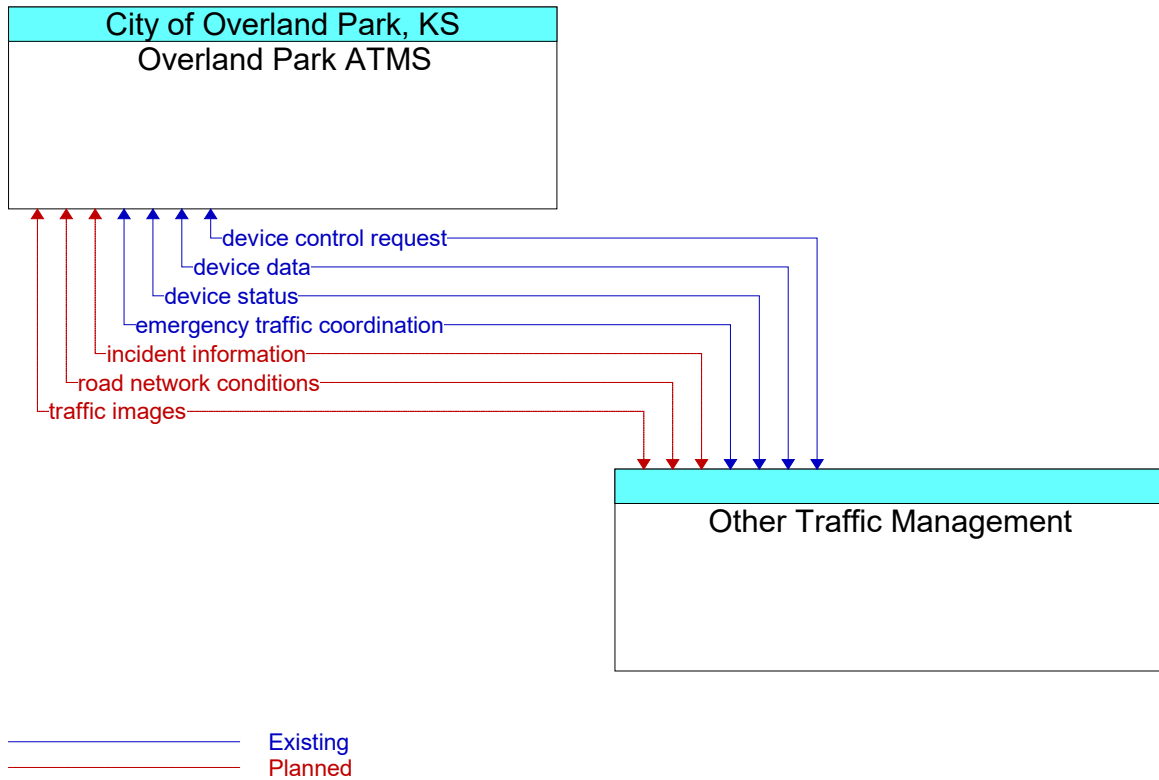
**Figure 1045: Other Emergency Management - Private Mayday Services Interface**



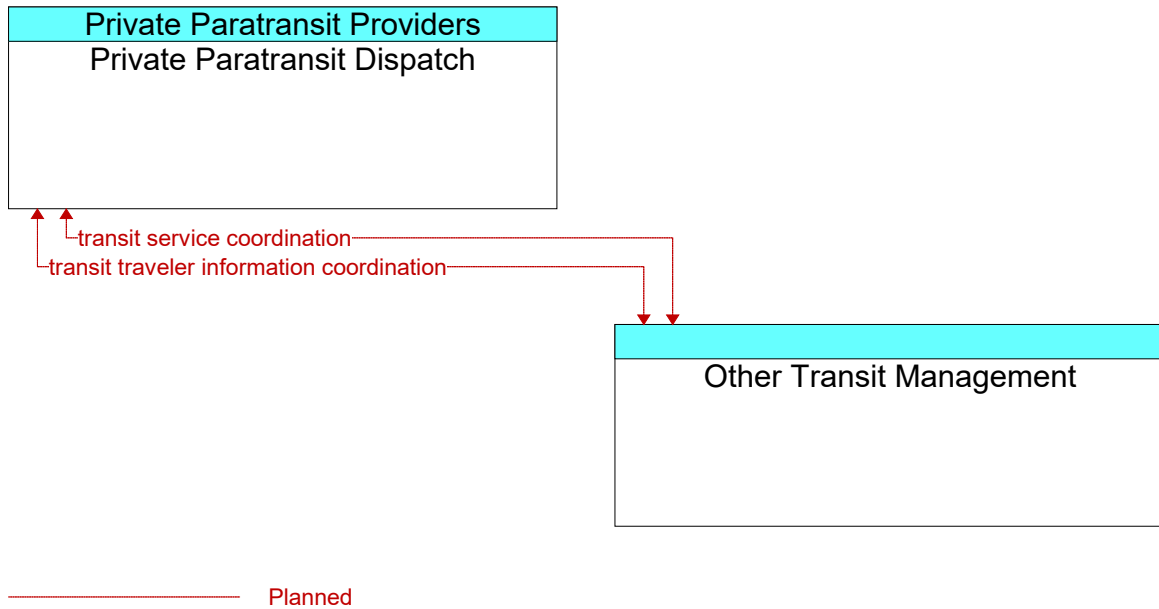
**Figure 1046: Other Emergency Management - RideKC Transit Police Interface**



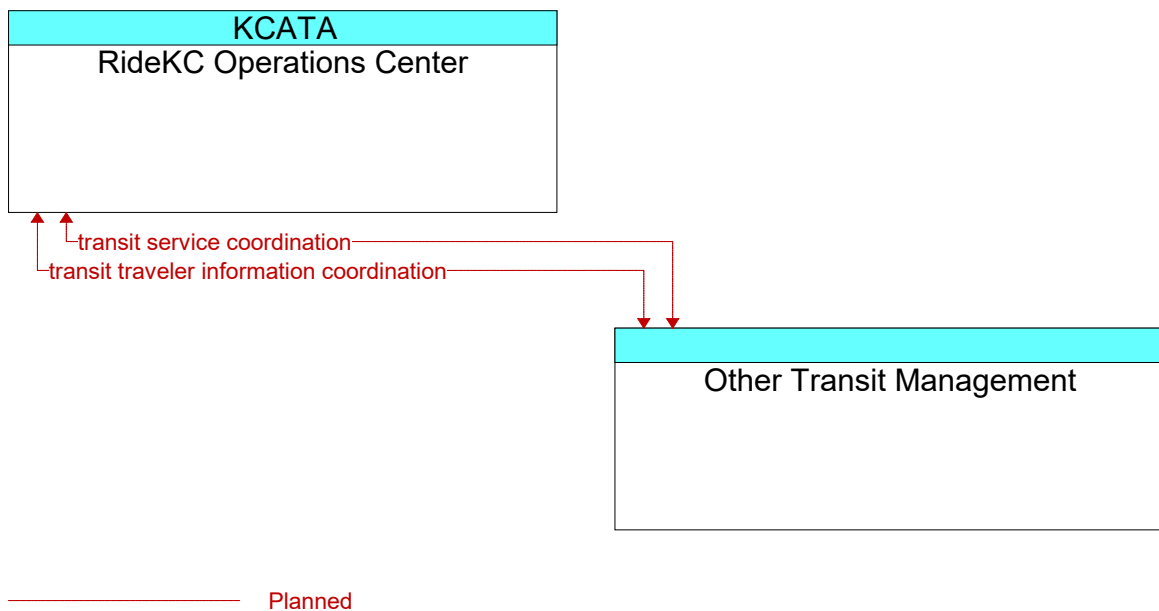
**Figure 1047: Other Roadway - Overland Park ATMS Field Equipment Interface**



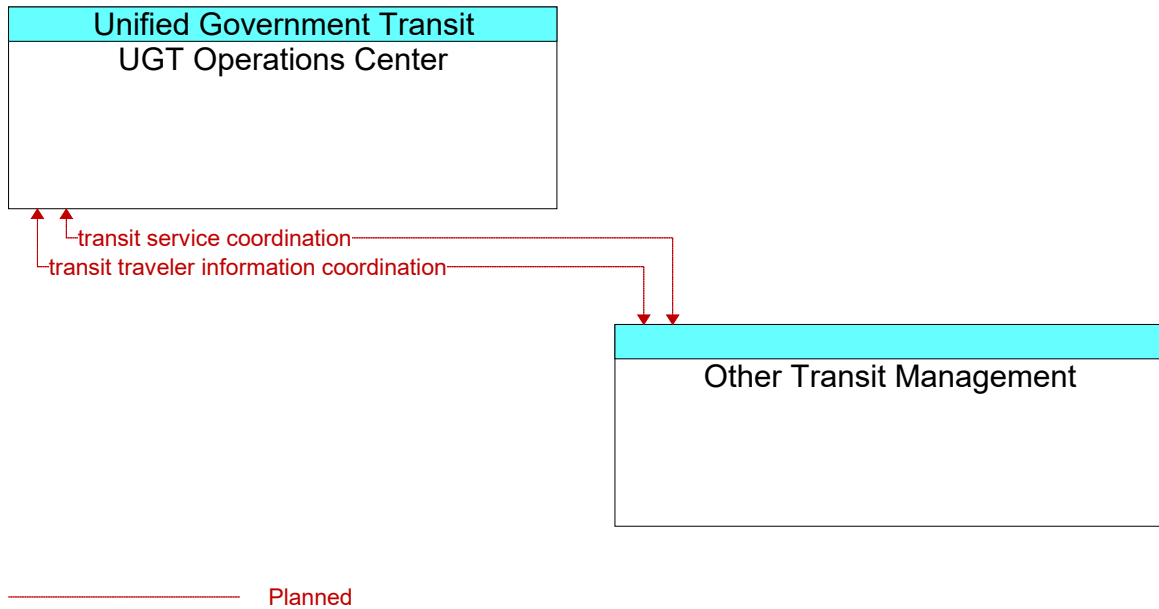
**Figure 1048: Other Traffic Management - Overland Park ATMS Interface**



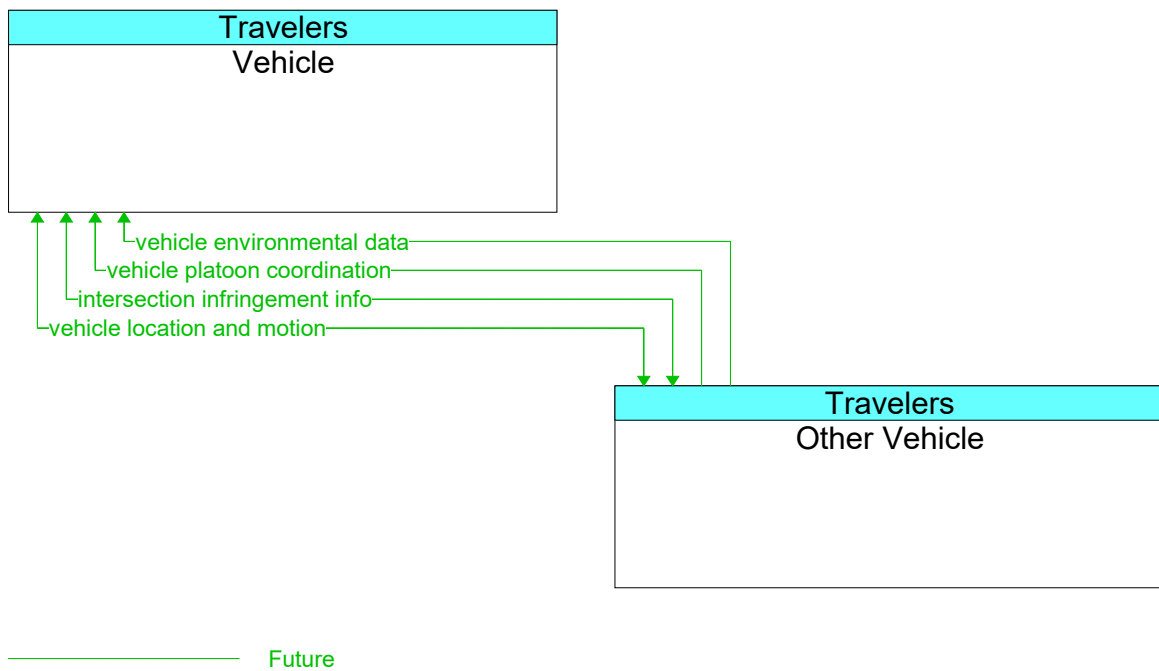
**Figure 1049: Other Transit Management - Private Paratransit Dispatch Interface**



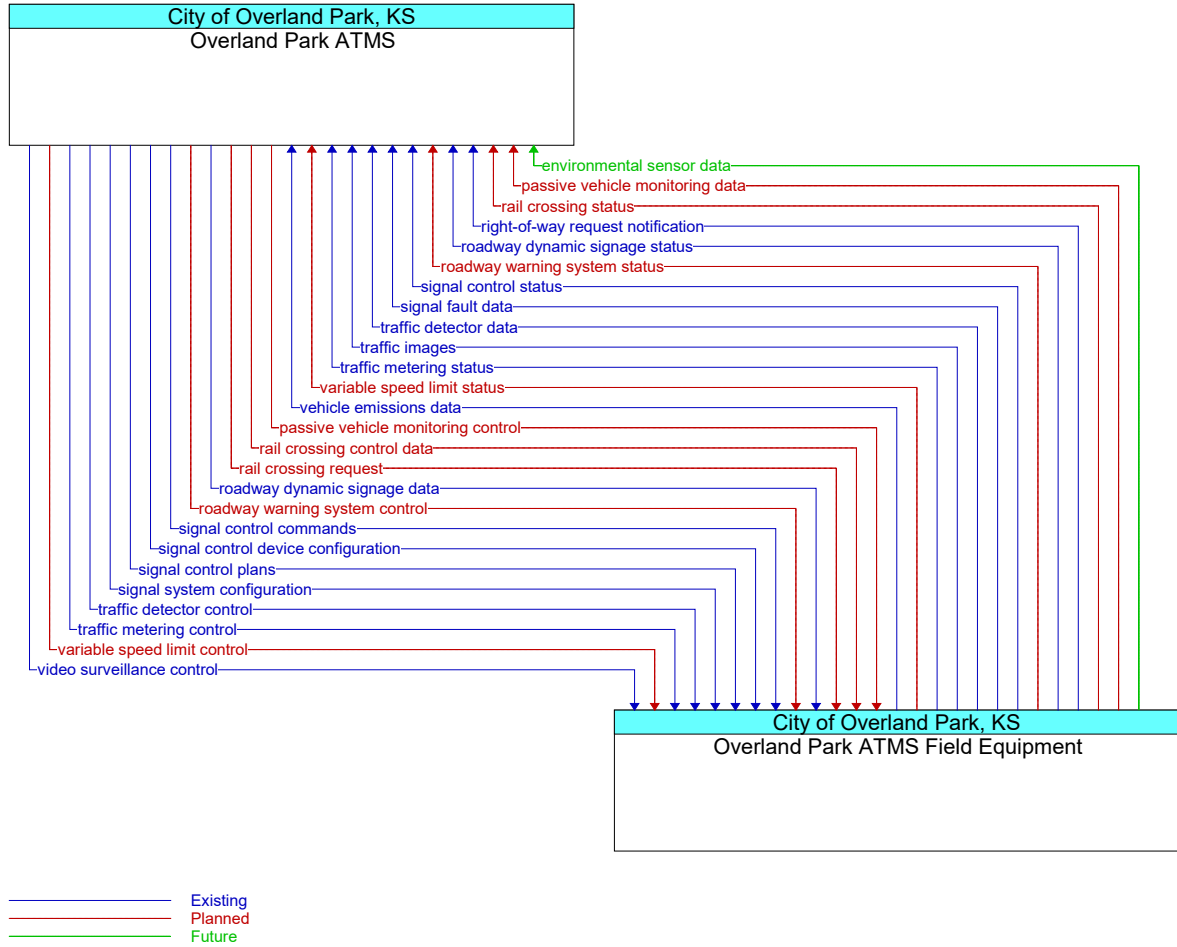
**Figure 1050: Other Transit Management - RideKC Operations Center Interface**



**Figure 1051: Other Transit Management - UGT Operations Center Interface**

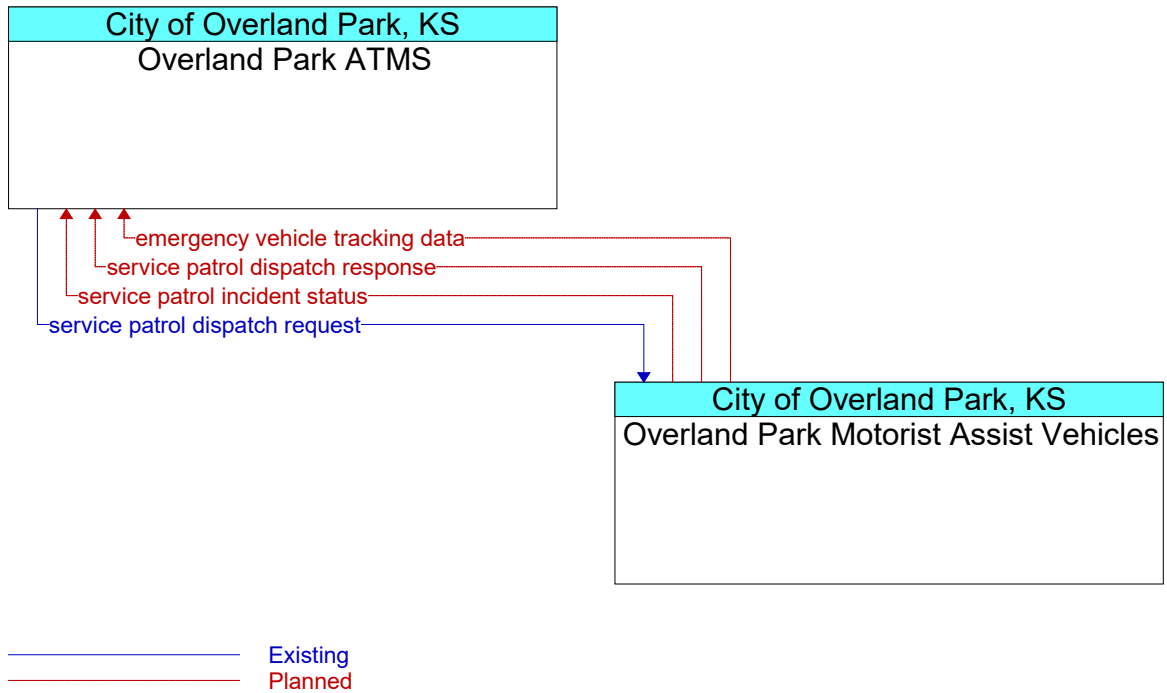


**Figure 1052: Other Vehicle - Vehicle Interface**

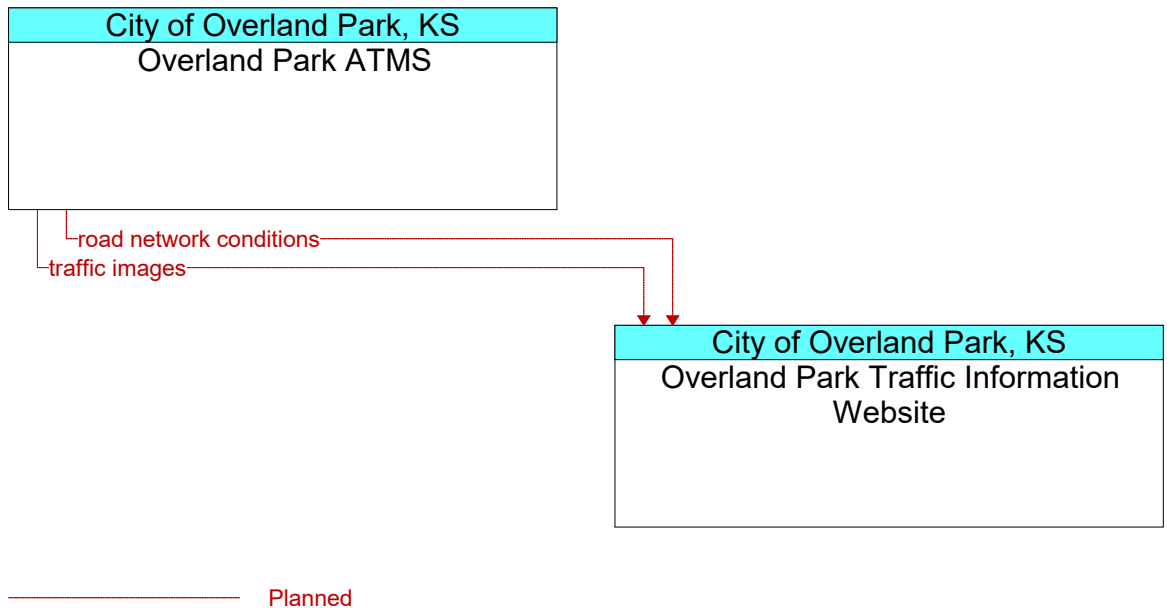


**Figure 1053: Overland Park ATMS - Overland Park ATMS Field Equipment Interface**

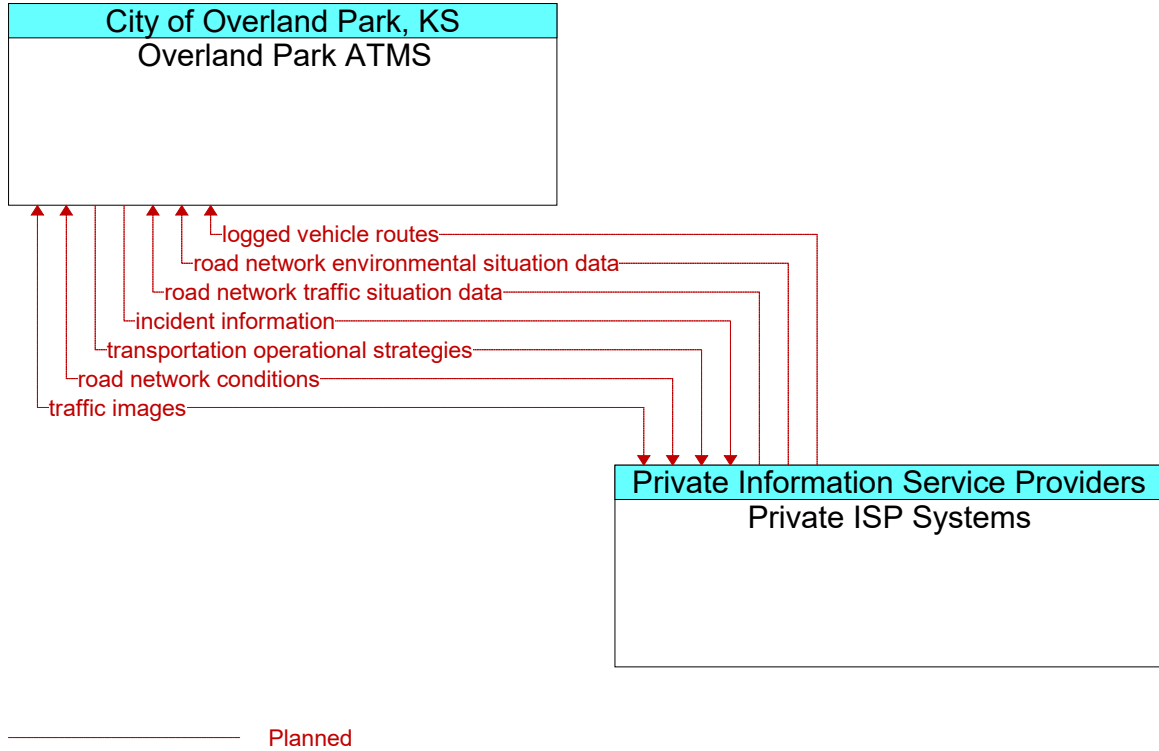




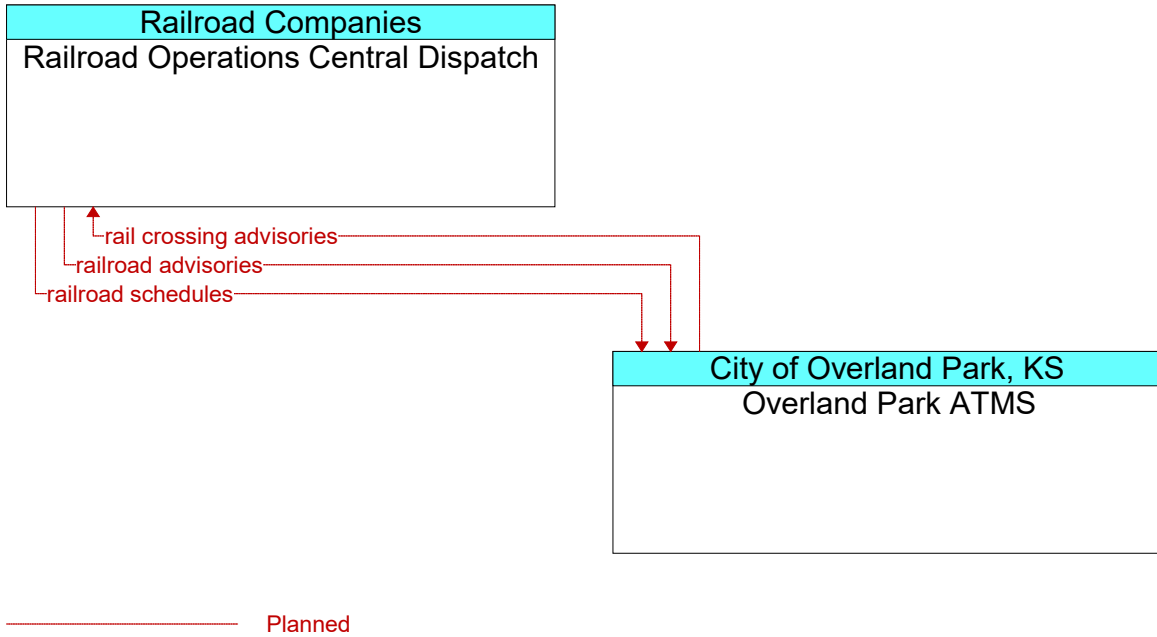
**Figure 1054: Overland Park ATMS - Overland Park Motorist Assist Vehicles Interface**



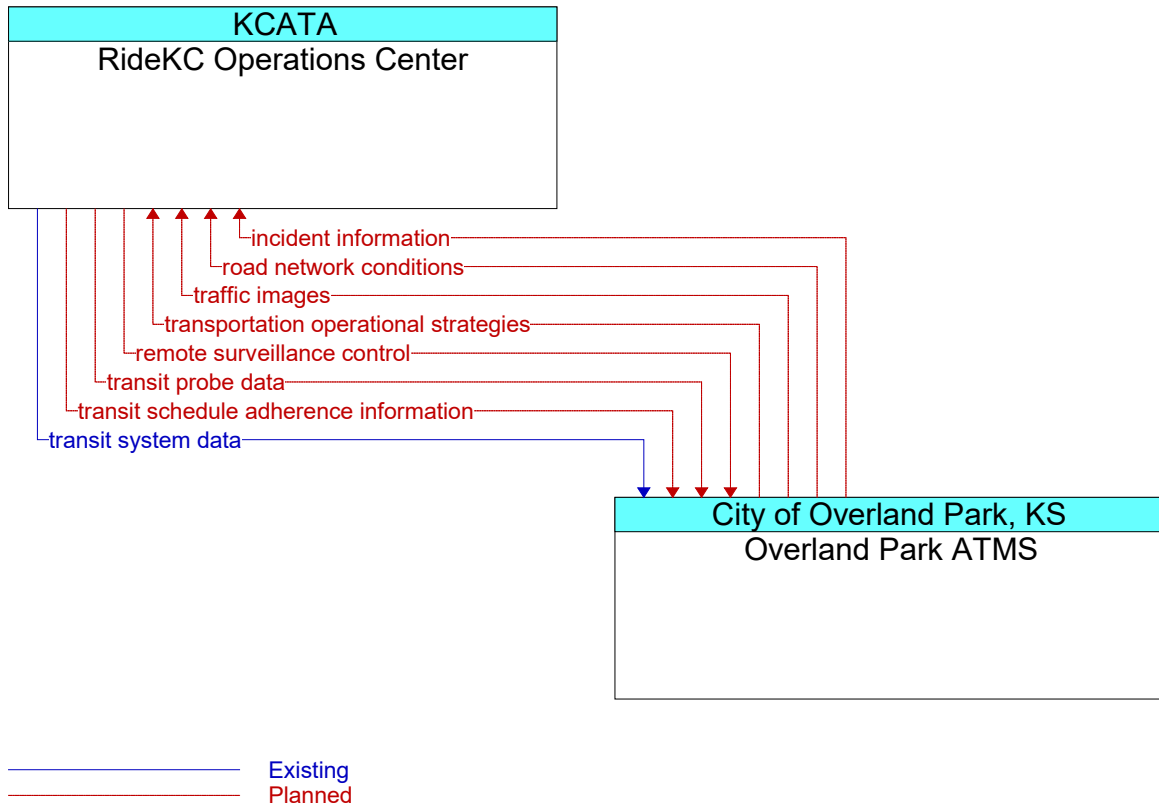
**Figure 1055: Overland Park ATMS - Overland Park Traffic Information Website Interface**



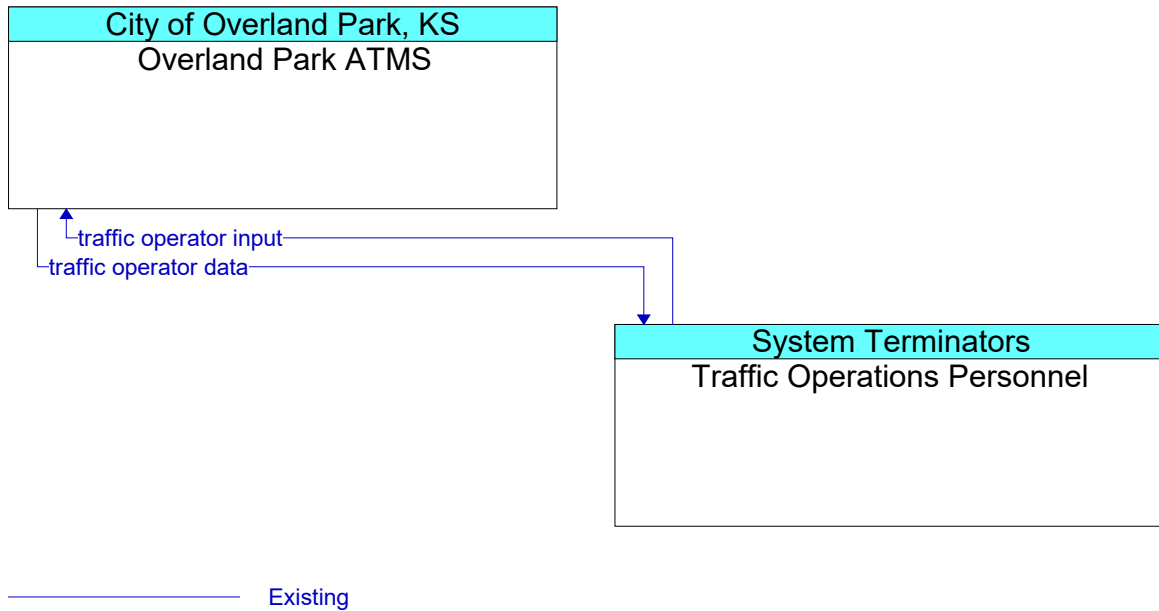
**Figure 1056: Overland Park ATMS - Private ISP Systems Interface**



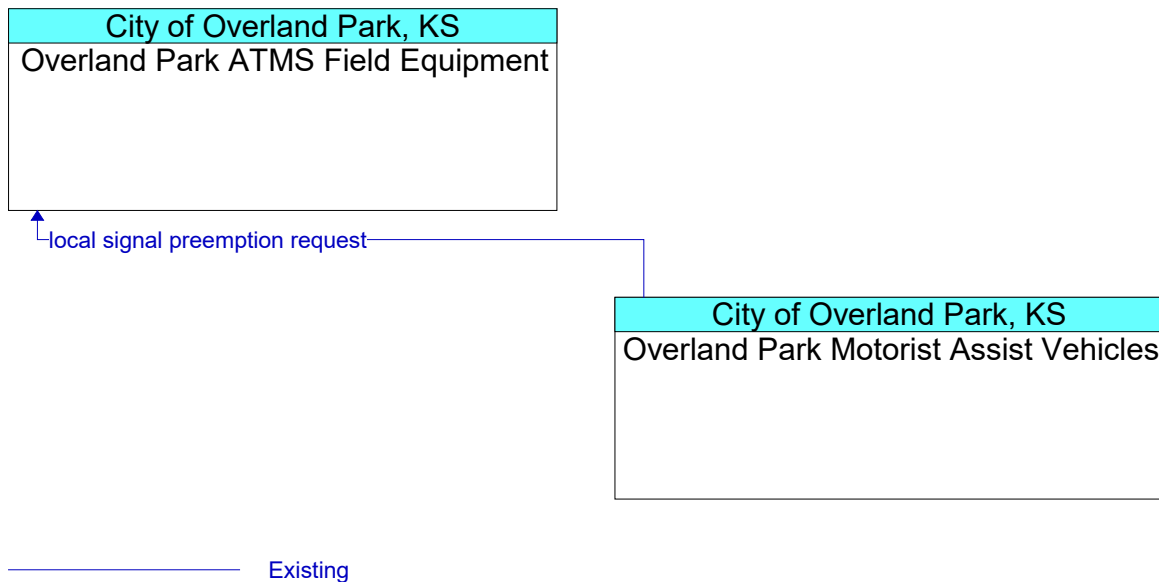
**Figure 1057: Overland Park ATMS - Railroad Operations Central Dispatch Interface**



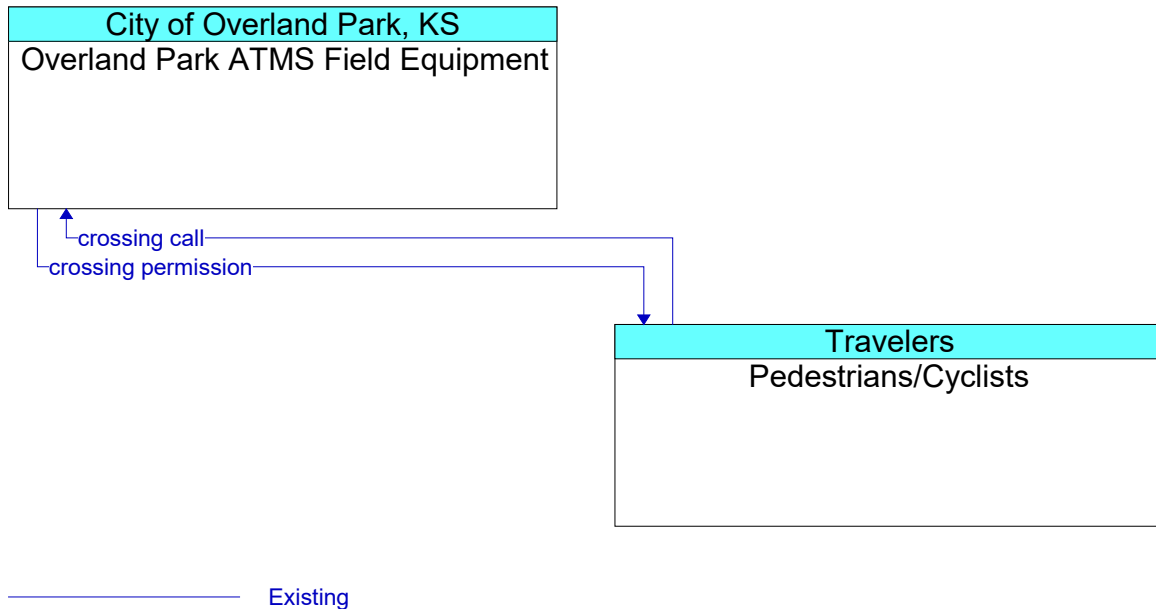
**Figure 1058: Overland Park ATMS - RideKC Operations Center Interface**



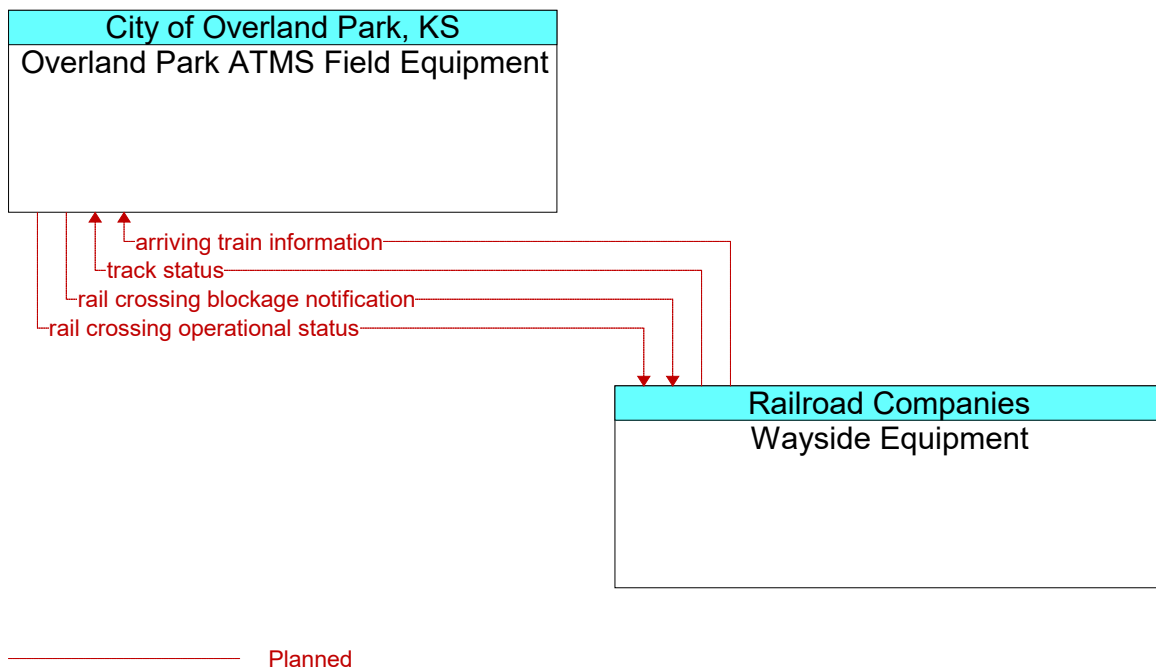
**Figure 1059: Overland Park ATMS - Traffic Operations Personnel Interface**



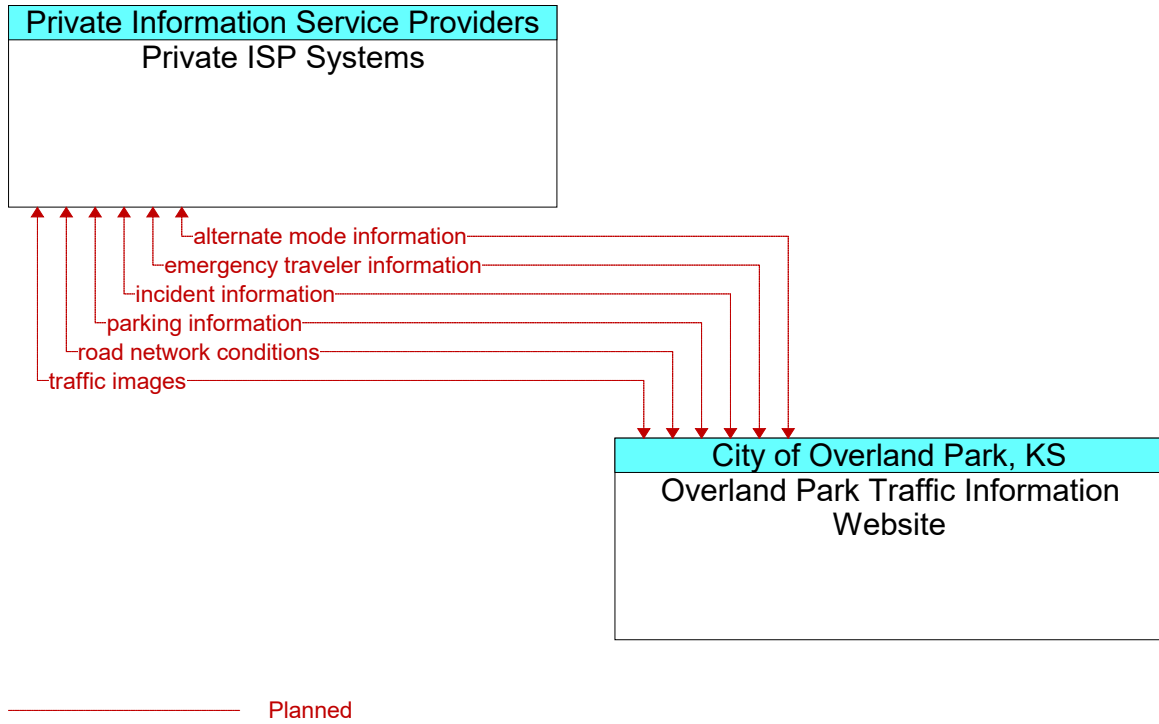
**Figure 1060: Overland Park ATMS Field Equipment - Overland Park Motorist Assist Vehicles Interface**



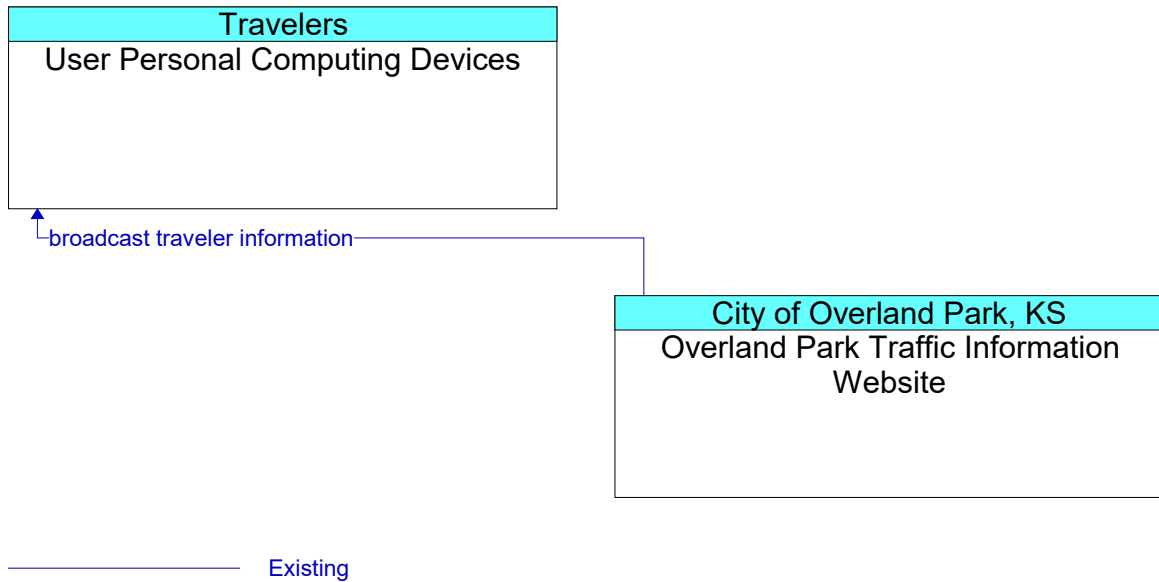
**Figure 1061: Overland Park ATMS Field Equipment - Pedestrians/Cyclists Interface**



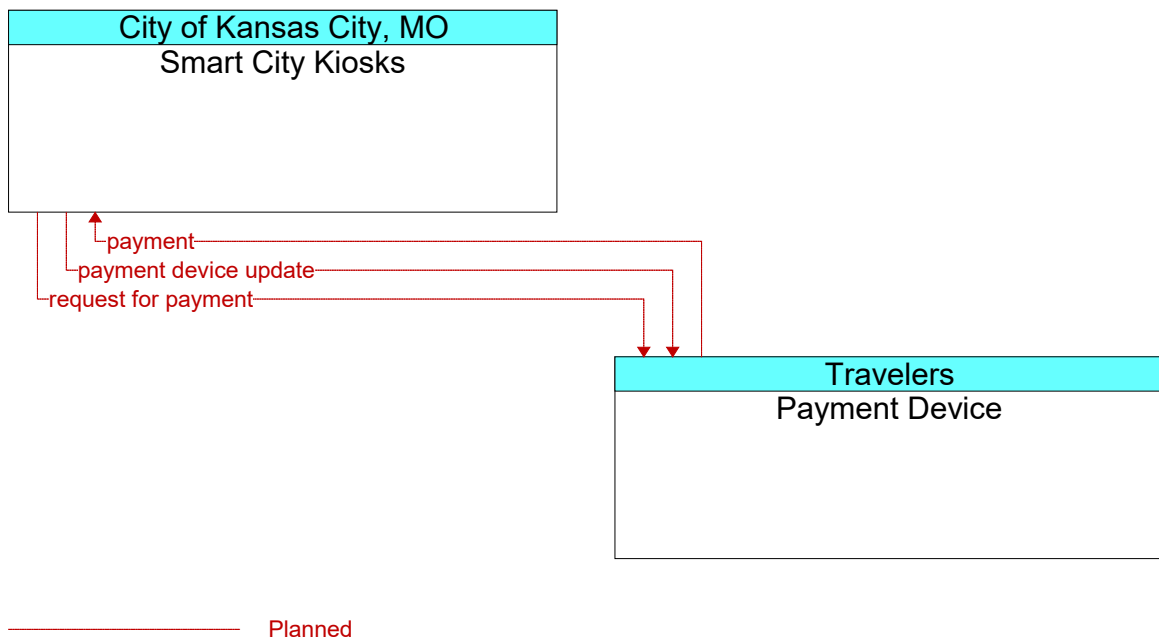
**Figure 1062: Overland Park ATMS Field Equipment - Wayside Equipment Interface**



**Figure 1063: Overland Park Traffic Information Website - Private ISP Systems Interface**

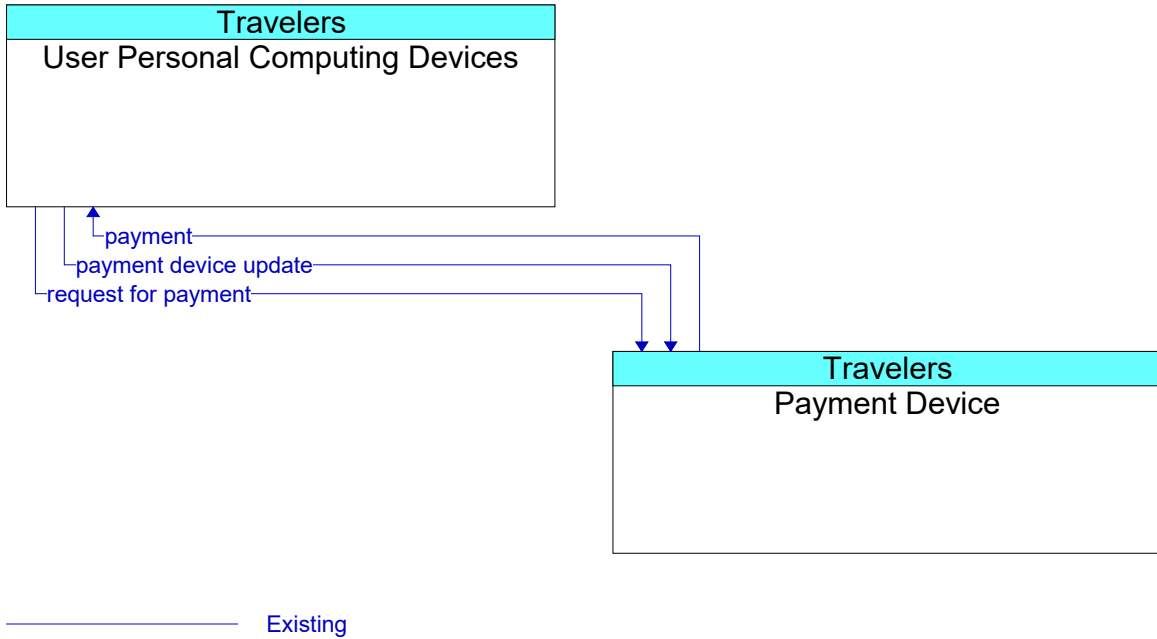


**Figure 1064: Overland Park Traffic Information Website - User Personal Computing Devices Interface**

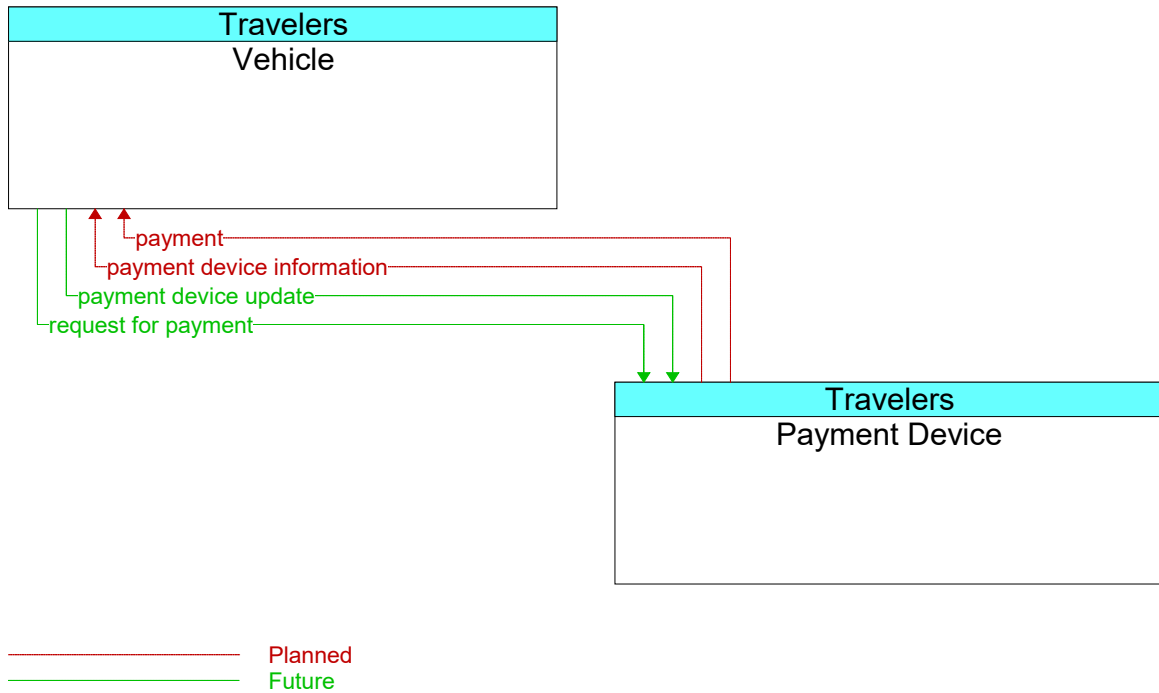


**Figure 1065: Payment Device - Smart City Kiosks Interface**

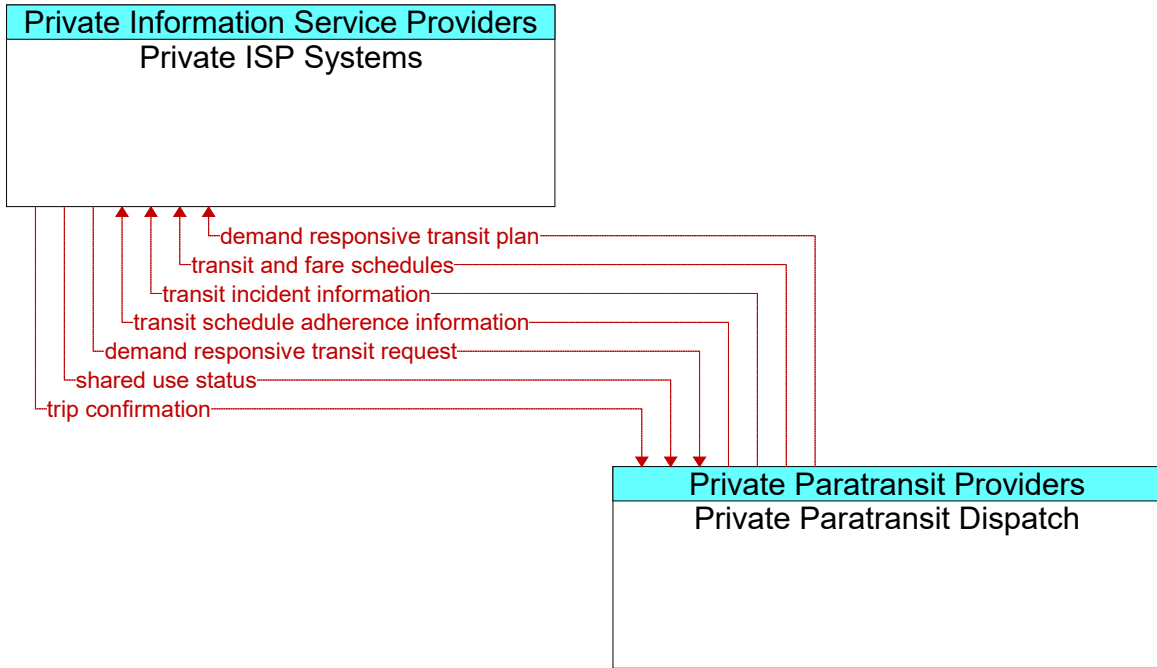




**Figure 1066: Payment Device - User Personal Computing Devices Interface**

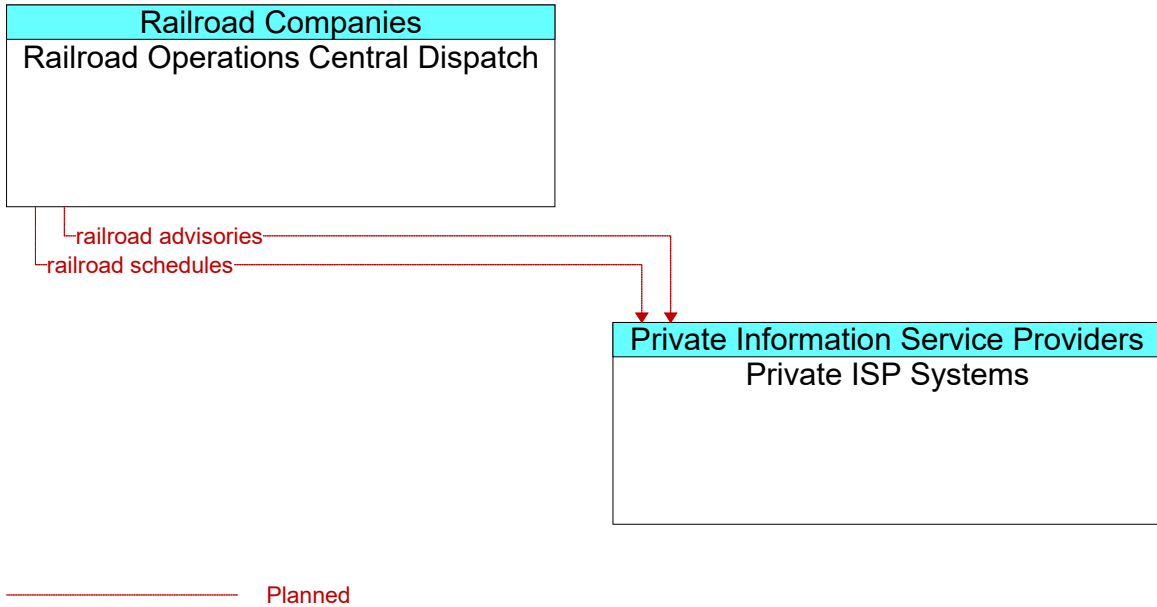


**Figure 1067: Payment Device - Vehicle Interface**

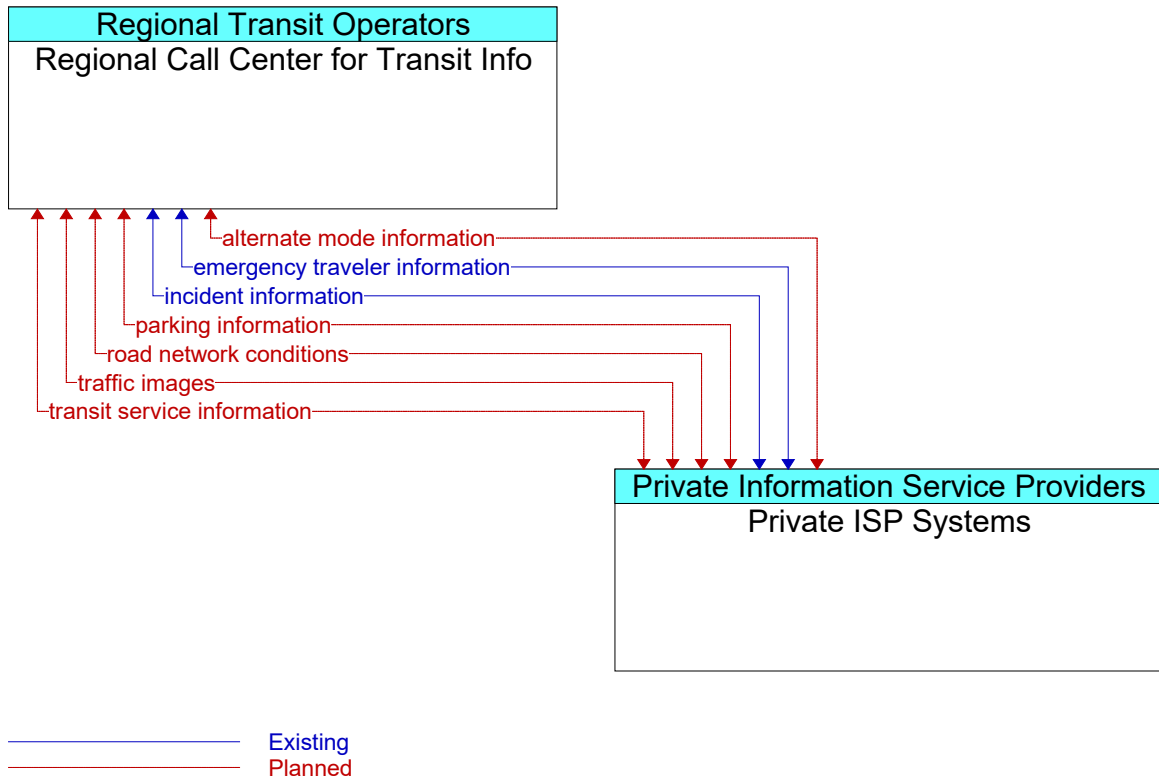


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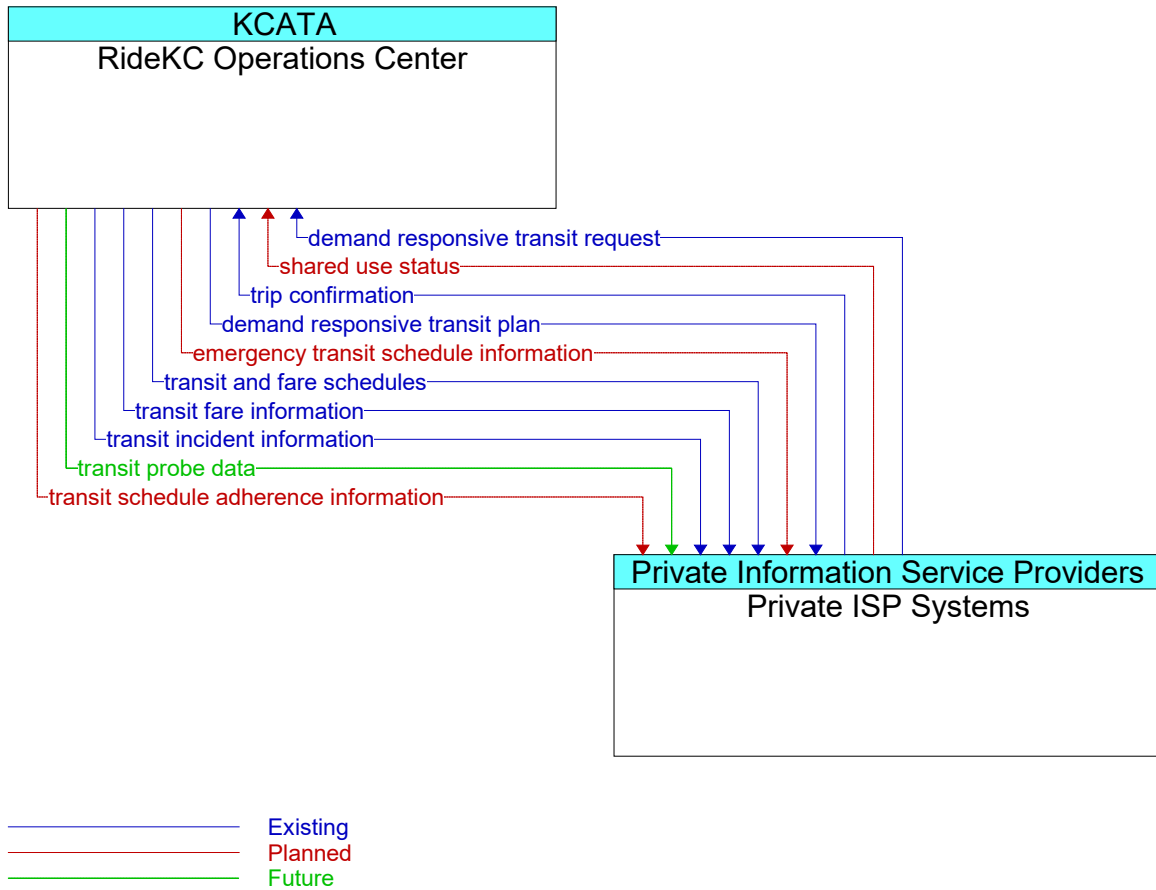
**Figure 1068: Private ISP Systems - Private Paratransit Dispatch Interface**



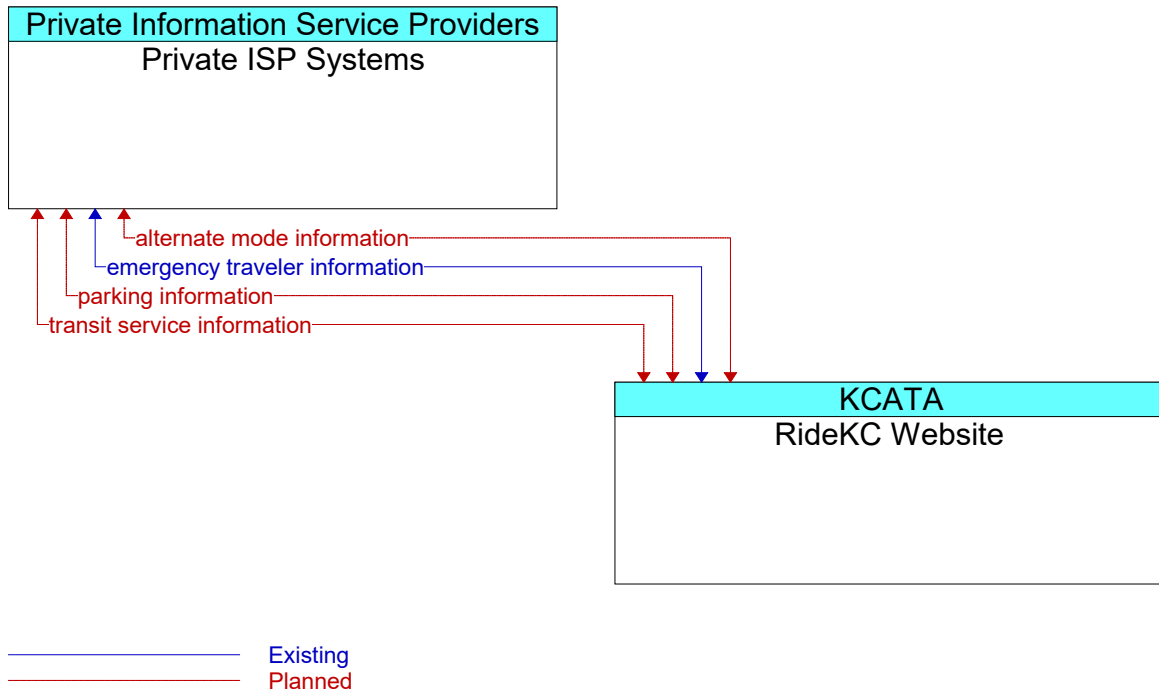
**Figure 1069: Private ISP Systems - Railroad Operations Central Dispatch Interface**



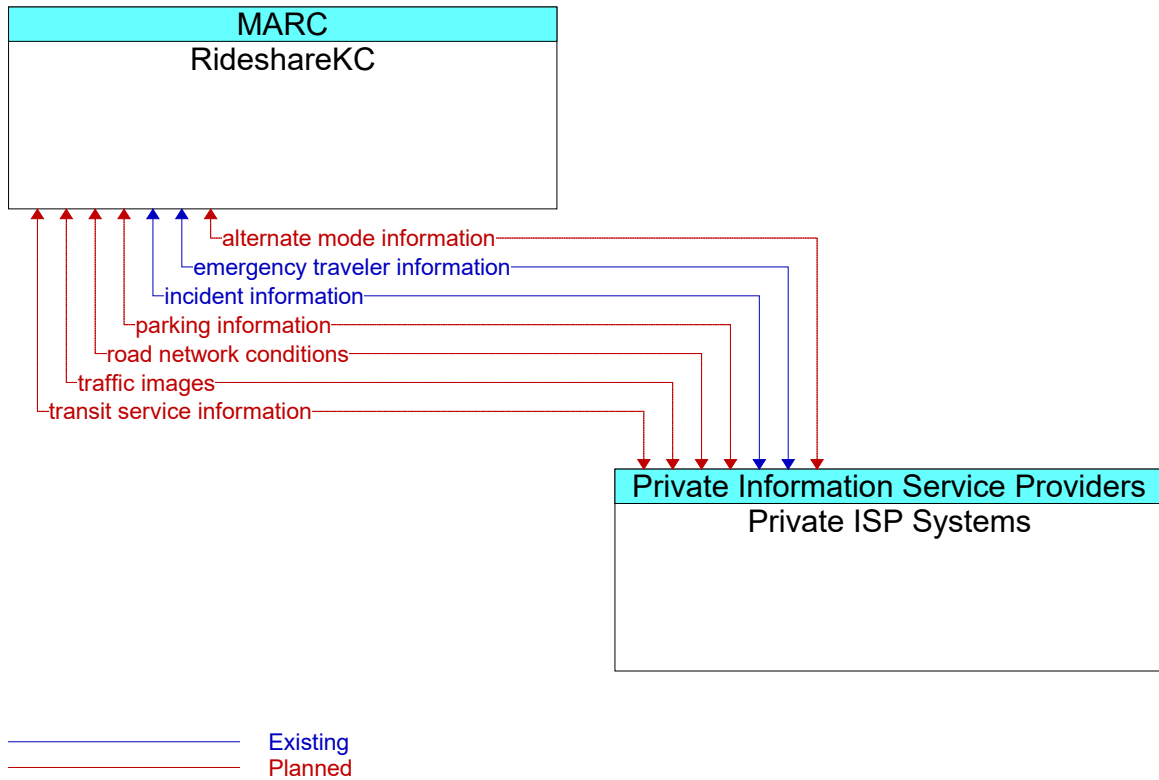
**Figure 1070: Private ISP Systems - Regional Call Center for Transit Info Interface**



**Figure 1071: Private ISP Systems - RideKC Operations Center Interface**

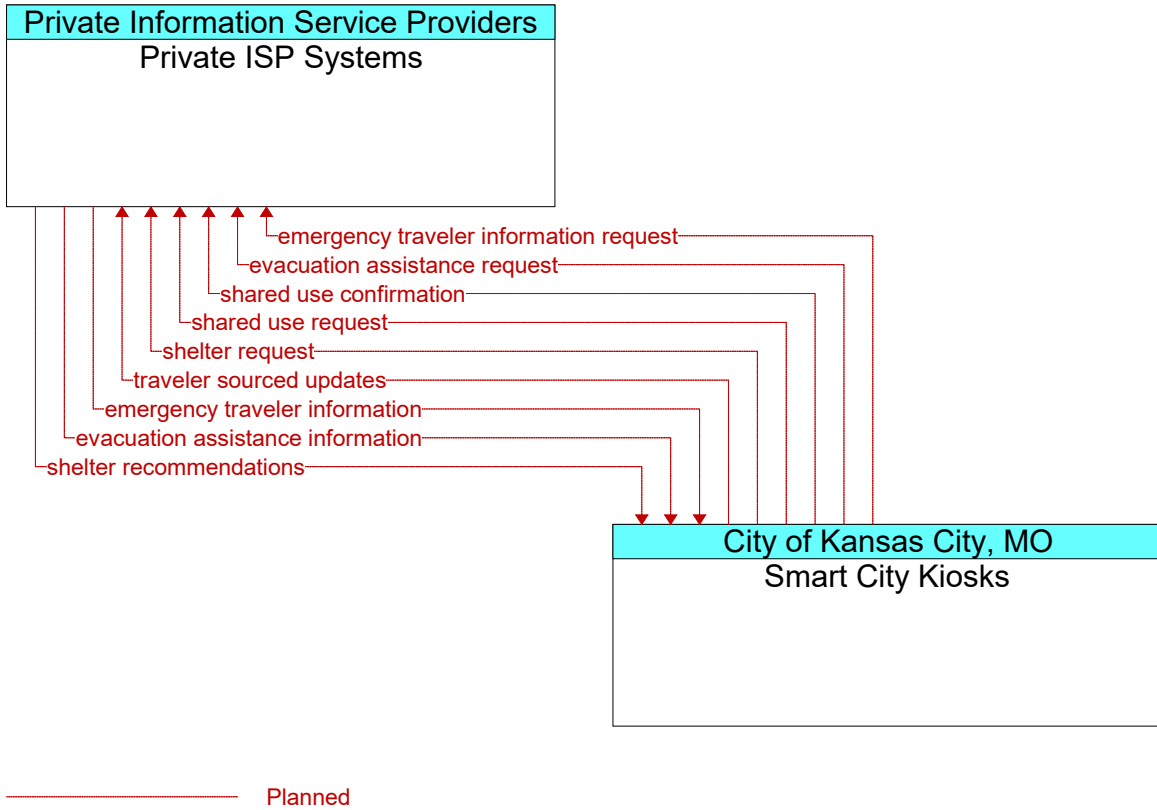


**Figure 1072: Private ISP Systems - RideKC Website Interface**

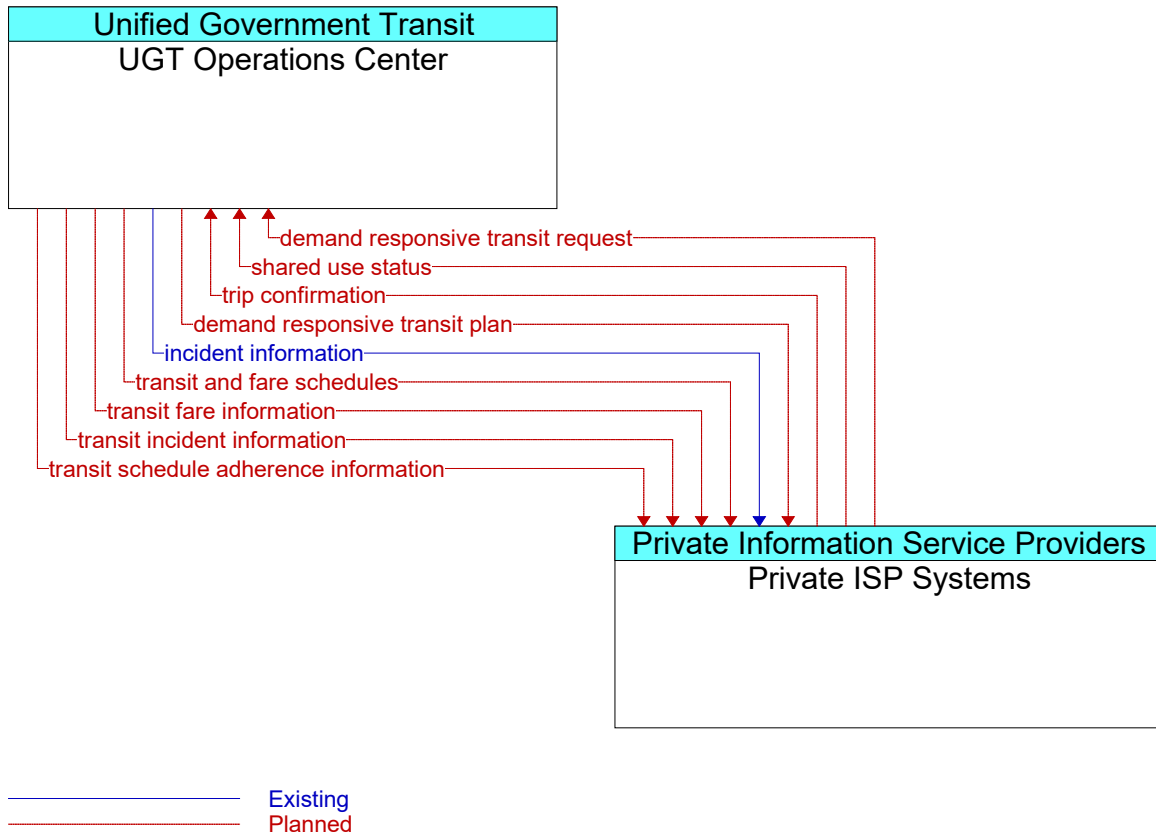


**Figure 1073: Private ISP Systems - RideshareKC Interface**

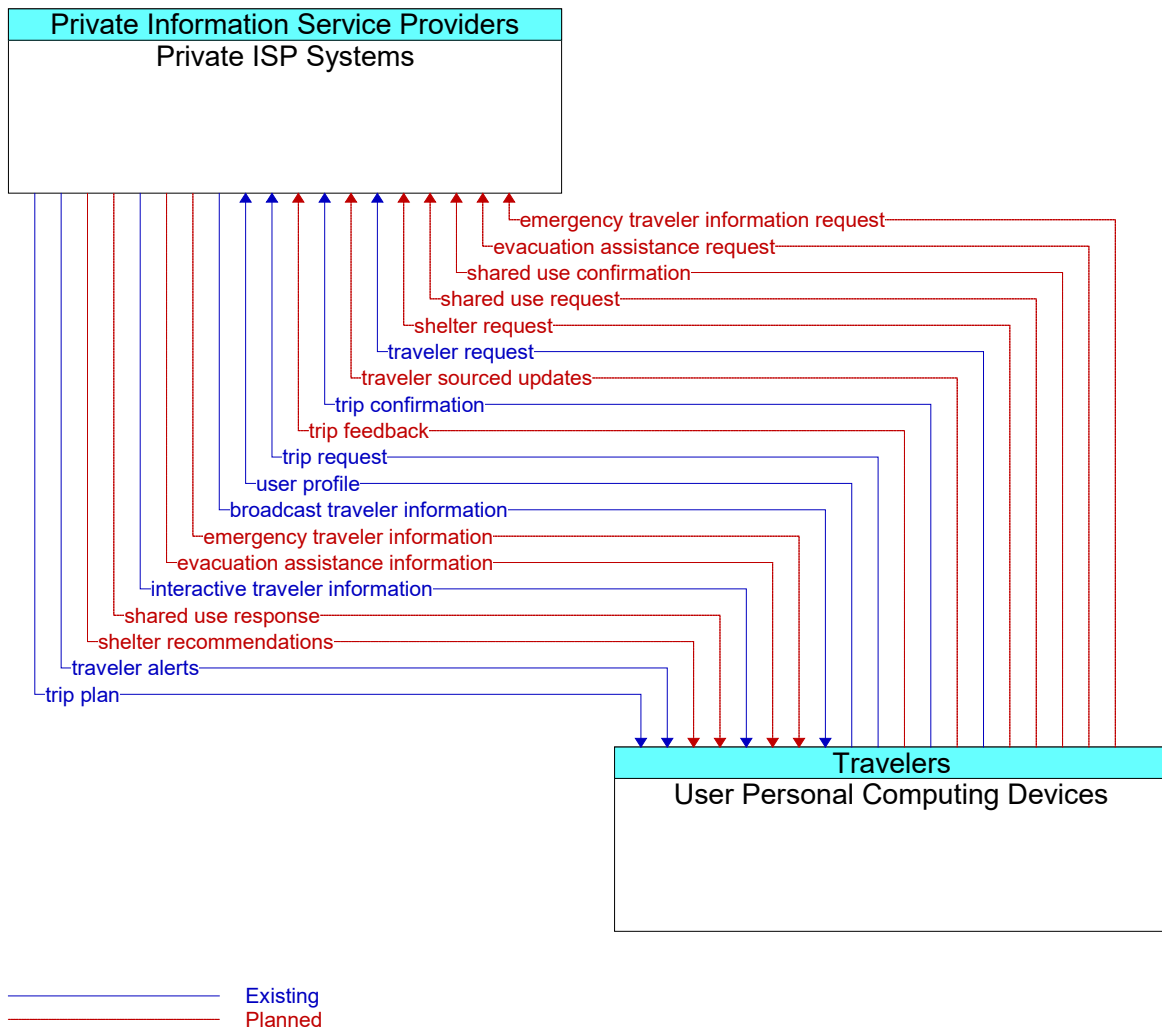




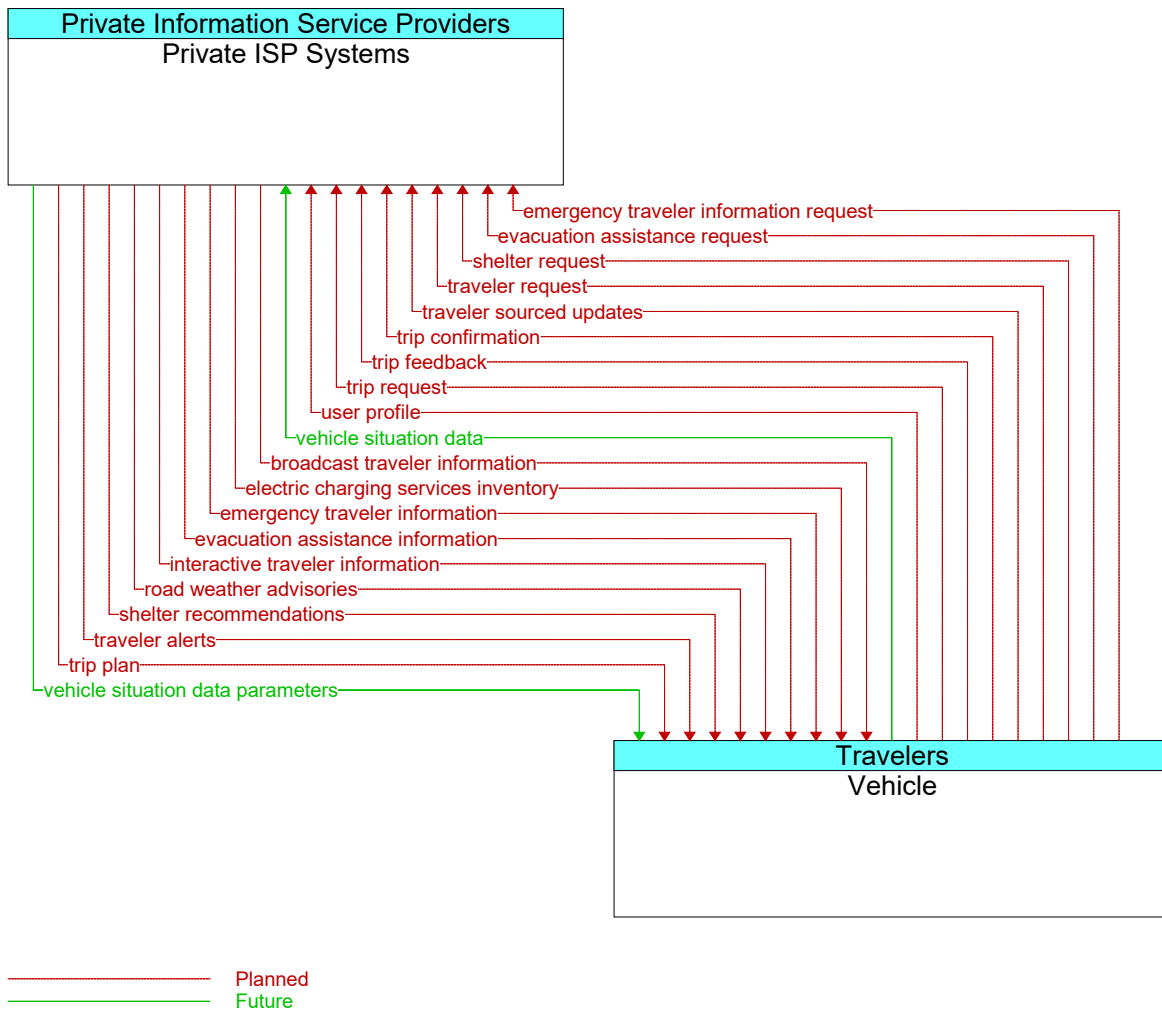
**Figure 1074: Private ISP Systems - Smart City Kiosks Interface**



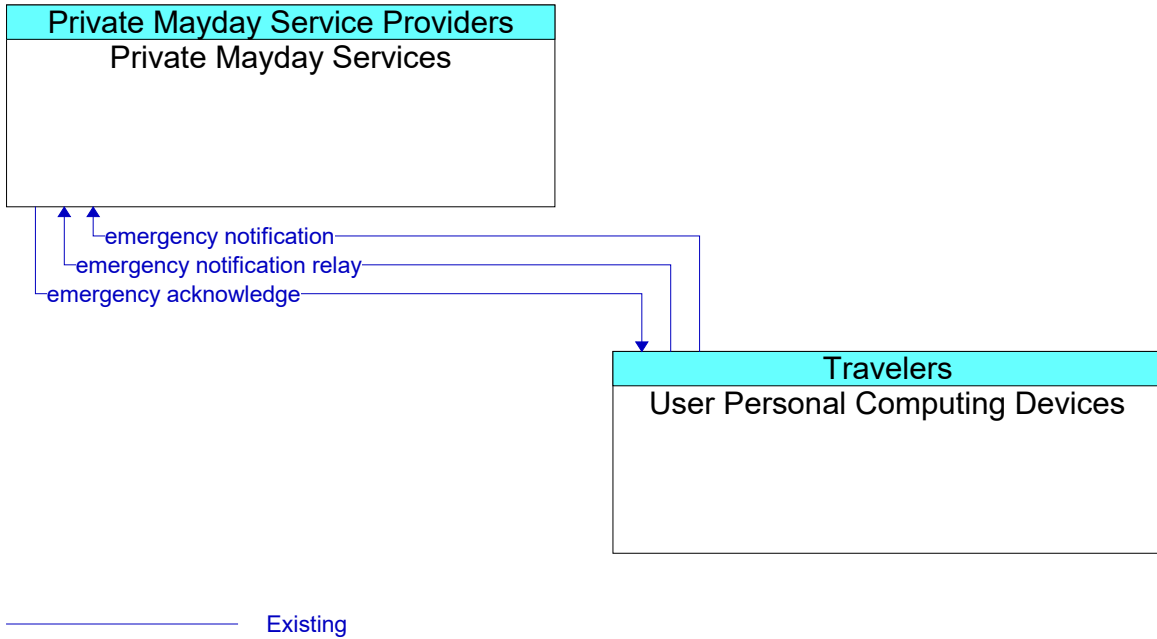
**Figure 1075: Private ISP Systems - UGT Operations Center Interface**



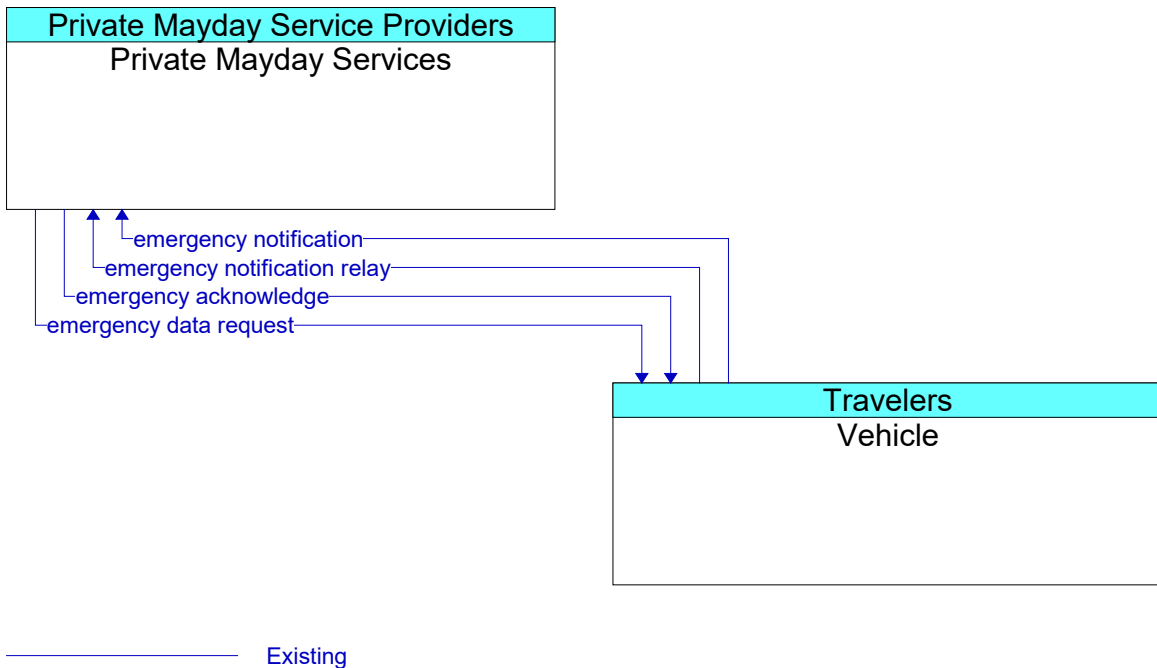
**Figure 1076: Private ISP Systems - User Personal Computing Devices Interface**



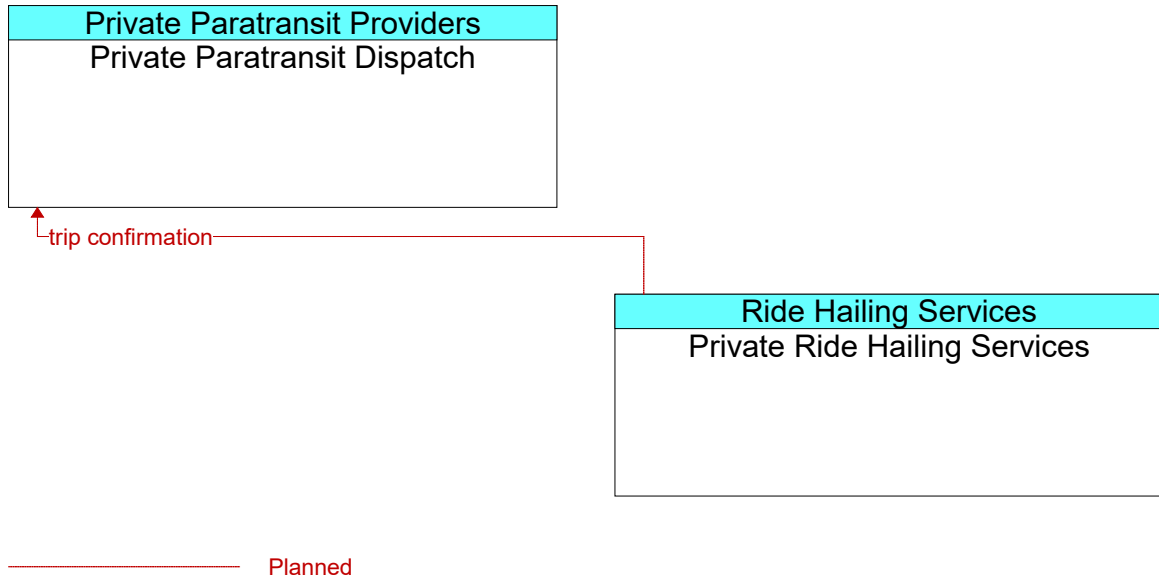
**Figure 1077: Private ISP Systems - Vehicle Interface**



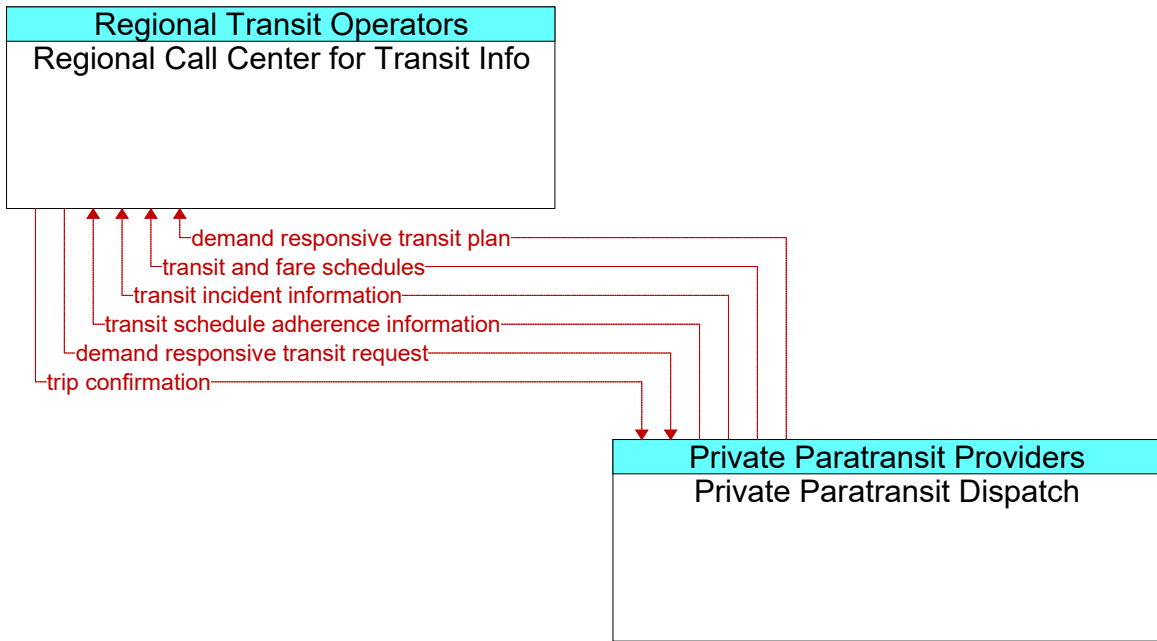
**Figure 1078: Private Mayday Services - User Personal Computing Devices Interface**



**Figure 1079: Private Mayday Services - Vehicle Interface**

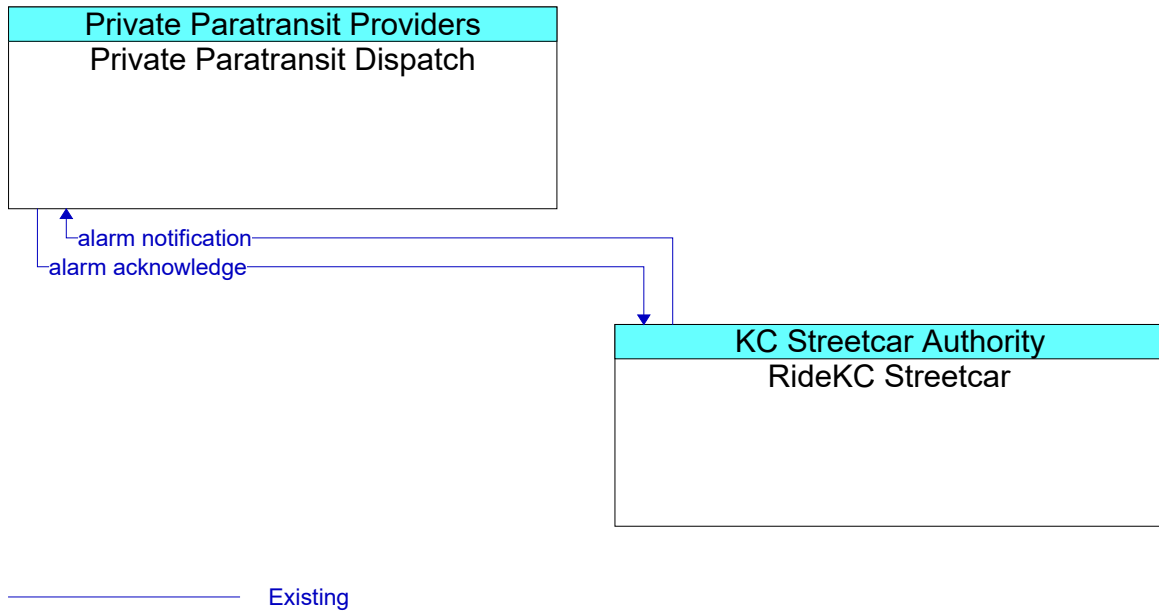


**Figure 1080: Private Paratransit Dispatch - Private Ride Hailing Services Interface**



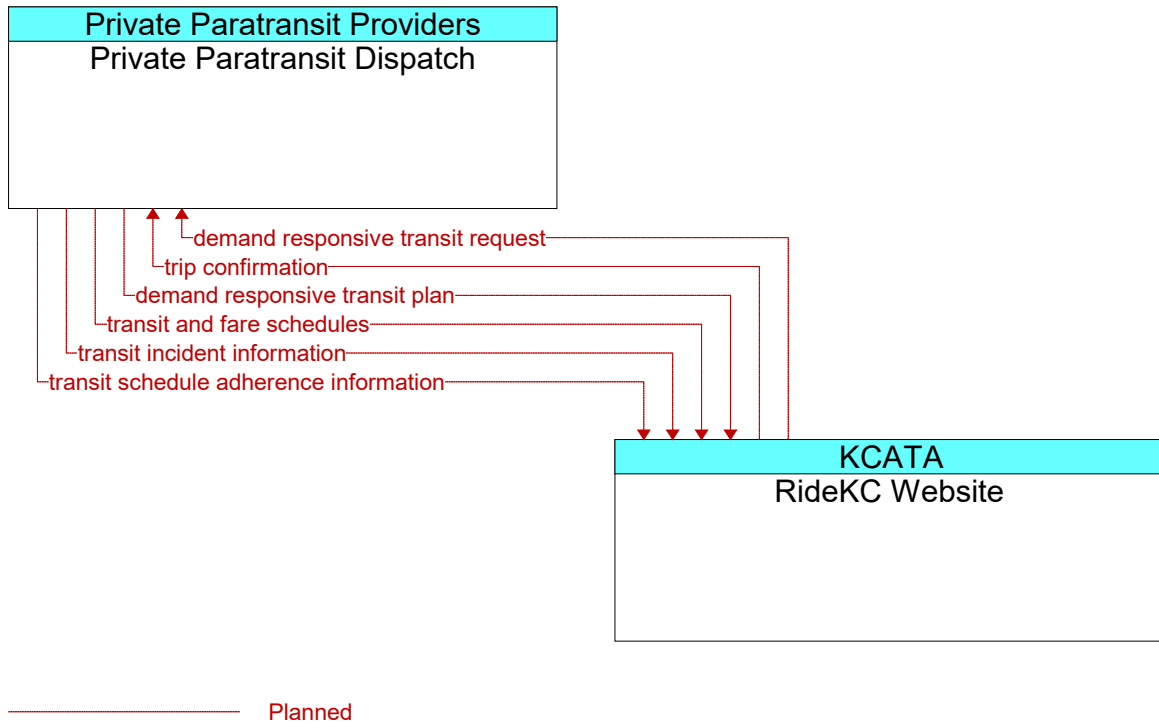
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**Figure 1081: Private Paratransit Dispatch - Regional Call Center for Transit Info Interface**

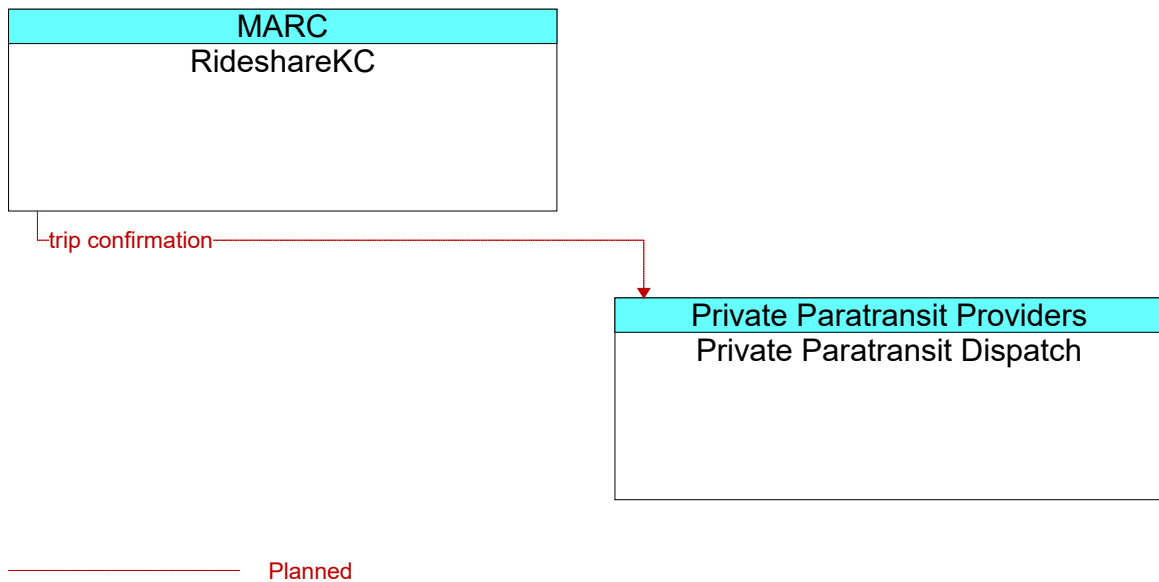


**Figure 1082: Private Paratransit Dispatch - RideKC Streetcar Interface**

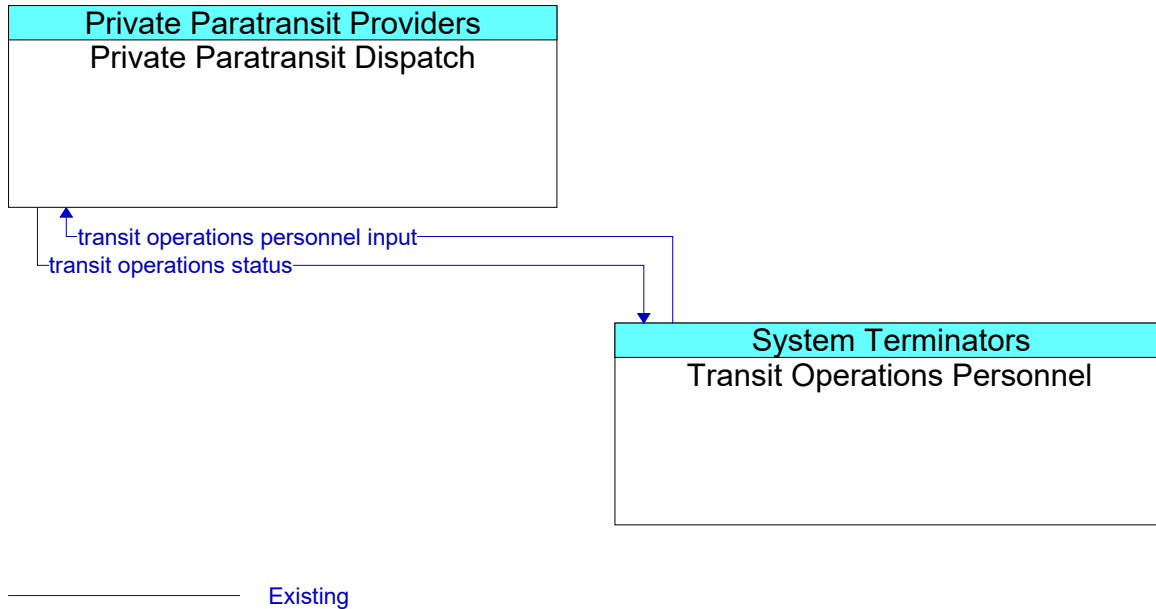




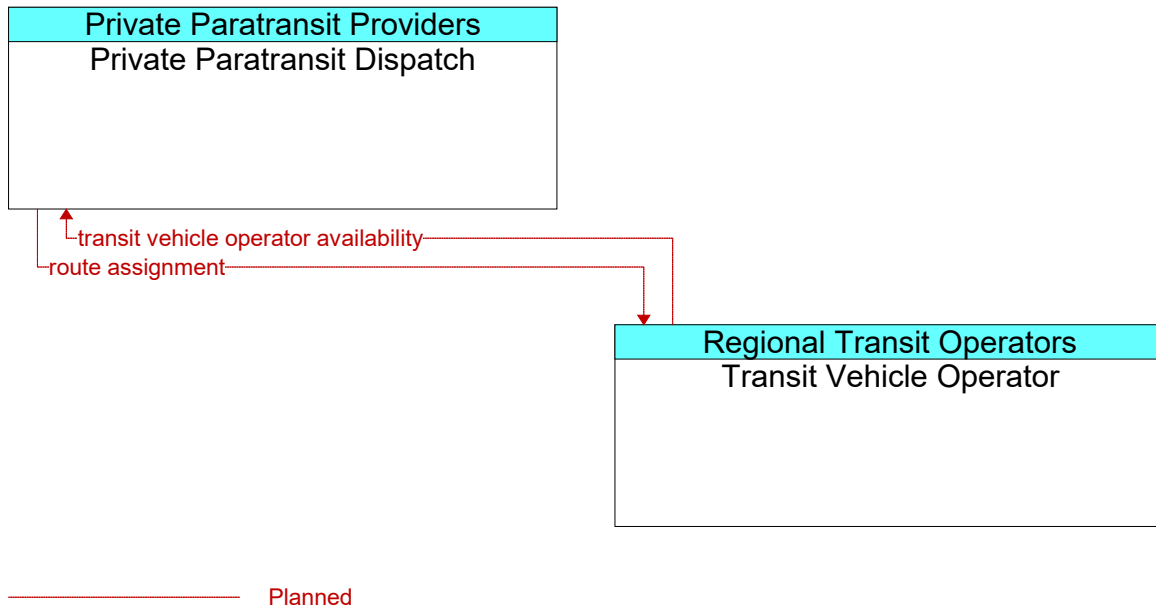
**Figure 1083: Private Paratransit Dispatch - RideKC Website Interface**



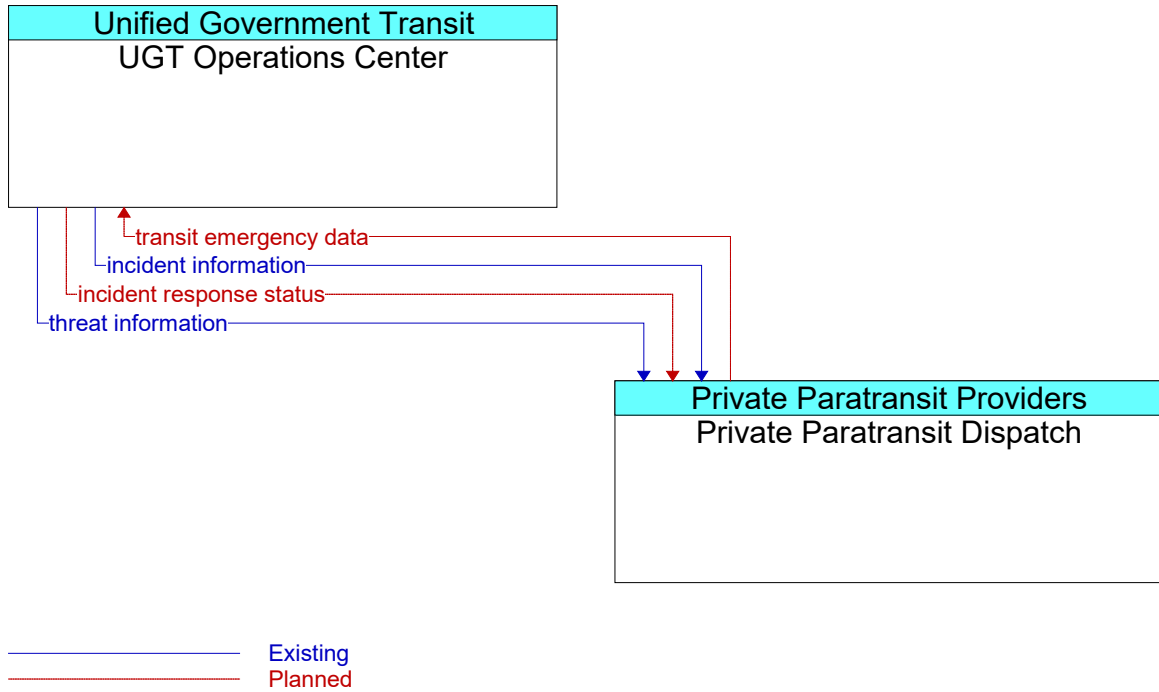
**Figure 1084: Private Paratransit Dispatch - RideshareKC Interface**



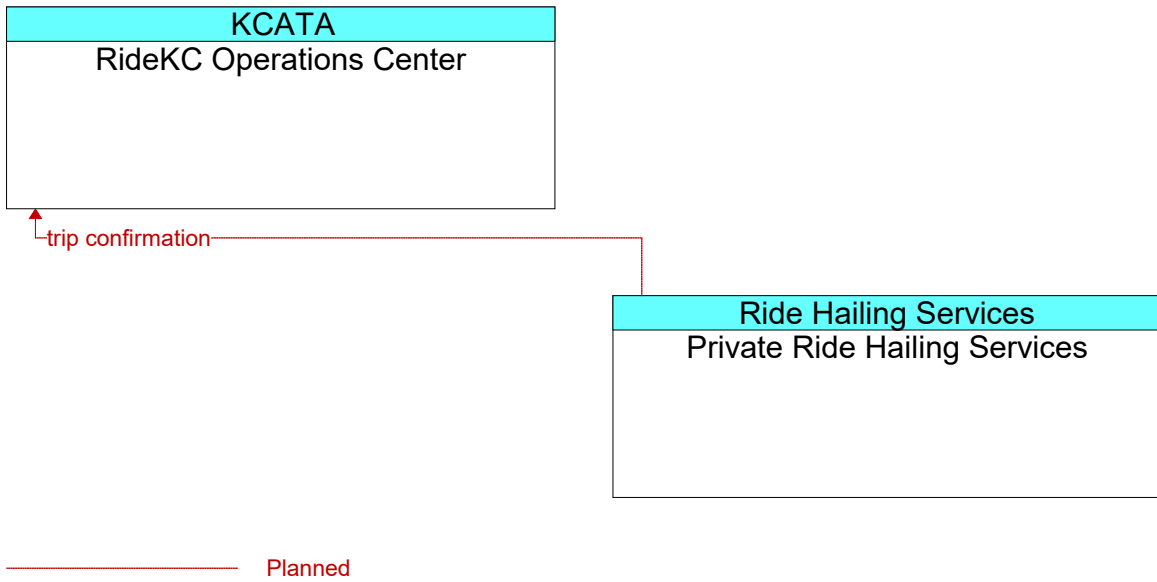
**Figure 1085: Private Paratransit Dispatch - Transit Operations Personnel Interface**



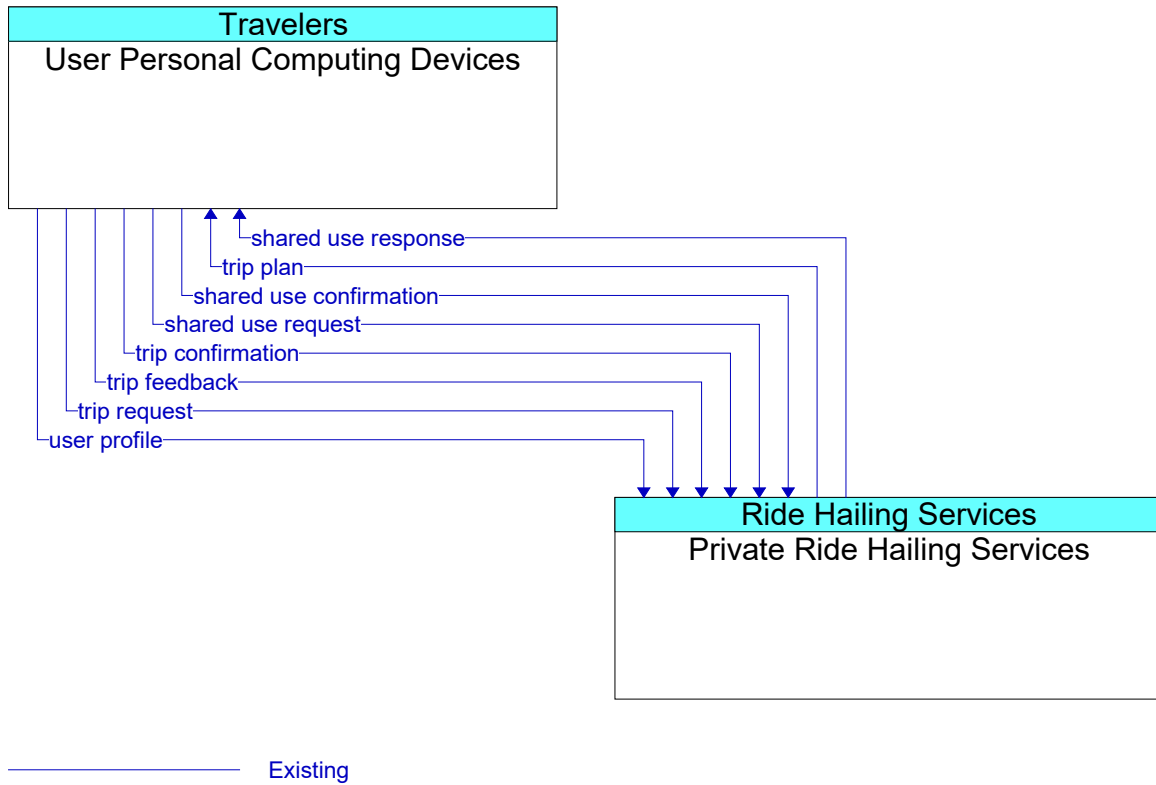
**Figure 1086: Private Paratransit Dispatch - Transit Vehicle Operator Interface**



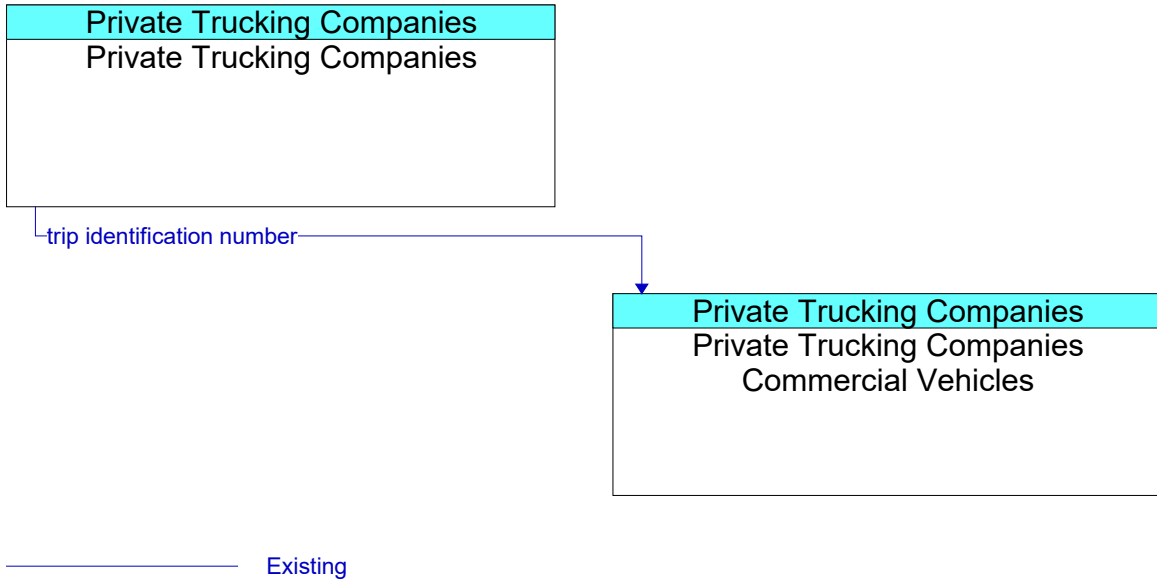
**Figure 1087: Private Paratransit Dispatch - UGT Operations Center Interface**



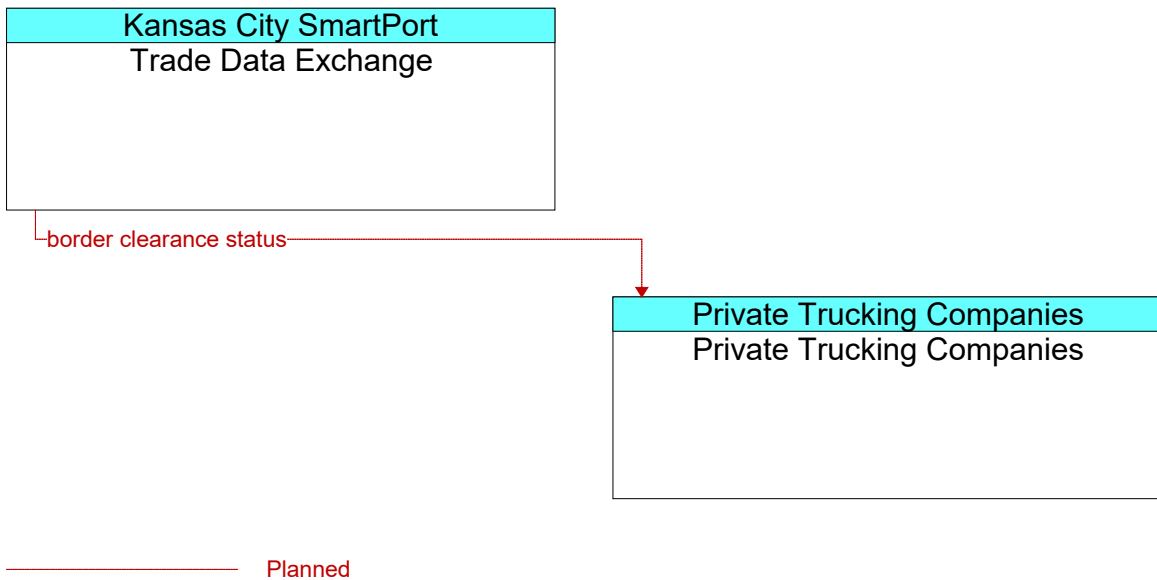
**Figure 1088: Private Ride Hailing Services - RideKC Operations Center Interface**



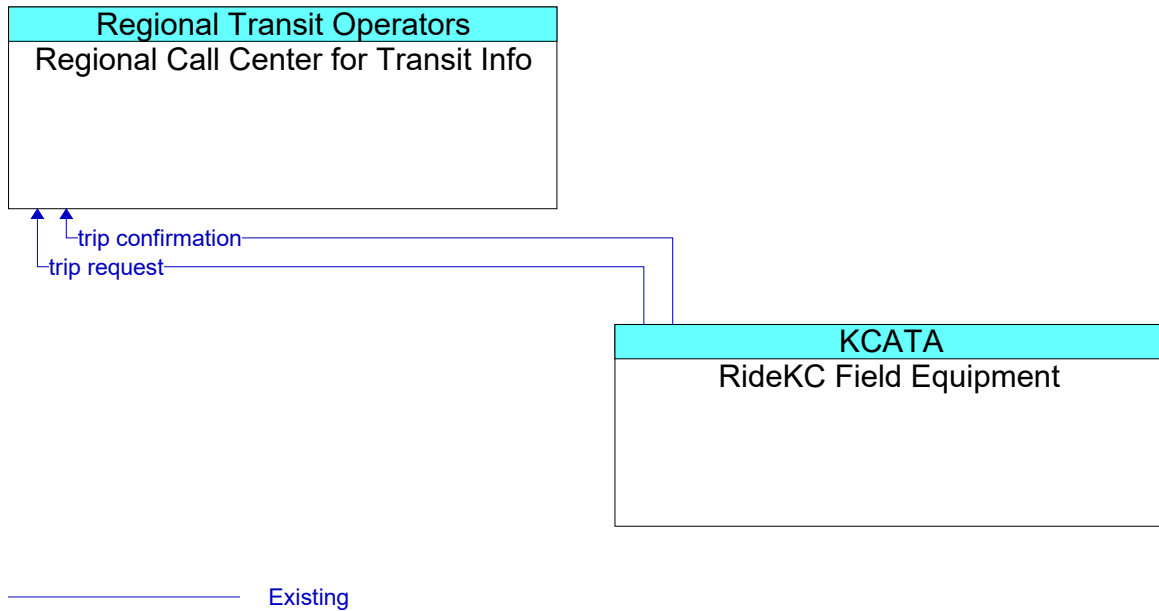
**Figure 1089: Private Ride Hailing Services - User Personal Computing Devices Interface**



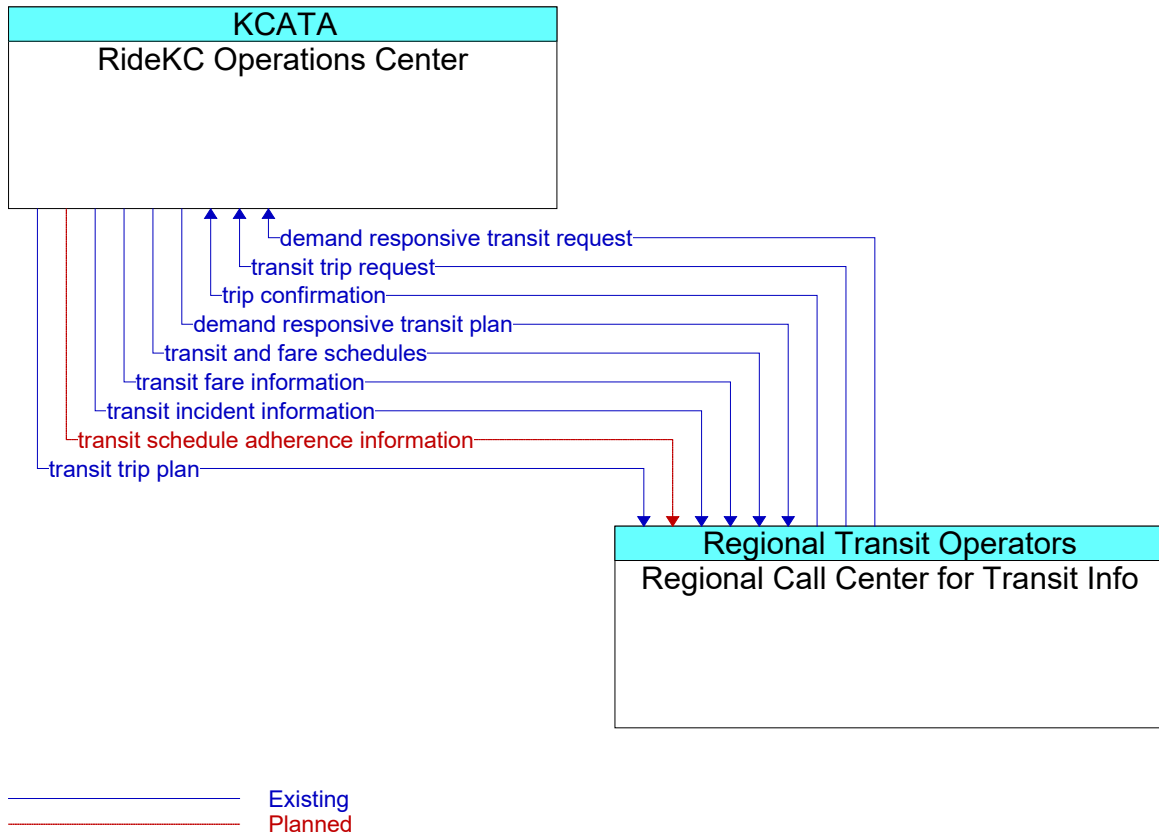
**Figure 1090: Private Trucking Companies - Private Trucking Companies Commercial Vehicles Interface**



**Figure 1091: Private Trucking Companies - Trade Data Exchange Interface**

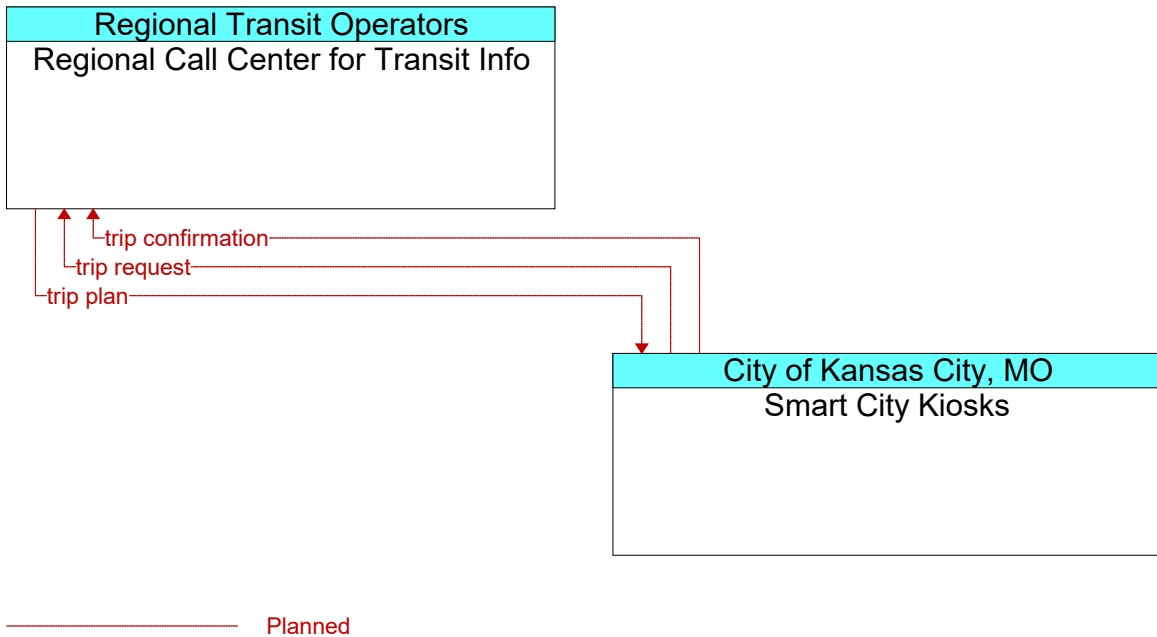


**Figure 1092: Regional Call Center for Transit Info - RideKC Field Equipment Interface**

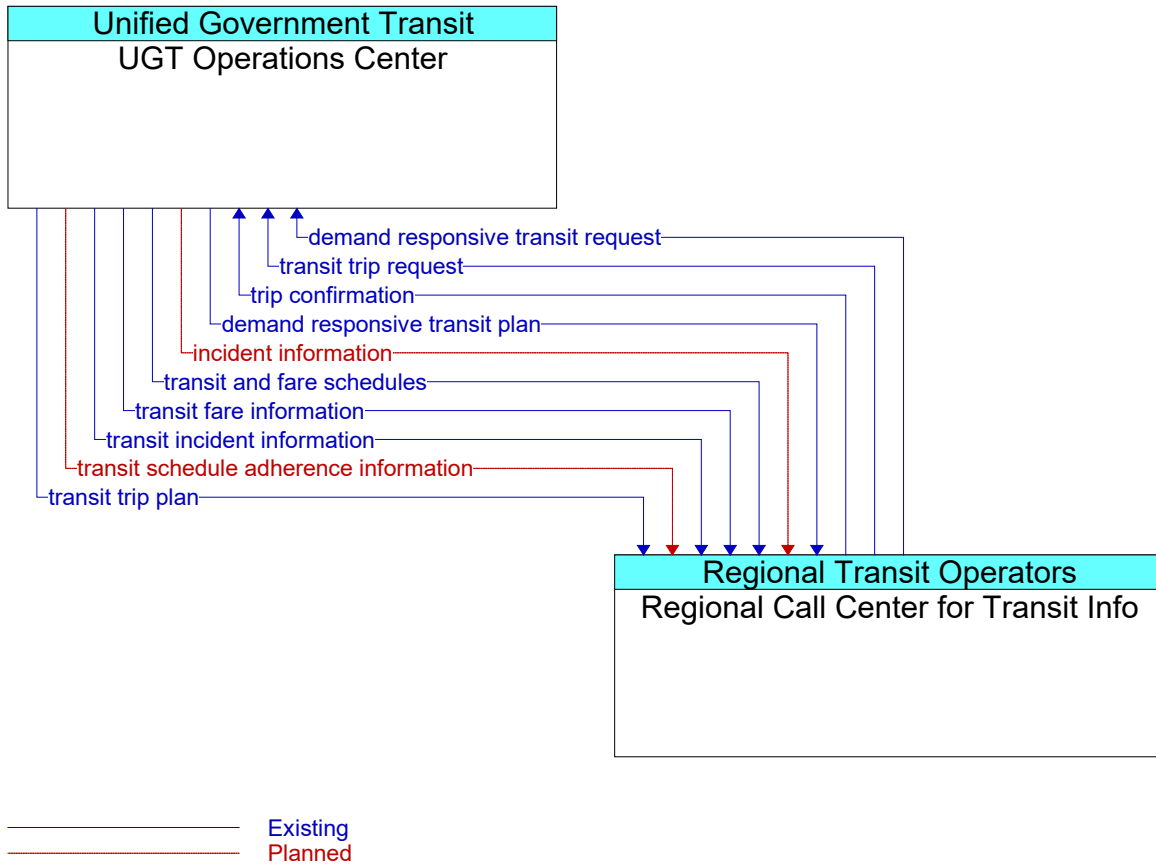


**Figure 1093: Regional Call Center for Transit Info - RideKC Operations Center Interface**

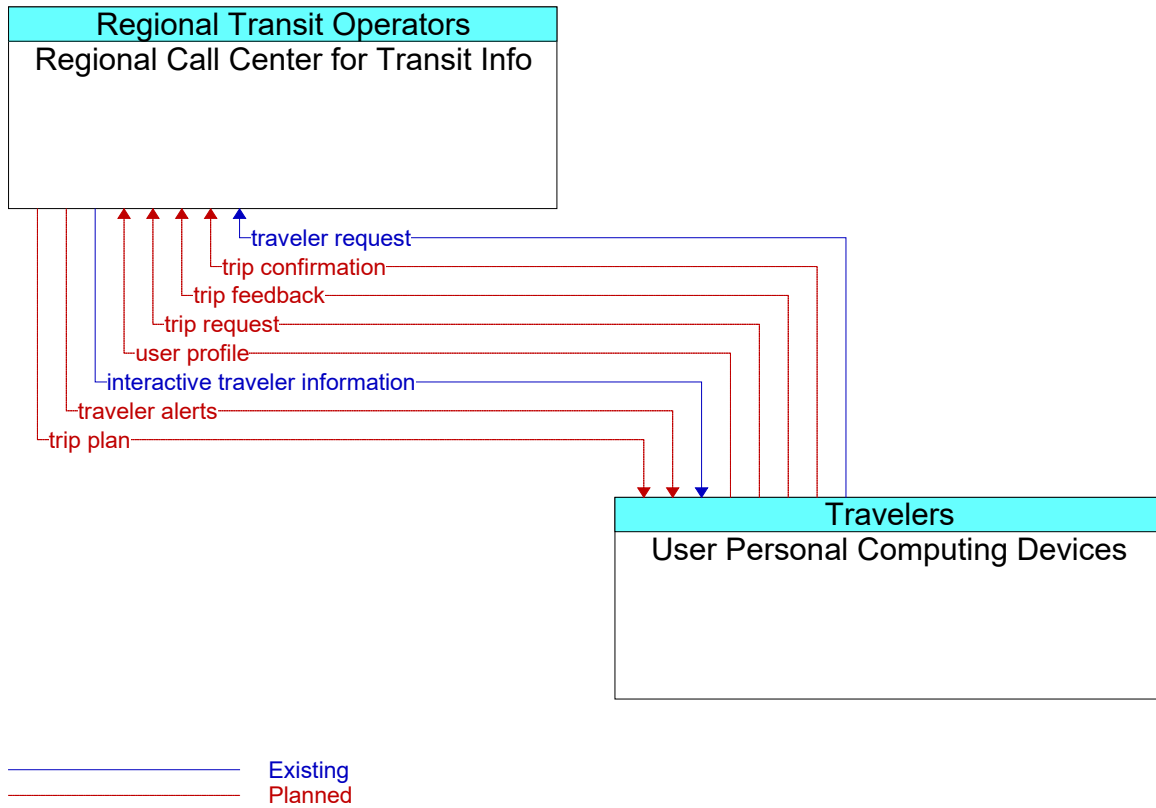




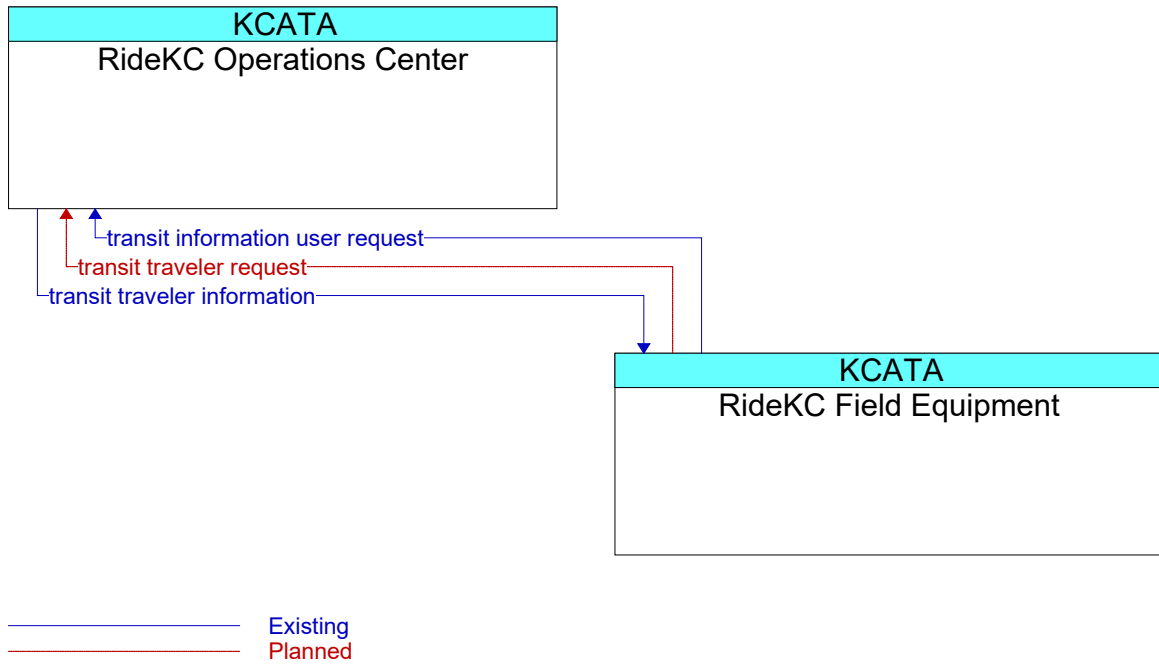
**Figure 1094: Regional Call Center for Transit Info - Smart City Kiosks Interface**



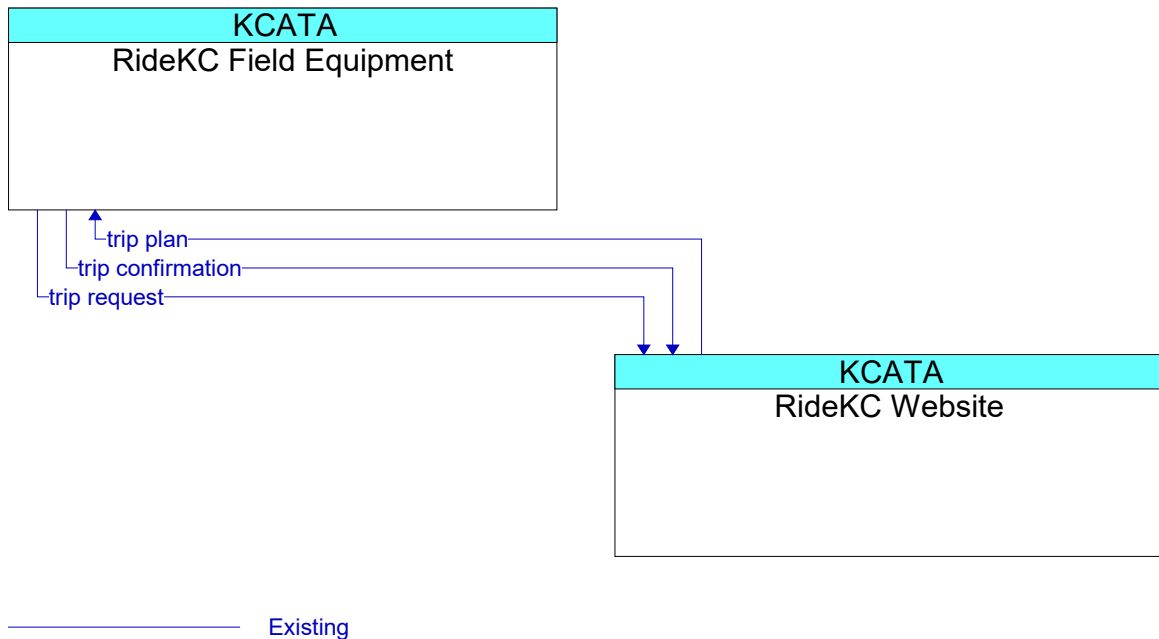
**Figure 1095: Regional Call Center for Transit Info - UGT Operations Center Interface**



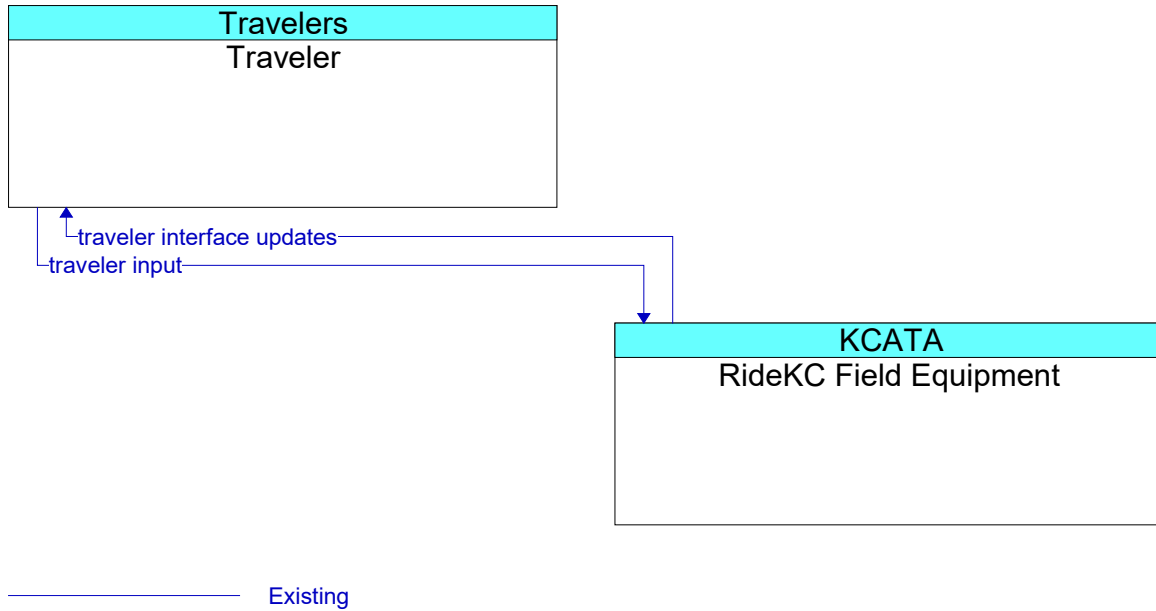
**Figure 1096: Regional Call Center for Transit Info - User Personal Computing Devices Interface**



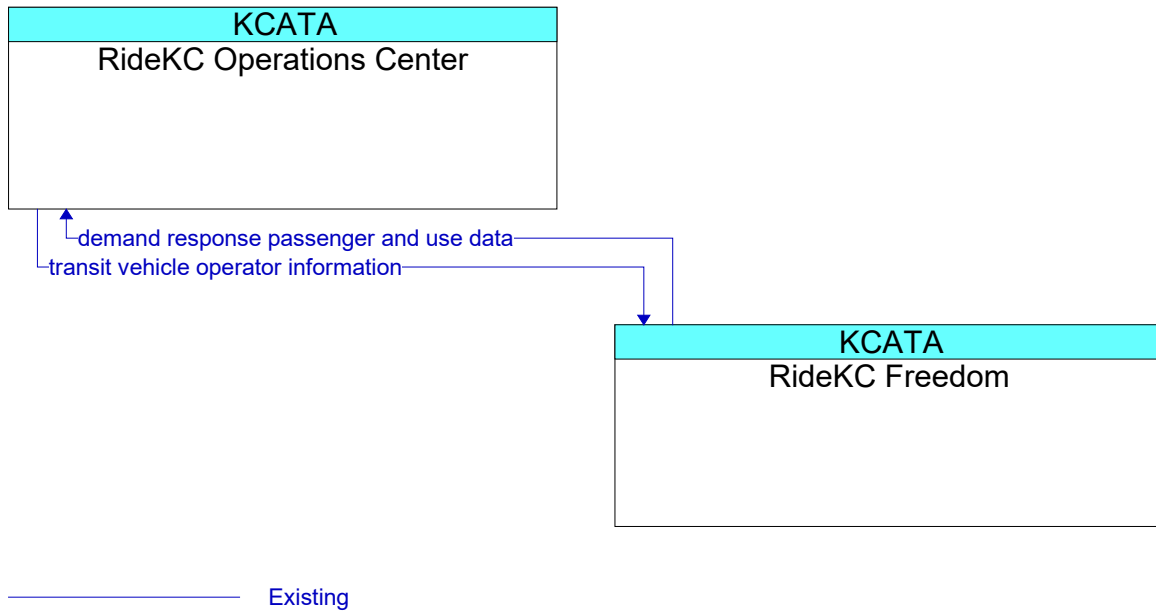
**Figure 1097: RideKC Field Equipment - RideKC Operations Center Interface**



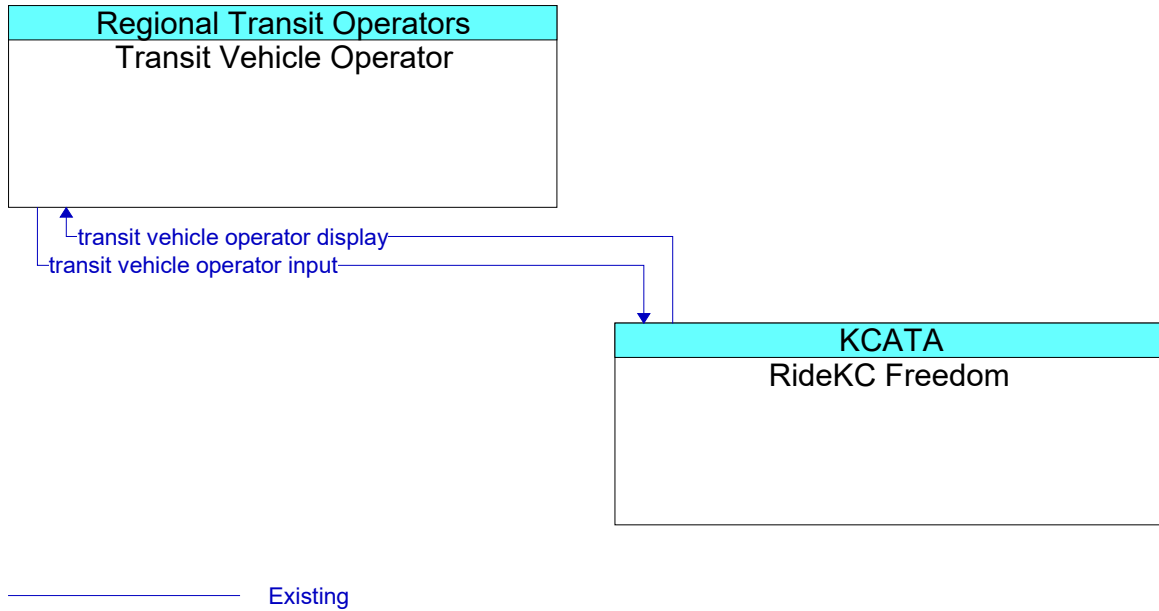
**Figure 1098: RideKC Field Equipment - RideKC Website Interface**



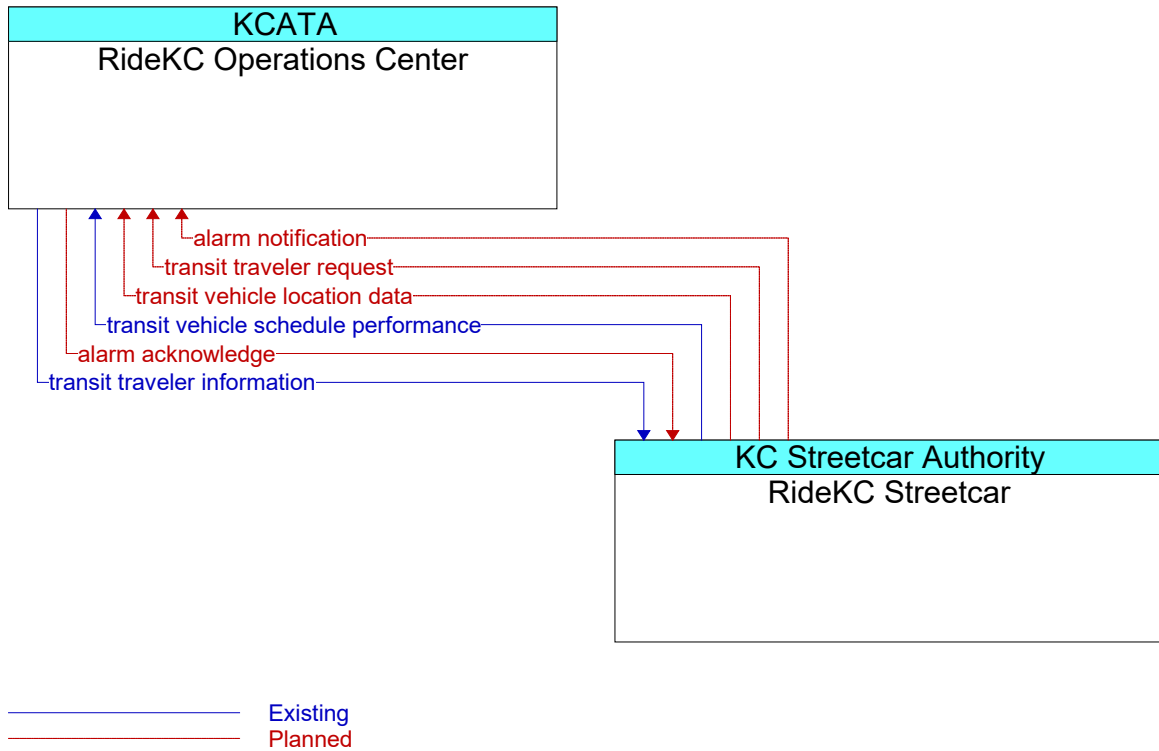
**Figure 1099: RideKC Field Equipment - Traveler Interface**



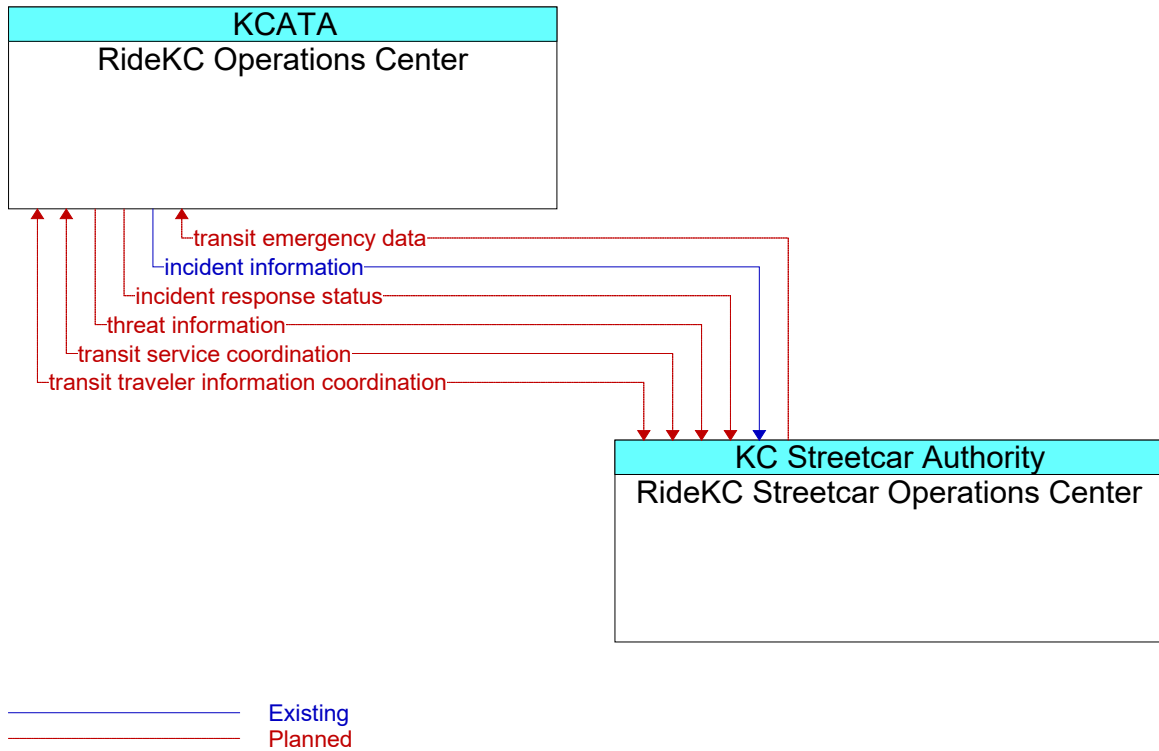
**Figure 1100: RideKC Freedom - RideKC Operations Center Interface**



**Figure 1101: RideKC Freedom - Transit Vehicle Operator Interface**

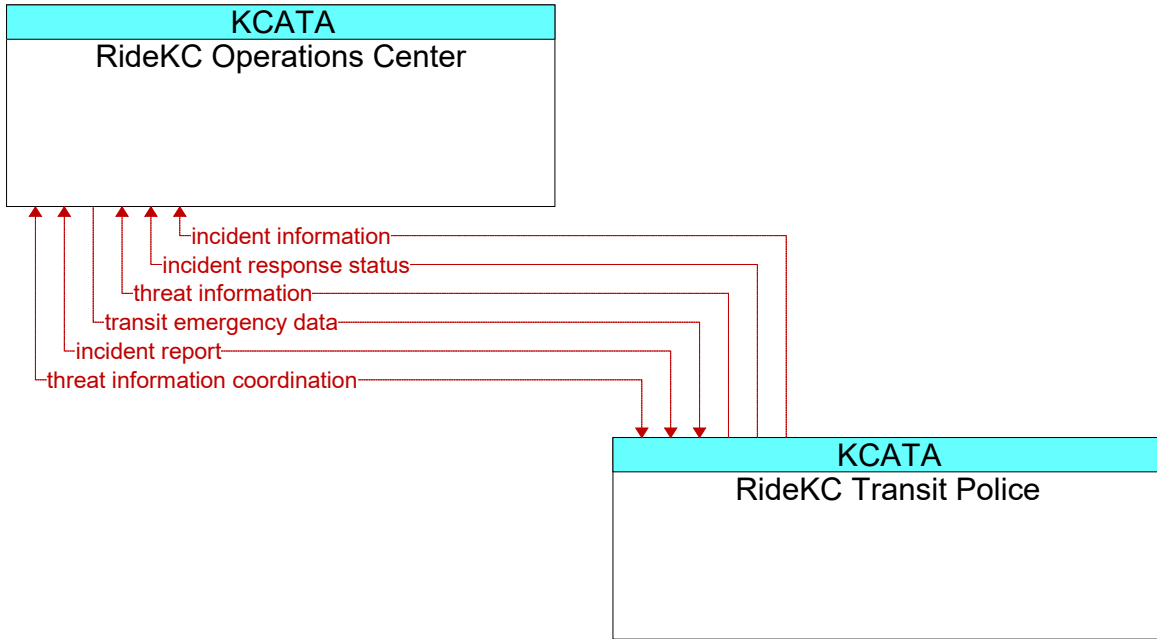


**Figure 1102: RideKC Operations Center - RideKC Streetcar Interface**



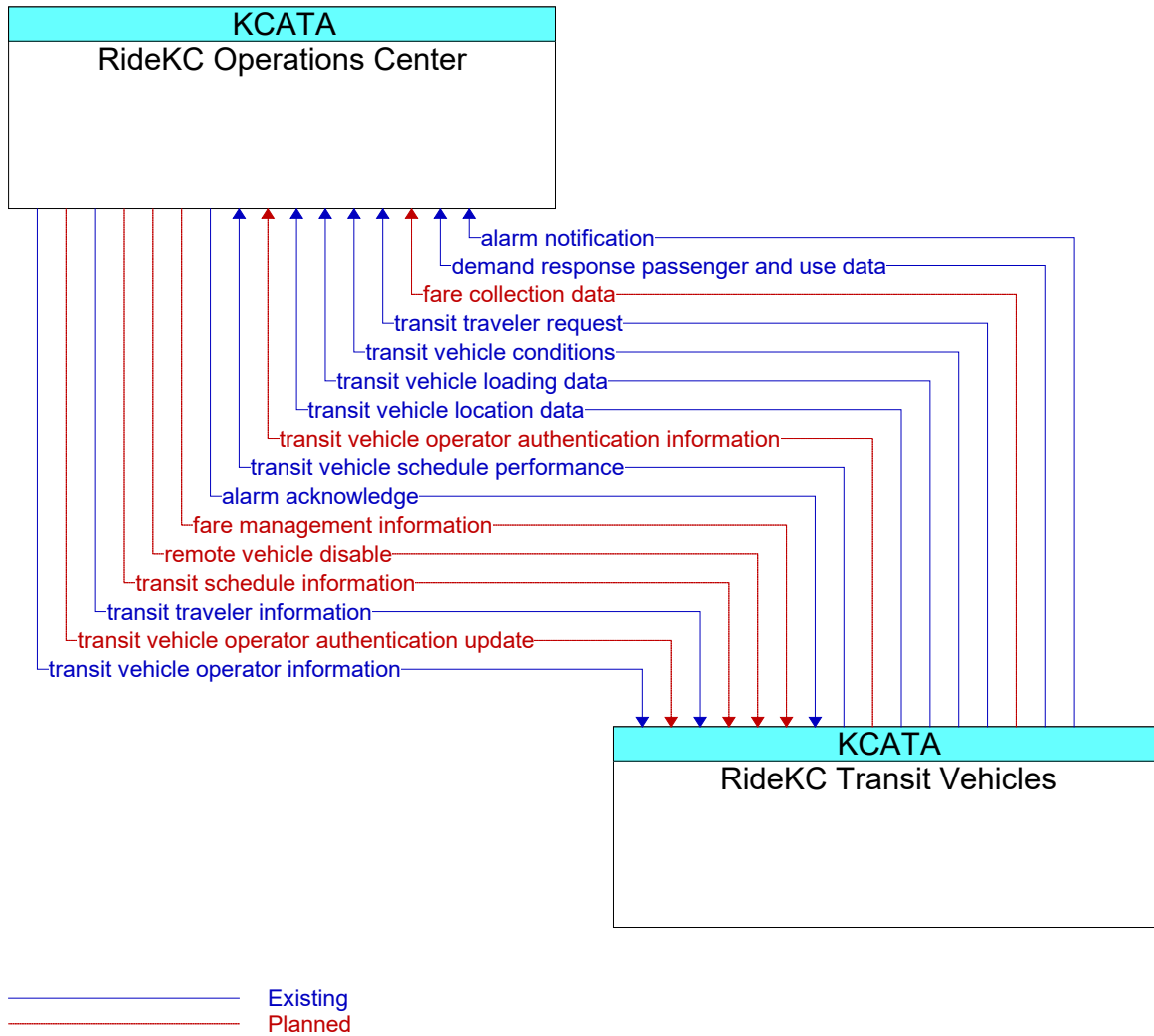
**Figure 1103: RideKC Operations Center - RideKC Streetcar Operations Center Interface**



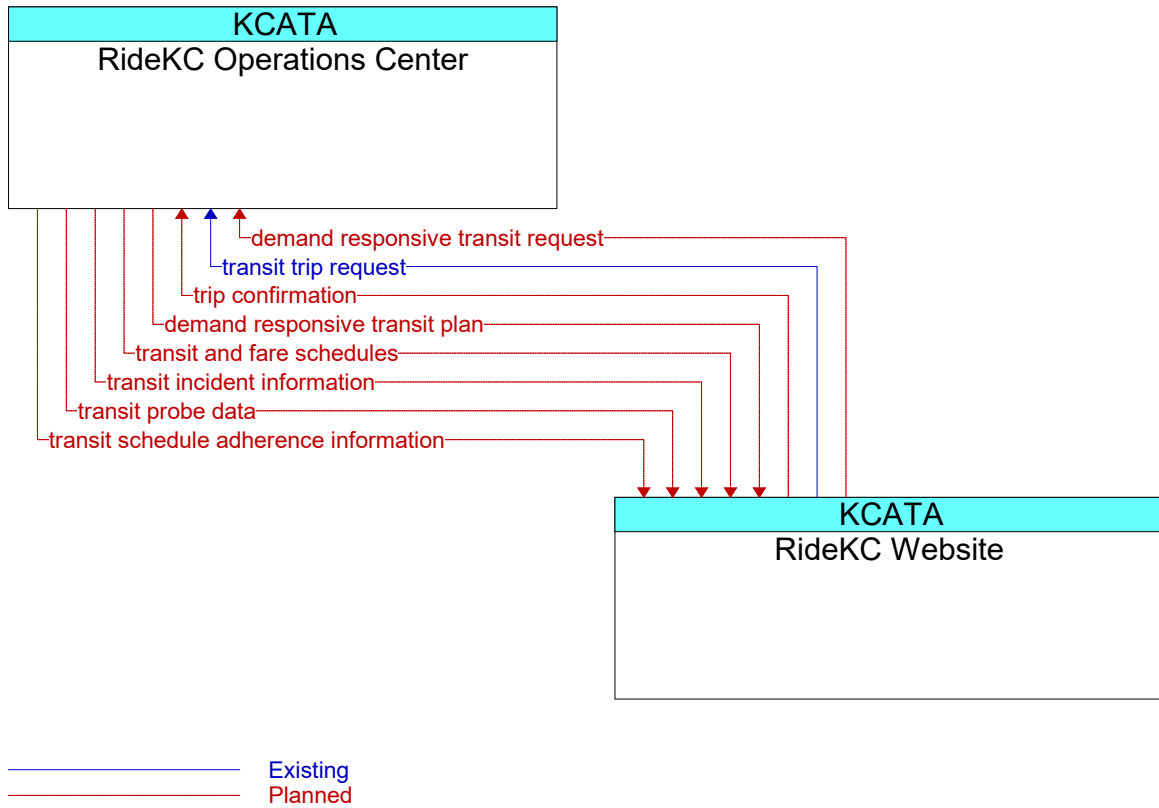


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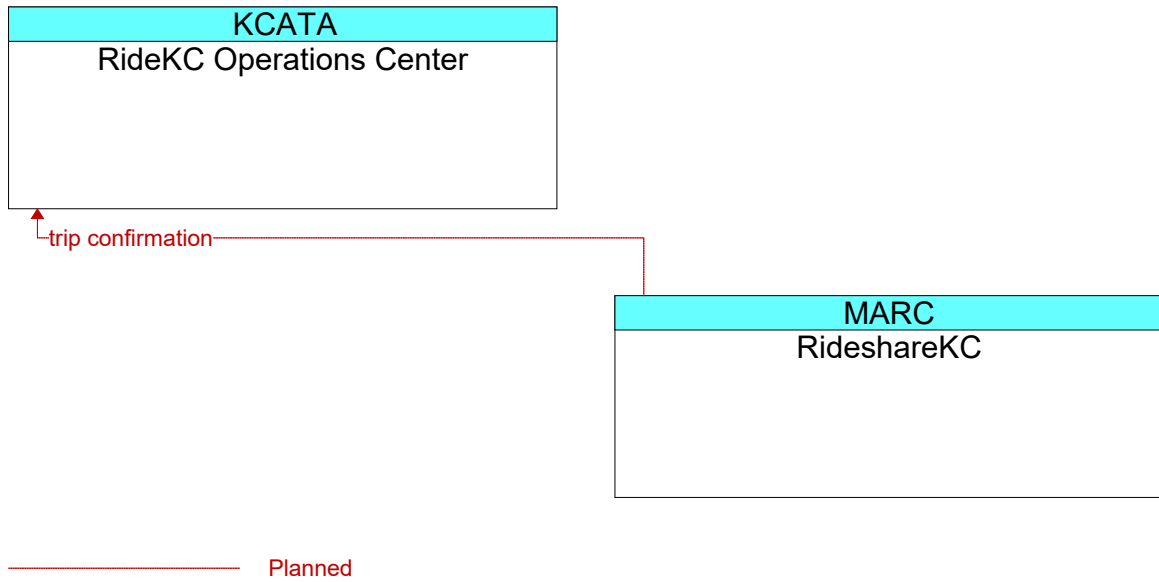
**Figure 1104: RideKC Operations Center - RideKC Transit Police Interface**



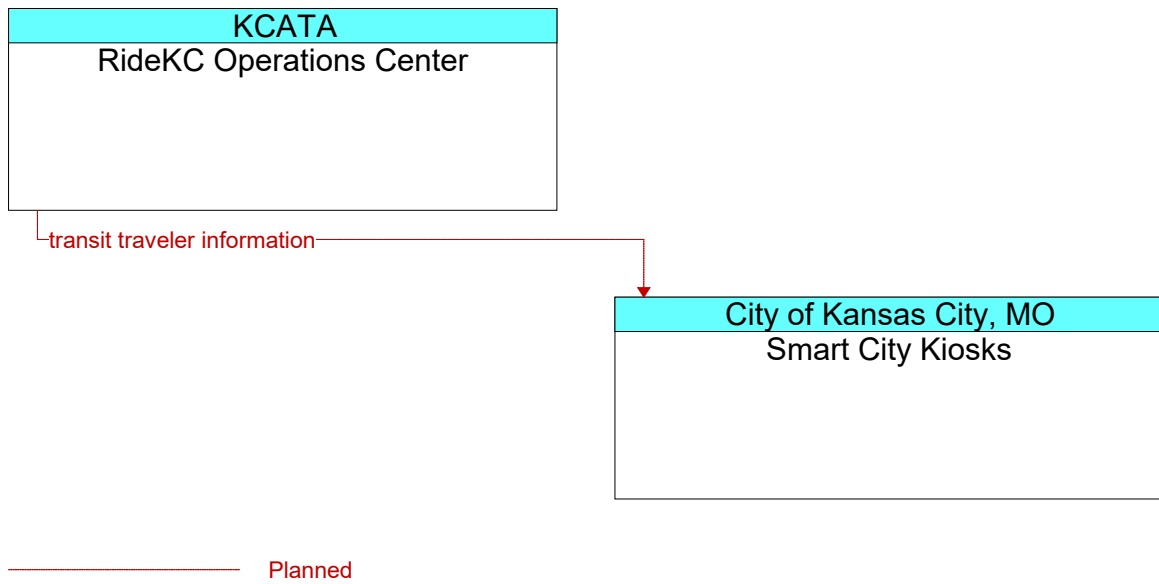
**Figure 1105: RideKC Operations Center - RideKC Transit Vehicles Interface**



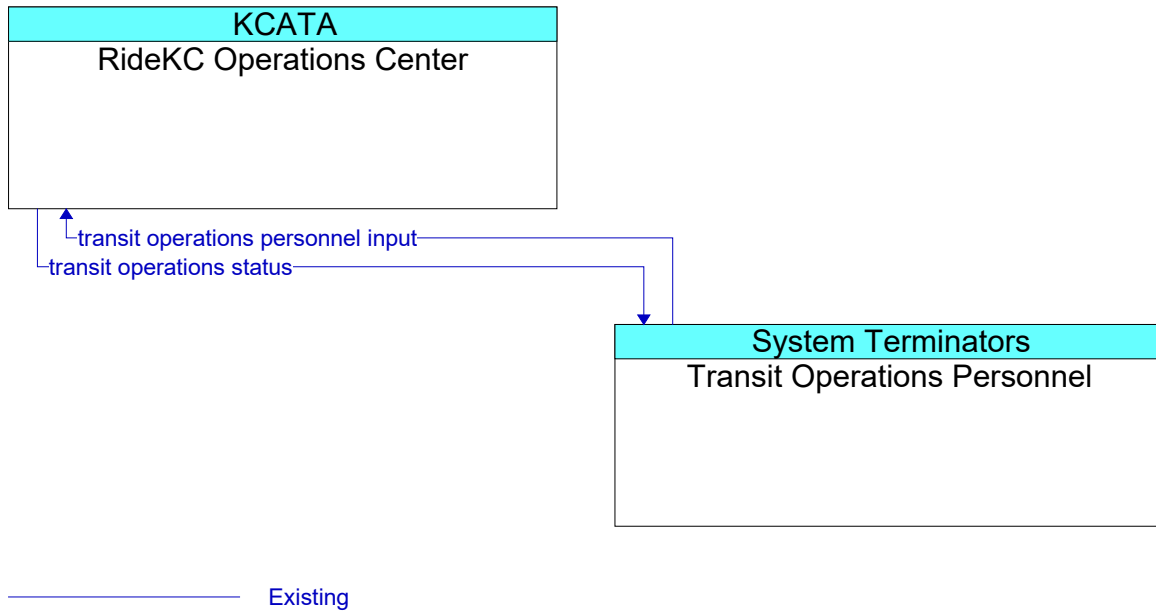
**Figure 1106: RideKC Operations Center - RideKC Website Interface**



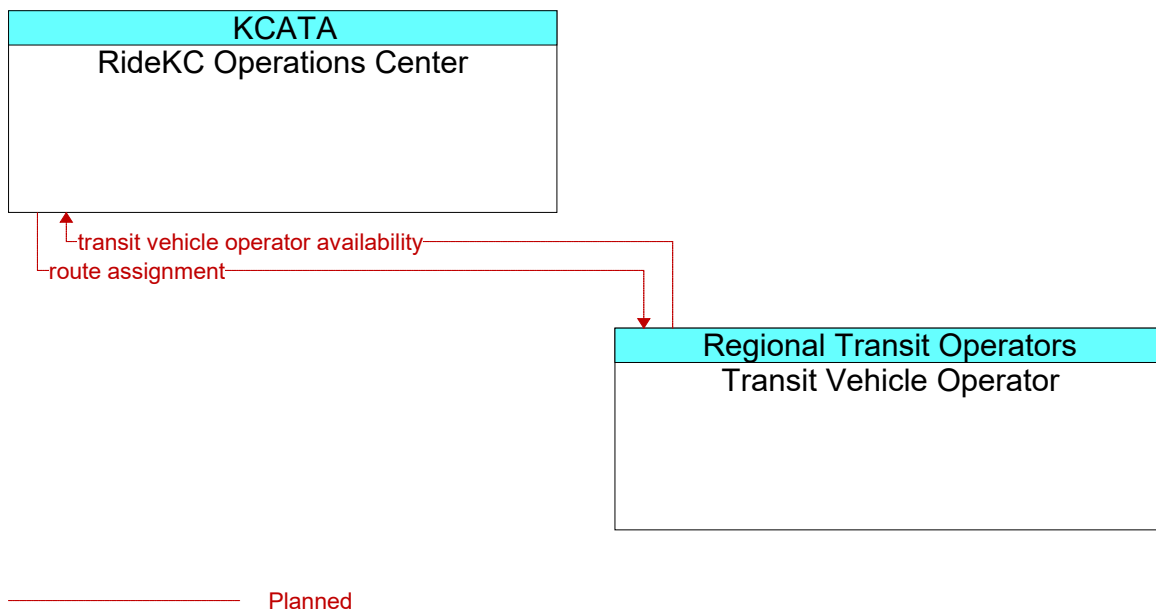
**Figure 1107: RideKC Operations Center - RideshareKC Interface**



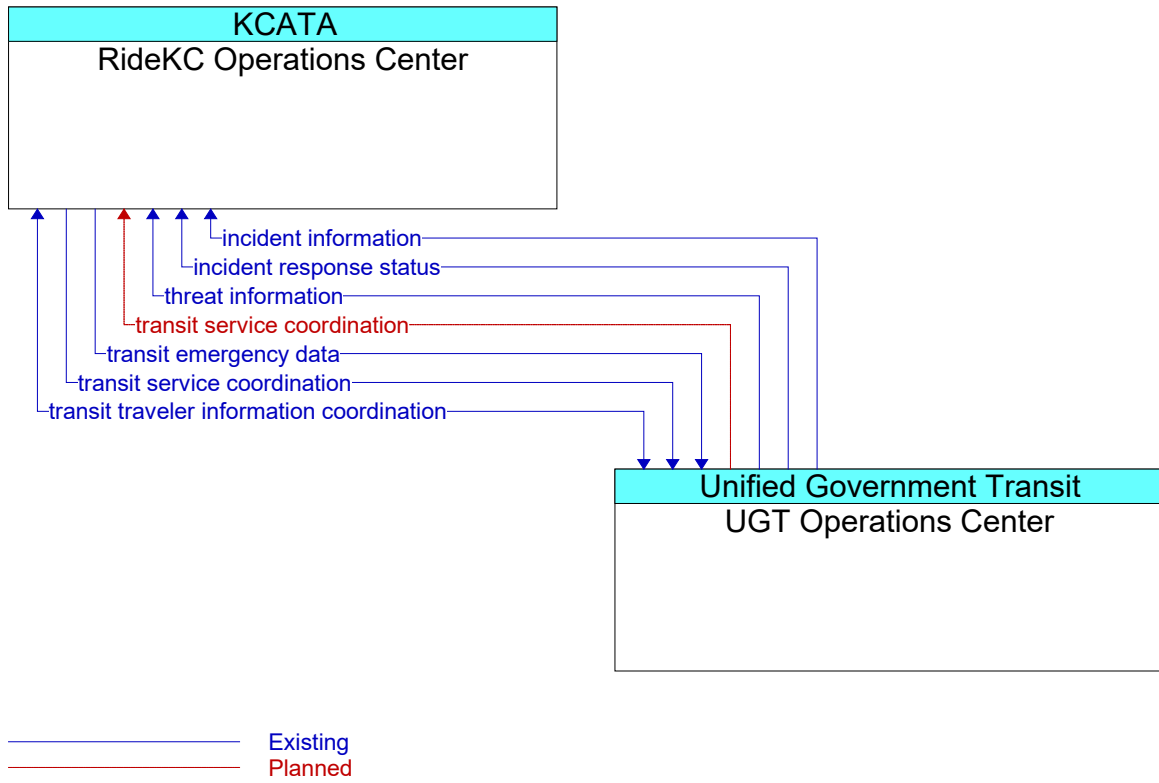
**Figure 1108: RideKC Operations Center - Smart City Kiosks Interface**



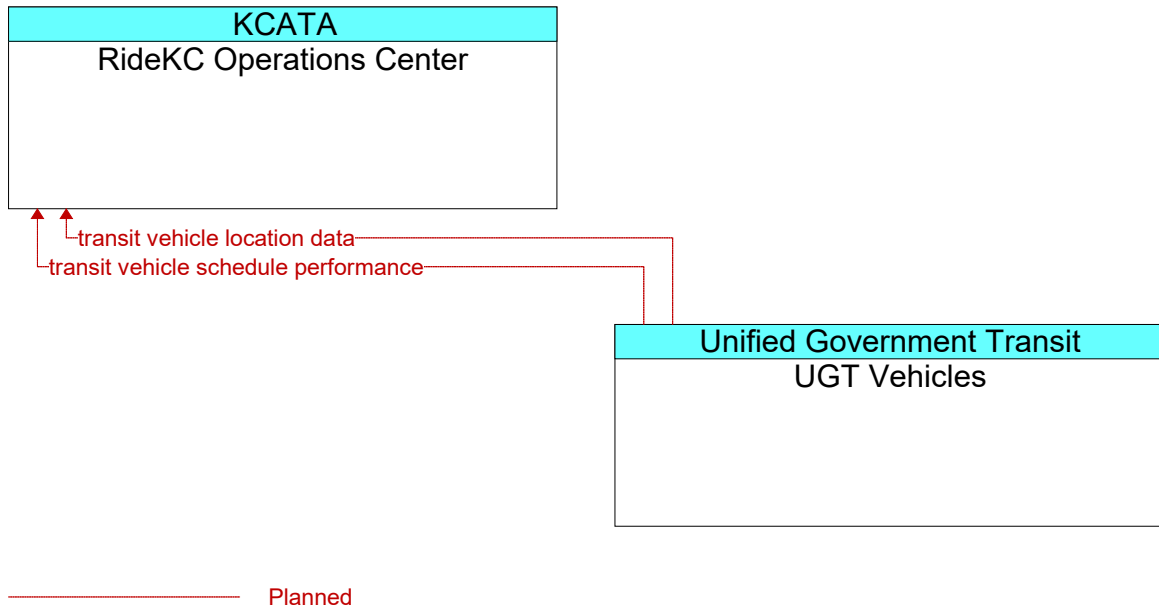
**Figure 1109: RideKC Operations Center - Transit Operations Personnel Interface**



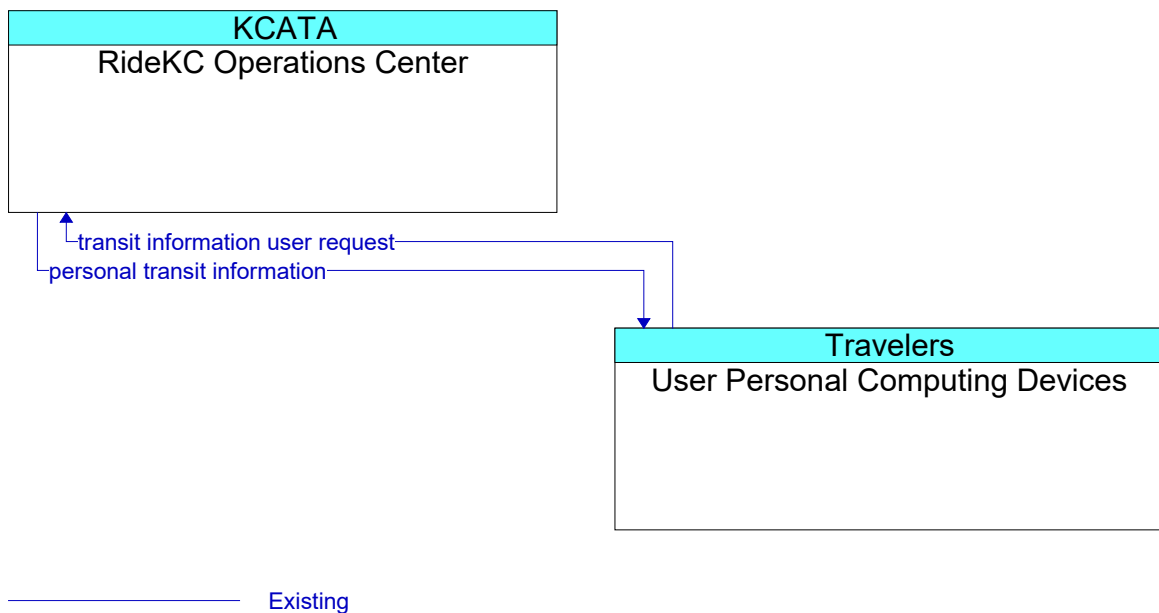
**Figure 1110: RideKC Operations Center - Transit Vehicle Operator Interface**



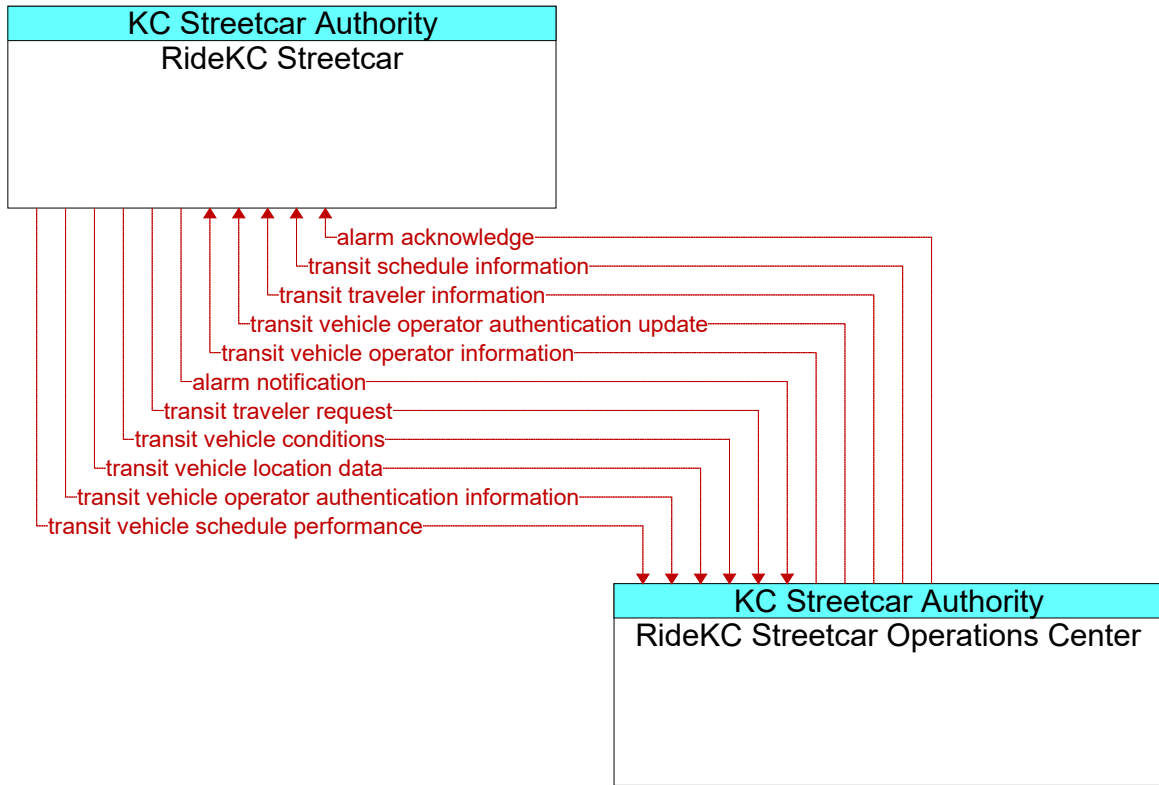
**Figure 1111: RideKC Operations Center - UGT Operations Center Interface**



**Figure 1112: RideKC Operations Center - UGT Vehicles Interface**



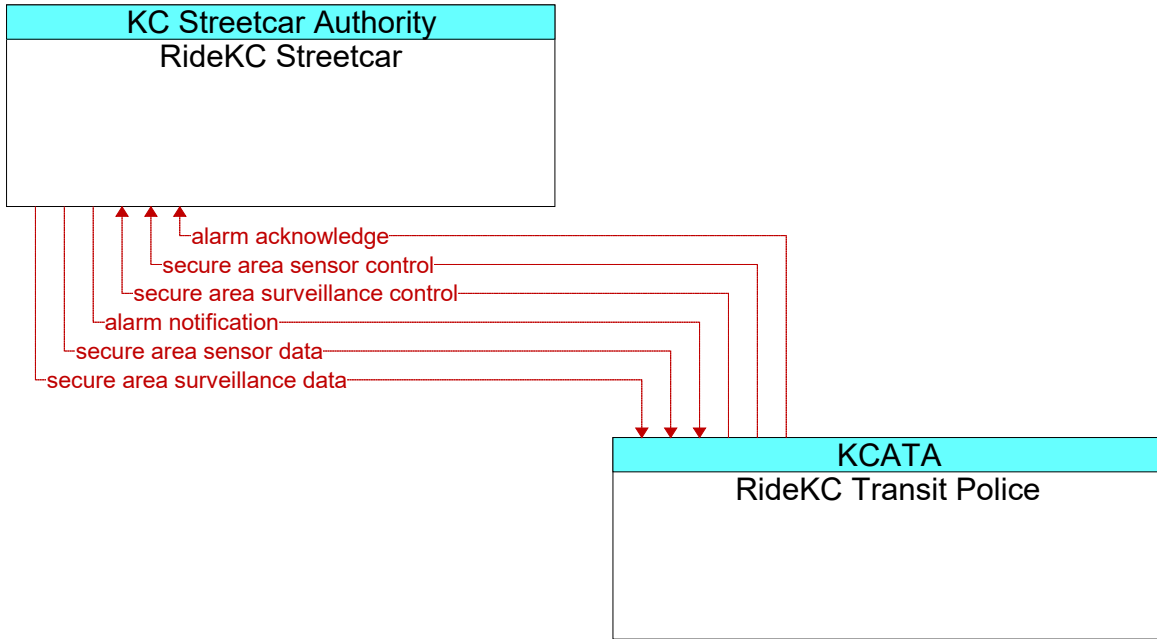
**Figure 1113: RideKC Operations Center - User Personal Computing Devices Interface**



Planned

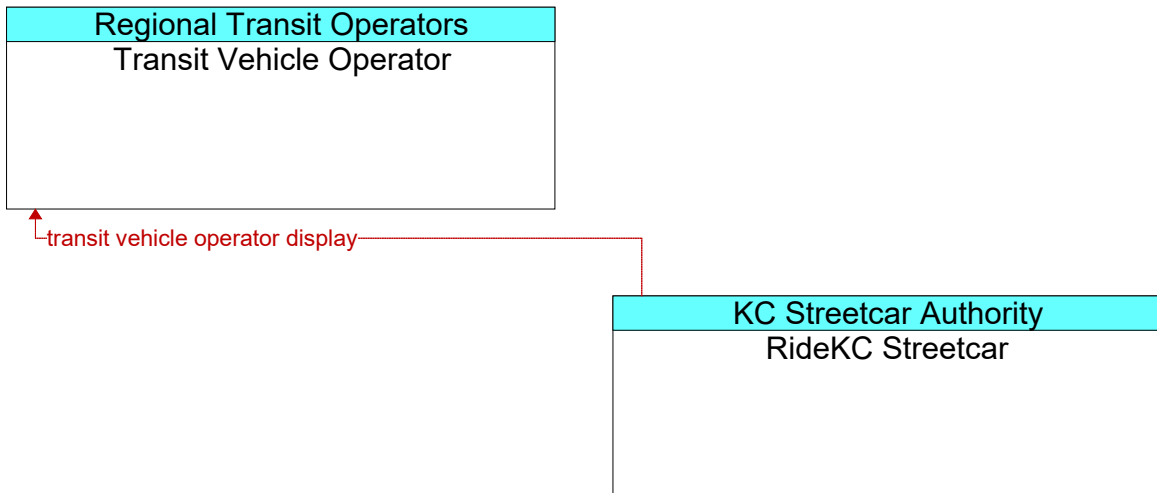
**Figure 1114: RideKC Streetcar - RideKC Streetcar Operations Center Interface**





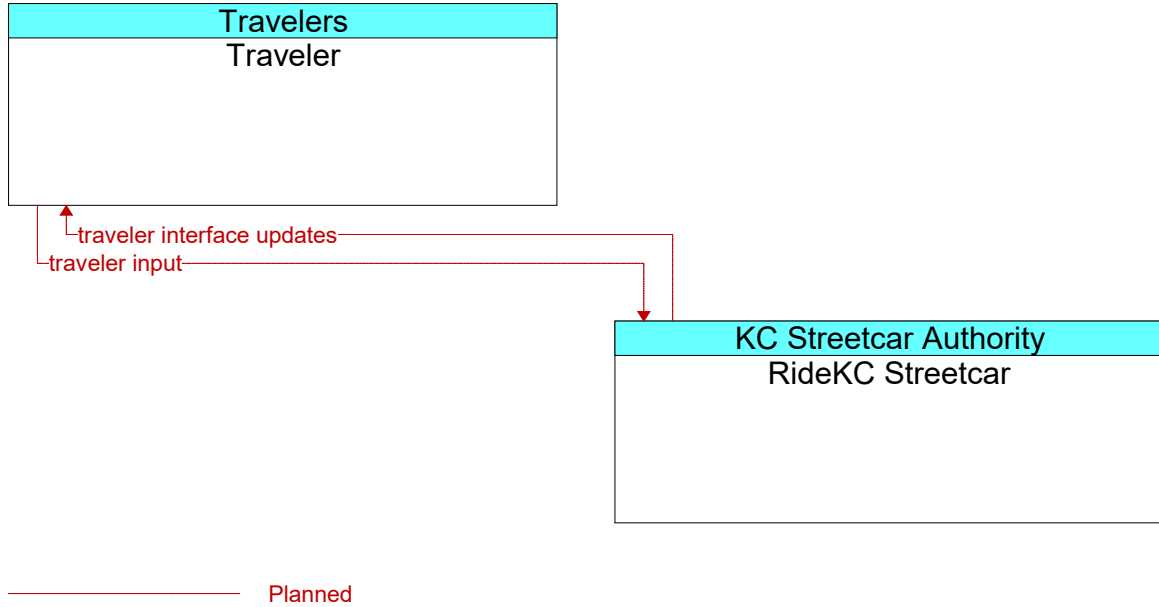
Planned

**Figure 1115: RideKC Streetcar - RideKC Transit Police Interface**

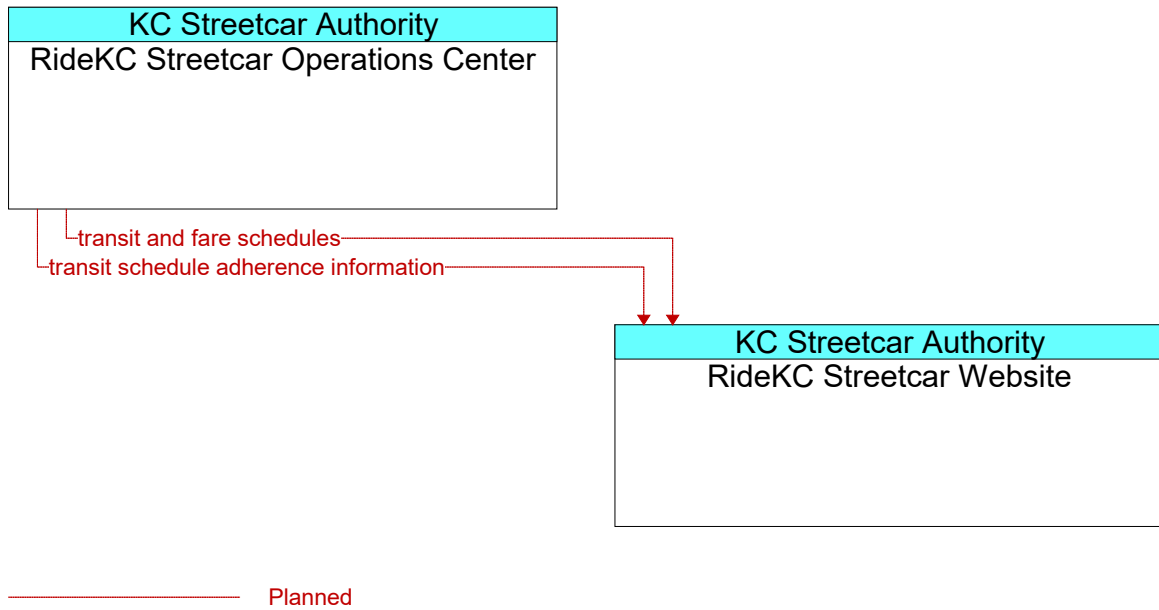


Planned

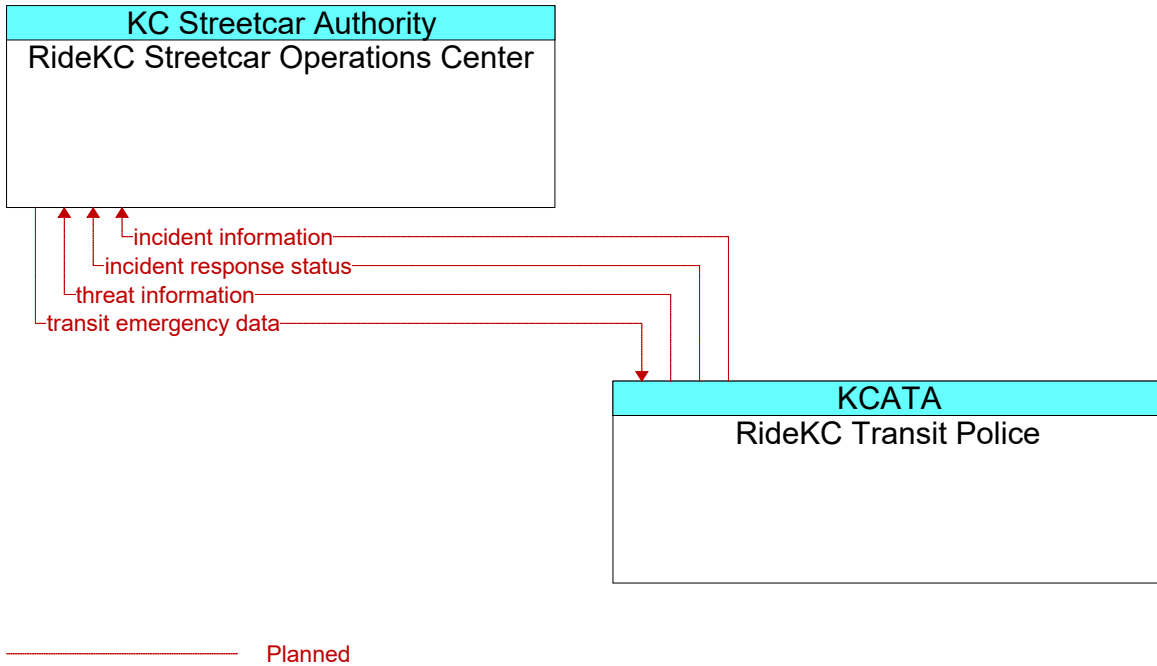
**Figure 1116: RideKC Streetcar - Transit Vehicle Operator Interface**



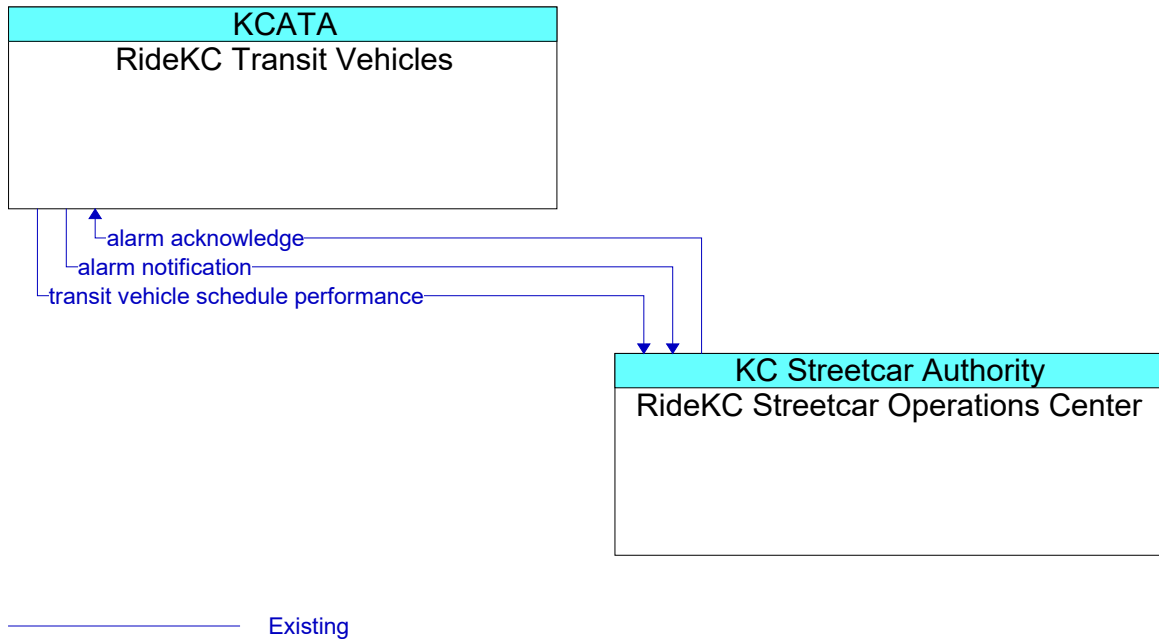
**Figure 1117: RideKC Streetcar - Traveler Interface**



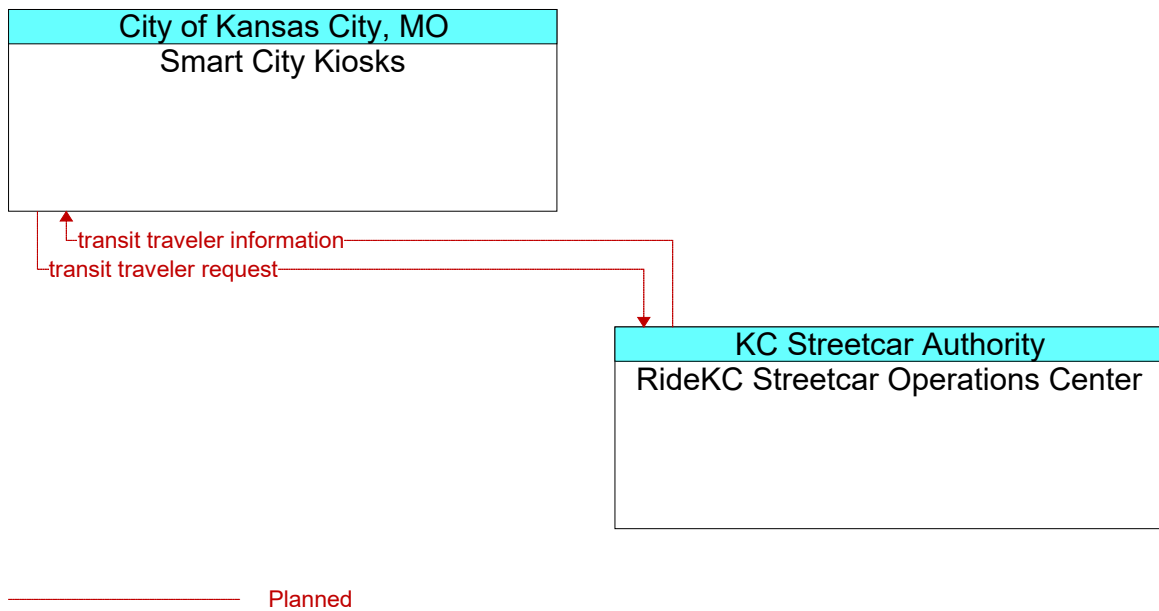
**Figure 1118: RideKC Streetcar Operations Center - RideKC Streetcar Website Interface**



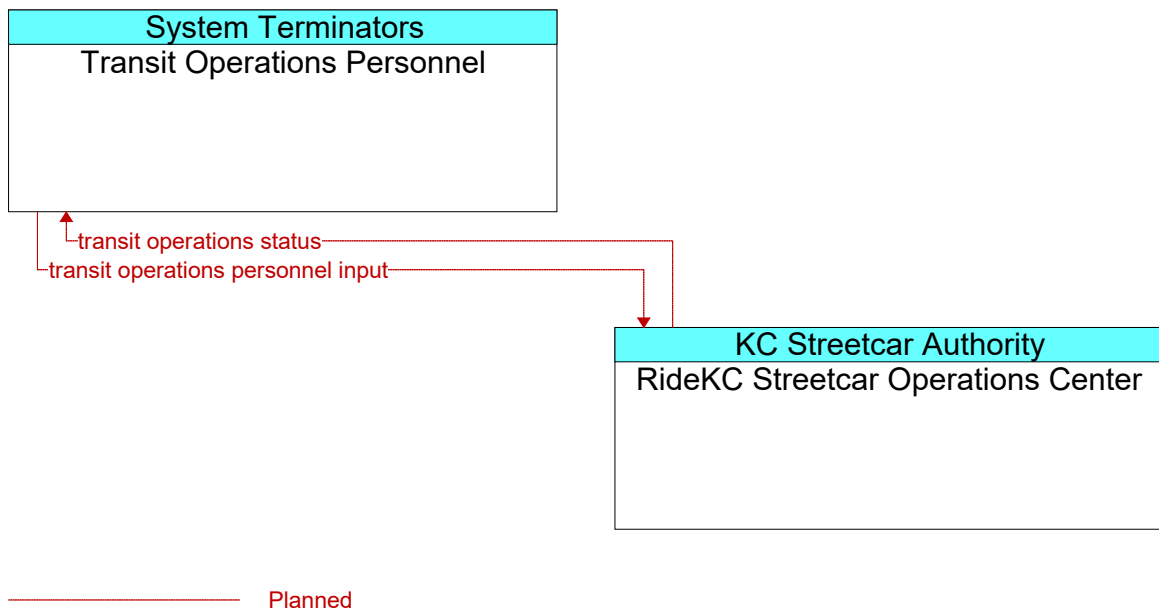
**Figure 1119: RideKC Streetcar Operations Center - RideKC Transit Police Interface**



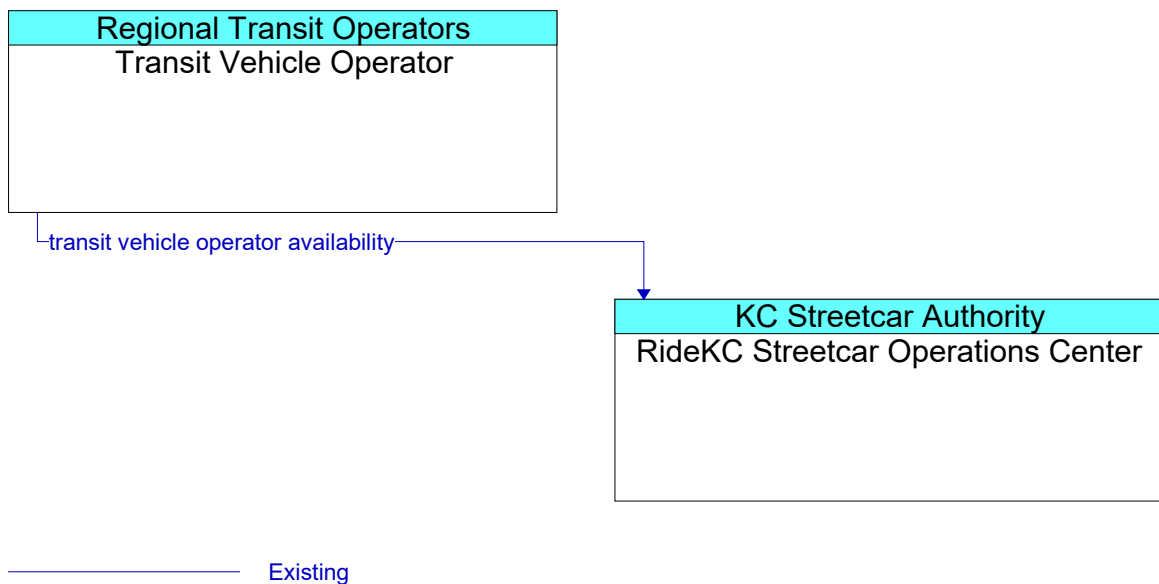
**Figure 1120: RideKC Streetcar Operations Center - RideKC Transit Vehicles Interface**



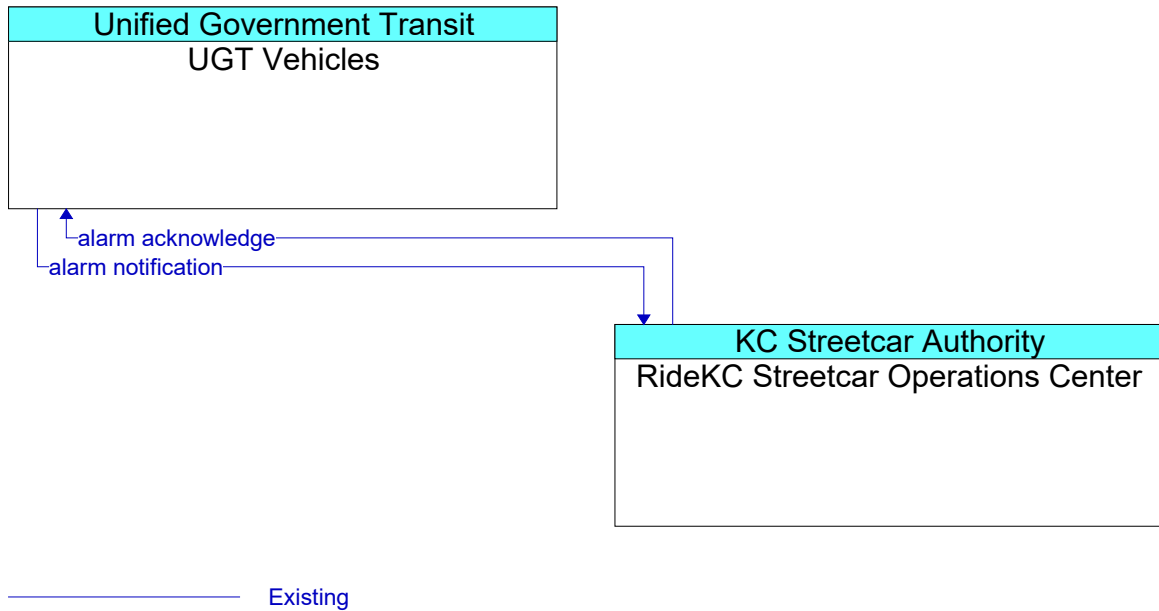
**Figure 1121: RideKC Streetcar Operations Center - Smart City Kiosks Interface**



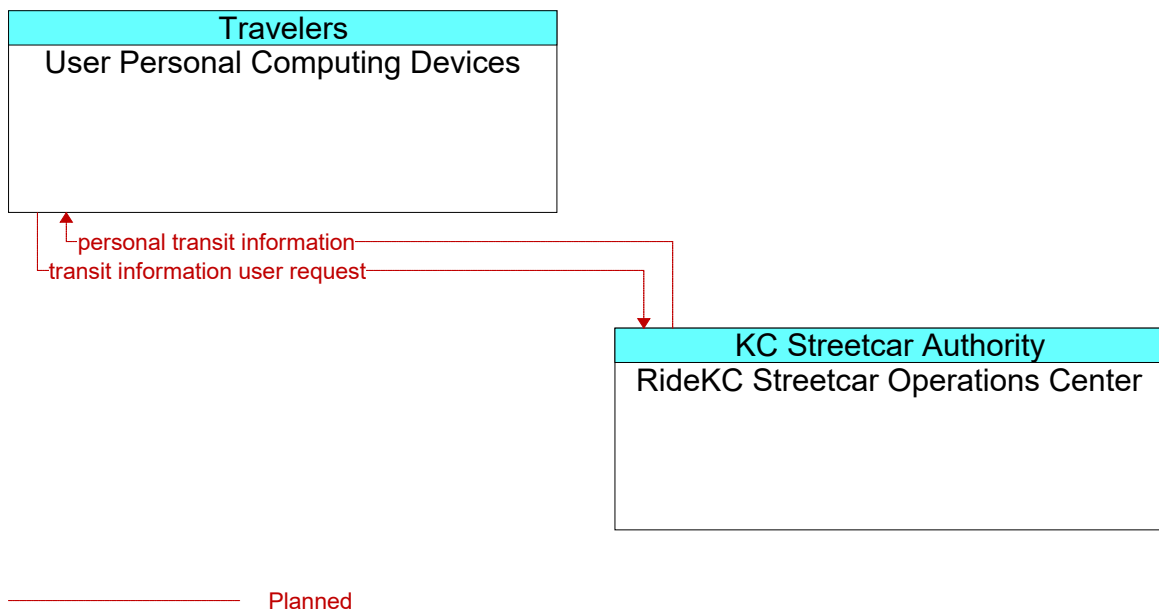
**Figure 1122: RideKC Streetcar Operations Center - Transit Operations Personnel Interface**



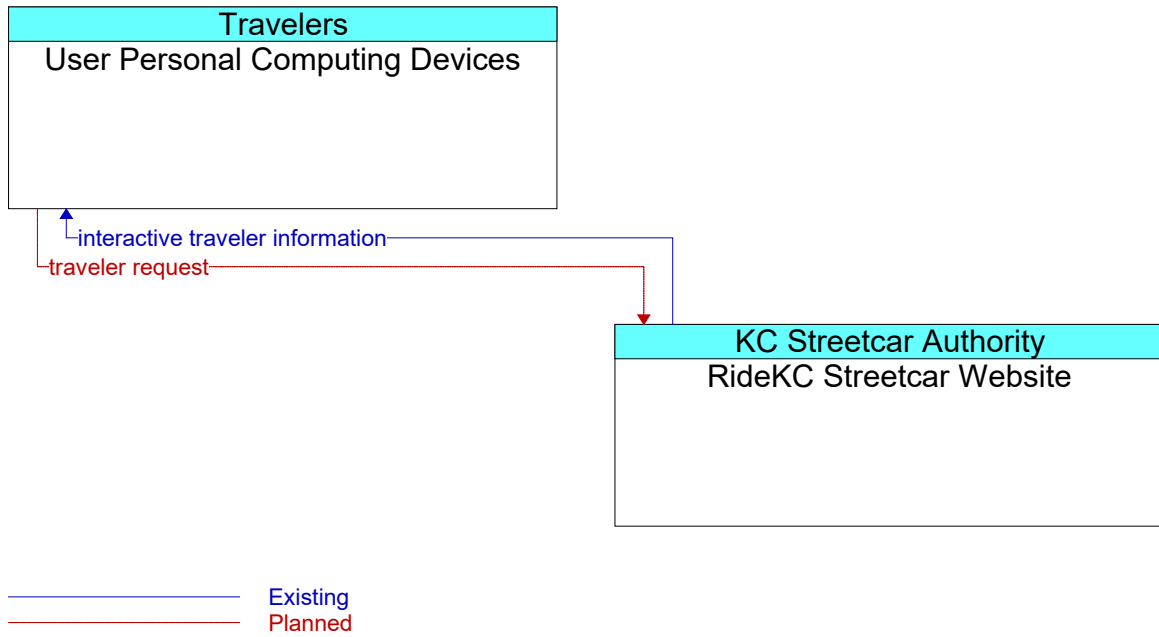
**Figure 1123: RideKC Streetcar Operations Center - Transit Vehicle Operator Interface**



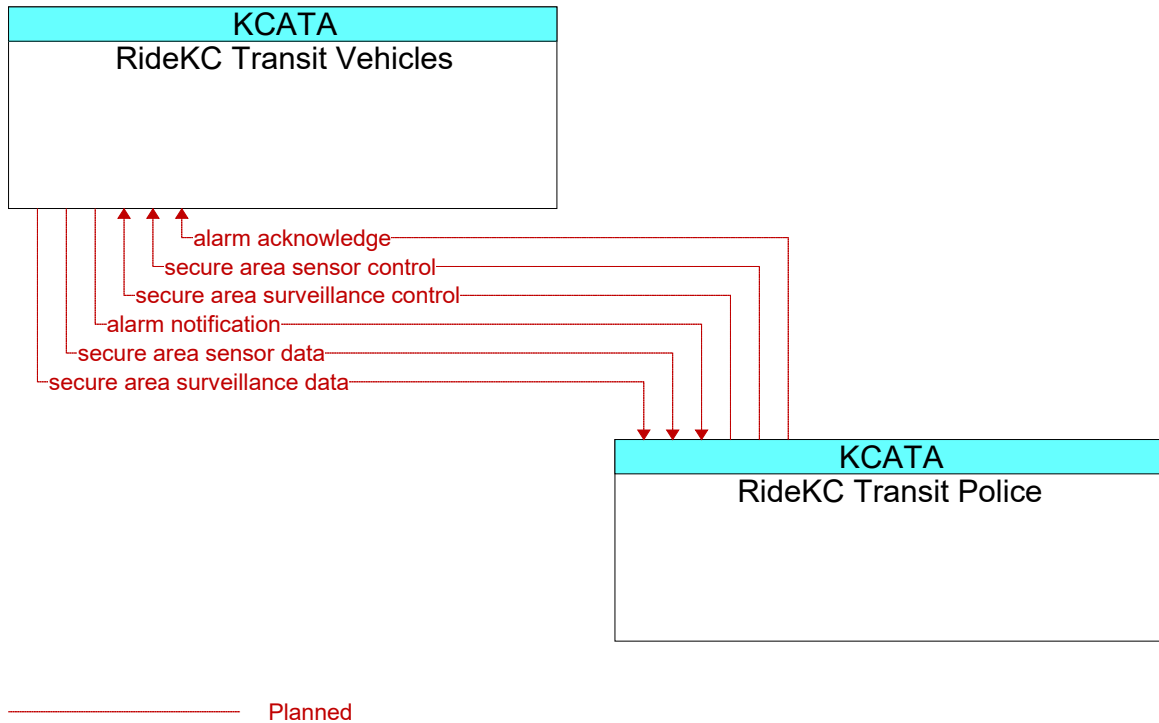
**Figure 1124: RideKC Streetcar Operations Center - UGT Vehicles Interface**



**Figure 1125: RideKC Streetcar Operations Center - User Personal Computing Devices Interface**

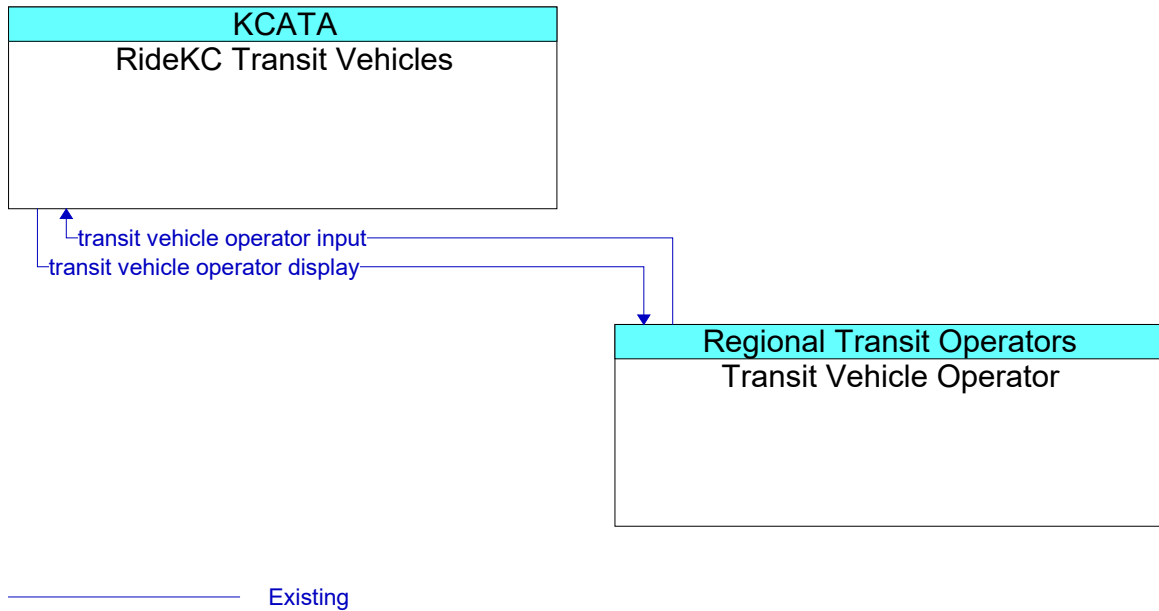


**Figure 1126: RideKC Streetcar Website - User Personal Computing Devices Interface**

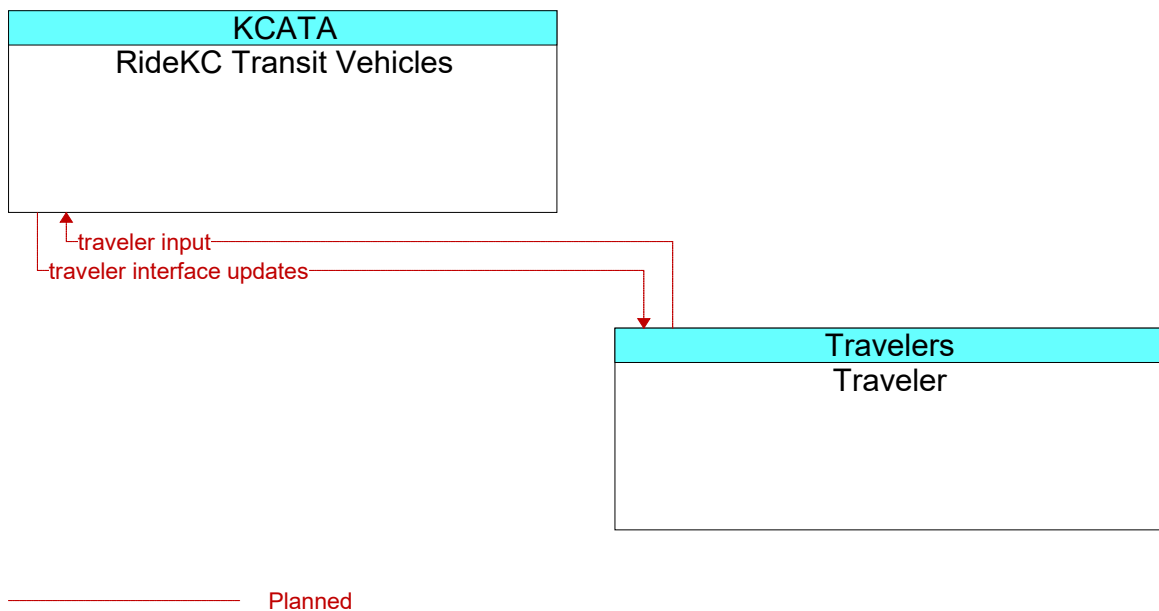


**Figure 1127: RideKC Transit Police - RideKC Transit Vehicles Interface**

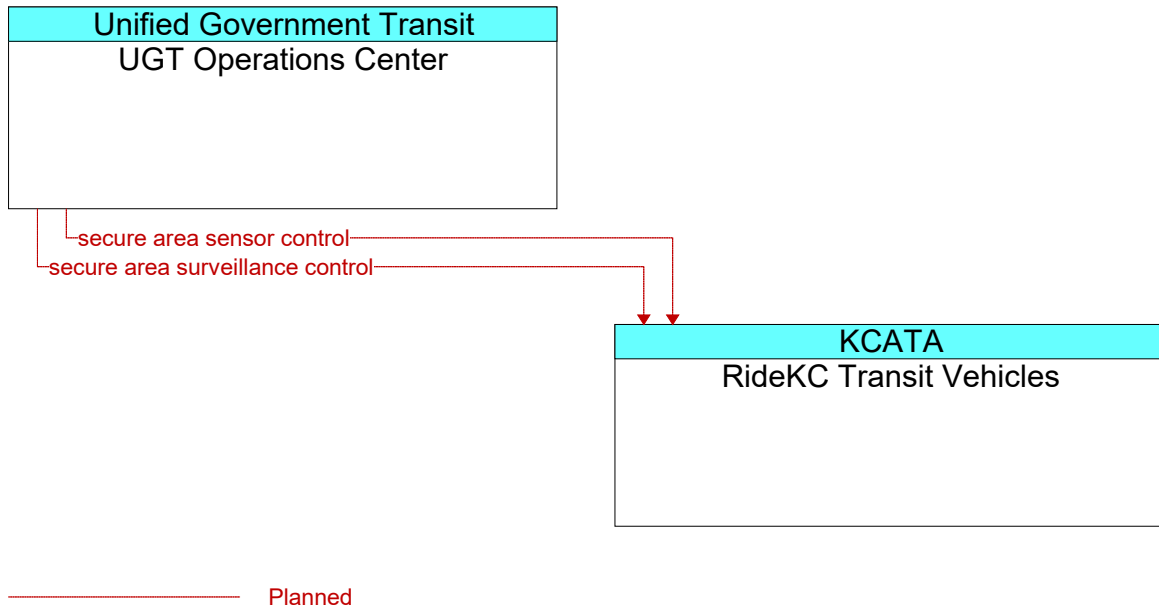




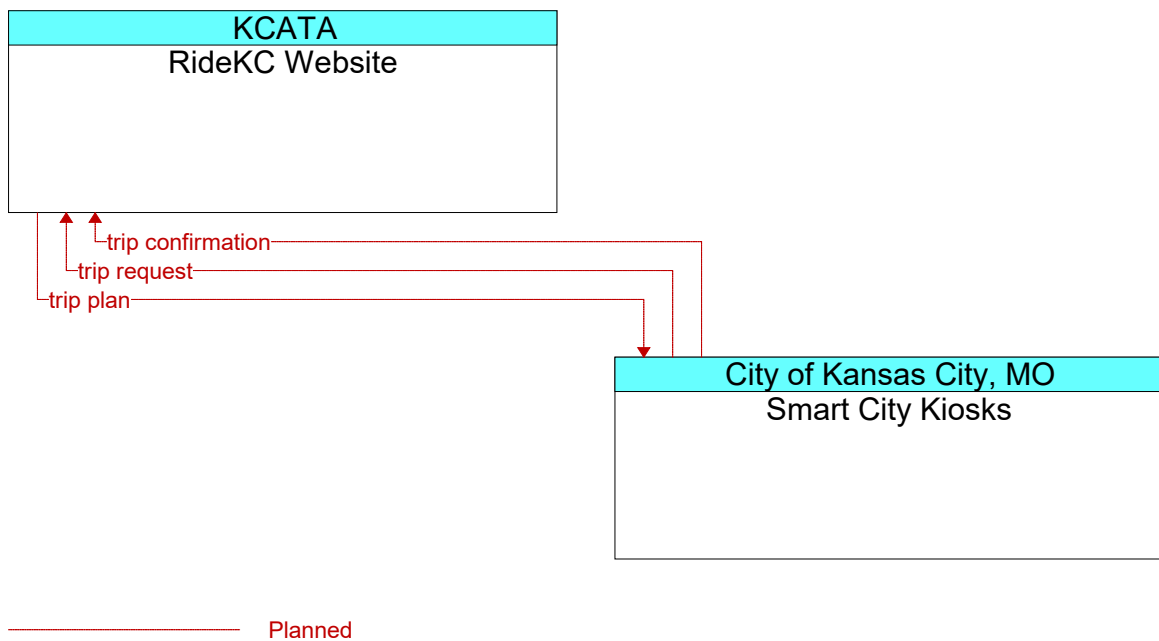
**Figure 1128: RideKC Transit Vehicles - Transit Vehicle Operator Interface**



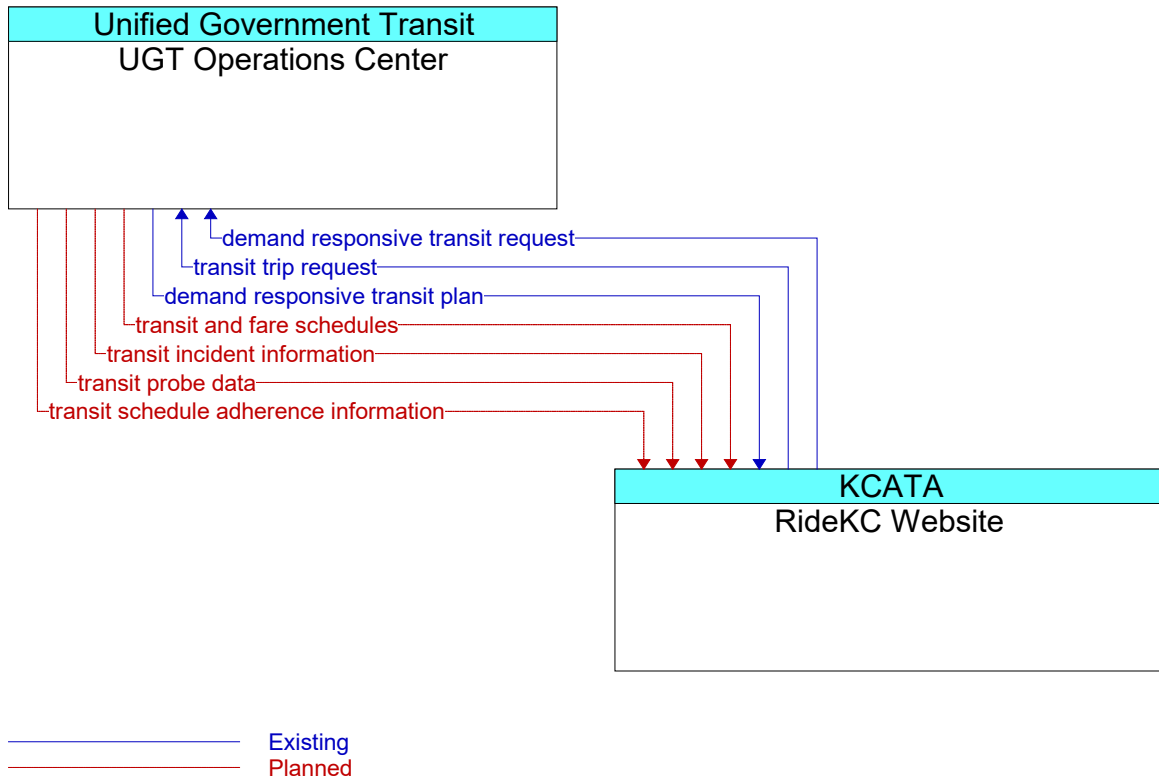
**Figure 1129: RideKC Transit Vehicles - Traveler Interface**



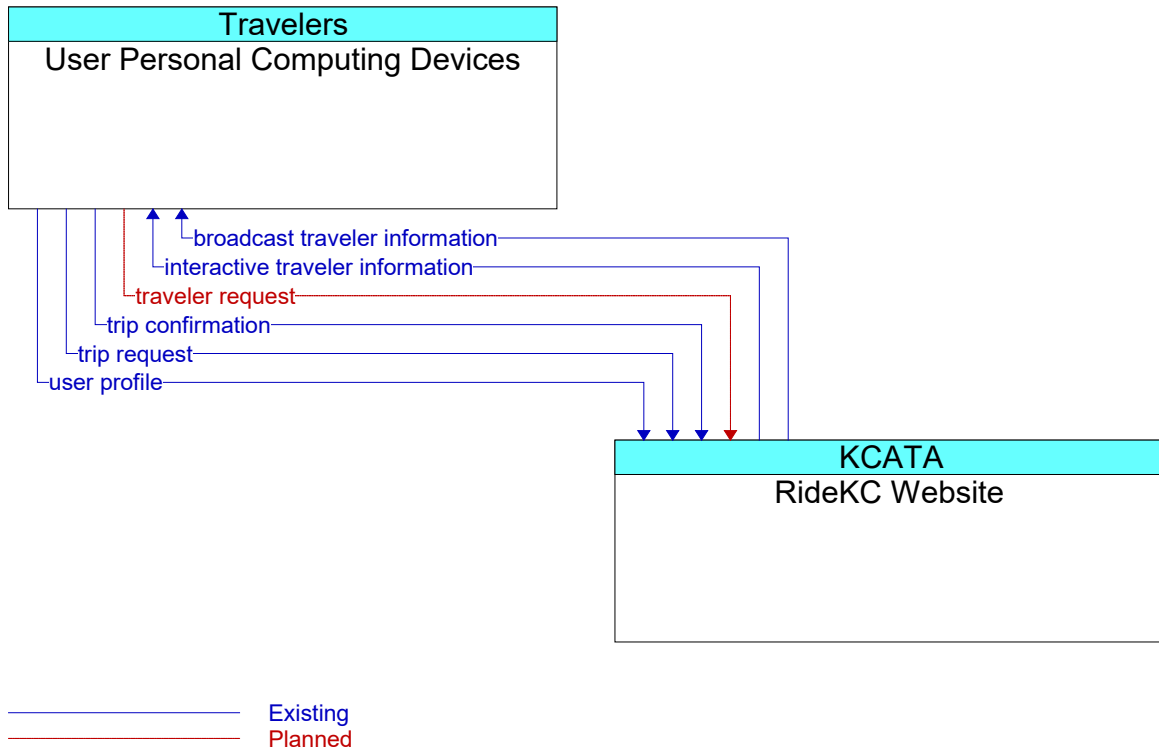
**Figure 1130: RideKC Transit Vehicles - UGT Operations Center Interface**



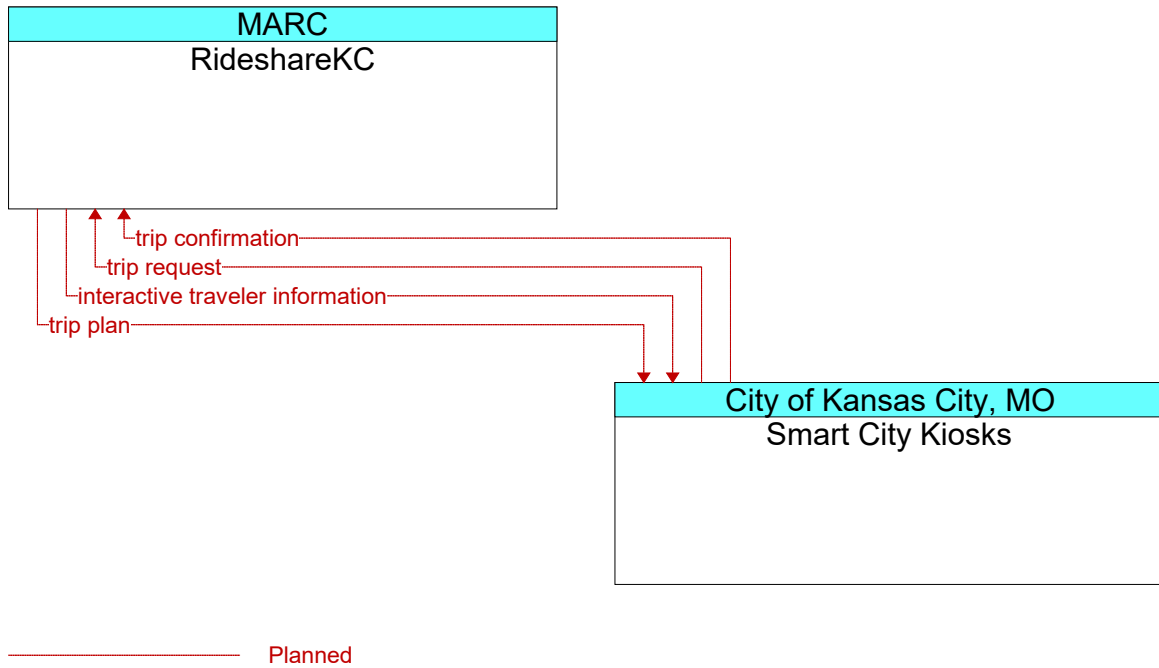
**Figure 1131: RideKC Website - Smart City Kiosks Interface**



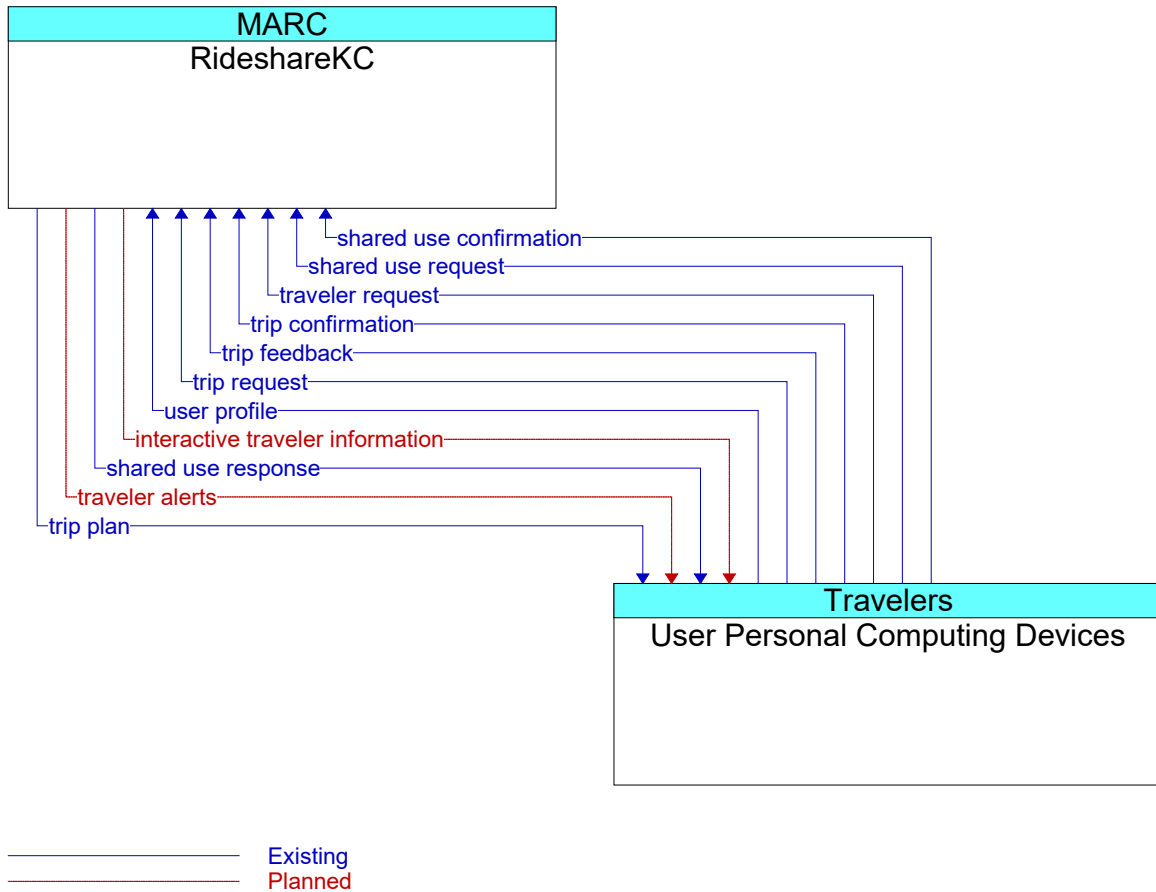
**Figure 1132: RideKC Website - UGT Operations Center Interface**



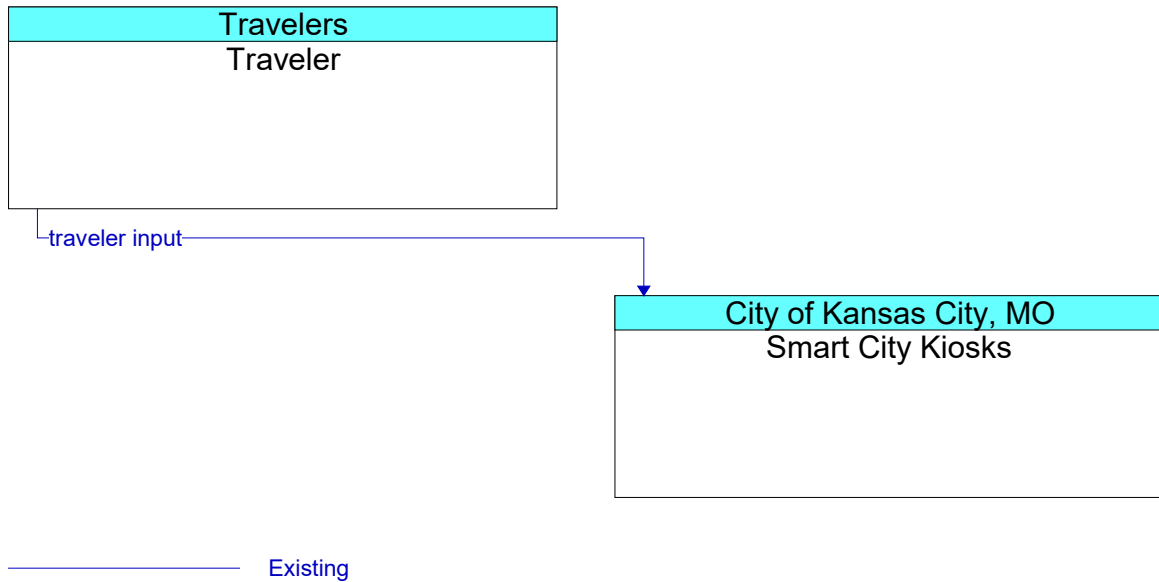
**Figure 1133: RideKC Website - User Personal Computing Devices Interface**



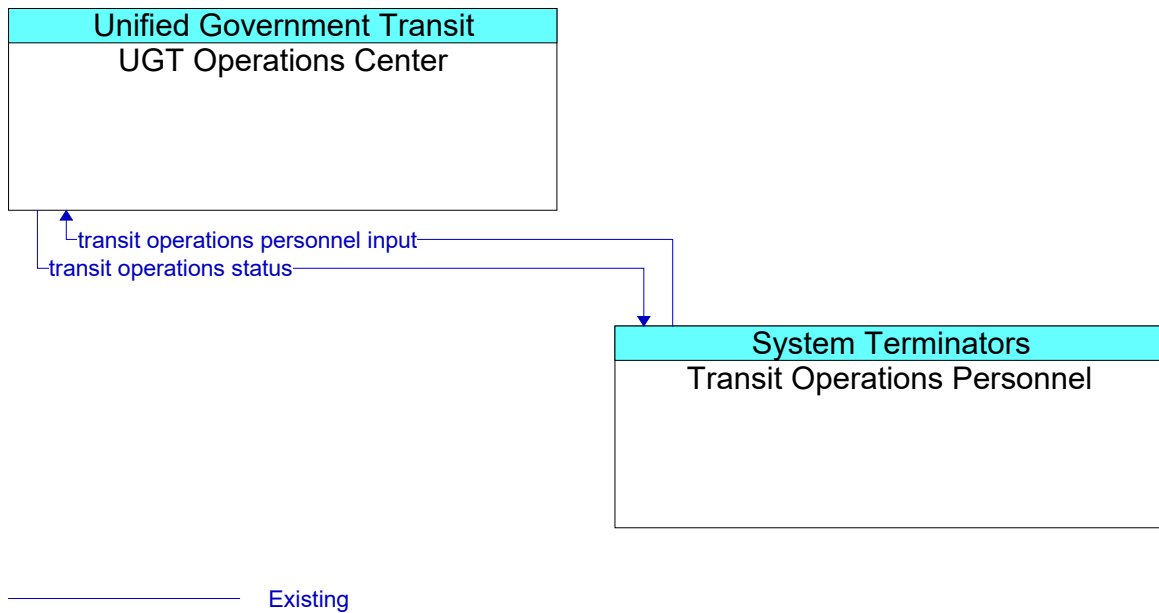
**Figure 1134: RideshareKC - Smart City Kiosks Interface**



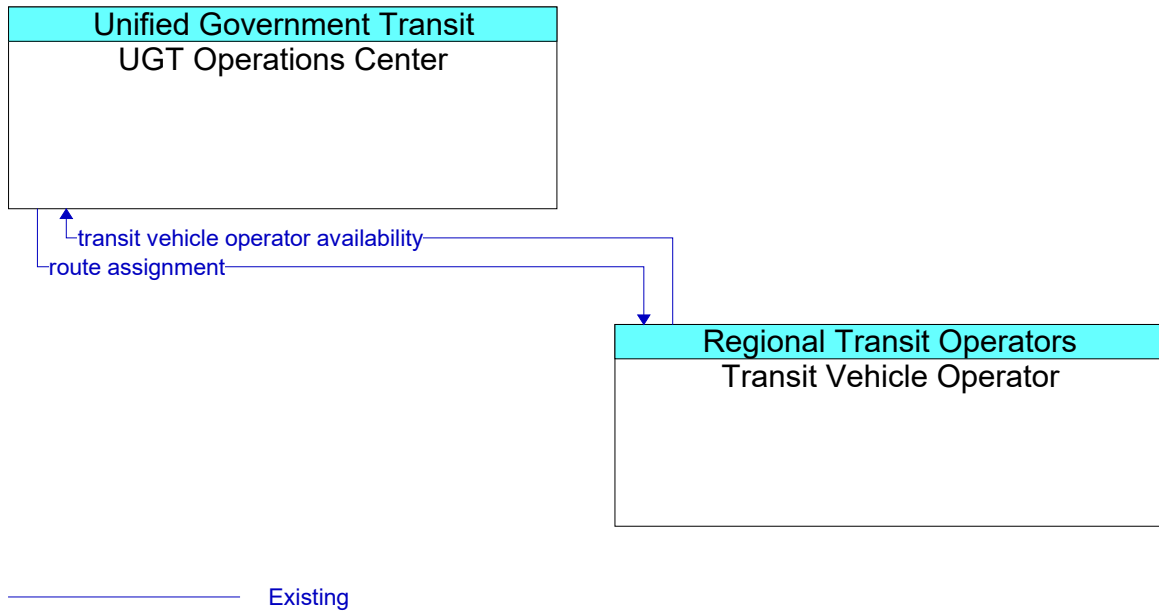
**Figure 1135: RideshareKC - User Personal Computing Devices Interface**



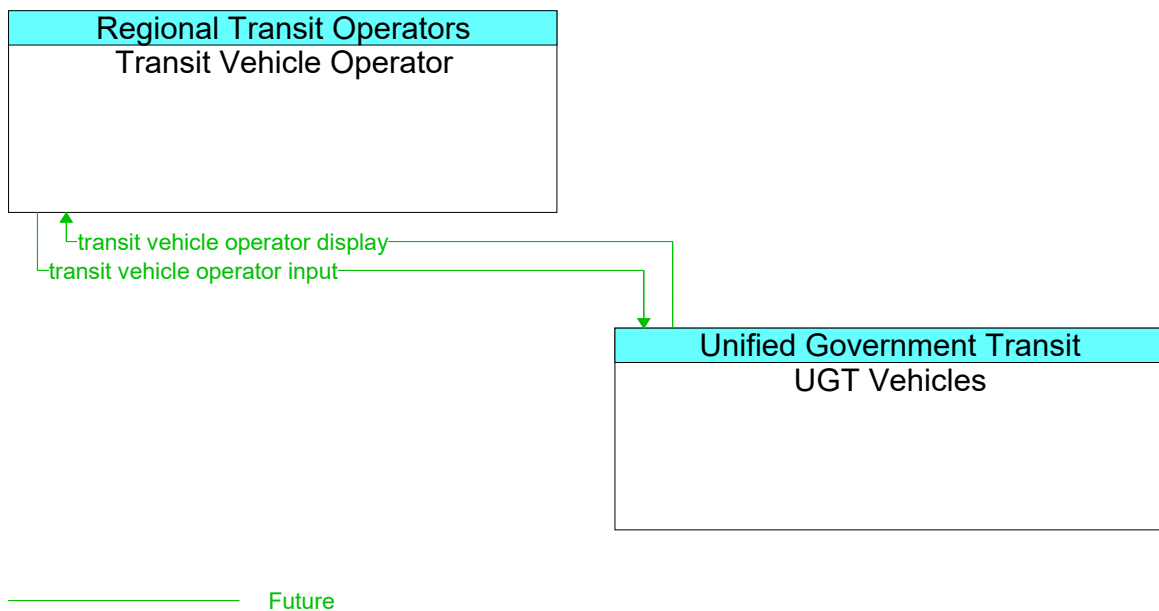
**Figure 1136: Smart City Kiosks - Traveler Interface**



**Figure 1137: Transit Operations Personnel - UGT Operations Center Interface**

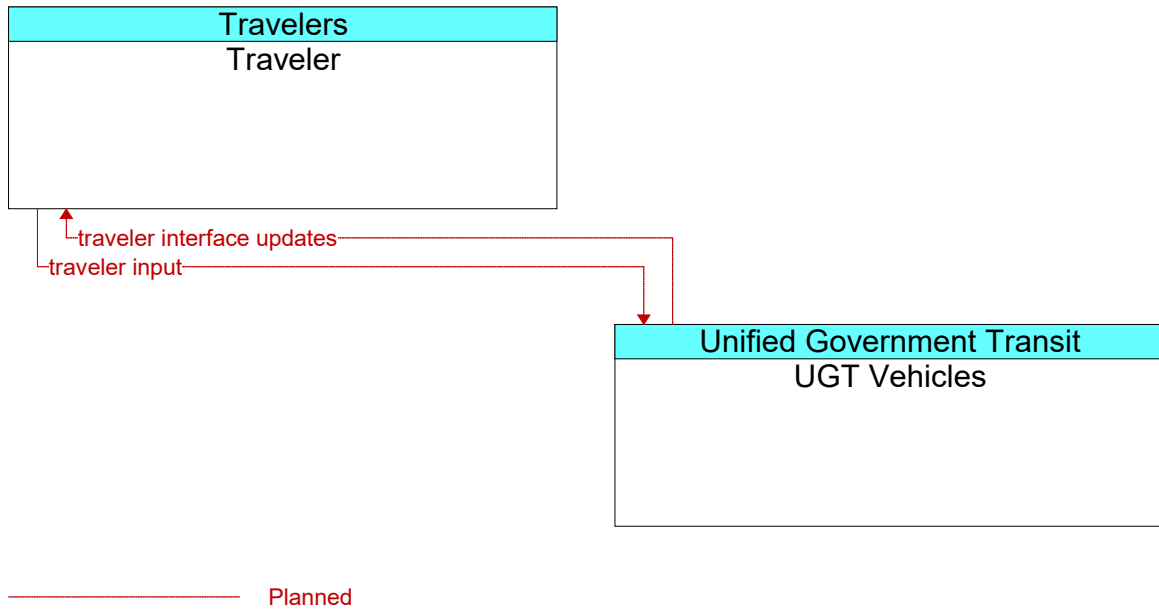


**Figure 1138: Transit Vehicle Operator - UGT Operations Center Interface**

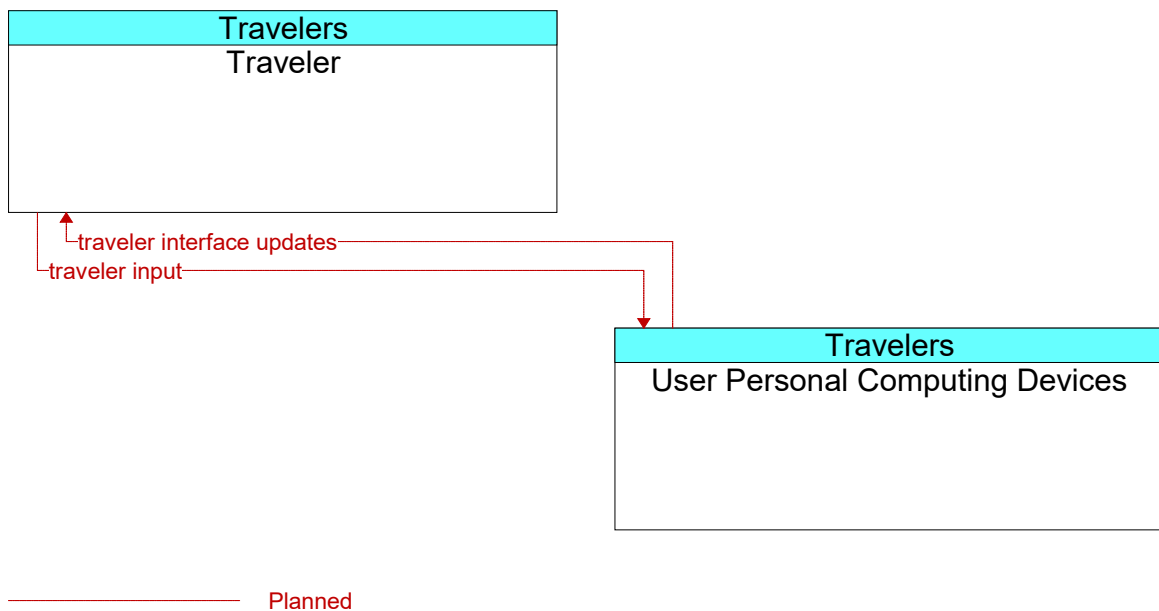


**Figure 1139: Transit Vehicle Operator - UGT Vehicles Interface**

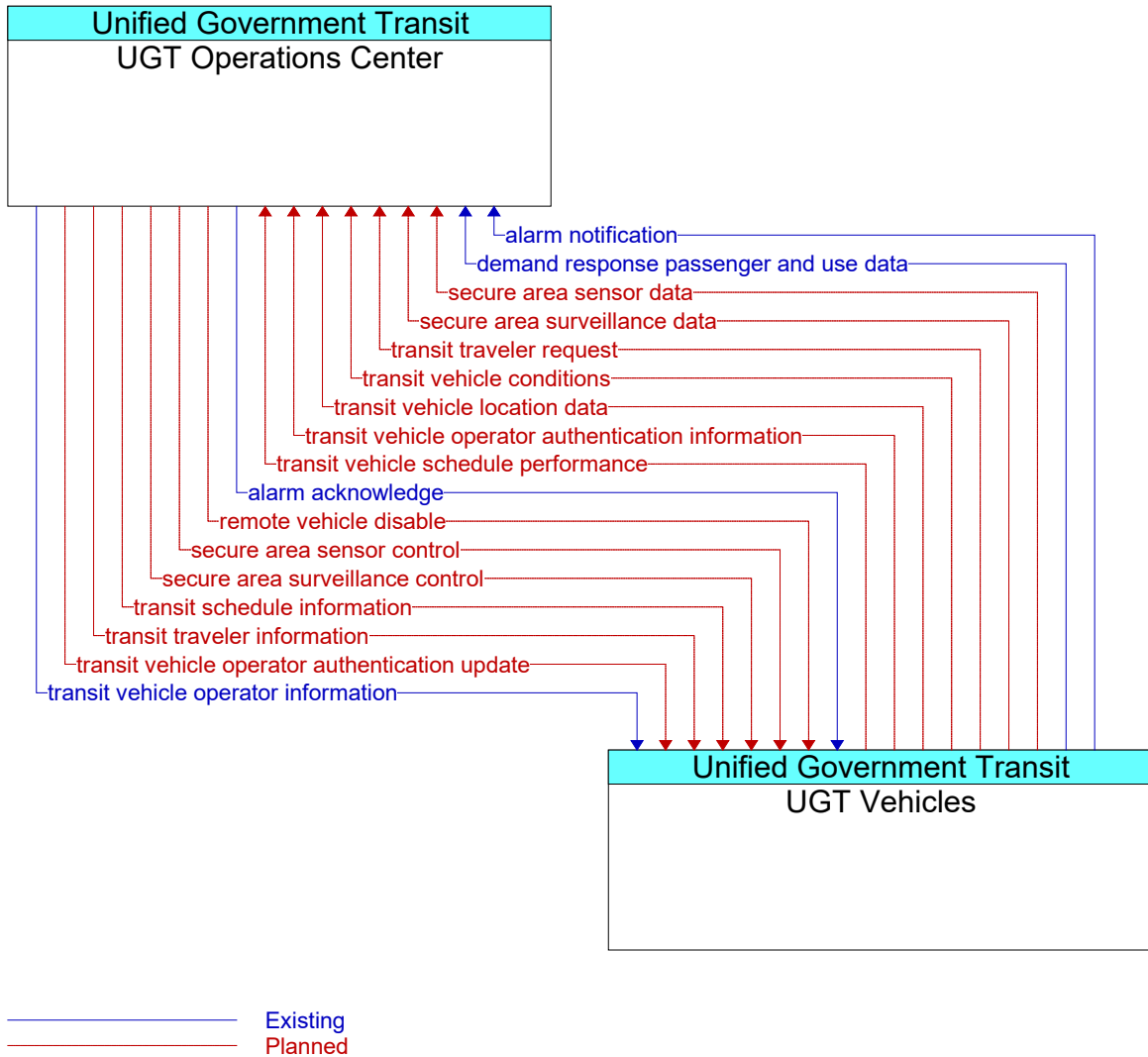




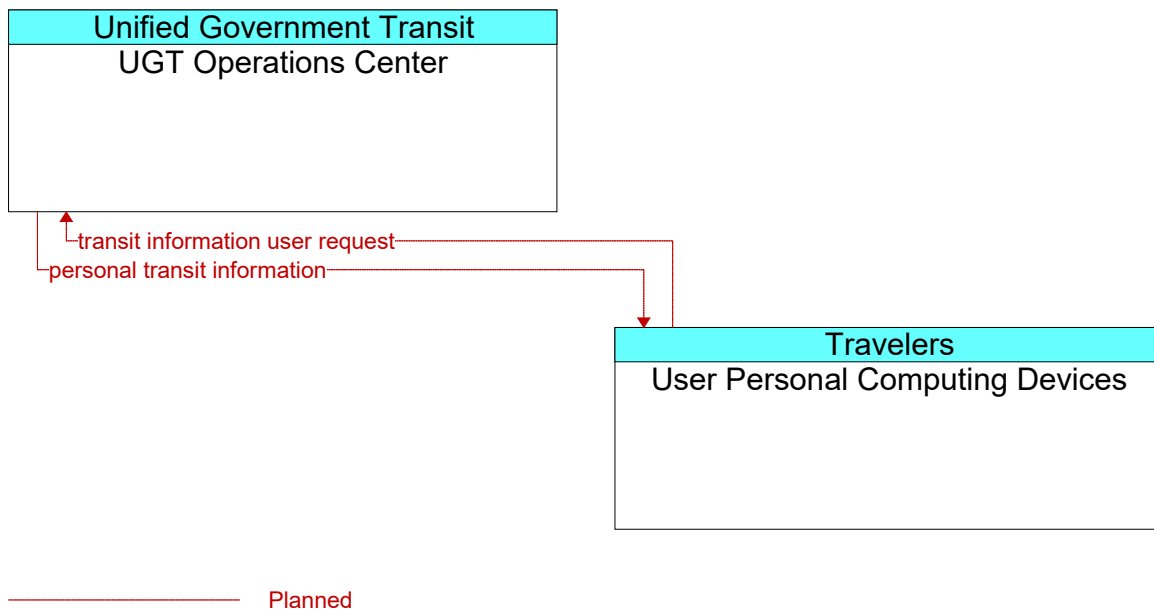
**Figure 1140: Traveler - UGT Vehicles Interface**



**Figure 1141: Traveler - User Personal Computing Devices Interface**



**Figure 1142: UGT Operations Center - UGT Vehicles Interface**



**Figure 1143: UGT Operations Center - User Personal Computing Devices Interface**

### ***Architecture Flow Definitions***

Flow Name	Description
access violation notification	Notification to an individual vehicle that it has committed a lane violation. The flow identifies the nature of the violation and the time and location where the violation was recorded.
air quality information	Aggregated region-wide measured air quality data and possible pollution incident information.
alarm acknowledge	Confirmation that alarm was received, instructions and additional information for the alarm initiator, and requests for additional information.
alarm notification	Notification of activation of an audible or silent alarm by a traveler in a public area or by a transit vehicle operator using an on-board device.
alert notification	Notification of a major emergency such as a natural or man-made disaster, civil emergency, or child abduction for distribution to the public. The flow identifies the alert originator, the nature of the emergency, the geographic area affected by the emergency, the effective time period, and information and instructions necessary for the public to respond to the alert. This flow may also identify specific information that should not be released to the public.
alert notification coordination	Coordination of emergency alerts to be distributed to the public. This includes notification of a major emergency such as a natural or man-made disaster, civil emergency, or child abduction for distribution to the public and status of the public notification.
alert response	This flow represents the tactile or auditory interface with ITS equipment. It contains the response by a Commercial Vehicle Driver or Fleet-Freight Manager that confirms or cancels an alert.
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.

Flow Name	Description
alerts	This flow represents the visual or auditory interface with ITS equipment containing specific alerts and messages related to commercial vehicles (e.g., trucks not advised, trucks over 10 tons not allowed on bridge, route details). This also includes detected route deviations and warning indications detected by on-board sensors (e.g., safety) and freight equipment sensors (e.g., breach, cargo).
alerts and advisories	Assessments (general incident and vulnerability awareness information), advisories (identification of threats or recommendations to increase preparedness levels), and alerts (information on imminent or in-progress emergencies). This flow also provides supporting descriptive detail on incidents, threats, and vulnerabilities to increase preparedness and support effective response to threats against the surface transportation system.
alternate mode information	Schedule information for alternate mode transportation providers such as air, ferry, and passenger-carrying heavy rail.
archive analysis requests	A user request that initiates data mining, analytical processing, aggregation or summarization, report formulation, or other advanced processing and analysis of archived data. The request also includes information that is used to identify and authenticate the user and support electronic payment requirements, if any.
archive analysis results	Processed information products, supporting meta data, and any associated transaction information resulting from data mining, analytical processing, aggregation or summarization, report formulation, or other on-line processing and analysis of archived data.
archive coordination	Catalog data, meta data, published data, and other information exchanged between archives to support data synchronization and satisfy user data requests.
archive request confirmation	Confirmation that an archive request has been received and processed with information on the disposition of the request.
archive requests	A request to a data source for information on available data (i.e., "catalog") or a request that defines the data to be archived. The request can be a general subscription intended to initiate a continuous or regular data stream or a specific request intended to initiate a one-time response from the recipient.
archive status	Notification that data provided to an archive contains erroneous, missing, or suspicious data or verification that the data provided appears valid. If an error has been detected, the offending data and the nature of the potential problem are identified.
archived data product requests	A user-specified request for archived data products (i.e., data, meta data, or data catalogs). The request also includes information that is used to identify and authenticate the user and support electronic payment requirements, if any.
archived data products	Raw or processed data, meta data, data catalogs and other data products provided to a user system upon request. The response may also include any associated transaction information.
arrival notification	Notification of arrival (and departure) of a motor vehicle at the inspection station.
arriving train information	Information for a train approaching a highway-rail intersection that may include direction and allow calculation of approximate arrival time and closure duration.
automated lane control data	Control commands and operating parameters provided to RSEs that control and monitor 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.
automated lane status	Current operational status of lanes supporting automated vehicle operations. The flow includes the status of the RSEs, associated field equipment, and vehicles using the facility.

Flow Name	Description
automated vehicle control parameters	Information, instructions, and control parameters for automated vehicle operations including current system conditions and advisories, control parameters (e.g., speed, required vehicle performance profiles, gaps or headways) and check in/checkout instructions.
automated vehicle control status	Data provided by a connected vehicle identifying its current mode and operational status and information provided to support checkin/checkout of the lane and coordinated maneuvers while on the automated facility.
barrier system control	Information used to configure and control barrier systems that are represented by gates, barriers and other automated or remotely controlled systems used to manage entry to roadways.
barrier system status	Current operating status of barrier systems. Barrier systems represent gates, barriers and other automated or remotely controlled systems used to manage entry to roadways. Status of the systems includes operating condition and current operational state.
border agency clearance results	Notification regarding the granting of permission for commercial freight shipment to enter the U.S.
border clearance data	Trip specific data regarding the movement of goods across international borders. Includes trip identification number. May also include results from recent border crossing screening events.
border clearance data request	Request for trip specific data regarding the movement of goods across international borders. Includes trip identification number. May also include results from recent border crossing screening events.
border clearance event	Reports clearance event data regarding action taken at border, including acceptance or override of system decision, and date/time stamp
border clearance status	Notification regarding the crossing status of commercial freight shipment scheduled to enter the U.S. Includes portions of border agency and transportation agency clearance results, as they become available.
border pass/pull-in	Command to commercial vehicle to pull into or bypass border inspection station
border security input	Information regarding security related events occurring at the border.
broadcast advisories	General broadcast advisories that are provided over wide-area wireless communications direct to the vehicle radio. These analog advisory messages may provide similar content to ITS broadcast information flows, but include no digital data component. Existing Highway-Advisory Radio (HAR) advisory messages are a prime example of this flow.
broadcast traveler information	General traveler information that contains traffic and road conditions, link travel times, incidents, advisories, restrictions, transit service information, weather information, parking information, and other related traveler information.
center archive data	Information describing center operations and measures that reflect the impact of these operations on the transportation system. Content may include a catalog of available information, the actual information to be archived, and associated meta data that describes the archived information.
citation	Report of commercial vehicle citation. The citation includes references to the statute(s) that was (were) violated. It includes information on the violator and the officer issuing the citation. A citation differs from a violation because it is adjudicated by the courts. 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.
clearance notification	Notification that cargo has been cleared through customs.
client verification information	Information about carriers who have made border credential applications such as commercial drivers license information and carrier safety status.
client verification request	Request for information such as commercial drivers license information and carrier safety status.

Flow Name	Description
commercial vehicle archive data	Information describing commercial vehicle travel and commodity flow characteristics. Content may include a catalog of available information, the actual information to be archived, and associated meta data that describes the archived information.
conflict monitor status	A control flow that supports failsafe operation in the event that a conflict is detected that requires the RSE to enter a failsafe operating mode.
consolidated agency response	Electronic manifest data as well as commercial vehicle screening results.
container manifest	Official statement of the cargo held in a container.
container seal interrogation	Customs inspection of the electronic seal on a container to verify the container has not been opened or tampered with; requires proper authentication.
container seal status	The status of an electronic seal on a container, indicating sealing time, location, and authority, and any openings or tampering.
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.
crossing call	Non-motorized user request to cross the roadway. This may be an overt (e.g., push button) request from a pedestrian or the physical presence of a pedestrian or cyclist that can be detected by sensors or surveillance systems.
crossing permission	Information provided to guide and warn pedestrians at crossings including crossing permission, crossing time remaining, and real-time warnings of safety threats.
current charging status	Current charging status including current charge rate, estimated time to completion, and cost associated with the charge.
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.
current lane restrictions	Information provided to an enforcement agency that defines the current enforceable lane restrictions. It defines the location, duration, and restrictions for lanes that are reserved for the exclusive use of certain types of vehicles (e.g., transit vehicles) or vehicles that meet other qualifications (e.g., number of occupants, low emissions criteria). It identifies the lane(s), the start and stop locations, start and end times, vehicle restrictions, and speed limits.
cv driver input	This flow represents the tactile or auditory interface with ITS equipment containing the commercial vehicle driver and vehicle information. This flow contains inquiries to the commercial vehicle managing system, interaction with on-board equipment including setup, configuration, and initiation of self tests, and entry of carrier, driver, vehicle, and route information.
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.

Flow Name	Description
CVO pass/pull-in message	This flow represents the visual or auditory interface with ITS equipment containing a message sent to commercial vehicle driver indicating whether to bypass or requesting pull in to inspection/verification stop along with inspection results (e. g., LED indicator on transponder or variable message sign).
daily site activity data	Record of daily activities at commercial vehicle check stations including summaries of screening events and inspections.
data collection and monitoring control	Information used to configure and control data collection and monitoring systems.
data provision	Data provision provides the source material for a publish-subscribe or query-retrieval data distribution scheme. This is the 1 of the 1:N data distribution architecture. This flow is a super-flow; it does not define data elements but is inclusive of any flow implemented using publish-subscribe or query-retrieval methods.
data publication	Data publication includes those dialogs necessary to satisfy the publication portion of a data distribution architecture. At its core, it provides data, organized by the sender as a one-to-many. This is a super-flow, meaning that it does not define data elements and is inclusive of any flow that is design to use publish-subscribe.
data query	Data query includes those dialogs necessary to determine what data is available for and also submit a query for near-term response.
data query publication	Data query publication includes those dialogs necessary to satisfy the retrieval portion of a query-response action using the data distribution architecture. This is a super-flow, meaning that it does not define data elements and is inclusive of any flow that is design to use query-retrieval.
data subscription	Data subscription includes those dialogs necessary to determine what data is available for subscription/query, and also the dialogs necessary to create or modify data subscriptions/queries.
decision support information	Information provided to support effective and safe incident response, including local traffic, road, and weather conditions, hazardous material information, and the current status of resources (including vehicles, other equipment, supplies) that have been allocated to an incident.
demand response passenger and use data	Data collected on board a demand response vehicle relating to the picking up and discharging of passengers.
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 enrollment information	Information provided by an end entity to support enrollment and authorization for the Connected Vehicle environment. This includes device identification, requested permissions and restrictions, and security credentials used to establish the current level of trust and eligibility for enrollment and authorization.
device status	Status information from devices
driver alert response	Commercial Vehicle Driver response to a breach alert for a Freight Equipment breach or tamper event, or other alerts provided to the driver.
driver information	Regulatory, warning, and guidance information provided to the driver while en route to support safe and efficient vehicle operation.

Flow Name	Description
driver input	Driver input to the vehicle on-board equipment including configuration data, settings and preferences, interactive requests, and control commands.
driver input information	Driver input received from the driver-vehicle interface equipment via the vehicle bus. It includes configuration data, settings and preferences, interactive requests, and control commands for the connected vehicle on-board equipment.
driver parking information	Presentation of general parking information to drivers including lot status, parking availability, and directions to available spaces, entrances, and exits.
driver to fleet request	Requests from the driver and vehicle for routing, payment, and enrollment information.
driver update information	Information provided to the driver-vehicle interface to inform the driver about current conditions, potential hazards, and the current status of vehicle on-board equipment. The flow includes the information to be presented to the driver and associated metadata that supports processing, prioritization, and presentation by the DVI as visual displays, audible information and warnings, and/or haptic feedback.
driver updates	Information provided to the driver including visual displays, audible information and warnings, and haptic feedback. The updates inform the driver about current conditions, potential hazards, and the current status of vehicle on-board equipment.
dynamic bus lane request	Request for a restricted bus lane.
dynamic bus lane status	Status of dynamic lane request, identifying if the request can be met, and the specific lane, start, end location, and time period where priority or exclusive access is to be granted.
electric charging services inventory	Aggregate information provided for electric charging stations identifying the location, operating hours, current availability, charging capacity and standards supported, access restrictions, and rates/fee structure for each station.
electric charging station information	Information provided for electric charging stations identifying the location, operating hours, current availability, charging capacity and standards supported, access restrictions, and rates/fee structure.
electronic lock data	Notification to roadside (via transponder) of the presence and status of electronic cargo locks.
electronic lock data request	Request from roadside for data regarding presence and status of electronic cargo locks.
emergency acknowledge	Acknowledge request for emergency assistance and provide additional details regarding actions and verification requirements.
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 data request	A request for additional information or a control command issued by the emergency response agency in response to an emergency request for assistance from a traveler.
emergency dispatch requests	Emergency vehicle dispatch instructions including incident location and available information concerning the incident.
emergency dispatch response	Request for additional emergency dispatch information and provision of en route status.



Flow Name	Description
emergency notification	An emergency request for assistance that is automatically initiated by a vehicle or manually initiated by a vehicle occupant. The request includes call-back number, date, time, location, prevent 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).
emergency notification relay	The relay of a previously received emergency notification. This relay enables a connected vehicle that is passing within radio range of a vehicle in need of assistance to store the notification and then forward it to a public safety agency when communications is available. Multiple relays may be necessary in remote areas with infrequent traffic and spotty communications coverage. The relay includes all of the information included in the original emergency notification (see 'emergency notification') and relay-specific data that can be used to manage the relay. Relay-specific data may include the date and time of original emergency notification receipt and the number of times the message has been relayed.
emergency route request	Request for access routes for emergency response vehicles and equipment. This may be a request for ingress or egress routes or other emergency routes.
emergency routes	Suggested ingress and egress routes for access to and between the scene and staging areas or other specialized emergency access routes.
emergency traffic control information	Status of a special traffic control strategy or system activation implemented in response to an emergency traffic control request, a request for emergency access routes, a request for evacuation, a request to activate closure systems, a request to employ driver information systems to support public safety objectives, or other special requests. Identifies the selected traffic control strategy and system control status.
emergency traffic control request	Special request to preempt the current traffic control strategy in effect at one or more signalized intersections or highway segments, activate traffic control and closure systems such as gates and barriers, activate safeguard systems, or use driver information systems. For example, this flow can request all signals to red-flash, request a progression of traffic control preemptions along an emergency vehicle route, request a specific evacuation traffic control plan, request activation of a road closure barrier system, or place a public safety or emergency-related message on a dynamic message sign.
emergency traffic coordination	Coordination supporting disaster response including evacuation and reentry. Includes coordination of special traffic control strategies that support efficient evacuation and reentry while protecting and optimizing movement of response vehicles and other resources responding to the emergency.
emergency transit schedule information	Information on transit schedule and service changes that adapt the service to better meet needs of responders and the general public in an emergency situation, including special service schedules supporting evacuation.
emergency 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.
emergency traveler information request	Request for alerts, evacuation information, and other emergency information provided to the traveling public.

Flow Name	Description
emergency vehicle tracking data	The current location and operating status of the emergency vehicle.
emissions archive data	Air quality and vehicle emissions information that is collected by sensors or derived from models. Content may include a catalog of available information, the actual information to be archived, and associated meta data that describes the archived information.
environmental conditions data	Current road conditions (e.g., surface temperature, subsurface temperature, moisture, icing, treatment status) and surface weather conditions (e.g., air temperature, wind speed, precipitation, visibility) as measured and reported by fixed and/or mobile environmental sensors and aggregated by the data collector. Attributes relating to the data collection (and aggregation) are also included.
environmental conditions data status	Status of the data quality of environmental conditions data provided by a data contributor. Includes not only status by sensor, but statistical data regarding the quality checking of data provided.
environmental monitoring application info	Environmental monitoring application parameters and thresholds that control the filtering, aggregation, and range of measures that are collected, derived, and reported. This flow also supports remote control of the application so the application can be taken offline, reset, or restarted.
environmental monitoring application status	Environmental monitoring application status reported by the RSE. This includes current operational state and status of the RSE and a record of system operation.
environmental sensor data	Current road conditions (e.g., surface temperature, subsurface temperature, moisture, icing, treatment status) and surface weather conditions (e.g., air temperature, wind speed, precipitation, visibility) as measured and reported by fixed and/or mobile environmental sensors. Operational status of the sensors is also included.
environmental sensors control	Data used to configure and control environmental sensors.
environmental situation data	Aggregated and filtered vehicle environmental data collected from vehicle safety and convenience systems including measured air temperature, exterior light status, wiper status, sun sensor status, rain sensor status, traction control status, anti-lock brake status, and other collected vehicle system status and sensor information. This information flow represents the aggregated and filtered environmental data sets that are provided by the RSE to the back office center. Depending on the RSE configuration and implementation, the data set may also include environmental sensor station data collected by the RSE.
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 assistance information	Information on evacuation resources including self-evacuation options, anticipated pickup time and location if a transportation asset is to be deployed, destination shelter, and supporting information on what to bring, estimated reentry date/time.
evacuation assistance request	A request for evacuation assistance, which may be registered in advance or issued during an evacuation. It specifies the location, number of people that need to be evacuated, and any special needs/requirements.
event confirmation	Confirmation that special event details have been received and processed.
event plans	Plans for major events possibly impacting traffic.

Flow Name	Description
event transit service plans	Transit service plans to support the special event. This may include additional runs, tighter headways, stop changes, and other changes to standard operations to accommodate the special event.
expedited clearance information	Includes carrier ID, importer ID, broker ID, conveyance ID, driver ID, service options, and associated information that is used to support expedited border clearance.
expedited clearance registration	Registration of the importer, carrier, conveyance, and driver, as applicable, for border clearance programs such as FAST, Customs Self Assessment (Canada), C-TPAT (US), PIP (Canada), ACI (Canada), and ACE (US). Includes electronic filing of forms and associated payment.
expedited clearance status	Status of expedited clearance registration.
external reports	Traffic and incident information that is collected by the media through a variety of mechanisms (e.g., radio station call-in programs, air surveillance).
fare and price information	Current transit, parking, and toll fee schedule information.
fare collection data	Fare collection information including the summary of fare system data and financial payment transaction data.
fare management information	Transit fare information and transaction data used to manage transit fare processing.
fleet and freight alerts	This flow represents the visual or auditory interface with ITS equipment containing security alert status information regarding commercial vehicle fleets and freight equipment.
fleet manager inquiry	This flow represents the tactile or auditory interface with ITS equipment containing an inquiry from fleet manager requesting data from commercial vehicle management system.
fleet status	This flow represents the visual or auditory interface with ITS equipment containing fleet status information including enrollment status, safety status including inspection summaries, detailed inspection reports, and safety ratings, routing information, current vehicle information, and emergency information.
fleet to driver update	Updated instructions to the driver including dispatch, routing, and special instructions, including alerts and other advisories.
freight equipment information	Container, trailer, or chassis information regarding identity, type, location, brake wear data, mileage, seal #, seal type, door open/close status, chassis bare/covered status, tethered / untethered status, temperature, humidity, power, battery levels, brake wear data, and bill of lading/information regarding the cargo/content.
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.
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.
hazmat spill notification	Information provided to emergency response organizations when cargo sensors detect a release of hazardous material. This information will include sensor information, vehicle location and identification, and carrier identification.

Flow Name	Description
host commercial vehicle status	Information provided to the ITS on-board equipment from other systems on the Commercial Vehicle Platform.
host vehicle status	Information provided to the ITS on-board equipment from other systems on the vehicle platform. This includes the current status of the powertrain, steering, and braking systems, and status of other safety and convenience systems. In implementations where GPS is not integrated into the Vehicle On-Board Equipment, the host vehicle is also the source for data describing the vehicle's location in three dimensions (latitude, longitude, elevation) and accurate time that can be used for time synchronization across the ITS environment.
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 information for media	Report of current desensitized incident information prepared for public dissemination through the media.
incident information for public	Report of current desensitized incident information prepared for public dissemination through the telecommunications system.
incident notification	The notification of an incident including its nature, severity, and location.
incident notification response	Interactive acknowledgement and verification of the incident information received, requests for additional information, and general information on incident response status.
incident report	Report of an identified incident including incident location, type, severity and other information necessary to initiate an appropriate incident response.
incident response coordination	Incident response procedures and current incident response status that are shared between allied response agencies to support a coordinated response to incidents. This flow provides current situation information, including a summary of incident status and its impact on the transportation system and other infrastructure, and current and planned response activities. This flow also coordinates a positive hand off of responsibility for all or part of an incident response between agencies.
incident response status	Status of the current incident response including a summary of incident status and its impact on the transportation system, traffic management strategies implemented at the site (e.g., closures, diversions, traffic signal control overrides), and current and planned response activities.
incident scene safety application info	Incident scene safety application configuration data and warning parameters and thresholds. This includes incident scene configuration including geofenced safe areas and travel lanes that provide a safety boundary between public safety responders and passing vehicles. This flow also supports remote control of the application so the application can be taken offline, reset, or restarted.
incident scene safety application status	Incident scene safety application status reported by the RSE. This includes current operational state and status of the RSE and a record of identified safety alerts and warnings issued.
incident scene warning device control	Data used to configure and control incident scene safety monitoring and warning devices.

Flow Name	Description
incident scene warning notification	Notification of an incident scene emergency or safety issue. This flow identifies that an incident scene emergency or safety issue has occurred so that warnings may be generated by more than one system in the work zone.
incident scene warning status	Status of incident scene 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.
incident status	Information gathered at the incident site that more completely characterizes the incident and provides current incident response status. This includes notification of medical facility transport and details about the vehicle occupants being transported.
infrastructure conditions data	Current condition of pavement, bridges, culverts, signs, and other roadway infrastructure as measured by on-board sensors or read from infrastructure-based sensors. The data may include raw data or images (e.g., photo logs) that indicate the current status of the infrastructure.
infrastructure monitoring sensor control	Data used to configure and control infrastructure monitoring sensors.
infrastructure monitoring sensor data	Data read from infrastructure-based sensors that monitor the condition or integrity of transportation infrastructure including bridges, tunnels, interchanges, pavement, culverts, signs, transit rail or guideway, and other roadway infrastructure. Includes sensor data and the operational status of the sensors.
infrastructure situation data	Aggregated and filtered vehicle data collected from vehicle safety and convenience systems that are indicative of infrastructure condition including traction control status, anti-lock brake status, accelerometer status, and other collected vehicle system status and sensor information. This information flow represents the aggregated and filtered environmental data sets that are provided by the RSE to the back office center.
inspection results	Report of results of border inspection on a particular load.
interactive traveler information	Traveler information provided in response to a traveler request. The provided information includes traffic and road conditions, advisories, incidents, payment information, transit services, parking information, weather information, and other travel-related data updates and confirmations.
intermodal depot information	
intermodal freight coordination	
intermodal freight event information	Plans for movement of intermodal freight from the depot area possibly impacting traffic. May also include requests for special treatment at traffic signals or dynamic lane management systems.
intermodal freight traffic information	Information on traffic conditions affecting the depot including information concerning any special traffic control accommodations or restrictions for commercial vehicles.
intersection control status	Status data provided by the traffic signal controller including phase information, alarm status, and priority/preempt status.
intersection infringement info	Vehicle path information sent by a vehicle that is violating the stop bar at an intersection. This flow includes the vehicle's position, heading, speed, acceleration, transmission, steering-wheel angle, braking status, size information and trajectory.
intersection management application info	Intersection and device configuration data and warning parameters and thresholds. This flow also supports remote control of the application so the application can be taken offline, reset, or restarted.

Flow Name	Description
intersection management application status	Infrastructure application status reported by the RSE. This includes current operational state and status of the RSE and a log of operations.
intersection safety application info	Intersection and device configuration data and warning parameters and thresholds. This flow also supports remote control of the application so the application can be taken offline, reset, or restarted.
intersection safety application status	Infrastructure safety application status reported by the RSE. This includes current operational state and status of the RSE and a record of intersection safety issues identified and alerts and warnings issued.
intersection safety warning	A warning of an imminent unsafe vehicle infringement at an intersection that may endanger other vehicles or pedestrians. This allows vehicles approaching the intersection to be warned in the event of an imminent red light or stop sign violation or potential infringement on an occupied crosswalk. All connected vehicles at the intersection receive the warning, including both the infringing vehicle and other vehicles at or near the intersection.
intersection status	Current signal phase and timing information for all lanes at a signalized intersection. This flow identifies active lanes and lanes that are being stopped and specifies the length of time that the current state will persist for each lane. It also identifies signal priority and preemption status and pedestrian crossing status information where applicable.
intersection status monitoring	Current signal phase and timing information for all lanes at a signalized intersection. This flow represents monitoring of communications by a receiver at the intersection to support monitoring for conflicts between actual signal states and RSE communications about those states.
lane closure information	Lane closure information provided to passing vehicles. This flow provides information about roadway configuration changes such as lane closures and shifts.
lane management control	Information used to configure and control dynamic lane management systems.
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.
lane violation notification	Notification to enforcement agency of detected lane entry violations, lane speed violations, or other dynamic lane violations. Lane entry violations may be issued for restricted vehicle types or vehicles that do not meet required emissions or passenger occupancy standards that enter a managed lane. This notification identifies the vehicle and documents the lane parameter that was violated.
local signal preemption request	Direct control signal or message to a signalized intersection that results in preemption of the current control plan and grants right-of-way to the requesting vehicle.
local signal priority request	Request from a vehicle to a signalized intersection for priority at that intersection. This flow also allows the vehicle to cancel a priority request (for example, when the vehicle clears the intersection).
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.
local traveler information	Traveler information including traffic, road, and weather conditions for a particular locality. This flow includes the location-specific traveler information and time effectivity of the information.

Flow Name	Description
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 dispatch information	Information used to dispatch maintenance and construction vehicles, equipment, and crews and information used to keep work zone crews informed. This information includes routing information, traffic information, road restrictions, incident information, environmental information, decision support information, maintenance schedule data, dispatch instructions, personnel assignments, alert notifications, and corrective actions.
maint and constr dispatch status	Current maintenance and construction status including work data, operator status, crew status, and equipment status.
maint and constr resource 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 vehicle location data	The current location and related status (e.g., direction and speed) of the maintenance/construction vehicle.
maint and constr vehicle operational data	Data that describes the maintenance and construction activity performed by the vehicle. Operational data includes materials usage (amount stored and current application rate), operational state of the maintenance equipment (e.g., blade up/down, spreader pattern), vehicle safety status, and other measures associated with the operation of a maintenance, construction, or other special purpose vehicle. Operational data may include basic operational status of the vehicle equipment or a more precise record of the work performed (e.g., application of crack sealant with precise locations and application characteristics).
maint and constr vehicle system control	Configure and control data that supports remote control of on-board maintenance and construction vehicle systems and field equipment that is remotely controlled by the vehicle. For example, the data can be used to adjust material application rates and spread patterns.
maint and constr work plans	Future construction and maintenance work schedules and activities including anticipated closures with anticipated impact to the roadway, alternate routes, anticipated delays, closure times, and durations.
maintenance requests from motorist assist	
manifest data	Identifies Port of Entry, date, and information on carrier and goods, origin, etc.
manifest receipt confirmation	Confirmation that a shippers manifest has been received.

Flow Name	Description
misbehavior report	Notification of potential security issues encountered in processing messages, including message authentication or integrity failures, plausibility failures, or other issues appropriate to the CCMS' misbehavior policies.
motorist assist information	
multimodal service data	Detailed real-time schedule and other service information from alternate modes that supports coordination between modes to facilitate efficient transfer at connection points.
object discovery	Represents the interactive discovery of network communications related information by any end entity, querying the ORDS. Information exchange could be as simple as a Domain Name Service (DNS) query, or it could include service and service metric information.
object registration	Represents the provision of information related to communications, service and service metric information from a service provider end entity to the ORDS.
on-board safety data	Safety data measured by on-board sensors. Includes information about the vehicle, vehicle components, cargo, and driver. The query flow is not explicitly shown.
on-board vehicle data	Information about the commercial vehicle stored on-board (for maintenance purposes, gate access, cargo status, lock status, etc.). The request flow is not explicitly shown.
parking archive data	Data used to analyze and monitor trends in parking demand, pricing, and operational actions. Content may include a catalog of available information, the actual information to be archived, and associated meta data that describes the archived information.
parking availability	Information on available parking. This flow identifies available spaces with associated information about parking restrictions and location for each available space.
parking information	General parking information and status, including current parking availability.
parking management application info	Parking management application information including parking lot configuration and status and associated parameters and thresholds that control the algorithms that monitor parking occupancy and the parking information that is delivered. This flow also supports remote control of the application so the application can be taken offline, reset, or restarted.
parking management application status	Parking management application status reported by the RSE. This includes current operational state and status of the RSE and current, aggregate parking data collected from connected vehicles that can be used to monitor parking space usage and availability.
parking operator input	User input from the parking operator to query current status and control the operation of the parking management system.
parking reservation confirmation	Confirmation for parking reservation.
parking reservation request	Reservation request for parking.
parking status	Presentation of information to the parking operator including operational status and transaction reports.
pass/pull-in	Command to commercial vehicle to pull into or bypass inspection station.
passive vehicle monitoring control	Control commands used to control detection systems that rely on infrastructure-based identification of individual vehicles to measure travel times and other related measures by identifying the same vehicle at different points in the network. Related technologies include bluetooth readers and license plate recognition systems.
passive vehicle monitoring data	Time stamped identifiers that identify the vehicles that have passed through a detection zone.



Flow Name	Description
payment	Payment of some kind (e.g., toll, parking, fare) by traveler which, in most cases, can be related to a credit account.
payment application information	Application configuration data and messaging parameters for electronic payment applications for tolls, road use, and other user-pay transportation applications. This flow provides information on services provided, user information, rates and rate criteria, including variable pricing based on calendar, time of day, vehicle type and passenger occupancy. This flow also supports remote control of the application so the application can be taken offline, reset, or restarted.
payment application status	Application status for electronic payment applications for tolls, road use, and other user-pay transportation applications. This includes current operational state and status of the RSE and a record of payments collected with identification that can be used to identify the payment account or source and related vehicle and service information that were used to calculate the payment. The flow also includes a record of detected violations.
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 device information	The traveler personal information such as name, address, license number, user account information, trip records and profile data.
payment device update	Information updated concerning traveler's personal data including name, address, user account information, trip records, and profile data.
payment instructions	Information provided to configure and support fixed point payment operations including pricing information.
payment transaction status	The status of an electronic payment transaction provided directly to the driver via sign or other roadside infrastructure.
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 location	The current location (latitude, longitude, and elevation) reported by the personal information device
personal safety warning	Safety alerts and warnings provided to a personal information device. The provided information would identify safety threats (e.g., vehicle encroachment into a work area, personal infringement into a travel lane)
personal transit information	General and personalized transit information for a particular fixed route, flexible route, or paratransit system.
pre-arrival notification	Identification of a vehicle or driver that is approaching a border crossing.
qualified environmental conditions data	Current road conditions (e.g., surface temperature, subsurface temperature, moisture, icing, treatment status) and surface weather conditions (e.g., air temperature, wind speed, precipitation, visibility) that has had quality checks performed on it and has been formatted and consolidated by the Clarus system. Attributes relating to the data collection (and aggregation) are also included.
rail crossing advisories	Notification of Highway-Rail Intersection equipment failure, intersection blockage, or other condition requiring attention, and maintenance activities at or near highway rail intersections.
rail crossing application status	Rail crossing application status reported by the RSE. This includes current operational state and status of the RSE and a record of rail crossing events and alerts and warnings issued.
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.

Flow Name	Description
rail crossing operational status	Status of the highway-rail grade crossing equipment including both the current state or mode of operation and the current equipment condition.
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.
rail crossing warning	A warning of a train approaching or already in a highway rail intersection.
rail incident response status	Status of the rail system's response to current incidents.
railroad advisories	Real-time notification of railway-related incident or advisory.
railroad schedules	Train schedules, maintenance schedules, and other information from the railroad that supports forecast of HRI closures.
reduced speed notification	Reduced speed zone information provided to passing vehicles. This flow provides the reduced speed limit, the location and extent of the reduced speed zone, and associated warning information.
regional situation data	This general flow represents the traffic, environmental, and emissions situation data that is collected from connected vehicles and aggregated, filtered, and distributed to other centers as a regional information product for use in operations, performance monitoring, and analysis.
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.
remote vehicle disable	Signal used to remotely disable a transit vehicle.
request for payment	Request to deduct cost of service from user's payment account.
request for service	Driver inputs that summon an emergency response, request a financial transaction, or initiate other services.
request tag data	Request for tag information including tag id and associated data.
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.
restricted lanes application info	Restricted lane application configuration data and messaging parameters. This flow defines the location, duration, and operating parameters for lanes that are reserved for the exclusive use of certain types of vehicles (e.g., transit vehicles) or vehicles that meet other qualifications (e.g., number of occupants, low emissions criteria). It identifies the lane(s), the start and stop locations, start and end times, vehicle restrictions, speed limits and platooning parameters. This flow also supports remote control of the application so the application can be taken offline, reset, or restarted.

Flow Name	Description
restricted lanes application status	Current RSE application status that is monitored by the back office center including the operational state of the RSE, current configuration parameters, and a log of lane use (aggregate profiles of vehicles that checked in to the lane and reported vehicle speeds in the lanes) and RSE communications activity.
restricted lanes information	This flow defines the location, duration, and operating parameters for lanes that are reserved for the exclusive use of certain types of vehicles (e.g., transit vehicles) or vehicles that meet other qualifications (e.g., number of occupants, low emissions criteria). It identifies the lane(s), the start and stop locations, start and end times, vehicle restrictions, speed limits and platooning parameters.
right-of-way request notification	Notice that a request has occurred for signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other source for right-of-way.
road closure information	Road closure information provided to passing vehicles. This flow provides information about the road closure with diversion information.
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 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 advisories	Segment-specific weather and road conditions including real-time advisories of deteriorating road and weather conditions, medium-term advisories for the next 2–12 hours, and long-term advisories more than 12 hours into the future. The advisories may include advisories that are issued by the RSE based on locally collected environmental data (e.g., an ice on bridge advisory).
road weather advisories for emergency response	Segment-specific weather and road conditions including real-time advisories of deteriorating road and weather conditions, medium-term advisories for the next 2–12 hours, and long-term advisories more than 12 hours into the future. This flow is filtered, tailored, and augmented to support emergency responders.
road weather advisory info	Road weather advisories and associated configuration and control information that are used to manage the RSE. Advisories include segment-specific weather and road conditions including real-time advisories of deteriorating road and weather conditions, medium-term advisories for the next 2–12 hours, and long-term advisories more than 12 hours into the future. This flow includes a schedule for issuing the included advisories.
road weather advisory status	Current RSE application status that is monitored by the back office center including the operational state of the RSE, current configuration parameters, and a log of advisories issued. The advisories may include advisories that are issued by the RSE based on locally collected environmental data (e.g., an ice on bridge advisory).
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.

Flow Name	Description
roadway dynamic signage data	Information used to initialize, configure, and control roadside systems that provide driver information (e.g., dynamic message signs, highway advisory radio). This flow can provide message content and delivery attributes, local message store maintenance requests, control mode commands, status queries, and all other commands and associated parameters that support remote management of these systems.
roadway dynamic signage status	Current operating status of dynamic message signs, highway advisory radios, or other configurable field equipment that provides dynamic information to the driver.
roadway maintenance status	Summary of maintenance fleet operations affecting the road network. This includes the status of winter maintenance (snow plow schedule and current status).
roadway warning system control	Information used to configure and control roadway warning systems.
roadway warning system status	Current operating status of roadway warning systems.
route assignment	Route assignment information for transit vehicle operator.
route deviation alert	An alert that indicates a deviation from a planned route has been detected. The alert will contain the current Commercial Vehicle location and identity.
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.
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.
screening results	Results of commercial vehicle screening event at a border crossing - reports clearance event data regarding action taken at border, including acceptance or override of system decision, and date/time stamp.
secure area sensor control	Information used to configure and control threat sensors (e.g., thermal, acoustic, radiological, chemical), object, motion and intrusion detection sensors. The provided information controls sensor data collection, aggregation, filtering, and other local processing.
secure area sensor data	Data provided by threat sensors (e.g., thermal, acoustic, radiological, chemical), and intrusion, motion, and object detection sensors in secure areas indicating the sensor's operational status, raw and processed sensor data, and alarm indicators when a threat has been detected.
secure area surveillance control	Information used to configure and control audio and video surveillance systems used for transportation infrastructure security in secure areas. The provided information controls surveillance data collection, aggregation, filtering, and other local processing.
secure area surveillance data	Data collected from surveillance systems used to monitor secure areas. Includes video, audio, processed surveillance data, equipment operational status, and alarm indicators when a threat has been detected.
security credential revocations	Certificate Revocation List; lists the certificates whose trust has been revoked by the CCMS.

Flow Name	Description
security credentials	The material used by an end-entity (vehicle, personal device, field device, center system etc.) to ensure privacy, integrity and authenticability of its data transmissions. This includes certificates with associated public and private verifying/signing and decrypting/encrypting keys.
security policy and networking information	Security policy information describing the CCMS' enrollment, authorization, misbehavior and revocation policies, and communications information related to CCMS components; including contact information and public credentials of those components.
service advertisement	An advertisement of available services and identification of how those services may be accessed (e.g., RF parameters, identifiers, etc.). Services include network services such as IPv6 routing, public roadside services such as intersection safety, back office services including situation data services and security credentials, or private services.
service information request	Request to multimodal (possibly non-roadway) transit provider for general services information and specific trip information or reservation.
service information response	Multimodal (possibly non-roadway) transit provider services information and trip reservation confirmations.
service patrol dispatch request	Service patrol dispatch instructions including incident location and available information concerning the incident.
service patrol dispatch response	Request for additional dispatch information and provision of en route status.
service patrol incident status	Information gathered at the incident site by a service patrol vehicle that more completely characterizes the incident, the services provided, and clearance status.
shared use confirmation	Confirmation that traveler is going to use the shared use asset now or at a future time.
shared use request	Request for shared use asset (e.g., car or bicycle) now or as a reservation for future use.
shared use response	Response from shared use provider regarding availability of the shared use asset now or in the future. Includes any payment requirements.
shared use status	Status of usage by shared use providers. Includes asset inventory and status. Could also include information on specific travelers to support multimodal trip planning.
shelter recommendations	Recommendation identifying the shelter or shelters best suited to the requestor. Hotels/motels may also be included as potential sheltering options. This flow may also include shelter assignments/reservations.
shelter request	A request for shelter information, recommendations, or assignment/reservation. Information provided may include name, current location, number of people in the group, additional requirements (e.g., evacuating with pets, needed medical support).
shoulder management control	Information used to configure and control systems that allow use of a shoulder as a lane for vehicular traffic.
shoulder management information	System status including current operational state, violations and logged information.
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.

Flow Name	Description
signal fault data	Faults reported by traffic signal control equipment.
signal preemption request	Direct request for preemption to a traffic signal controller that results in preemption of the current control plan and grants right-of-way to the requesting vehicle. This flow identifies the required phase and timing of the preemption. This flow may also cancel the preemption request (e.g., when the requesting vehicle clears the intersection).
signal priority service request	A service request for vehicle priority issued to a traffic signal controller that results in green extension or other accommodation for the priority vehicle, within the current signal timing plan. The request includes the priority level, the desired time and duration of service, and the intended travel path through the intersection. This flow also allows the RSE to cancel a previously issued request for priority.
signal service request	A call for service or extension for a signal control phase that is issued by the RSE for connected vehicles approaching an intersection and/or pedestrians at a crosswalk. This flow identifies the desired phase and service time.
signal system configuration	Data used to configure traffic signal systems including configuring control sections and mode of operation (time based or traffic responsive).
situation data collection parameters	The parameters that are used to control the flow of situation data from the RSE. This flow identifies the type of data/snapshots that are requested from passing vehicles and reporting parameters such as snapshot frequency, filtering criteria (data thresholds for reporting), and reporting interval that control the type and volume of data reported to the back office center.
special vehicle alert	Notification that a vehicle is in the vicinity that requires special attention from drivers. In this context, 'special vehicle' refers to any type of vehicle that uses lights or placards to alert drivers including public safety vehicles, oversize vehicles, slow vehicles, and service vehicles that stop and back up frequently.
speed warning application info	Roadway configuration data, current speed limits including time of day, week, or season speed limits as necessary, and warning parameters and thresholds. This flow also supports remote control of the application so the application can be taken offline, reset, or restarted.
speed warning application status	Speed warning application status reported by the RSE. This includes current operational state and status of the RSE and a record of measured vehicle speeds and notifications, alerts, and warnings issued.
suggested route	Suggested route for a dispatched emergency or maintenance vehicle that may reflect current network conditions and the additional routing options available to en route emergency or maintenance vehicles that are not available to the general public.
tag data	Unique tag ID and related vehicle information.
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 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.
track status	Current status of the wayside equipment and notification of an arriving train.
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 information	Represents the flow of traffic control and status information from a TMC to a third party TIC. This is reporting only, not actual control.

Flow Name	Description
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 sensor system.
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 and meta data that describes the images.
traffic information for media	Report of traffic conditions including traffic incident reports for public dissemination through the media. The reports may also include information on diversions and alternate routes, closures, and special traffic restrictions in effect.
traffic 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 monitoring application info	Traffic monitoring application parameters and thresholds that control the filtering, aggregation, and range of measures that are collected, derived, and reported. This flow also supports remote control of the application so the application can be taken offline, reset, or restarted.
traffic monitoring application status	Traffic monitoring application status reported by the RSE. This includes current operational state and status of the RSE and a record of system operation.
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 operator input	User input from traffic operations personnel including requests for information, configuration changes, commands to adjust current traffic control strategies (e.g., adjust signal timing plans, change DMS messages), and other traffic operations data entry.
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.
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 information	Information provided by transit management that supports fare payment transactions.

Flow Name	Description
transit incident information	Information on transit incidents that impact transit services for public dissemination.
transit incidents for media	Report of an incident impacting transit operations for public dissemination through the media.
transit information for media	Report of transit schedule deviations for public dissemination through the media.
transit information user request	Request for special transit routing, real-time schedule information, and availability information.
transit multimodal information	Transit schedule information for coordination at modal interchange points.
transit operations personnel input	User input from transit operations personnel including instructions governing service availability, schedules, emergency response plans, transit personnel assignments, transit maintenance requirements, and other inputs that establish general system operating requirements and procedures.
transit operations status	Presentation of information to transit operations personnel including accumulated schedule and fare information, ridership and on-time performance information, emergency response plans, transit personnel information, maintenance records, and other information intended to support overall planning and management of a transit property.
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 schedule information	Current and projected transit schedule information used to initialize the transit vehicle with a vehicle assignment, monitor schedule performance, and develop corrective actions on-board.
transit service coordination	Schedule coordination or AVL information shared between local/regional transit organizations. This includes coordination of connections between transit properties.
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, 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 traveler information	Transit information prepared to support transit users and other travelers. It contains transit schedules, real-time arrival information, fare schedules, alerts and advisories, and general transit service information.
transit 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.
transit traveler request	Request by a Transit traveler to summon assistance, request transit information, or request any other transit services.
transit trip plan	An origin-destination transit trip that may involve multiple modes and connections.
transit trip request	Request for a transit trip plan that is responsive to traveler requirements such as schedule, cost, or duration.
transit vehicle conditions	Operating conditions of transit vehicle (e.g., engine running, oil pressure, fuel level and usage).



Flow Name	Description
transit vehicle loading data	Data collected on board the transit vehicle relating to passenger boarding and alighting.
transit vehicle location data	Current transit vehicle location and related operational conditions data provided by a transit vehicle.
transit vehicle operator authentication information	Information regarding on-board transit operator authentication
transit vehicle operator authentication update	Results of authentication process or update of on-board authentication database.
transit vehicle operator availability	Transit vehicle operator availability data that can be used to develop vehicle operator assignments and detailed operations schedules.
transit vehicle operator display	Visual, audible, and tactile outputs to the transit vehicle operator including vehicle surveillance information, alarm information, vehicle system status, information from the operations center, and information indicating the status of all other on-board ITS services.
transit vehicle operator information	Transit service instructions, wide area alerts, traffic information, road conditions, and other information for both transit and paratransit operators.
transit vehicle operator input	Transit vehicle operator inputs to on-board ITS equipment, including tactile and verbal inputs. Includes authentication information, on-board system control, emergency requests, and fare transaction data.
transit vehicle schedule performance	Estimated times of arrival and anticipated schedule deviations reported by a transit vehicle.
transportation border clearance assessment	Includes directions for commercial driver to proceed to nearest vehicle weigh and inspection station for further review if required.
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 weather information	Current and forecast road conditions and weather information (e.g., surface condition, flooding, wind advisories, visibility, etc.) associated with the transportation network. This information is of a resolution, timeliness, and accuracy to be useful in transportation decision making.
traveler alerts	Traveler information alerts reporting congestion, incidents, adverse road or weather conditions, parking availability, transit service delays or interruptions, and other information that may impact the traveler. Relevant alerts are provided based on traveler-supplied profile information including trip characteristics and preferences.
traveler 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 for media	General traveler information regarding incidents, unusual traffic conditions, transit issues, or other advisory information that has been desensitized and provided to the media.
traveler input	User input from a traveler to summon assistance, request travel information, make a reservation, or request any other traveler service.
traveler interface updates	Visual or audio information (e.g., routes, messages, guidance, emergency information) that is provided to the traveler.

Flow Name	Description
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.
traveler sourced updates	Traveler posts on traffic and road conditions, transit services, traveler services, shelter information and other real-time crowd-sourced data that may be shared with other travelers.
trip confirmation	Acknowledgement by the driver/traveler of acceptance of a trip plan with associated personal and payment information required to confirm reservations.
trip declaration identifiers	Specific identifiers extracted from notification containing information regarding pending commercial freight shipment into the U.S. Includes carrier, vehicle, and driver identification data.
trip feedback	Information provided at the conclusion of a trip that supports performance monitoring and system optimization. Information provided may include a record of the trip including HOV/HOT lane usage and user provided feedback at the conclusion of the trip.
trip identification number	The unique trip load number for a specific cross-border shipment.
trip log	Driver's daily log, vehicle location, mileage, and trip activity (includes screening, inspection and border clearance event data as well as fare payments). The request flow is not explicitly shown.
trip log information	This flow represents the tactile or auditory interface with ITS equipment containing the information entered into the trip log, or request for update.
trip plan	A travel itinerary identifying a route and associated traveler information and instructions identifying recommended modes and transfer information, ride sharing options, and transit and parking reservation information.
trip request	Request for trip planning services that identifies the trip origin, destination(s), timing, preferences, and constraints. The request may also include the requestor's location or a request for transit and parking reservations and ridesharing options associated with the trip.
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., maximum transfer wait time, maximum walking distance, mode preferences, special needs), device information, a user ID and password, and information to support payment transactions, if applicable.
variable speed limit control	Information used to configure and control variable speed limit systems including the equipment used to provide current speed limits and other information to drivers and the equipment used to monitor traffic and environmental conditions along the roadway.
variable speed limit status	Current operating status of the variable speed limit systems including the state of the equipment.
vehicle charging profile	Vehicle information provided to an electric charging station including the operational status of the electrical system, the charging capacity and charging rate for the vehicle, and % charge complete.
vehicle control	Control commands issued to vehicle actuators that control steering, throttle, and braking and other related commands that support safe transition between manual and automated vehicle control. This flow can also deploy restraints and other safety systems when a collision is unavoidable.
vehicle emissions data	Measured emissions of specific vehicles comprised of exhaust pollutants including hydrocarbons, carbon monoxide, and nitrogen oxides.

Flow Name	Description
vehicle entries and exits	Information exchanged between an RSE and ITS Roadway Equipment that supports detection of non-equipped vehicles in an automated lane, low emissions zone, or other facility where V2I communications is used to monitor vehicles at entry or exit points. This exchange also supports identification of non-equipped vehicles where an RSE is used for payment collection. This generic exchange can be implemented by any approach that compares vehicle detections with V2I communications by the RSE to identify vehicles that are not equipped or are otherwise unable to communicate with the RSE.
vehicle environmental data	Data from vehicle safety and convenience systems that can be used to estimate environmental and infrastructure conditions, including measured air temperature, exterior light status, wiper status, sun sensor status, rain sensor status, traction control status, anti-lock brake status, vertical acceleration and other collected vehicle system status and sensor information. The collected data is reported along with the location, heading, and time that the data was collected. Both current data and snapshots of recent events (e.g., traction control or anti-lock brake system activations) may be reported.
vehicle location and motion	Data describing the vehicle's position, heading, speed, acceleration, transmission, steering wheel angle, braking status, size information, and trajectory.
vehicle location and motion for mapping	Vehicles may provide location and motion data independently using wide-area wireless communications to application/service providers who use the provided data to update their maps and maintain real-time traffic and road conditions information sourced from their client-base.
vehicle location and motion for surveillance	Data describing the vehicle's position, heading, speed, acceleration, transmission, steering wheel angle, braking status, size information, and trajectory. This flow represents monitoring of basic safety data ('vehicle location and motion') broadcast by passing connected vehicles for use in vehicle detection and traffic monitoring applications.
vehicle payment information	Information provided for payment of tolls, parking, and other transportation fees including identification that can be used to identify the payment account or source and related vehicle and service information that are used to determine the type and price of service requested. The information exchange normally supports an account debit to pay fees, but an account credit may be initiated where pricing strategies include incentives.
vehicle payment request	Request for information supporting payments. For fee structures that include incentives, the request may support either an account debit or an account credit or reimbursement.
vehicle payment update	Data written to vehicle equipment to support electronic toll collection or parking payment.
vehicle platoon coordination	Coordination of control commands between leader and follower vehicles allowing vehicles to join, coordinate with, and separate from platoons of cooperative vehicles. This flow shares platoon size, location, and performance parameters (e.g., platoon speed and spacing) between platooned vehicles. It also coordinates maneuvers between platooned vehicles, including maneuvers as vehicles join and leave the platoon.
vehicle profile	Information about a vehicle such as vehicle make and model, fuel type, engine type, size and weight, vehicle performance and level of control automation, average emissions, average fuel consumption, passenger occupancy, or other data that can be used to classify vehicle eligibility for access to specific lanes, road segments, or regions or participation in cooperative vehicle control applications.
vehicle signage application info	In-vehicle signing application configuration data and messaging parameters. This flow provides a list of regulatory, warning, and information messages to be displayed and parameters that support scheduling and prioritizing messages to be issued to passing vehicles. This flow also supports remote control of the application so the application can be taken offline, reset, or restarted.
vehicle signage application status	In-vehicle signing application status reported by the RSE. This includes current operational state and status of the RSE and a log of messages sent to passing vehicles.

Flow Name	Description
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., current signal states, grade crossing information, local traffic and road conditions, detours, advisories, and warnings).
vehicle signage local data	Information provided by adjacent field equipment to support in-vehicle signing of dynamic information that is currently being displayed to passing drivers. This includes the dynamic information (e.g., current signal states, grade crossing information, local traffic and road conditions, detours, advisories, parking availability, etc.) and control parameters that identify the desired timing, duration, and priority of the signage data.
vehicle situation data	This flow represents vehicle snapshots that may be provided by the vehicle to support traffic and environmental conditions monitoring. Snapshots are collected by the vehicle for specific events (e.g., when a sensor exceeds a threshold) or periodically and reported based on control parameters when communications is available. Traffic-related data includes snapshots of measured speed and heading and events including starts and stops, speed changes, and other vehicle control events. Environmental data may include measured air temperature, exterior light status, wiper status, sun sensor status, rain sensor status, traction control status, anti-lock brake status, and other collected vehicle system status and sensor information. The collected data is reported along with the location, heading, and time that the data was collected.
vehicle situation data parameters	A request for vehicle situation data that includes parameters used to control the data that is reported and the flow of data reported by the vehicle. This flow identifies the type of data/snapshots that are requested and reporting parameters such as snapshot frequency, filtering criteria (data thresholds for reporting), and reporting interval.
video surveillance control	Information used to configure and control video surveillance systems.
voice-based traveler information	Traveler information sent to the telecommunications systems for traveler information terminator. This flow may represent the bulk transfer of traveler information, including traffic conditions, incident information, transit information and weather and road condition information. It may be specially formatted for voice-based traveler information.
voice-based traveler request	The electronic traveler information request from the telecommunications systems for traveler information terminator. It may be specifically formatted for voice-based traveler requests. The request can be a general subscription intended to initiate a continuous or regular data stream or a specific request intended to initiate a one-time response from the recipient.
weather information	Accumulated forecasted and current weather data (e.g., temperature, pressure, wind speed, wind direction, humidity, precipitation, visibility, light conditions, etc.).
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 safety application info	Work zone safety application configuration data and warning parameters and thresholds. This includes work zone configuration including geofenced crew areas and travel lanes that provide a safety boundary between work zone personnel and passing vehicles. This flow also supports remote control of the application so the application can be taken offline, reset, or restarted.

Flow Name	Description
work zone safety application status	Work zone safety application status reported by the RSE. This includes current operational state and status of the RSE and a record of identified work zone safety alerts and warnings issued.
work zone status	Current work zone status including current location (and future locations for moving work zones), impact to the roadway, required lane shifts, expected time(s) and duration of impact, anticipated delays, alternate routes, and suggested speed limits.
work zone warning device control	Data used to configure and control work zone safety monitoring and warning devices.
work zone warning notification	Notification of a work zone emergency or safety issue. This flow identifies that a work zone emergency or safety issue has occurred so that warnings may be generated by more than one system in the work zone.
work zone warning status	Status of a work zone safety monitoring and warning devices. This flow documents system activations and includes additional supporting information (e.g., an image) that allows verification of the alarm.

## Appendix G. ITS Standards Details

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

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

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

**Table 6 – ITS Standards Details**

SDO	Document ID	Standard Title	Standard Type
American Public Transportation Association	APTA TCIP-S-001 3.0.4	Standard for Transit Communications Interface Profiles	Message/Data
American Society for Testing and Materials	ASTM E2468-05	Standard Practice for Metadata to Support Archived Data Management Systems	Message/Data
American Society for Testing and Materials	ASTM E2665-08	Standard Specifications for Archiving ITS-Generated Traffic Monitoring Data	Message/Data
Consortium of AASHTO, ITE, and NEMA	NTCIP 1201	Global Object Definitions	Message/Data
Consortium of AASHTO, ITE, and NEMA	NTCIP 1202	Object Definitions for Actuated Traffic Signal Controller (ASC) Units	Message/Data
Consortium of AASHTO, ITE, and NEMA	NTCIP 1203	Object Definitions for Dynamic Message Signs (DMS)	Message/Data
Consortium of AASHTO, ITE, and NEMA	NTCIP 1204	Object Definitions for Environmental Sensor Stations (ESS)	Message/Data
Consortium of AASHTO, ITE, and NEMA	NTCIP 1205	Object Definitions for Closed Circuit Television (CCTV) Camera Control	Message/Data

SDO	Document ID	Standard Title	Standard Type
Consortium of AASHTO, ITE, and NEMA	NTCIP 1206	Object Definitions for Data Collection and Monitoring (DCM) Devices	Message/Data
Consortium of AASHTO, ITE, and NEMA	NTCIP 1207	Object Definitions for Ramp Meter Control (RMC) Units	Message/Data
Consortium of AASHTO, ITE, and NEMA	NTCIP 1208	Object Definitions for Closed Circuit Television (CCTV) Switching	Message/Data
Consortium of AASHTO, ITE, and NEMA	NTCIP 1209	Data Element Definitions for Transportation Sensor Systems (TSS)	Message/Data
Consortium of AASHTO, ITE, and NEMA	NTCIP 1210	Field Management Stations (FMS) - Part 1: Object Definitions for Signal System Masters	Message/Data
Consortium of AASHTO, ITE, and NEMA	NTCIP 1211	Object Definitions for Signal Control and Prioritization (SCP)	Message/Data
European Committee for Standardization	TS 15531	Service Interface for Real-Time Information (SIRI)	Message/Data
General Transit Feed Specification Discussion Group	GTFS	General Transit Feed Specification (GTFS) Static	Message/Data
General Transit Feed Specification Discussion Group	GTFS-Realtime	General Transit Feed Specification (GTFS) Realtime	Message/Data
Institute of Electrical and Electronic Engineers	IEEE 1512 -2006	Standard for Common Incident Management Message Sets for use by Emergency Management Centers	Message/Data
Institute of Electrical and Electronic Engineers	IEEE 1512.3-2006	Standard for Hazardous Material Incident Management Message Sets for Use by Emergency Management Centers	Message/Data
Institute of Electrical and Electronic Engineers	IEEE 1570-2002	Standard for the Interface Between the Rail Subsystem and the Highway Subsystem at a Highway Rail Intersection	Message/Data
Institute of Electrical and Electronic Engineers	IEEE 1609.11	Standard for Wireless Access in Vehicular Environments (WAVE) - Over- the-Air Data Exchange Protocol for Intelligent Transportation Systems (ITS)	Message/Data
Institute of Transportation Engineers	ITE TMDD	Traffic Management Data Dictionary (TMDD) and Message Sets for External Traffic Management Center Communications (MS/ETMCC)	Message/Data
Profile	CCMS	CCMS Communications	Standard Profile
Profile	Contact-Proximity-Interface	Proximity Communication Interface	Standard Profile
Profile	DSRC-UDP	Vehicle-to-Vehicle/Infrastructure using UDP	Standard Profile

SDO	Document ID	Standard Title	Standard Type
Profile	DSRC-WSMP	Vehicle-to-Vehicle/Infrastructure using WSMP	Standard Profile
Profile	NTCIP-DATEX	NTCIP using DATEX	Standard Profile
Profile	NTCIP-SMTP	NTCIP using SMTP	Standard Profile
Profile	NTCIP-SNMP	NTCIP using SNMP	Standard Profile
Profile	RSE-C2F	RSE - Center to Field Communications	Standard Profile
Profile	RSE-C2F-SNMP	RSE - Center to Field Communications - SNMP	Standard Profile
Profile	RSE-F2F	Roadside Equipment to ITS Roadway Equipment	Standard Profile
Profile	RSEGateway-VehicleDestination	Vehicle Communications via RSEs, Vehicle Destination	Standard Profile
Profile	RSEGateway-VehicleSource	Vehicle Communications via RSEs, Vehicle Source	Standard Profile
Profile	SRC-Legacy	Legacy Short Range Comm Using IEEE 1455	Standard Profile
Profile	VehicleGateway-CenterSource	Vehicle Cluster from Center	Standard Profile
Profile	Vehicle-On-Board	Vehicle-On-Board	Standard Profile
Profile	WAB-Via-WAID	Wide-Area-Broadcast-Via-WAID	Standard Profile
Profile	WAW-ASN1	Wide Area Wireless using ASN.1 as encoding method	Standard Profile
Profile	WAW-WWWBrowser-JSON	Wide Area Wireless using JSON as encoding method	Standard Profile
Profile	WAW-XML	Wide Area Wireless using XML as encoding method	Standard Profile
Profile	XML	eXtensible Markup Language	Standard Profile
Society of Automotive Engineers	J2945/1	On-Board System Requirements for V2V Safety Communications	Communications Protocol
Society of Automotive Engineers	SAE J2313	On-Board Land Vehicle Mayday Reporting Interface	Message/Data
Society of Automotive Engineers	SAE J2354	Message Set for Advanced Traveler Information System (ATIS)	Message/Data
Society of Automotive Engineers	SAE J2735	Dedicated Short Range Communications (DSRC) Message Set Dictionary	Message/Data
Society of Automotive Engineers	SAE J3067	Candidate Improvements to Dedicated Short Range Communications (DSRC) Message Set Dictionary [SAE J2735] Using Systems Engineering Methods	Message/Data



## Appendix H. Agreements Details

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

**Table 7 – Agreements Details**

Agreement Title	Agreement Type	Agreement Status	Description	Lead Stakeholder	Associated Stakeholders
Johnson County Transit AVL	Unspecified	Planned	A memorandum of understanding for the planned implementation of an automatic vehicle location system for Johnson County Transit.	Johnson County Transit	Johnson County Transit, Kansas Department of Transportation (KDOT), KCATA, MARC, Unified Government Transit
Kansas City Scout ATMS	Unspecified	Existing	Agreements establishing the creation, governance, and continued operation of the bi-state freeway management system in the Kansas City area.	KDOT / MoDOT	Kansas Department of Transportation (KDOT), KDOT / MoDOT, MARC, MoDOT
Kansas City Unified Incident Management	Unspecified	Existing	The Kansas and Missouri Departments of Transportation have formed partnerships with metro first responder agencies through Kansas City Scout. These partnerships were further solidified upon the signing of the updated One Accord Agreement, a resolution unifying these agencies with Scout in Traffic Incident Management for the metropolitan Kansas City area.	KDOT / MoDOT	Counties and Cities, Kansas Department of Transportation (KDOT), Kansas Highway Patrol, Missouri Department of Public Safety, MoDOT
KCATA AVL	Unspecified	Planned	A memorandum of understanding for a planned implementation of an automatic vehicle location system for KCATA.	KCATA	Johnson County Transit, Kansas Department of Transportation (KDOT), KCATA, MARC, MoDOT, Unified Government Transit
KCATA Bus Rapid Transit	Unspecified	Existing	Memorandum of understanding for the participants in the implementation of a bus rapid transit system. The system currently operates in Kansas City, MO, but it is likely that additional cities will also be served by BRT.	KCATA	City of Kansas City, MO, KCATA, MARC
Olathe ATMS	Unspecified	Existing	Agreements documenting the funding and operational responsibilities for the implementation and operation of an arterial traffic management system.	City of Olathe, KS	City of Olathe, KS, Kansas Department of Transportation (KDOT), MARC

Agreement Title	Agreement Type	Agreement Status	Description	Lead Stakeholder	Associated Stakeholders
Operation Green Light ATMS	Unspecified	Existing	Agreements documenting the funding and operational responsibilities for the implementation and operation of a regional arterial traffic management system. These agencies and cities are participating in the Operation Green Light project: Federal Highway Administration, Kansas Department of Transportation, Mid-America Regional Council, Missouri Department of Transportation, Belton, Mo., Blue Springs, Mo., Bonner Springs, Kan., Fairway, Kan., Gladstone, Mo., Grandview, Mo., Independence, Mo., Kansas City, Mo., Lansing, Kan., Leavenworth, Kan., Leawood, Kan., Lee's Summit, Mo., Lenexa, Kan., Liberty, Mo., Merriam, Kan., Mission, Kan., Mission Woods, Kan., North Kansas City, Mo., Olathe, Kan., Overland Park, Kan., Prairie Village, Kan., Raymore, Mo., Shawnee, Kan., Westwood, Kan., Westwood Hills, Kan., Unified Government of Wyandotte County/Kansas City, Kan.	MARC	Counties and Cities, Kansas Department of Transportation (KDOT), MARC, MoDOT
Overland Park ATMS	Unspecified	Existing	Agreements documenting the funding and operational responsibilities for the implementation and operation of an arterial traffic management system.	City of Overland Park, KS	City of Overland Park, KS, Kansas Department of Transportation (KDOT), MARC
Smart City Technology Agreement	Unspecified	Existing	MOU establishing wifi and communications across Kansas City.		City of Kansas City, MO, Private Information Service Providers
Technology Cooperative Agreement	Unspecified	Existing	MOU for information sharing across Kansas City for Prospect Max, Fiber Optic Communications, and data.		City of Kansas City, MO, KCATA, Private Information Service Providers
Unified Government Transit AVL	Unspecified	Planned	A memorandum of understanding for a planned implementation of an automatic vehicle location system for Unified Government Transit.		Johnson County Transit, Kansas Department of Transportation (KDOT), KCATA, MARC, MoDOT