Alaska Iways Architecture Update

Task 2 (Part 5 of 6):
Chapter 5: Physical ITS Architecture

FINAL

September 5, 2008

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5 PHYSICAL ITS ARCHITECTURE

5.1 Introduction

The Physical ITS Architecture is the fifth in the series of six chapters that comprise the body of Alaska's Iways Architecture. The Physical Architecture is a high-level representation or framework that shows how existing and planned ITS elements across the state interconnect to exchange information and data. To this extent the Physical Architecture can be portrayed as a "blue print" that illustrates the existing and future state of ITS integration. It identifies the individual pieces or ITS elements that comprise the Alaska Iways Program, the functions these pieces perform, and the information and data that are exchanged. Since the Physical Architecture is developed at a high-level it is not intended serve as the detailed design of the system, but rather gives guidance to those individuals involved in design and implementation of ITS elements. The Physical Architecture does not define how pieces of the statewide ITS will be implemented, but rather defines the interactions these pieces have among each other. This helps agencies easily visualize where in the "big picture" their ITS elements fit, and with what other elements they communicate.

5.1.1 Purpose

The Physical Architecture identifies existing and planned ITS elements within Alaska and defines the physical relationships between them. The Architecture identifies the interconnections between ITS elements and describes the flow of information that occurs between them. The architecture is illustrated through a series of diagrams that show how individual elements connect. These illustrations ease understanding of ITS integration and will in time serve as a guide on how to best implement systems, and improve integration efforts leading to greater return on investment. In other words, it helps identify gaps in existing system implementation, so that new ITS projects can be programmed and phased for implementation in a manner that best builds off the existing ITS framework. Additionally, the Physical Architecture works to improve transportation in that it fosters an environment where consensus can be achieved, promotes interoperability of ITS technology, and meets federal requirements to ensure that ITS projects remain eligible for federal funding. Each of the areas are described in greater detail below.

Promotes Consensus and Understanding of ITS Projects and Activity

The Physical Architecture can be viewed as a tool that promotes understanding and helps achieve inter-organizational cooperation and partnerships. To be effective the architecture must involve statewide ITS stakeholders so that input can be collected to guide development of the architecture and ITS investment. Through this process, the architecture brings together various agencies across the state that would not otherwise interact. Through this interaction, agencies are indirectly exposed to the activities of other agencies, and are given the opportunity to understand the needs, issues, desires, and constraints of other agencies. This tears down institutional barriers, and forms an environment where agencies can work together to solve agency issues and transportation

needs. This environment even offers the potential for agencies to develop partnerships and agreements that benefit the operations of both agencies, allowing both to operate more effectively and efficiently.

Guides System Inter-operability

The Physical Architecture promotes interoperability in that it reveals to stakeholders the relationships and interconnections that currently exist and are planned between their systems and those of other agencies within the State. Through these relationships and interconnections stakeholders can easily visualize the pathways that information currently flow, and the additional technologies which are needed to improve the efficiency and effectiveness of existing day-to-day operations. The architecture also promotes consistency in the manner in which systems are developed, and promotes adherence to standards that enable systems to be more easily interconnected across jurisdictional boundaries.

Meets Federal Funding Mandates

Last, but perhaps most important to project implementation is that the Architecture satisfies the mandate that ITS projects be included within an ITS architecture in order to receive Federal funding. Although Alaska has had a Statewide ITS Architecture in place since 2003, their action to undergo this update shows the state's desire to remain compliant with Federal requirements and to actively seek technological solutions to today's transportation needs.

5.1.2 The National ITS Architecture

The National ITS Architecture is a common, mature framework for planning, defining, and integrating ITS elements. The National Architecture reflects the contributions of a broad cross-section of the ITS community and specifically defines:

- The functions that are required of ITS to perform transportation services.
- The physical entities or subsystems where these functions reside.
- The information flows and data flows that connect these functions and physical subsystems together into an integrated system.

The listing of functions, subsystems and flows contained in the National Architecture is comprehensive and is intended to serve as a guide to regions/states developing a local architecture. For this reason, any statewide or regional ITS Architecture such as the Alaska Iways Architecture will reflect only a sub set of all the possible functions, subsystems and flows brought forward by the National Architecture.

5.1.3 The Turbo Architecture Software Tool

The Alaska Iways Architecture was developed in part through use of Turbo Architecture (Version 3.1) software (hereafter referred to as Turbo). Turbo is a software application that supports development of regional and project ITS architectures using the National ITS Architecture as a starting point. The electronic Turbo file contains attributes of Iways Architecture, including stakeholders, existing and planned ITS elements, high-level functions, system-to-system interconnects and information flows, and applicable standards. The Turbo electronic database file should be used as a means to easily and effectively update the Alaska Architecture in the future.

5.2 Stakeholders and Systems

ADOT&PF with support from its consultant identified a comprehensive list of stakeholders from around the state thought to have an active interest or be potentially be impacted by ITS activities.

These stakeholders were invited to participate in stakeholder outreach events, including workshops and document reviews. In addition, a comprehensive internet search was completed to expand the breadth of information collection, but primarily to identify and include other stakeholders, beyond that which participated in the formal outreach efforts. To this extent Table 5-1, identifies Alaska's primary ITS stakeholders that are believed to own ITS systems, in which integration efforts will prove to expand the benefits of ITS systems. Table 5-1 does not include all of Alaska's ITS stakeholders, but rather just those that own or operate ITS-related systems.

Table 5-1:
Alaska's Primary ITS Stakeholders and Respective Systems

Stakeholder	Stakeholder System	System Status
ADOTPF/ Program Development	Field/ Variable Speed Limit System	Planned
	Weather Prediction System	Planned
	Center/ Avalanche Detection System	Planned
	Center/ Highway Data Weather Portal	Planned
	Field/ Border Data Collection System	Planned
	Field/ Seismic Sensors	Existing
	Center/ Condition Acquisition and Reporting System	Existing
	Field/ Highway Advisory Radio	Planned
	Center/ Tunnel Control System	Existing
	Center/ Anton Anderson Tunnel Control System	Existing
	Center/ 511 (phone and web)	Existing
State of Alaska/ Division of Tourism	Center/ Division of Tourism Website	Existing
State of Alaska/ Division of Homeland Security and Emergency Management	Center/ State Emergency Coordination Center	Existing
	Emergency Alert System	Existing
DPS/ Division of Alaska State Troopers	Field/ Permanent Dynamic Message Signs (Permanent @ FOX Station)	Existing
ADOTPF/ Alaska Railroad Corporation	ARRC Dispatch	Existing
	Field/ Train Whistle Noise Reduction Sensors	Existing
	Center/ Computerized Materials and Maintenance Management System	Existing
	Center/ ARRC Collision Avoidance System	Existing
	Field/ Train Signal System	Existing
	Field/ Train Whistle Noise Reduction Horns	Existing
ADOTPF/ Alaska Marine Highway System	Center/ AMHS Website	Existing
	Vehicle/ Ferries AVL	Existing
	Center/ AMHS Dispatch and Communications	Existing
	Vehicle/ Ferries On-board Systems	Existing
	Center/ Vessel Tracking System	Existing
	Field/ Cameras (at AMHS Terminals)	Existing
ADOTPF/ Measurement Standards and Commercial Vehicle Enforcement	Center/ Credentials Data Integration and Access System (CDIAS)	Existing
	Field/ Infra-red Inspection System (IRIS)	Existing
	Field/ Permanent Dynamic Message Signs (Port of Anchorage)	Existing
	Center/ SAFETYNET	Existing
	Center/ SEPP	Existing
	Center/ International Border System	Planned
	Field/ AVI/WIM	Existing

Stakeholder	Stakeholder System	System Status
	Center/ HazMat	Planned
	Center/ CVE Insurance	Existing
	Center/ MSCVE Headquarters	Existing
	Center/ Web-Based Electronic Registration System (WeB CAT)	Planned
	Center/ MSCVE Offices	Existing
	Field/ Remote Video Monitoring System	Planned
	Field/ Weigh and Border Station Roadside and Handheld Equipment	Existing
	Center/ CVIEW	Planned
	Weigh Stations	Existing
	Field/ ASPEN	Existing
	Field/ Integrated Roadside Operations Computer	Planned
MOA/ Anchorage Police Department	Field/ Permanent Dynamic Message Signs (Anchorage)	Existing
	Center/ APD Headquarters and Dispatch	Existing
Military Bases	Field/ Weather and Pavement Sensors (Military Bases)	Existing
Public Travelers	Travelers/ Personal Communications/Computing Devices (pre-trip)	Existing
	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
	General Public Vehicle	Existing
State of Alaska/ DOA/ Division of Motor Vehicles	Paymentech	Existing
	State Treasury	Existing
	Department of Motor Vehicles	Existing
	Center/ ALVIN CDL	Existing
	Center/ ALVIN Registration	Existing
Commercial Vehicle Operators/ Motor Carriers (Any)	Vehicle/ Commercial Vehicle On-Board Systems	Existing
	Center/ Commercial Vehicle Operations Offices	Existing
	Center/ Motor Carrier Administrative Systems	Existing
ADOTPF/ Highway Database Section	Center/ Highway Analysis System	Existing
	Center/ Highway Database Section Office	Existing
	Field/ Automatic Traffic Data Recorders	Existing
National Weather Service (NWS) Alaska Region	Field/ Weather and Pavement Sensors (NWS)	Existing
	Center/ National Weather Service Offices	Existing
ADOTPF/ Regional Maintenance and Operations Departments	Center/ Regional Maintenance Stations	Existing
	Vehicle/ ADOTPF Maintenance Vehicle AVL	Planned
	Field/ Cameras (at RWIS)	Existing
	Field/ Road Weather Information Systems (RWIS)	Existing
	Vehicle/ Maintenance Vehicle On-board Systems (State)	Existing
	Center/ Maintenance Management System	Existing
	Field/ Automated Bridge Anti-icing	Existing
Media	Media Systems (T.V. and Radio)	Existing
City of Fairbanks	Field/ Pre-emption and Priority Systems (Fairbanks)	Existing
DMVA/ Department of Homeland Security and Emergency Management	Center/ Customs and Border Protection	Planned

Stakeholder	Stakeholder System	System Status
Financial Institutions	Carrier Banks	Existing
Federal Motor Carrier Safety Administration	Center/ CDLIS	Existing
	Center/ Motor Carrier Management Information System	Existing
	Center/ SAFER	Existing
	Center/ CAPRI	Existing
WSDOT	Center/ Transponder Administration System	Planned
MOA/ Street Maintenance	Vehicle/ MOA Maintenance Vehicle AVL	Planned
	Center/ MOA Maintenance Dispatch Office	Existing
	Vehicle/ Maintenance Vehicle On-board Systems (MOA)	Existing
MOA/ Anchorage Office of Emergency Management	Center/ MOA Emergency Operations Center	Existing
FAA/ Alaska Region	Center/ FAA Website	Existing
	Field/ Cameras (FAA)	Existing
ADOTPF/ Bridge Design Section	Center/ Bridge Management System	Existing
	Center/ Bridge Design Section Offices	Existing
ADOTPF/ Statewide Materials	Center/ Pavement Management System	Existing
Municipality of Anchorage	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
MOA/ Signal Section	Field/ Pre-emption and Priority Systems (MOA)	Planned
	Field/ Cameras (MOA)	Existing
	Center/ MOA Signal Control	Existing
MOA/ PeopleMover	"See Transit Agencies"	NA
Transit Agencies	Center/ Transit Agency Websites (Placeholder)	Existing
	Vehicle/ Transit Vehicle AVL (Placeholder)	Existing
	Center/ Transit Agency Dispatch (Placeholder)	Existing
	Vehicle/ Transit Vehicle On-board Systems (Placeholder)	Existing
Capital Transit	"See Transit Agencies"	NA
Matsu Transit	"See Transit Agencies"	NA
Kenai Central Area Rural Transit	"See Transit Agencies"	NA
Ketchikan Gateway Borough Transit	"See Transit Agencies"	NA
Kodiak Area Transit	"See Transit Agencies"	NA
Sitka Center for Community	"See Transit Agencies"	NA
Fairbanks North Star Borough Transit	"See Transit Agencies"	NA
ADOTPF/ Traffic and Safety Offices	Field/ Pre-emption and Priority Systems (State)	Existing
	Center/ ADOTPF Traffic and Safety Offices	Existing
State of Alaska/ Department of Health and Social Services/ Injury Prevention and EMS	Smart Call Boxes	Existing
Juneau/ City of Juneau Police Department	"See Law Enforcement Agencies"	NA
City of Wasilla Police Department	"See Law Enforcement Agencies"	NA
City of Palmer Police Department	"See Law Enforcement Agencies"	NA
Law Enforcement Agencies	Center/ Law Enforcement Dispatch	Existing
	Vehicle/ Law Enforcement Vehicle On-board Systems	Existing
	Vehicle/ Law Enforcement Vehicle AVL	Existing
	Center/ Law Enforcement Data Archives	Existing
City of Fairbanks Police Department	"See Law Enforcement Agencies"	NA

Stakeholder	Stakeholder System	System Status
EMS Providers	Center/ EMS Dispatch Centers (Placeholder)	Existing
	Vehicle/ EMS Vehicle AVL	Existing
	Vehicle/ EMS Vehicle On-board Systems	Existing
U.S. Geological Survey Alaska Science Center	Field/ Bridge Scour Sensors	Existing
	Center/ Bridge Scour System	Existing
Traffic Signal Owners and Operators	Field/ Traffic Signal Controllers	Existing
	Field/ Traffic Detectors	Existing

5.3 High-level ITS Functional Requirements

ITS Functional Requirements drive development of ITS elements by specifically stating what ITS elements must do to deliver transportation services and satisfy user needs and issues. The High-level ITS Functional Requirements listed in Appendix A provide a starting point for defining projects and developing detailed functional requirements for projects. Requirements are also used to verify that ITS elements are built correctly. Besides in Appendix A, high-level ITS functional requirements are documented in the Alaska Iways Architecture Turbo Architecture Database. As an example of how functional requirements are written, the high-level functional requirements for the RWIS system are provided in Table 5-2.

Table 5-2:
Example of High-level Functional Requirements (RWIS)

Element	Requirement	Status
Field/ Road Weather Information Systems (RWIS)	The field element shall include surface and sub-surface environmental sensors that measure road surface temperature, moisture, icing, salinity, and other measures.	Existing
	The field element shall include environmental sensors that measure weather conditions including temperature, wind, humidity, precipitation, and visibility.	Existing
	The field element's environmental sensors shall be remotely controlled by a maintenance center.	Existing
	The field element shall provide environmental sensor equipment operational status to the controlling center or maintenance vehicle.	Existing
	The field element shall provide environmental sensor equipment fault indication to the controlling center or maintenance vehicle.	Existing
	The field element shall provide weather and road surface condition data to centers.	Existing
	The field element shall collect traffic, road, and environmental conditions information.	Existing
	The field element shall include the sensors and supporting roadside devices that sense, collect, and send traffic, road, and environmental conditions information to a center for archival.	Existing
	The field element shall collect sensor status and sensor faults from roadside equipment and send it along with the recorded data to a center for archival.	Planned

5.4 Physical Architecture Components/Terminology

The Physical Architecture identifies the various entities that comprise the physical world in which ITS activities take place, and which are required to deliver transportation functions or services. Entities are classified by the National ITS Architecture as either a Subsystem or a Terminator. The Physical Architecture also identifies the types of information that are exchanged among entities to deliver transportation services. An overview of the various components that comprise the Physical Architecture is provided below.

5.4.1 Subsystems

As its name implies, a subsystem is a stand alone, independent component of a larger system – in this case the Alaska Iways Program. Subsystems are critical components of the larger system and in some regards can be viewed as a system themselves. Subsystems are composed of related, yet smaller groups of technologies referred to in the National Architecture as Equipment Packages that together can be bundled to deliver specific transportation services. Subsystems represent the primary building blocks of a physical architecture, and therefore the Alaska's Iways Architecture.

The National ITS Architecture v 5.0 identifies 22 possible subsystems in which Alaska's ITS elements may be categorized. It is certainly possible that identified ITS systems do not fit in any of these 22

sub-system categories. In these rare cases, these systems are preserved for inclusion into the architecture at some point in the future. These systems are preserved because the National Architecture has yet to mature to a point where these systems are widely accepted and included within this framework.

The 22 subsystems identified within the National Architecture are grouped into four classes: Travelers, Centers, Vehicles, Field. Subsystems are grouped within their respective Class, in what is known as the National Architecture Sausage Diagram shown in Figure 5-1. Following Figure 5-1, a description of subsystem classes is provided.

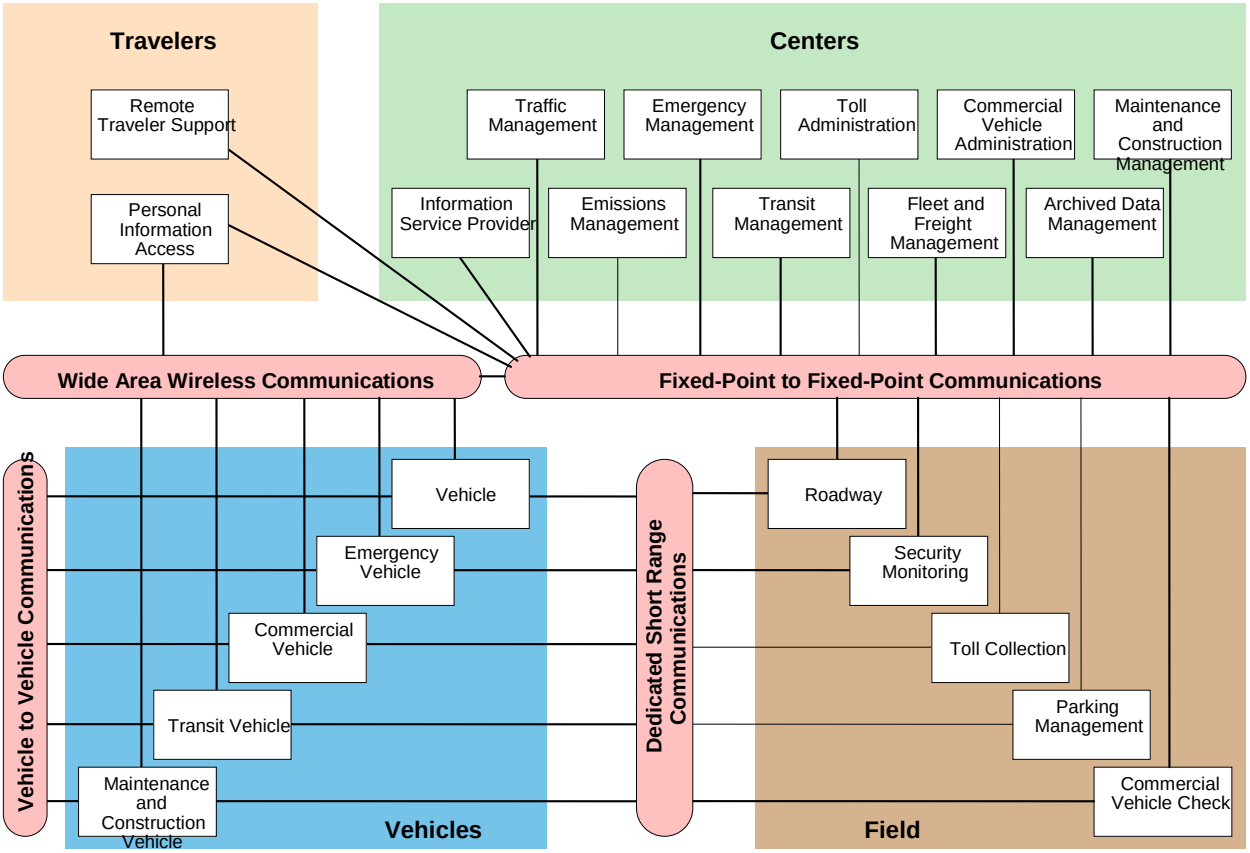


Figure 5-1:
National ITS Architecture Subsystems and Communications (Sausage Diagram)

Traveler Subsystems: These are systems that are used by travelers to access ITS services pre-trip and en-route. This includes services that are owned and operated by the traveler as well as services that are owned by transportation and information providers. Examples of traveler subsystems include but are not limited to; kiosks, personal digital assistants and cell phones. National Architecture Traveler Subsystems are shown in the Travelers box within Figure 5-1, and listed below:

- Remote Traveler Support
- Personal Information Access

Center Subsystems: These are systems that provide management, administrative, and support functions for the transportation system. Center subsystems each communicate with other centers to enable coordination between modes and across jurisdictions. National ITS Architecture Center Subsystems are shown in the Centers box within Figure 5-1, and listed below:

- Traffic Management
- Transit Management
- Commercial Vehicle Administration
- Archived Data Management
- Emissions Management
- Toll Administration
- Emergency Management
- Information Service Provider
- Fleet and Freight Management

Vehicle Subsystems: These are systems located on or within vehicle platforms. Vehicle subsystems include general driver information and safety systems applicable to all vehicle types. National Architecture Vehicle Subsystems are shown in the Vehicles box within Figure 5-1, and listed below:

- Vehicle
- Emergency Vehicle
- Commercial Vehicle
- Transit Vehicle
- Maintenance and Construction Vehicle

Field Subsystems: These are systems that are located along the roadway, or in the field, which perform surveillance, collect or provide information, or carry out maintenance or management functions. Field subsystems are primarily controlled by center subsystems; however, field elements may also interface directly with other field or vehicle subsystems. National Architecture Field Systems are shown in the field box within Figure 5-1, and listed below.

- Roadway
- Security Monitoring
- Toll Collection
- Parking Management
- Commercial Vehicle Check

Of the 22 subsystems identified within the National Architecture, 18 currently apply to the existing and planned ITS infrastructure in Alaska. These 18 are illustrated in Figure 5-2, as boxes that are not shaded gray. Figure 5-2, is a depiction of the National Architecture sausage diagram that is customized to reflect the existing and planned ITS subsystems in Alaska.

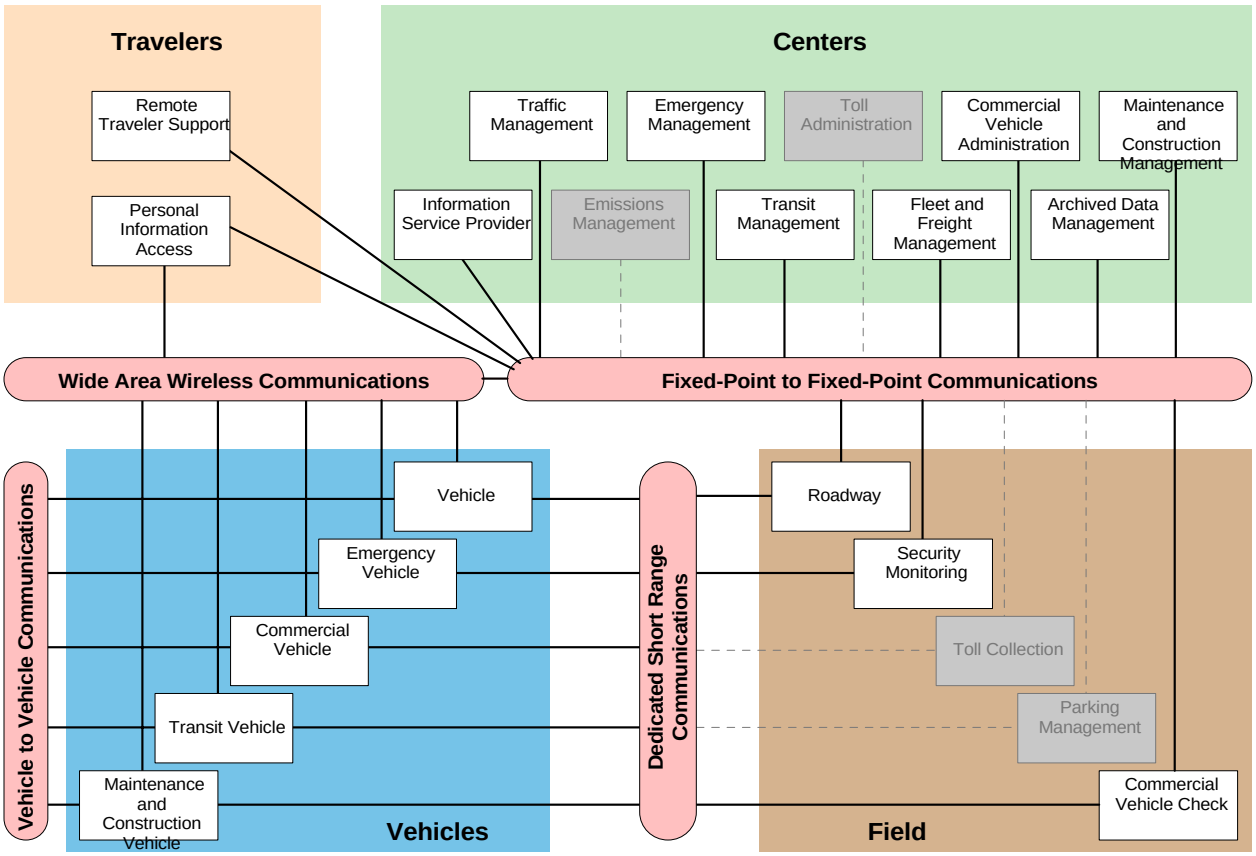


Figure 5-2:
National ITS Architecture Subsystems Relevant to Alaska

A mapping of Alaska's existing and planned ITS elements to National ITS Architecture Subsystems is provided in Table 5-3. This table is color coded to match the color scheme of the National ITS Architecture Subsystem classes shown in Figure 5-1 and Figure 5-2. As shown in Table 5-3, each National Architecture Subsystem can be comprised of more than one ITS element.

Table 5-3:
Mapping of Alaska ITS Elements to National ITS Architecture Subsystems

National ITS Architecture Subsystem Class	National ITS Architecture Subsystem	Corresponding Alaska ITS Elements
Traveler	Remote Traveler Support	• Field/ Cameras (at AMHS terminals)
	Personal Information Access	• Travelers/ Personal Communications/Computing Devices (en-route) • Travelers/ Personal Communications/Computing Devices (pre-trip)

National ITS Architecture Subsystem Class	National ITS Architecture Subsystem	Corresponding Alaska ITS Elements
Center	Information Service Provider	• Center/ 511 (phone and web) • Center/ AMHS Dispatch and Communications • Center/ Condition Acquisition and Reporting System • Center/ Division of Tourism Website • Center/ FAA Website • Center/ MOA Integrated Transportation Operations and Communication Center • Center/ National Weather Service Offices • Center/ Transit Agency Websites • International Border System
	Traffic Management	• Center/ ADOT&PF Traffic and Safety Offices • Center/ Anton Anderson Tunnel Control System • Center/ APD Headquarters and Dispatch • Center/ Highway Database Section Office • Center/ Law Enforcement Dispatch • Center/ MOA Integrated Transportation Operations and Communication Center • Center/ MOA Maintenance Dispatch Office • Center/ MOA Signal Control • Center/ MSCVE Offices • Center/ Regional Maintenance Stations • Field/ Variable Speed Limit System
	Emergency Management	• Regional 911 System • Center/ APD Headquarters and Dispatch • Center/ Condition Acquisition and Reporting System • Center/ Law Enforcement Dispatch • Center/ MOA Emergency Operations Center • Center/ MOA Integrated Transportation Operations and Communication Center • Center/ State Emergency Coordination Center • Center/ EMS Dispatch Centers • HazMat
	Transit Management	• Center/ AMHS Dispatch and Communications • Center/ Transit Agency Dispatch • Center/ Vessel Tracking System • Vehicle/ ARRC Collision Avoidance System
	Fleet and Freight Management	• Center/ Commercial Vehicle Operations Offices

National ITS Architecture Subsystem Class	National ITS Architecture Subsystem	Corresponding Alaska ITS Elements
		• Center/ Motor Carrier Administrative Systems • Motor Carrier Management Information System (MCMIS) • SAFETYNET
	Commercial Vehicle Administration	• ALVIN CDL • ALVIN Registration • CAPRI • CDLIS • Center/ Customs and Border Protection • Center/ CVIEW • Center/ Motor Carrier Administrative Systems • Center/ MSCVE Headquarters • CVE Insurance • HazMat • International Border System • Motor Carrier Management Information System • SAFER • SAFETYNET • SEPP • State Treasury • Transponder Administration System • Web-Based Electronic Registration System
	Archived Data Management	• Center/ Bridge Management System • Center/ Law Enforcement Data Archives • Center/ Condition Acquisition and Reporting System • Center/ Credentials Data Integration and Access System • Center/ Highway Data Weather Portal • Center/ Law Enforcement Dispatch • Center/ Maintenance Management System • Center/ MOA Integrated Transportation Operations and Communication Center • Center/ Pavement Management System • Center/ State Emergency Coordination Center • International Border System • SEPP
	Maintenance and Construction Management	• Center/ Bridge Design Section Offices

National ITS Architecture Subsystem Class	National ITS Architecture Subsystem	Corresponding Alaska ITS Elements
		• Center/ Bridge Scour System • Center/ Condition Acquisition and Reporting System • Center/ Highway Data Weather Portal • Center/ Maintenance Management System • Center/ MOA Integrated Transportation Operations and Communication Center • Center/ MOA Maintenance Dispatch Office • Center/ Regional Maintenance Stations • Field/ Avalanche Detection System
Vehicle	Vehicle	• Vehicle/ ADOT&PF Maintenance Vehicle AVL • Vehicle/ EMS Vehicle AVL • Vehicle/ Ferries AVL • Vehicle/ Ferries On-board Systems • Vehicle/ General Public • Vehicle/ Law Enforcement Vehicle AVL • Vehicle/ MOA Maintenance Vehicle AVL • Vehicle/ Transit Vehicle AVL
	Emergency Vehicle	• Vehicle/ EMS Vehicle On-board Systems • Vehicle/ Law Enforcement Vehicle On-board Systems
	Commercial Vehicle	• Vehicle/ Commercial Vehicle On-board Systems
	Transit Vehicle	• Vehicle/ Ferries On-board Systems • Vehicle/ Transit Vehicle On-board Systems
	Maintenance and Construction Vehicle	• Vehicle/ Maintenance Vehicle On-board Systems (MOA) • Vehicle/ Maintenance Vehicle On-board Systems (State)
Field	Roadway	• Field/ Automated Bridge Anti-Icing • Field/ Bridge Scour Sensors • Field/ Cameras (at RWIS) • Field/ Cameras (FAA) • Field/ Cameras (MOA) • Field/ Highway Advisory Radio • Field/ Permanent Dynamic Message Signs (Anchorage) • Field/ Permanent Dynamic Message Signs (Fox Station) • Field/ Permanent Dynamic Message Signs (Port of

National ITS Architecture Subsystem Class	National ITS Architecture Subsystem	Corresponding Alaska ITS Elements
		Anchorage) • Field/ Pre-emption and Priority Systems (Fairbanks) • Field/ Pre-emption and Priority Systems (MOA) • Field/ Pre-emption and Priority Systems (State) • Field/ Remote Video Monitoring System • Field/ traffic Detectors • Field/ Traffic Signal Controllers • Field/ Train Signal System • Field/ Train Whistle Noise Reduction Horns • Tunnel Control System • Weather Prediction System
	Security Monitoring	• Field/ Avalanche Detection System • Field/ Bridge Scour Sensors • Field/ Cameras (at RWIS) • Field/ Seismic Sensors
	Commercial Vehicle Check	• ASPEN • AVI/WIM • Border Data Collection System • Field/ Intra-red Inspection System • Field/ Remote Video Monitoring System • Field/ Weight and Border Station and Handheld Equipment • Integrated Roadside Operations Computer • International Border System

5.4.2 Terminators

Terminators are similar to Subsystems in that they also comprise the physical world in which ITS services take place. Unlike subsystems however, terminators are not key to delivering transportation services, but are still important in that they are involved in these services albeit to a much lesser degree. Terminators are generally defined as the people, systems and general environment that lie outside the boundary of ITS but still impact ITS systems. The National ITS Architecture includes interfaces between terminators and subsystems and processes, but does not allocate functional requirements to terminators. To this extent understanding the role of terminators is less critical than subsystems, however, where possible it is still important to illustrate the relationships that exist among terminators so as to complete the picture of ITS activities and information flow. A mapping of Alaska's existing and planned ITS elements to National ITS Architecture Terminators is provided in Table 5-4.

Table 5-4:
Mapping of Alaska ITS Elements to National ITS Architecture Terminators

National ITS Architecture Terminator	Corresponding Alaska ITS Elements
Alerting and Advisory Systems	• Emergency Alert System • Field/ Avalanche Detection System • Field/ Seismic Sensors
Archived Data User Systems	• Travelers/ Personal Communication/Computing Devices (en-route) • Travelers/ Personal Communication/Computing Devices (pre-trip)
Asset Management	• Center/ Computerized Materials and Maintenance Management System
Basic Commercial Vehicle	• Vehicle/ Commercial Vehicle On-board Systems
Basic Vehicle	• General Public Vehicle
CVO Information Requestor	• Center/ MSCVE Headquarters
CVO Inspector	• CVO Inspector
DMV	• Department of Motor Vehicles
Driver	• Travelers/ Personal Communications/Computing Devices (en-route)
Emergency Telecommunications System	• Field/ Smart Call Boxes
Enforcement Agency	• CVO Inspector
Financial Institution	• Carrier Banks • Paymentech • State Treasury
Freight Equipment	• Vehicle/ Commercial Vehicle On-board Systems
Maintenance and Construction Administrative Systems	• Center/ Maintenance Management System
Media	• Media Systems (T.V. and Radio)
Other CVAS	• Weigh Stations
Other Emergency Management	• Regional 911 System • Center/ Law Enforcement Dispatch • Center/ MOA Integrated Transportation Operations and Communications Center • Center/ State Emergency Coordination Center
Other Roadway	• Field/ Train Signal System • Tunnel Control System • Field/ Traffic Detectors
Other Traffic Management	• Center/ MOA Integrated Transportation Operations and Communications Center

Rail Operations	• Center/ ARRC Dispatch
Surface Transportation Weather Service	• Field/ Weather and Pavement Sensors (NWS) • Weather Prediction System
Wayside Equipment	• Field/ Train Whistle Noise Reduction Sensors
Weather Service	• Center/ NWS Offices • Field/ Weather and Pavement Sensors (Military Bases) • Field/ Weather and Pavement Sensors (NWS)

5.4.3 Service Areas and Market Packages

Operational Concepts that are applicable for fulfilling Alaska's desired ITS functions and services were discussed in Chapter 4, Section 4.6. Operational Concepts were derived using National Architecture Market Packages. Market Packages are groupings of different subsystems, terminators, and architecture flows needed to deliver a desired transportation service (e.g., Network Surveillance or Roadway Automated Treatment). Market Packages can work separately, or in combination to address the real-world transportation needs and desires expressed by stakeholders in Chapter 1.

The National Architecture identifies 85 Market Packages, categorized into 8 general service areas. These service areas are:

- Archived Data Management
- Public Transportation
- Traveler Information
- Traffic Management
- Vehicle Safety
- Commercial Vehicle Operations
- Emergency Management
- Maintenance and Control Management

National ITS Market Packages are identified by their general service area in Table 5-5. Market Packages that are applicable to Alaska are highlighted within Table 5-5 and marked with a (■). The market packages that are highlighted support the delivery of user needs and desires documented in Chapter 1.

Table 5-5:
National ITS Architecture Service Areas and Market Packages (Alaska Applicable Highlighted)

Archived Data Management Service Area	Vehicle Safety Service Area
ITS Data Mart	*Vehicle Safety Monitoring*
ITS Data Warehouse	*Driver Safety Monitoring*
■ *ITS Virtual Data Warehouse*	*Longitudinal Safety Warning*
Public Transportation Service Area	■ *Lateral Safety Warning*
■ *Transit Vehicle Tracking*	*Intersection Safety Warning*
■ *Transit Fixed-Route Operations*	*Pre-Crash Restraint Deployment*
Demand Response Transit Operations	■ *Driver Visibility Improvement*
Transit Passenger and Fare Management	*Advanced Vehicle Longitudinal Control*
■ *Transit Security*	*Advanced Vehicle Lateral Control*
Transit Maintenance	*Intersection Collision Avoidance*
Multi-modal Coordination	*Automated Highway System*
Transit Traveler Information	Commercial Vehicle Operations Service Area
Traveler Information Service Area	■ *Fleet Administration*
Broadcast Traveler Information	■ *Freight Administration*
Interactive Traveler Information	■ *Electronic Clearance*
Autonomous Route Guidance	■ *CV Administrative Processes*
Dynamic Route Guidance	■ *International Border Electronic Clearance*
ISP Based Trip Planning and Route Guidance	■ *Weigh-In-Motion*
Integrated Transportation Management/Route Guidance	■ *Roadside CVO Safety*
■ *Yellow Pages and Reservation*	■ *On-board CVO and Freight Safety & Security*
Dynamic Ridesharing	*CVO Fleet Maintenance*
In Vehicle Signing	■ *HAZMAT Management*
Traffic Management Service Area	■ *Roadside HAXMAT Security Detection and Mitigation*
■ *Network Surveillance*	■ *CV Driver Security Authentication*
Probe Surveillance	*Freight Assignment Tracking*
■ *Surface Street Control*	Emergency Management Service Area
Freeway Control	■ *Emergency Call-Taking and Dispatch*
HOV Lane Management	■ *Emergency Routing*
■ *Traffic Information Dissemination*	■ *Mayday Support*
Regional Traffic Control	*Roadway Service Patrols*
■ *Traffic Incident Management System*	■ *Transportation Infrastructure Protection*
Traffic Forecast and Demand Management	■ *Wide-Area Alert*
Electronic Toll Collection	■ *Early Warning System*
Emissions Monitoring and Management	*Disaster Response and Recovery*
Virtual TMC and Smart Probe Data	*Evacuation and Reentry Management*
■ *Standard Railroad Grade Crossing*	*Disaster Traveler Information*
Advanced Railroad Grade Crossing	Maintenance and Construction Management Service Area
Railroad Operations Coordination	■ *Maintenance and Construction Vehicle and Equipment Tracking*
Parking Facility Management	*Maintenance and Construction Vehicle Maintenance*
Regional Parking Management	■ *Road Weather Data Collection*
Reversible Lane Management	■ *Weather Information Processing and Distribution*
Speed Monitoring	■ *Roadway Automated Treatment*
Drawbridge Management	■ *Winter Maintenance*
Roadway Closure Management	■ *Roadway Maintenance and Construction*
	Work Zone Management
	Work Zone Safety Monitoring
	■ *Maintenance and Construction Activity Coordination*

5.4.4 Architecture Interconnects

Architecture interconnects are the communications paths that carry information between subsystems and terminators. Several different types of interconnects are defined in the National Architecture to reflect the range of interface requirements in ITS. A system-to-system interconnect may occur via one or more of the following types of communications as shown in Figure 5-1.

- Wide area wireless communications.
- Fixed-point to fixed-point communications.
- Dedicated short range communications.
- Vehicle-to-vehicle communications.

Since the Physical Architecture is a high-level planning document, it does not specify that a certain type of communication be used to achieve the architecture interconnect.

Figure 5-3 illustrates what an architecture interconnect looks like. The interconnect diagram shown is for the transit vehicle on-board system, a vehicle subsystem owned by a placeholder stakeholder represented by Transit Agencies across the state. Interconnect diagrams for each ITS element in Alaska is provided in Appendix B.

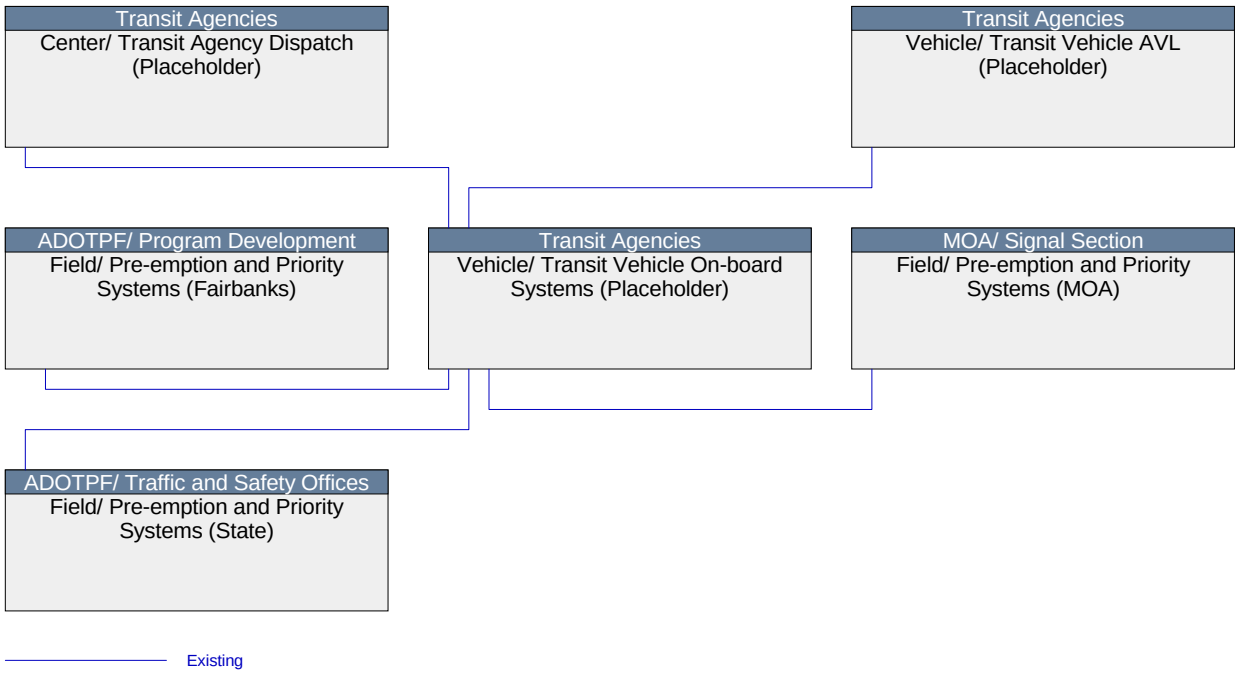


Figure 5-3:
Example of an Interconnect Diagram

Table 5-6:
Summary of Interconnects Between Alaska ITS Elements

Element 1	Interfacing Element 2	Status
ALVIN CDL	CDLIS	Existing
	CVIEW	Planned
ALVIN Registration	Carrier Banks	Planned
	Center/ Motor Carrier Administrative Systems	Planned
ALVIN Registration	CVIEW	Planned
	State Treasury	Existing
ASPEN	CVO Inspector	Existing
	SAFER	Existing
AVI/WIM	CVO Inspector	Planned
	Integrated Roadside Operations Computer (IROC)	Planned
	International Border System	Planned
	Vehicle/ Commercial Vehicle On-Board Systems	Planned
CAPRI	SAFETYNET	Existing
Carrier Banks	Center/ Motor Carrier Administrative Systems	Existing
	Paymentech	Planned
	State Treasury	Planned
CDLIS	CVO Inspector	Existing
Center/ Law Enforcement Data Archives	Center/ Law Enforcement Dispatch	Existing
Center/ AMHS Website	Center/ Vessel Tracking System	Existing
	Center/ AMHS Dispatch and Communications	Existing
	Travelers/ Personal Communications/Computing Devices (pre-trip)	Existing
	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
Center/ Bridge Design Section Offices	Field/ Bridge Scour Sensors	Existing
Center/ Bridge Scour System	Field/ Bridge Scour Sensors	Existing
Center/ Computerized Materials and Maintenance Management System	Center/ ARRC Dispatch	Existing
Center/ Condition Acquisition and Reporting System (CARS)	Center/ Law Enforcement Dispatch	Existing
	Center/ People Mover Dispatch	Planned
	CVIEW	Planned
	Field/ Road Weather Information Systems (RWIS)	Existing
	HazMat	Planned
	Center/ 511 (phone and web)	Existing
	Center/ AMHS Dispatch and	Planned

Element 1	Interfacing Element 2	Status
	Communications	
	Center/ APD Headquarters and Dispatch	Existing
	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned
	Center/ MOA Maintenance Office	Planned
	Center/ NWS Offices	Existing
	Center/ Regional Maintenance Stations	Existing
	Center/ Transit Agency Dispatch (Placeholder)	Planned
	SEPP	Planned
Center/ Credentials Data Integration and Access System (CDIAS)	Center/ Commercial Vehicle Operations Offices	Existing
Center/ Division of Tourism Website	Travelers/ Personal Communications/Computing Devices (pre-trip)	Existing
	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
Center/ Highway Analysis System (HAS)	SAFETYNET	Planned
Center/ Highway Database Section Office	Field/ Automatic Traffic Data Recorders (ATR)	Existing
Center/ Law Enforcement Dispatch	Center/ State Emergency Coordination Center (SECC)	Existing
	Emergency Alert System (EAS)	Existing
	Field/ Avalanche Detection System	Planned
	Field/ Cameras (at AMHS terminals)	Planned
	Field/ Smart Call Boxes	Existing
	Media Systems (T.V. and Radio)	Existing
	Center/ ARRC Dispatch	Existing
	Center/ Commercial Vehicle Operations Offices	Existing
	Center/ MOA Emergency Operations Center	Planned
	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned
	Center/ Regional Maintenance Stations	Existing
	Center/ Transit Agency Dispatch (Placeholder)	Planned
	Center/EMS Dispatch Centers (Placeholder)	Planned
	Field/ Seismic Sensors	Planned
	Vehicle/ Law Enforcement Vehicle	Existing

Element 1	Interfacing Element 2	Status
	On-board Systems	
Center/ Maintenance Management System (MMS)	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned
	Center/ Regional Maintenance Stations	Existing
Center/ MOA Signal Control	Field/ Cameras (MOA)	Planned
	Field/ Traffic Signal Controlers (MOA)	Existing
Center/ Motor Carrier Administrative Systems	SEPP	Planned
	Transponder Administration System	Planned
	Vehicle/ Commerical Vehicle On-Board Systems	Planned
Center/ MSCVE Offices	Field/ Permanent Dynamic Message Signs (Port of Anchorage)	Existing
	Field/ Permanent Dynamic Message Signs (Permanent @ FOX Station)	Existing
Center/ People Mover Dispatch	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned
	Center/ Transit Agency Websites	Existing
	Vehicle/ Transit Vehicle On-board Systems (Placeholder)	Existing
Center/ State Emergency Coordination Center (SECC)	Emergency Alert System (EAS)	Existing
	Center/ MOA Emergency Operations Center	Planned
Center/ Vessel Tracking System	Vehicle/ Ferries On-board Systems	Existing
CVE Insurance	CVIEW	Planned
CVIEW	HazMat	Planned
	Integrated Roadside Operations Computer (IROC)	Planned
	International Border System	Planned
	SAFETYNET	Planned
	SAFER	Planned
	SEPP	Planned
	Transponder Administration System	Planned
CVO Inspector	Field/ Infra-red Inspection System (IRIS)	Planned
	Field/ Weigh and Border Station Roadside and Handheld Equipment	Existing
	Integrated Roadside Operations Computer (IROC)	Planned
	International Border System	Planned
	Border Data Collection System	Planned

Element 1	Interfacing Element 2	Status
Field/ Automated Bridge Anti-icing	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned
	Center/ Regional Maintenance Stations	Planned
Field/ Automatic Traffic Data Recorders (ATR)	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned
Field/ Avalanche Detection System	Center/ Regional Maintenance Stations	Existing
Field/ Cameras (at RWIS)	Center/ Regional Maintenance Stations	Existing
Field/ Cameras (MOA)	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned
Field/ Infra-red Inspection System (IRIS)	Weigh Stations	Planned
Field/ Permanent Dynamic Message Signs (Anchorage)	Center/ APD Headquarters and Dispatch	Existing
	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned
	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
Field/ Permanent Dynamic Message Signs (Port of Anchorage)	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
Field/ Pre-emption and Priority Systems (State)	Vehicle/ EMS Vehicle On-board Systems	Existing
Field/ Road Weather Information Systems (RWIS)	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned
	Center/ Regional Maintenance Stations	Existing
	Weather Prediction System	Planned
Field/ Traffic Signal Controllers	Center/ ADOTPF Traffic and Safety Offices	Existing
	Field/ Traffic Detectors	Existing
Field/ Train Signal System (TSS)	Center/ Anton Anderson Tunnel Control System	Existing
	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned
	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
	Tunnel Control System (TCS)	Existing
Field/ Train Whistle Noise Reduction Horns	Field/ Train Whistle Noise Reduction Sensors	Existing
Field/ Weigh and Border Station Roadside and	Center/ MSCVE Headquarters	Existing

Element 1	Interfacing Element 2	Status
Handheld Equipment	Vehicle/ Commercial Vehicle On-Board Systems	Existing
	Weigh Stations	Existing
HazMat	SEPP	Planned
Integrated Roadside Operations Computer (IROC)	International Border System	Planned
Media Systems (T.V. and Radio)	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned
	Center/ MOA Maintenance Office	Existing
	Center/ Regional Maintenance Stations	Existing
Motor Carrier Management Information System (MCMIS)	SAFETYNET	Existing
	SAFER	Existing
Border Data Collection System	Center/ Customs and Border Protection	Planned
	Vehicle/ Commercial Vehicle On-Board Systems	Planned
	Web-Based Electronic Registration System (WeB CAT)	Planned
Center / Local Law Enforcement data archives	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned
Center/ AMHS Dispatch and Communications	Vehicle/ Ferries On-board Systems	Existing
Center/ Anton Anderson Tunnel Control System	Center/ ARRC Dispatch	Existing
	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned
	Tunnel Control System (TCS)	Existing
Center/ APD Headquarters and Dispatch	Center/ Department of Motor Vehicles	Existing
	Center/ Transit Agency Dispatch (Placeholder)	Planned
Center/ ARRC Dispatch	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned
Center/ Commercial Vehicle Operations Offices	Center/ Customs and Border Protection	Existing
	Center/ MSCVE Headquarters	Existing
	Vehicle/ Commercial Vehicle On-Board Systems	Existing
	Web-Based Electronic Registration System (WeB CAT)	Planned
	Weigh Stations	Existing
Center/ Department of Motor Vehicles	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned
Center/ MOA Emergency Operations Center	Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Planned

Element 1	Interfacing Element 2	Status
	Center/ Transit Agency Dispatch (Placeholder)	Planned
Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Center/ MOA Maintenance Office	Planned
	Center/ Regional Maintenance Stations	Planned
	Center/ Transit Agency Dispatch (Placeholder)	Planned
	Center/EMS Dispatch Centers (Placeholder)	Planned
	Field/ Highway Advisory Radio (HAR)	Planned
	Field/ Remote Video Monitoring System	Planned
	Field/ Weather and Pavement Sensors (Military Bases)	Planned
Center/ MOA Integrated Transportation Operations and Communications Center (ITOCC)	Field/ Weather and Pavement Sensors (NWS)	Planned
	Vehicle/ Maintenance Vehicle On-board Systems (State)	Planned
	Weather Prediction System	Planned
	Web-Based Electronic Registration System (WeB CAT)	Planned
Center/ MOA Maintenance Office	Vehicle/ Maintenance Vehicle On-board Systems (MOA)	Existing
Center/ MSCVE Headquarters	Center/ Regional Maintenance Stations	Planned
Center/ NWS Offices	Center/ Regional Maintenance Stations	Existing
	Vehicle/ Ferries On-board Systems	Existing
Center/ Regional Maintenance Stations	Field/ Seismic Sensors	Existing
	Field/ Weather and Pavement Sensors (Military Bases)	Existing
	Field/ Weather and Pavement Sensors (NWS)	Existing
	Vehicle/ Maintenance Vehicle On-board Systems (State)	Planned
	Weather Prediction System	Planned
	Vehicle/ Smart Snow Plows and Blowers	Planned
Center/ Transit Agency Dispatch (Placeholder)	Center/ Transit Agency Websites	Existing
	Vehicle/ Transit Vehicle On-board Systems (Placeholder)	Existing
Center/EMS Dispatch Centers (Placeholder)	Vehicle/ EMS Vehicle On-board Systems	Existing
Field/ Cameras (Weigh Stations)	Weigh Stations	Existing
Field/ Highway Advisory Radio (HAR)	General Public Vehicle	Planned
Field/ Permanent Dynamic Message Signs (Permanent @ FOX Station)	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
Field/ Preemption and Priority Systems	Vehicle/ EMS Vehicle On-board	Planned

Element 1	Interfacing Element 2	Status
(Fairbanks)	Systems	
Field/ Preemption and Priority Systems (MOA)	Vehicle/ EMS Vehicle On-board Systems	Existing
Field/ Remote Video Monitoring System	Vehicle/ Commercial Vehicle On-Board Systems	Planned
	Weigh Stations	Planned
SAFETYNET	SAFER	Existing
Vehicle/ ADOTPF Maintenance Vehicle AVL	Vehicle/ Maintenance Vehicle On-board Systems (State)	Planned
	Vehicle/ Smart Snow Plows and Blowers	Planned
Vehicle/ EMS Vehicle On-board Systems	Vehicle/ MOA Maintenance Vehicle AVL	Planned
Vehicle/ Maintenance Vehicle On-board Systems (MOA)	Vehicle/ MOA Maintenance Vehicle AVL	Planned
Vehicle/ Transit Vehcile AVL (Placeholder)	Vehicle/ Transit Vehicle On-board Systems (Placeholder)	Existing
Paymentech	SEPP	Existing
	State Treasury	Existing
	Transponder Administration System	Planned
SEPP	State Treasury	Existing
Vehicle/ AMHS Vehicle AVL	Vehicle/ Ferries On-board Systems	Existing

5.4.5 Architecture Flows

Architecture flow is the term given to the specific type of information and/or data that are exchanged between the various ITS elements within the Alaska Statewide ITS Architecture. An architecture flow is one set of data that satisfies a particular transportation need. For instance, the architecture flow "incident data" provides data and imagery collected at the roadside to support incident detection and verification. Each architecture flow originates at one ITS element and flows to another. For instance, the flow "incident data" may originate at a roadway subsystem and flow to a traffic management subsystem. A single architecture interconnect (see Section 5.3.4) may consist of several unique architecture flows. Similarly, each architecture flow is defined in terms of its status (i.e., existing or planned).

Several standards development organizations have issued standards (documented agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines, or definitions of characteristics for the interchange of data) for several of the architecture flows planned between systems within Alaska. This ensures that interfaces between subsystems are common between unique ITS architectures. For example, if the flow "incident data" were in the Alaska Iways Architecture, standards associated with this flow would then set forth the same interface requirements for this flow if implemented in a different state or region and vice versa. The standards development process is still on-going, and not all flows in the National ITS Architecture have standards associated with them.

The Architecture flows relevant to Alaska's ITS elements are illustrated in the element-to-element Architecture flow diagrams in Appendix C. These architecture flows are also provided in a tabular format in Appendix D. National ITS Architecture flow definitions are provided in Appendix E. For the purpose of understanding how the architecture flows will satisfy Alaska's unique transportation needs and desires, flows are shown by the National ITS Architecture Market Packages applicable to Alaska. Each Market Package diagram is customized to reflect only those flows needed to deliver Alaska's desired transportation services. Customized Market Package Diagrams showing pertinent architecture flows are categorized by their respective transportation service bundle in Figures 5-4 through 5-26.

Traffic Management

Network Surveillance

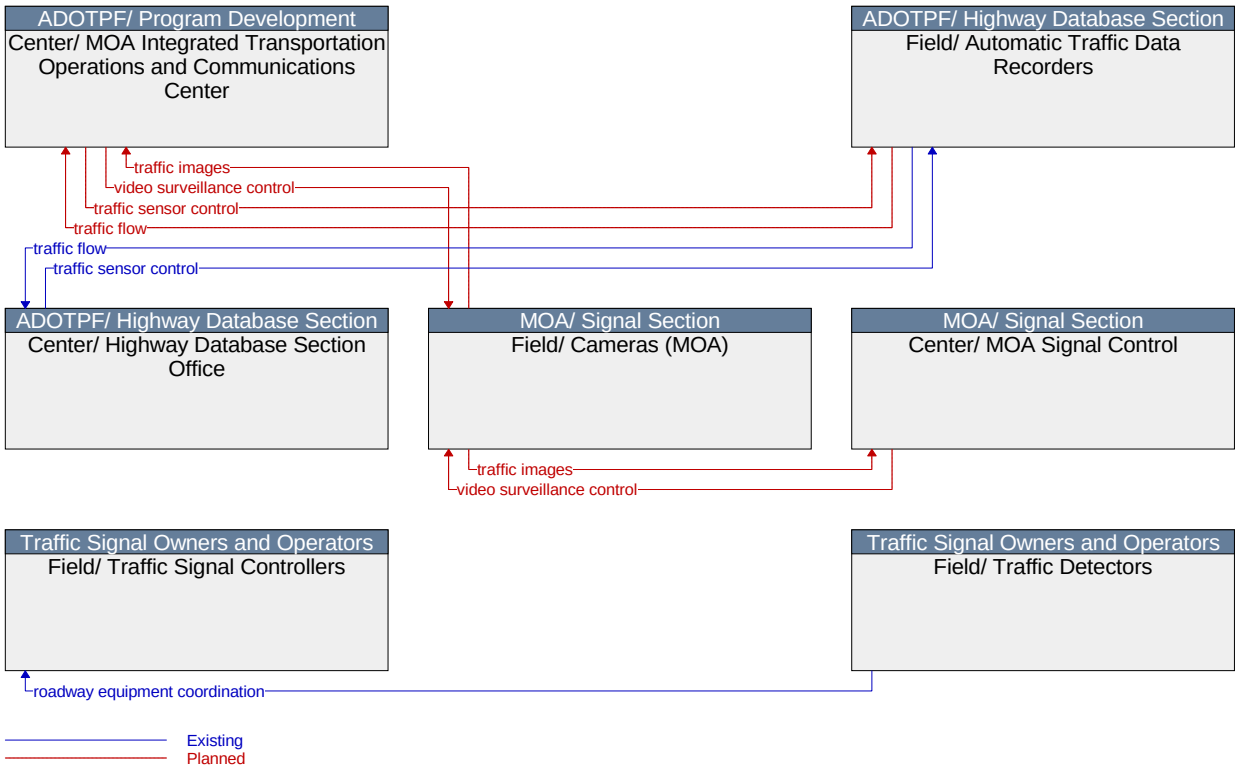


Figure 5-4:
Physical ITS Architecture for Network Surveillance

Surface Street Control

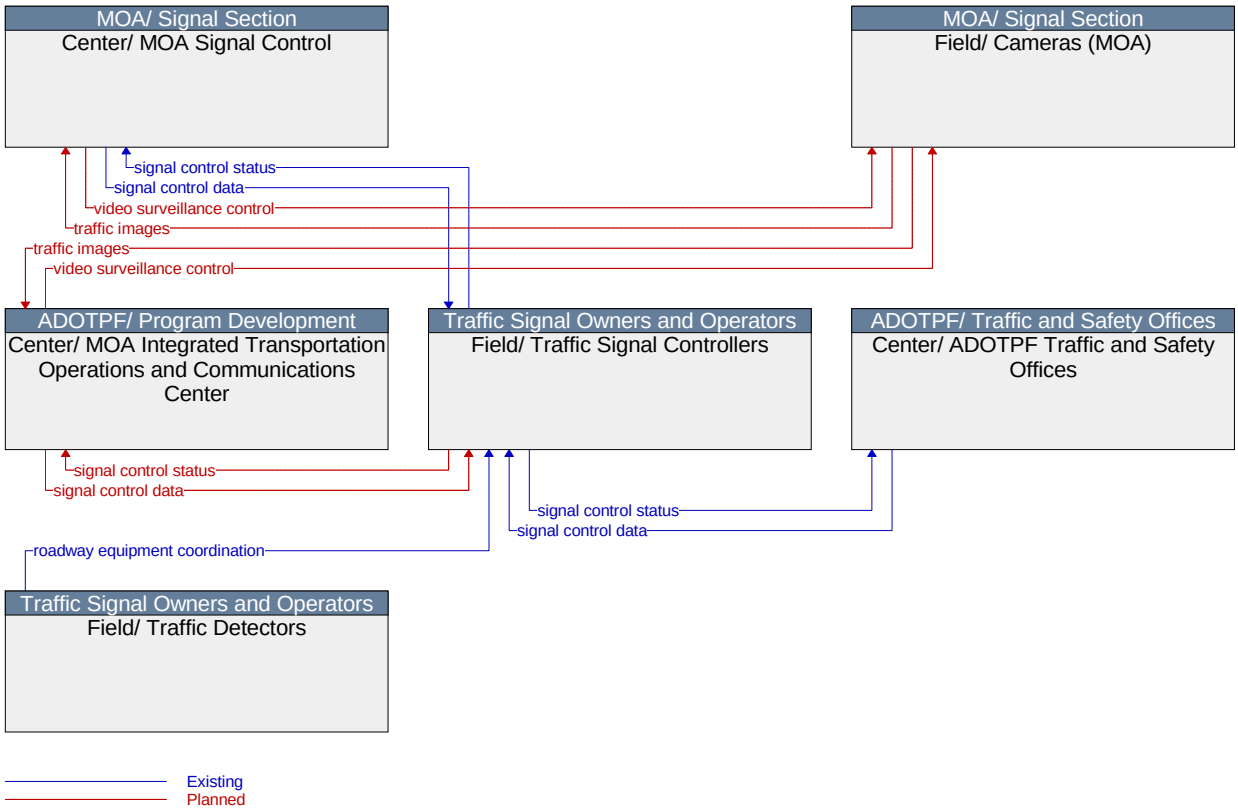


Figure 5-5:
Physical ITS Architecture for Surface Street Control

Traffic Information Dissemination

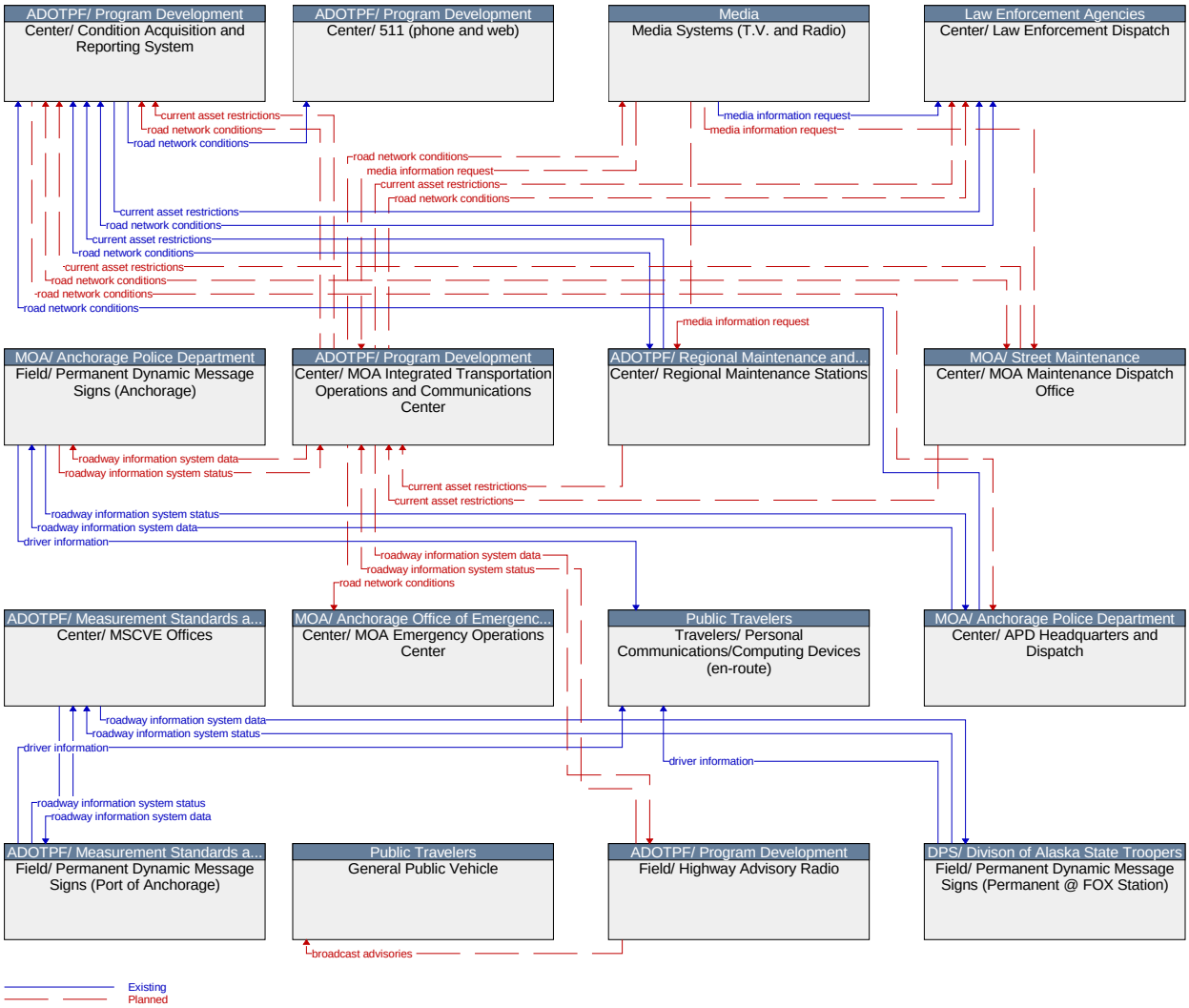


Figure 5-6:
Physical ITS Architecture for Traffic Information Dissemination

Traffic Incident Management

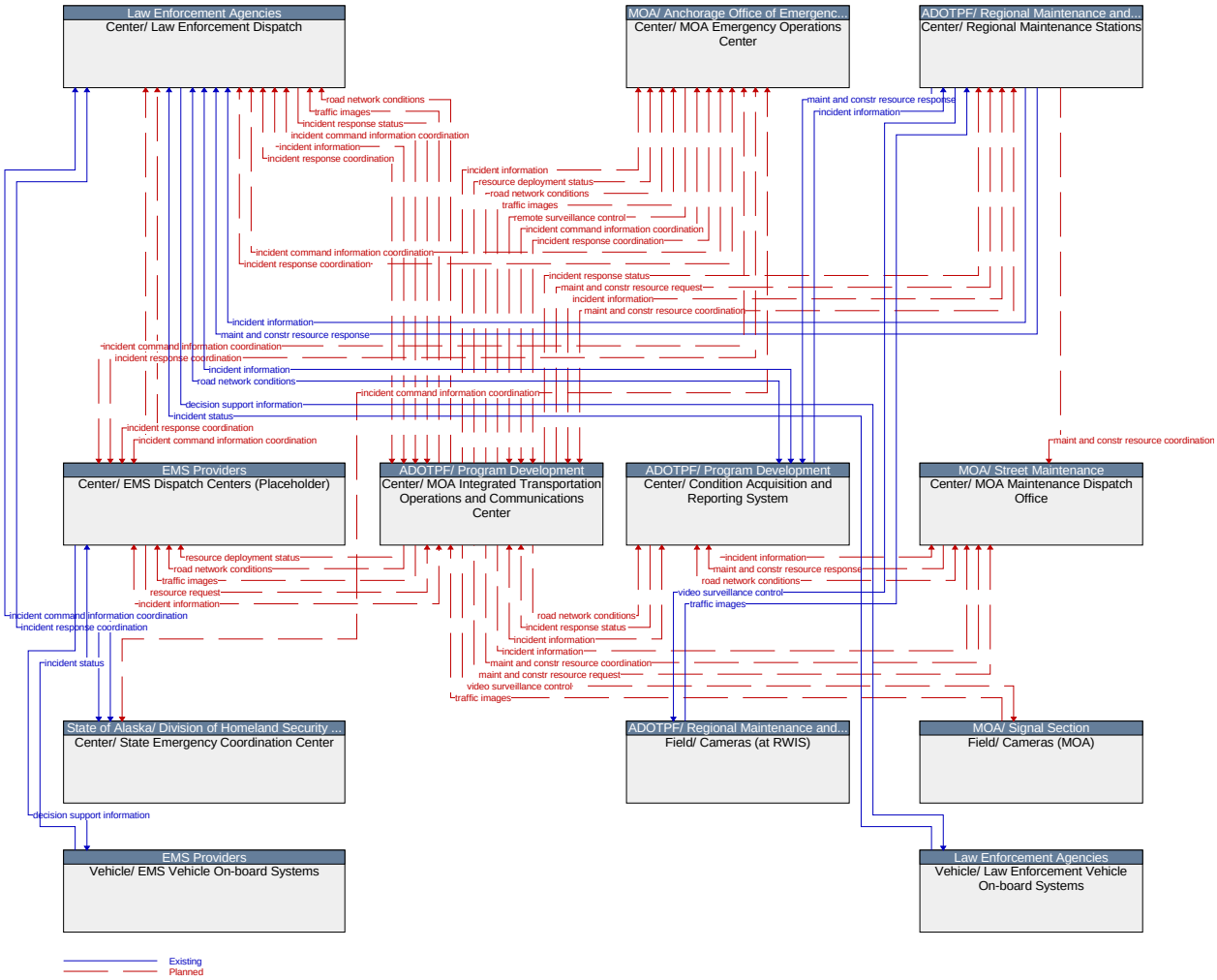


Figure 5-7:
Physical ITS Architecture for Traffic Incident Management

Standard Railroad Crossing

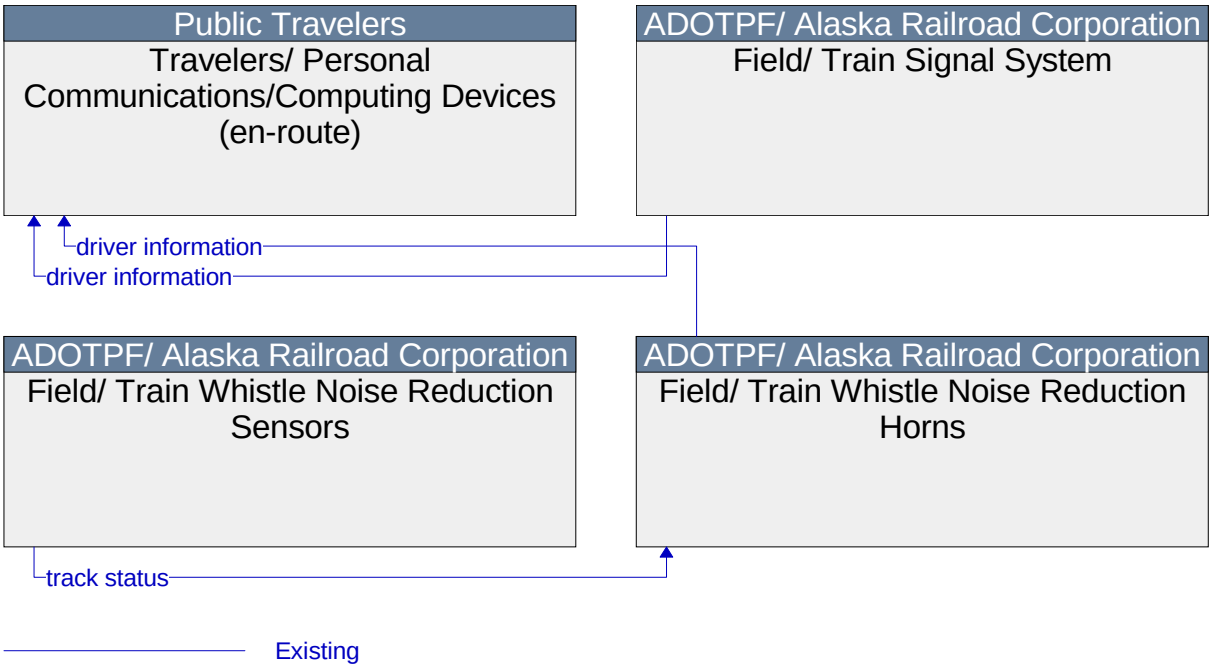


Figure 5-8:
Physical ITS Architecture for Standard Railroad Crossing

Traveler Information

Yellow Pages and Reservation

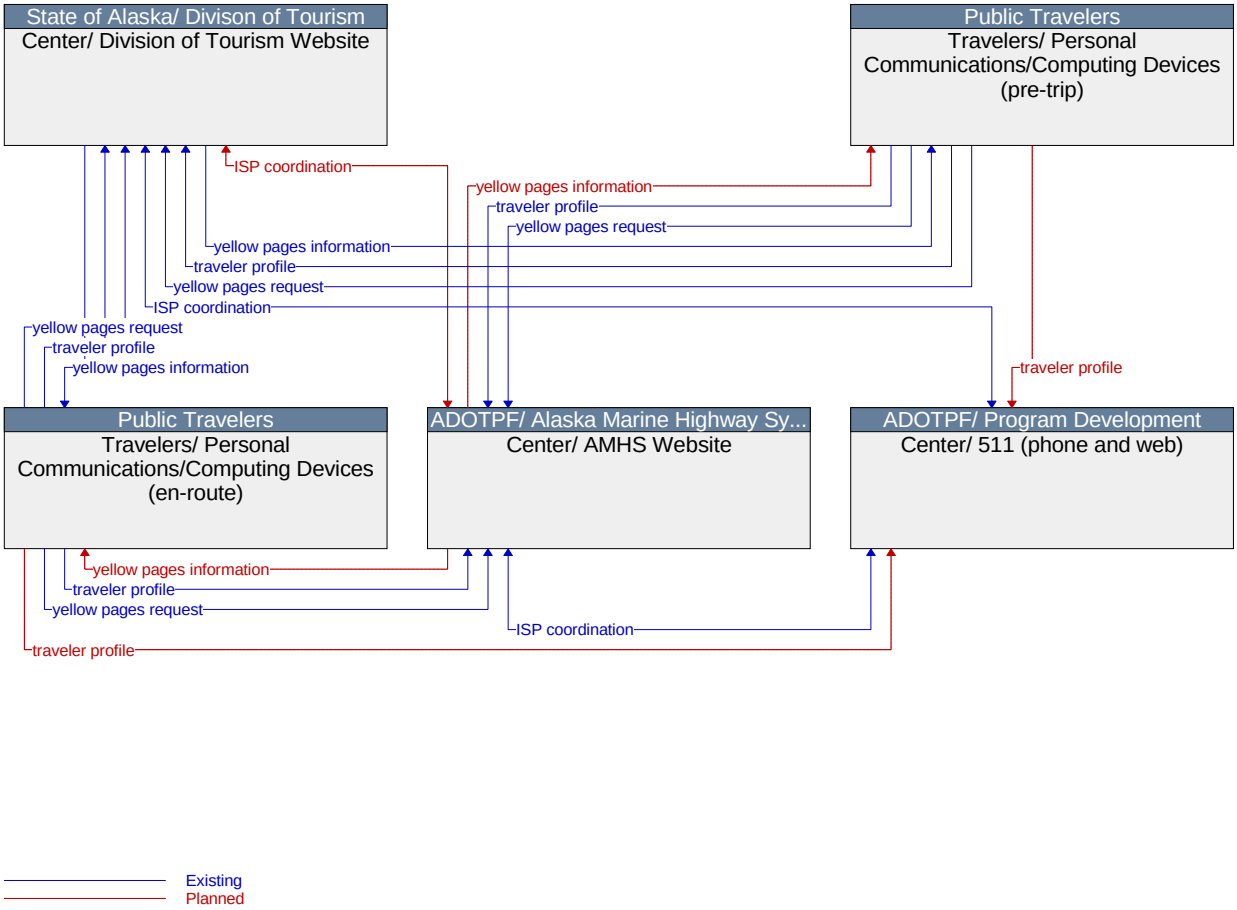


Figure 5-9:
Physical ITS Architecture for Yellow Pages and Reservation

Maintenance and Construction Management Concepts

Maintenance and Construction Vehicle and Equipment Tracking

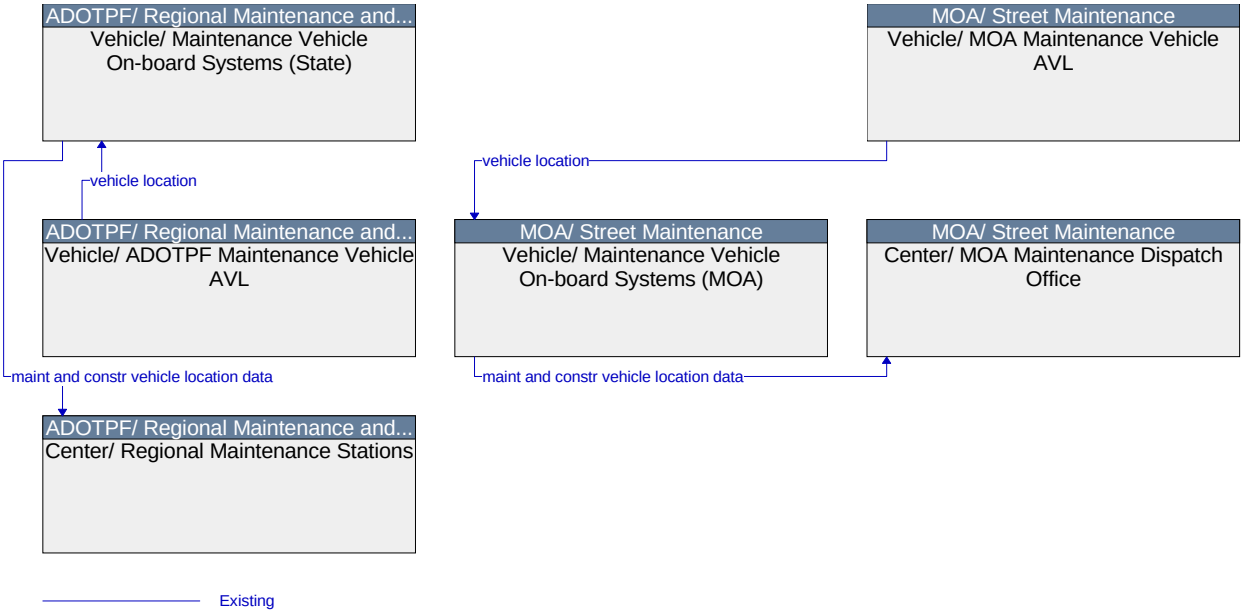


Figure 5-10:
Physical ITS Architecture for Maintenance and Construction Vehicle and Equipment Tracking

Road Weather Data Collection

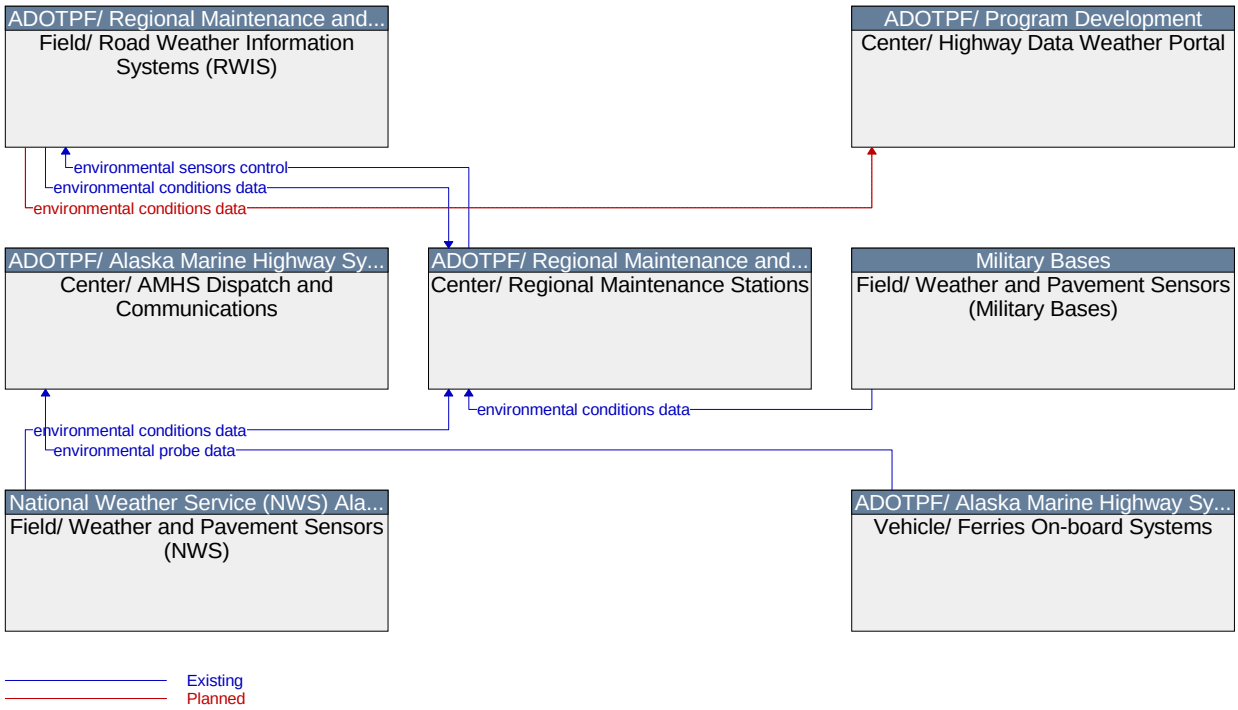


Figure 5-11:
Physical ITS Architecture for Road Weather Data Collection

Weather Information Processing and Distribution

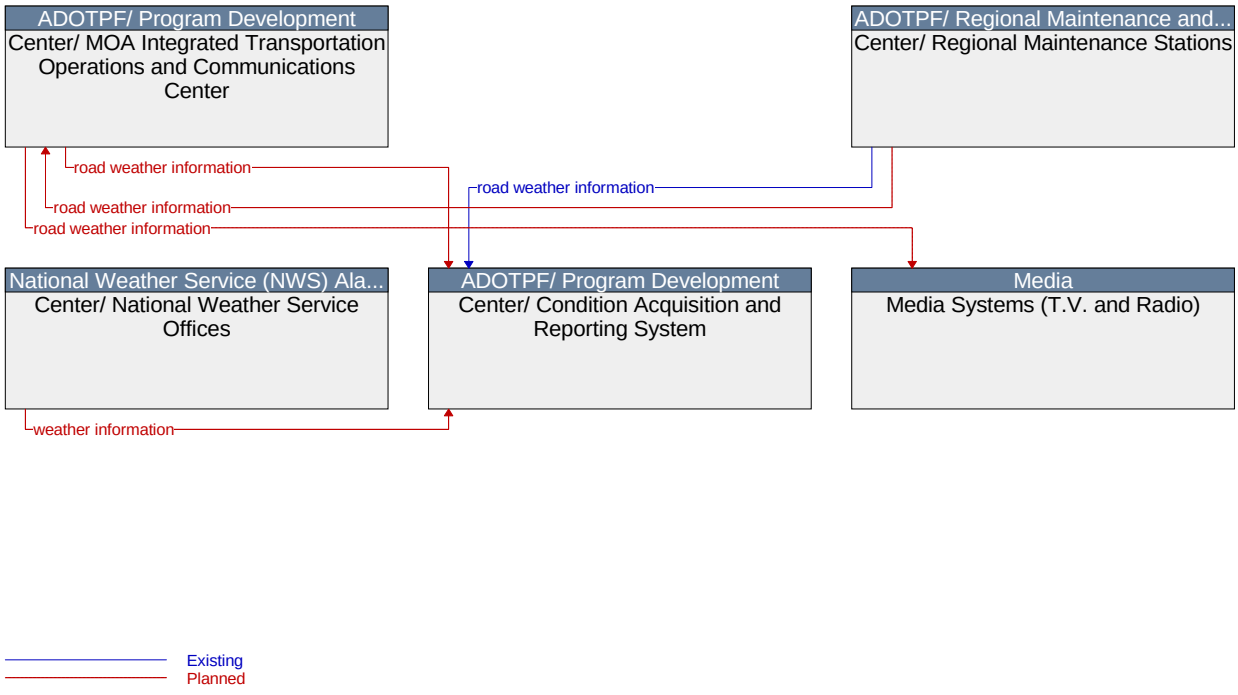


Figure 5-12:
Physical ITS Architecture for Weather Information Processing and Distribution

Roadway Automated Treatment

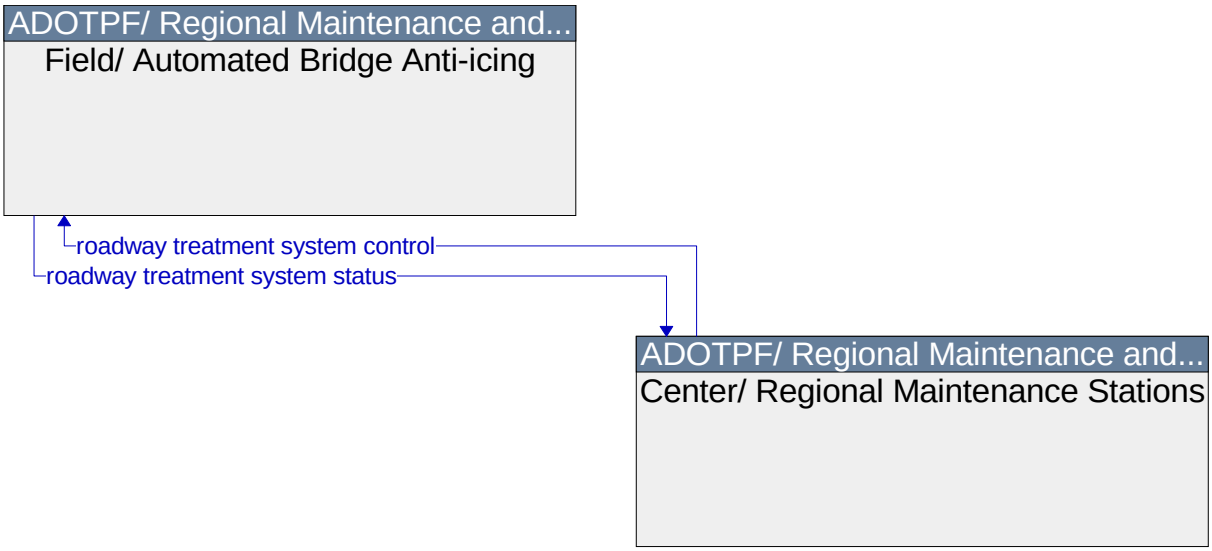


Figure 5-13:
Physical ITS Architecture for Roadway Automated Treatment

Winter Maintenance

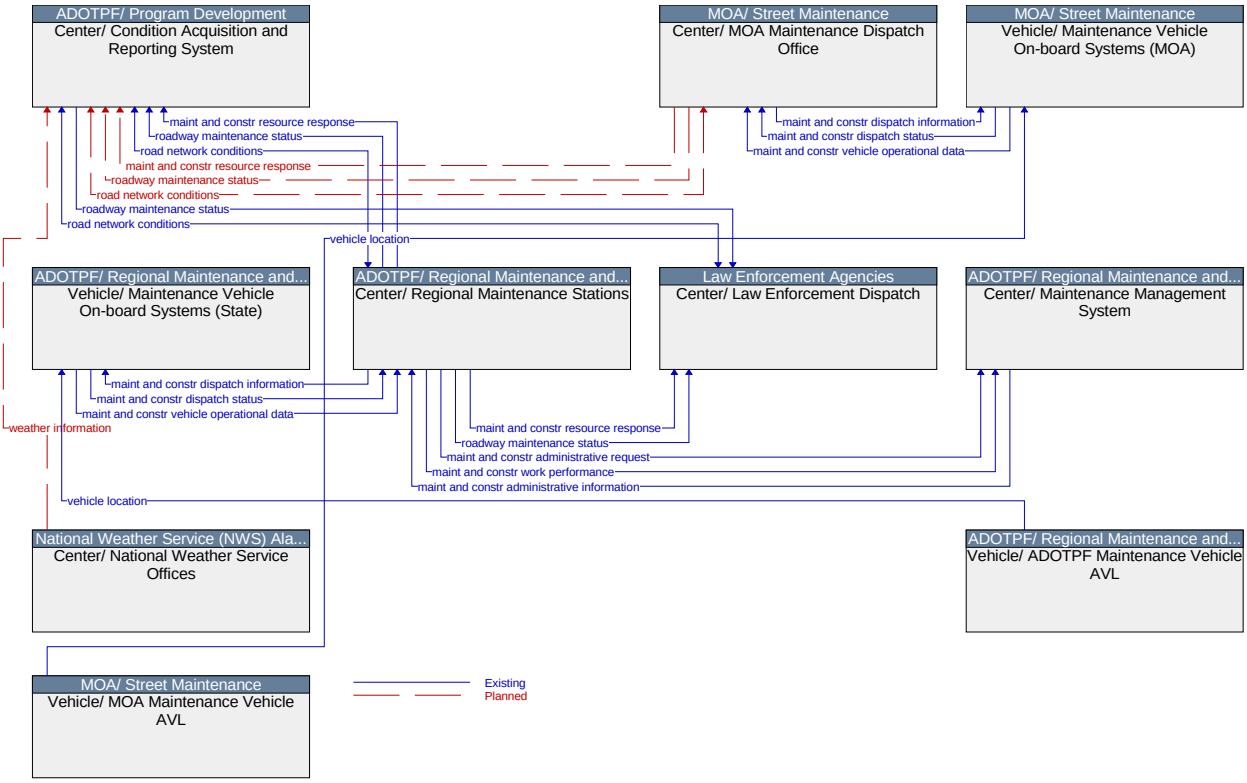


Figure 5-14:
Physical ITS Architecture for Winter Maintenance

Roadway Maintenance and Construction

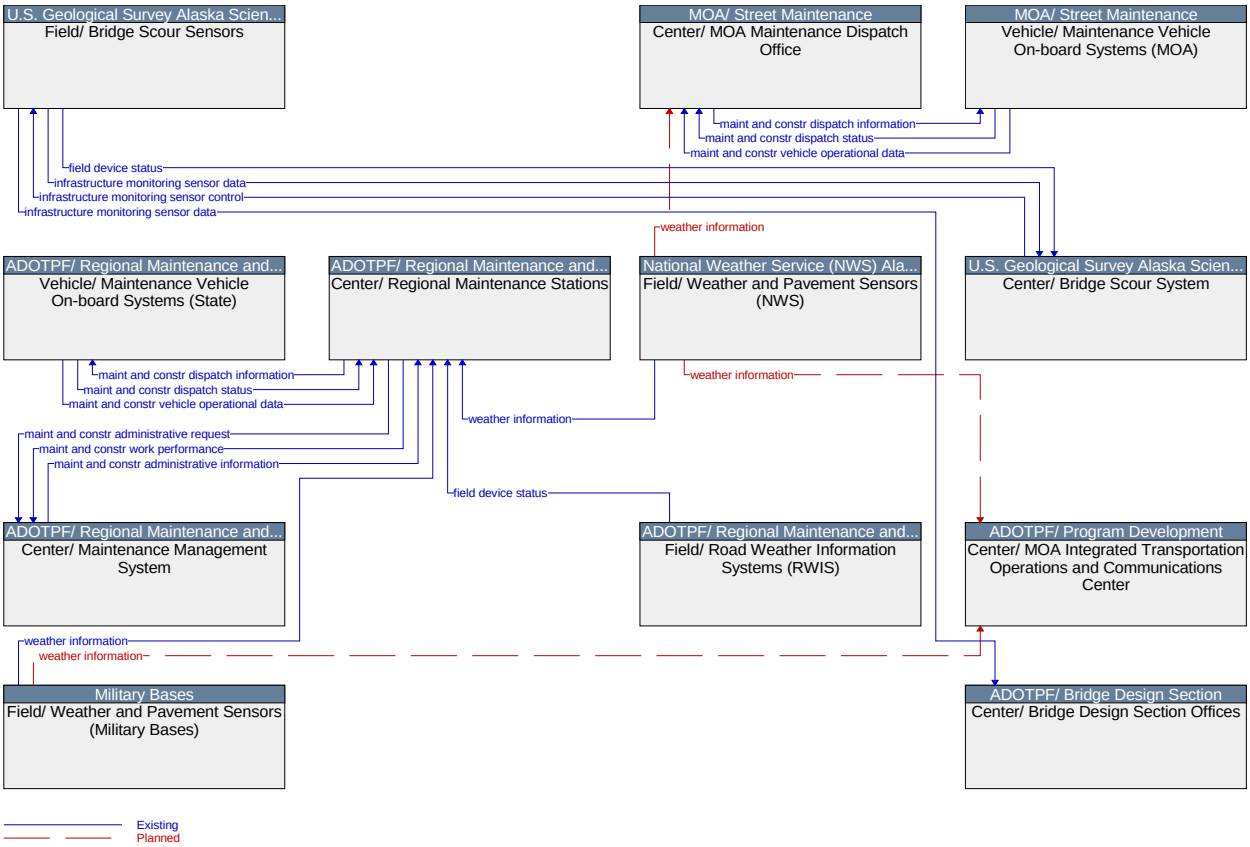


Figure 5-15:
Physical ITS Architecture for Roadway Maintenance and Construction

Maintenance and Construction Activity Coordination

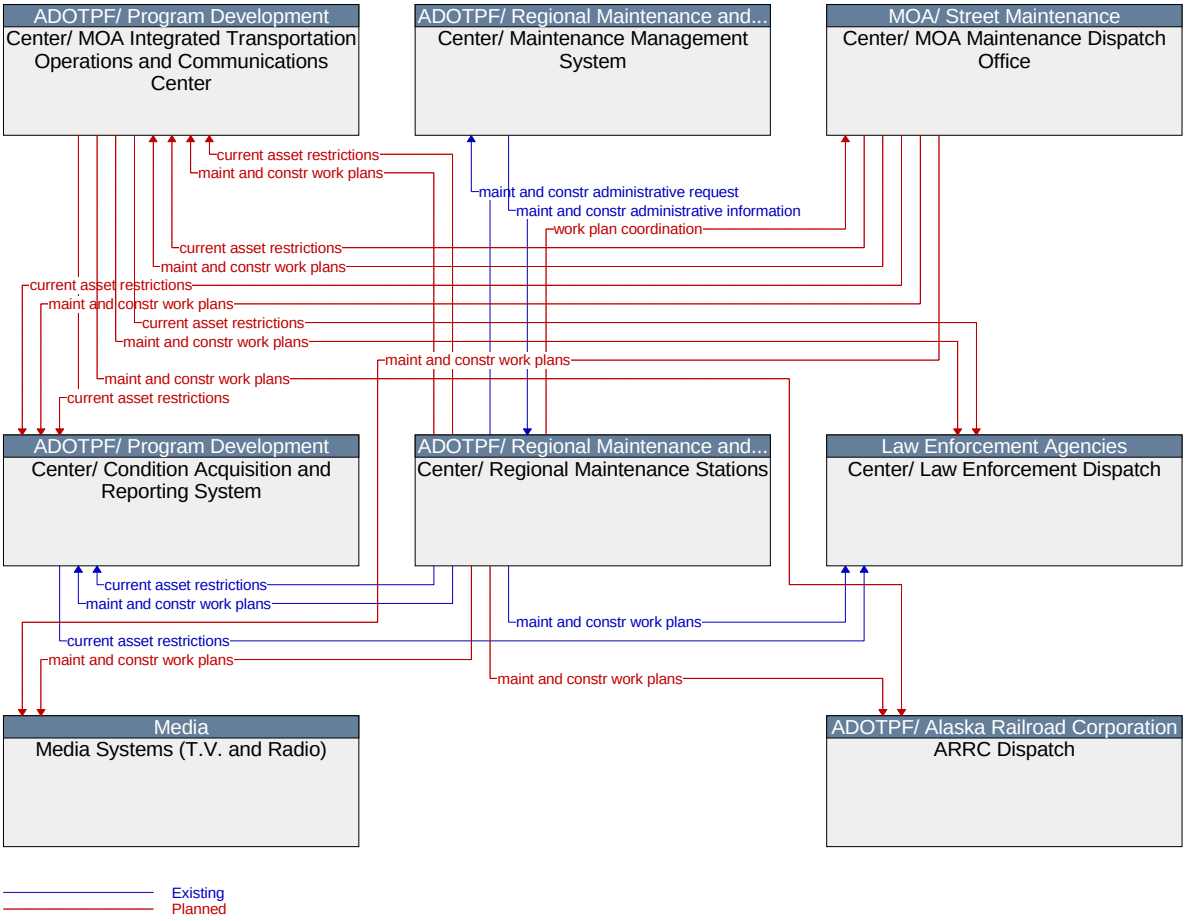


Figure 5-16:
Physical ITS Architecture for Maintenance and Construction Activity Coordination

Public Transportation Concepts

Transit Vehicle Tracking

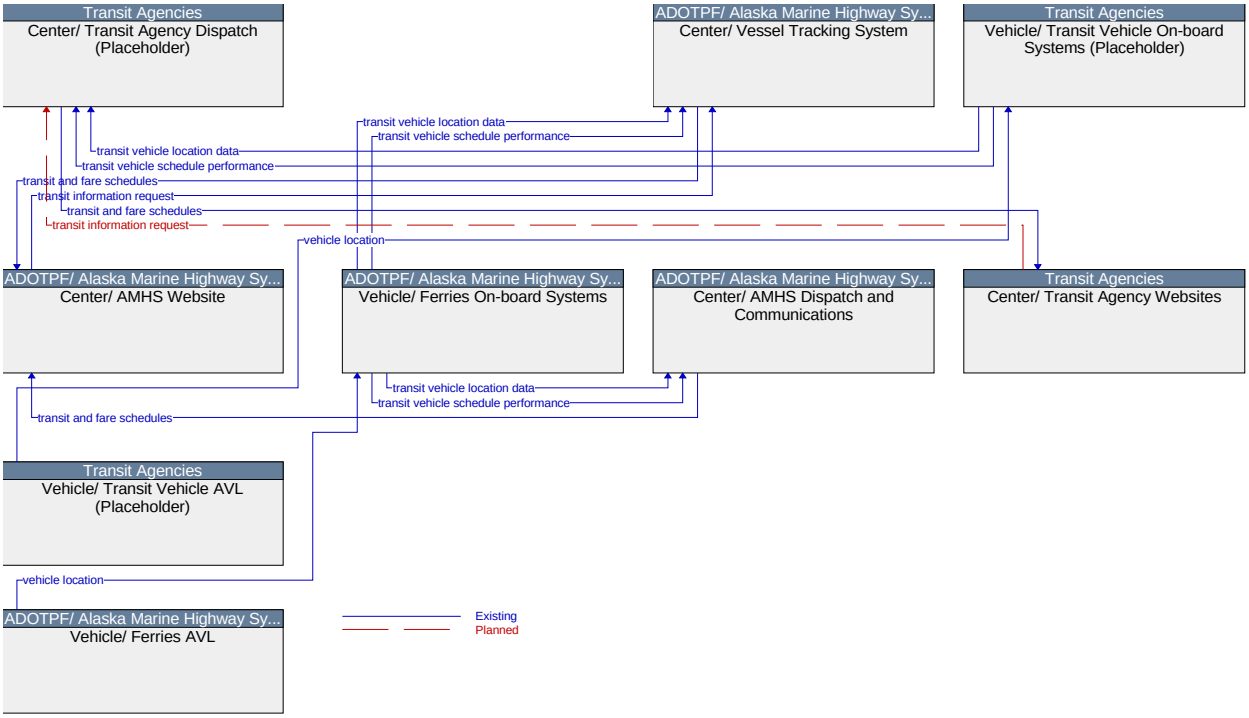


Figure 5-17:
Physical ITS Architecture for Transit Vehicle Tracking

Transit Fixed-Route Operations

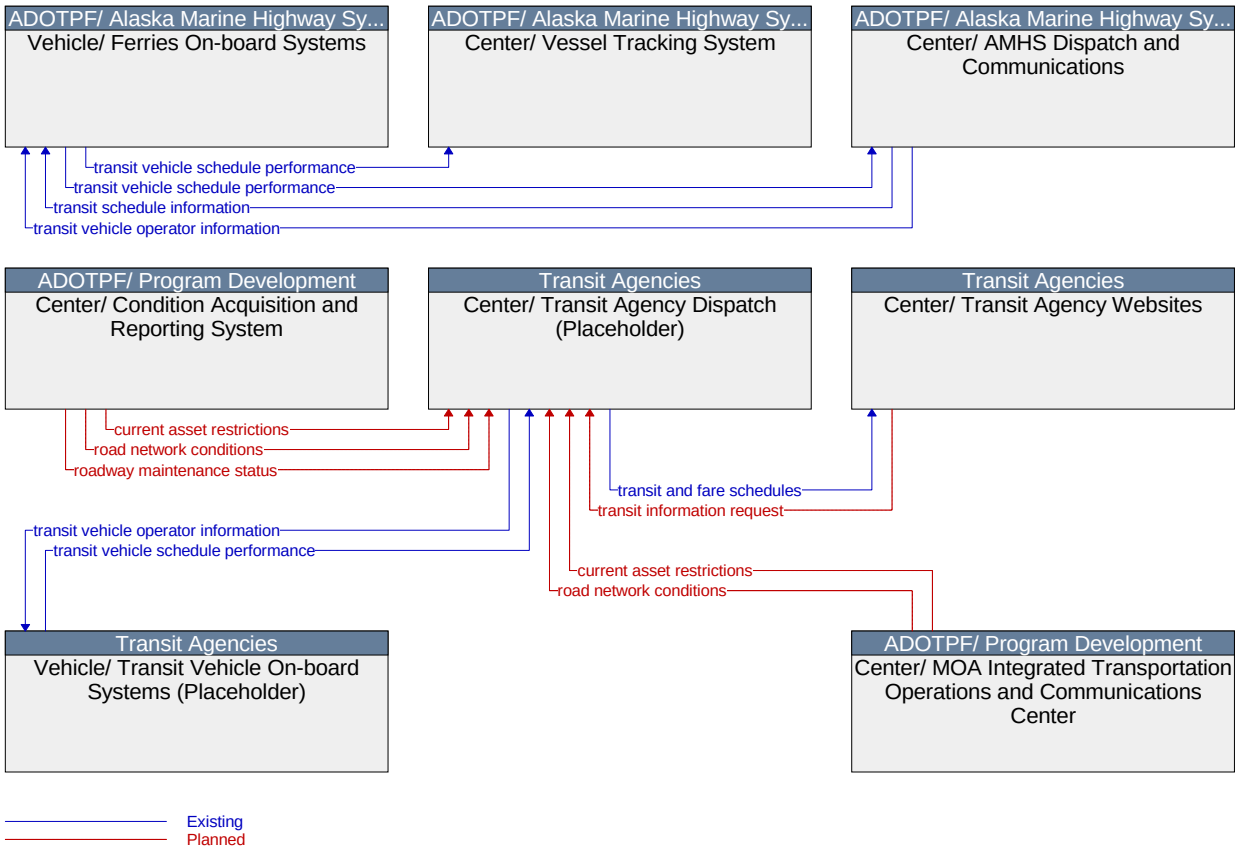


Figure 5-18:
Physical ITS Architecture for Transit Fixed-Route Operations

Transit Security

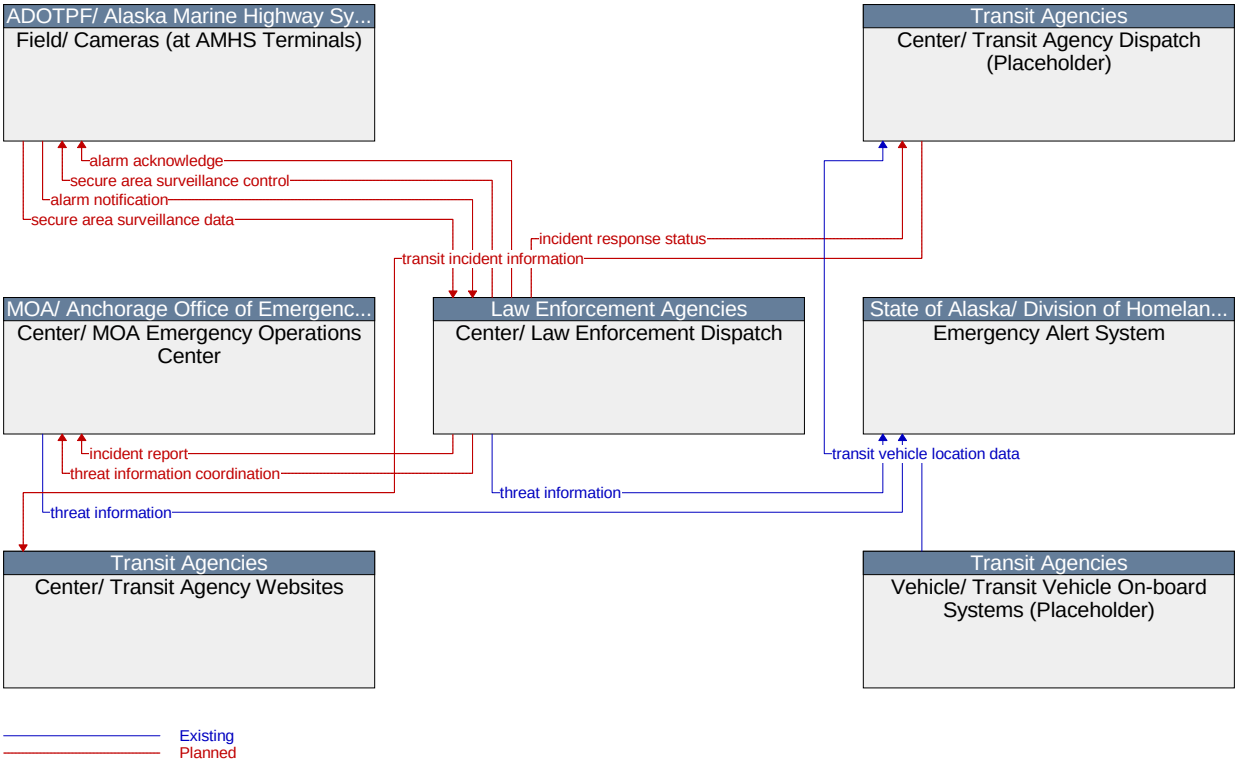
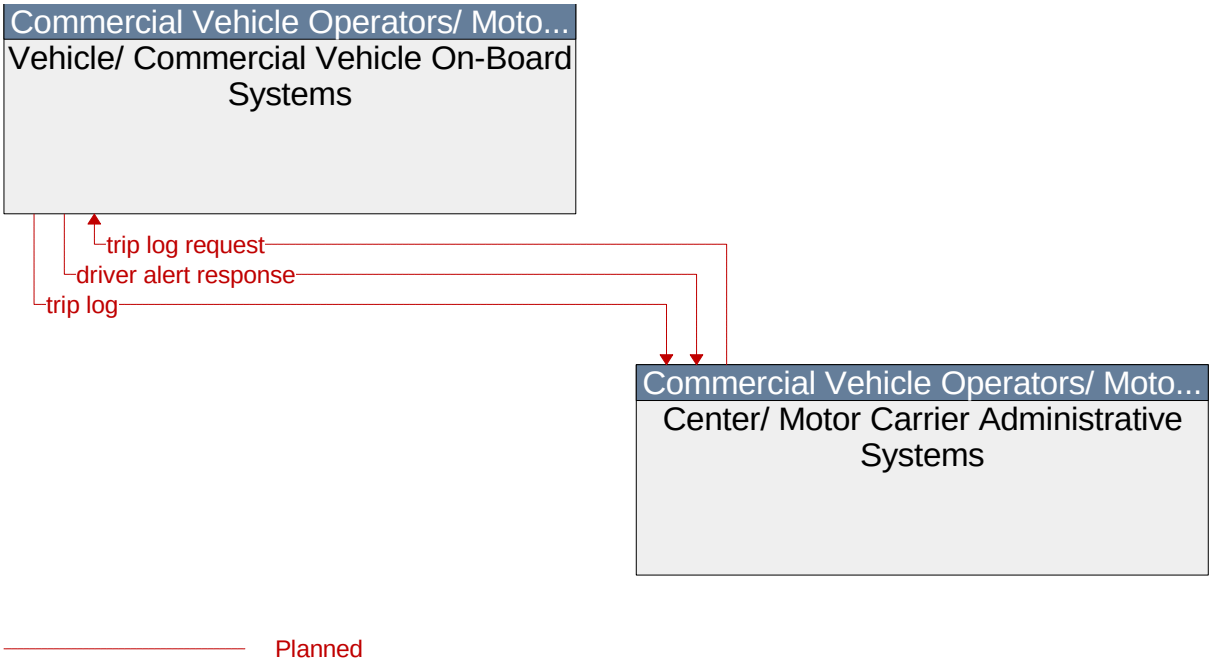


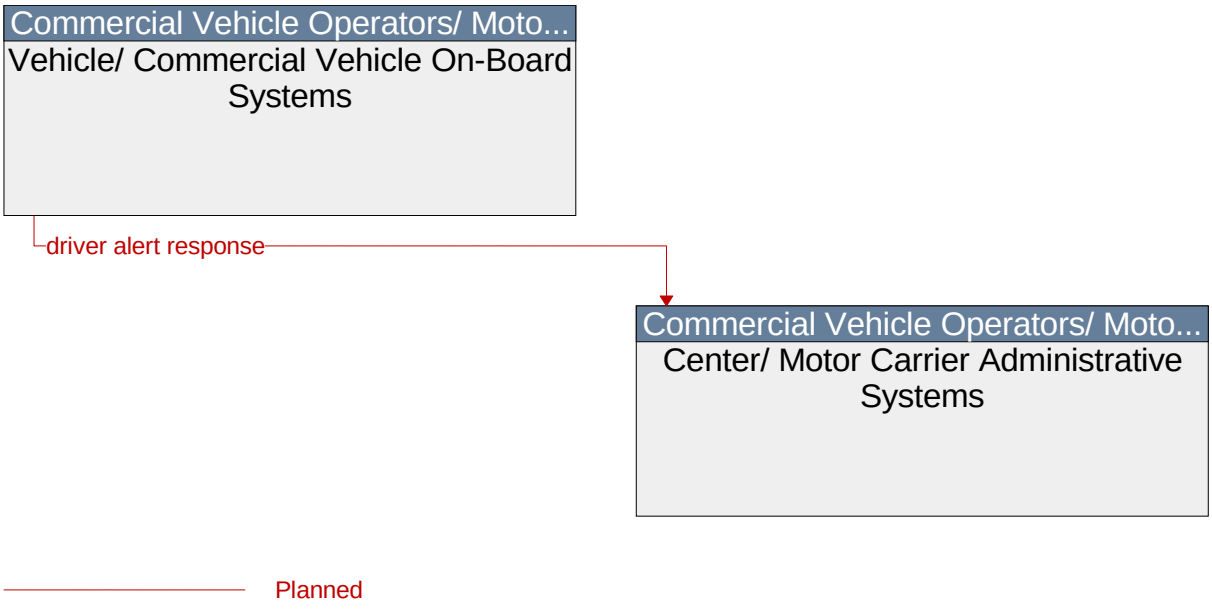
Figure 5-19:
Physical ITS Architecture for Transit Security

Commercial Vehicle Operations

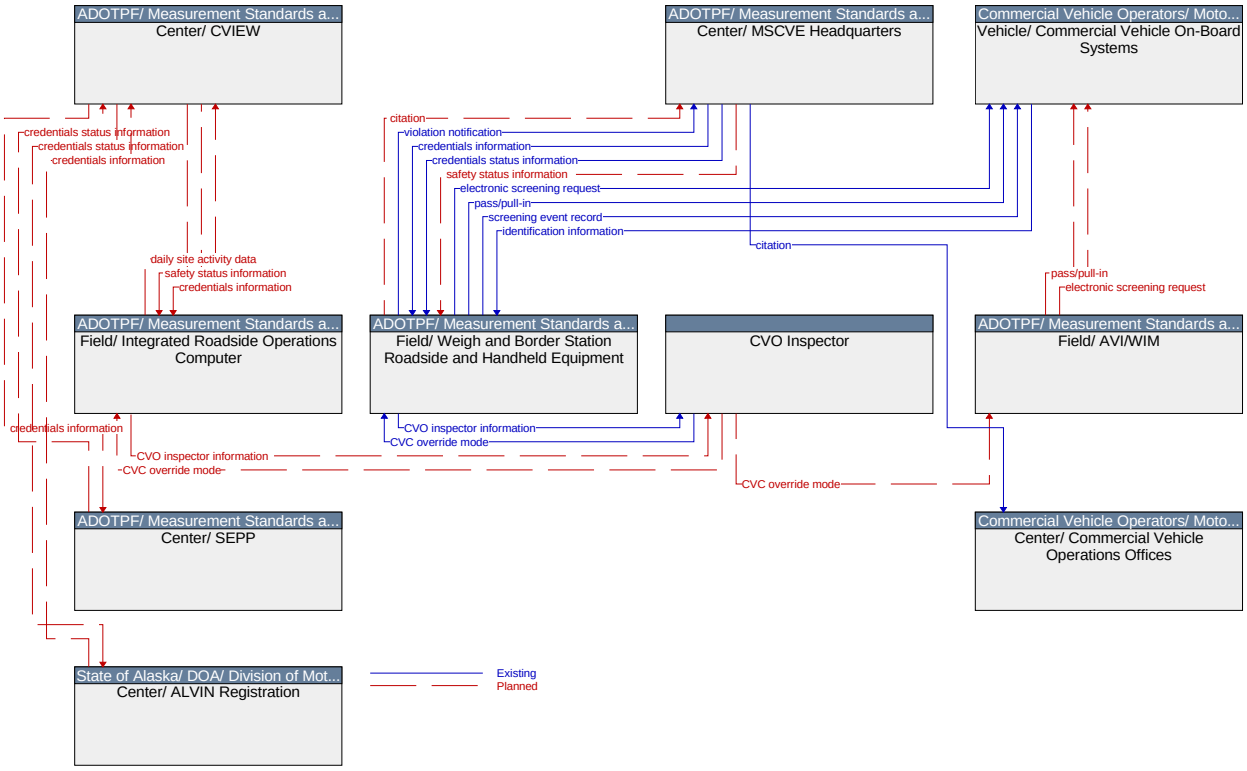
Fleet Administration



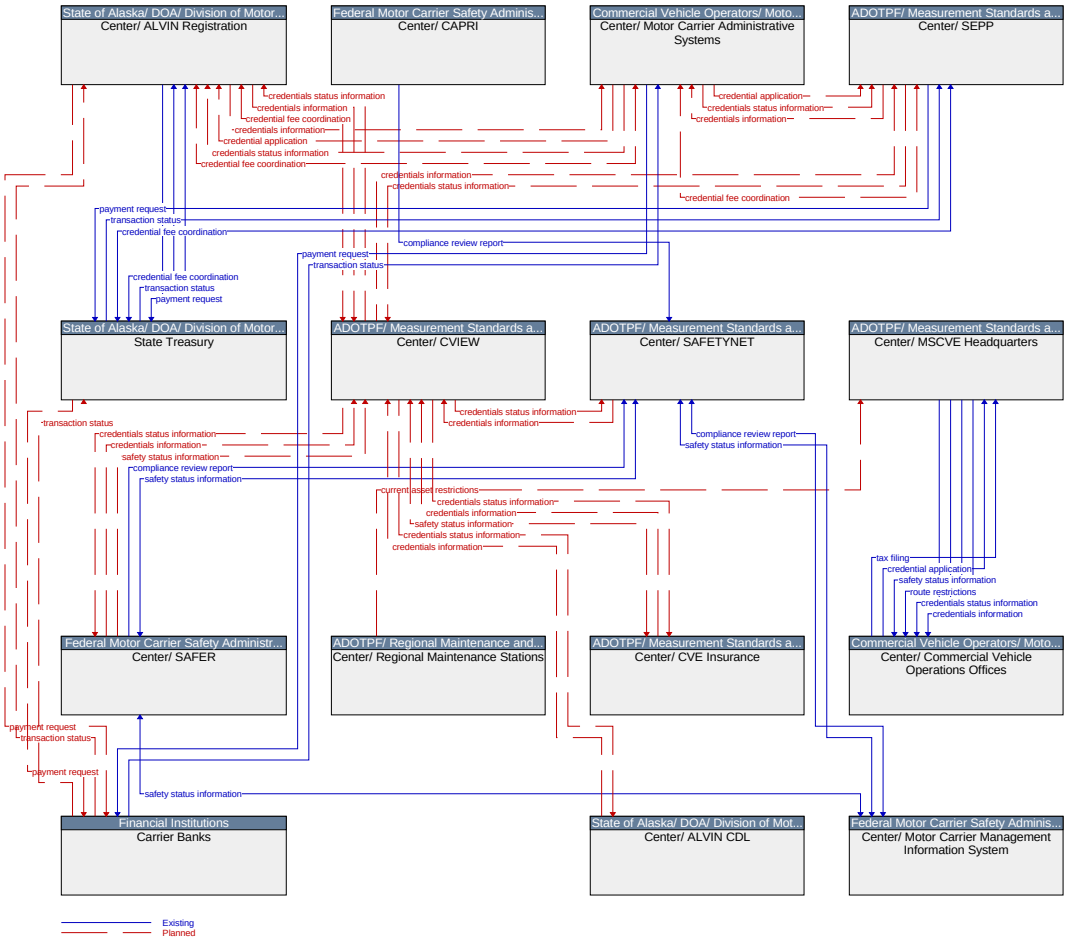
Freight Administration



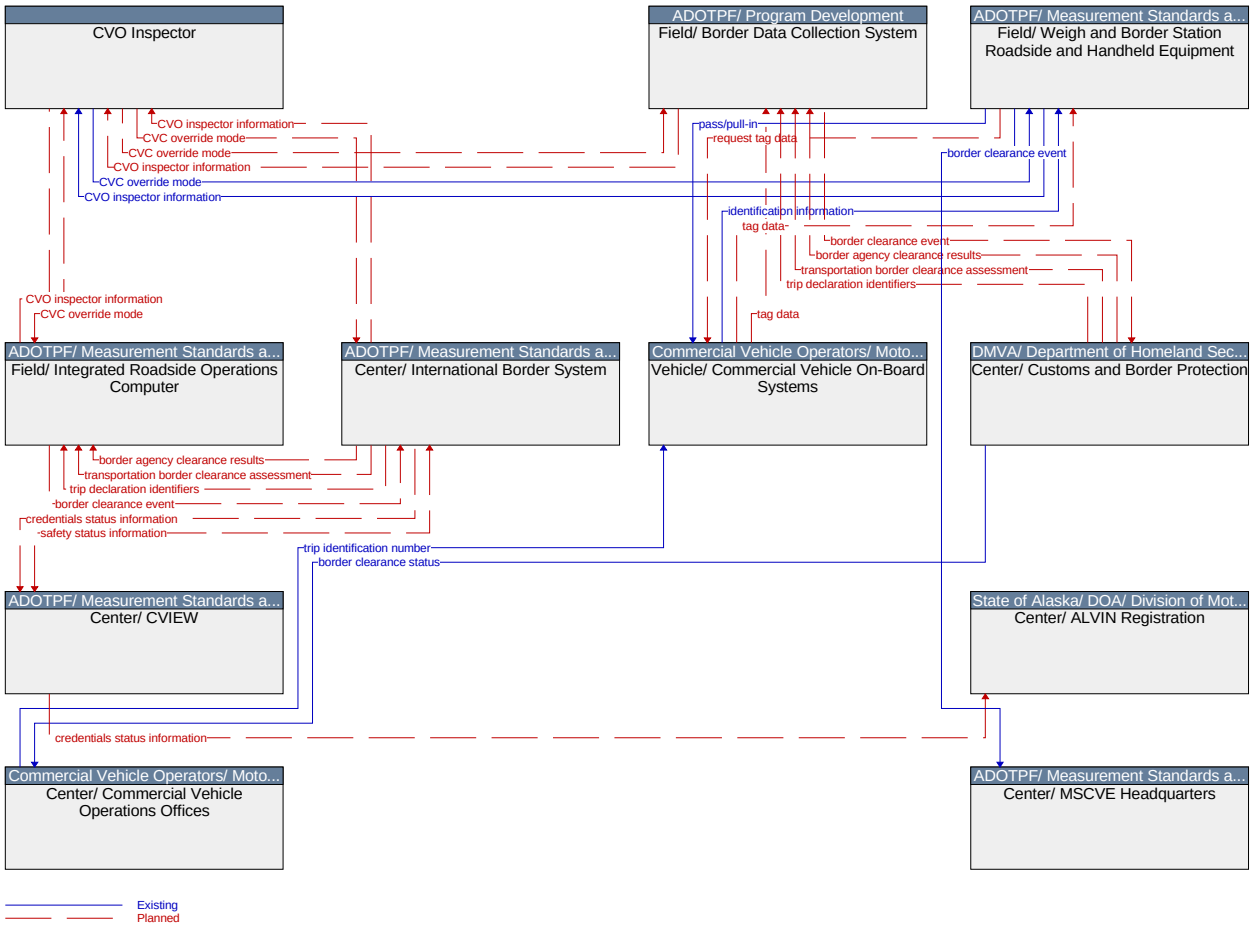
Electronic Clearance



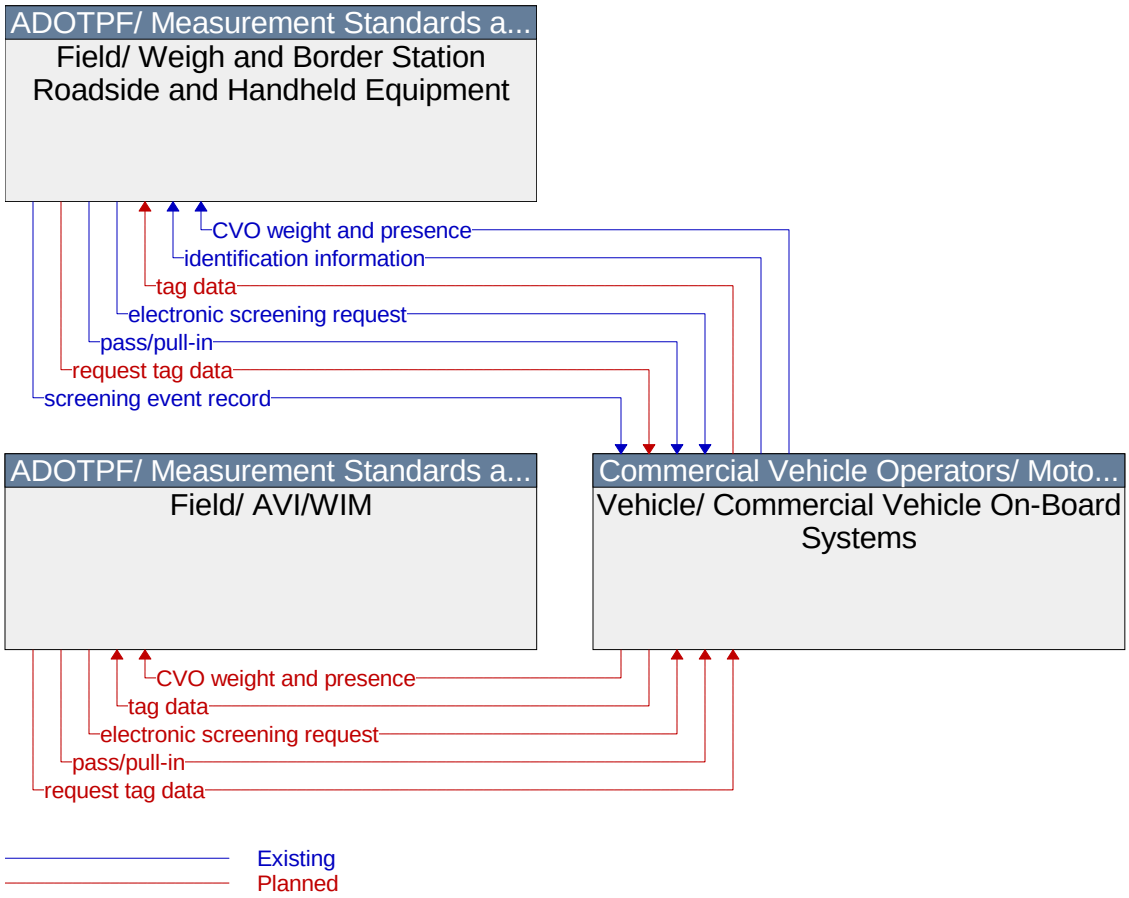
CV Administrative Processes



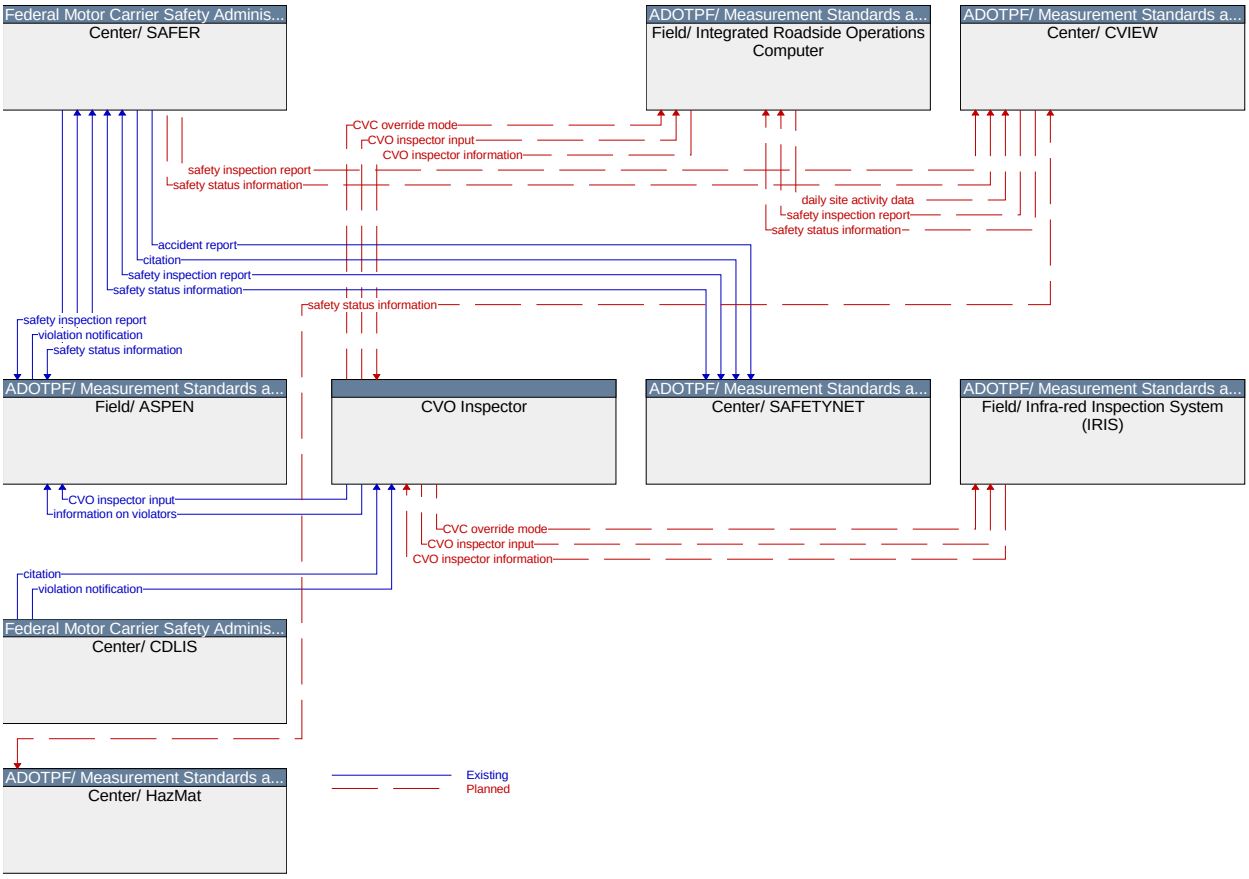
International Border Electronic Clearance



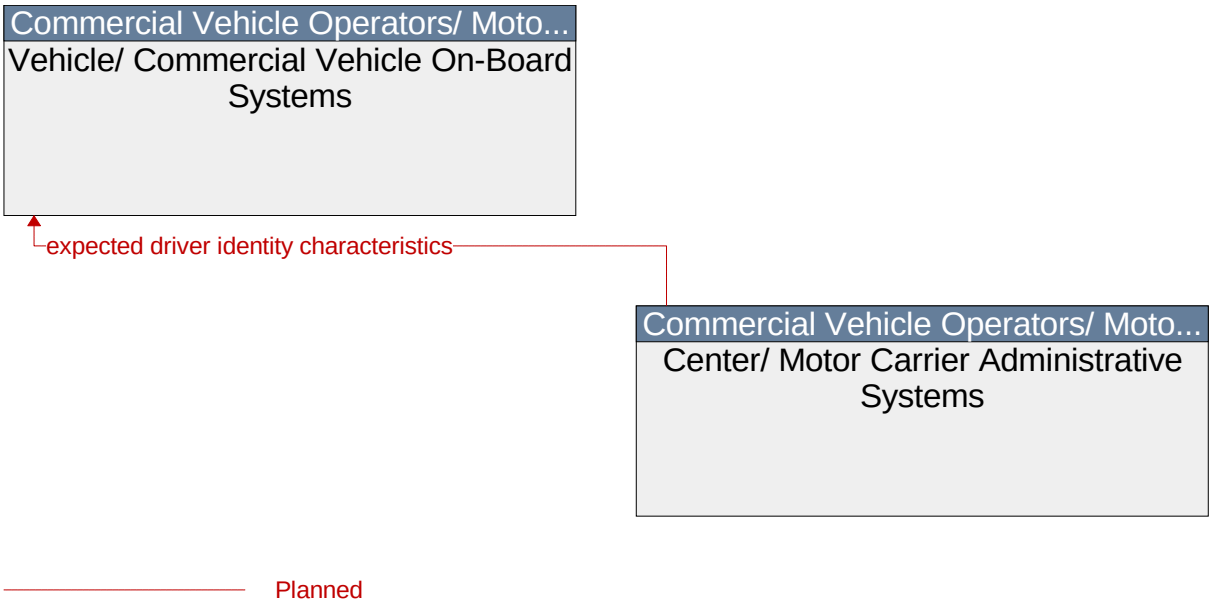
Weigh-in-Motion



Roadside CVO Safety



CV Driver Security Authentication



Emergency Management

Emergency Call-Taking and Dispatch

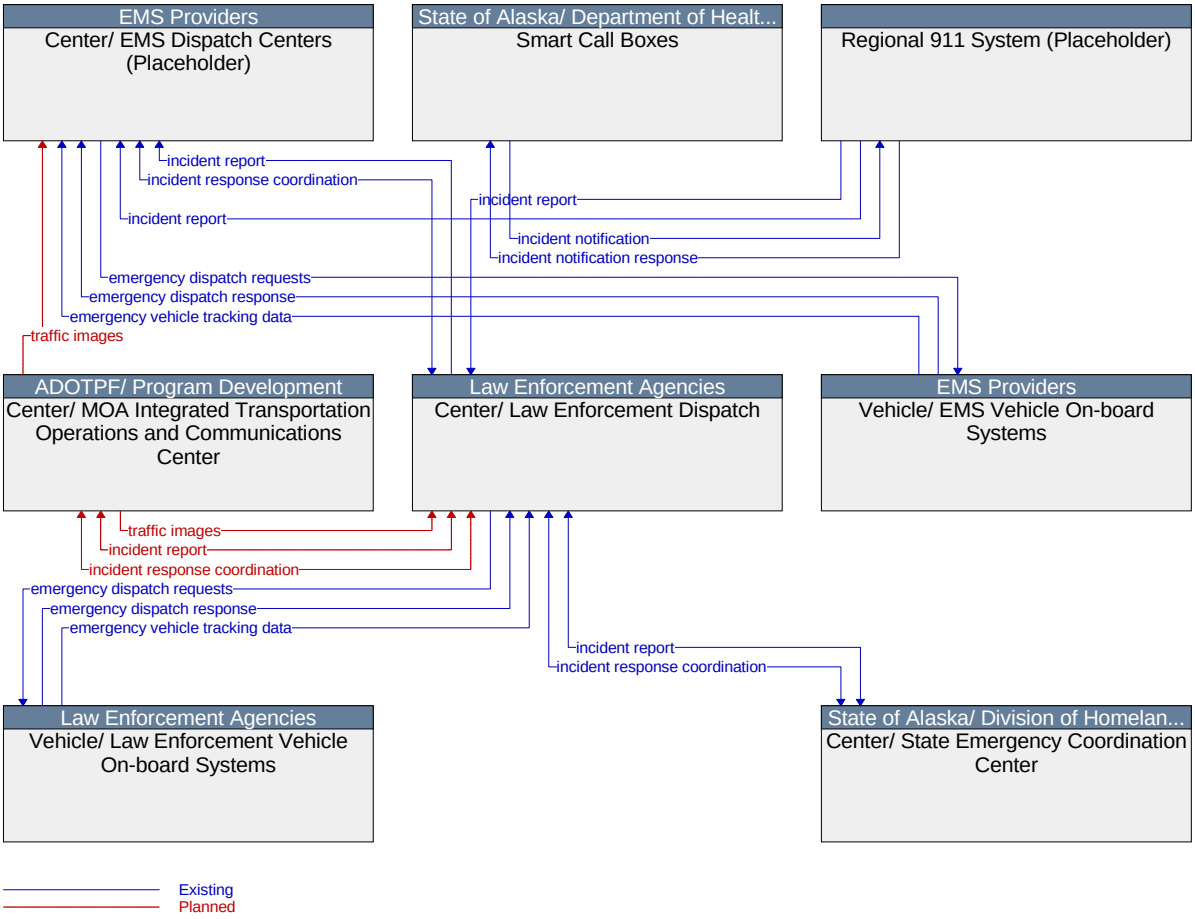


Figure 5-20:
Physical ITS Architecture for Emergency Call Taking and Dispatch

Emergency Routing

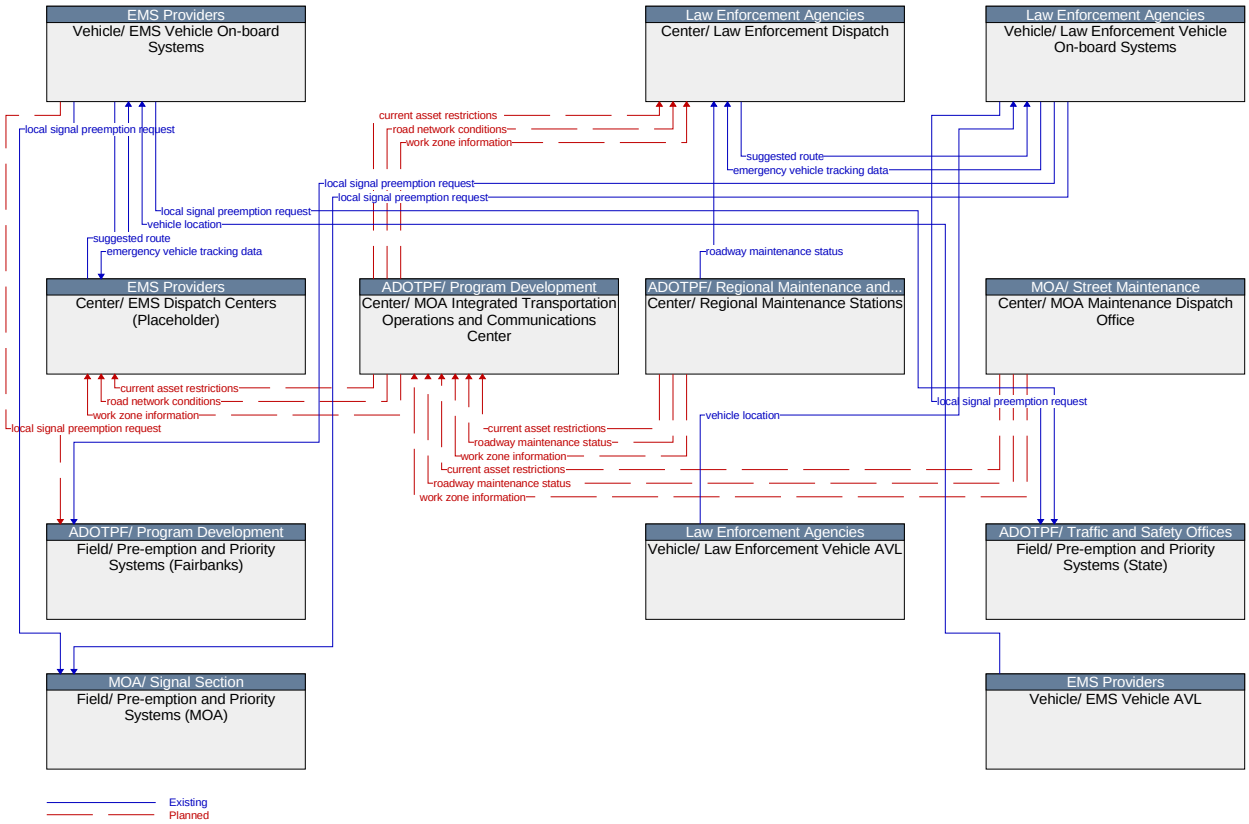


Figure 5-21:
Physical ITS Architecture for Emergency Routing

Mayday Support

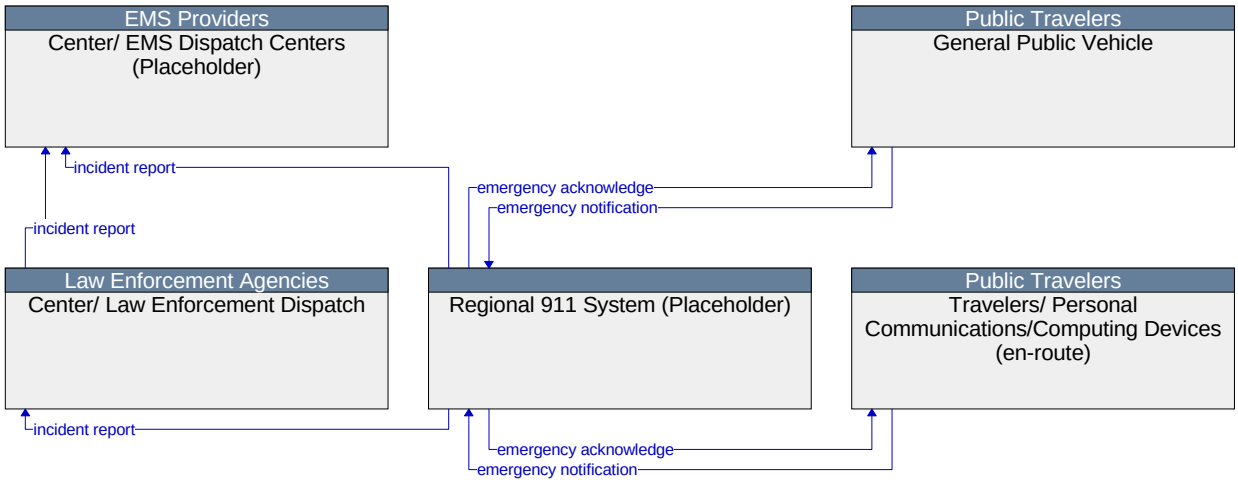


Figure 5-22:
Physical ITS Architecture for Mayday Support

Transportation Infrastructure Protection

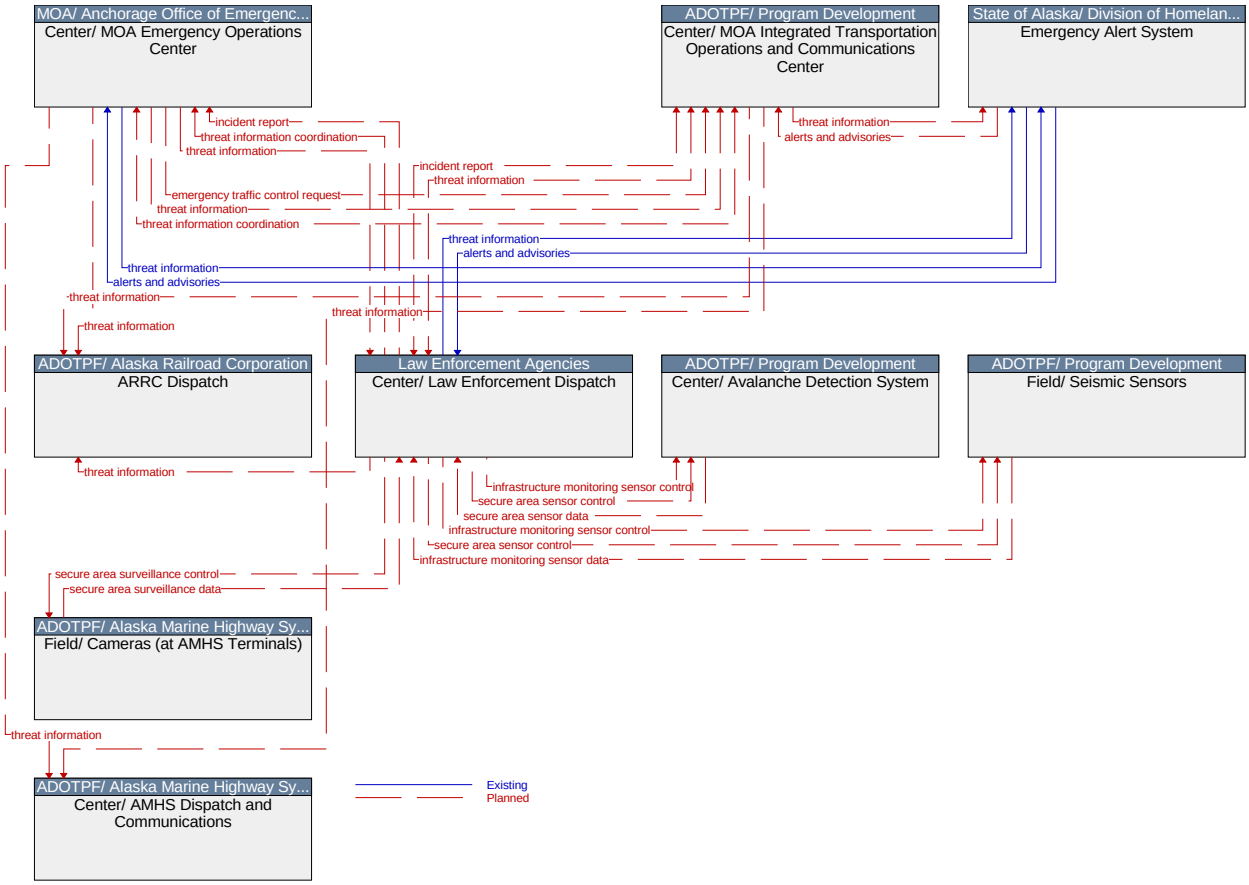


Figure 5-23:
Physical ITS Architecture for Transportation Infrastructure Protection

Wide-area Alert

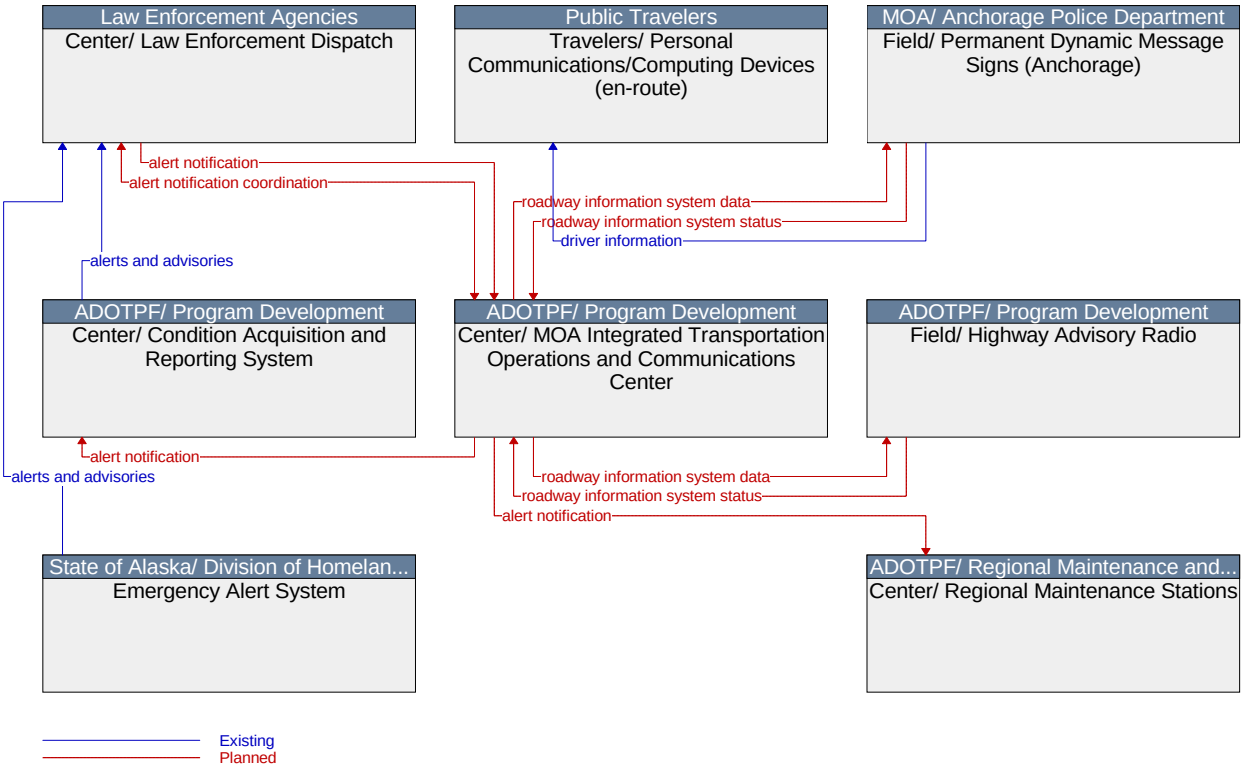


Figure 5-24:
Physical ITS Architecture for Wide-Area Alert

Early Warning System

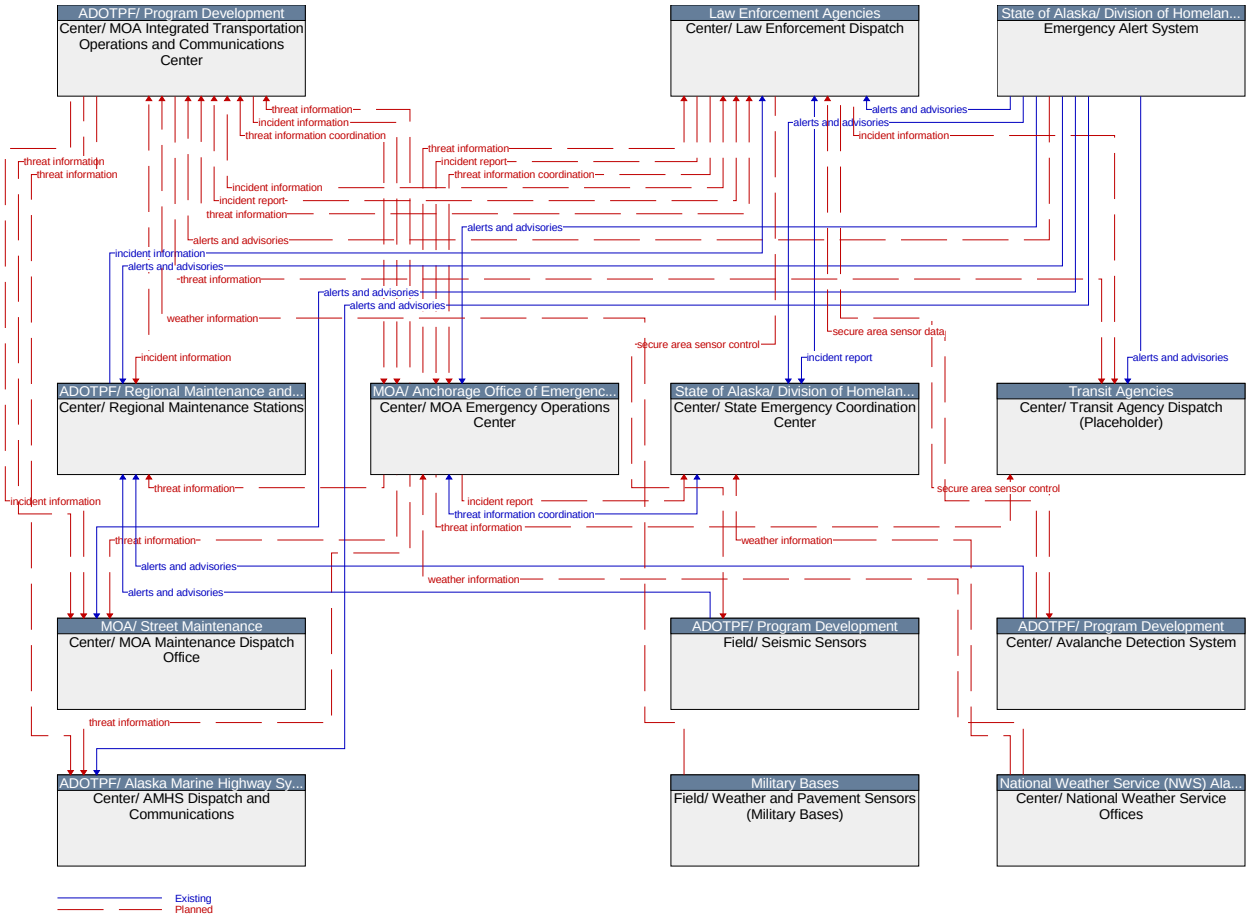


Figure 5-25:
Physical ITS Architecture for Early Warning System

Archived Data Management

ITS Virtual Data Warehouse

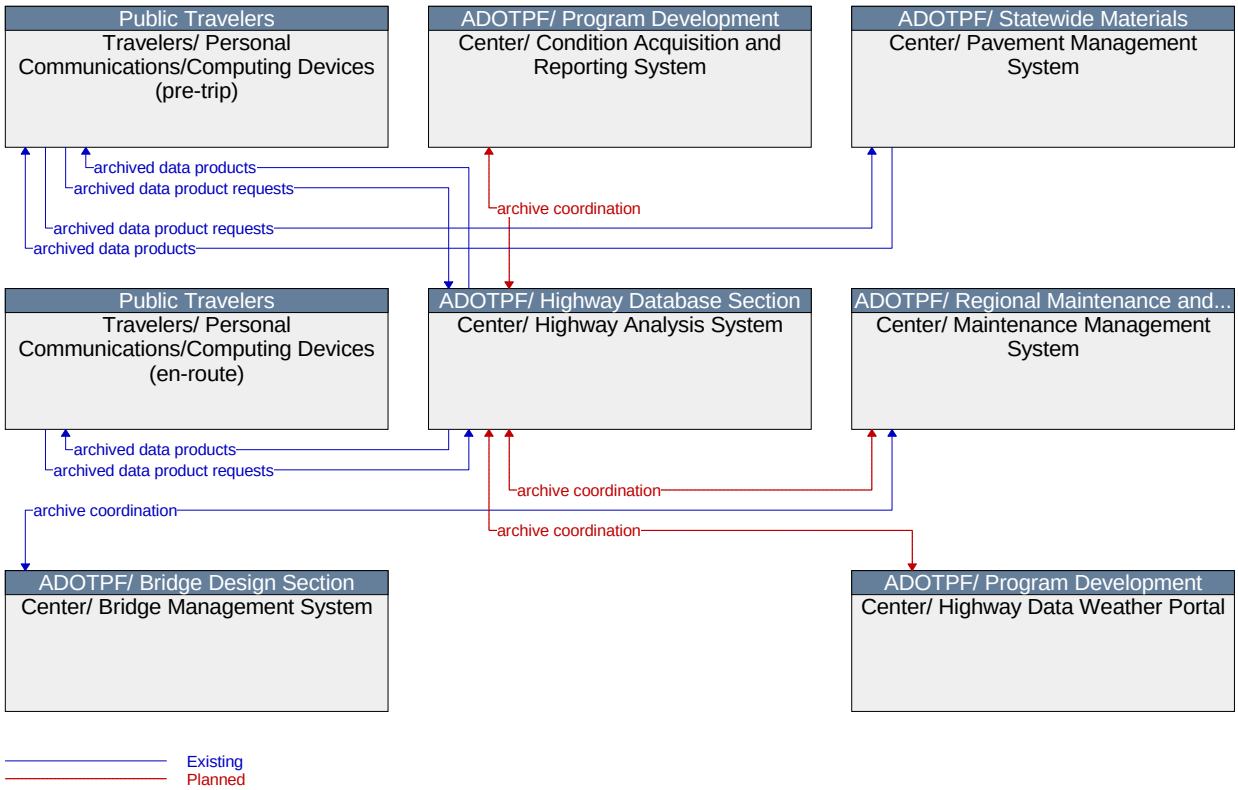


Figure 5-26:
Physical ITS Architecture for ITS virtual Data Warehouse

5.5 Appendix A: High-level Functional Requirements

Table 5-7:
High-level Functional Requirements for Alaska ITS Elements

Element	Requirement	Status
Center/ 511 (phone and web)	The center shall collect, process, and store traffic and highway condition information, including incident information, detours and road closures, event information, recommended routes, and current speeds on specific routes.	Existing
	The center shall collect, process, and store maintenance and construction information, including scheduled maintenance and construction work activities and work zone activities.	Existing
	The center shall collect, process, and store weather information.	Existing
	The center shall collect, process, and store event information.	Existing
	The center shall collect, process, store, and disseminate traffic and highway condition information to travelers, including incident information, detours and road closures, event information, recommended routes, and current speeds on specific routes.	Existing
	The center shall collect, process, store, and disseminate maintenance and construction information to travelers, including scheduled maintenance and construction work activities and work zone activities.	Existing
	The center shall collect, process, store, and disseminate weather information to travelers.	Existing
	The center shall collect, process, store, and disseminate event information to travelers.	Existing
	The center shall provide the capability to process voice-formatted requests for traveler information from a traveler telephone information system, and return the information in the requested format.	Existing
	The center shall provide the capability to process dual-tone multifrequency (DTMF)-based requests (touch-tone) for traveler information from a traveler telephone information system.	Existing
	The center shall provide the capability to process traveler information requests from a traveler telephone information system.	Existing
	The center shall collect and provide information on traffic conditions in the requested voice format and for the requested location.	Existing
	The center shall collect and provide work zone and roadway maintenance information in the requested voice format and for the requested location.	Existing
	The center shall collect and provide weather and event information in the requested voice format and for the requested location.	Existing

Element	Requirement	Status
	The center shall collect and provide transit service information in the requested voice format and for the requested location.	Planned
	The center shall collect and provide yellow pages services information in the requested voice format and for the requested location.	Planned
	The center shall collect and provide current ferry and rail schedule and airport status information in the requested voice format and for the requested location.	Existing
	The center shall collect, process, store, and disseminate yellow pages information (such as lodging, restaurants, theaters, bicycle facilities, and other tourist activities) to travelers upon request.	Planned
Center/ ADOTPF Traffic and Safety Offices	The center shall monitor, analyze, and store traffic sensor data (speed, volume, occupancy) collected from field elements under remote control of the center.	Planned
	The center shall distribute road network conditions data (raw or processed) based on collected and analyzed traffic sensor and surveillance data to other centers.	Planned
	The center shall support an interface with a map update provider, or other appropriate data sources, through which updates of digitized map data can be obtained and used as a background for traffic data.	Planned
	The center shall remotely control traffic signal controllers.	Existing
	The center shall collect traffic signal controller operational status and compare against the control information sent by the center.	Existing
	The center shall collect traffic signal controller fault data from the field.	Existing
Center/ ALVIN CDL	The center shall provide commercial vehicle safety data to roadside check facilities.	Planned
	The center shall exchange information with roadside check facilities, including credentials and credentials status information, safety status information, daily site activity data, and citations.	Planned
Center/ ALVIN Registration	The center shall exchange credentials and tax information with other commercial vehicle administration centers - either in other states or the federal government.	Planned
	The center shall provide credentials information about commercial vehicle operators and carriers to authorized requestors such as insurance agencies.	Planned
Center/ AMHS Dispatch and Communications	The center shall monitor the locations of all transit vehicles within its network.	Existing
	The center shall determine adherence of transit vehicles to their assigned schedule.	Existing
	The center shall support an interface with a map update provider, or other appropriate data sources, through which updates of digitized map data can be obtained and used as a background for transit tracking and dispatch.	Existing
	The center shall provide transit operational data to traveler information service providers.	Existing
	The center shall provide the interface to the system operator to control the generation of new routes and schedules (transit services) including the ability to review and update the parameters used by the routes and schedules generation processes and to initiate these processes	Existing

Element	Requirement	Status
	The center shall be able to generate special routes and schedules to support an incident, disaster, evacuation, or other emergency.	Existing
	The center shall dispatch fixed route or flexible route transit vehicles	Existing
	The center shall collect transit operational data for use in the generation of routes and schedules.	Existing
	The center shall provide instructions or corrective actions to the transit vehicle operators based upon operational needs.	Existing
	The center shall generate the necessary corrective actions which may involve more than the vehicles concerned and more far reaching action, such as, the introduction of extra vehicles, wide area signal priority by traffic management, the premature termination of some services, etc.	Existing
	The center shall receive reports of emergencies on-board transit vehicles entered directly be the transit vehicle operator or from a traveler through interfaces such as panic buttons or alarm switches.	Existing
	The center shall exchange transit incident information along with other service data with other transit agencies.	Existing
	The center shall coordinate the response to security incidents involving transit with other agencies including Emergency Management, other transit agencies, media, traffic management, and traveler information service providers.	Planned
	The center shall receive threat information and status on the integrity of the transit infrastructure.	Planned
Center/ AMHS Website	The center shall collect, process, store, and disseminate transit routes and schedules, transit transfer options, transit fares, and real-time schedule adherence information to travelers.	Existing
	The center shall generate route plans based on transit services, including fares, schedules, and requirements for travelers with special needs.	Planned
	The center shall use the preferences and constraints specified by the traveler in the trip request to select the most appropriate mode of transport.	Planned
	The center shall provide the capability for the traveler to confirm the proposed trip plan.	Planned
	The center shall support an interface with a map update provider, or other appropriate data sources, through which updates of digitized map data can be obtained and used to determine vehicle and non-vehicle routes, trip planning, and on-line vehicle guidance.	Existing
	The center shall manage updates of digitized map data and provide periodic updates to traveler interface systems.	Existing
	The center shall manage reservations and payment for yellow pages services and provide transaction success or failure details.	Existing
Center/ Anton Anderson Tunnel Control System	The center shall monitor, analyze, and distribute traffic images from CCTV systems under remote control of the center.	Existing

Element	Requirement	Status
	The center shall exchange incident and threat information with emergency management centers as well as maintenance and construction centers; including notification of existence of incident and expected severity, location, time and nature of incident.	Planned
	The center shall remotely control devices to detect traffic in reversible lanes, including wrong-way vehicles.	Existing
	The center shall monitor the use of reversible lanes and detect wrong-way vehicles in reversible lanes using sensor and surveillance information, and the current lane control status (which direction the lane is currently operating).	Existing
	The center shall remotely control automated reversible lane equipment and driver information systems (such as lane control signals) that control traffic in reversible lanes on freeways.	Existing
	The center shall collect operational status for the reversible lane field equipment.	Existing
	The center shall collect fault data for the reversible lane field equipment and send to the maintenance center for repair.	Planned
	The center shall remotely control barrier systems for transportation facilities and infrastructure. Barrier systems include automated or remotely controlled gates, barriers and other systems that manage entry to roadways.	Existing
	The center shall collect barrier system operational status.	Existing
	The center shall collect barrier system fault data and send to the maintenance center for repair.	Planned
Center/ APD Headquarters and Dispatch	The center shall support the interface to the Emergency Telecommunications System (e.g. 911 or 7-digit call routing) to receive emergency notification information and provide it to the emergency system operator.	Existing
	The center shall receive emergency call information from 911 services and present the possible incident information to the emergency system operator.	Existing
	The center shall receive emergency call information from mayday service providers and present the possible incident information to the emergency system operator.	Existing
	The center shall receive emergency notification information from other public safety agencies and present the possible incident information to the emergency system operator.	Existing
	The center shall send a request for remote control of CCTV systems from a traffic management center in order to verify the reported incident.	Planned
	The center shall forward the verified emergency information to the responding agency based on the location and nature of the emergency.	Planned
	The center shall update the incident information log once the emergency system operator has verified the incident.	Planned
	The center shall provide the capability for digitized map data to act as the background to the emergency information presented to the emergency system operator.	Existing
	The center shall dispatch emergency vehicles to respond to verified emergencies under center personnel control.	Existing

Element	Requirement	Status
	The center shall store the current status of all emergency vehicles available for dispatch and those that are dispatched.	Existing
	The center shall relay location and incident details to the responding vehicles.	Existing
	The center shall track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.	Existing
	The center shall store and maintain the emergency service responses in an action log.	Existing
	The center shall provide the capability for digitized map data to act as the background to the information presented to the emergency system operator.	Existing
	The center shall receive traffic images to support dispatch of emergency vehicles.	Planned
	The center shall provide the capability to request remote control of traffic surveillance devices	Planned
	The center shall coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.	Existing
	The center shall collect current traffic and road condition information from traffic management centers for emergency vehicle route calculation.	Existing
	The center shall receive inputs from traffic management and maintenance centers on the location and status of traffic control equipment and work zones along potential emergency routes.	Planned
	The center shall receive asset restriction information from maintenance centers to support the dispatching of appropriate emergency resources.	Planned
	The center shall calculate emergency vehicle routes, under center personnel control, based on information from traffic management and maintenance centers.	Planned
	The center shall provide the capability for digitized map data to act as the background to the information presented to the emergency system operator.	Existing
	The center shall remotely control dynamic messages signs for dissemination of traffic and other information to drivers.	Existing
	The center shall collect operational status for the driver information systems equipment (DMS, HAR, etc.).	Existing
	The center shall collect fault data for the driver information systems equipment (DMS, HAR, etc.) for repair.	Existing
	The center shall retrieve locally stored traffic information, including current and forecasted traffic information, road and weather conditions, traffic incident information, information on diversions and alternate routes, closures, and special traffic restrictions (lane/shoulder use, weight restrictions, width restrictions, HOV requirements), etc.	Existing
Center/ ARRC Collision Avoidance System	The center shall monitor the locations of all transit vehicles within its network.	Planned
	The center shall determine adherence of transit vehicles to their assigned schedule.	Planned
	The center shall support an interface with a map update provider, or other appropriate data sources, through which updates of digitized map data can be obtained and used as a background for transit tracking and dispatch.	Planned

Element	Requirement	Status
Center/ Avalanche Detection System	The field element shall include security sensors that monitor conditions of secure areas including facilities (e.g. transit yards) and transportation infrastructure (e.g. bridges, tunnels, interchanges, roadway infrastructure, and transit railways or guideways).	Planned
	The field element shall provide equipment status and fault indication of security sensor equipment to a center.	Planned
	The field element shall include motion and intrusion detection sensors.	Planned
Center/ Bridge Design Section Offices	The center shall use the various data inputs of environmental sensors and road weather data to develop a view of current and predicted road weather and road conditions.	Existing
Center/ Bridge Management System	The center shall store the archived data in a focused repository that is suited to a particular set of ITS data users.	Planned
	The center shall include capabilities for archive to archive coordination.	Planned
Center/ Bridge Scour System	The center shall remotely control environmental sensors that measure road surface temperature, moisture, icing, salinity, and other measures.	Existing
	The center shall collect operational status for the roadside and vehicle-based environmental sensor equipment.	Existing
	The center shall collect fault data for the roadside and vehicle-based environmental sensor equipment for repair.	Existing
	The center shall collect the status and fault data from roadside equipment, such as traffic, infrastructure, and environmental sensors, highway advisory radio and dynamic message signs, automated roadway treatment systems, barrier and safeguard systems, cameras, traffic signals and override equipment, ramp meters, beacons, security sensors and surveillance equipment, etc., and provide a cohesive view of equipment repair needs.	Existing
	The center shall remotely control and collect data from infrastructure monitoring sensors located along the roadway infrastructure or on maintenance and construction vehicles.	Existing
Center/ CAPRI	The center shall provide commercial vehicle safety data to roadside check facilities.	Existing
	The center shall exchange information with roadside check facilities, including credentials and credentials status information, safety status information, daily site activity data, and citations.	Existing
	The center shall receive operational data from the roadside check systems as well as administration and credentials data.	Existing
Center/ CDLIS	The center shall provide commercial vehicle safety data to roadside check facilities.	Planned
	The center shall exchange information with roadside check facilities, including credentials and credentials status information, safety status information, daily site activity data, and citations.	Planned
Center/ Commercial Vehicle Operations Offices	The center shall send data concerning enrollment and purchase of commercial vehicles credentials and tax filing to the appropriate commercial vehicle administration center.	Existing

Element	Requirement	Status
	The center shall receive compliance review reports from the appropriate commercial vehicle administration centers concerning the operations of the commercial vehicle fleet, including concomitant out-of-service notifications, and carrier warnings/notifications.	Existing
	The center shall provide audit data to the appropriate commercial vehicle administration center to support tax audits.	Existing
	The center shall support an interface with a commercial vehicle driver that is acting in the role of a commercial vehicle fleet manager for the purposes of obtaining credentials, filing taxes and audit data, and receiving compliance reports and status information.	Existing
Center/ Condition Acquisition and Reporting System	The center shall collect data to be archived from one or more data sources.	Existing
	The center shall store the archived data in a focused repository that is suited to a particular set of ITS data users.	Existing
	The center shall collect, process, and store traffic and highway condition information, including incident information, detours and road closures, event information, recommended routes, and current speeds on specific routes.	Existing
	The center shall collect, process, and store maintenance and construction information, including scheduled maintenance and construction work activities and work zone activities.	Existing
	The center shall collect, process, and store weather information.	Existing
	The center shall collect, process, and store event information.	Existing
	The center shall collect maintenance and construction data (such as field equipment status, infrastructure status, maintenance and construction activity data) gathered from roadway, traffic, and other maintenance and construction sources.	Existing
Center/ Credentials Data Integration and Access System (CDIAS)	The center shall collect data to be archived from one or more data sources.	Existing
Center/ Customs and Border Protection	The center shall exchange information with roadside check facilities, including credentials and credentials status information, safety status information, daily site activity data, and citations.	Planned
	The center shall exchange safety and credentials data among other commercial vehicle administration centers; includes border clearance status, credentials information, credentials status information, and safety status information.	Planned
	The center shall provide commercial vehicle credentials and safety status information to authorized requestors such as insurance agencies.	Planned
	The center shall receive domestic transportation and declaration information from Trade Regulatory Agencies such as U.S. Bureau of Immigration and Customs Enforcement(ICE), the U.S. Bureau of Customs and Border Protection (CBP), and their counterparts in Canada and Mexico.	Planned

Element	Requirement	Status
	The center shall provide an assessment regarding a commercial vehicle and driver at a border crossing. The assessment or clearance data will be forwarded on to the appropriate regulatory agencies and roadside check facilities operating at the border crossing.	Planned
	The center shall provide border clearance status concerning commercial vehicles and their shipments to the roadside check facilities, the commercial vehicle fleet and freight management centers, intermodal freight shippers, other commercial vehicle administration centers, and the trade regulatory agencies.	Planned
	The center shall receive and store border clearance event data from the roadside check facilities that are located near border crossings.	Planned
Center/ CVE Insurance Center/ CVIEW	The center shall manage the filing of appropriate taxes for the operation of commercial vehicles.	Planned
	The center shall manage electronic credentials filing and processing for commercial vehicles.	Planned
	The center shall exchange credentials and tax information with other commercial vehicle administration centers - either in other states or the federal government.	Planned
	The center shall provide credentials information about commercial vehicle operators and carriers to authorized requestors such as insurance agencies.	Planned
	The center shall provide commercial vehicle safety data to roadside check facilities.	Planned
	The center shall collect and review safety inspection reports and violations from the roadside check facilities and pass on appropriate portions to other commercial vehicle administrative centers and commercial vehicle fleet operators.	Planned
	The center shall notify enforcement agencies of commercial vehicle safety violations by individual commercial vehicles, drivers, or carriers.	Planned
	The center shall exchange information with roadside check facilities, including credentials and credentials status information, safety status information, daily site activity data, and citations.	Planned
	The center shall exchange safety and credentials data among other commercial vehicle administration centers; includes border clearance status, credentials information, credentials status information, and safety status information.	Planned
	The center shall provide commercial vehicle credentials and safety status information to authorized requestors such as insurance agencies.	Planned
	The center shall provide border clearance status concerning commercial vehicles and their shipments to the roadside check facilities, the commercial vehicle fleet and freight management centers, intermodal freight shippers, other commercial vehicle administration centers, and the trade regulatory agencies.	Planned
	The center shall receive and store border clearance event data from the roadside check facilities that are located near border crossings.	Planned
Center/ Division of Tourism Website	The center shall provide the capability to provide specific pre-trip and enroute directions to travelers (and drivers), including costs, arrival times, and transfer points.	Planned

Element	Requirement	Status
	The center shall include bicycle routes, walkways, skyways, and multi-use trails in the pre-trip and enroute directions it provides to travelers.	Planned
	The center shall collect, process, store, and disseminate yellow pages information (such as lodging, restaurants, theaters, bicycle facilities, and other tourist activities) to travelers upon request.	Existing
Center/ EMS Dispatch Centers (Placeholder)	The center shall support the interface to the Emergency Telecommunications System (e.g. 911 or 7-digit call routing) to receive emergency notification information and provide it to the emergency system operator.	Existing
	The center shall receive emergency call information from 911 services and present the possible incident information to the emergency system operator.	Existing
	The center shall receive emergency call information from motorist call-boxes and present the possible incident information to the emergency system operator.	Existing
	The center shall receive emergency call information from mayday service providers and present the possible incident information to the emergency system operator.	Existing
	The center shall receive emergency notification information from other public safety agencies and present the possible incident information to the emergency system operator.	Existing
	The center shall coordinate, correlate, and verify all emergency inputs, including those identified based on external calls and internal analysis of security sensor and surveillance data, and assign each a level of confidence.	Planned
	The center shall send a request for remote control of CCTV systems from a traffic management center in order to verify the reported incident.	Planned
	The center shall forward the verified emergency information to the responding agency based on the location and nature of the emergency.	Planned
	The center shall update the incident information log once the emergency system operator has verified the incident.	Planned
	The center shall provide the capability for digitized map data to act as the background to the emergency information presented to the emergency system operator.	Planned
	The center shall dispatch emergency vehicles to respond to verified emergencies under center personnel control.	Existing
	The center shall store the current status of all emergency vehicles available for dispatch and those that are dispatched.	Existing
	The center shall relay location and incident details to the responding vehicles.	Existing
	The center shall track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.	Existing
	The center shall store and maintain the emergency service responses in an action log.	Planned
	The center shall provide the capability for digitized map data to act as the background to the information presented to the emergency system operator.	Planned

Element	Requirement	Status
	The center shall receive traffic images to support dispatch of emergency vehicles.	Planned
	The center shall provide the capability to request remote control of traffic surveillance devices	Planned
	The center shall coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.	Existing
	The center shall collect current traffic and road condition information from traffic management centers for emergency vehicle route calculation.	Planned
	The center shall receive inputs from traffic management and maintenance centers on the location and status of traffic control equipment and work zones along potential emergency routes.	Planned
	The center shall receive status information from care facilities to determine the appropriate facility and its location.	Planned
	The center shall receive asset restriction information from maintenance centers to support the dispatching of appropriate emergency resources.	Planned
	The center shall provide the capability for digitized map data to act as the background to the information presented to the emergency system operator.	Planned
Center/ FAA Website	The center shall provide camera images for use by travelers in making travel-realted decisions.	Planned
Center/ HazMat	The center shall exchange safety and credentials data among other commercial vehicle administration centers; includes border clearance status, credentials information, credentials status information, and safety status information.	Planned
	The center shall provide commercial vehicle credentials and safety status information to authorized requestors such as insurance agencies.	Planned
	The center shall share incident command information with other public safety agencies including resource deployment status, hazardous material information, rail incident information, evacuation advice as well as traffic, road, and weather conditions.	Planned
Center/ Highway Analysis System	The center shall collect data to be archived from one or more data sources.	Existing
	The center shall store the archived data in a focused repository that is suited to a particular set of ITS data users.	Existing
	The center shall include capabilities for error notification on the incoming archived data.	Planned
	The center shall include capabilities for archive to archive coordination.	Planned
	The center shall manage the collection of archive data directly from collection equipment located at the roadside.	Existing
	The center shall collect traffic sensor information from roadside devices.	Existing
	The center shall coordinate information exchange with a local data warehouse.	Existing
Center/ Highway Data Weather Portal	The center shall respond to control data from center personnel regarding environmental sensor control and weather data collection and processing.	Planned

Element	Requirement	Status
	The center shall assimilate current and forecast road conditions and surface weather information using a combination of weather service provider information (such as the National Weather Service and value-added sector specific meteorological services) and local environmental sensor data.	Planned
	The center shall use the various data inputs of environmental sensors and road weather data to develop a view of current and predicted road weather and road conditions.	Planned
	The center shall disseminate current and forecasted road weather and road condition information to weather service providers (such as the National Weather Service and value-added sector specific meteorological services) as well as other agencies including traffic, emergency, and transit management, traveler information providers, rail operations centers, media, and other maintenance management centers.	Planned
	The center shall provide value-added sector specific meteorological services with information on basic road facility and treatment information that supports forecasts for road conditions.	Planned
Center/ Highway Database Section Office	The center shall monitor, analyze, and store traffic sensor data (speed, volume, occupancy) collected from field elements under remote control of the center.	Existing
Center/ International Border System	The center shall exchange information with roadside check facilities, including credentials and credentials status information, safety status information, daily site activity data, and citations.	Planned
	The center shall receive domestic transportation and declaration information from Trade Regulatory Agencies such as U.S. Bureau of Immigration and Customs Enforcement(ICE), the U.S. Bureau of Customs and Border Protection (CBP), and their counterparts in Canada and Mexico.	Planned
	The center shall provide an assessment regarding a commercial vehicle and driver at a border crossing. The assessment or clearance data will be forwarded on to the appropriate regulatory agencies and roadside check facilities operating at the border crossing.	Planned
	The center shall provide border clearance status concerning commercial vehicles and their shipments to the roadside check facilities, the commercial vehicle fleet and freight management centers, intermodal freight shippers, other commercial vehicle administration centers, and the trade regulatory agencies.	Planned
	The center shall receive and store border clearance event data from the roadside check facilities that are located near border crossings.	Planned
	The roadside check facility equipment shall detect the presence of commercial vehicles and freight equipment approaching a facility. Sensors can differentiate between different types of vehicles and determine the number of axles, gross vehicle weight, and the identification of the vehicle and its cargo.	Planned
	The roadside check facility equipment shall receive violation records from appropriate law enforcement agencies pertaining to commercial vehicles.	Planned
	The roadside check facility equipment shall provide an interface to inspectors in the field to allow them to monitor and if necessary override the pull-in decisions made by the system.	Planned
	The roadside check facility equipment shall request and input electronic screening data from the commercial vehicle's electronic tag data.	Planned

Element	Requirement	Status
	The roadside check facility equipment shall send a pass/pull-in notification to the commercial vehicle and its driver based on the information received from the vehicle, the administration center, enforcement agencies, and the inspector. The message may be sent to the on-board equipment in the commercial vehicle or transmitted to the driver using equipment such as dynamic message signs, red-green lights, flashing signs, etc.	Planned
	The roadside check facility equipment shall send a record of daily activities at the facility including summaries of screening events and inspections to the commercial vehicle administration center.	Planned
	The roadside check facility equipment at a border crossing shall receive the border agency clearance results, transportation border clearance assessments, and trip declaration identifiers from the commercial vehicle administration center to be used to screen the incoming commercial vehicles.	Planned
	The roadside check facility equipment at a border crossing shall request and input the tag data from approaching commercial vehicles to determine the identity of the vehicle along with its carrier, driver, and a trip identity.	Planned
	The roadside check facility equipment at a border crossing shall request and input the border clearance data from approaching commercial vehicles to compare against the data received from the center concerning compliance with import/export and immigration regulations.	Planned
	The roadside check facility equipment at a border crossing shall send clearance event data regarding action taken at border to the commercial vehicle administration center and to the commercial vehicle. This may include a date/time stamped acceptance or override of system decisions whether to allow release of the vehicle and its cargo.	Planned
Center/ Law Enforcement Data Archives	The center shall collect data to be archived from one or more data sources.	Existing
	The center shall store the archived data in a focused repository that is suited to a particular set of ITS data users.	Existing
	The center shall include capabilities for archive to archive coordination.	Planned
Center/ Law Enforcement Dispatch	The center shall support the interface to the Emergency Telecommunications System (e.g. 911 or 7-digit call routing) to receive emergency notification information and provide it to the emergency system operator.	Existing
	The center shall receive emergency call information from 911 services and present the possible incident information to the emergency system operator.	Existing
	The center shall receive emergency call information from motorist call-boxes and present the possible incident information to the emergency system operator.	Existing
	The center shall receive emergency call information from mayday service providers and present the possible incident information to the emergency system operator.	Existing
	The center shall receive emergency notification information from other public safety agencies and present the possible incident information to the emergency system operator.	Existing

Element	Requirement	Status
	The center shall receive emergency notification information from public transit systems and present the possible incident information to the emergency system operator.	Planned
	The center shall coordinate, correlate, and verify all emergency inputs, including those identified based on external calls and internal analysis of security sensor and surveillance data, and assign each a level of confidence.	Planned
	The center shall send a request for remote control of CCTV systems from a traffic management center in order to verify the reported incident.	Planned
	The center shall forward the verified emergency information to the responding agency based on the location and nature of the emergency.	Planned
	The center shall update the incident information log once the emergency system operator has verified the incident.	Planned
	The center shall provide the capability for digitized map data to act as the background to the emergency information presented to the emergency system operator.	Existing
	The center shall dispatch emergency vehicles to respond to verified emergencies under center personnel control.	Existing
	The center shall store the current status of all emergency vehicles available for dispatch and those that are dispatched.	Existing
	The center shall relay location and incident details to the responding vehicles.	Existing
	The center shall track the location and status of emergency vehicles responding to an emergency based on information from the emergency vehicle.	Existing
	The center shall provide the capability for digitized map data to act as the background to the information presented to the emergency system operator.	Existing
	The center shall receive traffic images to support dispatch of emergency vehicles.	Planned
	The center shall provide the capability to request remote control of traffic surveillance devices	Planned
	The center shall coordinate response to incidents with other Emergency Management centers to ensure appropriate resources are dispatched and utilized.	Existing
	The center shall collect current traffic and road condition information from traffic management centers for emergency vehicle route calculation.	Planned
	The center shall receive inputs from traffic management and maintenance centers on the location and status of traffic control equipment and work zones along potential emergency routes.	Planned
	The center shall receive status information from care facilities to determine the appropriate facility and its location.	Planned
	The center shall receive asset restriction information from maintenance centers to support the dispatching of appropriate emergency resources.	Planned

Element	Requirement	Status
	The center shall calculate emergency vehicle routes, under center personnel control, based on information from traffic management and maintenance centers.	Planned
	The center shall provide the capability for digitized map data to act as the background to the information presented to the emergency system operator.	Planned
	The center shall assess the status of responding emergency vehicles as part of an incident command.	Existing
Center/ Maintenance Management System	The center shall store the archived data in a focused repository that is suited to a particular set of ITS data users.	Existing
	The center shall exchange information with administrative systems to support the planning and scheduling of winter maintenance activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.	Existing
	The center shall receive equipment availability and materials storage status information from storage facilities to support the scheduling of winter maintenance activities.	Existing
	The center shall determine the need for roadway treatment based on current and forecasted weather information, current usage of treatments and materials, available resources, requests for action from other agencies, and recommendations from the Maintenance Decision Support system, specifically under winter conditions. This supports winter maintenance such as plowing, treating, anti-icing, etc.	Planned
	The center shall assess the current status of all winter maintenance activities, including actual work activities performed, current locations and operational conditions of vehicles, materials and equipment inventories, field equipment status, environmental information, etc.	Existing
	The center shall provide work zone activities affecting the road network including the nature of the maintenance or construction activity, location, impact to the roadway, expected time(s) and duration of impact, anticipated delays, alternate routes, and suggested speed limits. This information may be augmented with images that provide a visual indication of current work zone status and traffic impacts.	Existing
	The center shall provide status information about scheduled maintenance and construction activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations. The information is provided to other management centers such as traffic, emergency, transit, traveler information providers, other maintenance centers, multimodal transportation providers, rail operations, and the media.	Existing
	The center shall exchange information with administrative systems to support the planning and scheduling of maintenance and construction activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.	Existing

Element	Requirement	Status
Center/ MOA Emergency Operations Center	The center shall provide tactical decision support, resource coordination, and communications integration for Incident Commands that are established by first responders to support local management of an incident.	Planned
	The center shall provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.	Planned
	The center shall track and maintain resource information and action plans pertaining to the incident command.	Planned
	The center shall share incident command information with other public safety agencies including resource deployment status, hazardous material information, rail incident information, evacuation advice as well as traffic, road, and weather conditions.	Planned
	The center shall monitor information from Alerting and Advisory Systems such as the Information Sharing and Analysis Centers (ISACs), the National Infrastructure Protection Center (NIPC), the Homeland Security Advisory System (HSAS), etc. The information may include assessments (general incident and vulnerability awareness information), advisories (identification of threats or recommendations to increase preparedness levels), or alerts (information on imminent or in-progress emergencies).	Planned
	The center shall provide the capability to correlate alerts and advisories, incident information, and security sensor and surveillance data.	Planned
	The center shall provide strategic emergency response capabilities such as that of an Emergency Operations Center for large-scale incidents and disasters.	Planned
	The center shall manage coordinated inter-agency responses to and recovery from large-scale emergencies. Such agencies include traffic management, transit, maintenance and construction management, rail operations, and other emergency management agencies.	Planned
	The center shall provide the capability to implement response plans and track progress through the incident by exchanging incident information and distributing response status to allied agencies.	Planned
	The center shall develop, coordinate with other agencies, and store emergency response plans.	Planned
	The center shall track the availability of resources (including vehicles, roadway cleanup, etc.), request additional resources from traffic, maintenance, or other emergency centers if needed.	Planned
	The center shall provide information to the media concerning the status of an emergency response.	Planned
	The center shall develop and exchange evacuation plans with allied agencies prior to the occurrence of a disaster.	Planned
	The center shall provide evacuation information to traffic, transit, maintenance and construction, rail operations, and other emergency management centers as needed.	Planned
	The center shall request resources from transit agencies as needed to support the evacuation.	Planned
	The center shall request traffic management agencies to implement special traffic control strategies and to control evacuation traffic, including traffic on local streets and arterials as well as the major evacuation routes.	Planned

Element	Requirement	Status
Center/ MOA Integrated Transportation Operations and Communications Center	The center shall monitor information from Alerting and Advisory Systems such as the Information Sharing and Analysis Centers (ISACs), the National Infrastructure Protection Center (NIPC), the Homeland Security Advisory System (HSAS), etc. The information may include assessments (general incident and vulnerability awareness information), advisories (identification of threats or recommendations to increase preparedness levels), or alerts (information on imminent or in-progress emergencies).	Planned
	The center shall coordinate the broadcast of wide-area alerts and advisories with other emergency management centers.	Planned
	The center shall monitor, analyze, and store traffic sensor data (speed, volume, occupancy) collected from field elements under remote control of the center.	Planned
	The center shall monitor, analyze, and distribute traffic images from CCTV systems under remote control of the center.	Planned
	The center shall monitor, analyze, and store multimodal crossing and high occupancy vehicle (HOV) lane sensor data under remote control of the center.	Planned
	The center shall distribute road network conditions data (raw or processed) based on collected and analyzed traffic sensor and surveillance data to other centers.	Planned
	The center shall respond to control data from center personnel regarding sensor and surveillance data collection, analysis, storage, and distribution.	Planned
	The center shall remotely control traffic signal controllers.	Planned
	The center shall collect traffic signal controller operational status and compare against the control information sent by the center.	Planned
	The center shall collect traffic signal controller fault data from the field.	Planned
	The center shall implement control plans to coordinate signalized intersections, under control of center personnel, based on data from sensors and surveillance monitoring traffic conditions, incidents, emergency vehicle preemptions, the passage of commercial vehicles with unusual loads, equipment faults, pedestrian crossings, etc.	Planned
	The center shall remotely control dynamic messages signs for dissemination of traffic and other information to drivers.	Planned
	The center shall remotely control driver information systems that communicate directly from a center to the vehicle radio (such as Highway Advisory Radios) for dissemination of traffic and other information to drivers.	Planned
	The center shall collect operational status for the driver information systems equipment (DMS, HAR, etc.).	Planned
	The center shall collect fault data for the driver information systems equipment (DMS, HAR, etc.) for repair.	Planned
	The center shall retrieve locally stored traffic information, including current and forecasted traffic information, road and weather conditions, traffic incident information, information on diversions and alternate routes, closures, and special traffic restrictions (lane/shoulder use, weight restrictions, width restrictions, HOV requirements), etc.	Planned

Element	Requirement	Status
	The center shall distribute traffic data to maintenance and construction centers, transit centers, emergency management centers, and traveler information providers.	Planned
	The center shall distribute traffic data to the media upon request; the capability to provide the information in both data stream and graphical display shall be supported.	Planned
	The center shall provide the capability for center personnel to control the nature of the data that is available to non-traffic operations centers and the media.	Planned
	The center shall receive inputs from the Alerting and Advisory System concerning the possibility or occurrence of severe weather, terrorist activity, or other major emergency, including information provided by the Emergency Alert System.	Planned
	The center shall collect and store traffic flow and image data from the field equipment to detect and verify incidents.	Planned
	The center shall receive inputs concerning upcoming events that would effect the traffic network from event promoters, traveler information service providers, and intermodal freight depots.	Planned
	The center shall exchange incident and threat information with emergency management centers as well as maintenance and construction centers; including notification of existence of incident and expected severity, location, time and nature of incident.	Planned
	The center shall support requests from emergency management centers to remotely control sensor and surveillance equipment located in the field.	Planned
	The center shall provide road network conditions and traffic images to emergency management centers to support the detection, verification, and classification of incidents.	Planned
	The center shall provide video and traffic sensor control commands to the field equipment to detect and verify incidents.	Planned
	The center shall exchange alert information and status with emergency management centers. The information includes notification of a major emergency such as a natural or man-made disaster, civil emergency, or child abduction for distribution to the public. The information may include the alert originator, the nature of the emergency, the geographic area affected by the emergency, the effective time period, and information and instructions necessary for the public to respond to the alert. This may also identify specific information that should not be released to the public.	Planned
	The center shall coordinate planning for incidents with emergency management centers - including pre-planning activities for disaster response, evacuation, and recovery operations.	Planned
	The center shall exchange incident and threat information with emergency management centers as well as maintenance and construction centers; including notification of existence of incident and expected severity, location, time and nature of incident.	Planned

Element	Requirement	Status
	The center shall respond to requests from emergency management to provide traffic management resources to implement special traffic control measures, assist in clean up, verify an incident, etc. This may also involve coordination with maintenance centers.	Planned
	The center shall provide road network conditions and traffic images to emergency management centers, maintenance and construction centers, and traveler information service providers.	Planned
	The center shall exchange road network status assessment information with emergency management and maintenance centers including an assessment of damage sustained by the road network including location and extent of the damage, estimate of remaining capacity, required closures, alternate routes, necessary restrictions, and time frame for repair and recovery.	Planned
	The center shall coordinate planning for evacuation with emergency management centers - including pre-planning activities such as establishing routes, areas to be evacuated, timing, etc.	Planned
	The center shall support requests from emergency management centers to preempt the current traffic control strategy, activate traffic control and closure systems such as gates and barriers, activate safeguard systems, or use driver information systems to support evacuation traffic control plans.	Planned
	The center shall coordinate execution of evacuation strategies with emergency management centers - including activities such as setting closures and detours, establishing routes, updating areas to be evacuated, timing the process, etc.	Planned
	The center shall collect and store CCTV surveillance system (traffic, pedestrian) operational status.	Planned
	The center shall collect and store sensor (traffic, pedestrian, multimodal crossing) fault data and send to the maintenance center for repair.	Planned
	The center shall collect and store CCTV surveillance system (traffic, pedestrian) fault data send to the maintenance center for repair.	Planned
	The center shall collect traffic management data such as operational data, event logs, etc.	Planned
Center/ MOA Maintenance Dispatch Office	The center shall monitor the locations of all maintenance and construction vehicles and other equipment under its jurisdiction.	Planned
	The center shall present location data to center personnel for the fleet of maintenance and construction vehicles and other equipment.	Planned
	The center shall support an interface with a map update provider, or other appropriate data sources, through which updates of digitized map data can be obtained and used as a background for maintenance and construction vehicle tracking.	Planned
	The center shall receive inputs from the Alerting and Advisory System concerning the possibility or occurrence of severe weather, terrorist activity, or other major emergency, including information provided by the Emergency Alert System.	Planned

Element	Requirement	Status
	The center shall exchange alert information and status with emergency management centers. The information includes notification of a major emergency such as a natural or man-made disaster, civil emergency, or child abduction. The information may include the alert originator, the nature of the emergency, the geographic area affected by the emergency, the effective time period, etc.	Existing
	The center shall exchange incident and threat information with emergency management centers as well as traffic management centers; including notification of existence of incident and expected severity, location, time and nature of incident.	Existing
	The center shall coordinate planning for incidents with emergency management centers - including pre-planning activities for disaster response, evacuation, and recovery operations.	Planned
	The center shall respond to requests from emergency management to provide maintenance and construction resources to implement response plans, assist in clean up, verify an incident, etc. This may also involve coordination with traffic management centers and other maintenance centers.	Existing
	The center shall exchange road network status assessment information with emergency management and traffic management centers including an assessment of damage sustained by the road network including location and extent of the damage, estimate of remaining capacity, required closures, alternate routes, necessary restrictions, and time frame for repair and recovery.	Existing
	The center shall provide work zone activities affecting the road network including the nature of the maintenance or construction activity, location, impact to the roadway, expected time(s) and duration of impact, anticipated delays, alternate routes, and suggested speed limits. This information may be augmented with images that provide a visual indication of current work zone status and traffic impacts.	Existing
	The center shall receive information indicating the damage sustained by transportation assets, derived from aerial surveillance, field reports, inspections, tests, and analyses to support incident management.	Planned
	The center shall provide the center personnel with tailored external information, including weather or road condition observations, forecasted weather information or road conditions, current usage of treatments and materials, available resources, equipment and vehicle availability, road network information, and source reliability information.	Planned
	The center shall provide dispatch information to maintenance and construction vehicles based on the outputs of the decision support system, including recommended roadway treatment actions.	Planned
	The center shall respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other winter roadway maintenance.	Planned
	The center shall exchange information with administrative systems to support the planning and scheduling of winter maintenance activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.	Planned

Element	Requirement	Status
	The center shall provide status information about scheduled winter maintenance activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations. The information is provided to other management centers such as traffic, emergency, transit, traveler information providers, other maintenance centers, and the media.	Planned
	The center shall collect current and forecast traffic and weather information from traffic management centers and weather service providers (such as the National Weather Service and value-added sector specific meteorological services).	Planned
	The center shall dispatch and route winter maintenance vehicle drivers and support them with route- specific environmental, incident, advisory, threat, alert, and traffic congestion information.	Planned
	The center shall determine the need for roadway treatment based on current and forecasted weather information, current usage of treatments and materials, available resources, requests for action from other agencies, and recommendations from the Maintenance Decision Support system, specifically under winter conditions. This supports winter maintenance such as plowing, treating, anti-icing, etc.	Planned
	The center shall provide dispatch instructions for vehicle operators based on input parameters from center personnel, specifically for winter conditions. This could include a treatment route, treatment application rates, start and end times, and other treatment instructions.	Planned
	The center shall assess the current status of all winter maintenance activities, including actual work activities performed, current locations and operational conditions of vehicles, materials and equipment inventories, field equipment status, environmental information, etc.	Planned
	The center shall maintain an interface with asset management systems to track the inventory, restrictions, repair needs and status updates of transportation assets (pavement, bridges, signs, etc.) including location, installation and materials information, vendor/contractor, current maintenance status, standard height, width, and weight restrictions.	Planned
	The center shall respond to requests from emergency management and traffic management centers for hazard removal, field equipment repair, and other roadway maintenance.	Existing
	The center shall exchange information with administrative systems to support the planning and scheduling of maintenance activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.	Planned
	The center shall provide emergency management and traffic management centers with information about scheduled maintenance and construction work activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations.	Existing

Element	Requirement	Status
	The center shall collect the status and fault data from roadside equipment, such as traffic, infrastructure, and environmental sensors, highway advisory radio and dynamic message signs, automated roadway treatment systems, barrier and safeguard systems, cameras, traffic signals and override equipment, ramp meters, beacons, security sensors and surveillance equipment, etc., and provide a cohesive view of equipment repair needs.	Existing
	The center shall support an interface with a map update provider, or other appropriate data sources, through which updates of digitized map data can be obtained and used as a background for the scheduling of roadway maintenance and construction activities.	Planned
	The center shall dispatch and route maintenance and construction vehicle drivers and support them with route- specific environmental, incident, advisory, threat, alert, and traffic congestion information.	Planned
	The center shall track the status of roadway maintenance and construction activities by monitoring collected data from the dispatched vehicles and equipment.	Planned
	The center shall provide work zone activities affecting the road network including the nature of the maintenance or construction activity, location, impact to the roadway, expected time(s) and duration of impact, anticipated delays, alternate routes, and suggested speed limits. This information may be augmented with images that provide a visual indication of current work zone status and traffic impacts.	Planned
	The center shall provide status information about scheduled maintenance and construction activities including anticipated closures and impact to the roadway, alternate routes, anticipated delays, closure times, and durations. The information is provided to other management centers such as traffic, emergency, transit, traveler information providers, other maintenance centers, multimodal transportation providers, rail operations, and the media.	Planned
	The center shall collect and respond to feedback concerning scheduled maintenance and construction activities with other management centers such as traffic, emergency, transit, and rail operations.	Planned
	The center shall exchange information with administrative systems to support the planning and scheduling of maintenance and construction activities. This information includes: equipment and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.	Planned
Center/ MOA Signal Control	The center shall monitor, analyze, and distribute traffic images from CCTV systems under remote control of the center.	Planned
	The center shall remotely control traffic signal controllers.	Existing
	The center shall collect traffic signal controller operational status and compare against the control information sent by the center.	Existing
	The center shall collect traffic signal controller fault data from the field.	Existing

Element	Requirement	Status
	The center shall implement control plans to coordinate signalized intersections, under control of center personnel, based on data from sensors and surveillance monitoring traffic conditions, incidents, emergency vehicle preemptions, the passage of commercial vehicles with unusual loads, equipment faults, pedestrian crossings, etc.	Planned
	The center shall collect and store CCTV surveillance system (traffic, pedestrian) operational status.	Planned
	The center shall collect and store sensor (traffic, pedestrian, multimodal crossing) fault data and send to the maintenance center for repair.	Planned
	The center shall collect and store CCTV surveillance system (traffic, pedestrian) fault data send to the maintenance center for repair.	Planned
	The center shall exchange data with maintenance centers concerning the reporting of faulty equipment and the schedule/status of their repair. Information exchanged includes details of new equipment faults, and clearances when the faults are cleared.	Planned
Center/ Motor Carrier Administrative Systems	The center shall manage electronic credentials filing and processing for commercial vehicles.	Planned
	The center shall manage the filing of appropriate taxes for the operation of commercial vehicles.	Planned
	The center shall process requests for payments of electronic credentials and tax filing and maintain an interface to a Financial Institution.	Planned
	The center shall exchange credentials and tax information with other commercial vehicle administration centers - either in other states or the federal government.	Planned
	The center shall provide credentials information about commercial vehicle operators and carriers to authorized requestors such as insurance agencies.	Planned
	The center shall provide commercial vehicle safety data to roadside check facilities.	Planned
	The center shall send data concerning enrollment of commercial vehicles for electronic clearance and tax filing to the appropriate commercial vehicle administration center. The data may include driver and vehicle identification, safety inspections/status, carrier credentials, related citations, and accident information.	Planned
	The center shall monitor the locations and progress of commercial vehicles against their planned routes and raise appropriate warnings based on route monitoring parameters.	Planned
	The center shall collect data from the commercial vehicles carrying freight or from the freight equipment itself. Includes container, trailer, or chassis information regarding identity, type, location, brake wear data, mileage, seal number/type, door open/close status, chassis bare/covered status, tethered / untethered status, bill of lading, and sensor status.	Planned
	The center shall track the progress of freight equipment as it moves from source to destination based on inputs from the commercial vehicles, the freight equipment, intermodal freight depots, shippers, and commercial vehicle administration centers that provide border clearance status information.	Planned
	The center shall send data concerning enrollment and purchase of commercial vehicles credentials and tax filing to the appropriate commercial vehicle administration center.	Planned

Element	Requirement	Status
	The center shall receive compliance review reports from the appropriate commercial vehicle administration centers concerning the operations of the commercial vehicle fleet, including concomitant out-of-service notifications, and carrier warnings/notifications.	Planned
	The center shall support an interface with a commercial vehicle driver that is acting in the role of a commercial vehicle fleet manager for the purposes of obtaining credentials, filing taxes and audit data, and receiving compliance reports and status information.	Planned
	The center shall monitor the identity of a commercial vehicle driver and compare it with the planned driver, generating warnings if the tracked identities do not match the planned assignments.	Planned
	The center shall track the routing and cargo information, including the manifest data plus the chemical characteristics of a hazardous materials (HAZMAT) load being carried by its fleet of commercial vehicles.	Planned
	The center shall provide information concerning commercial vehicles carrying hazardous materials (HAZMAT) upon request from an emergency management center. The information includes the nature of the cargo being carried, identity of the vehicle and unloading instructions.	Planned
	The center shall send an alarm to the appropriate emergency management center when an unauthorized access is attempted on a commercial vehicle.	Planned
Center/ Motor Carrier Management Information System	The center shall provide credentials information about commercial vehicle operators and carriers to authorized requestors such as insurance agencies.	Planned
	The center shall receive and store information on commercial vehicle violations from enforcement agencies as part of the processing of credentials applications.	Planned
	The center shall provide commercial vehicle safety data to roadside check facilities.	Planned
	The center shall collect and review safety inspection reports and violations from the roadside check facilities and pass on appropriate portions to other commercial vehicle administrative centers and commercial vehicle fleet operators.	Planned
Center/ MSCVE Headquarters	The center shall manage electronic credentials filing and processing for commercial vehicles.	Existing
	The center shall exchange credentials and tax information with other commercial vehicle administration centers - either in other states or the federal government.	Existing
	The center shall provide route restrictions information, including hazmat restrictions, to other centers and agencies for distribution to commercial vehicle operators. These centers and agencies may include commercial fleet and freight management operators, traveler information centers, digital map update providers, and other commercial vehicle administration centers.	Existing
Center/ MSCVE Offices	The center shall monitor, analyze, and distribute traffic images from CCTV systems under remote control of the center.	Existing
	The center shall remotely control dynamic messages signs for dissemination of traffic and other information to drivers.	Existing
	The center shall collect operational status for the driver information systems equipment (DMS, HAR, etc.).	Existing

Element	Requirement	Status
	The center shall collect fault data for the driver information systems equipment (DMS, HAR, etc.) for repair.	Existing
Center/ National Weather Service Offices	The center shall collect, process, store, and disseminate weather information to travelers.	Existing
Center/ Pavement Management System	The center shall store the archived data in a focused repository that is suited to a particular set of ITS data users.	Planned
	The center shall include capabilities for archive to archive coordination.	Planned
Center/ Regional Maintenance Stations	The center shall monitor the locations of all maintenance and construction vehicles and other equipment under its jurisdiction.	Existing
	The center shall present location data to center personnel for the fleet of maintenance and construction vehicles and other equipment.	Existing
	The center shall support an interface with a map update provider, or other appropriate data sources, through which updates of digitized map data can be obtained and used as a background for maintenance and construction vehicle tracking.	Planned
	The center shall monitor, analyze, and distribute traffic images from CCTV systems under remote control of the center.	Planned
Center/ SAFER		
	The center shall provide commercial vehicle safety data to roadside check facilities.	Planned
	The center shall collect and review safety inspection reports and violations from the roadside check facilities and pass on appropriate portions to other commercial vehicle administrative centers and commercial vehicle fleet operators.	Planned
	The center shall exchange information with roadside check facilities, including credentials and credentials status information, safety status information, daily site activity data, and citations.	Planned
	The center shall exchange safety and credentials data among other commercial vehicle administration centers; includes border clearance status, credentials information, credentials status information, and safety status information.	Planned
	The center shall provide commercial vehicle accident reports and citations to enforcement agencies.	Planned
	The center shall provide commercial vehicle credentials and safety status information to authorized requestors such as insurance agencies.	Planned
Center/ SAFETYNET	The center shall provide commercial vehicle safety data to roadside check facilities.	Planned
	The center shall collect and review safety inspection reports and violations from the roadside check facilities and pass on appropriate portions to other commercial vehicle administrative centers and commercial vehicle fleet operators.	Planned
Center/ SEPP	The center shall manage electronic credentials filing and processing for commercial vehicles.	Planned
	The center shall process requests for payments of electronic credentials and tax filing and maintain an interface to a Financial Institution.	Planned

Element	Requirement	Status
	The center shall exchange credentials and tax information with other commercial vehicle administration centers - either in other states or the federal government.	Planned
	The center shall provide route restrictions information, including hazmat restrictions, to other centers and agencies for distribution to commercial vehicle operators. These centers and agencies may include commercial fleet and freight management operators, traveler information centers, digital map update providers, and other commercial vehicle administration centers.	Planned
	The center shall provide credentials information about commercial vehicle operators and carriers to authorized requestors such as insurance agencies.	Planned
	The center shall exchange information with roadside check facilities, including credentials and credentials status information, safety status information, daily site activity data, and citations.	Planned
	The center shall exchange safety and credentials data among other commercial vehicle administration centers; includes border clearance status, credentials information, credentials status information, and safety status information.	Planned
Center/ State Emergency Coordination Center	The center shall provide incident command communications with public safety, emergency management, transportation, and other allied response agency centers.	Planned
	The center shall track and maintain resource information and action plans pertaining to the incident command.	Planned
	The center shall share incident command information with other public safety agencies including resource deployment status, hazardous material information, rail incident information, evacuation advice as well as traffic, road, and weather conditions.	Planned
Center/ Transit Agency Dispatch (Placeholder)	The center shall monitor the locations of all transit vehicles within its network.	Planned
	The center shall determine adherence of transit vehicles to their assigned schedule.	Planned
	The center shall support an interface with a map update provider, or other appropriate data sources, through which updates of digitized map data can be obtained and used as a background for transit tracking and dispatch.	Planned
	The center shall provide transit operational data to traveler information service providers.	Planned
	The center shall be able to generate special routes and schedules to support an incident, disaster, evacuation, or other emergency.	Planned
	The center shall collect transit operational data for use in the generation of routes and schedules.	Planned
	The center shall provide instructions or corrective actions to the transit vehicle operators based upon operational needs.	Planned
	The center shall receive threat information and status on the integrity of the transit infrastructure.	Planned
Center/ Transit Agency Websites	The center shall collect, process, store, and disseminate transit routes and schedules, transit transfer options, transit fares, and real-time schedule adherence information to travelers.	Existing

Element	Requirement	Status
Center/ Tunnel Control System	The field element shall receive track status from the rail wayside equipment that can be passed on to the traffic management center. This may include the current status of the tracks and whether a train is approaching.	Existing
	The field element shall control the dynamic message signs (DMS) in the vicinity of a highway-rail intersection (HRI) to advise drivers, cyclists, and pedestrians of approaching trains.	Existing
	The field element shall close the highway-rail intersection (HRI) when a train is approaching using gates, lights/signs, barriers, and traffic control signals.	Existing
	The field element shall support the integrated control of adjacent traffic signals to clear an area in advance of an approaching train and to manage traffic around the intersection.	Existing
	The field element shall activate barrier systems for transportation facilities and infrastructure under center control. Barrier systems include automated or remotely controlled gates, barriers and other systems that manage entry to roadways.	Existing
	The field element shall return barrier system operational status to the controlling center.	Existing
	The field element shall return barrier system fault data to the maintenance center for repair.	Existing
	The field element shall monitor traffic in reversible lanes, including wrong-way vehicles, using sensors and surveillance equipment under center control.	Existing
	The field element shall include automated reversible lane equipment and driver information systems (such as lane control signals) that control traffic in reversible lanes on freeways, under center control.	Existing
	The field element shall provide operational status for the reversible lane field equipment to the center.	Existing
	The field element shall provide fault data for the reversible lane field equipment to the center.	Existing
	The field element shall include sensors to monitor requests from non-highway traffic to cross at multimodal crossings for specified durations (such as draw bridges and miscellaneous other interference crossings between highway traffic and other modes such as river traffic, aircraft, etc.); the sensors are under center control.	Existing
	The field element shall include signals to control traffic at multimodal crossings on surface streets, under center control.	Existing
	The field element shall include driver information systems (such as dynamic messages signs, highway advisory radios (HAR), and equipment that controls warning lights and gates) that advise drivers at multimodal crossings, under center control.	Existing
	The field element shall provide operational status for the sensors, signals, and driver information systems equipment at multimodal crossings to the center.	Existing
	The field element shall provide fault data for the sensors, signals, and driver information systems equipment at multimodal crossings to the center for repair.	Existing
Center/ Vessel Tracking	The center shall collect transit operational data for use in the generation of routes and schedules.	Existing

Element	Requirement	Status
System	The center shall provide instructions or corrective actions to the transit vehicle operators based upon operational needs.	Planned
	The center shall generate the necessary corrective actions which may involve more than the vehicles concerned and more far reaching action, such as, the introduction of extra vehicles, wide area signal priority by traffic management, the premature termination of some services, etc.	Planned
Field/ ASPEN	The roadside check facility equipment shall receive the safety inspection and status information from the commercial vehicle administration center to include information such as safety ratings, inspection summaries, and violation summaries. Corresponds to the safety portion of CVISN snapshots." "	Planned
	The roadside check facility equipment shall provide an interface to inspectors in the field to allow them to safety inspection data including overrides to the pull-in decisions made by the system.	Planned
	The roadside check facility equipment shall forward results of the roadside safety inspections to the commercial vehicle administration center.	Planned
	The roadside check facility equipment shall forward results of the roadside inspections to the commercial vehicle administration center either as needed or on a periodic (e.g. basis). These reports include accident reports, violation notifications, citations, and daily site activity logs.	Planned
Field/ Automated Bridge Anti-icing	The field element shall include devices (such as arterial or freeway controllers, roadway automated treatment systems, barrier and safeguard systems, emissions or pollution systems, and work zone intrusion alert systems) that provide data and status information to other field element devices (such as dynamic message signs, traffic controllers on adjacent intersections), without center control.	Planned
	The field element shall activate automated roadway treatment systems based on environmental or atmospheric conditions. Treatments can be in the form of fog dispersion, anti-icing chemicals, etc.	Existing
	The field element shall return automated roadway treatment system and associated environmental sensor operational status to the maintenance center.	Existing
	The field element shall return automated roadway treatment system and associated environmental sensor fault data to the maintenance center for repair.	Existing
Field/ Automatic Traffic Data Recorders	The field element shall collect, process, digitize, and send traffic sensor data (speed, volume, and occupancy) to the center for further analysis and storage, under center control.	Existing
	The field element shall return sensor and CCTV system operational status to the controlling center.	Existing
	The field element shall return sensor and CCTV system fault data to the controlling center for repair.	Existing
	The field element shall collect traffic, road, and environmental conditions information.	Existing
	The field element shall include the sensors and supporting roadside devices that sense, collect, and send traffic, road, and environmental conditions information to a center for archival.	Existing
	The field element shall collect sensor status and sensor faults from roadside equipment and send it along with the recorded data to a center for archival.	Existing

Element	Requirement	Status
Field/ AVI/WIM	The roadside check facility equipment shall detect the presence of commercial vehicles and freight equipment approaching a facility. Sensors can differentiate between different types of vehicles and determine the number of axles, gross vehicle weight, and the identification of the vehicle and its cargo.	Existing
	The roadside check facility equipment shall receive the credential and credentials status information (e.g. snapshots) from the commercial vehicle administration center to maintain an up to date list of which vehicles are cleared (enrolled) to potentially pass through without stopping.	Existing
	The roadside check facility equipment shall provide an interface to inspectors in the field to allow them to monitor and if necessary override the pull-in decisions made by the system.	Existing
	The roadside check facility equipment shall request and input electronic screening data from the commercial vehicle's electronic tag data.	Existing
	The roadside check facility equipment shall send a pass/pull-in notification to the commercial vehicle and its driver based on the information received from the vehicle, the administration center, enforcement agencies, and the inspector. The message may be sent to the on-board equipment in the commercial vehicle or transmitted to the driver using equipment such as dynamic message signs, red-green lights, flashing signs, etc.	Existing
	The roadside check facility equipment shall detect the presence of commercial vehicles and freight equipment approaching a facility. Sensors can differentiate between different types of vehicles and determine the number of axles, gross vehicle weight, weight per axle, and the identification of the vehicle and its cargo.	Existing
	The roadside check facility equipment shall request and input electronic screening data from the commercial vehicle's electronic tag data.	Existing
	The roadside check facility equipment shall send a pass/pull-in notification to the commercial vehicle and its driver based on the information received from the vehicle and the measurements taken. The message may be sent to the on-board equipment in the commercial vehicle or transmitted to the driver using equipment such as dynamic message signs, red-green lights, flashing signs, etc.	Existing
	The roadside check facility equipment at a border crossing shall receive the border agency clearance results, transportation border clearance assessments, and trip declaration identifiers from the commercial vehicle administration center to be used to screen the incoming commercial vehicles.	Existing
	The roadside check facility equipment at a border crossing shall request and input the tag data from approaching commercial vehicles to determine the identity of the vehicle along with its carrier, driver, and a trip identity.	Existing
	The roadside check facility equipment at a border crossing shall request and input the border clearance data from approaching commercial vehicles to compare against the data received from the center concerning compliance with import/export and immigration regulations.	Existing

Element	Requirement	Status
	The roadside check facility equipment at a border crossing shall send clearance event data regarding action taken at border to the commercial vehicle administration center and to the commercial vehicle. This may include a date/time stamped acceptance or override of system decisions whether to allow release of the vehicle and its cargo.	Existing
Field/ Border Data Collection System	The roadside check facility equipment at a border crossing shall receive the border agency clearance results, transportation border clearance assessments, and trip declaration identifiers from the commercial vehicle administration center to be used to screen the incoming commercial vehicles.	Planned
	The roadside check facility equipment at a border crossing shall request and input the tag data from approaching commercial vehicles to determine the identity of the vehicle along with its carrier, driver, and a trip identity.	Planned
	The roadside check facility equipment at a border crossing shall request and input the border clearance data from approaching commercial vehicles to compare against the data received from the center concerning compliance with import/export and immigration regulations.	Planned
	The roadside check facility equipment at a border crossing shall send clearance event data regarding action taken at border to the commercial vehicle administration center and to the commercial vehicle. This may include a date/time stamped acceptance or override of system decisions whether to allow release of the vehicle and its cargo.	Planned
Field/ Bridge Scour Sensors	The field element shall include infrastructure condition monitoring sensors that monitor the condition of pavement, bridges, tunnels, associated hardware, and other transportation-related infrastructure (e.g., culverts), under maintenance center control.	Existing
	The field element shall provide operational status for the infrastructure condition monitoring sensors to the maintenance center.	Existing
	The field element shall provide fault data for the infrastructure condition monitoring sensors to the maintenance center for repair.	Existing
	The field element shall be remotely controlled by a center.	Existing
	The field element shall provide equipment status and fault indication of security sensor equipment to a center.	Existing
	The field element shall include infrastructure condition and integrity monitoring sensors.	Existing
Field/ Cameras (at AMHS Terminals)	The field element shall include video and/or audio surveillance of traveler secure areas including transit stations, transit stops, rest areas, park and ride lots, and other fixed sites along travel routes (e.g., emergency pull-off areas and traveler information centers).	Existing
	The field element shall be remotely controlled by a center.	Existing
	The field element shall provide equipment status and fault indication of surveillance equipment to a center.	Existing
	The field element shall provide raw video or audio data.	Existing

Element	Requirement	Status
	The field element shall remotely process video and audio data and provide an indication of potential incidents or threats to a center.	Existing
Field/ Cameras (at RWIS)	The field element shall collect, process, and send traffic images to the center for further analysis and distribution.	Existing
	The field element shall return sensor and CCTV system operational status to the controlling center.	Existing
	The field element shall return sensor and CCTV system fault data to the controlling center for repair.	Existing
Field/ Cameras (FAA)		
Field/ Cameras (MOA)	The field element shall collect, process, and send traffic images to the center for further analysis and distribution.	Planned
	The field element shall return sensor and CCTV system operational status to the controlling center.	Planned
	The field element shall return sensor and CCTV system fault data to the controlling center for repair.	Planned
	The field element shall collect, process, and send traffic images to the center for further analysis and distribution.	Planned
	The field element shall remotely process video data and provide an indication of potential incidents to the traffic management center.	Planned
	The field element's video devices shall be remotely controlled by a traffic management center.	Planned
	The field element shall provide operational status and fault data for the incident detection devices to the traffic management center.	Planned
Field/ Highway Advisory Radio	The field element shall include driver information systems that communicate directly from a center to the vehicle radio (such as Highway Advisory Radios) for dissemination of traffic and other information to drivers, under center control.	Existing
	The field element shall provide operational status for the driver information systems equipment (DMS, HAR, etc.) to the center.	Planned
	The field element shall provide fault data for the driver information systems equipment (DMS, HAR, etc.) to the center for repair.	Existing
Field/ Infra-red Inspection System (IRIS)	The roadside check facility equipment shall provide an interface to inspectors in the field to allow them to safety inspection data including overrides to the pull-in decisions made by the system.	Existing
Field/ Integrated Roadside Operations Computer	The roadside check facility equipment shall provide an interface to inspectors in the field to allow them to monitor and if necessary override the pull-in decisions made by the system.	Planned
	The roadside check facility equipment shall request and input electronic screening data from the commercial vehicle's electronic tag data.	Planned

Element	Requirement	Status
	The roadside check facility equipment shall send a pass/pull-in notification to the commercial vehicle and its driver based on the information received from the vehicle, the administration center, enforcement agencies, and the inspector. The message may be sent to the on-board equipment in the commercial vehicle or transmitted to the driver using equipment such as dynamic message signs, red-green lights, flashing signs, etc.	Planned
	The roadside check facility equipment shall send a record of daily activities at the facility including summaries of screening events and inspections to the commercial vehicle administration center.	Planned
	The roadside check facility equipment shall request and input electronic screening data from the commercial vehicle's electronic tag data.	Planned
	The roadside check facility equipment shall send a pass/pull-in notification to the commercial vehicle and its driver based on the information received from the vehicle and the measurements taken. The message may be sent to the on-board equipment in the commercial vehicle or transmitted to the driver using equipment such as dynamic message signs, red-green lights, flashing signs, etc.	Planned
	The roadside check facility equipment shall receive the safety inspection and status information from the commercial vehicle administration center to include information such as safety ratings, inspection summaries, and violation summaries. Corresponds to the safety portion of CVISN snapshots." "	Planned
	The roadside check facility equipment shall provide an interface to inspectors in the field to allow them to safety inspection data including overrides to the pull-in decisions made by the system.	Planned
	The roadside check facility equipment shall request and input electronic safety data from the commercial vehicle's electronic tag data. This includes driver logs, on-board safety data, safety inspection records, commercial vehicle breach information, as well as freight equipment information.	Planned
	The roadside check facility equipment shall send a pass/pull-in notification to the commercial vehicle and its driver based on the information received from the vehicle, the administration center, and the inspector. The message may be sent to the on-board equipment in the commercial vehicle or transmitted to the driver using equipment such as dynamic message signs, red-green lights, flashing signs, etc.	Planned
	The roadside check facility equipment shall forward results of the roadside safety inspections to the commercial vehicle administration center.	Planned
Field/ Permanent Dynamic Message Signs (Anchorage)	The field element shall include dynamic messages signs for dissemination of traffic and other information to drivers, under center control; the DMS may be either those that display variable text messages, or those that have fixed format display(s) (e.g. vehicle restrictions, or lane open/close).	Existing
	The field element shall provide operational status for the driver information systems equipment (DMS, HAR, etc.) to the center.	Existing
	The field element shall provide fault data for the driver information systems equipment (DMS, HAR, etc.) to the center for repair.	Existing

Element	Requirement	Status
Field/ Permanent Dynamic Message Signs (Permanent @ FOX Station)	The field element shall include dynamic messages signs for dissemination of traffic and other information to drivers, under center control; the DMS may be either those that display variable text messages, or those that have fixed format display(s) (e.g. vehicle restrictions, or lane open/close).	Existing
	The field element shall provide operational status for the driver information systems equipment (DMS, HAR, etc.) to the center.	Existing
	The field element shall provide fault data for the driver information systems equipment (DMS, HAR, etc.) to the center for repair.	Existing
Field/ Permanent Dynamic Message Signs (Port of Anchorage)	The field element shall include dynamic messages signs for dissemination of traffic and other information to drivers, under center control; the DMS may be either those that display variable text messages, or those that have fixed format display(s) (e.g. vehicle restrictions, or lane open/close).	Existing
	The field element shall provide operational status for the driver information systems equipment (DMS, HAR, etc.) to the center.	Existing
	The field element shall provide fault data for the driver information systems equipment (DMS, HAR, etc.) to the center for repair.	Existing
Field/ Pre-emption and Priority Systems (Fairbanks)	The field element shall respond to requests for indicator (e.g., signal) preemption requests from emergency vehicles at intersections, pedestrian crossings, and multimodal crossings.	Existing
	The field element shall respond to requests for indicator (e.g., signal) priority requests from transit vehicles at intersections, pedestrian crossings, and multimodal crossings.	Existing
	The field element shall notify controlling traffic management center and maintenance center that the signal timing has changed based on a signal preemption/priority request to help those centers determine whether a fault detected at the signal is a true malfunction or due to a signal override.	Planned
	The field element shall include sensors (such as traffic, environmental, and work zone intrusion detection sensors) that provide data and status information to other field element devices (such as dynamic message signs, ramp meters, traffic signals, work zone intrusion alert systems), without center control.	Existing
	The field element shall include sensors (such as traffic, environmental, and work zone intrusion detection sensors) that receive control information from other field element devices, without center control.	Existing
Field/ Pre-emption and Priority Systems (MOA)	The field element shall respond to requests for indicator (e.g., signal) preemption requests from emergency vehicles at intersections, pedestrian crossings, and multimodal crossings.	Existing
	The field element shall respond to requests for indicator (e.g., signal) priority requests from transit vehicles at intersections, pedestrian crossings, and multimodal crossings.	Planned
	The field element shall notify controlling traffic management center and maintenance center that the signal timing has changed based on a signal preemption/priority request to help those centers determine whether a fault detected at the signal is a true malfunction or due to a signal override.	Existing

Element	Requirement	Status
	The field element shall include sensors (such as traffic, environmental, and work zone intrusion detection sensors) that provide data and status information to other field element devices (such as dynamic message signs, ramp meters, traffic signals, work zone intrusion alert systems), without center control.	Existing
	The field element shall include sensors (such as traffic, environmental, and work zone intrusion detection sensors) that receive control information from other field element devices, without center control.	Existing
Field/ Pre-emption and Priority Systems (State)	The field element shall respond to requests for indicator (e.g., signal) preemption requests from emergency vehicles at intersections, pedestrian crossings, and multimodal crossings.	Existing
	The field element shall respond to requests for indicator (e.g., signal) priority requests from transit vehicles at intersections, pedestrian crossings, and multimodal crossings.	Existing
	The field element shall notify controlling traffic management center and maintenance center that the signal timing has changed based on a signal preemption/priority request to help those centers determine whether a fault detected at the signal is a true malfunction or due to a signal override.	Planned
	The field element shall include sensors (such as traffic, environmental, and work zone intrusion detection sensors) that provide data and status information to other field element devices (such as dynamic message signs, ramp meters, traffic signals, work zone intrusion alert systems), without center control.	Planned
Field/ Remote Video Monitoring System	The field element shall collect, process, and send traffic images to the center for further analysis and distribution.	Existing
	The field element shall return sensor and CCTV system operational status to the controlling center.	Planned
	The field element shall return sensor and CCTV system fault data to the controlling center for repair.	Planned
Field/ Road Weather Information Systems (RWIS)	The field element shall include surface and sub-surface environmental sensors that measure road surface temperature, moisture, icing, salinity, and other measures.	Existing
	The field element shall include environmental sensors that measure weather conditions including temperature, wind, humidity, precipitation, and visibility.	Existing
	The field element's environmental sensors shall be remotely controlled by a maintenance center.	Existing
	The field element shall provide environmental sensor equipment operational status to the controlling center or maintenance vehicle.	Existing
	The field element shall provide environmental sensor equipment fault indication to the controlling center or maintenance vehicle.	Existing
	The field element shall provide weather and road surface condition data to centers.	Existing
	The field element shall collect traffic, road, and environmental conditions information.	Existing
	The field element shall include the sensors and supporting roadside devices that sense, collect, and send traffic, road, and environmental conditions information to a center for archival.	Existing
	The field element shall collect sensor status and sensor faults from roadside equipment and send it along with the recorded data to a center for archival.	Planned
Field/ Seismic Sensors	The field element shall include motion and intrusion detection sensors.	Planned

Element	Requirement	Status
	The field element shall remotely process security sensor data and provide an indication of potential incidents or threats to a center.	Planned
Field/ Traffic Detectors	The field element shall collect, process, digitize, and send traffic sensor data (speed, volume, and occupancy) to the center for further analysis and storage, under center control.	Existing
	The field element shall return sensor and CCTV system operational status to the controlling center.	Existing
	The field element shall return sensor and CCTV system fault data to the controlling center for repair.	Existing
Field/ Traffic Signal Controllers	The field element shall control traffic signals at intersections and on main highways for urban and rural areas, under center control.	Existing
	The field element shall return traffic signal controller operational status to the controlling center.	Existing
	The field element shall return traffic signal controller fault data to the maintenance center for repair.	Planned
	The field element shall include sensors (such as traffic, environmental, and work zone intrusion detection sensors) that provide data and status information to other field element devices (such as dynamic message signs, ramp meters, traffic signals, work zone intrusion alert systems), without center control.	Existing
	The field element shall include sensors (such as traffic, environmental, and work zone intrusion detection sensors) that receive control information from other field element devices, without center control.	Existing
Field/ Train Signal System	The field element shall support the integrated control of adjacent traffic signals to clear an area in advance of an approaching train and to manage traffic around the intersection.	Existing
	The field element shall include automated reversible lane equipment and driver information systems (such as lane control signals) that control traffic in reversible lanes on freeways, under center control.	Existing
	The field element shall provide operational status for the reversible lane field equipment to the center.	Existing
	The field element shall provide fault data for the reversible lane field equipment to the center.	Existing
	The field element shall include signals to control traffic at multimodal crossings on surface streets, under center control.	Existing
	The field element shall provide operational status for the sensors, signals, and driver information systems equipment at multimodal crossings to the center.	Existing
	The field element shall provide fault data for the sensors, signals, and driver information systems equipment at multimodal crossings to the center for repair.	Existing
Field/ Train Whistle Noise Reduction Horns		
Field/ Train Whistle Noise Reduction Sensors		
Field/ Varibale Speed Limit System		

Element	Requirement	Status
Field/ Weather and Pavement Sensors (Military Bases)		
Field/ Weather and Pavement Sensors (NWS)		
Field/ Weigh and Border Station Roadside and Handheld Equipment	The roadside check facility equipment shall detect the presence of commercial vehicles and freight equipment approaching a facility. Sensors can differentiate between different types of vehicles and determine the number of axles, gross vehicle weight, and the identification of the vehicle and its cargo.	Existing
	The roadside check facility equipment shall receive the credential and credentials status information (e.g. snapshots) from the commercial vehicle administration center to maintain an up to date list of which vehicles are cleared (enrolled) to potentially pass through without stopping.	Existing
	The roadside check facility equipment shall provide an interface to inspectors in the field to allow them to monitor and if necessary override the pull-in decisions made by the system.	Existing
	The roadside check facility equipment shall request and input electronic screening data from the commercial vehicle's electronic tag data.	Existing
	The roadside check facility equipment shall send a pass/pull-in notification to the commercial vehicle and its driver based on the information received from the vehicle, the administration center, enforcement agencies, and the inspector. The message may be sent to the on-board equipment in the commercial vehicle or transmitted to the driver using equipment such as dynamic message signs, red-green lights, flashing signs, etc.	Existing
	The roadside check facility equipment shall detect the presence of commercial vehicles and freight equipment approaching a facility. Sensors can differentiate between different types of vehicles and determine the number of axles, gross vehicle weight, weight per axle, and the identification of the vehicle and its cargo.	Existing
	The roadside check facility equipment shall request and input electronic screening data from the commercial vehicle's electronic tag data.	Existing
	The roadside check facility equipment shall send a pass/pull-in notification to the commercial vehicle and its driver based on the information received from the vehicle and the measurements taken. The message may be sent to the on-board equipment in the commercial vehicle or transmitted to the driver using equipment such as dynamic message signs, red-green lights, flashing signs, etc.	Existing
	The roadside check facility equipment shall receive information concerning commercial vehicles and freight equipment approaching a facility that are being pulled in for safety inspections.	Existing
	The roadside check facility equipment shall receive the safety inspection and status information from the commercial vehicle administration center to include information such as safety ratings, inspection summaries, and violation summaries. Corresponds to the safety portion of CVISN snapshots." "	Existing

Element	Requirement	Status
	The roadside check facility equipment shall provide an interface to inspectors in the field to allow them to safety inspection data including overrides to the pull-in decisions made by the system.	Existing
	The roadside check facility equipment shall forward results of the roadside safety inspections to the commercial vehicle administration center.	Existing
	The roadside check facility equipment shall record the results of roadside inspections carried using an inspector's hand held terminal interface.	Existing
	The roadside check facility equipment shall provide an interface for an inspector to add comments to the inspection results.	Existing
	The roadside check facility equipment shall forward results of the roadside inspections to the commercial vehicle administration center either as needed or on a periodic (e.g. basis). These reports include accident reports, violation notifications, citations, and daily site activity logs.	Existing
General Public Vehicle	The vehicle shall receive formatted traffic information from a center and present it to the driver.	Existing
	The vehicle shall receive event information from a center and present it to the driver.	Planned
	The vehicle shall receive wide-area alerts and present it to the driver.	Planned
	The vehicle shall present information to the driver in audible or visual forms without impairing the driver's ability to control the vehicle in a safe manner.	Existing
	The vehicle shall provide the capability for a driver to report an emergency and summon assistance.	Existing
	The vehicle shall provide the capability to accept input from a driver via a panic button or some other functionally similar form of input device provided as part of the in-vehicle equipment.	Existing
	The vehicle shall provide the capability to automatically identify that a collision has occurred using equipment such as collision detection sensors with an interface to mayday type equipment that would automatically detect vehicle problems and send appropriate distress signals to a center.	Planned
Media Systems (T.V. and Radio)		
Paymentech		
Regional 911 System (Placeholder)	The center shall support the interface to the Emergency Telecommunications System (e.g. 911 or 7-digit call routing) to receive emergency notification information and provide it to the emergency system operator.	Existing
	The center shall receive emergency call information from 911 services and present the possible incident information to the emergency system operator.	Existing
	The center shall receive emergency call information from motorist call-boxes and present the possible incident information to the emergency system operator.	Existing
	The center shall receive emergency call information from mayday service providers and present the possible incident information to the emergency system operator.	Existing
	The center shall forward the verified emergency information to the responding agency based on the location and nature of the emergency.	Existing

Element	Requirement	Status
	The center shall update the incident information log once the emergency system operator has verified the incident.	Planned
Smart Call Boxes		
State Treasury	The center shall process requests for payments of electronic credentials and tax filing and maintain an interface to a Financial Institution.	Existing
	The center shall exchange credentials and tax information with other commercial vehicle administration centers - either in other states or the federal government.	Existing
Travelers/ Personal Communications/Computing Devices (en-route)	The personal traveler interface shall receive traffic information from a center and present it to the traveler.	Existing
	The personal traveler interface shall receive transit information from a center and present it to the traveler.	Existing
	The personal traveler interface shall receive event information from a center and present it to the traveler.	Planned
	The personal traveler interface shall receive evacuation information from a center and present it to the traveler.	Planned
	The personal traveler interface shall receive wide-area alerts and present it to the traveler.	Planned
	The personal traveler interface shall provide the capability for digitized map data to act as the background to the information presented to the traveler.	Planned
	The personal traveler interface shall support traveler input in audio or manual form.	Existing
	The personal traveler interface shall present information to the traveler in audible or visual forms, consistent with a personal device.	Existing
	The personal traveler interface shall receive traffic information from a center and present it to the traveler upon request.	Existing
	The personal traveler interface shall receive transit information from a center and present it to the traveler upon request.	Existing
	The personal traveler interface shall receive yellow pages information (such as lodging, restaurants, theaters, bicycle facilities, and other tourist activities) from a center and present it to the traveler upon request.	Existing
	The personal traveler interface shall receive event information from a center and present it to the traveler upon request.	Planned
	The personal traveler interface shall receive evacuation information from a center and present it to the traveler.	Planned
	The personal traveler interface shall receive wide-area alerts and present it to the traveler.	Planned
	The personal traveler interface shall accept reservations for confirmed trip plans.	Existing
	The personal traveler interface shall support payment for services, such as confirmed trip plans, tolls, transit fares, parking lot charges, map updates, and advanced payment for tolls.	Existing
	The personal traveler interface shall present information to the traveler in audible or visual forms consistent with a personal device, and suitable for travelers with hearing and vision physical disabilities.	Planned

Element	Requirement	Status
	The personal traveler interface shall receive traffic information from a center and present it to the traveler.	Existing
	The personal traveler interface shall receive transit information from a center and present it to the traveler.	Existing
	The personal traveler interface shall receive event information from a center and present it to the traveler.	Planned
	The personal traveler interface shall receive evacuation information from a center and present it to the traveler.	Planned
	The personal traveler interface shall receive wide-area alerts and present it to the traveler.	Planned
	The personal traveler interface shall provide the capability for digitized map data to act as the background to the information presented to the traveler.	Planned
	The personal traveler interface shall support traveler input in audio or manual form.	Existing
	The personal traveler interface shall present information to the traveler in audible or visual forms, consistent with a personal device.	Existing
	The personal traveler interface shall receive traffic information from a center and present it to the traveler upon request.	Existing
	The personal traveler interface shall receive transit information from a center and present it to the traveler upon request.	Existing
	The personal traveler interface shall receive yellow pages information (such as lodging, restaurants, theaters, bicycle facilities, and other tourist activities) from a center and present it to the traveler upon request.	Existing
	The personal traveler interface shall receive event information from a center and present it to the traveler upon request.	Planned
	The personal traveler interface shall receive evacuation information from a center and present it to the traveler.	Planned
	The personal traveler interface shall receive wide-area alerts and present it to the traveler.	Planned
	The personal traveler interface shall accept reservations for confirmed trip plans.	Existing
	The personal traveler interface shall support payment for services, such as confirmed trip plans, tolls, transit fares, parking lot charges, map updates, and advanced payment for tolls.	Existing
	The personal traveler interface shall provide digitized map data to act as the background to the information presented to the traveler.	Planned
	The personal traveler interface shall support traveler input in audio or manual form.	Planned
	The personal traveler interface shall present information to the traveler in audible or visual forms consistent with a personal device, and suitable for travelers with hearing and vision physical disabilities.	Planned
	The personal traveler interface shall provide the capability for a traveler to request and confirm multi-modal route guidance from a specified source to a destination.	Planned
	The personal traveler interface shall forward user preferences, background information, constraints, and payment information to the supplying traveler information center.	Existing

Element	Requirement	Status
	The personal traveler interface shall present information to the traveler in audible or visual forms consistent with a personal device, and suitable for travelers with hearing and vision physical disabilities.	Planned
	The personal traveler interface shall support an interface with a map update provider, or other appropriate data sources, through which updates of digitized map data can be obtained and used for route guidance displays.	Planned
	The personal traveler interface shall provide the capability for a traveler to report an emergency and summon assistance.	Existing
	The personal traveler interface shall provide the capability to accept input from a traveler via a panic button or some other functionally similar form of input device provided as part of the traveler's personal portable device.	Existing
	When initiated by a traveler, the personal traveler interface shall forward a request for assistance to the center containing the traveler's current location and identity.	Existing
	The personal traveler interface shall acknowledge the request for emergency assistance.	Existing
Vehicle/ ADOTPF Maintenance Vehicle AVL	The vehicle shall provide the vehicle's current location to other in-vehicle functions.	Existing
	The vehicle shall calculate the location from one or more sources of position data. These location referencing systems include position systems such as GPS, DGPS, odometer and differential odometers.	Existing
Vehicle/ Commercial Vehicle On-Board Systems	The commercial vehicle shall compute the location of the commercial vehicle and its freight equipment based on inputs from commercial vehicle measures (e.g. identity, distance traveled, etc.) and a vehicle location determination function.	Existing
	The commercial vehicle shall provide details of the route input from the commercial vehicle fleet management center.	Existing
	The commercial vehicle shall provide warnings to the driver and the commercial vehicle fleet management center when the vehicle's location has deviated from its planned route.	Planned
	The commercial vehicle shall maintain the driver's daily log, vehicle location, mileage, and trip activity (includes screening, inspection and border clearance event data as well as fare payments) and distribute it to the driver and to the commercial vehicle fleet management center upon request.	Planned
	The commercial vehicle shall provide on-board vehicle data to the commercial vehicle fleet management center upon request - includes location, credentials, driver license citations, fuel purchase data, identity details, inspection data, log data, service records, safety systems diagnostics, and freight equipment data.	Existing
	The commercial vehicle shall maintain the interface between the vehicle, its driver, and the commercial vehicle fleet management center for dispatch, routing, and special instructions as well as payment, and enrollment information.	Existing
	The commercial vehicle shall compute the location of the commercial vehicle and its freight equipment based on inputs from a vehicle location determination function.	Planned

Element	Requirement	Status
	The commercial vehicle shall monitor information concerning the freight equipment including cargo type, HAZMAT designation (if any) for the cargo, cargo weight, the type of container in which the cargo is held, safety condition of the cargo, etc.	Planned
	The commercial vehicle shall forward information concerning the freight equipment on to its fleet and freight management center as well as the roadside check facility.	Planned
	The commercial vehicle shall send notification of a hazmat spill to appropriate emergency management center in case of an incident including the information from cargo sensors, vehicle location, and the carrier identification.	Planned
	The commercial vehicle shall receive pass/pull-in messages from the roadside check facilities and present them to the driver in either audible or visual forms.	Existing
	The commercial vehicle shall respond to requests to provide data accumulated on-board the vehicle to roadside check facilities for inspection including driver logs, electronic identifiers, credentials, border clearance data, and other screening data such as cargo status, hazmat identifiers, out of service status, vehicle axle weight, vehicle weight, and time.	Existing
	The commercial vehicle shall respond to requests to provide the identity, status and other information from the electronic cargo lock tag, if so equipped, to roadside check facilities, including border crossings.	Planned
	The commercial vehicle shall support an interface to a commercial vehicle driver that is also acting in the role of a commercial vehicle fleet manager to set up routes, pay necessary taxes, obtain proper credentials, and write the identifiers to the electronic tag for the driver, vehicle, and carrier.	Planned
	The commercial vehicle shall receive pass/pull-in messages from the roadside check facilities and present them to the driver in either audible or visual forms.	Existing
	The commercial vehicle shall respond to requests to provide on-board safety inspection data to roadside check facilities including vehicle identification, driver logs, and characteristics data for initiating safety checking. Results of the inspection are read back into the on-board equipment.	Existing
	The commercial vehicle shall monitor on-board systems pertaining to the safety and security of the vehicle, its driver, and its cargo/freight equipment; and provide the information to the driver, roadside check facilities, and commercial fleet management centers.	Planned
	The commercial vehicle shall provide information concerning a breach or tamper event on a commercial vehicle or its attached freight equipment to roadside check facilities and to the commercial fleet management center, the information includes identity, type of breach, location, and time.	Planned
	The commercial vehicle shall receive and store driver assignments and associated driver identity characteristic keys from the commercial vehicle fleet management center.	Planned
	The commercial vehicle shall detect when an unauthorized commercial vehicle driver attempts to drive their vehicle based on stored driver identity information; passing the information on to the commercial vehicle fleet management center.	Existing

Element	Requirement	Status
	The commercial vehicle shall activate commands to safely disable the commercial vehicle when an unauthorized driver is detected; either in a stand-alone fashion or in response to inputs from the commercial vehicle fleet management center.	Existing
Vehicle/ EMS Vehicle AVL	The vehicle shall provide the vehicle's current location to other in-vehicle functions.	Existing
	The vehicle shall calculate the location from one or more sources of position data. These location referencing systems include position systems such as GPS, DGPS, odometer and differential odometers.	Existing
Vehicle/ EMS Vehicle On-board Systems	The emergency vehicle, including roadway service patrols, shall compute the location of the emergency vehicle based on inputs from a vehicle location determination function.	Existing
	The emergency vehicle, including roadway service patrols, shall send the vehicle's location and operational data to the center for emergency management and dispatch.	Existing
	The emergency vehicle, including roadway service patrols, shall receive incident details and a suggested route when dispatched to a scene.	Existing
	The emergency vehicle shall send the current en route status (including estimated time of arrival) and requests for emergency dispatch updates.	Existing
	The emergency vehicle shall send requests to traffic signal control equipment at the roadside to preempt the signal.	Existing
	The emergency vehicle shall provide the personnel on-board with dispatch information, including incident type and location, and forward an acknowledgment from personnel to the center that the vehicle is on its way to the incident scene.	Existing
	The emergency vehicle shall send patient status information to the care facility along with a request for further information.	Planned
	The emergency vehicle shall forward care facility status information to emergency vehicle personnel, including the location, specialized services, quality of care, waiting time, number of rooms available, and emergency room status of hospitals or emergency care providers.	Planned
	The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that are allocated to an incident.	Existing
	The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the incident site such as the extent of injuries, identification of vehicles and people involved, hazardous material, etc.	Existing
	The emergency vehicle shall provide an interface to the center for emergency personnel to transmit information about the current incident response status such as the identification of the resources on site, site management strategies in effect, and current clearance status.	Existing
Vehicle/ Ferries AVL	The vehicle shall provide the vehicle's current location to other in-vehicle functions.	Existing

Element	Requirement	Status
	The vehicle shall calculate the location from one or more sources of position data. These location referencing systems include position systems such as GPS, DGPS, odometer and differential odometers.	Existing
Vehicle/ Ferries On-board Systems	The transit vehicle shall compute the location of the transit vehicle based on inputs from a vehicle location determination function.	Existing
	The transit vehicle shall support the computation of the location of a transit vehicle using on-board sensors to augment the location determination function. This may include proximity to the transit stops or other known reference points as well as recording trip length.	Existing
	The transit vehicle shall receive transit route information for its assigned route including transit service instructions, traffic information, road conditions, and other information for the operator.	Existing
	The transit vehicle shall use the route information and its current location to determine the deviation from the predetermined schedule.	Planned
	The vehicle shall collect and process environmental sensor data, including air temperature, wind speed, surface temperature, traction conditions, etc.	Existing
	The vehicle shall transmit environmental sensor data to the center along with location and timestamp information.	Existing
Vehicle/ Law Enforcement Vehicle AVL	The vehicle shall provide the vehicle's current location to other in-vehicle functions.	Existing
	The vehicle shall calculate the location from one or more sources of position data. These location referencing systems include position systems such as GPS, DGPS, odometer and differential odometers.	Existing
Vehicle/ Law Enforcement Vehicle On-board Systems	The emergency vehicle, including roadway service patrols, shall compute the location of the emergency vehicle based on inputs from a vehicle location determination function.	Existing
	The emergency vehicle, including roadway service patrols, shall send the vehicle's location and operational data to the center for emergency management and dispatch.	Existing
	The emergency vehicle, including roadway service patrols, shall receive incident details and a suggested route when dispatched to a scene.	Existing
	The emergency vehicle shall send the current en route status (including estimated time of arrival) and requests for emergency dispatch updates.	Existing
	The emergency vehicle shall send requests to traffic signal control equipment at the roadside to preempt the signal.	Existing
	The emergency vehicle shall provide the personnel on-board with dispatch information, including incident type and location, and forward an acknowledgment from personnel to the center that the vehicle is on its way to the incident scene.	Existing
	The emergency vehicle shall receive dispatch instructions sufficient to enable emergency personnel in the field to implement an effective incident response. It includes local traffic, road, and weather conditions, hazardous material information, and the current status of resources that are allocated to an incident.	Existing

Element	Requirement	Status
Vehicle/ Maintenance Vehicle On-board Systems (MOA)	The maintenance and construction vehicle shall compute the location of the vehicle based on inputs from a vehicle location determination function.	Planned
	The maintenance and construction vehicle shall send the timestamped vehicle location to the controlling center.	Planned
	The maintenance and construction vehicle shall respond to dispatch information from the center, presented to the vehicle operator for acknowledgement and returning status.	Planned
	The maintenance and construction vehicle shall monitor materials information including remaining quantity and current application rate of materials on the vehicle.	Planned
	The maintenance and construction vehicle shall respond to dispatch information from the center, presented to the vehicle operator for acknowledgement and returning status.	Existing
	The maintenance and construction vehicle shall send operational data to the center including the operational state of the maintenance equipment (e.g., blade up/down, spreader pattern), types and quantities of materials used for construction and maintenance activities, and a record of the actual work performed.	Planned
Vehicle/ Maintenance Vehicle On-board Systems (State)	The maintenance and construction vehicle shall compute the location of the vehicle based on inputs from a vehicle location determination function.	Planned
	The maintenance and construction vehicle shall send the timestamped vehicle location to the controlling center.	Planned
	The maintenance and construction vehicle shall respond to dispatch information from the center, presented to the vehicle operator for acknowledgement and returning status.	Planned
	The maintenance and construction vehicle shall monitor materials information including remaining quantity and current application rate of materials on the vehicle.	Planned
	The maintenance and construction vehicle shall respond to dispatch information from the center, presented to the vehicle operator for acknowledgement and returning status.	Existing
	The maintenance and construction vehicle shall send operational data to the center including the operational state of the maintenance equipment (e.g., blade up/down, spreader pattern), types and quantities of materials used for construction and maintenance activities, and a record of the actual work performed.	Planned
Vehicle/ MOA Maintenance Vehicle AVL	The vehicle shall provide the vehicle's current location to other in-vehicle functions.	Existing
	The vehicle shall calculate the location from one or more sources of position data. These location referencing systems include position systems such as GPS, DGPS, odometer and differential odometers.	Planned
Vehicle/ Transit Vehicle AVL (Placeholder)	The vehicle shall provide the vehicle's current location to other in-vehicle functions.	Existing
	The vehicle shall calculate the location from one or more sources of position data. These location referencing systems include position systems such as GPS, DGPS, odometer and differential odometers.	Existing
Vehicle/ Transit Vehicle On-board Systems (Placeholder)	The transit vehicle shall compute the location of the transit vehicle based on inputs from a vehicle location determination function.	Existing

Element	Requirement	Status
	The transit vehicle shall support the computation of the location of a transit vehicle using on-board sensors to augment the location determination function. This may include proximity to the transit stops or other known reference points as well as recording trip length.	Existing
	The transit vehicle shall receive transit route information for its assigned route including transit service instructions, traffic information, road conditions, and other information for the operator.	Existing
	The transit vehicle shall use the route information and its current location to determine the deviation from the predetermined schedule.	Planned
	The transit vehicle shall calculate the estimated times of arrival (ETA) at transit stops.	Planned
	The transit vehicle shall send priority requests to traffic signal controllers at intersections, pedestrian crossings, and multimodal crossings on the roads (surface streets) and freeway (ramp controls) network that enable a transit vehicle schedule deviation to be corrected.	Existing
Weather Prediction System	The field element shall include environmental sensors that measure weather conditions including temperature, wind, humidity, precipitation, and visibility.	Planned
	The field element shall remotely aggregate environmental sensor data with environmental data collected from maintenance and construction vehicles.	Planned

5.6 Appendix B: Interconnect Diagrams

Alaska's interconnect diagrams illustrate all of Alaska's existing and planned connections between ITS elements in the state. Interconnect diagrams further the operational concept, and create the framework for system integration. Stakeholders can use the interconnect diagrams to begin to understand how their respective systems will integrate with other systems across the state, and together with other stakeholders develop consensus and understanding of system integration. At this stage in the process the specific types of information that flow across each interconnect are not yet defined. The focus here is to not get bogged downed down with the specific information flows, but rather confirm that system-to-system interconnections are correct and offer the best means of exchanging data. Due to the magnitude of the architecture flows in the architecture, it is often easier to begin defining interconnects first then architecture flows. With that said, the Inter-connect diagrams provide stakeholders the ability to more easily verify system-to-system connections, without having to process extra details associated with the more numerous architecture flows.

Each block shown in the interconnect diagram represents an ITS element. The name of the stakeholder associated with that element is shown in the top shaded portion the block. The interconnect lines between elements are solid or dashed, indicating existing or planned connections.

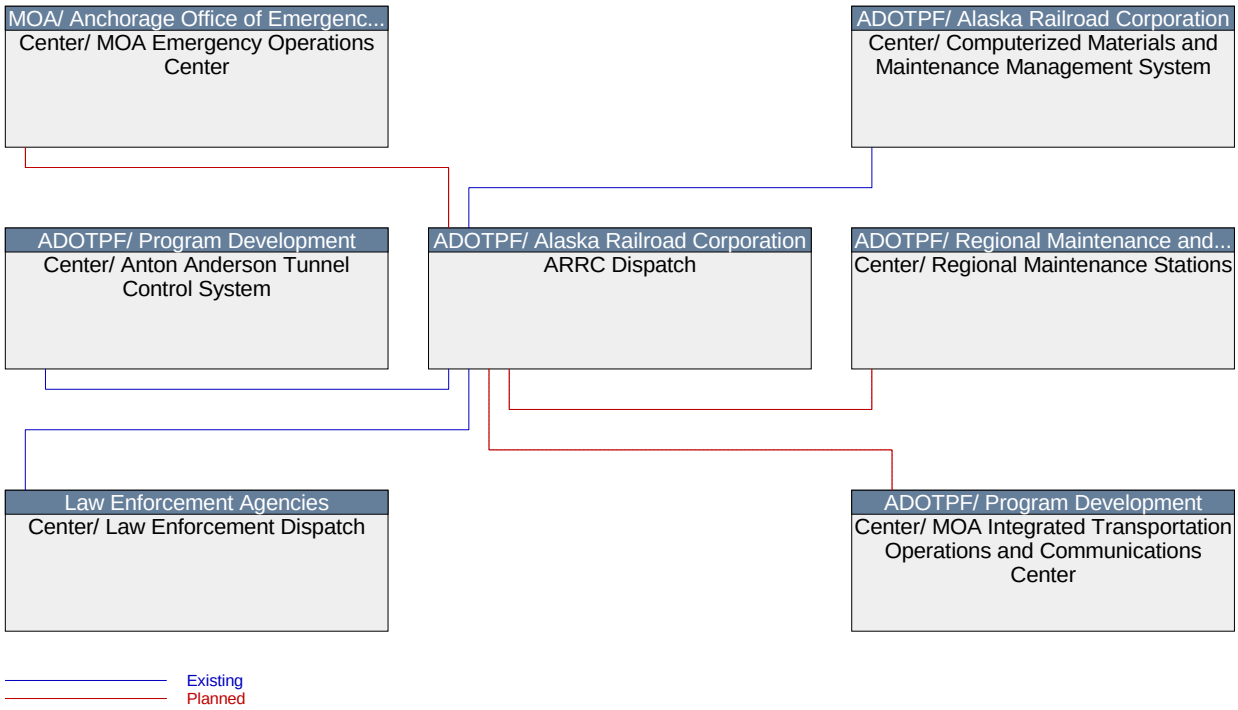


Figure 5-27:
Interconnect Diagram for Alaska Railroad Corporation Dispatch

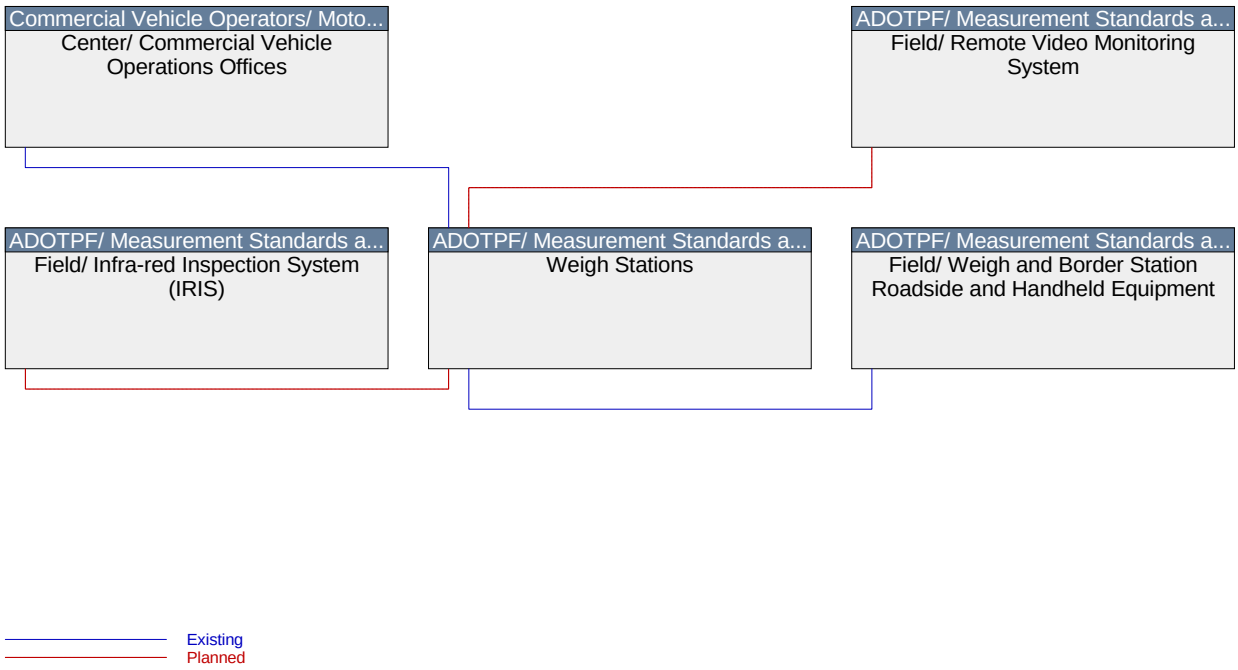


Figure 5-28:
Interconnect Diagram for Weigh Stations

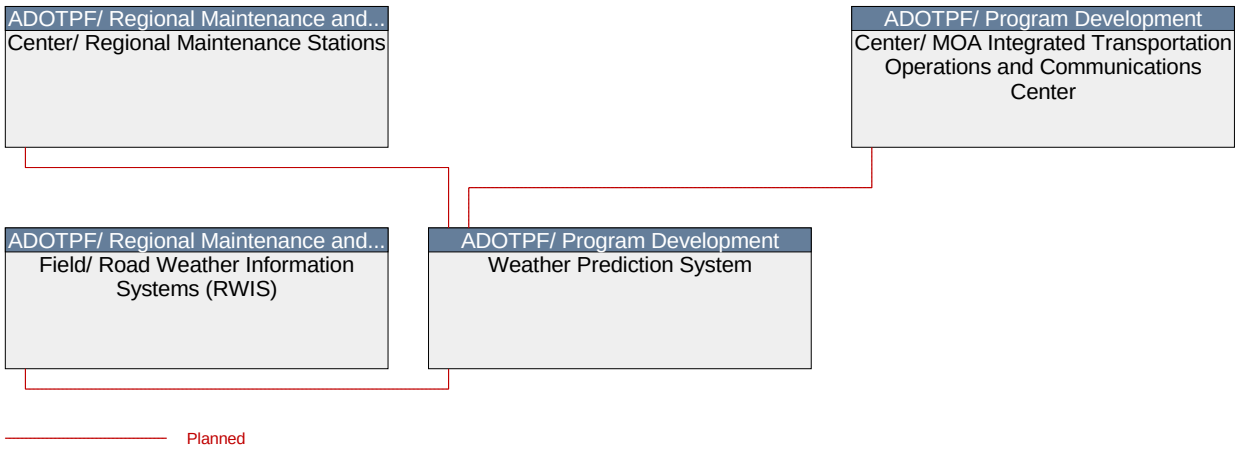


Figure 5-29:
Interconnect Diagram for Weather Prediction System

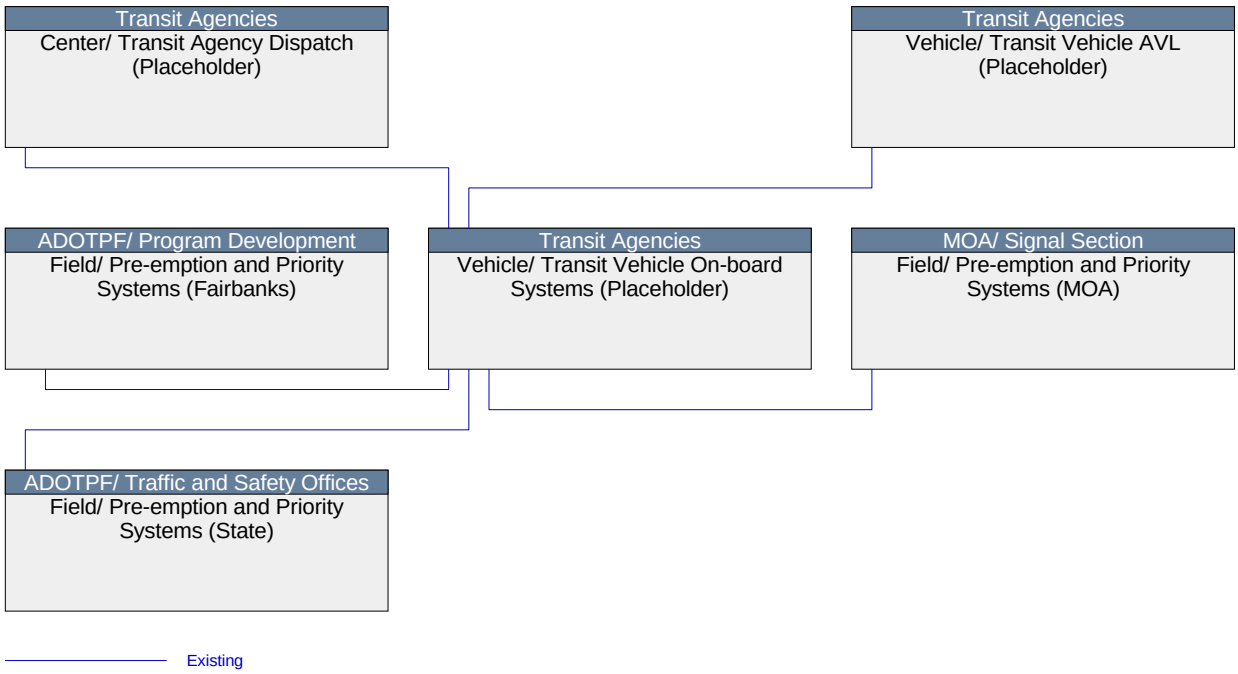


Figure 5-30:
Interconnect Diagram for Transit Vehicle On-board Systems (Placeholder)

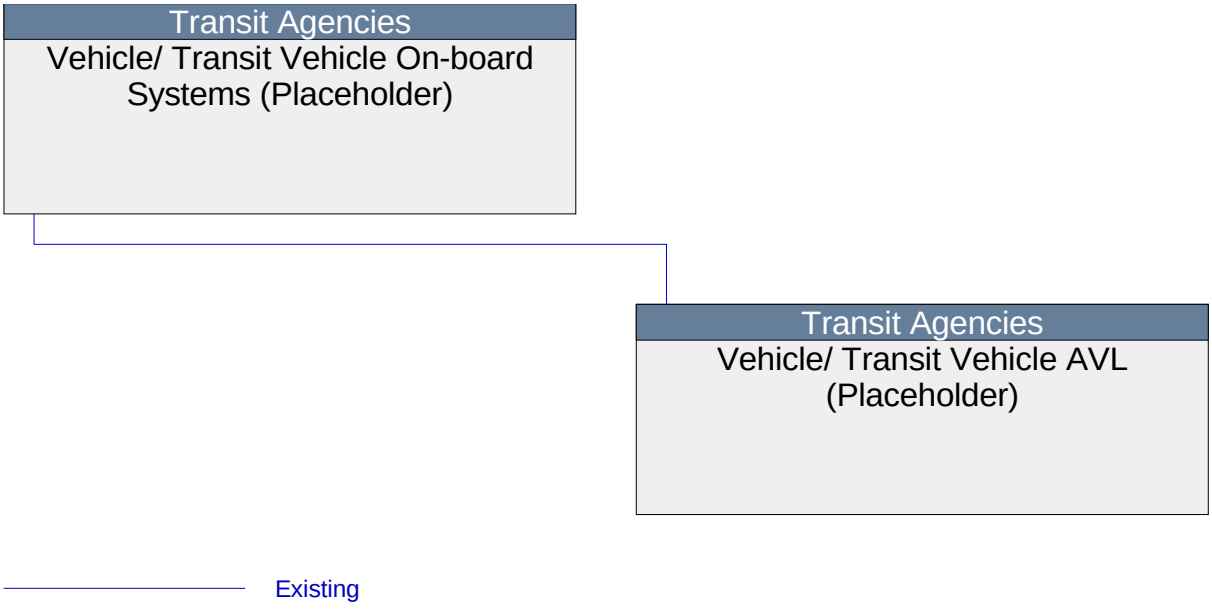


Figure 5-31:
Interconnect Diagram for Transit Vehicle AVL

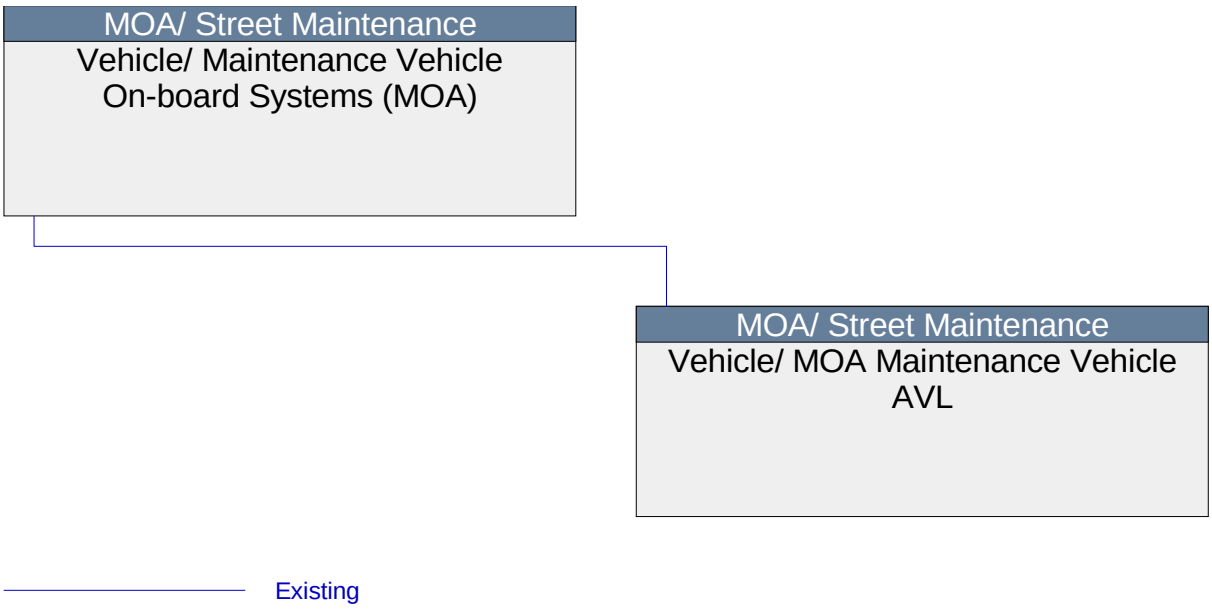


Figure 5-32:
Interconnect Diagram for MOA Maintenance Vehicle AVL

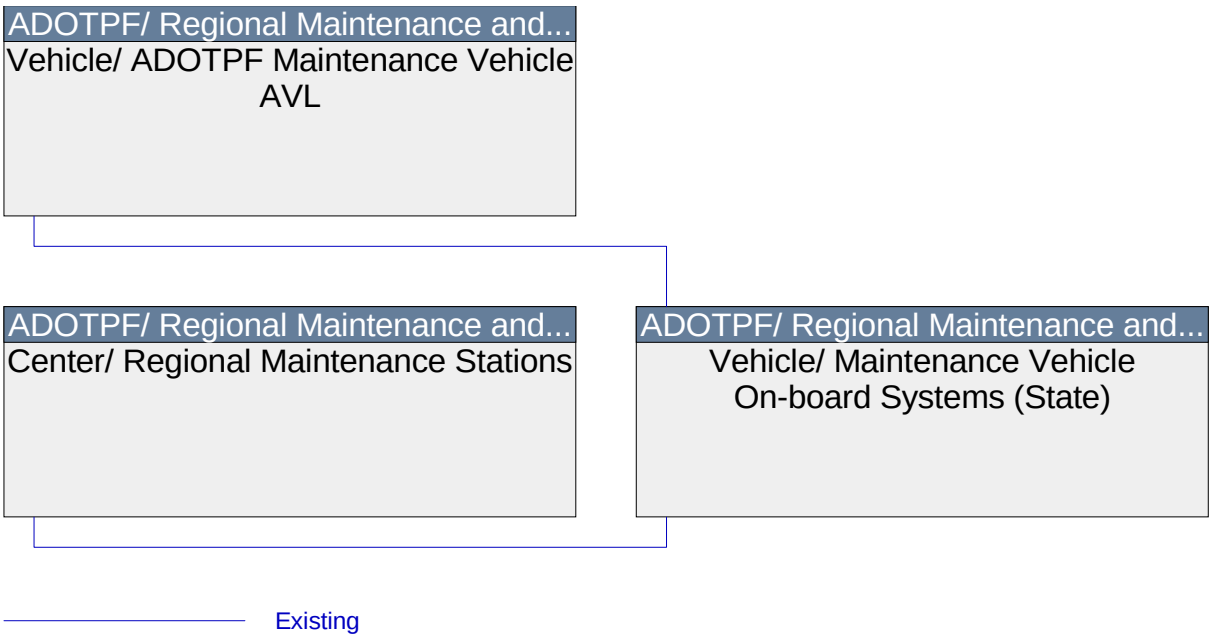


Figure 5-33:
Interconnect Diagram for Maintenance Vehicle On-board System (State)

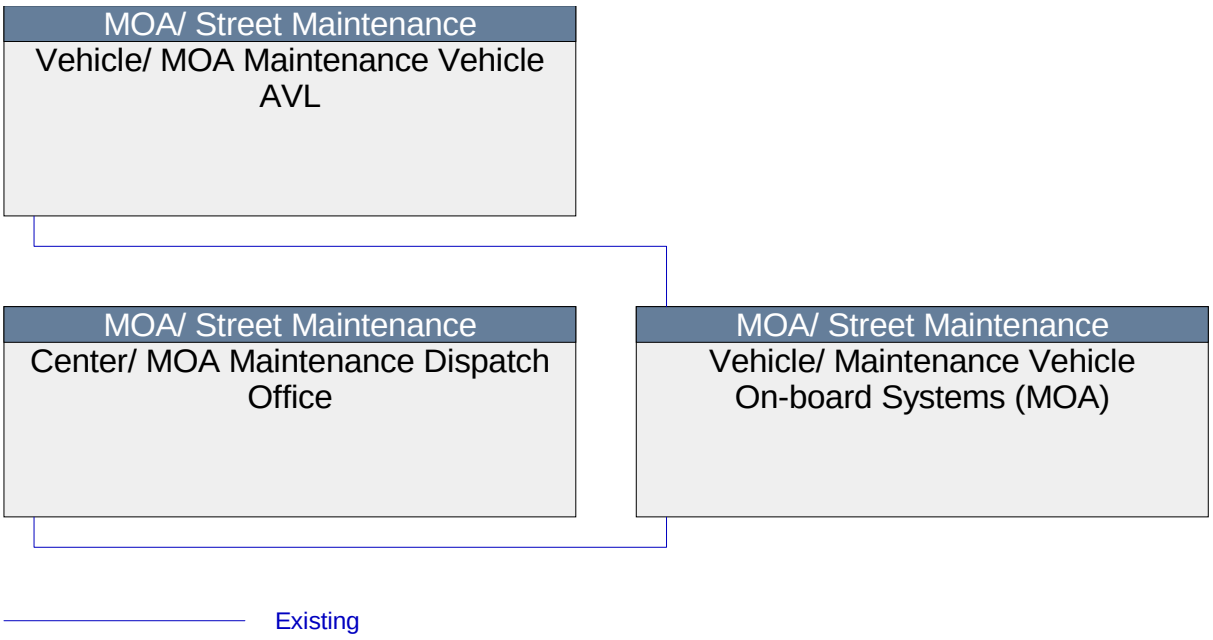


Figure 5-34:
Interconnect Diagram for Maintenance Vehicle On-board Systems (MOA)

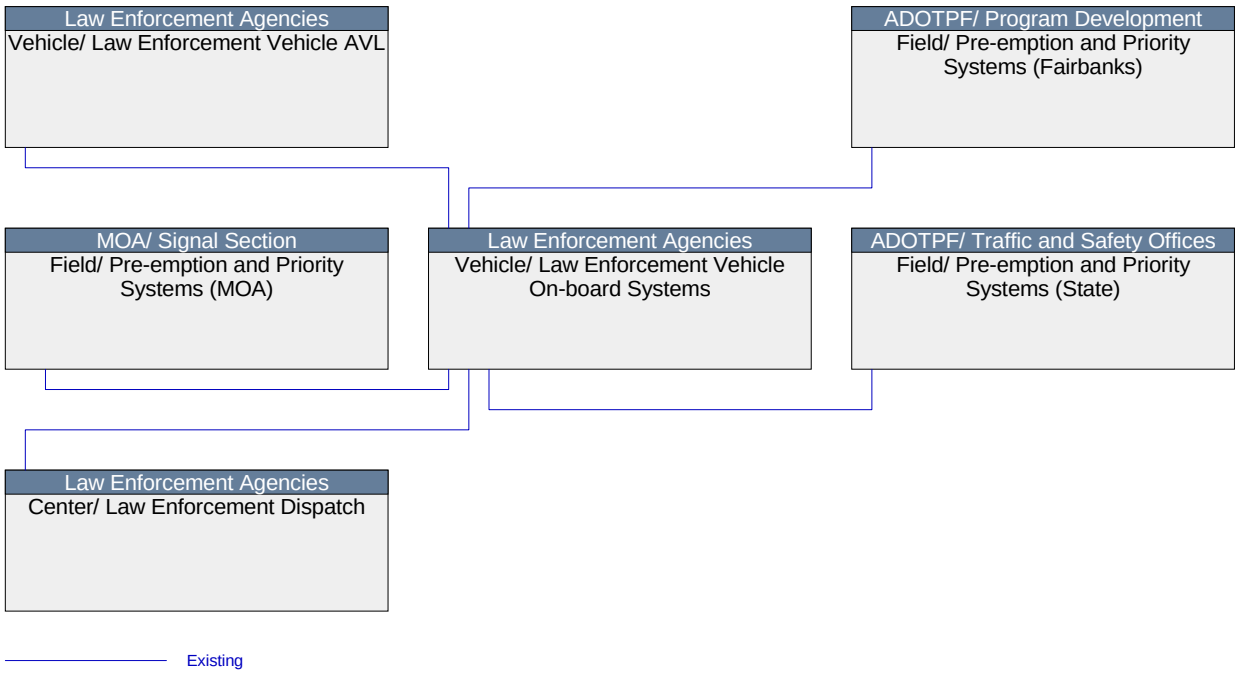


Figure 5-35:
Interconnect Diagram for Law Enforcement Vehicle On-board Systems (Placeholder)

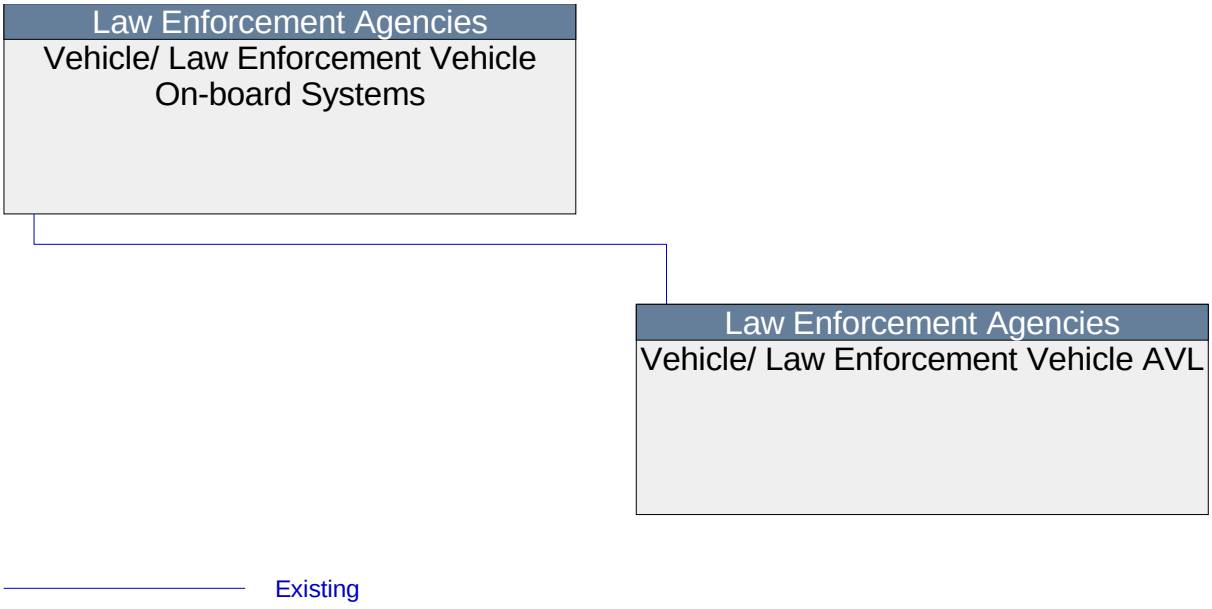


Figure 5-36:
Interconnect Diagram for Law Enforcement Vehicle AVL

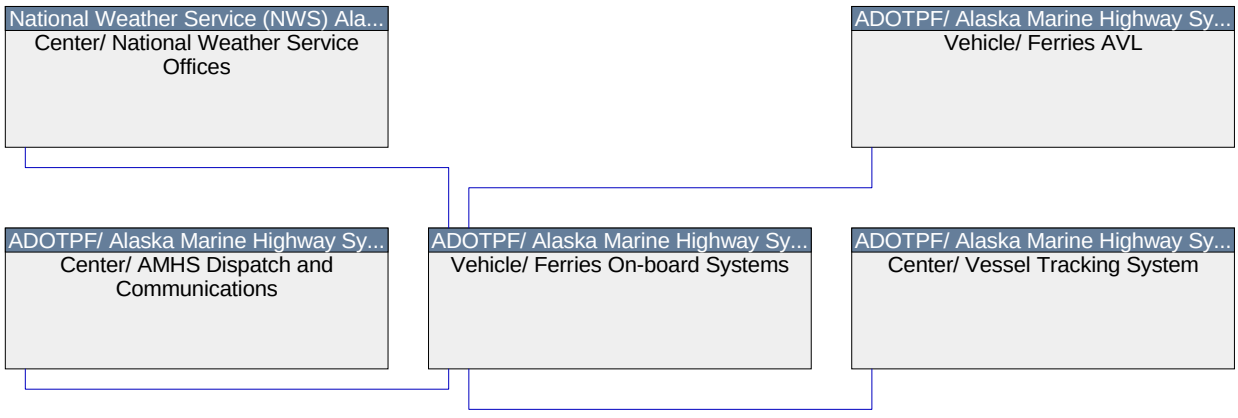


Figure 5-37:
Interconnect Diagram for Ferries On-board Systems

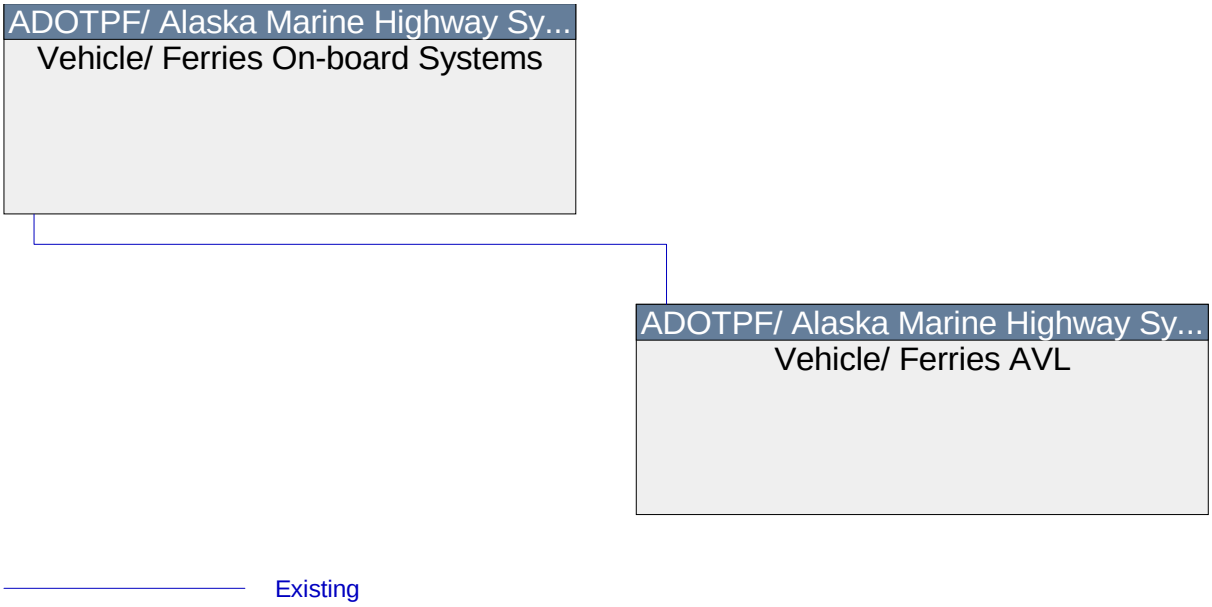


Figure 5-38:
Interconnect Diagram for Ferries AVL

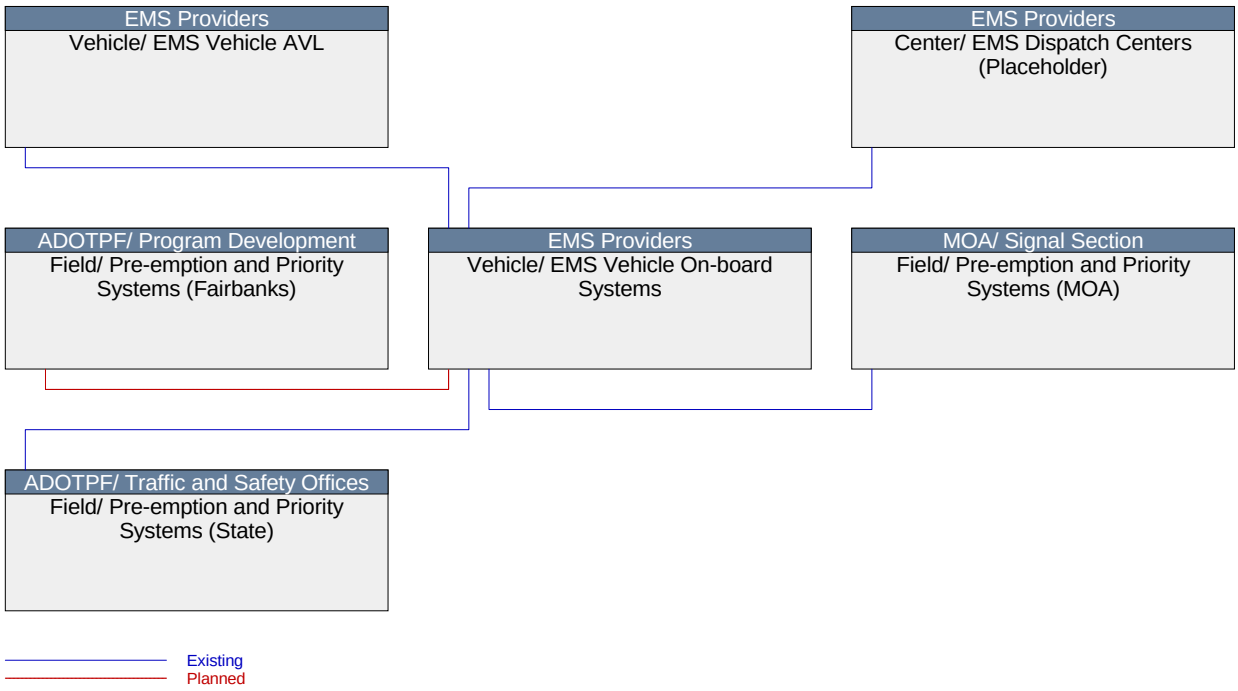


Figure 5-39:
Interconnect Diagram for EMS Vehicle On-Board Systems (Placeholder)

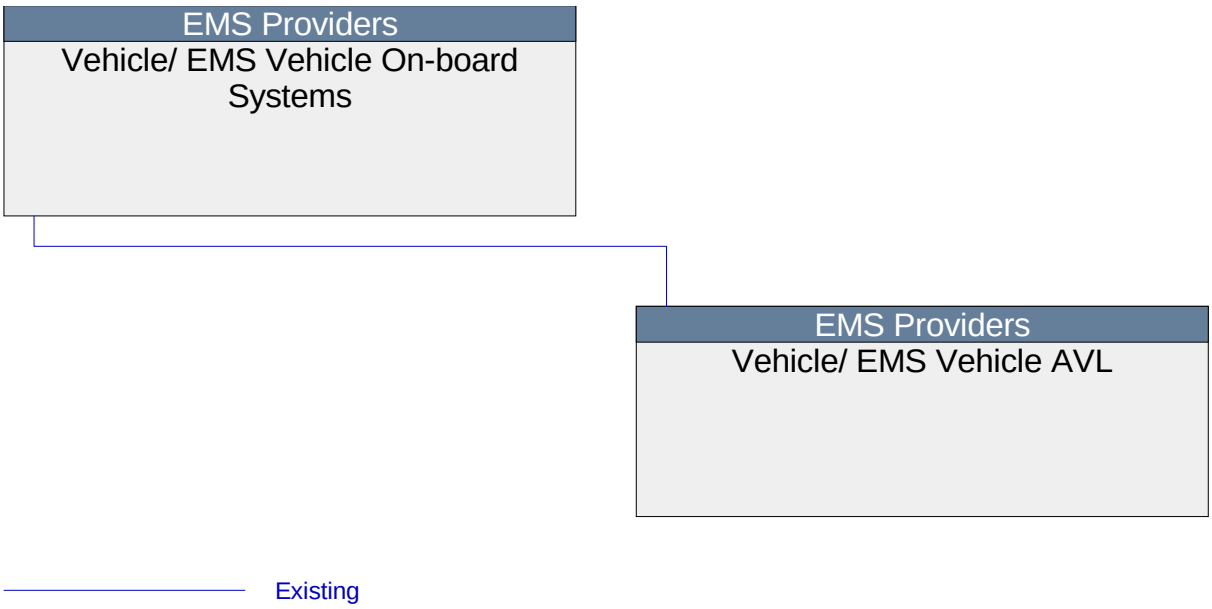


Figure 5-40:
Interconnect Diagram for EMS Vehicle AVL

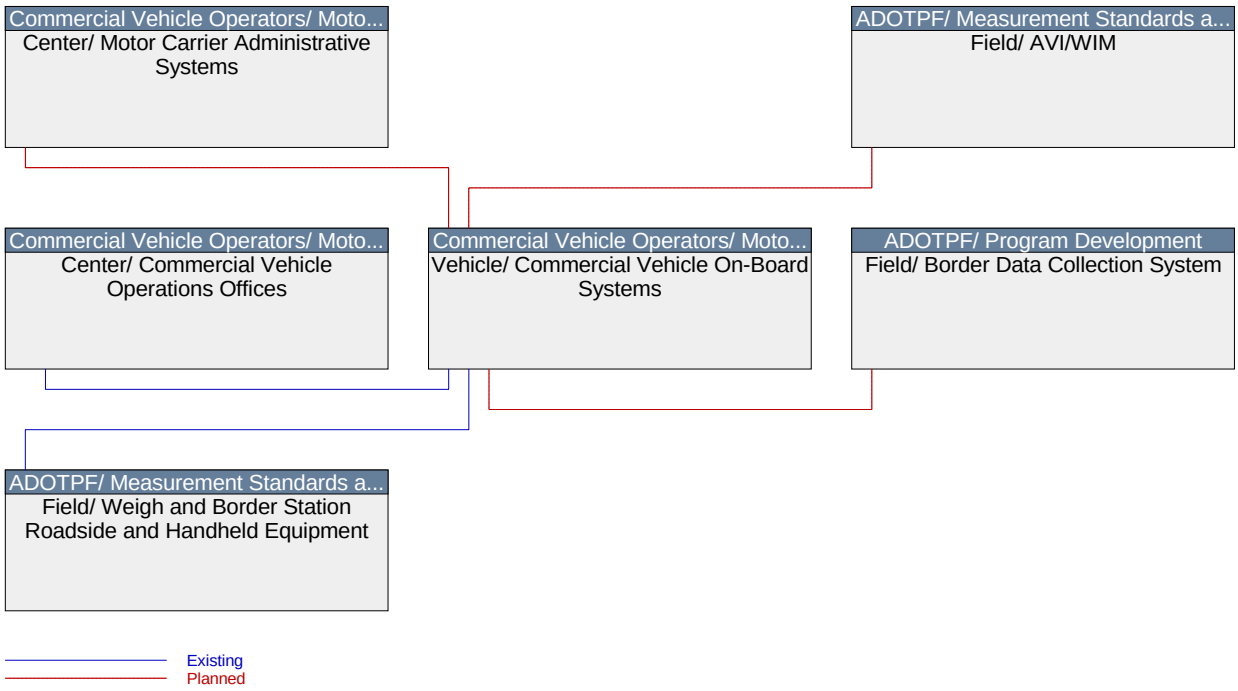


Figure 5-41:
Interconnect Diagram for Commercial Vehicle On-Board Systems

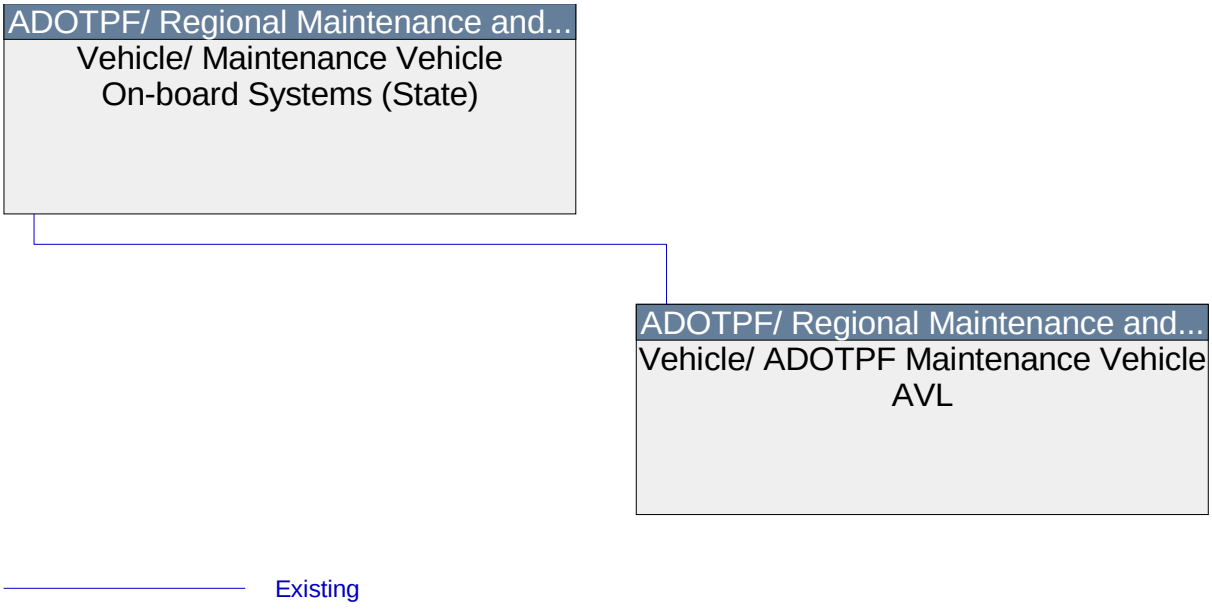


Figure 5-42:
Interconnect Diagram for ADOT&PF Maintenance Vehicle AVL

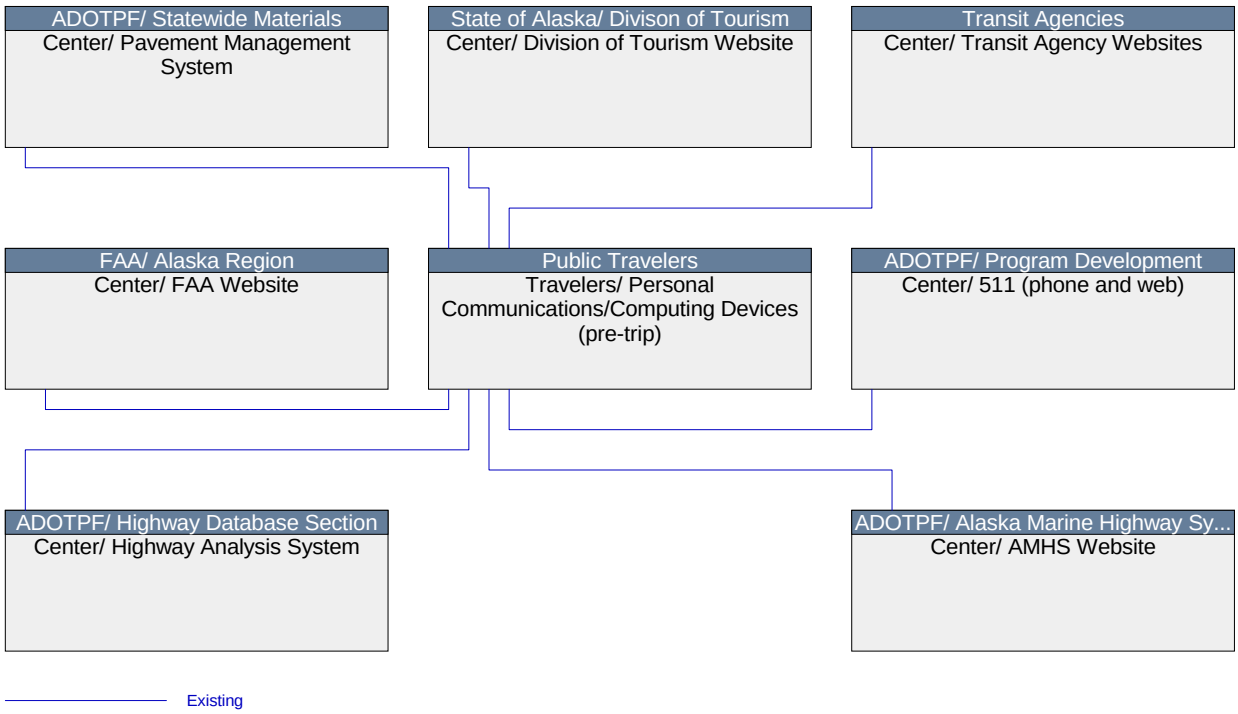


Figure 5-43:
Interconnect Diagram for Personal Communications/ Computing Devices (used pre-trip)

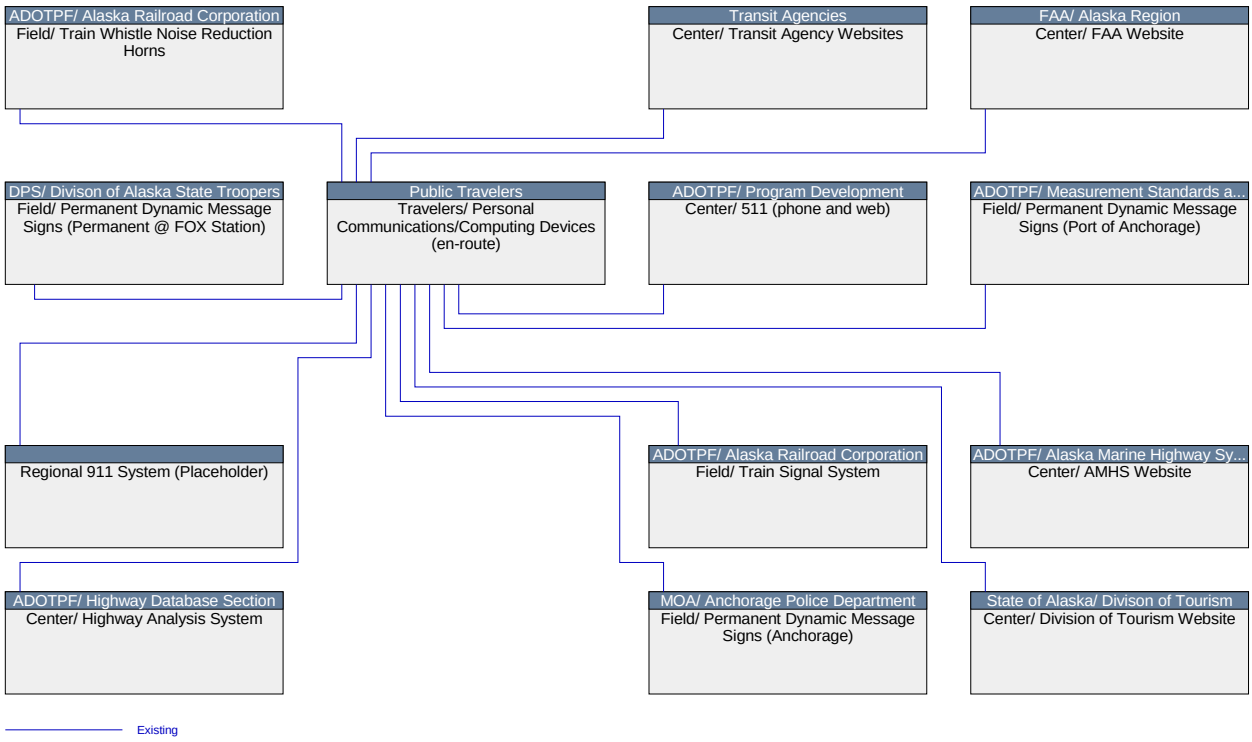


Figure 5-44:
Interconnect Diagram for Personal Communications/ Computing Devices (used en-route)

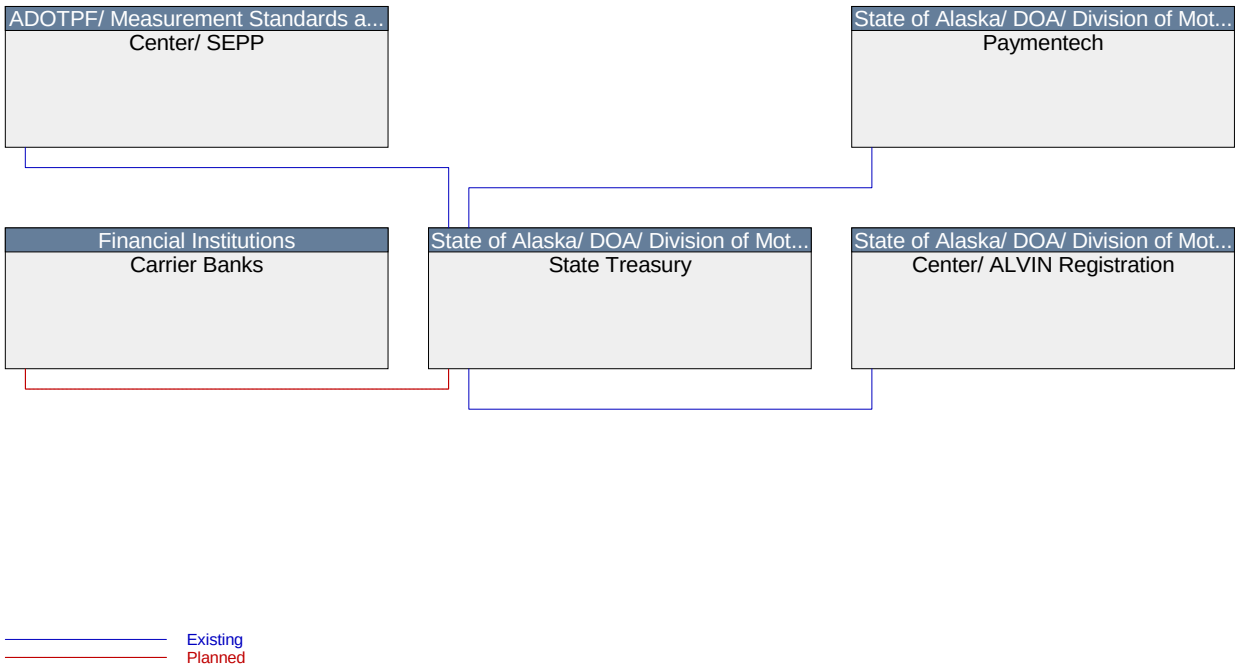


Figure 5-45:
Interconnect Diagram for State Treasury

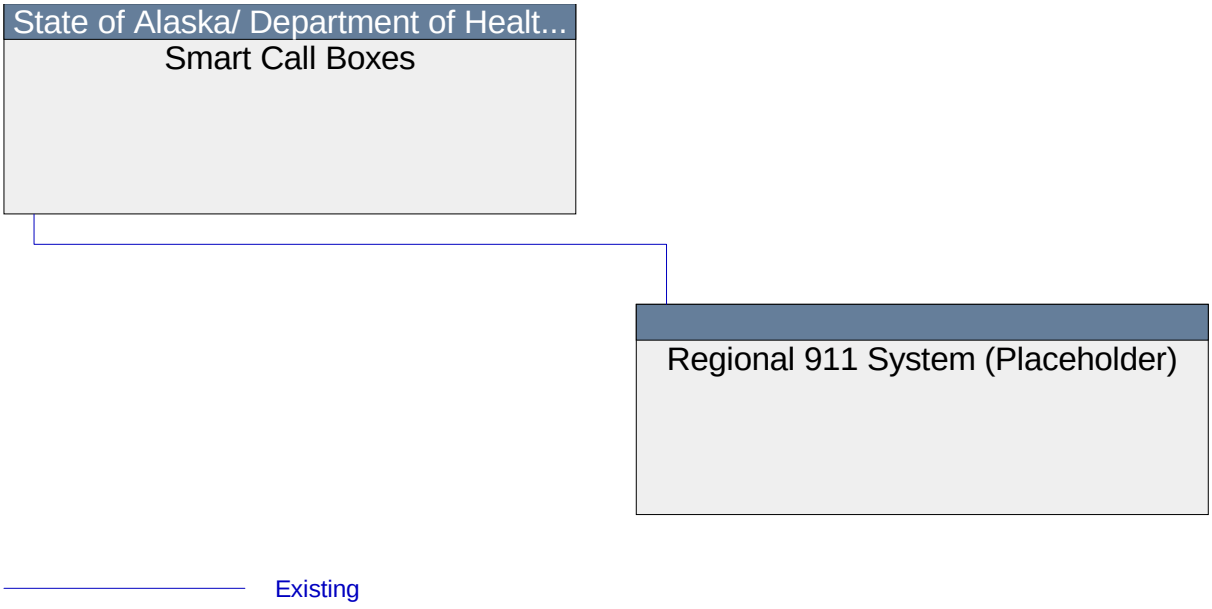


Figure 5-46:
Interconnect Diagram for Smart Call Boxes

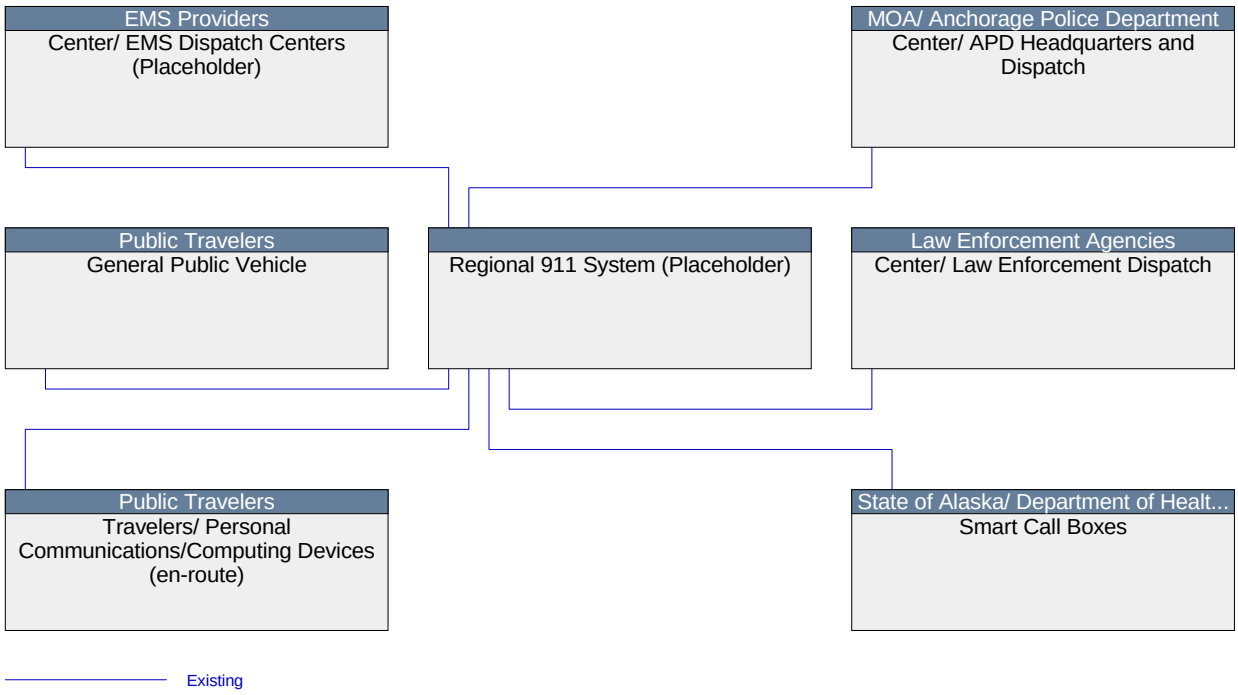


Figure 5-47:
Interconnect Diagram for Regional 911 System (Placeholder)

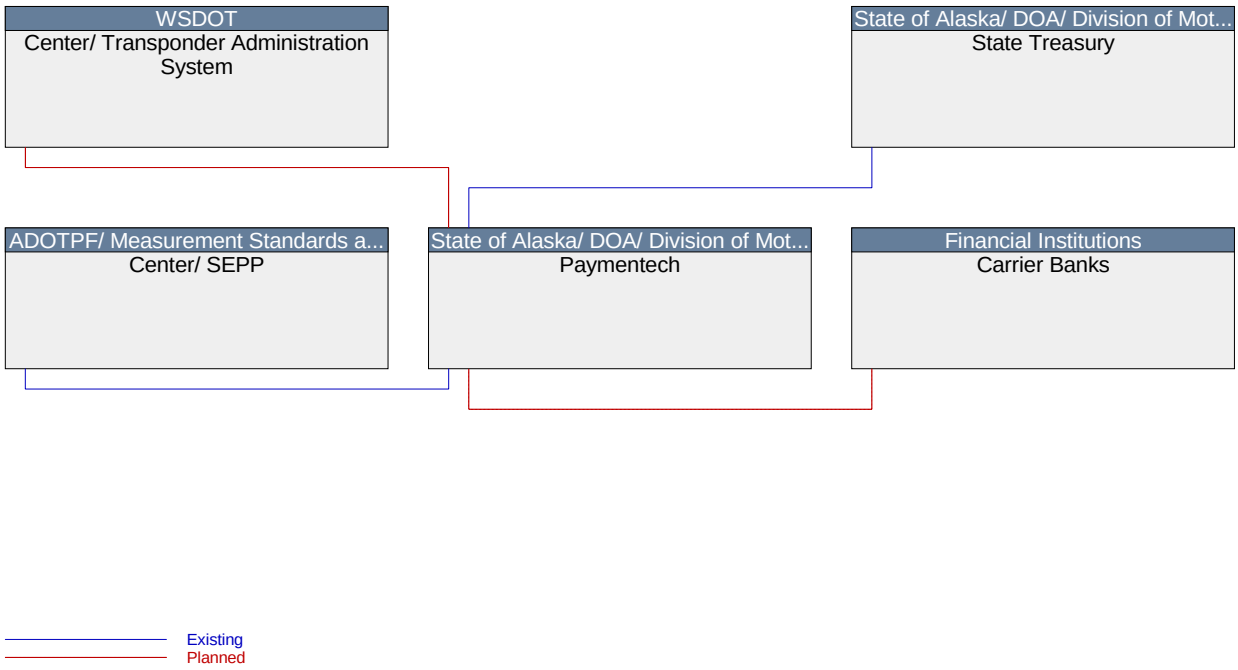


Figure 5-48:
Interconnect Diagram for Paymentech

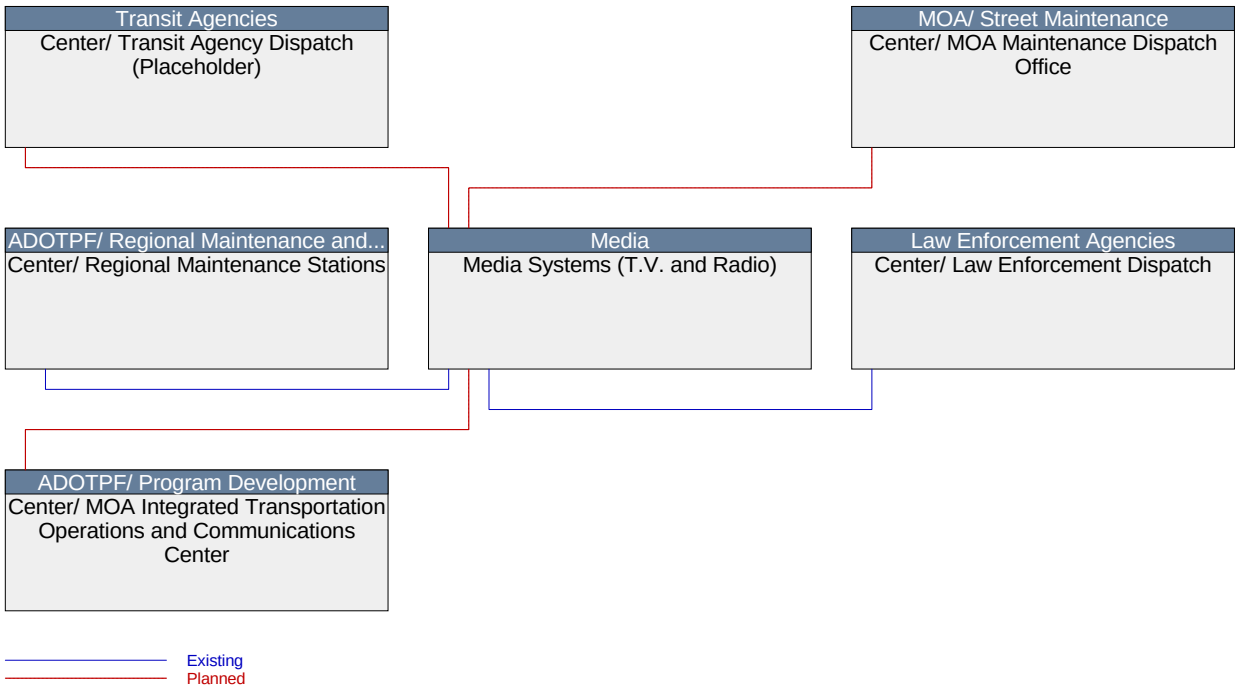


Figure 5-49:
Interconnect Diagram for Media Systems (T.V. and Radio)

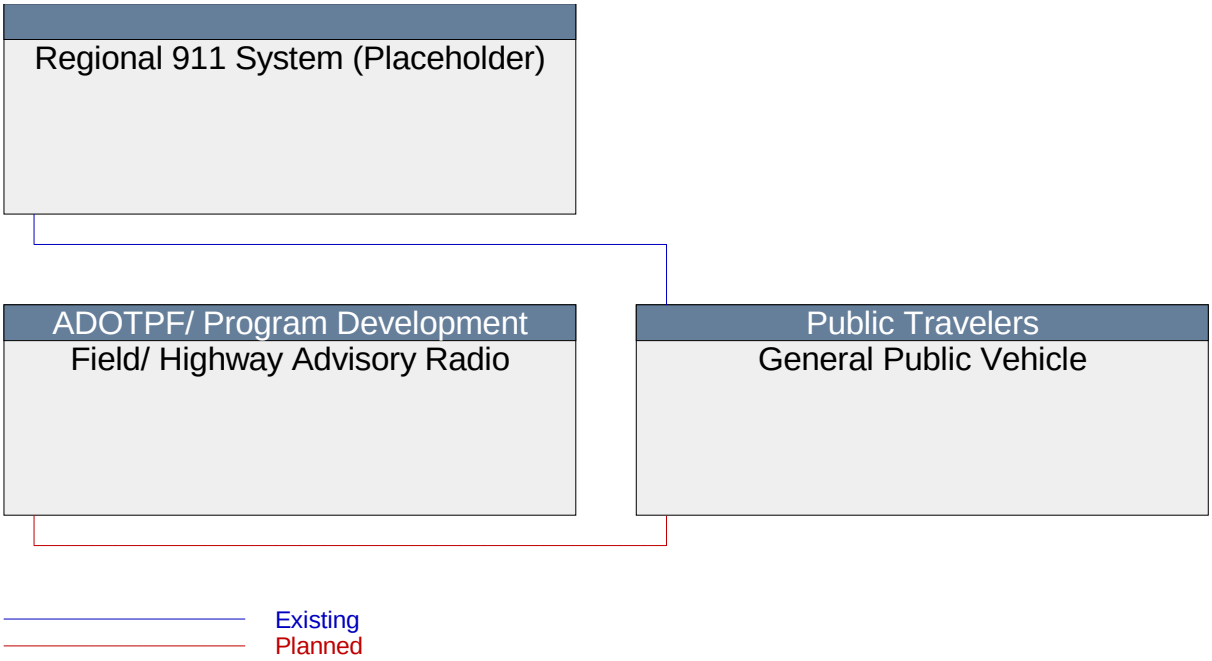


Figure 5-50:
Interconnect Diagram for General Public Vehicle

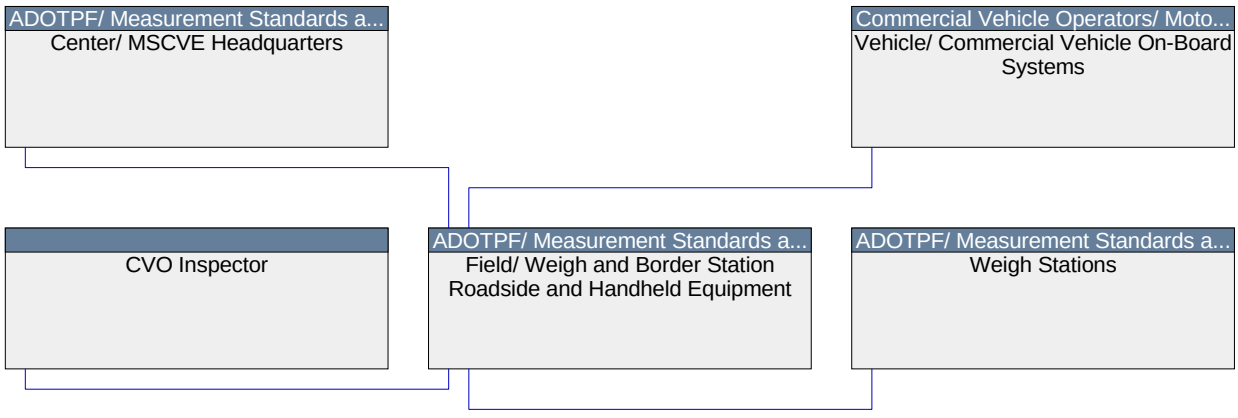


Figure 5-51:
Interconnect Diagram for Weigh and Border Station Roadside and Handheld Equipment

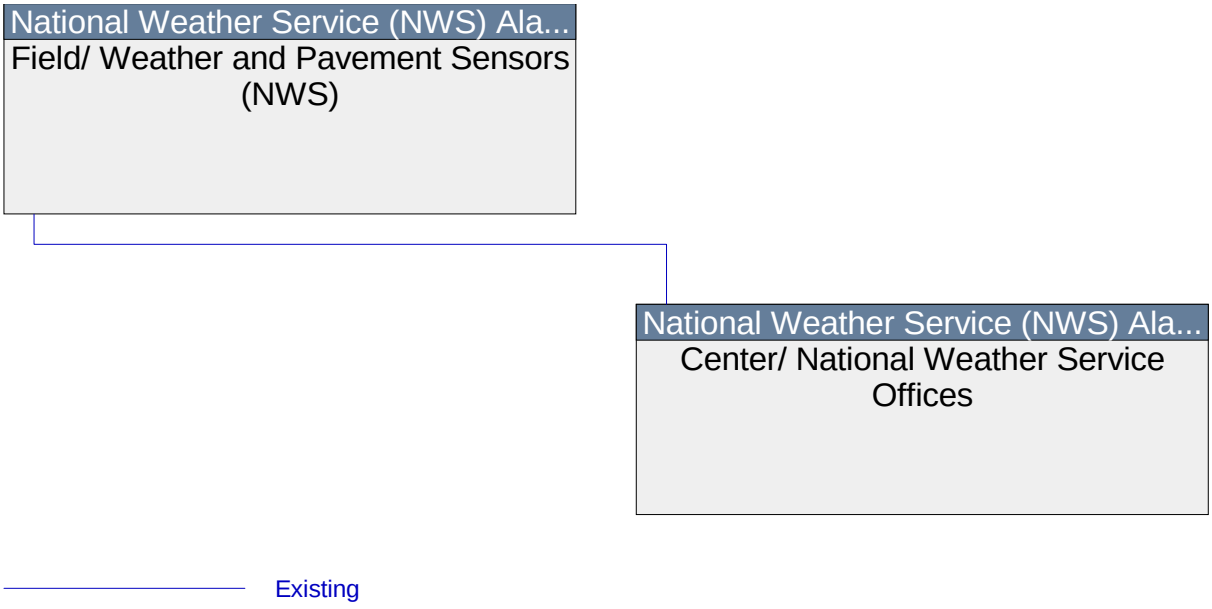


Figure 5-52:
Interconnect Diagram for Weather and Pavement Sensors (National Weather Service)

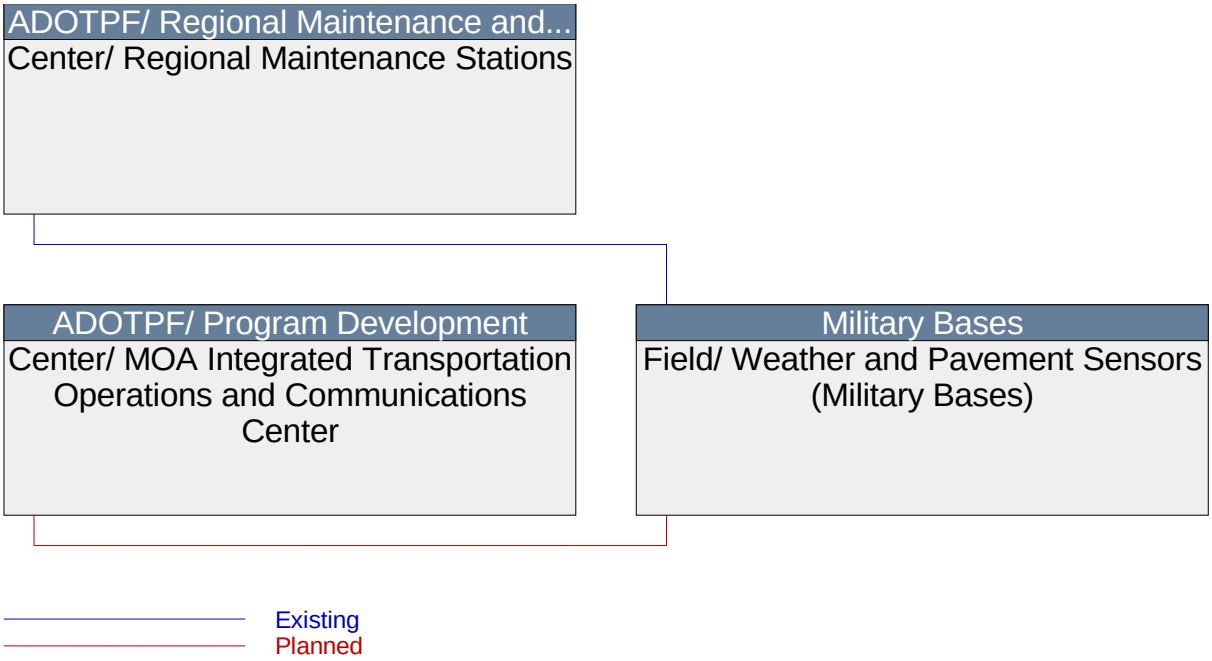


Figure 5-53:
Interconnect Diagram for Weather and Pavement Sensors (Military Bases)

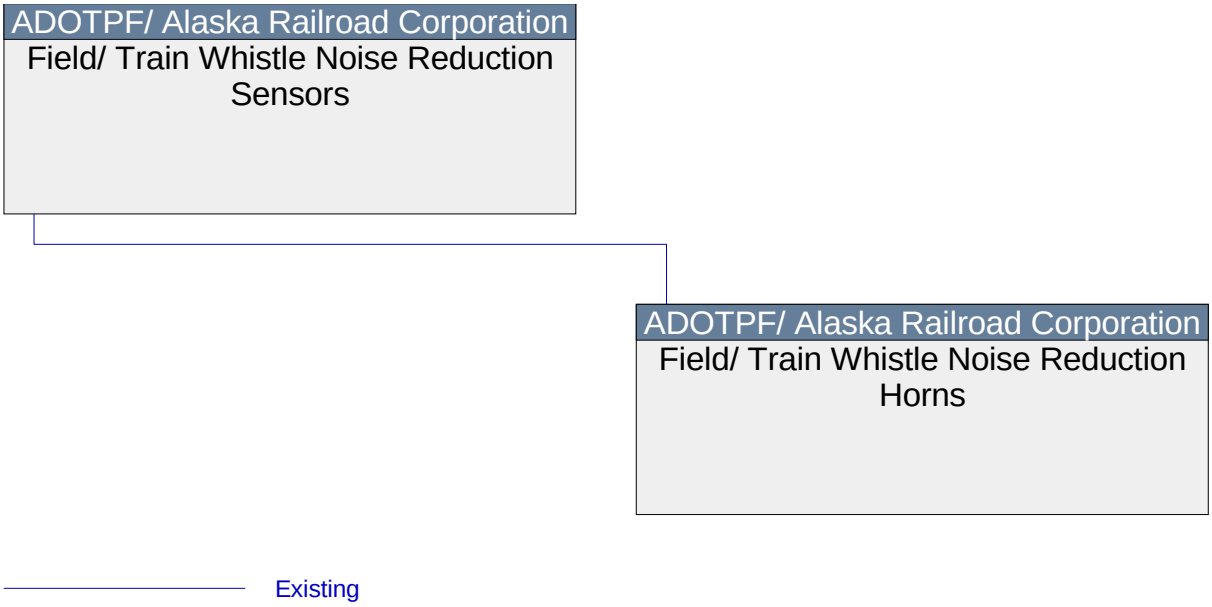


Figure 5-54:
Interconnect Diagram for Train Whistle Noise Reduction Sensors

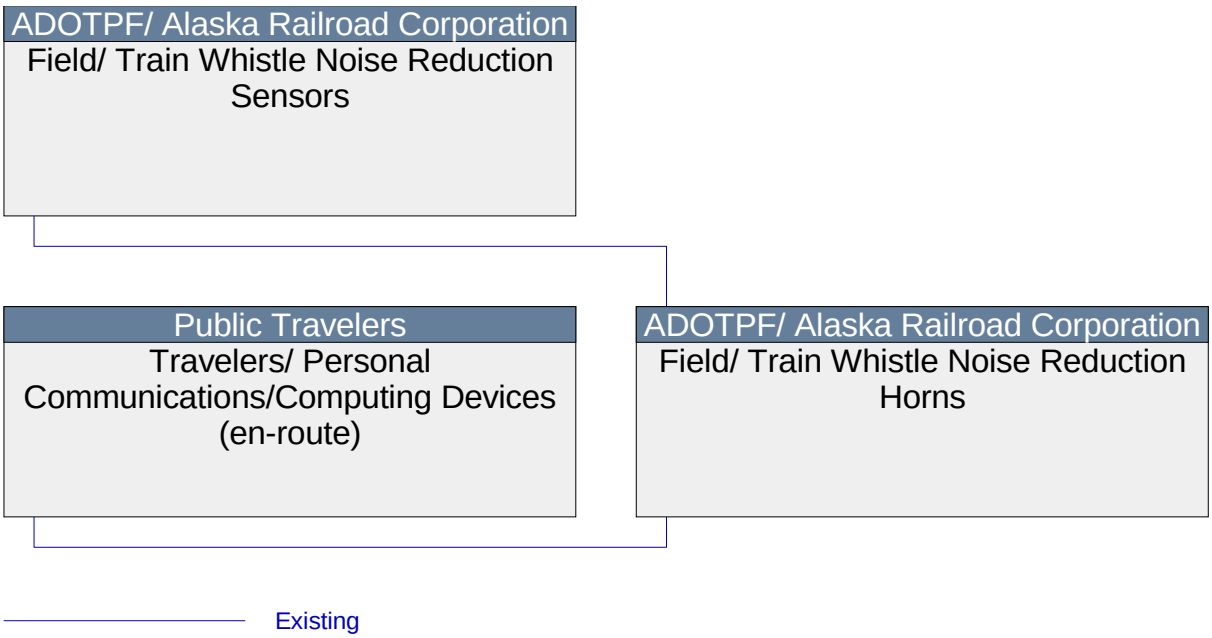


Figure 5-55:
Interconnect Diagram for Train Whistle Noise Reduction Horns

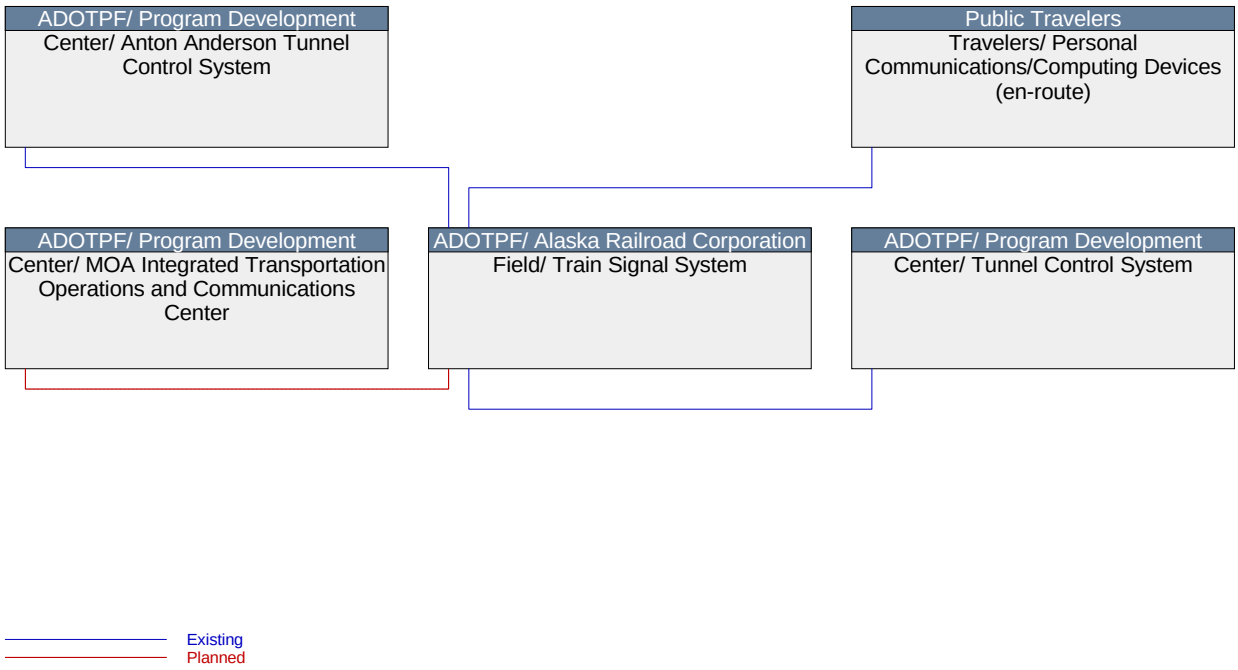


Figure 5-56:
Interconnect Diagram for Train Signal System

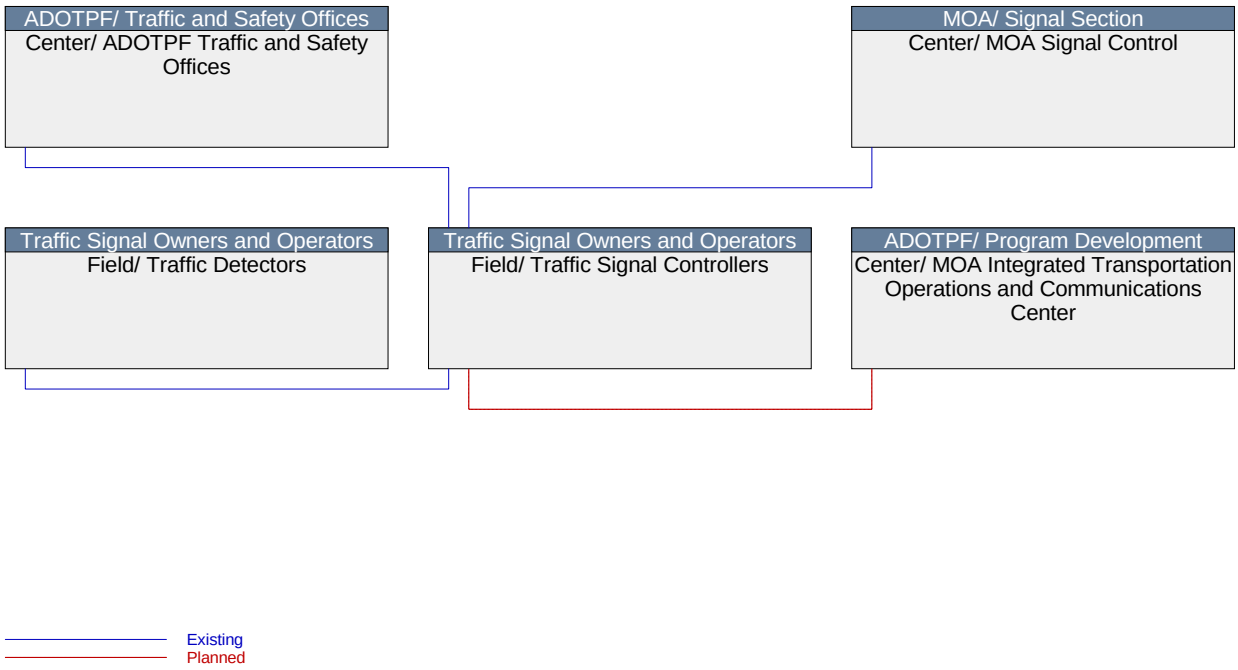


Figure 5-57:
Interconnect Diagram for Traffic Signal Controllers

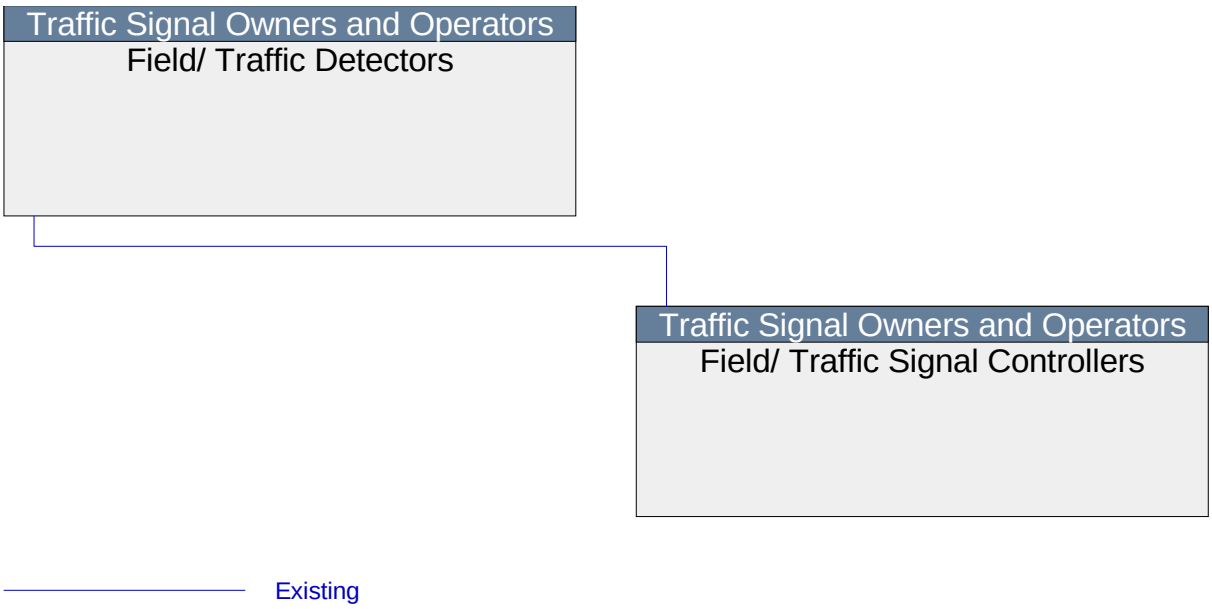


Figure 5-58:
Interconnect Diagram for Traffic Detectors

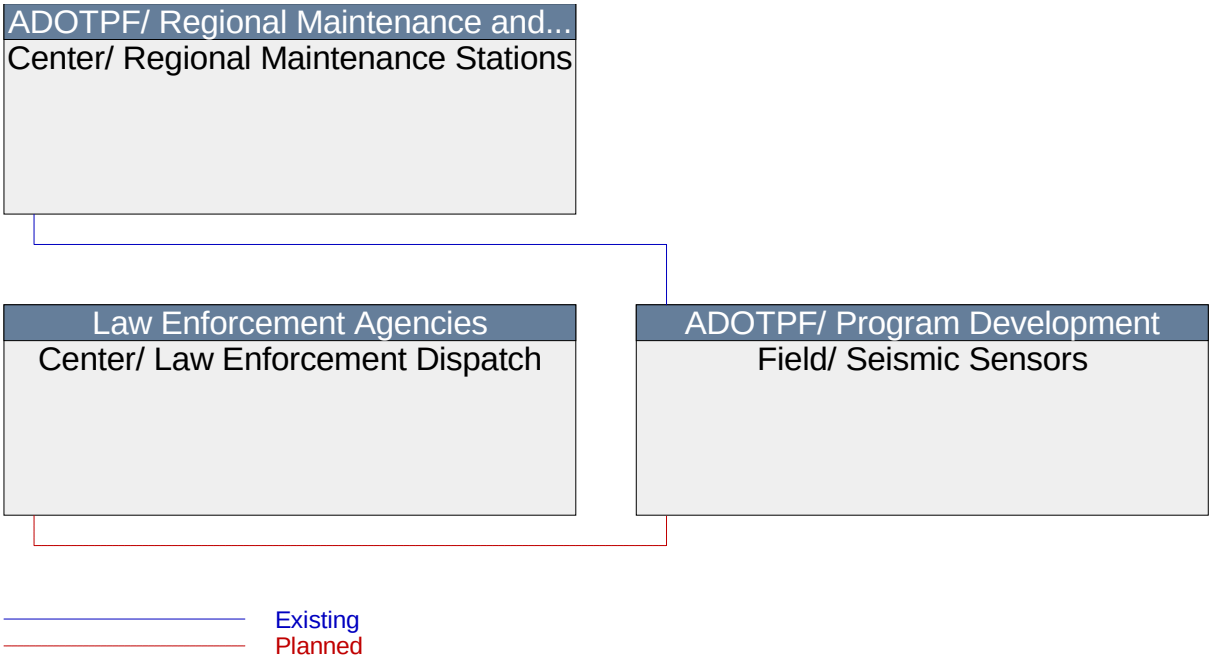


Figure 5-59:
Interconnect Diagram for Seismic Sensors

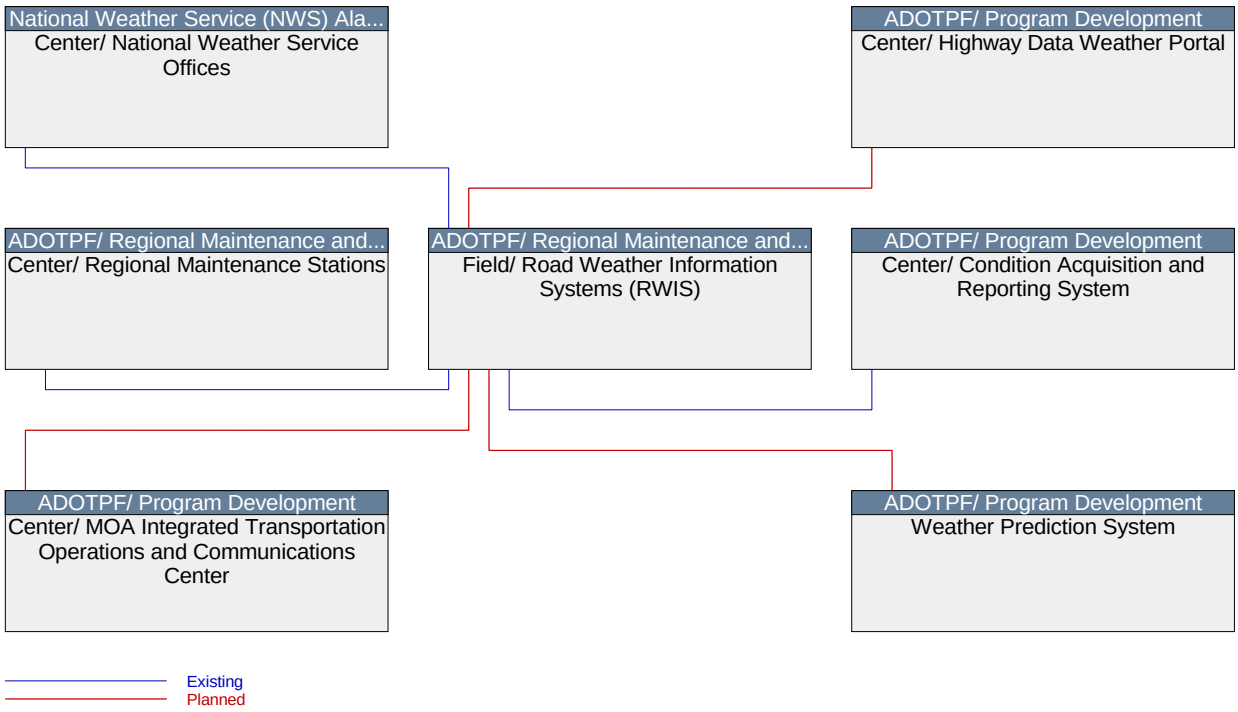


Figure 5-60:
Interconnect Diagram for Road Weather Information System

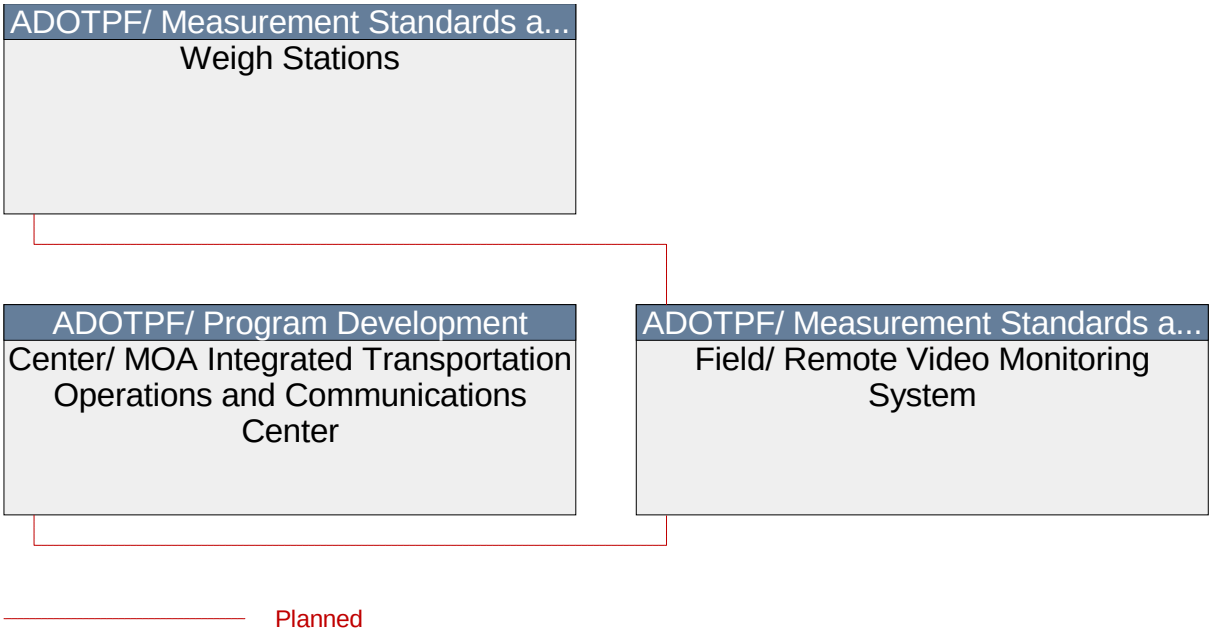


Figure 5-61:
Interconnect Diagram for Remote Video Monitoring System

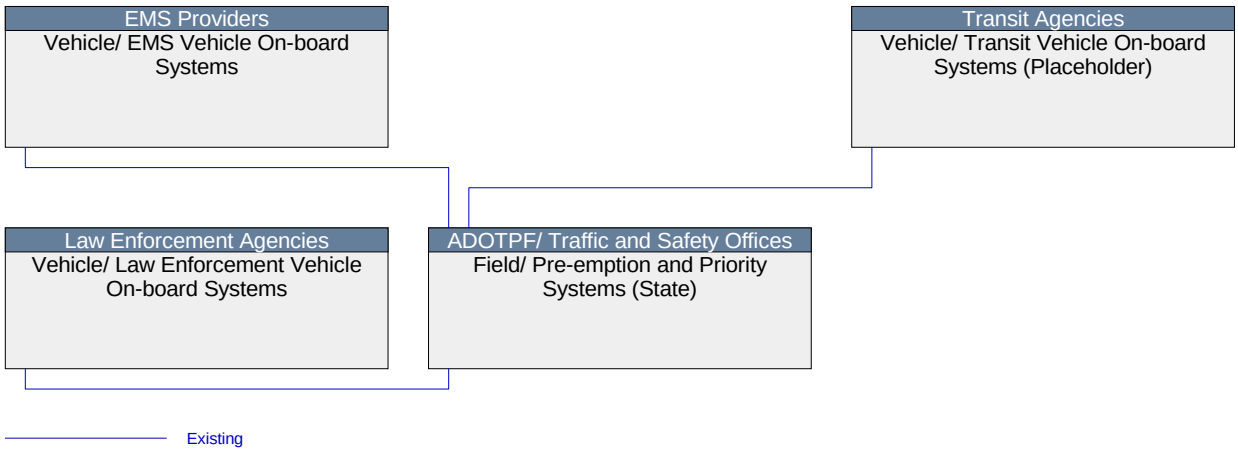


Figure 5-62:
Interconnect Diagram for Pre-emption and Priority Systems (State)

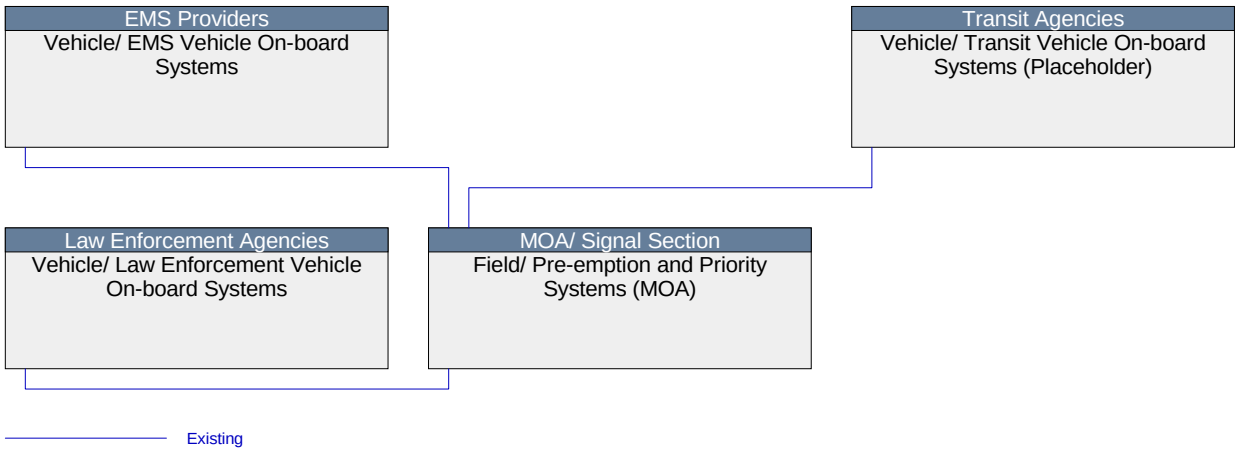


Figure 5-63:
Interconnect Diagram for Pre-emption and Priority Systems (MOA)

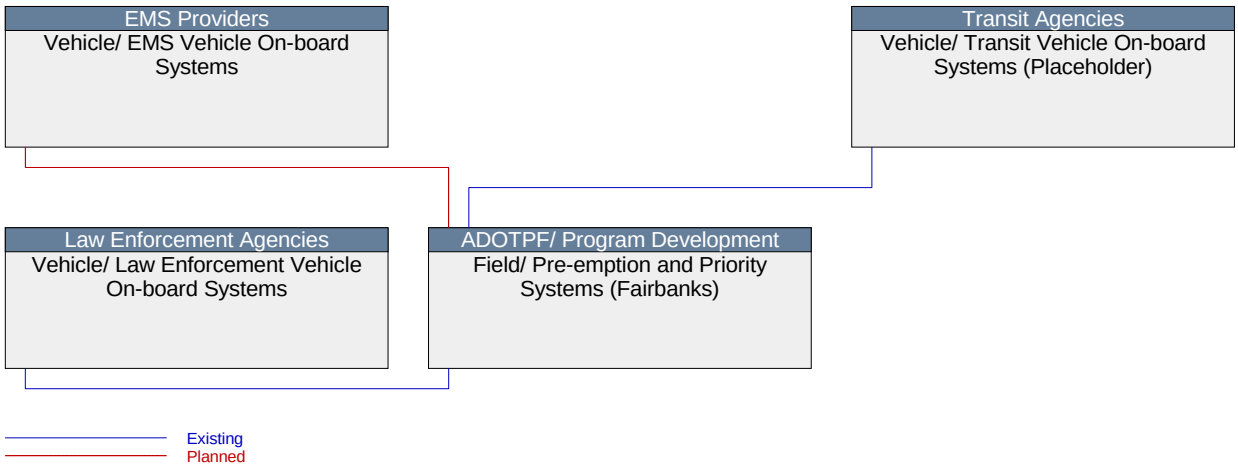


Figure 5-64:
Interconnect Diagram for Pre-emption and Priority Systems (Fairbanks)

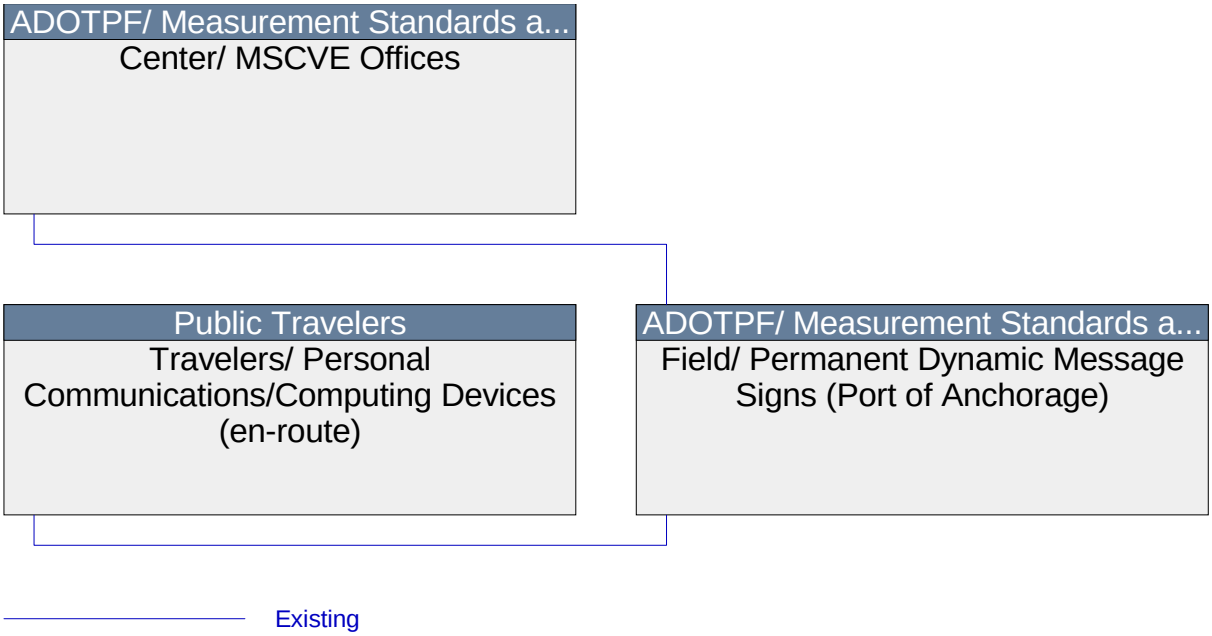


Figure 5-65:
Interconnect Diagram for Permanent Dynamic Message Signs (Port of Anchorage)

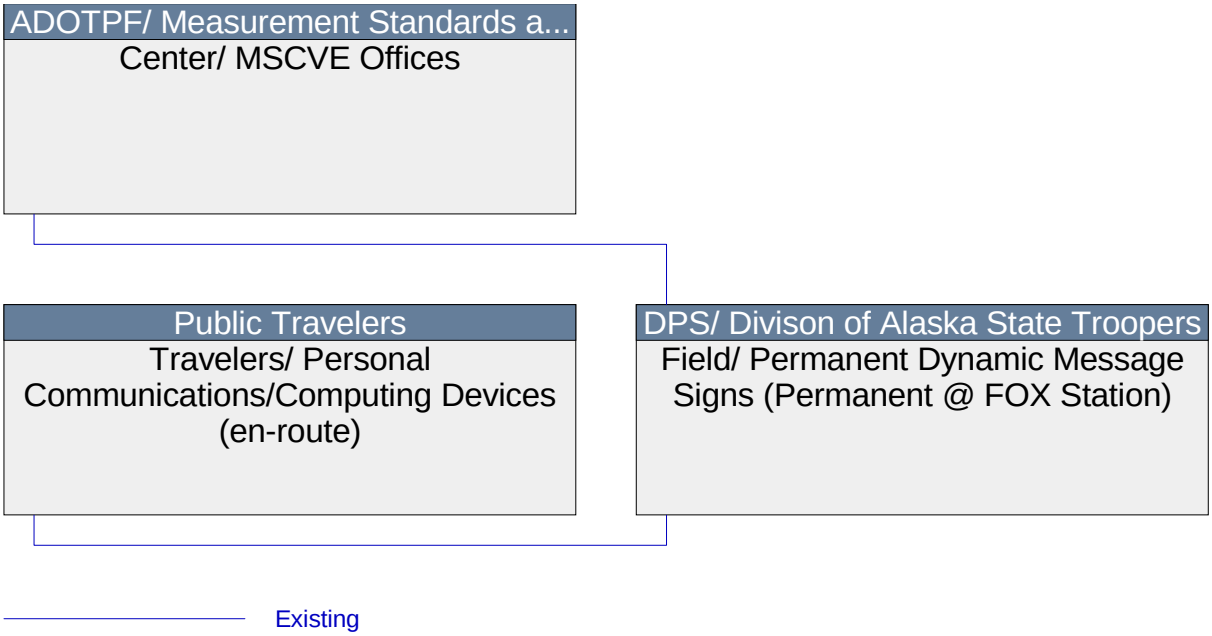


Figure 5-66:
Interconnect Diagram for Permanent Dynamic Message Signs (Permanent @ Fox Station)

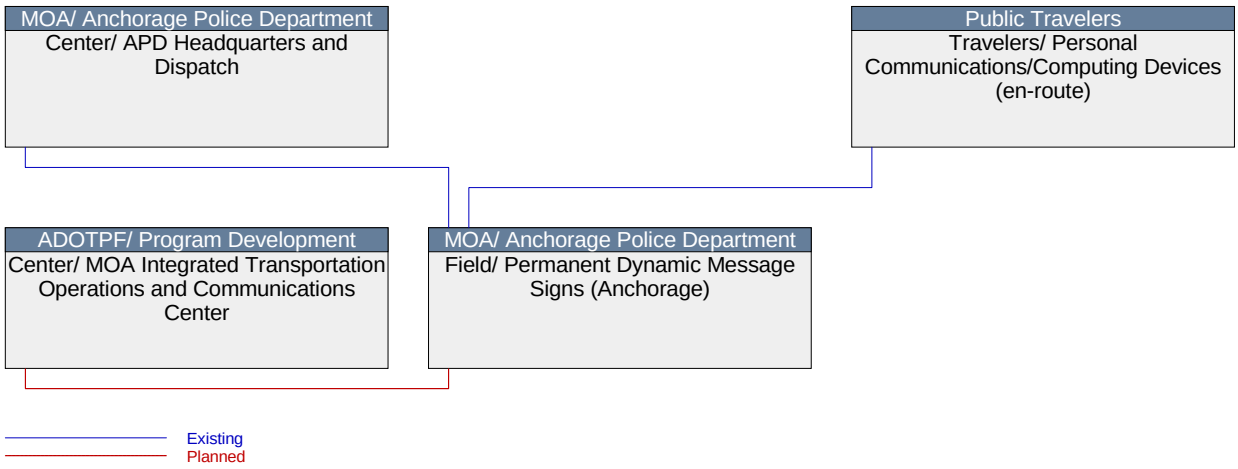


Figure 5-67:
Interconnect Diagram for Permanent Dynamic Message Signs (Anchorage)

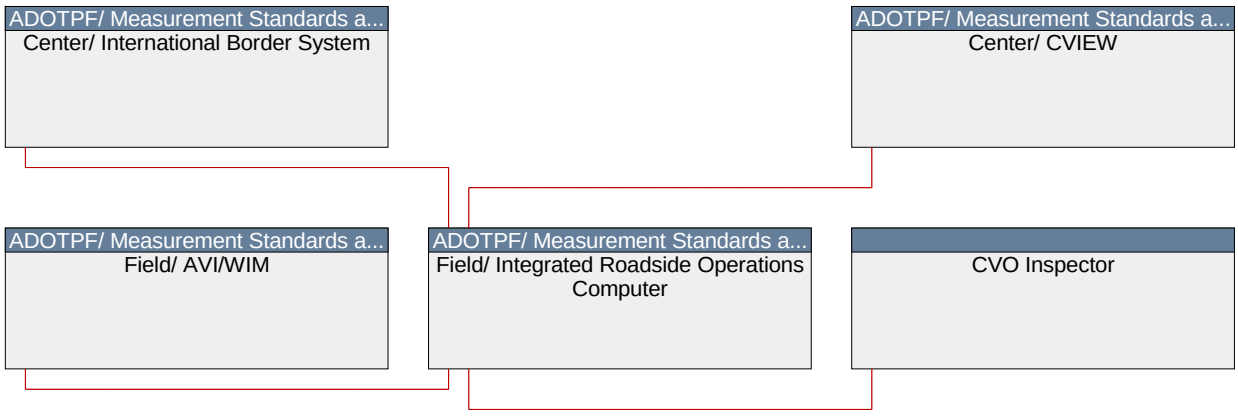


Figure 5-68:
Interconnect Diagram for Integrated Roadside Operations Computer

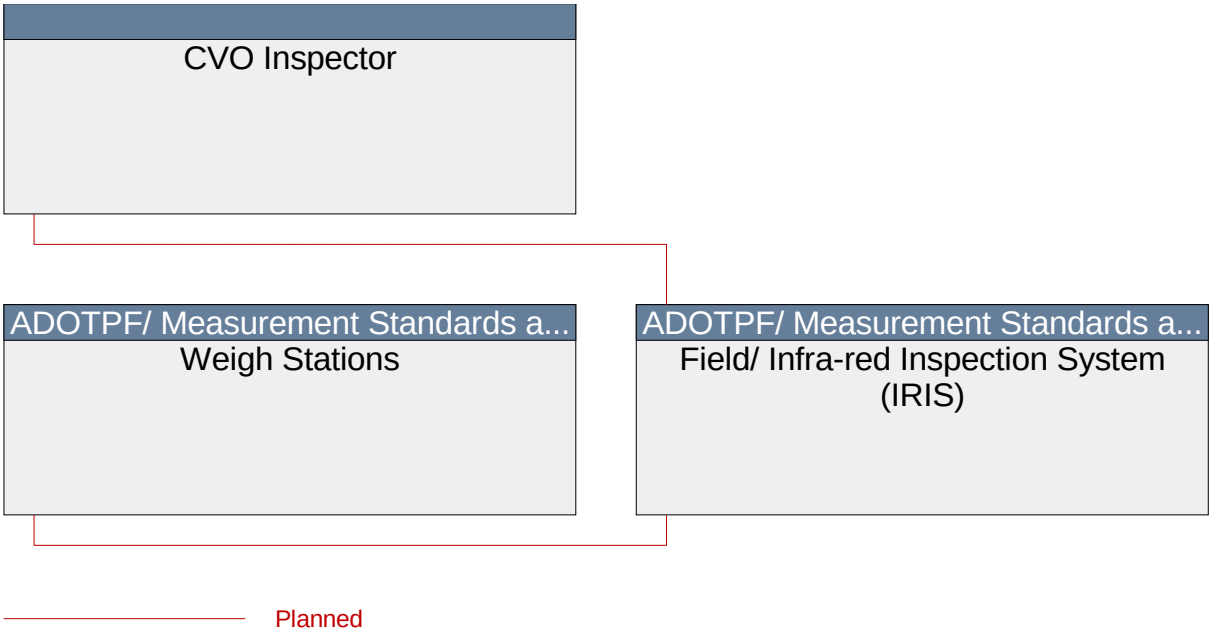


Figure 5-69:
Interconnect Diagram for Intra-red Inspection System

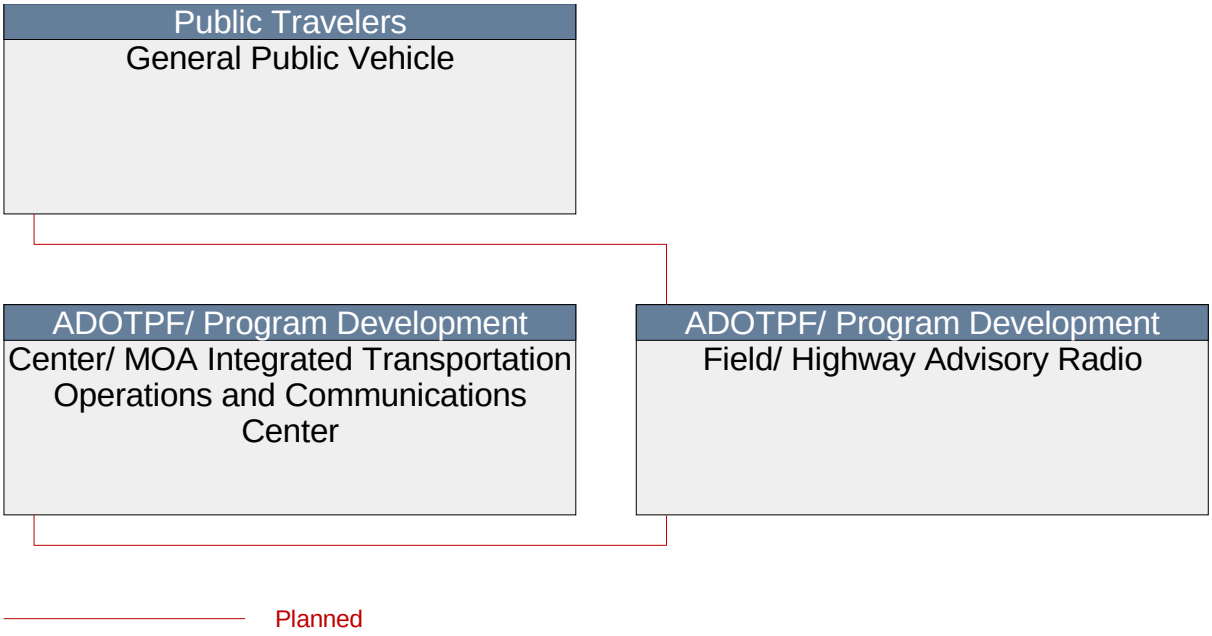


Figure 5-70:
Interconnect Diagram for Highway Advisory Radio

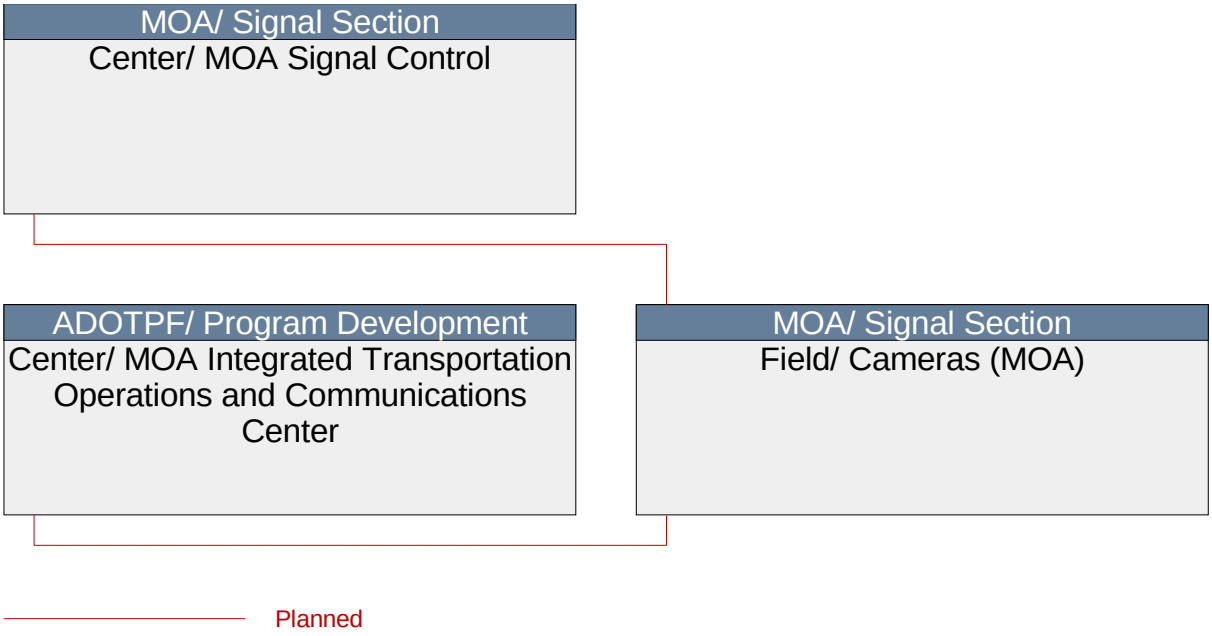


Figure 5-71:
Interconnect Diagram for Cameras (MOA)

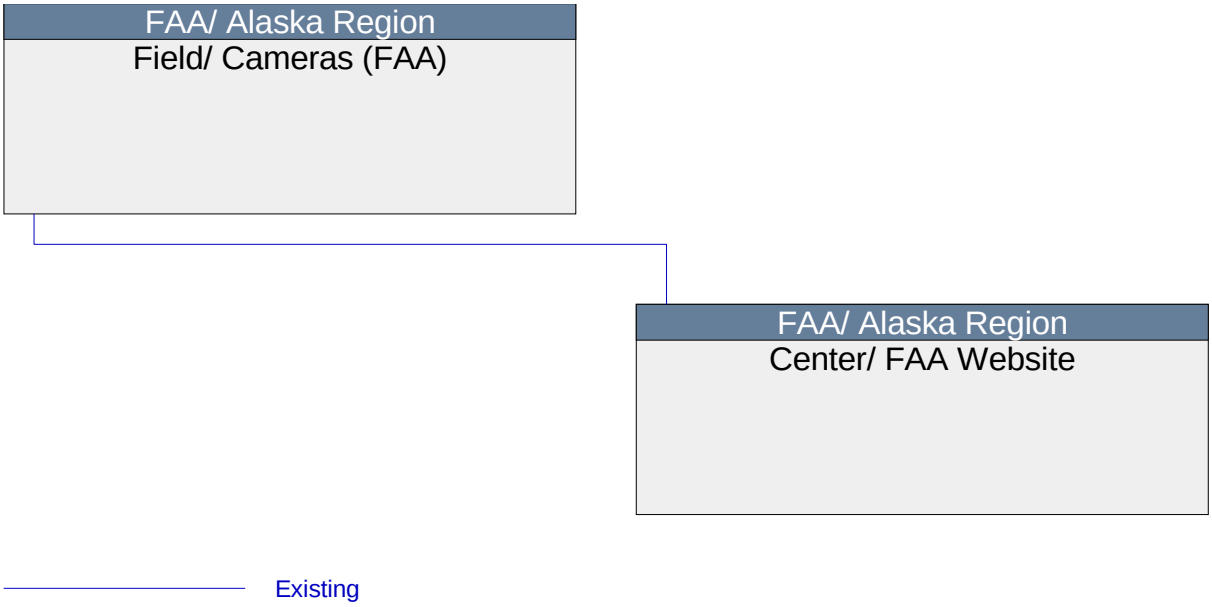


Figure 5-72:
Interconnect Diagram for Cameras (FAA)

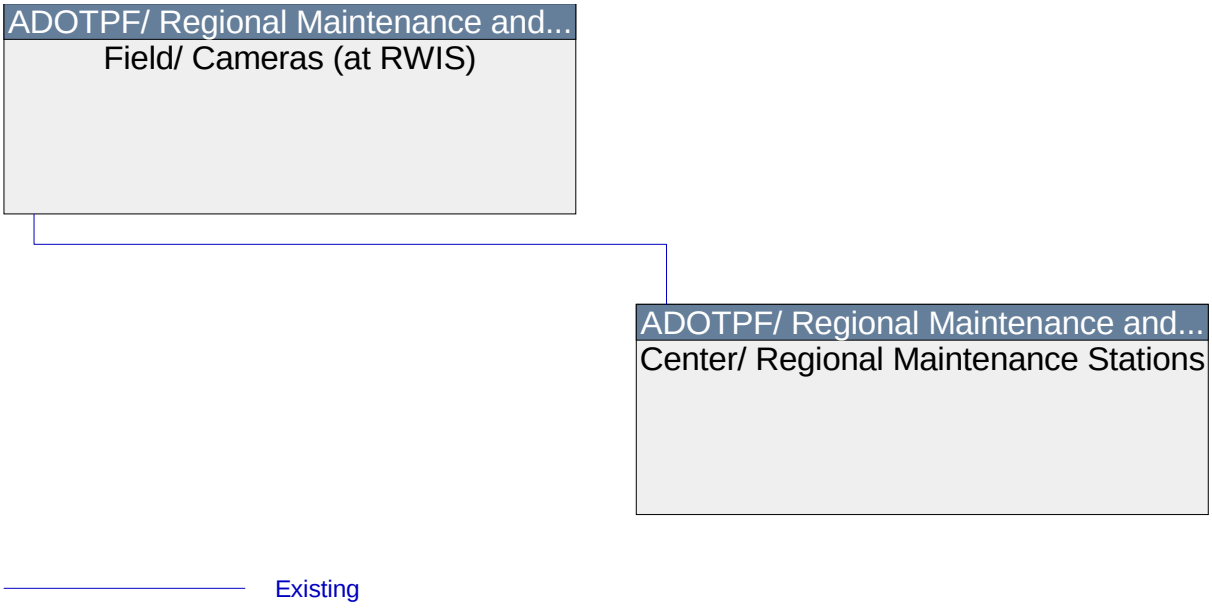


Figure 5-73:
Interconnect Diagram for Cameras (at RWIS)

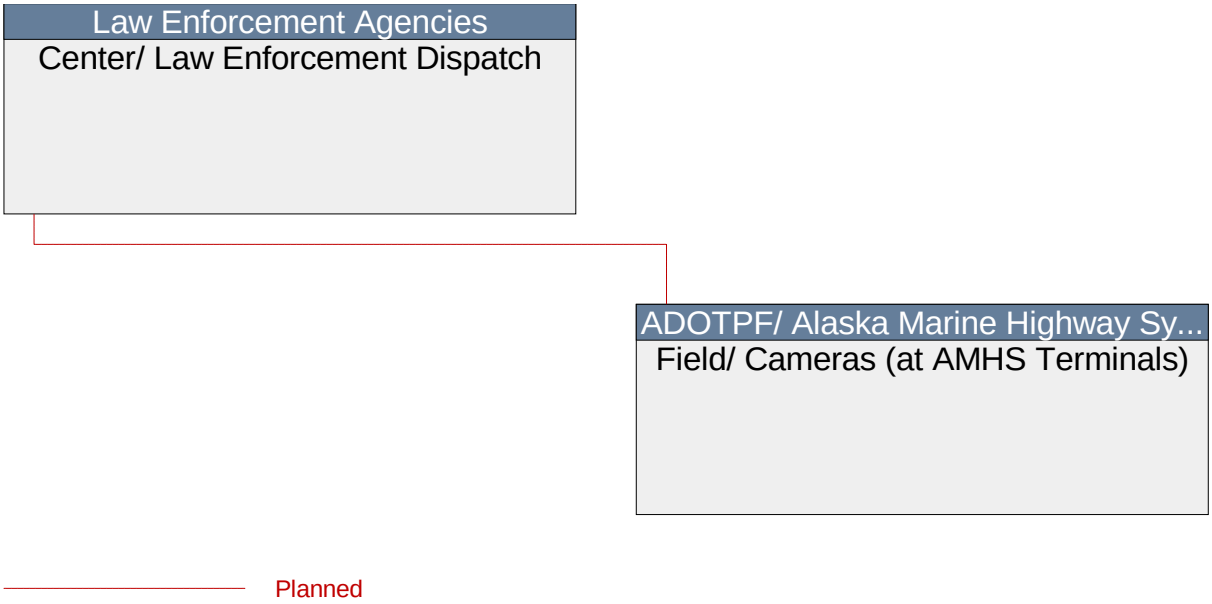


Figure 5-74:
Interconnect Diagram for Cameras (at AMHS Terminals)

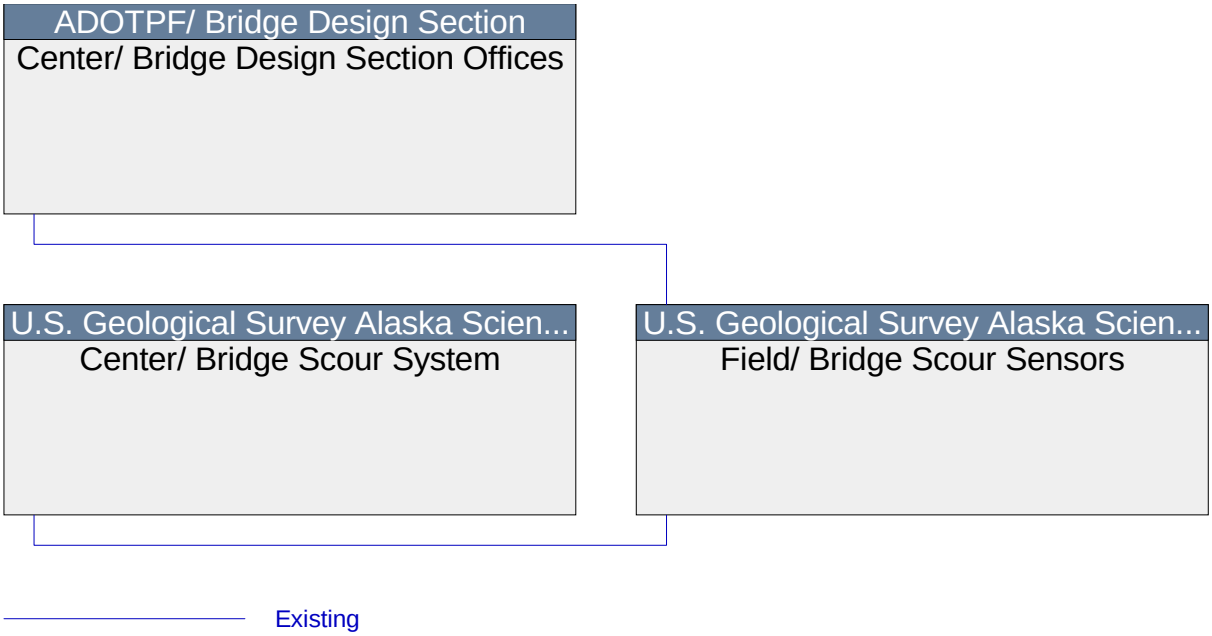


Figure 5-75:
Interconnect Diagram for Bridge Scour Sensors

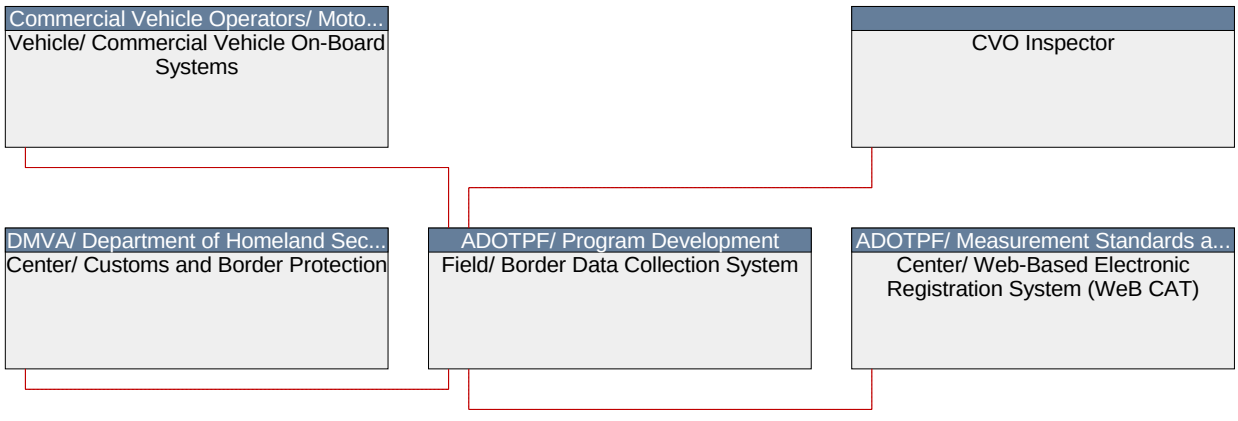


Figure 5-76:
Interconnect Diagram for Border Data Collection System

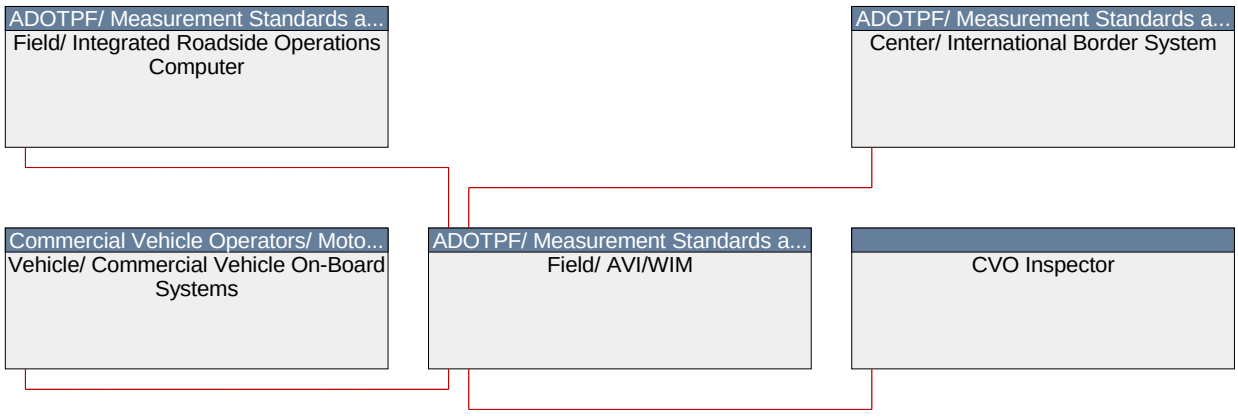


Figure 5-77:
Interconnect Diagram for AVI/WIM

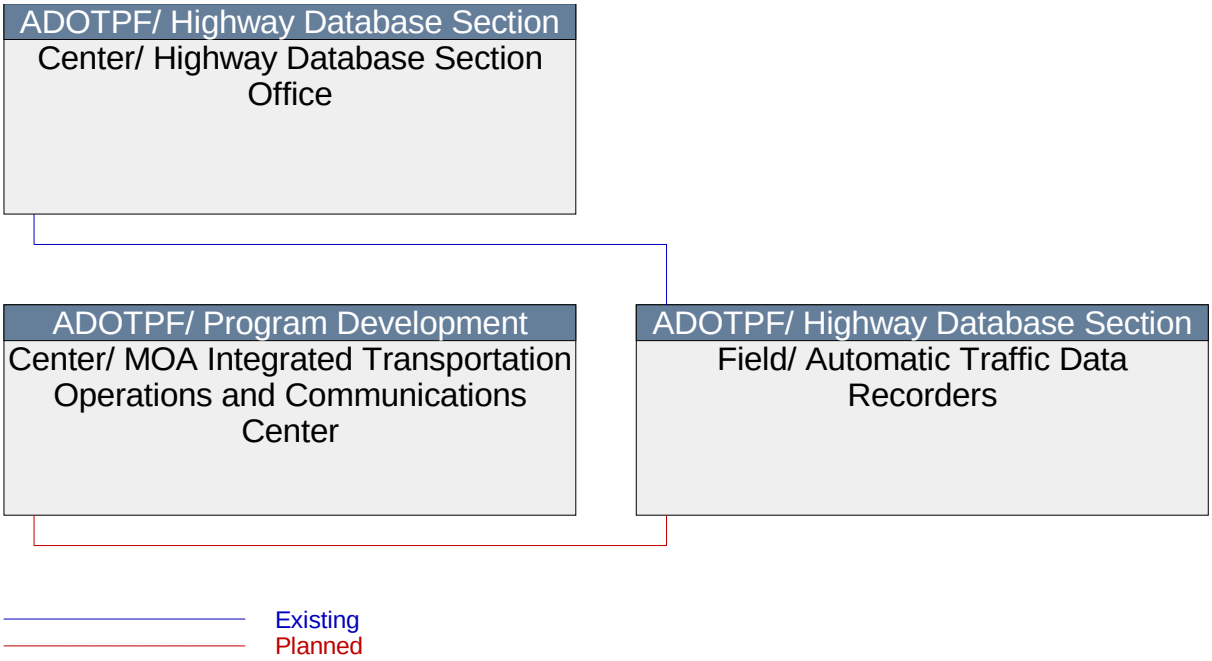


Figure 5-78:
Interconnect Diagram for Automatic Traffic Data Recorders

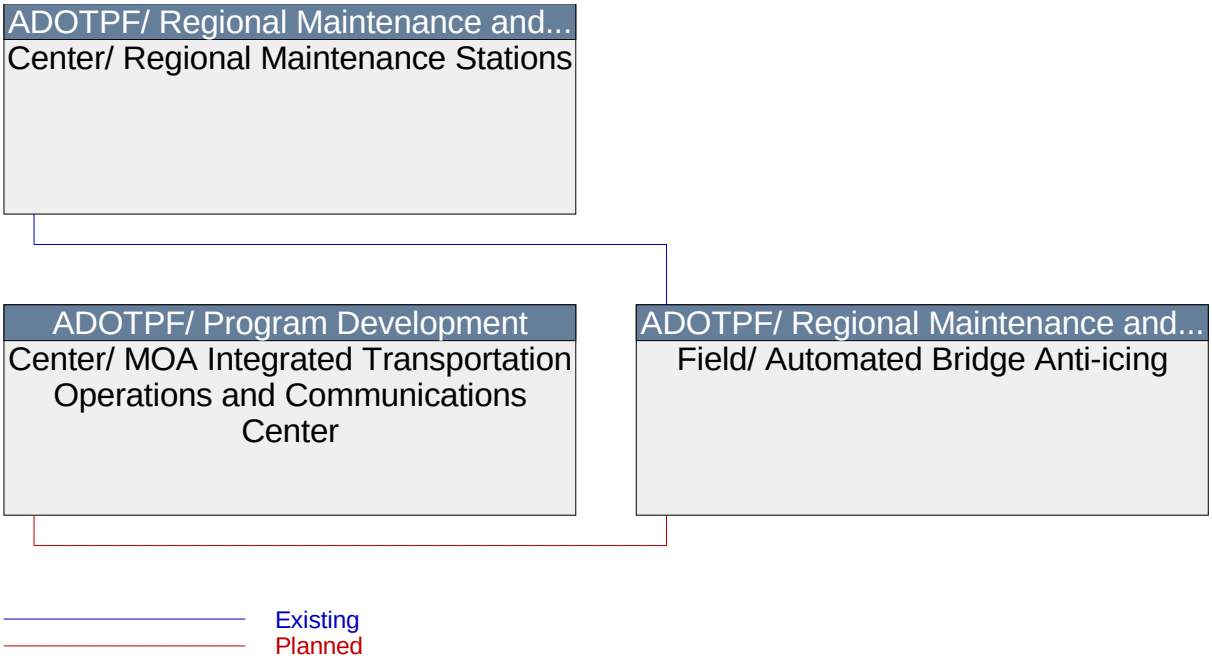


Figure 5-79:
Interconnect Diagram for Automated Bridge Anti-icing

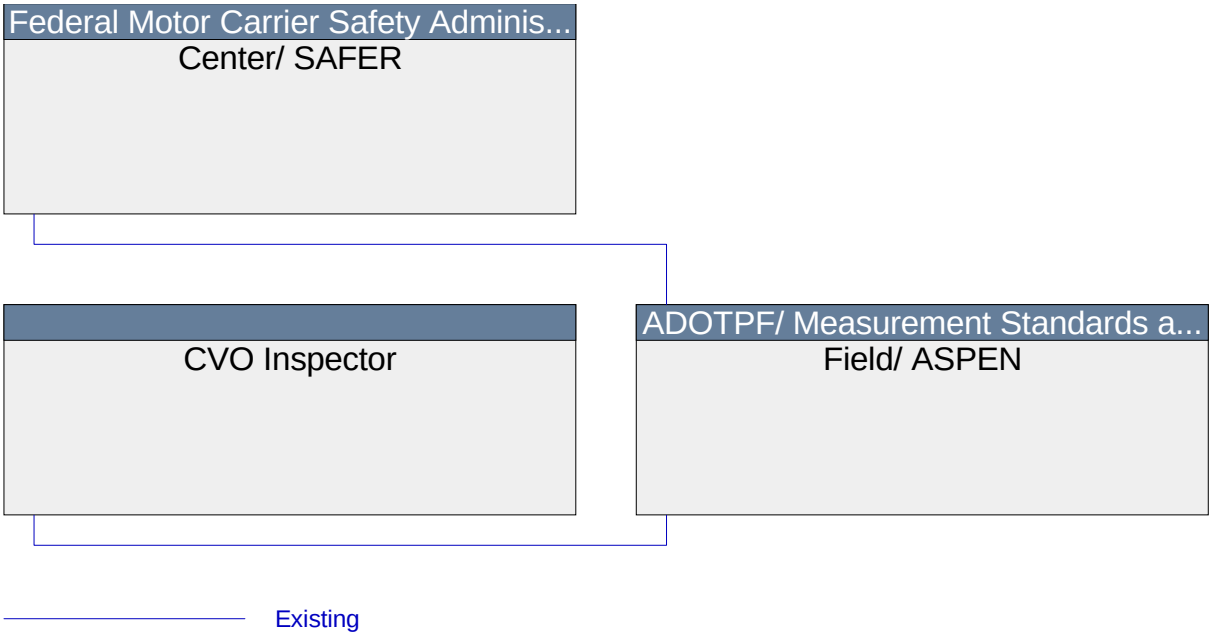


Figure 5-80:
Interconnect Diagram for ASPEN

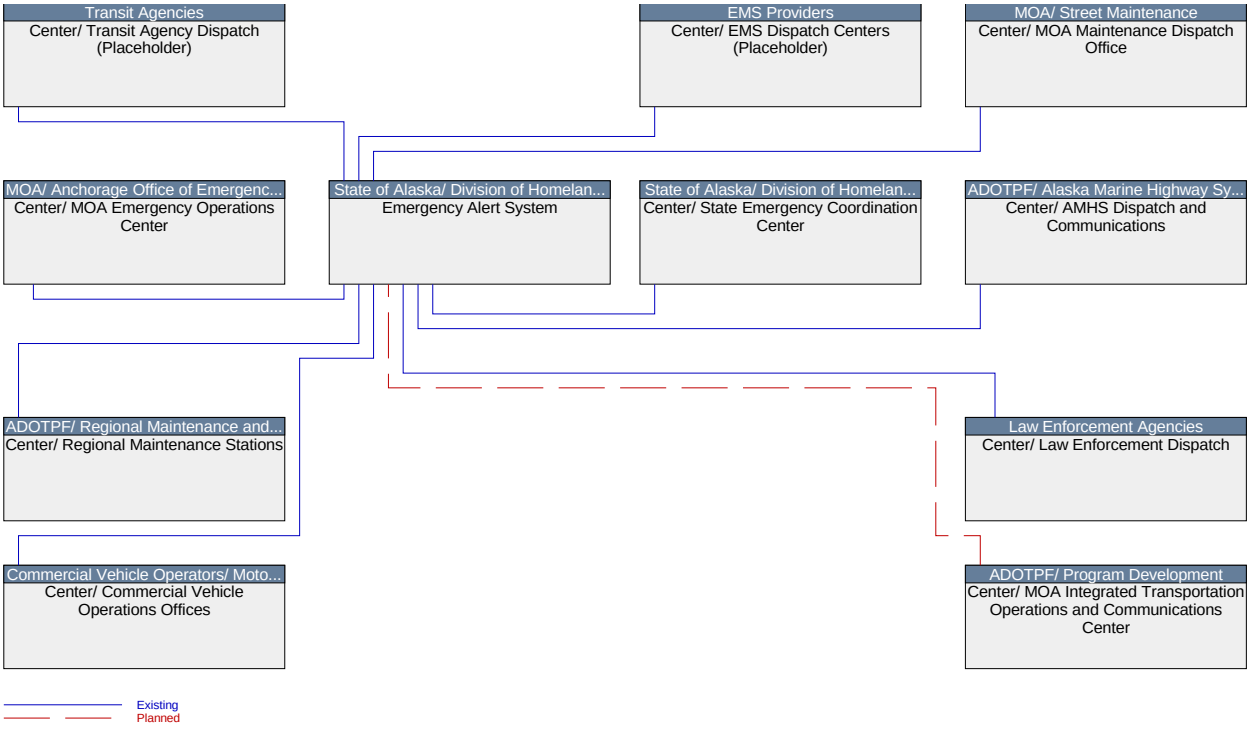


Figure 5-81:
Interconnect Diagram for Emergency Alert System

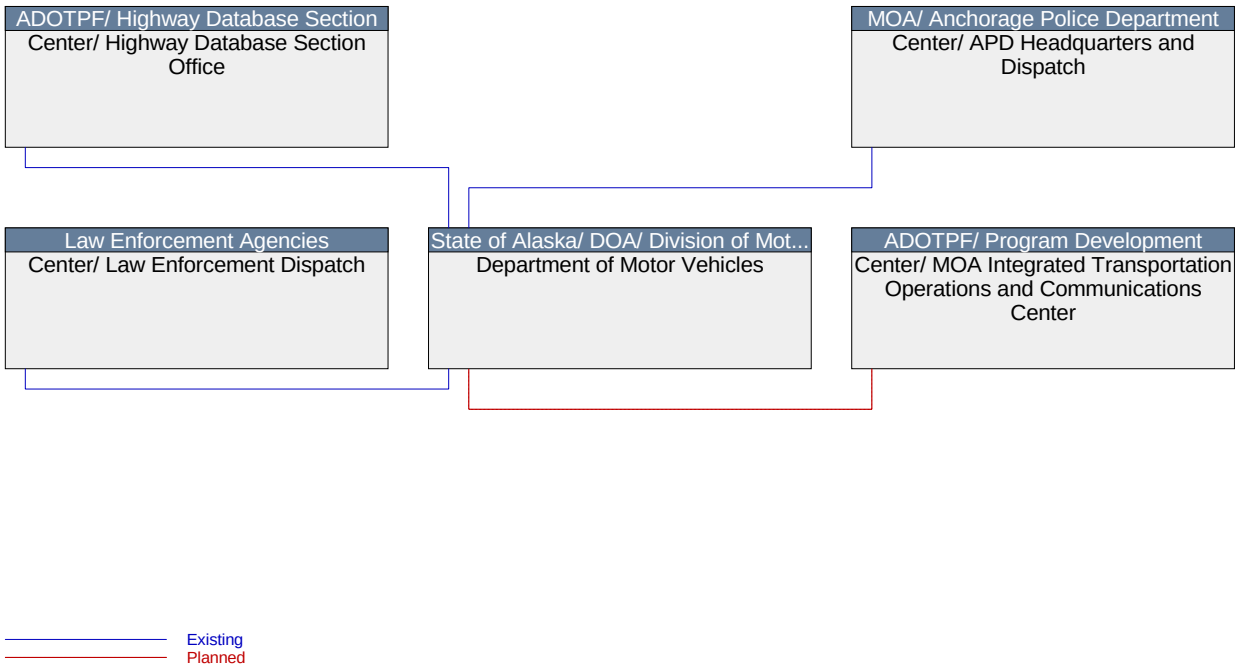


Figure 5-82:
Interconnect Diagram for Department of Motor Vehicles

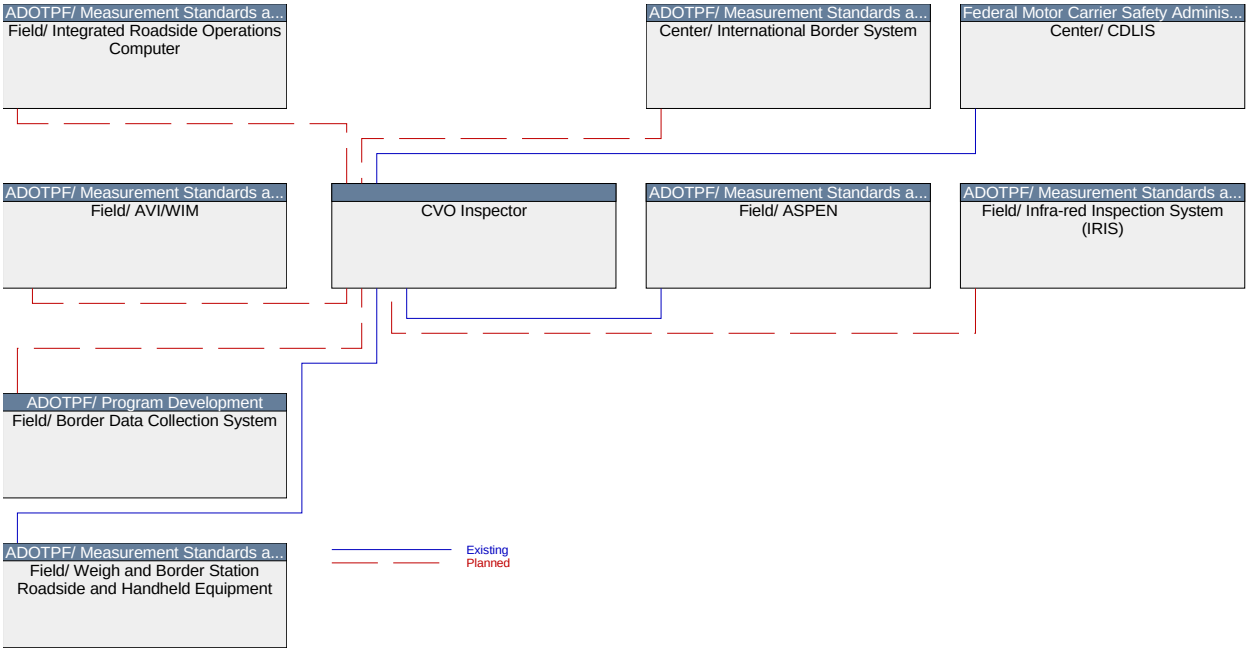


Figure 5-83:
Interconnect Diagram for CVO Inspector

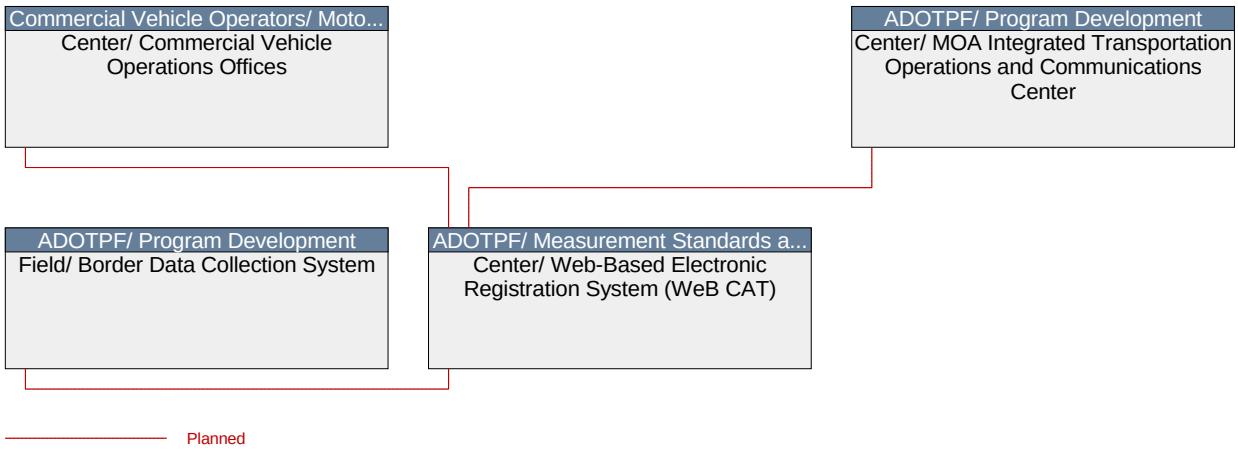


Figure 5-84:
Interconnect Diagram for Web-based Electronic Registration System

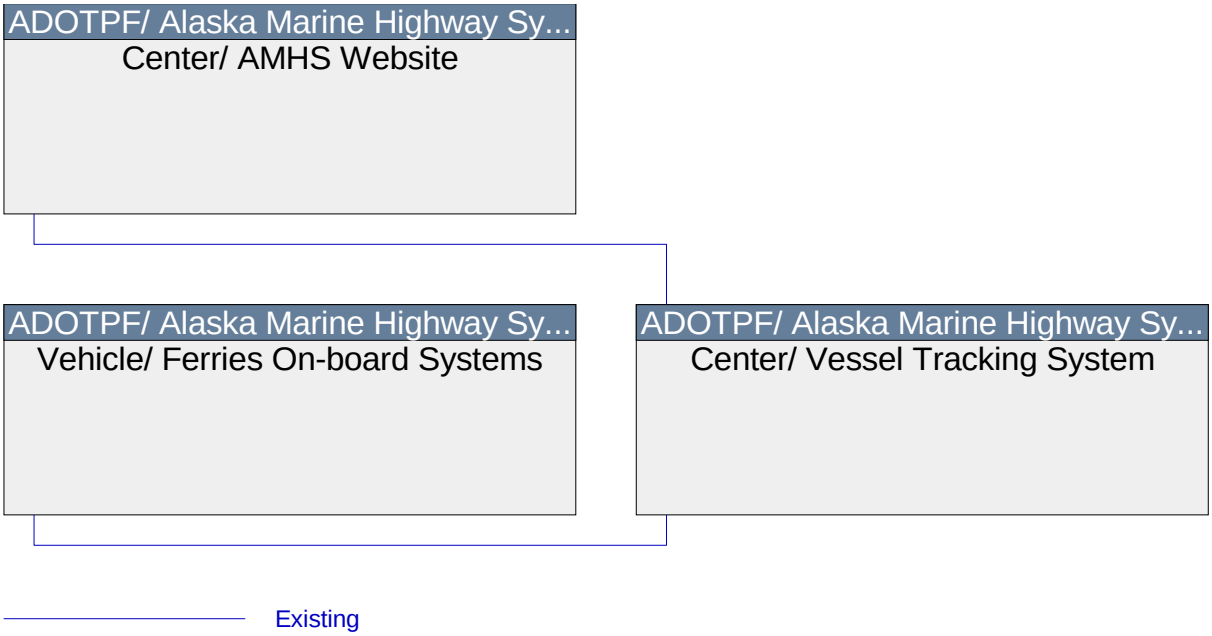


Figure 5-85:
Interconnect Diagram for Vessel Tracking System

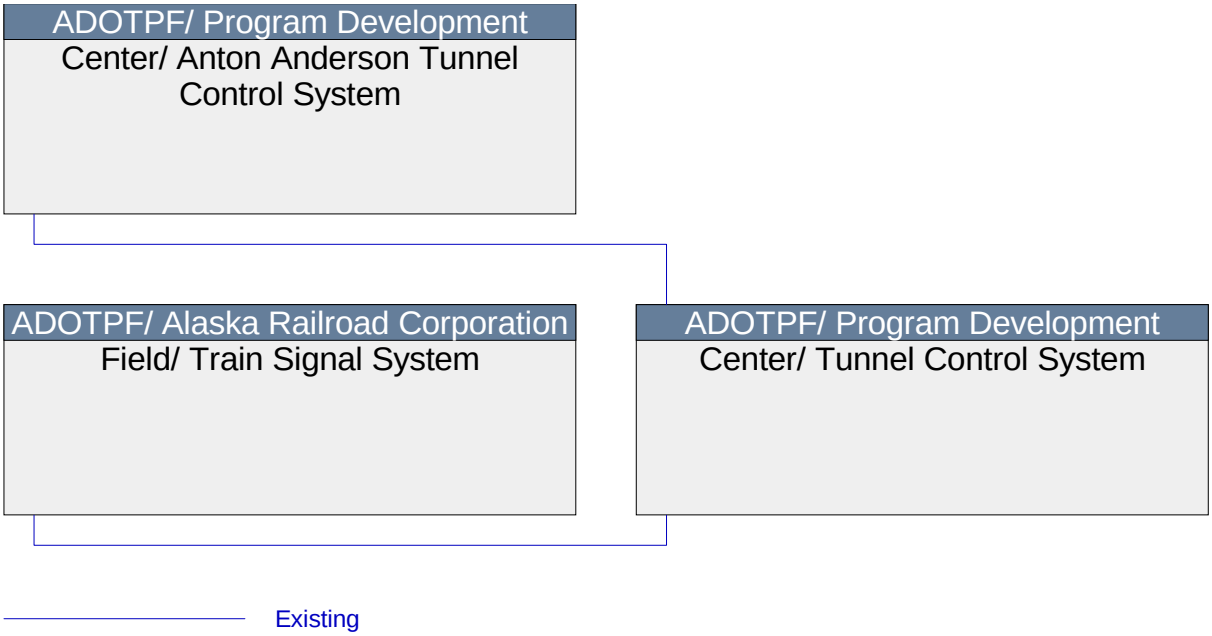


Figure 5-86:
Interconnect Diagram for Tunnel Control System

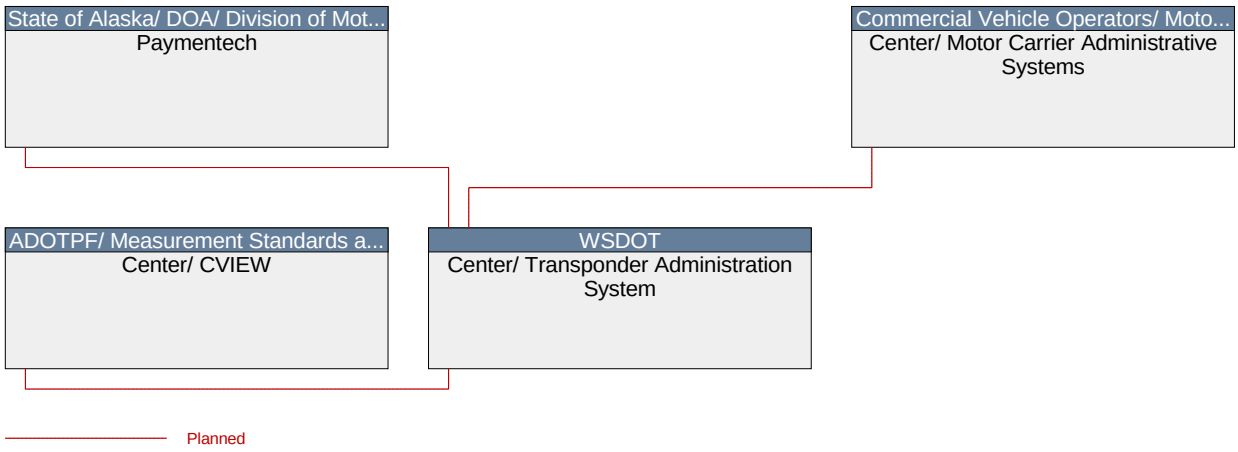


Figure 5-87:
Interconnect Diagram for Transponder Administration System

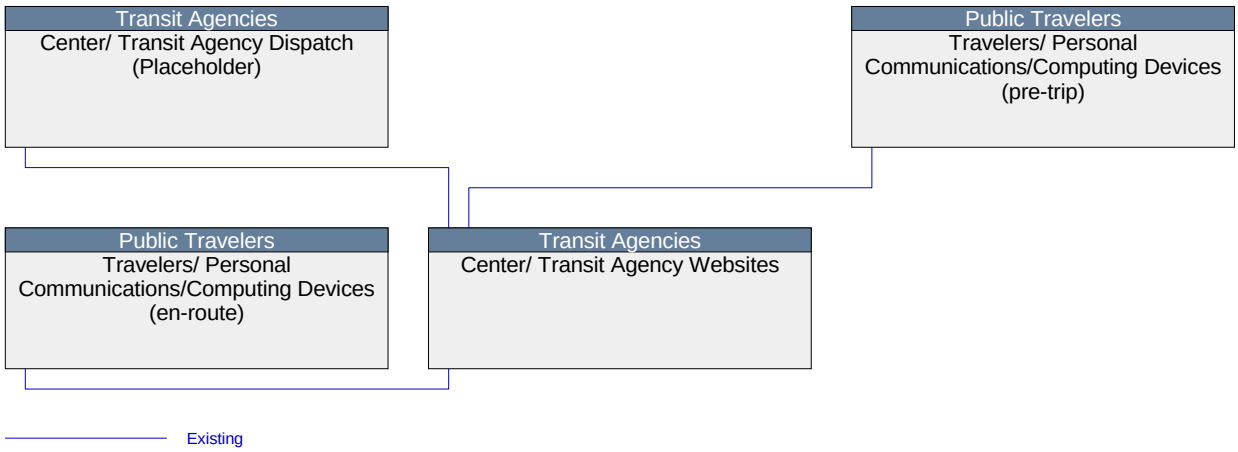


Figure 5-88:
Interconnect Diagram for Transit Agency Websites

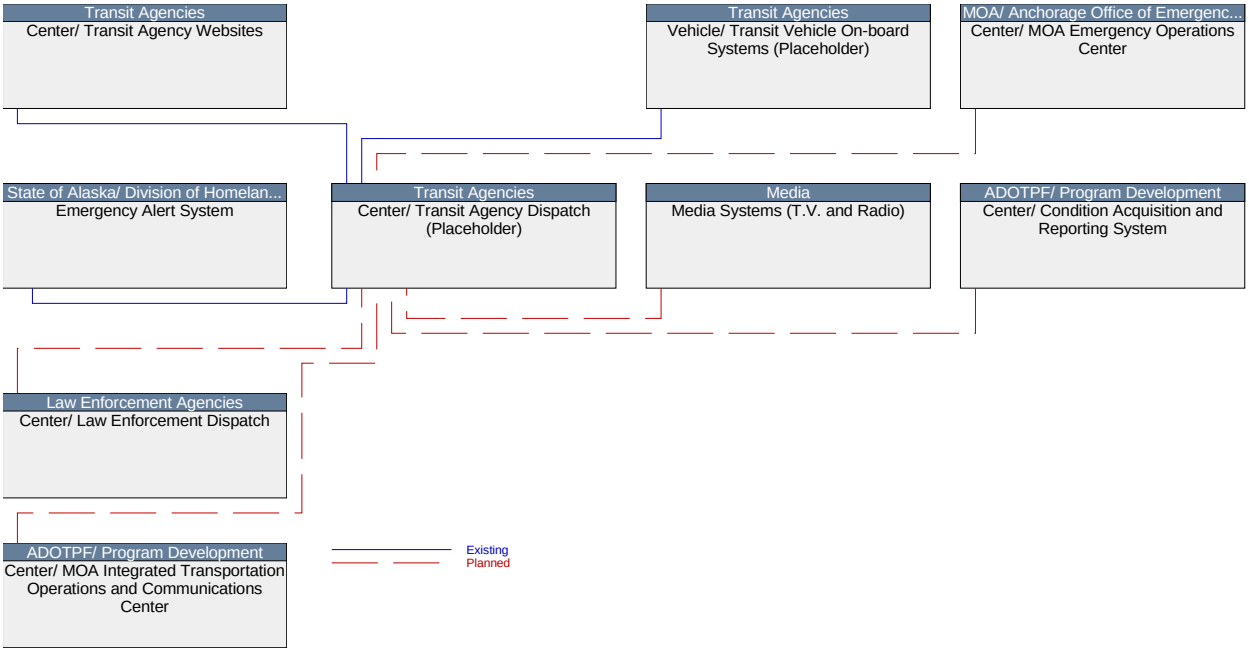


Figure 5-89:
Interconnect Diagram for Transit Agency Dispatch (Placeholder)

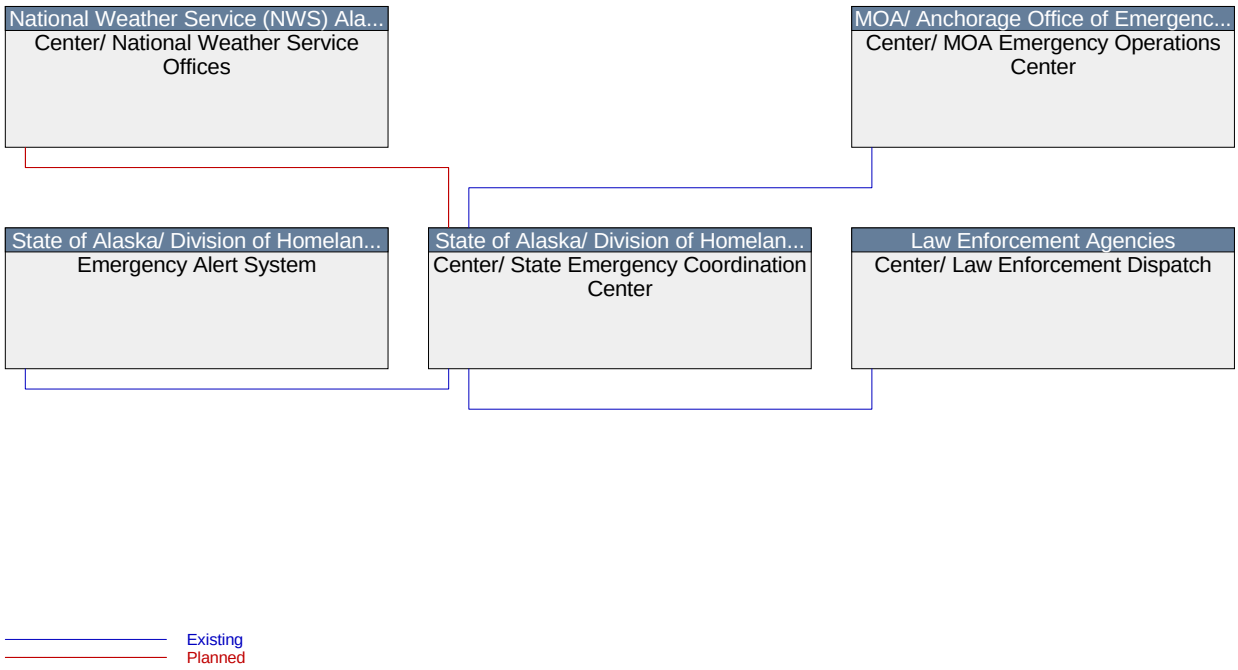


Figure 5-90:
Interconnect Diagram for State Emergency Coordination Center

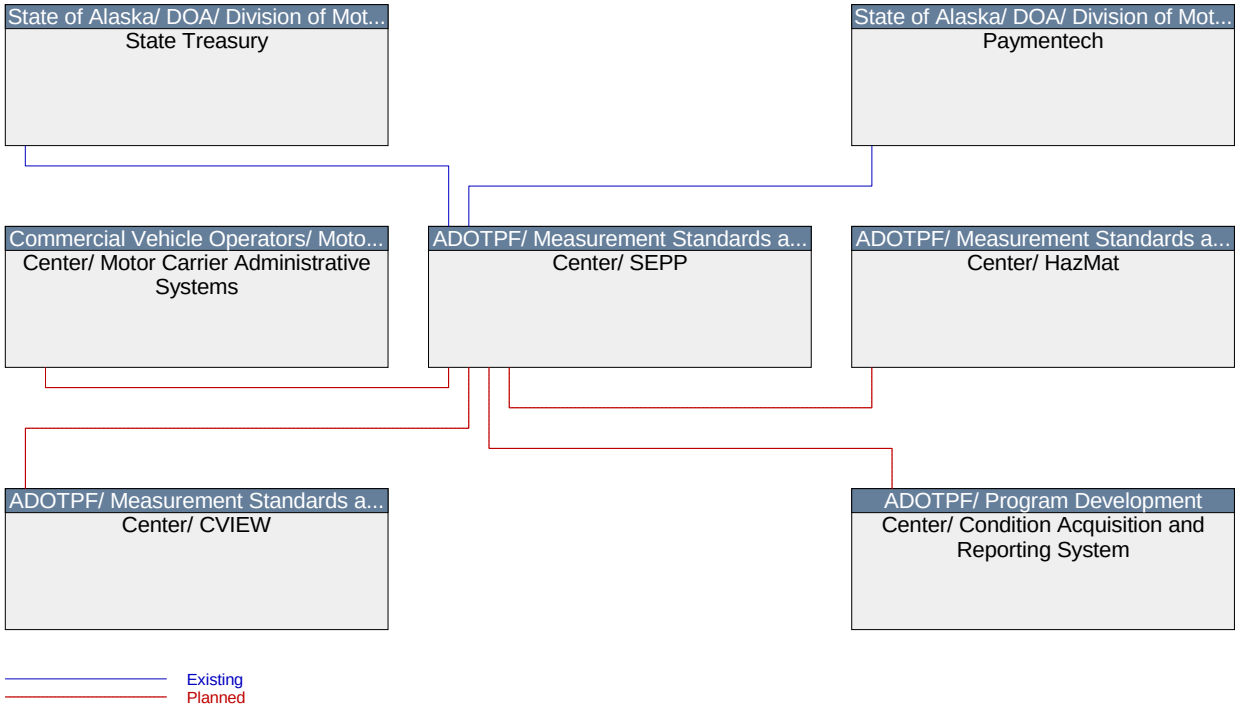


Figure 5-91:
Interconnect Diagram for SEPP

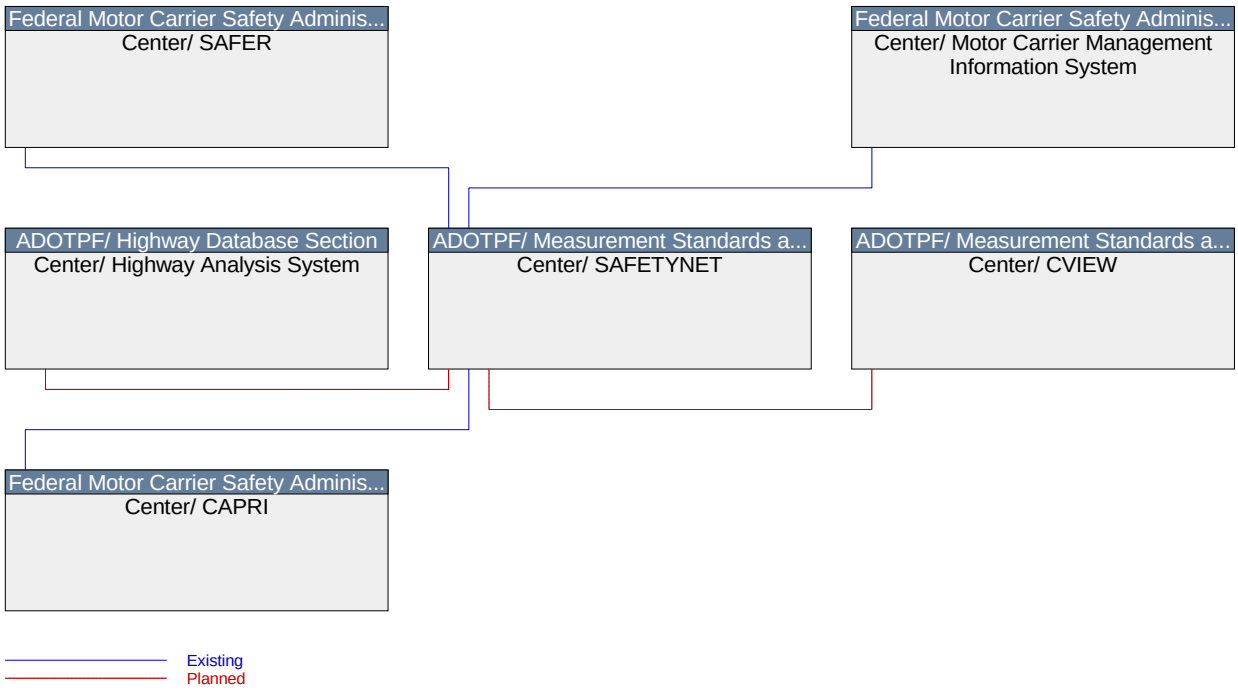


Figure 5-92:
Interconnect Diagram for SAFETYNET

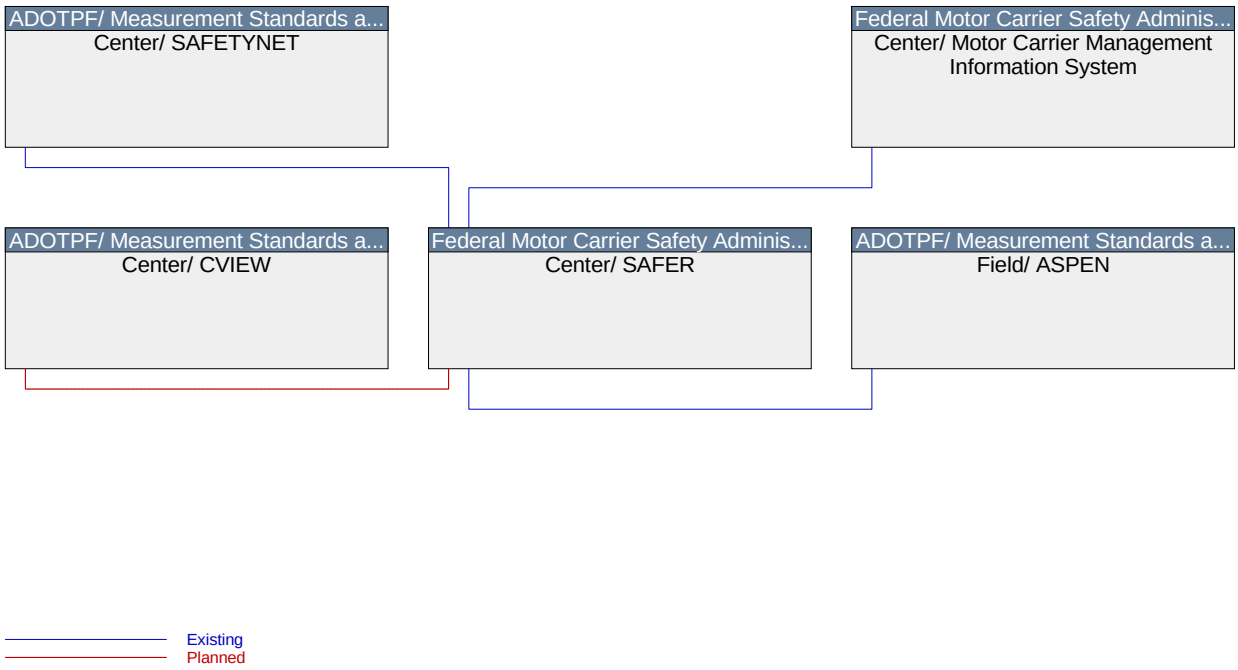


Figure 5-93:
Interconnect Diagram for SAFER

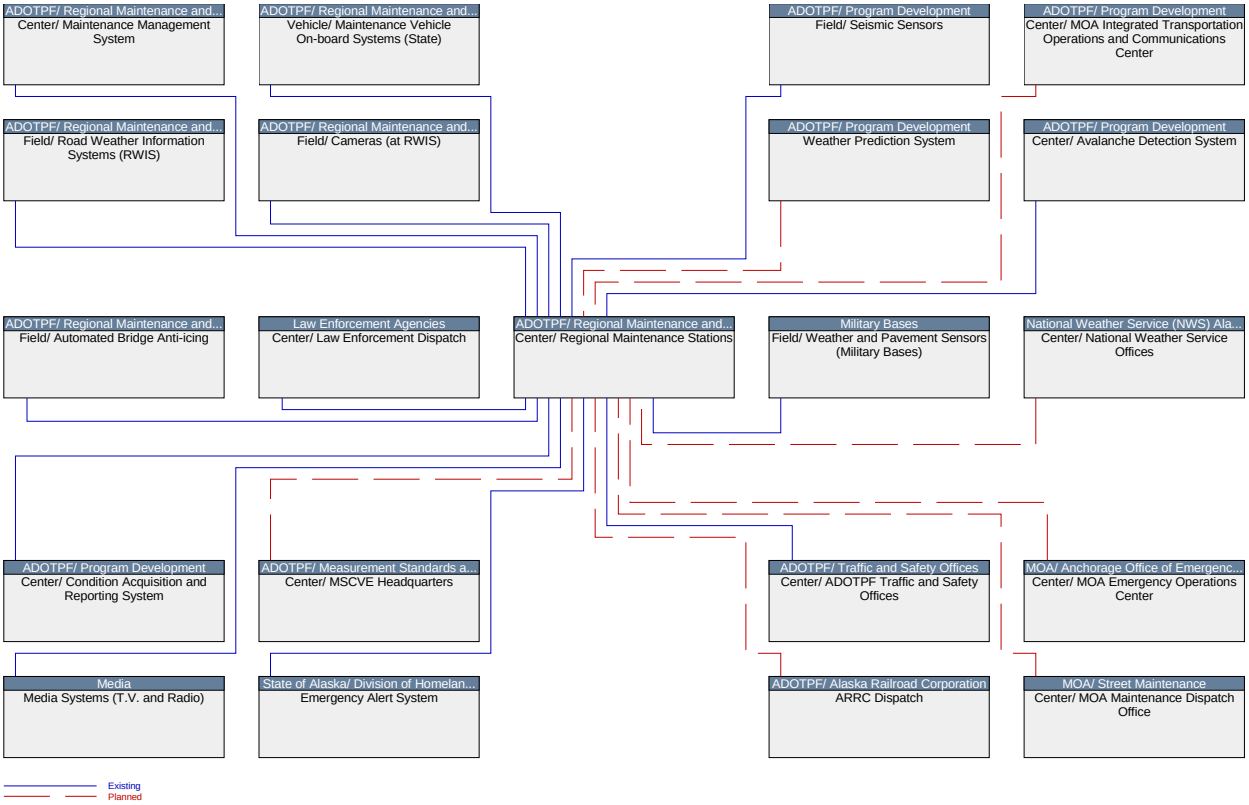


Figure 5-94:
Interconnect Diagram for Regional Maintenance Stations

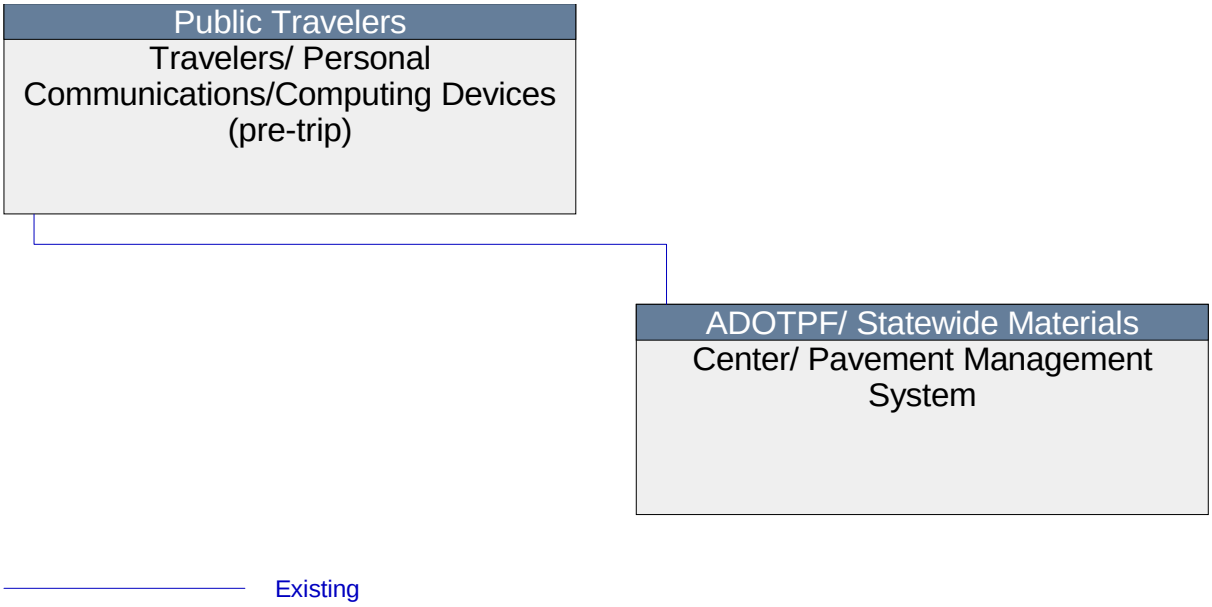


Figure 5-95:
Interconnect Diagram for Pavement Management System

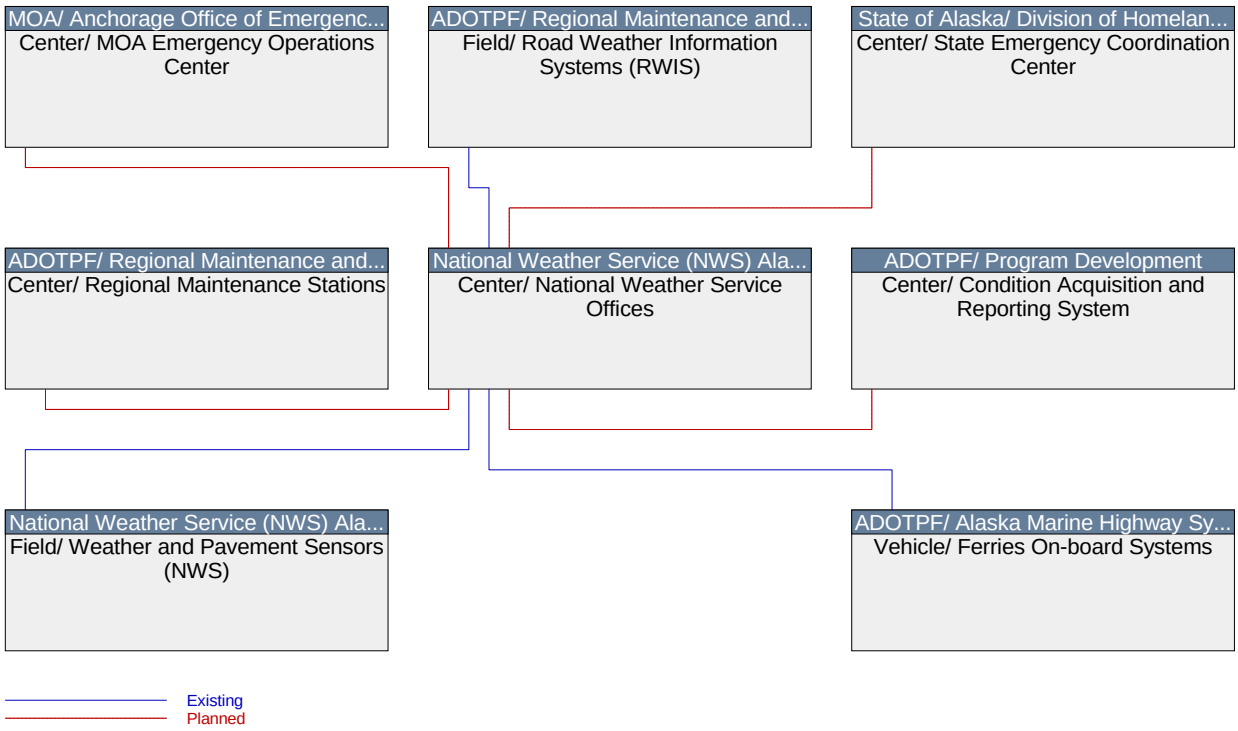


Figure 5-96:
Interconnect Diagram for National Weather Service Offices

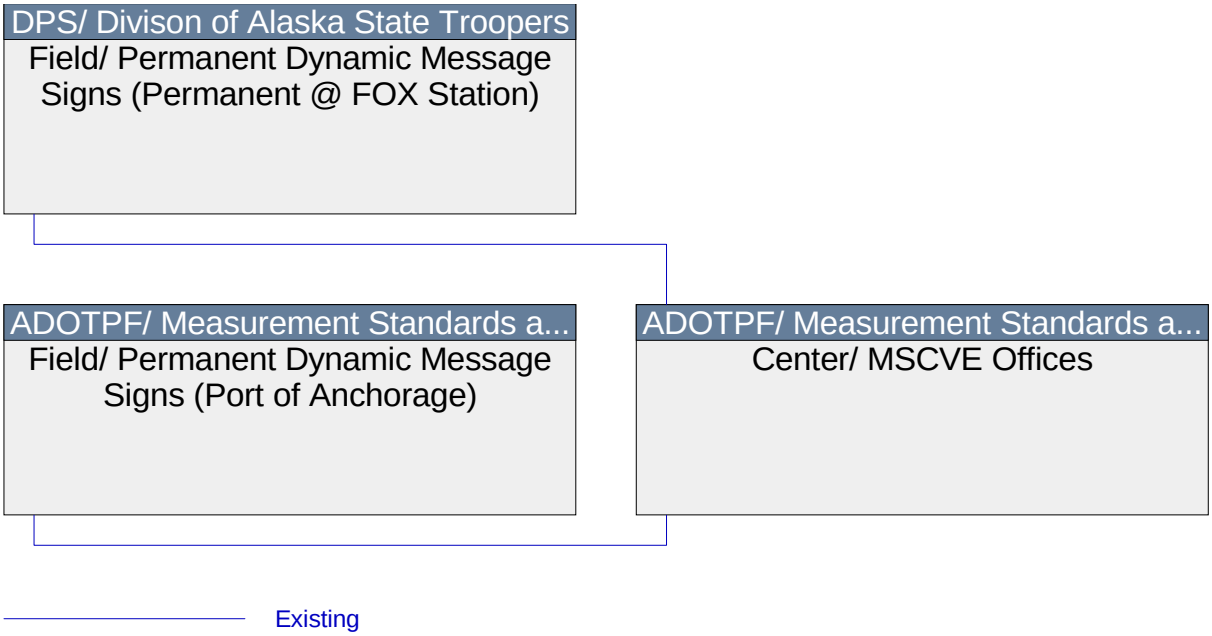


Figure 5-97:
Interconnect Diagram for MSCVE Offices

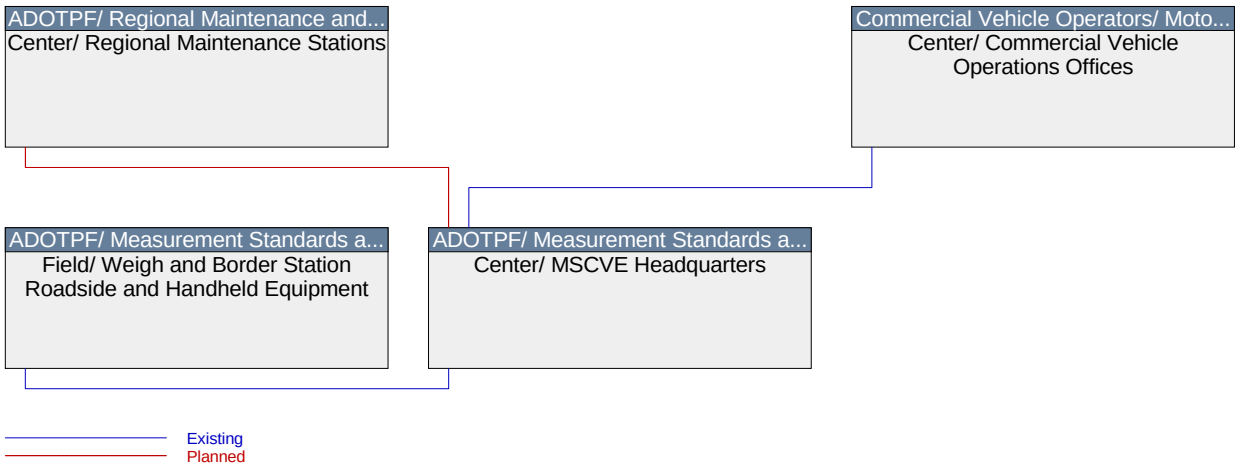


Figure 5-98:
Interconnect Diagram for MSCVE Headquarters

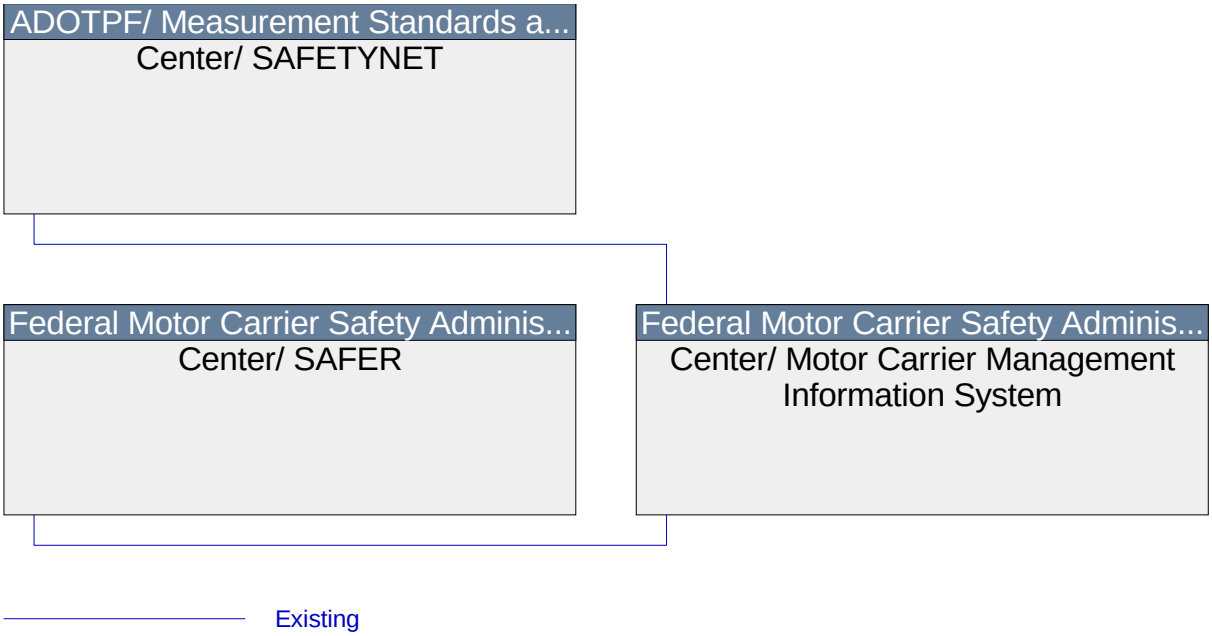


Figure 5-99:
Interconnect Diagram for Motor Carrier Management Information System

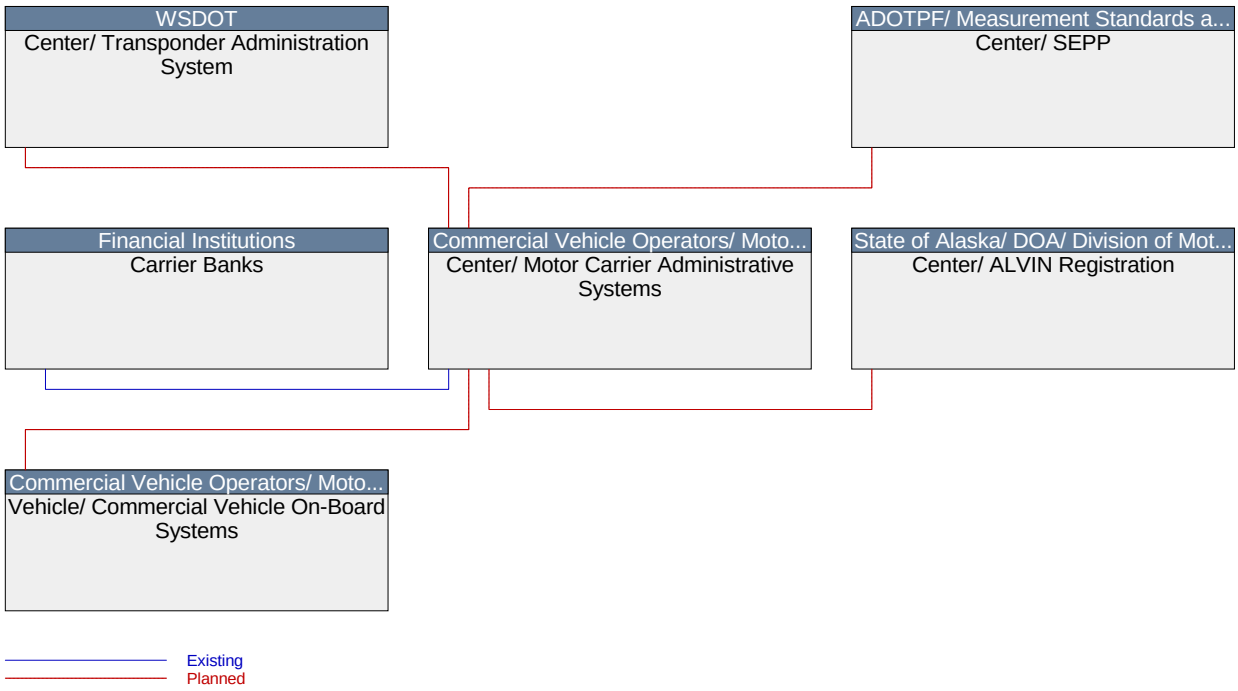


Figure 5-100:
Interconnect Diagram for Motor Carrier Administrative Systems

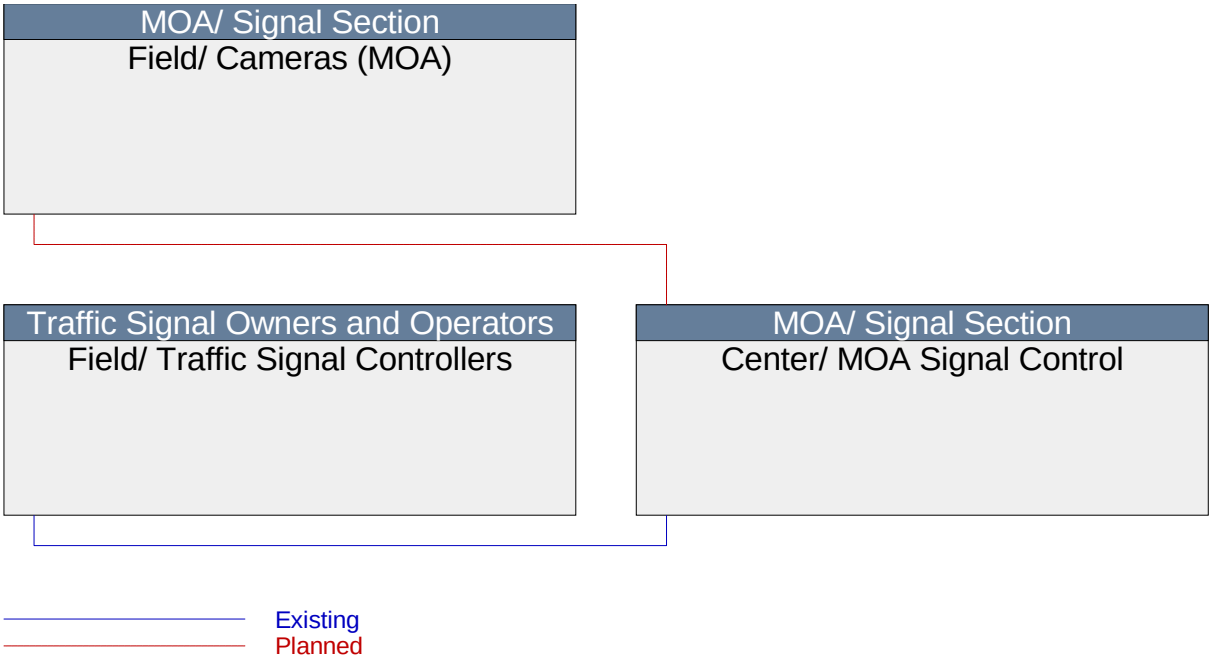


Figure 5-101:
Interconnect Diagram for MOA Signal Control

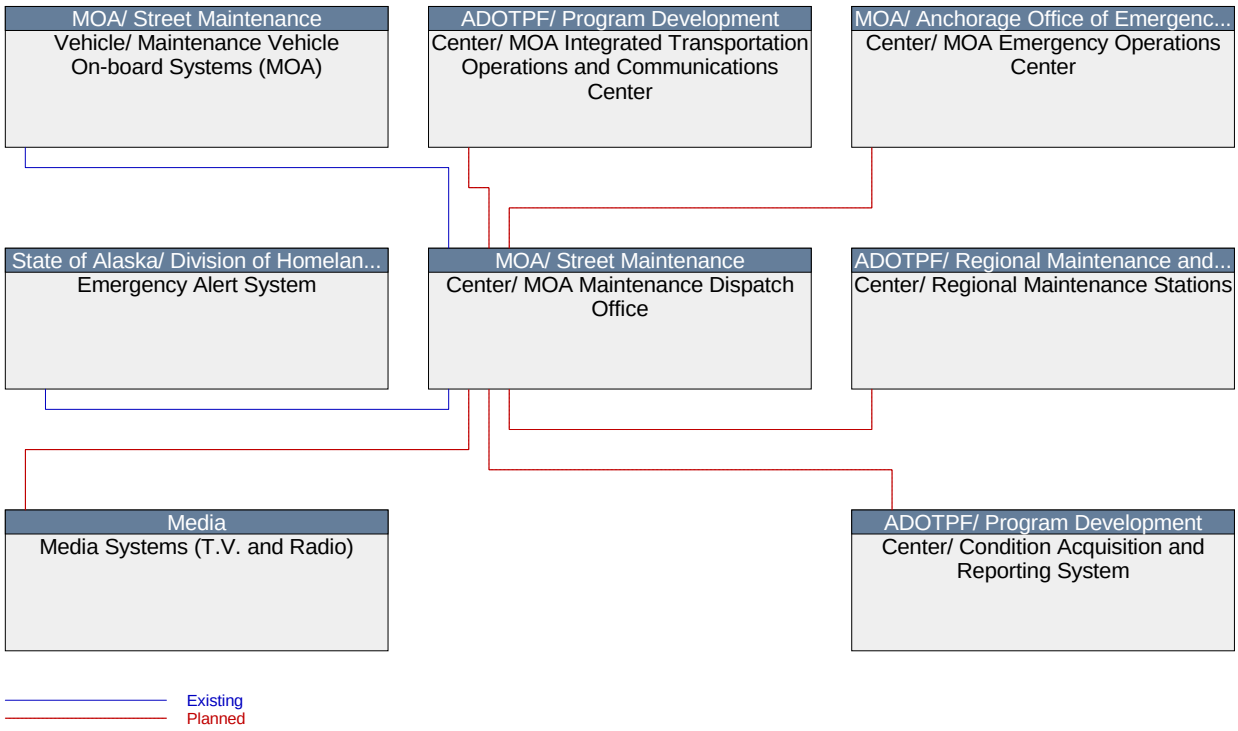


Figure 5-102:
Interconnect Diagram for MOA Maintenance Dispatch Office

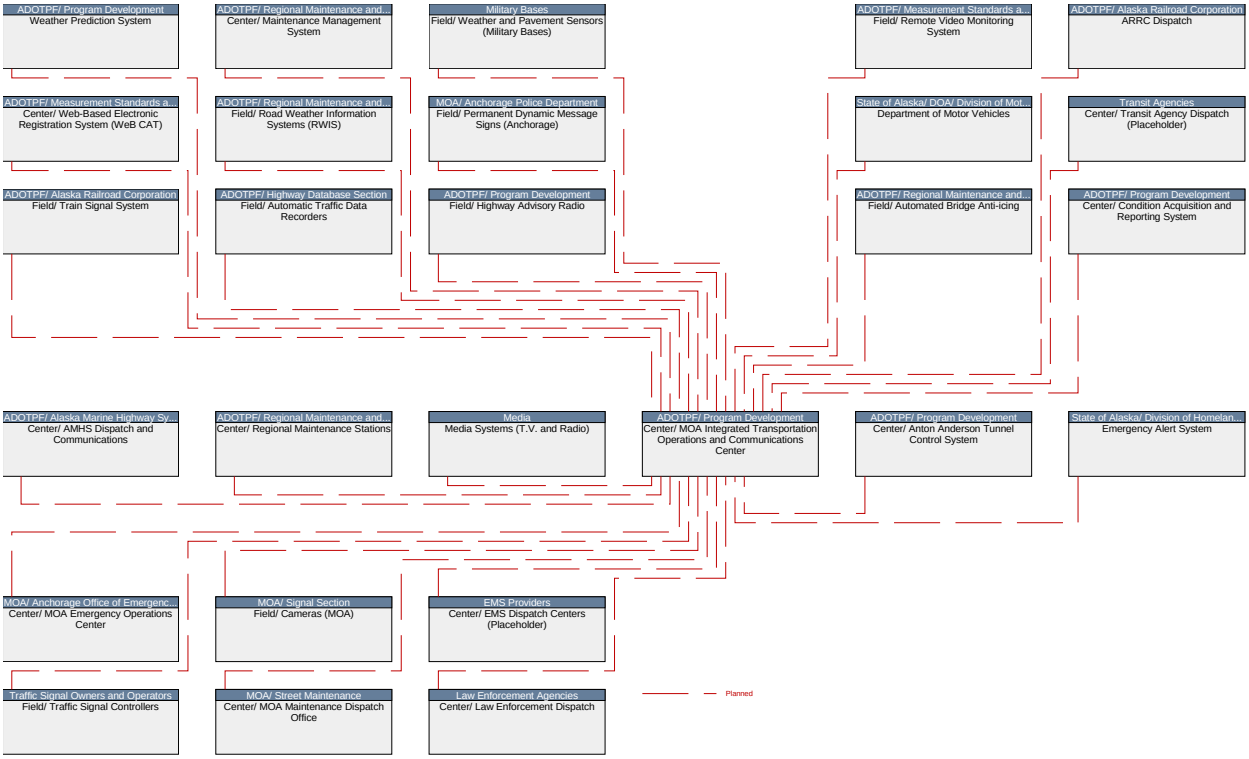


Figure 5-103:
Interconnect Diagram for MOA Integrated Transportation Operations and Communications Center

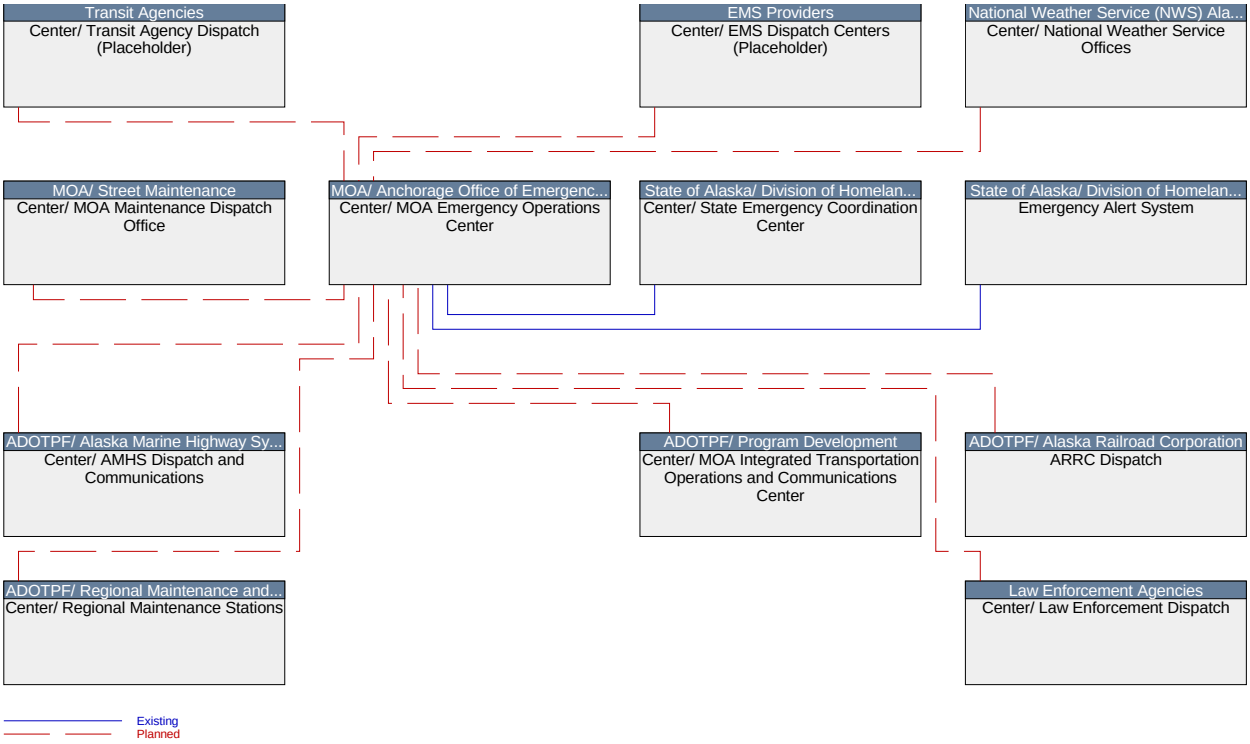


Figure 5-104:
Interconnect Diagram for MOA Emergency Operations Center

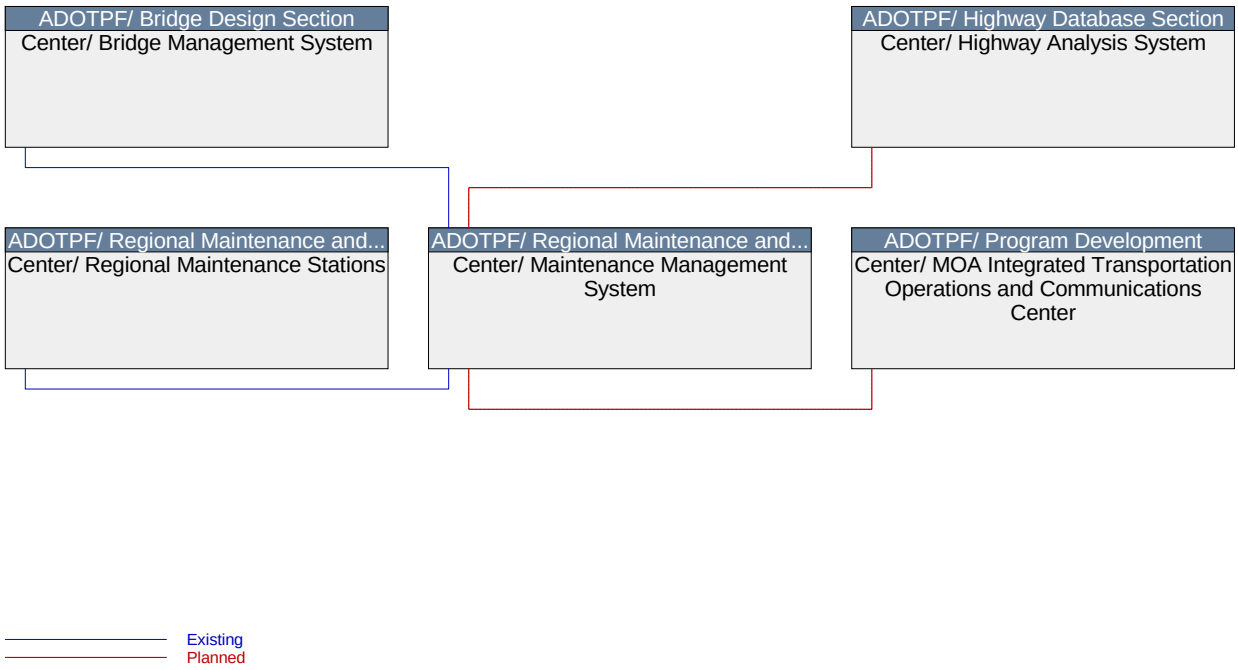


Figure 5-105:
Interconnect Diagram for Maintenance Management System

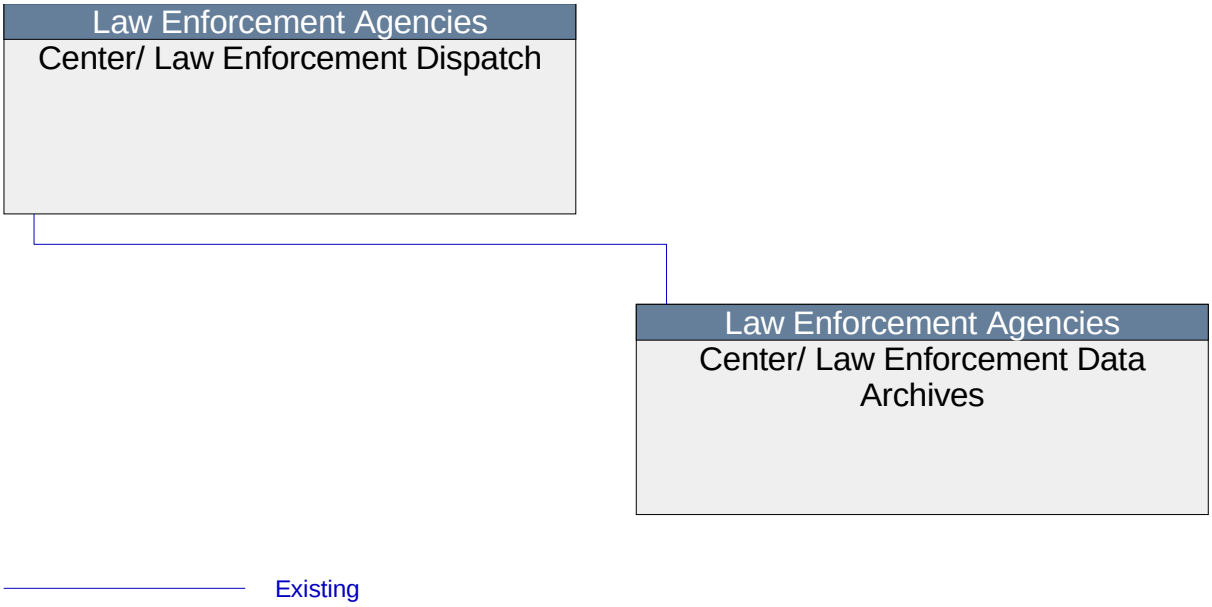


Figure 5-106:
Interconnect Diagram for Local Law Enforcement Data Archives

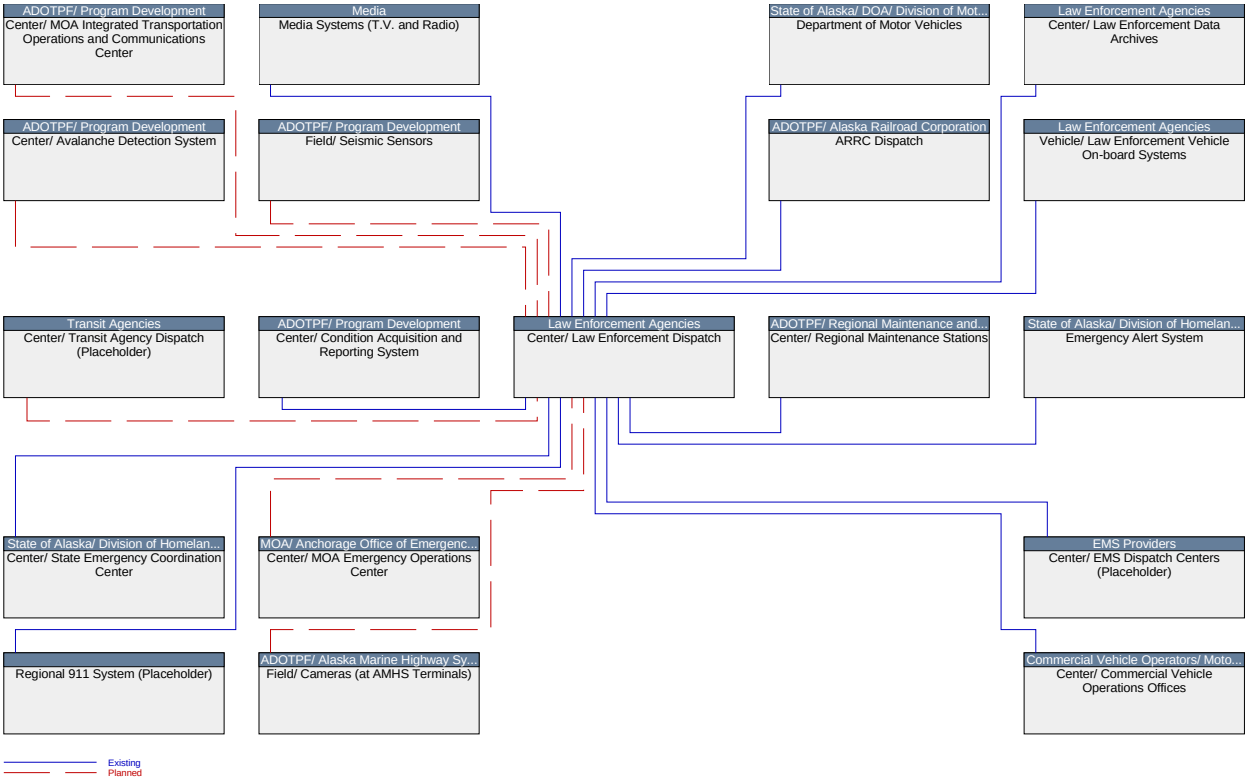


Figure 5-107:
Interconnect Diagram for Law Enforcement Dispatch (Placeholder)

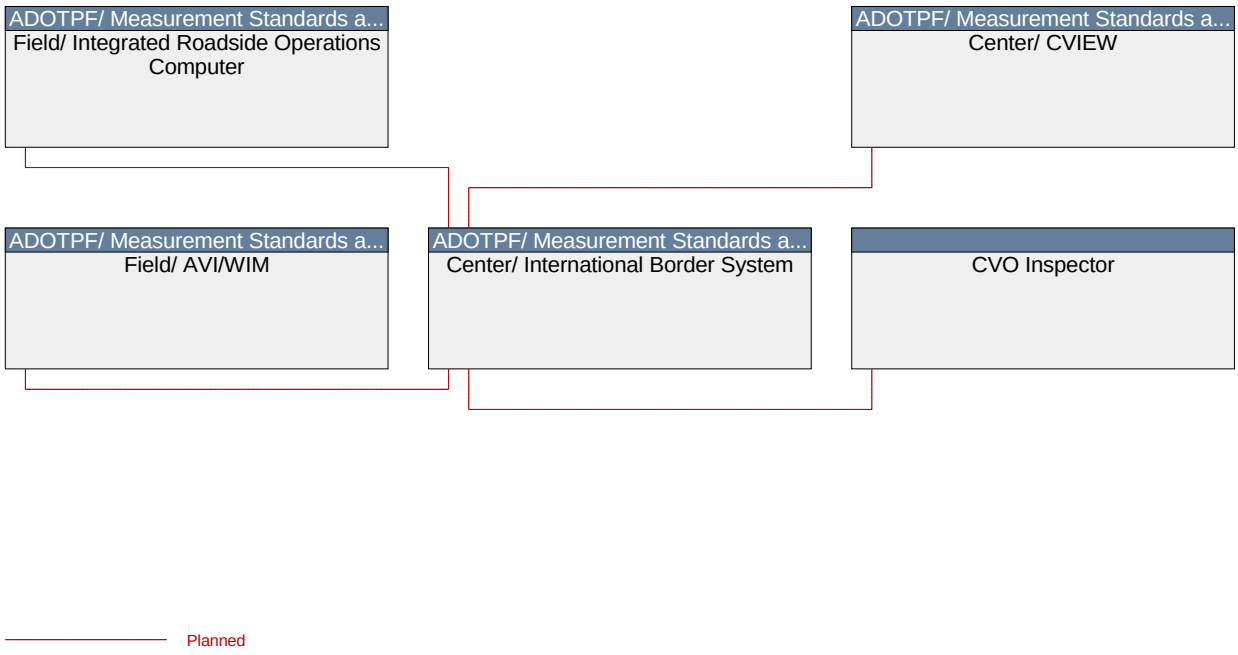


Figure 5-108:
Interconnect Diagram for International Border System

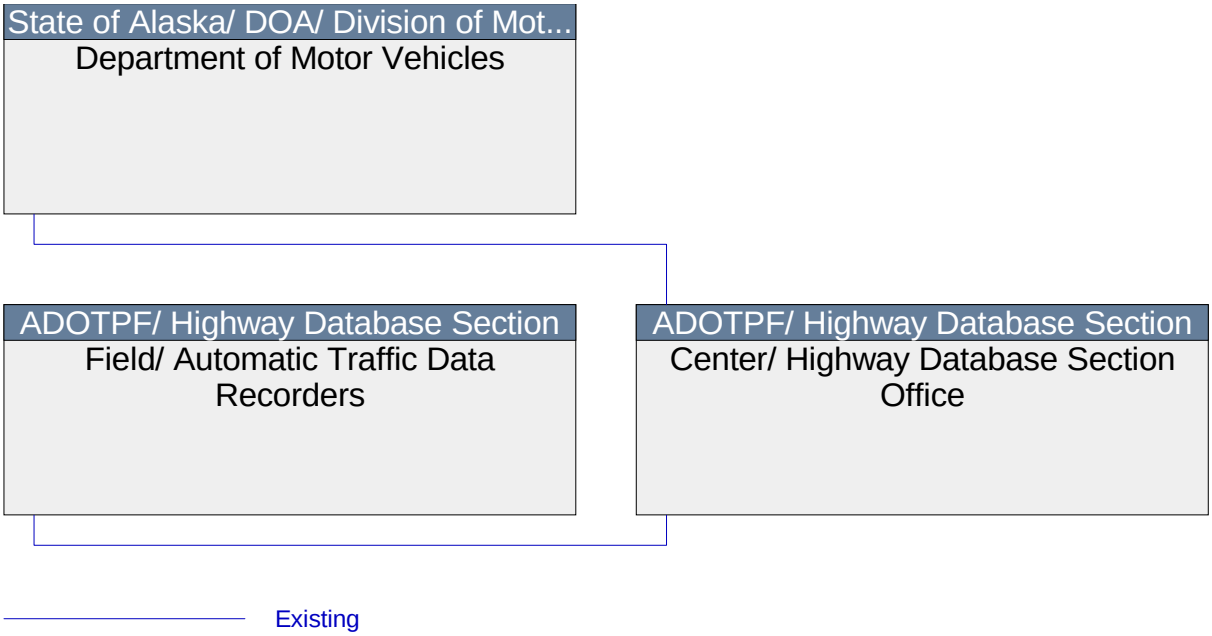


Figure 5-109:
Interconnect Diagram for Highway Database Section Office

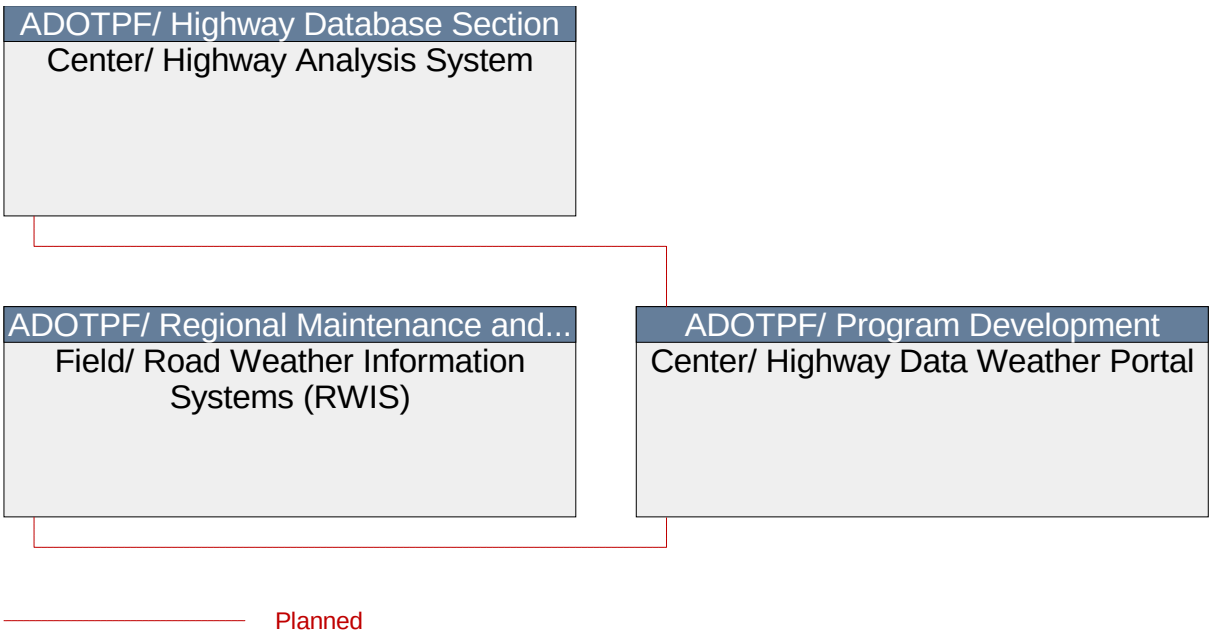


Figure 5-110:
Interconnect Diagram for Highway Data Weather Portal

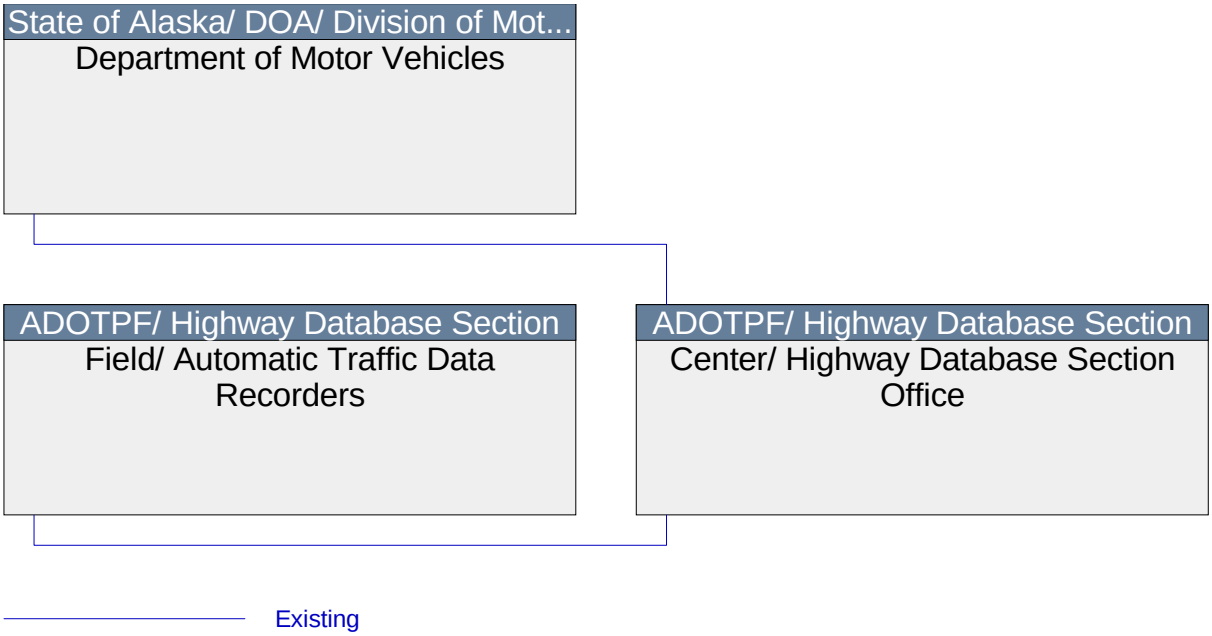


Figure 5-111:
Interconnect Diagram for Highway Database Section Office

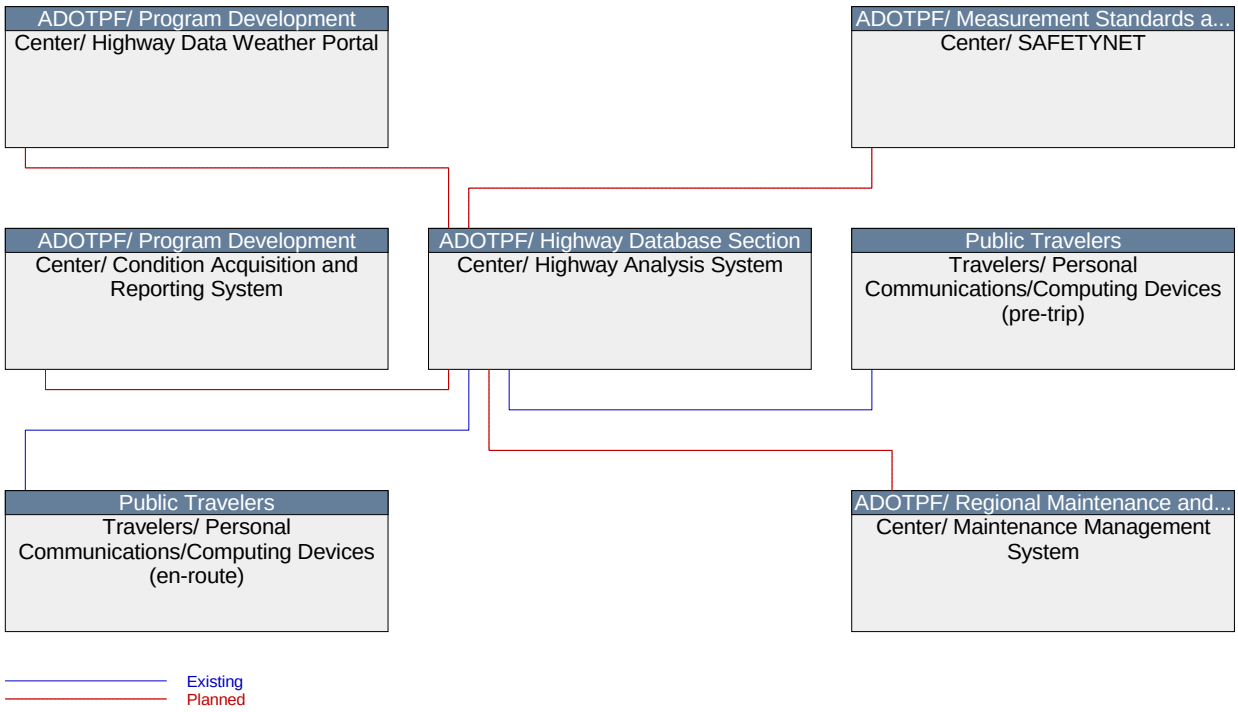


Figure 5-112:
Interconnect Diagram for Highway Analysis System

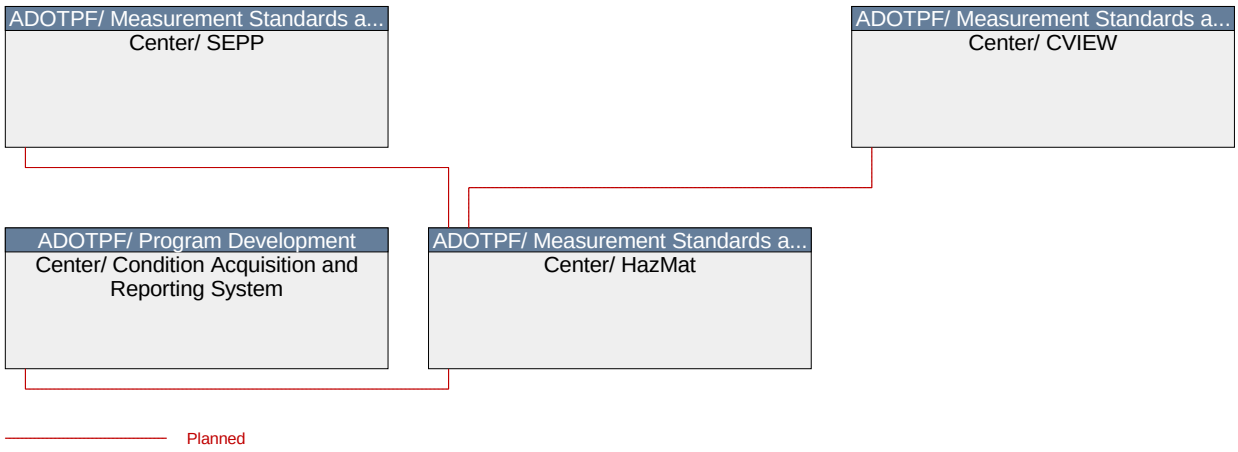


Figure 5-113:
Interconnect Diagram for HazMat

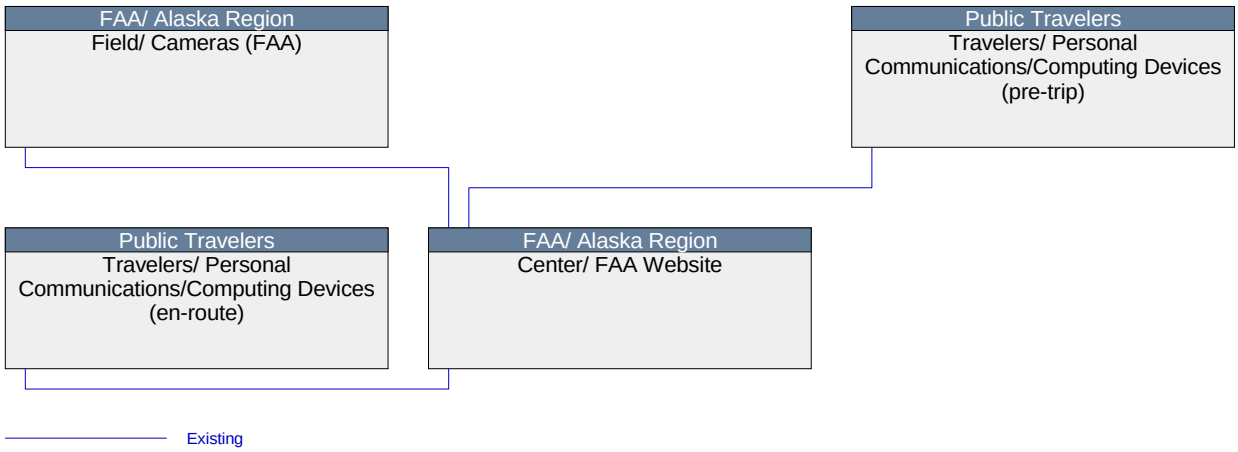


Figure 5-114:
Interconnect Diagram for FAA Website

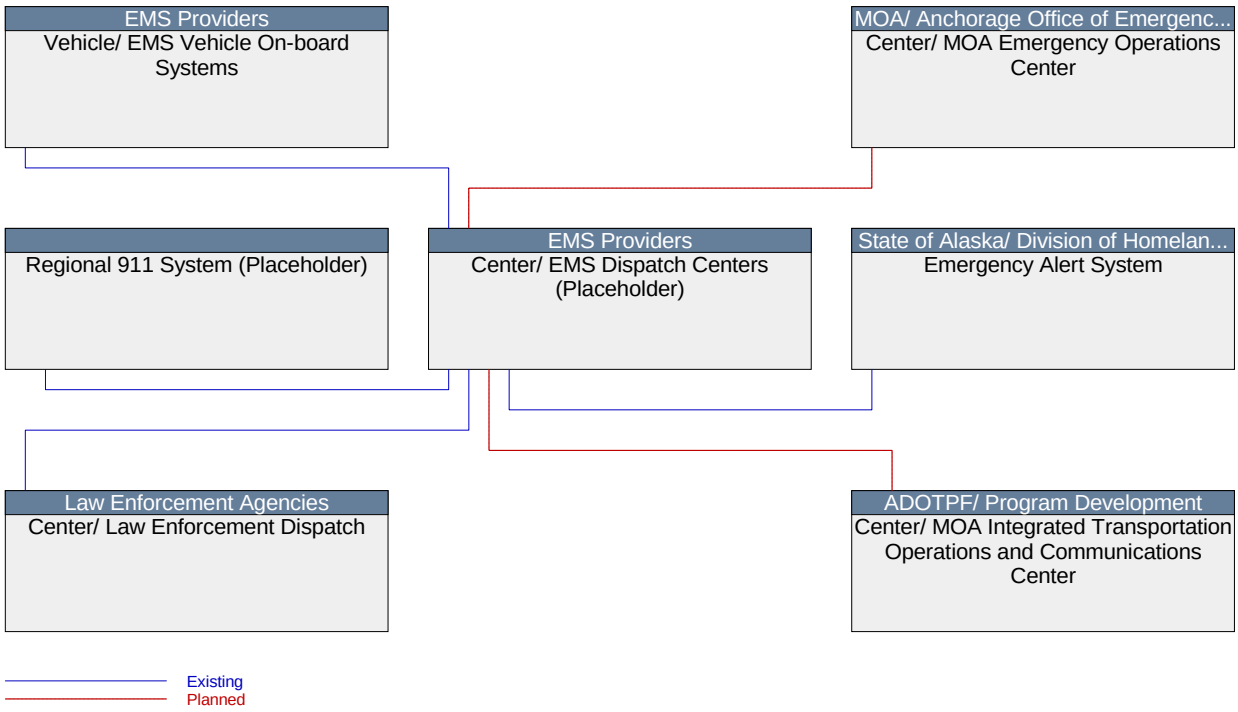


Figure 5-115:
Interconnect Diagram for EMS Dispatch Centers (Placeholder)

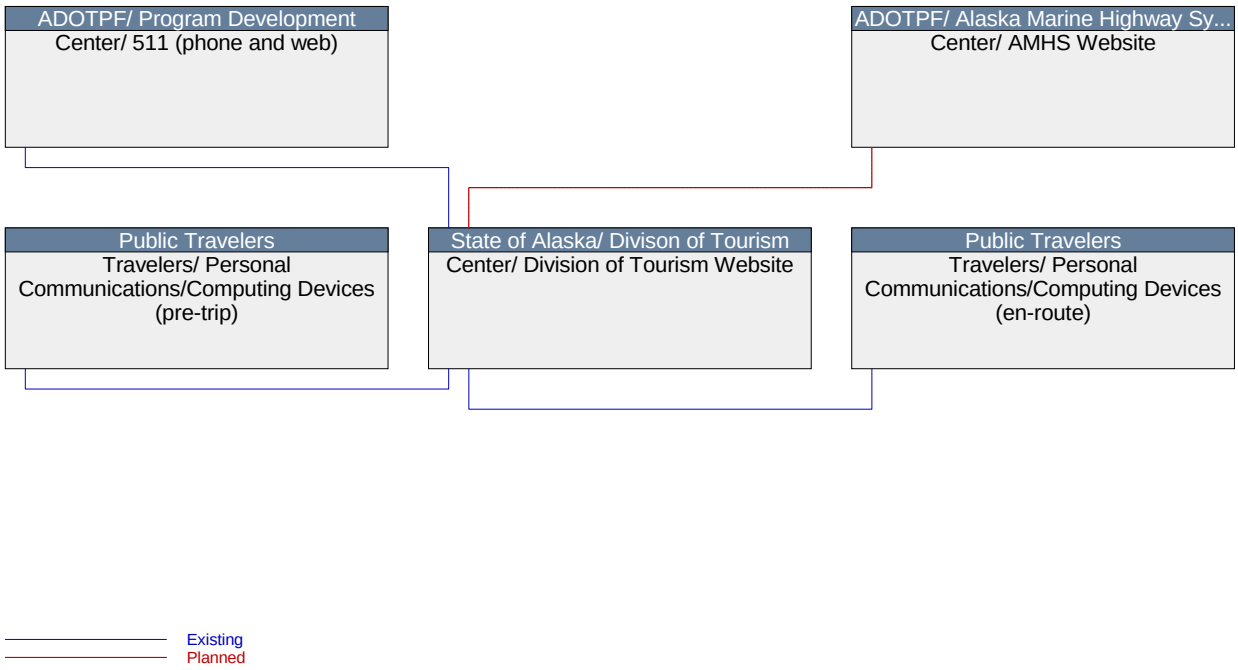


Figure 5-116:
Interconnect Diagram for Division of Tourism Website

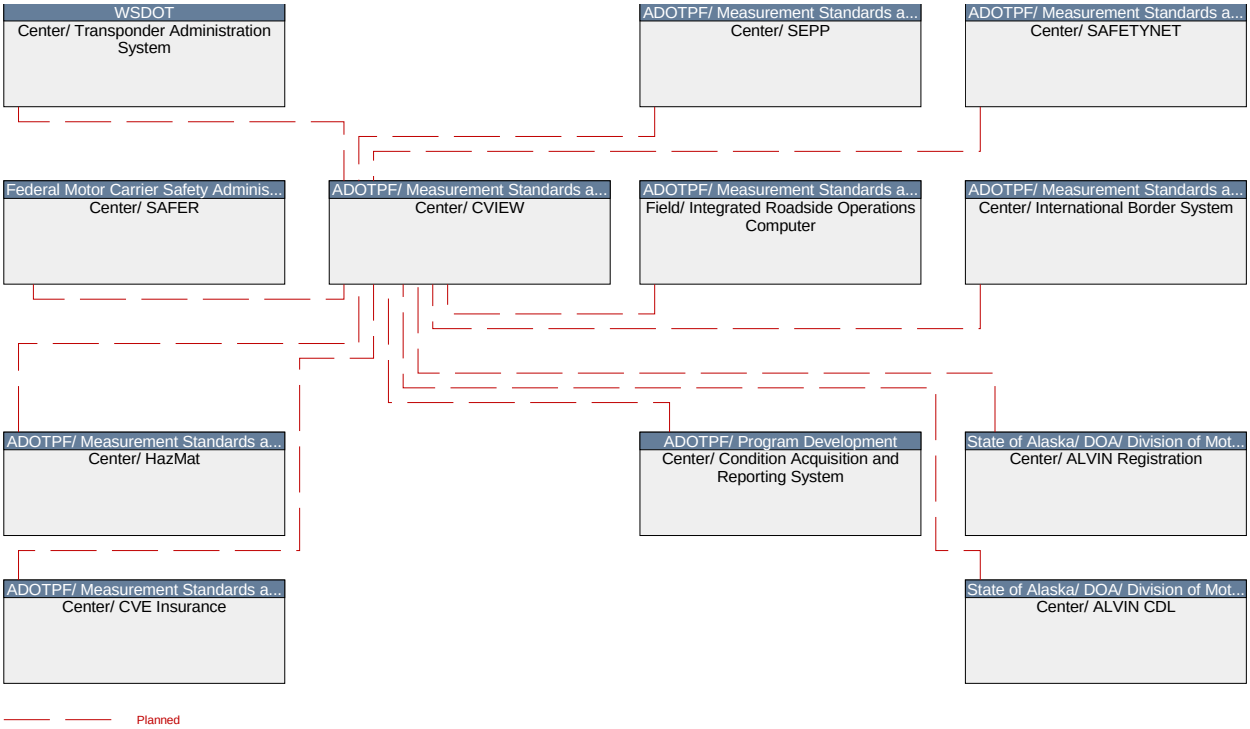


Figure 5-117:
Interconnect Diagram for CVIEW

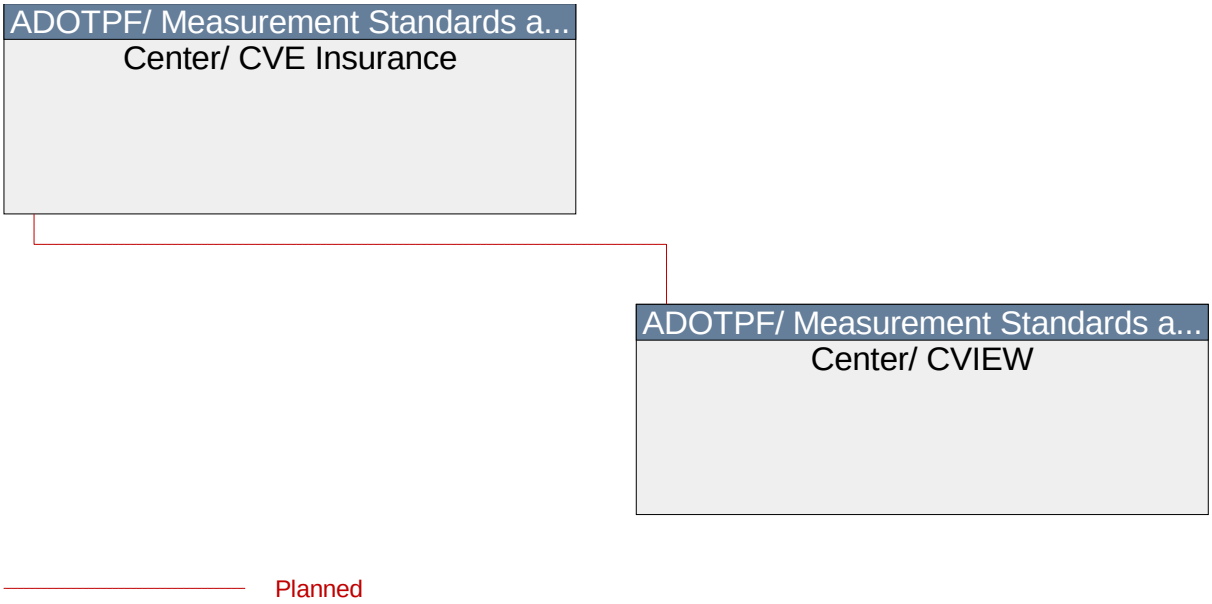


Figure 5-118:
Interconnect Diagram for CVE Insurance

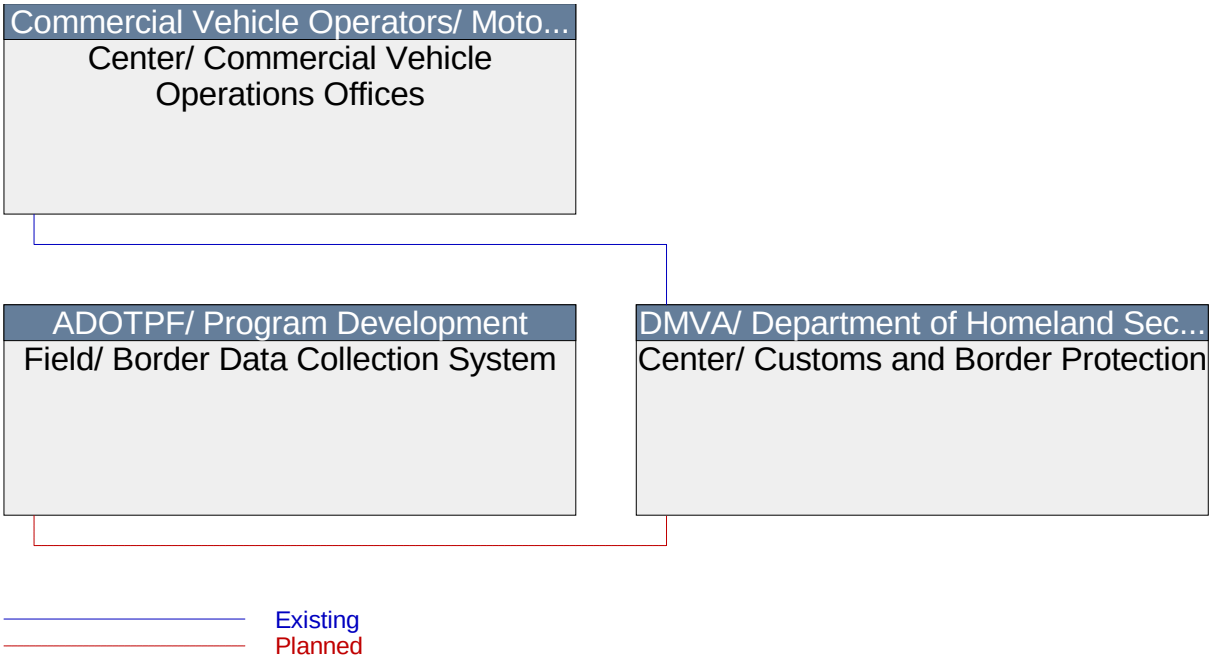


Figure 5-119:
Interconnect Diagram for Customs and Border Protection

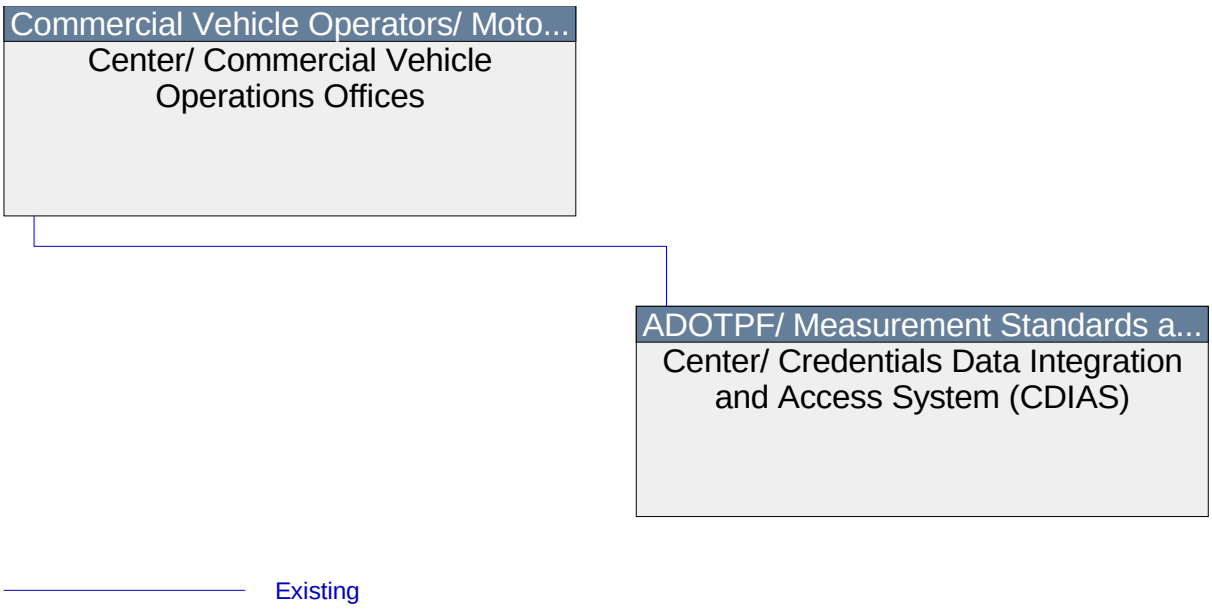


Figure 5-120:
Interconnect Diagram for Credentials Data Integration and Access System

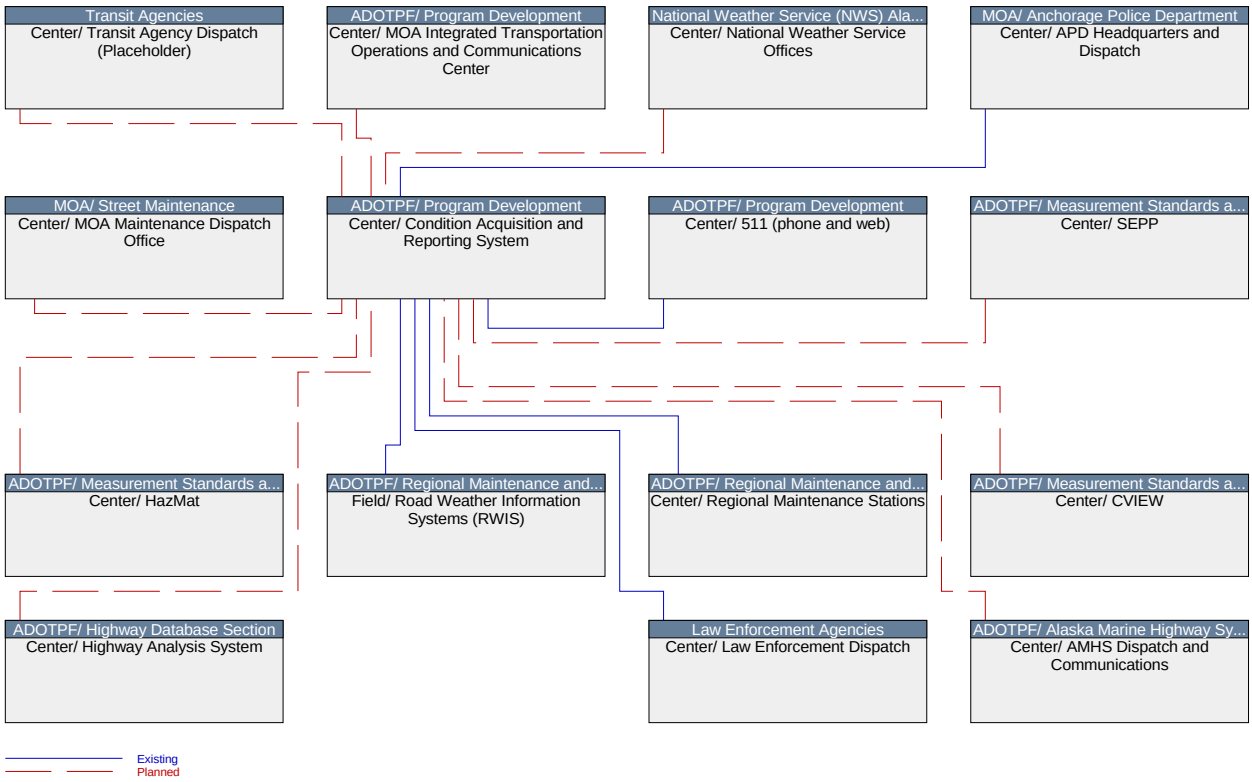


Figure 5-121:
Interconnect Diagram for Condition Acquisition and Reporting System

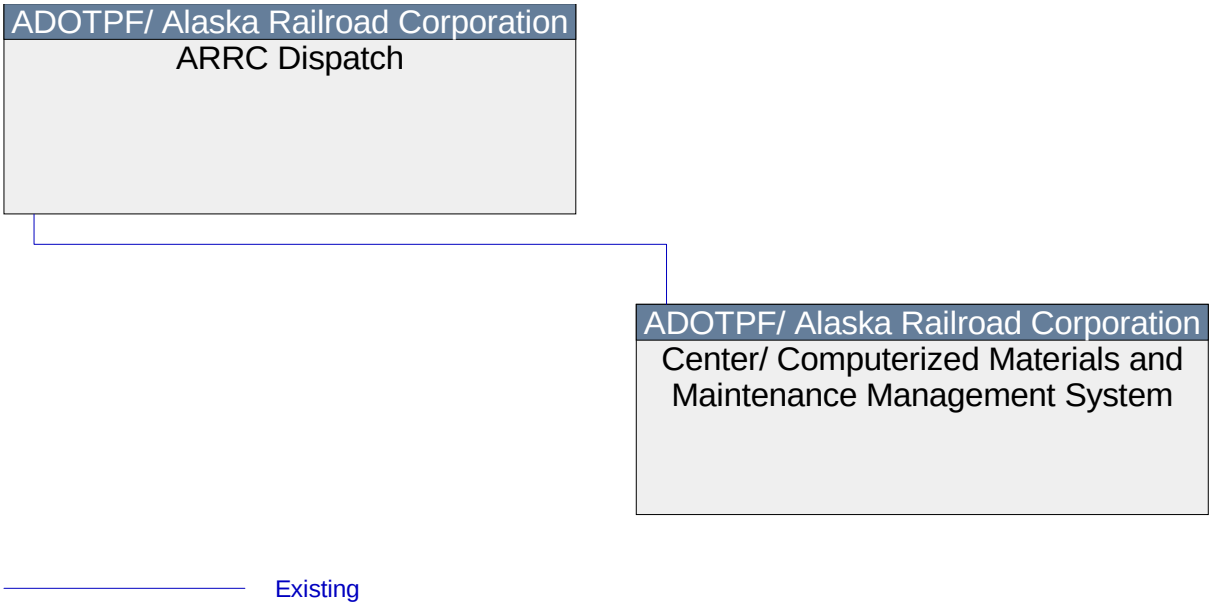


Figure 5-122:
Interconnect Diagram for Computerized Materials and Maintenance Management System

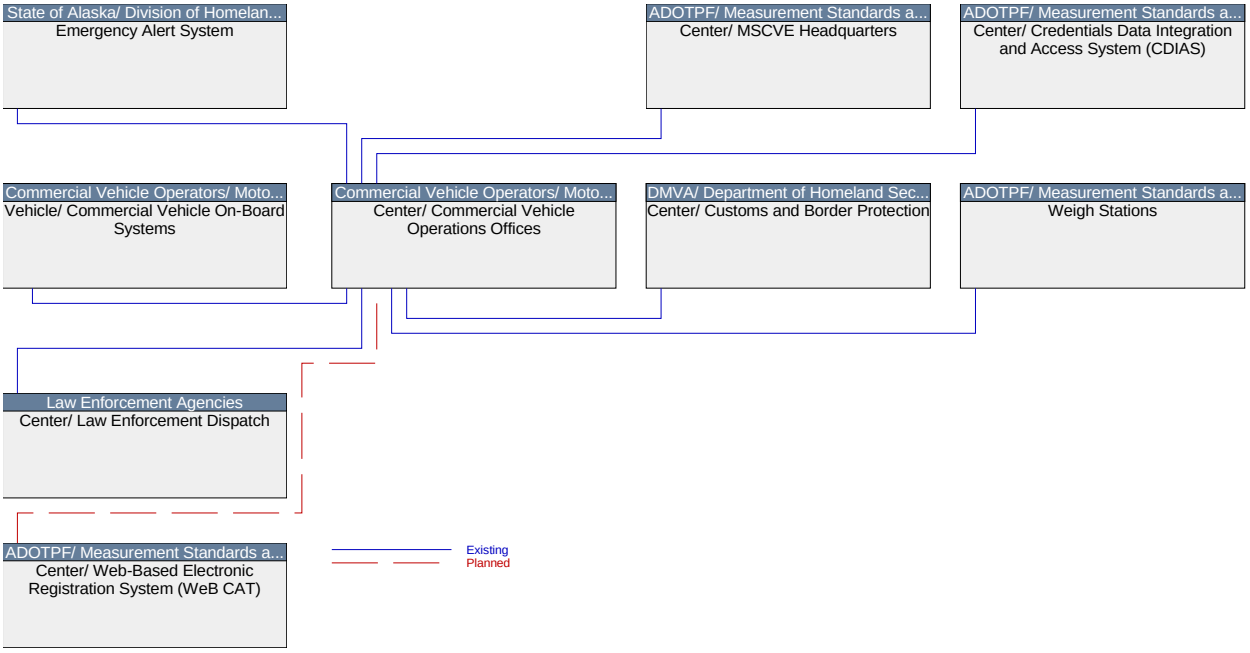


Figure 5-123:
Interconnect Diagram for Commercial Vehicle Operations Offices

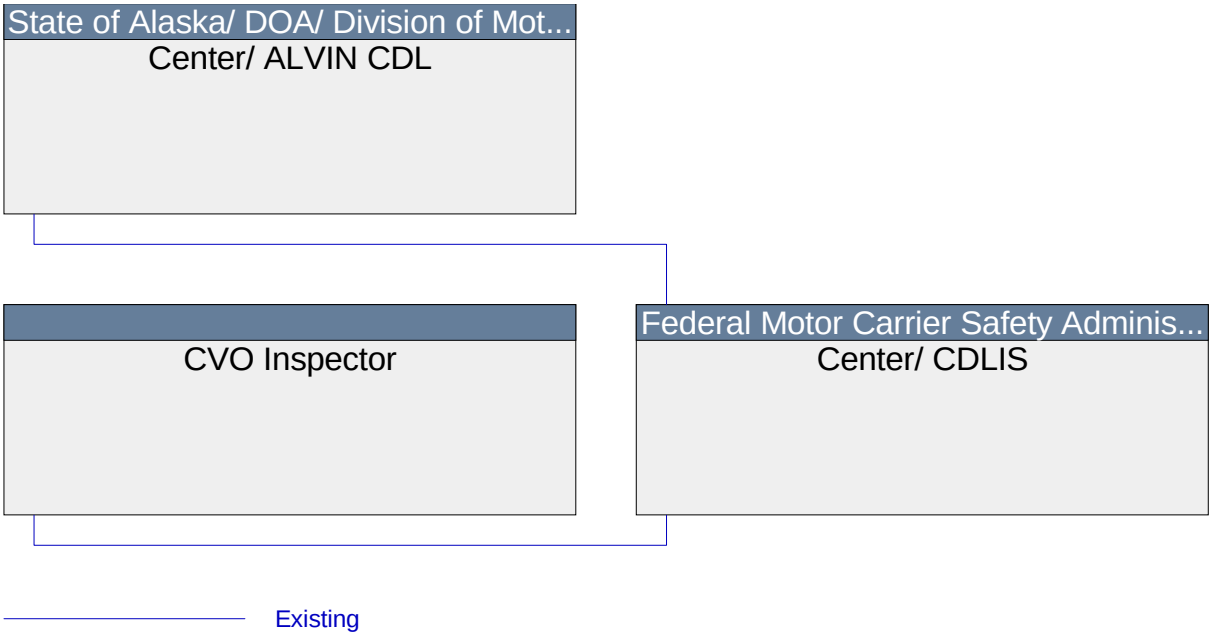


Figure 5-124:
Interconnect Diagram for CDLIS

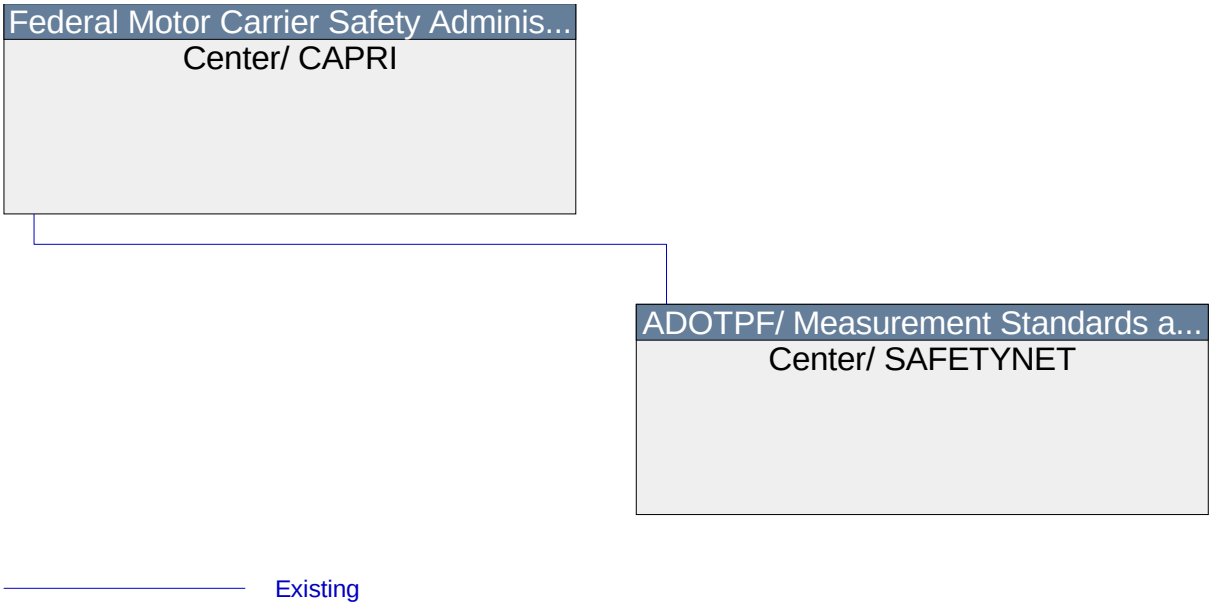


Figure 5-125:
Interconnect Diagram for CAPRI

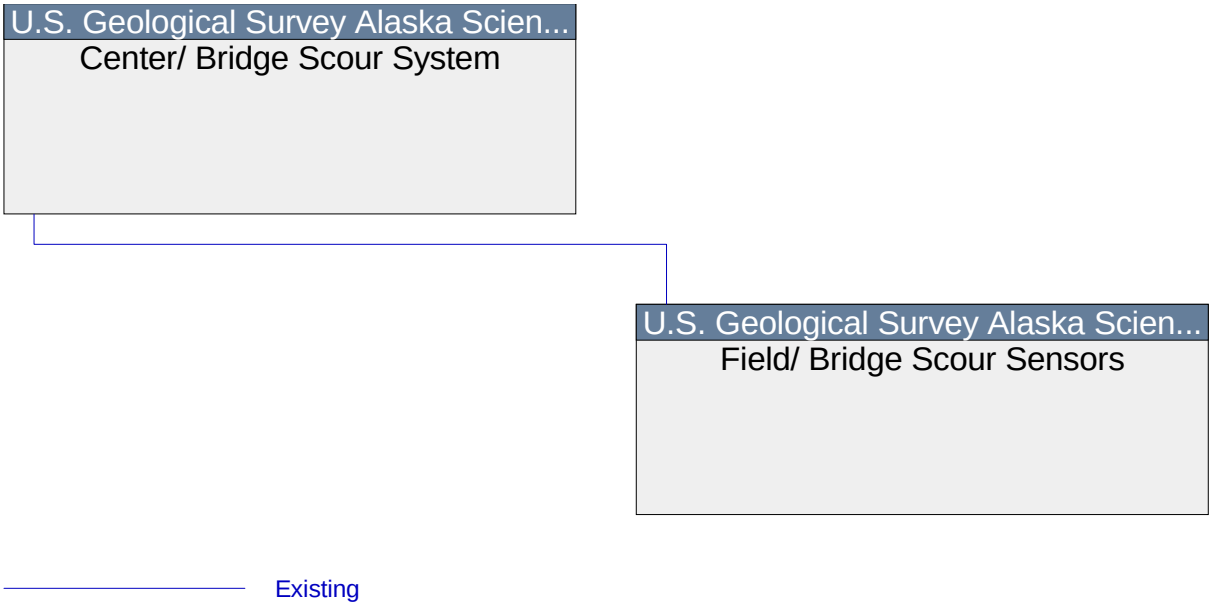


Figure 5-126:
Interconnect Diagram for Bridge Scour System

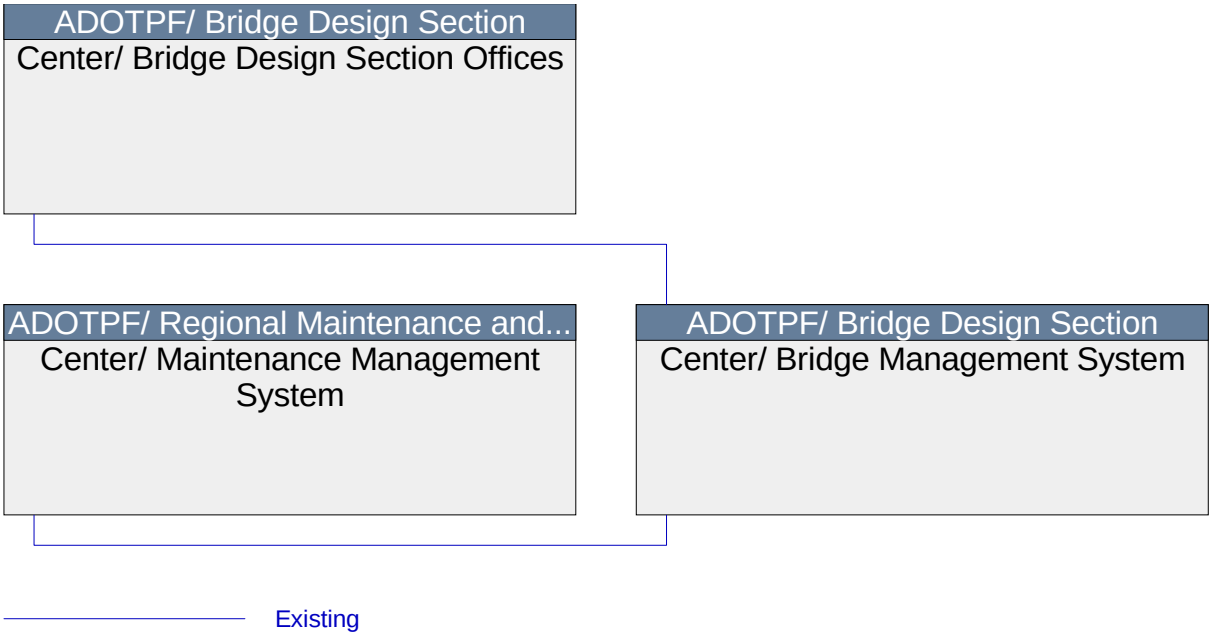


Figure 5-127:
Interconnect Diagram for Bridge Management System

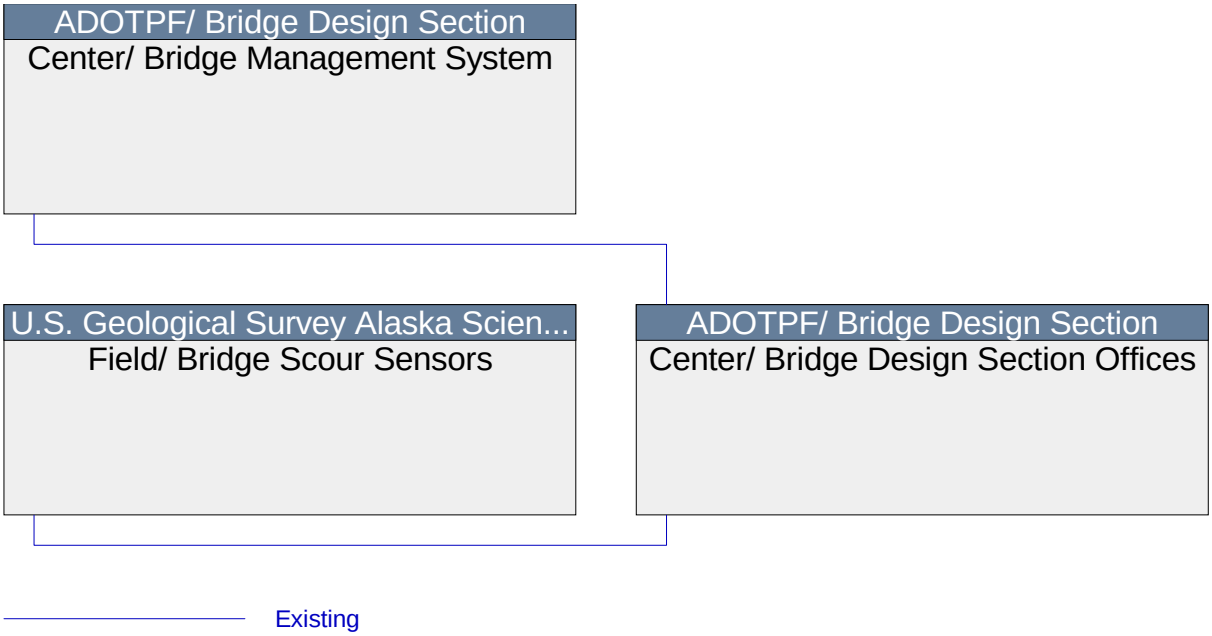


Figure 5-128:
Interconnect Diagram for Bridge Design Section Offices

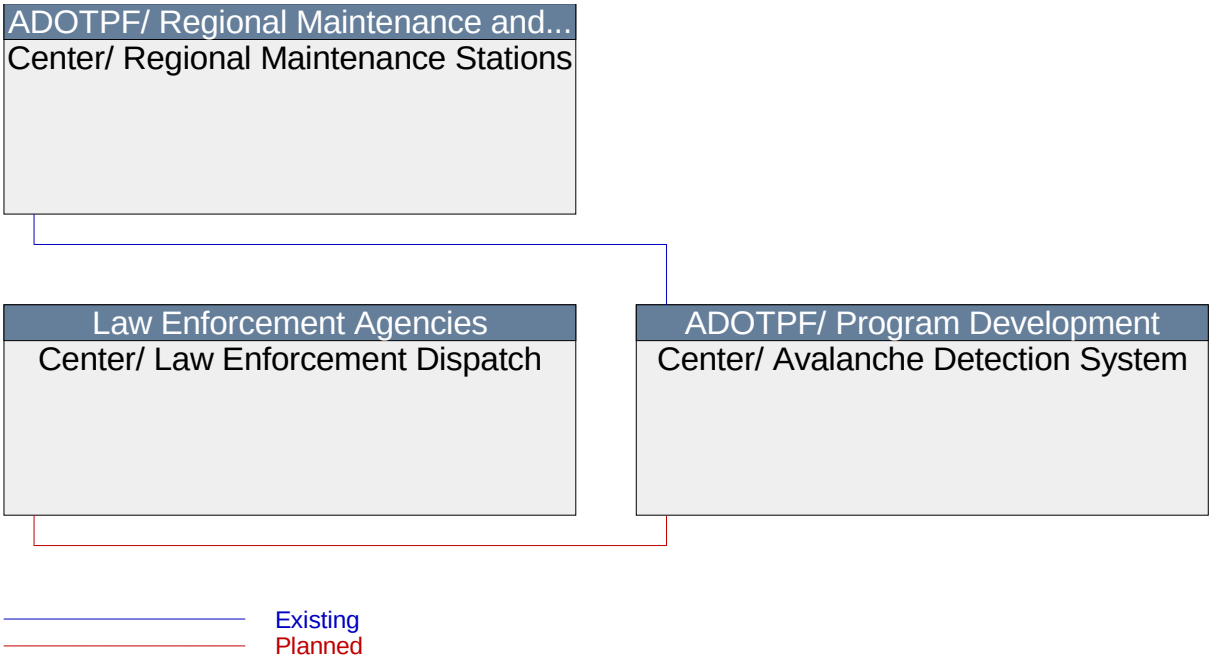


Figure 5-129:
Interconnect Diagram for Avalanche Detection System

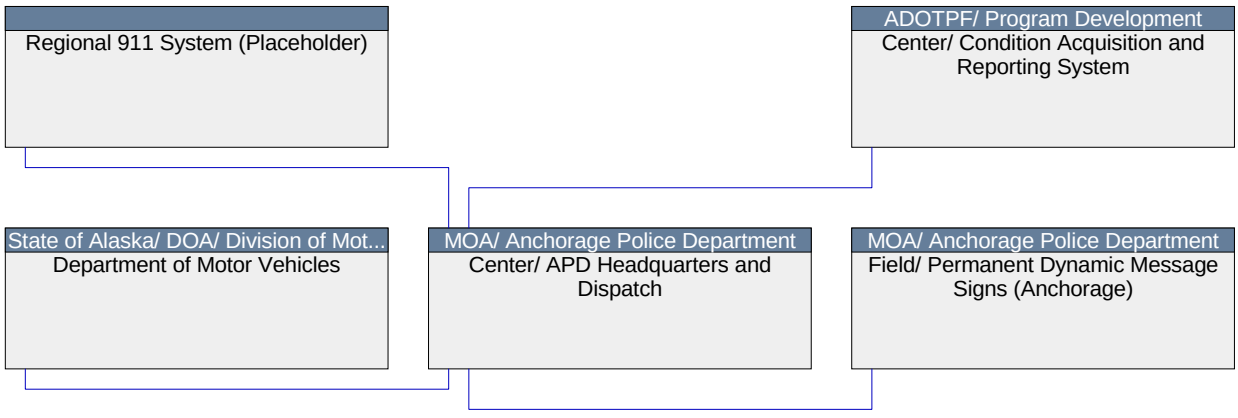


Figure 5-130:
Interconnect Diagram for APD Headquarters and Dispatch

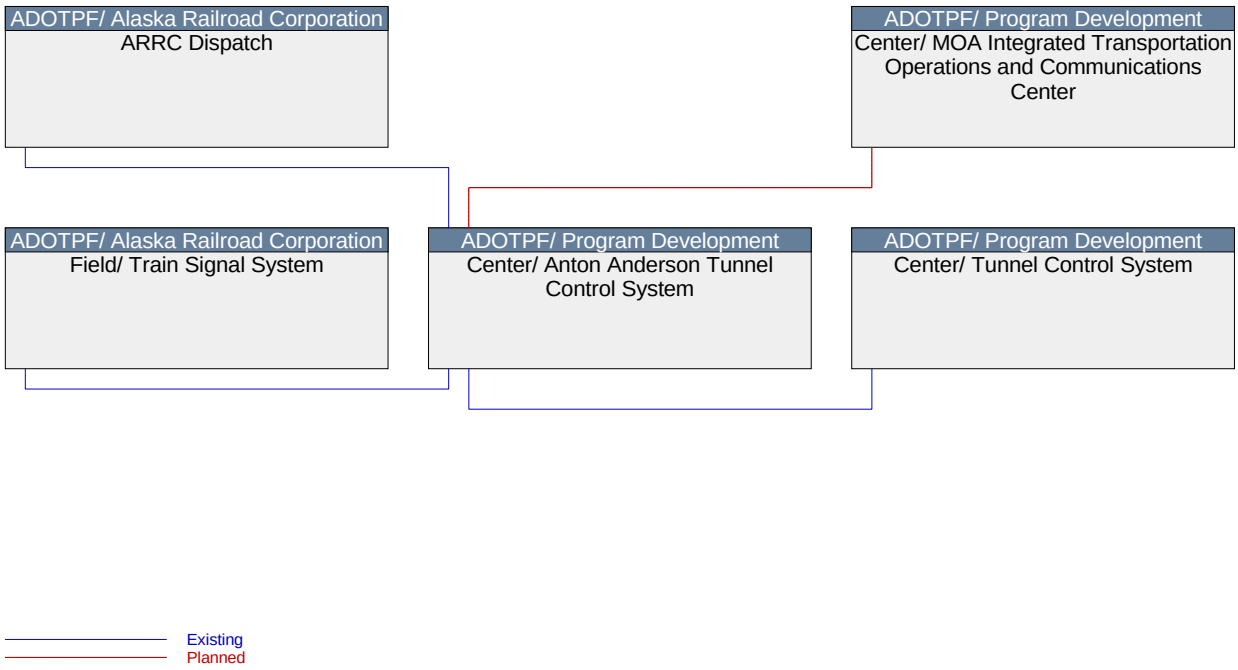


Figure 5-131:
Interconnect Diagram for Anton Anderson Tunnel Control System

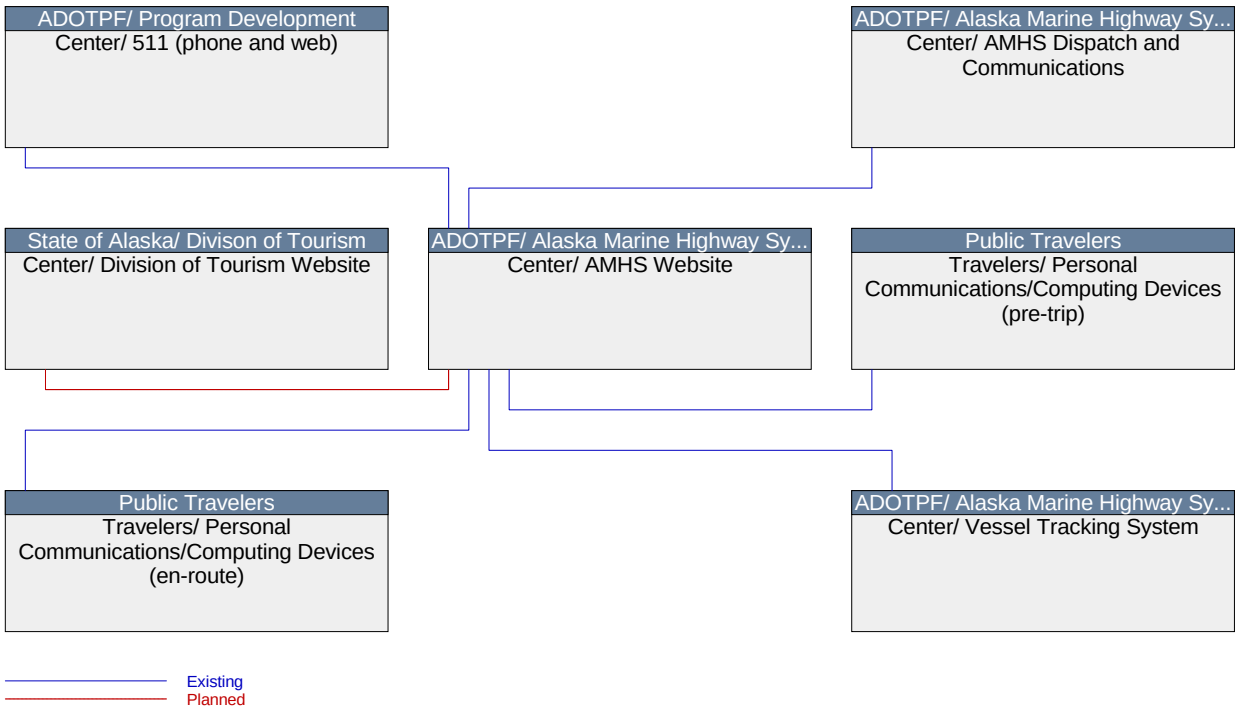


Figure 5-132:
Interconnect Diagram for AMHS Website

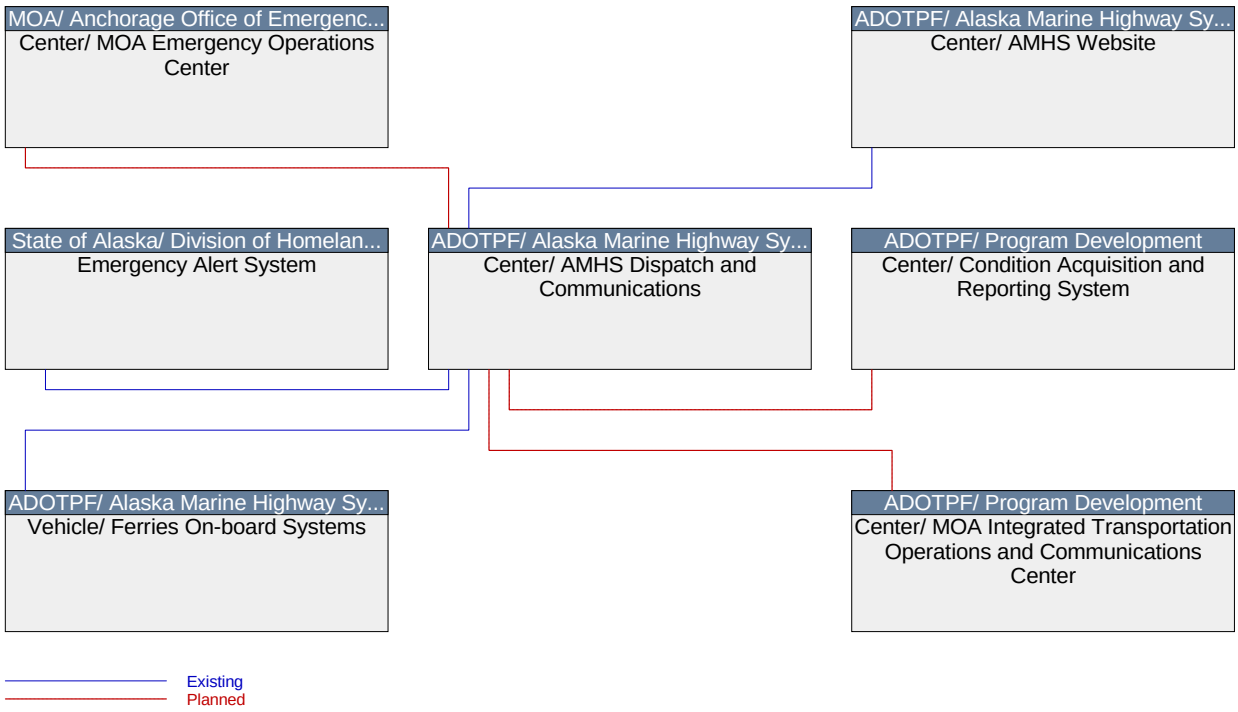


Figure 5-133:
Interconnect Diagram for AMHS Dispatch and Communications

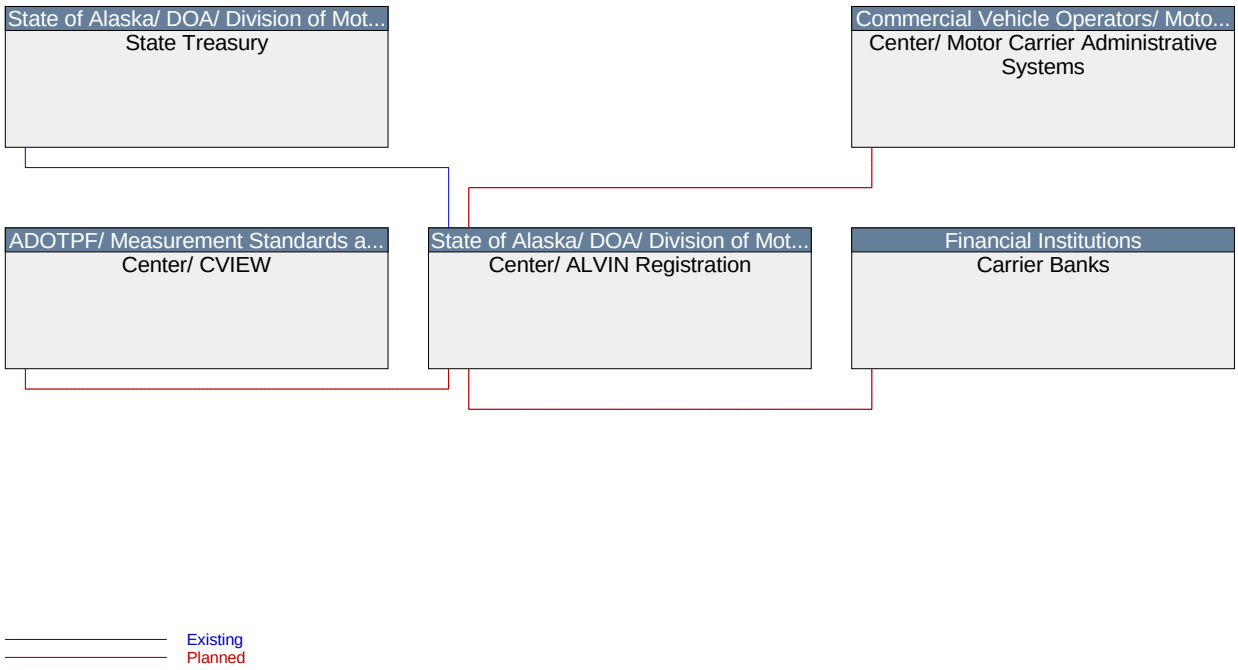


Figure 5-134:
Interconnect Diagram for ALVIN Registration

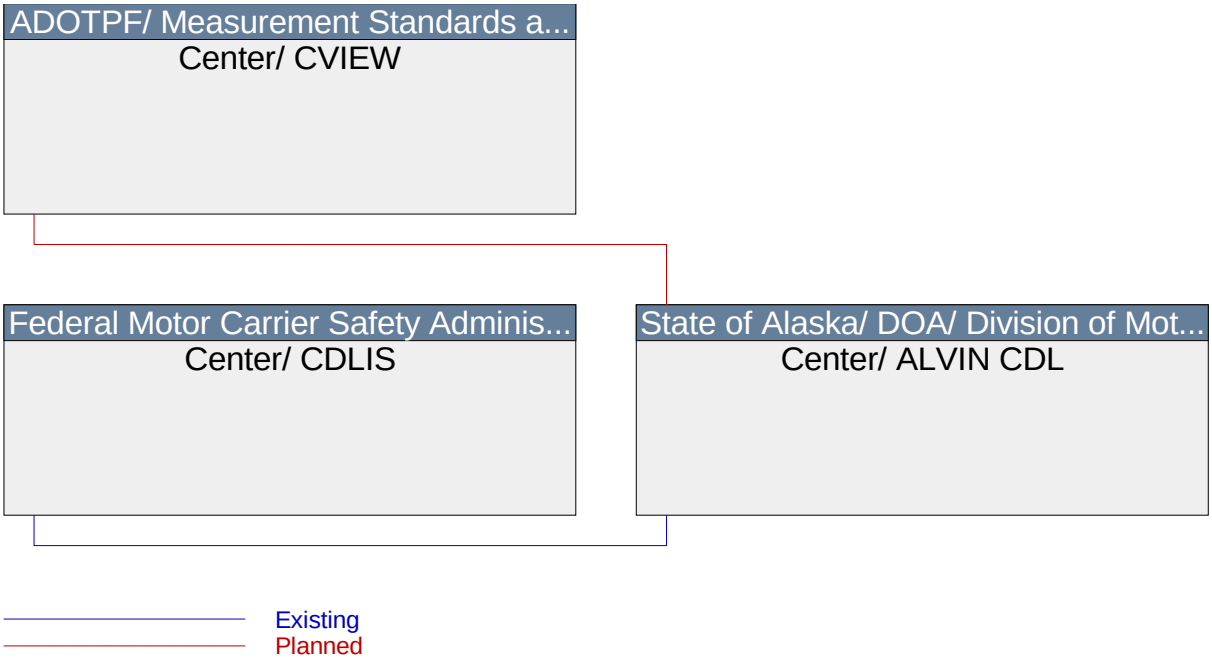


Figure 5-135:
Interconnect Diagram for ALVIN CDL

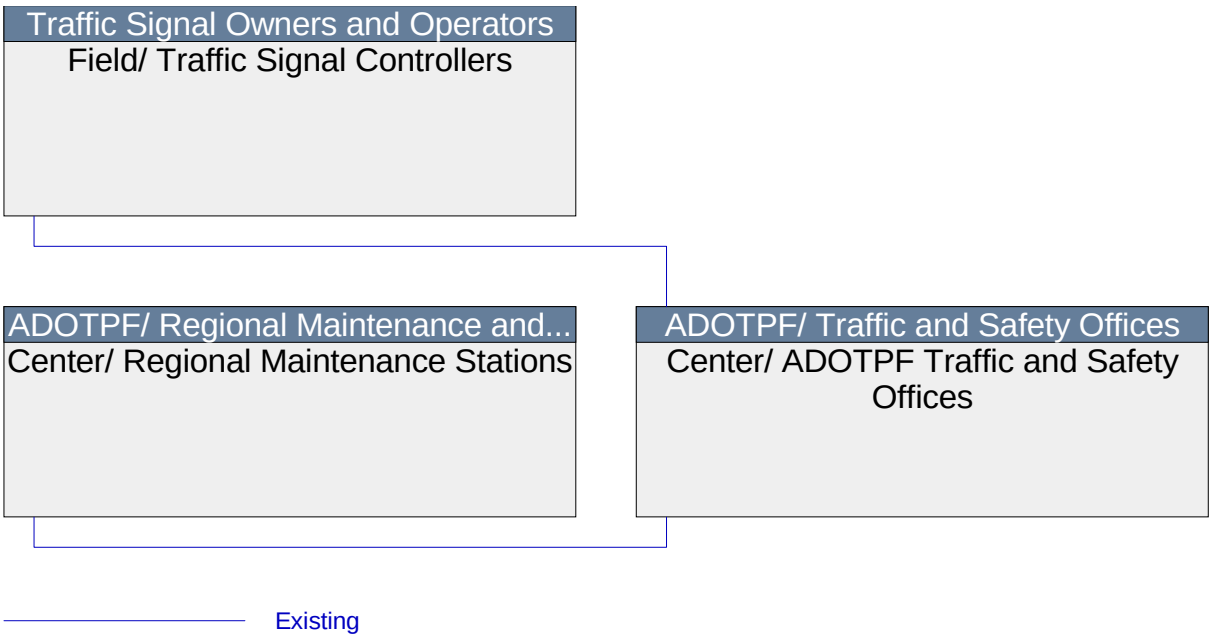


Figure 5-136:
Interconnect Diagram for ADOT&PF Traffic and Safety Offices

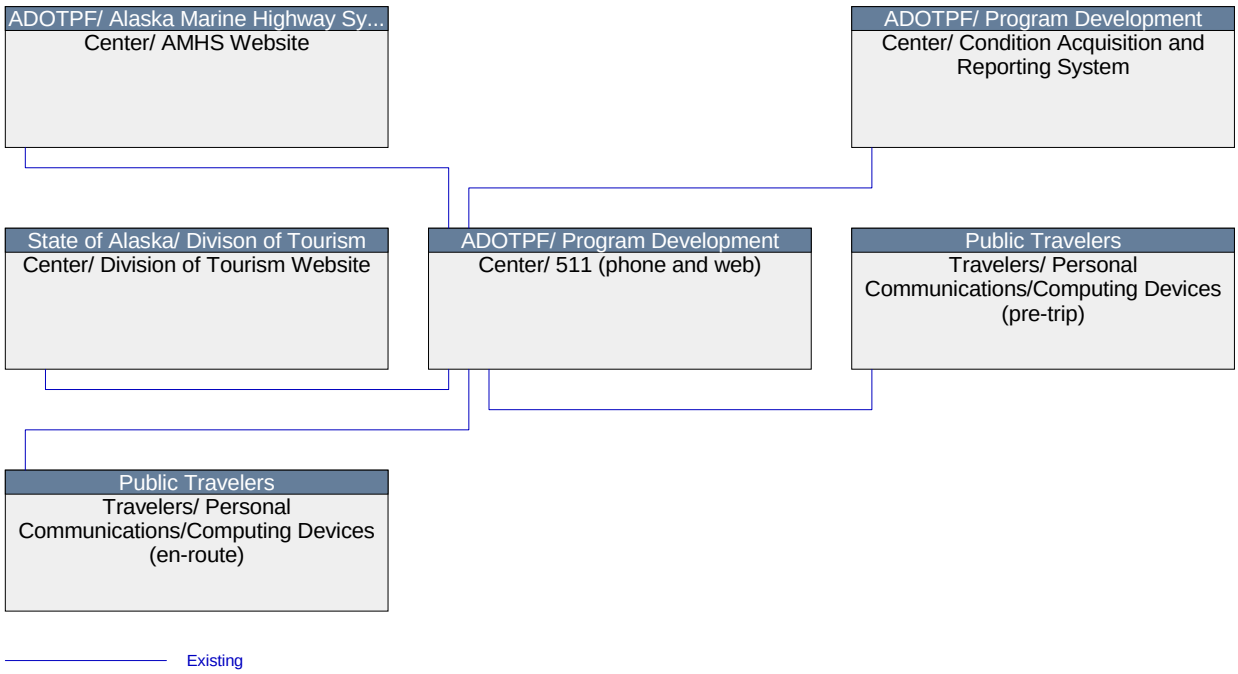


Figure 5-137:
Interconnect Diagram for 511 (Phone and Web)

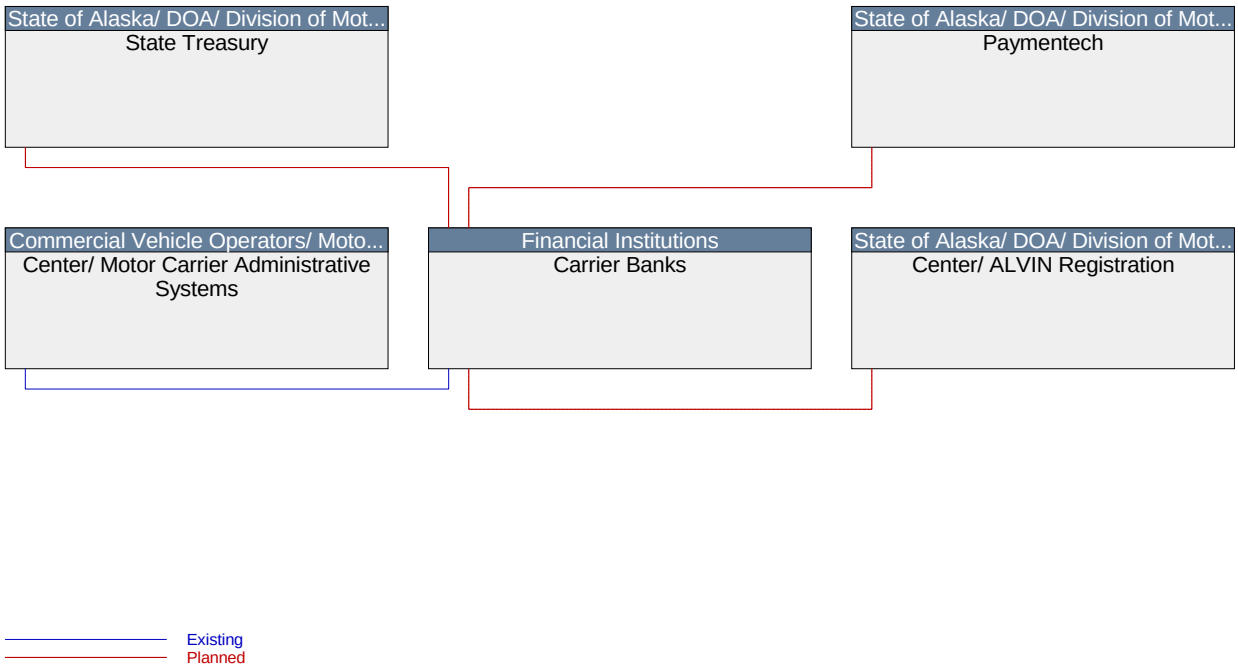
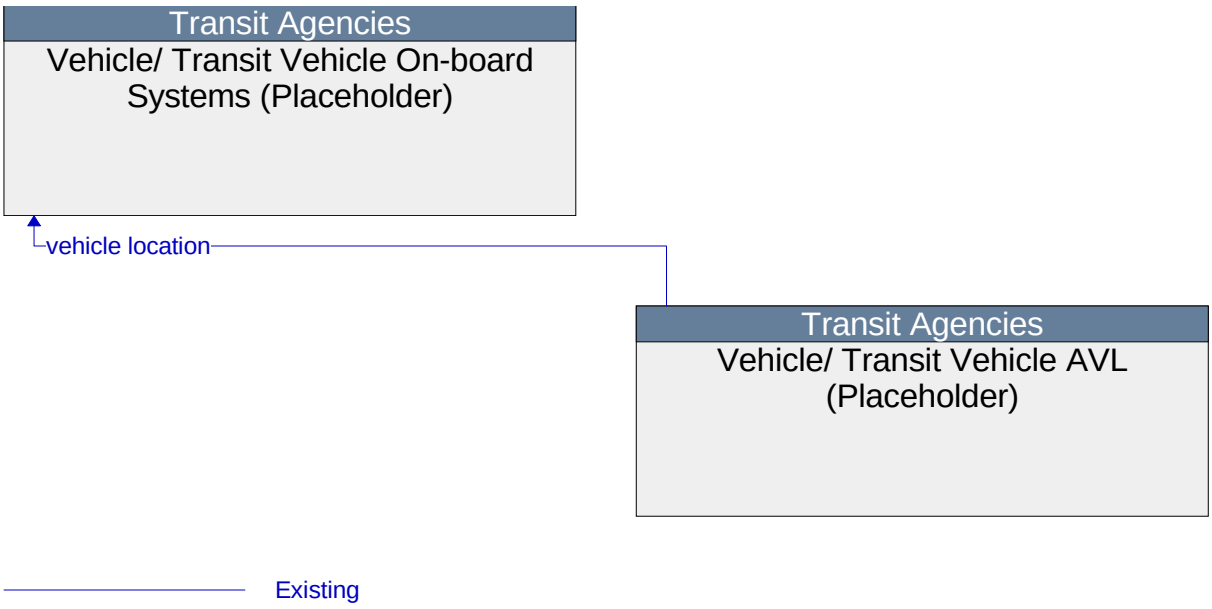
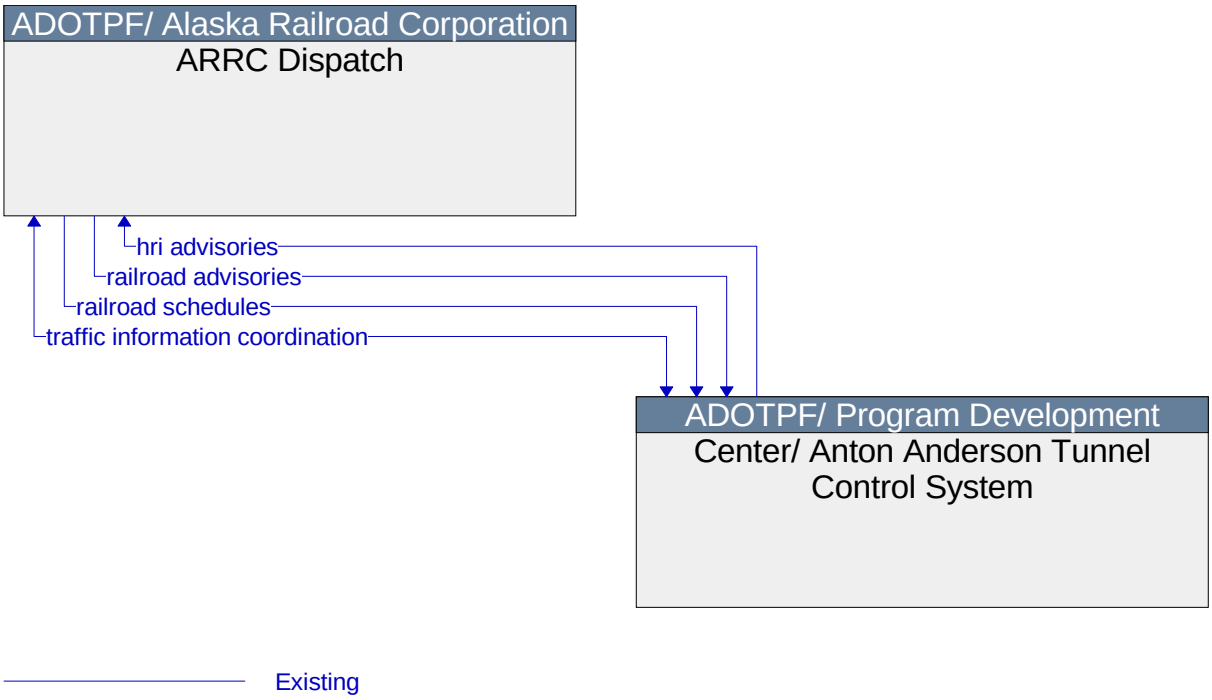
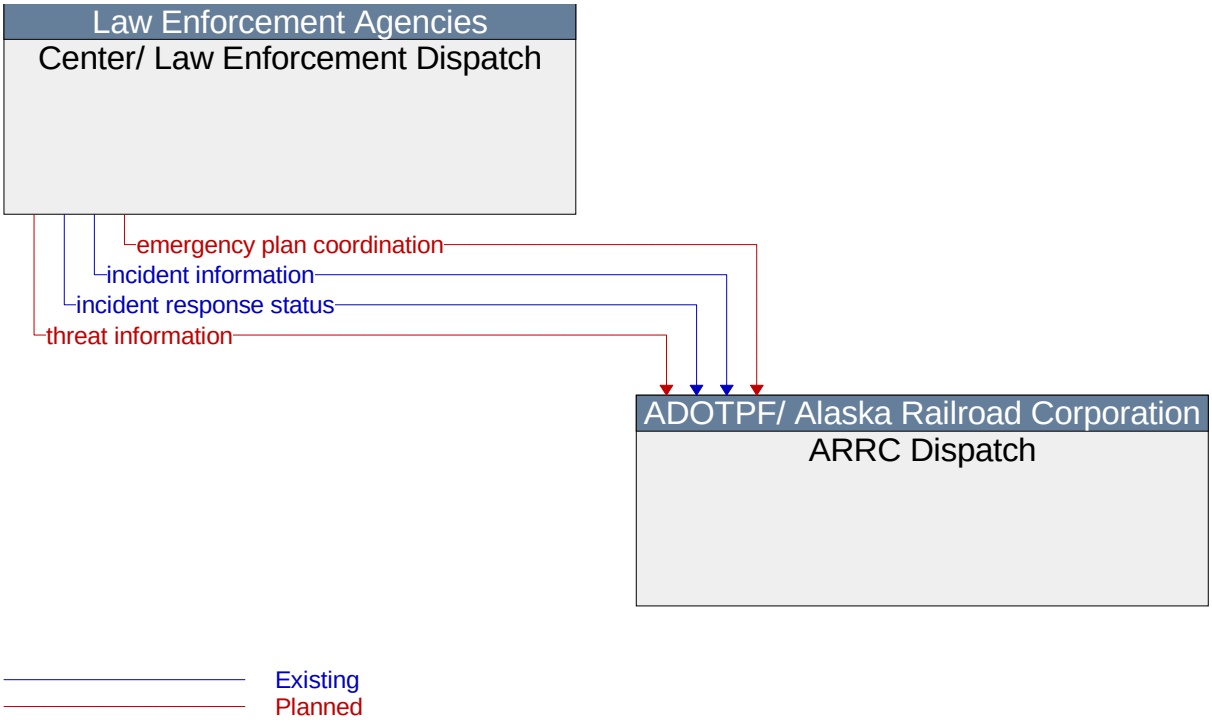


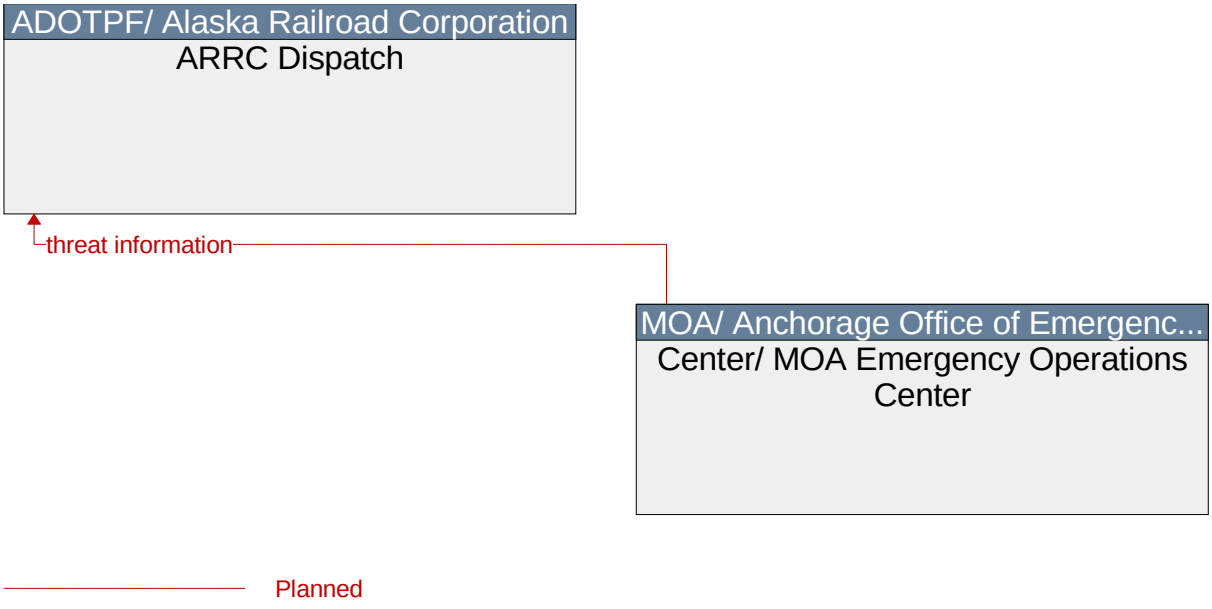
Figure 5-138:
Interconnect Diagram for Carrier Banks

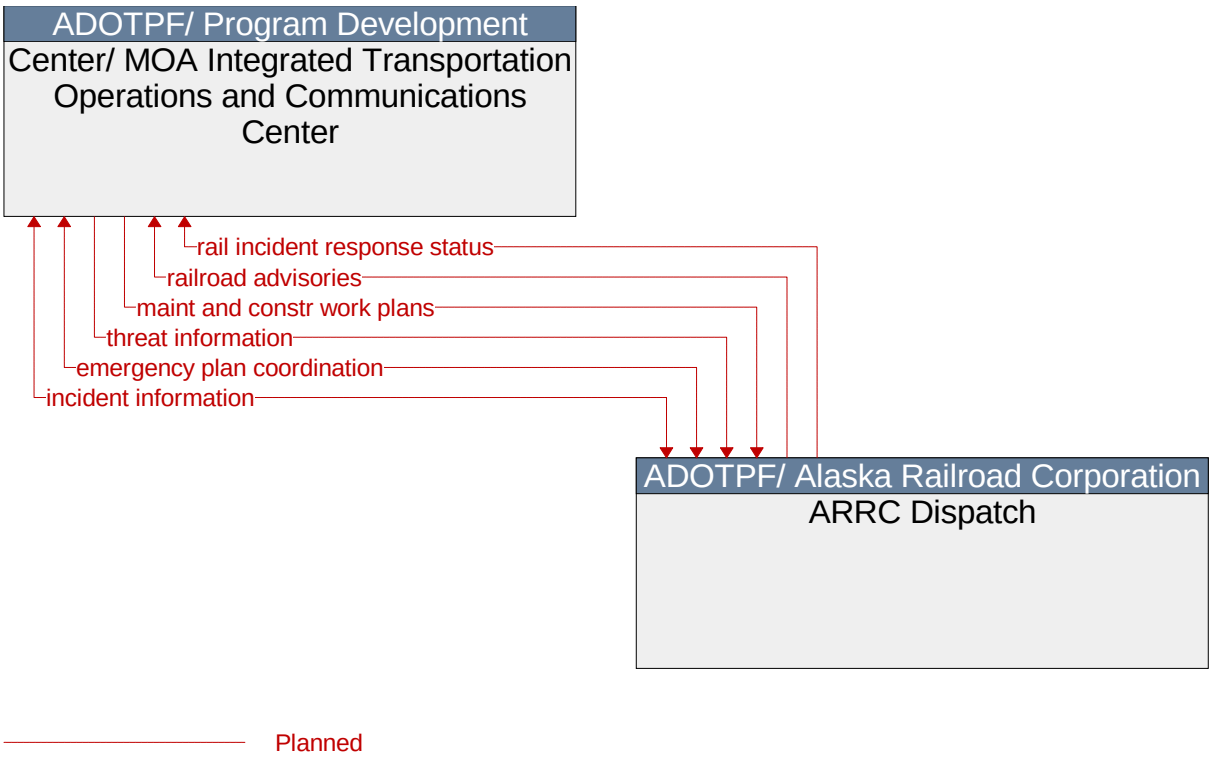
5.7 Appendix C: Architecture Flow Diagrams

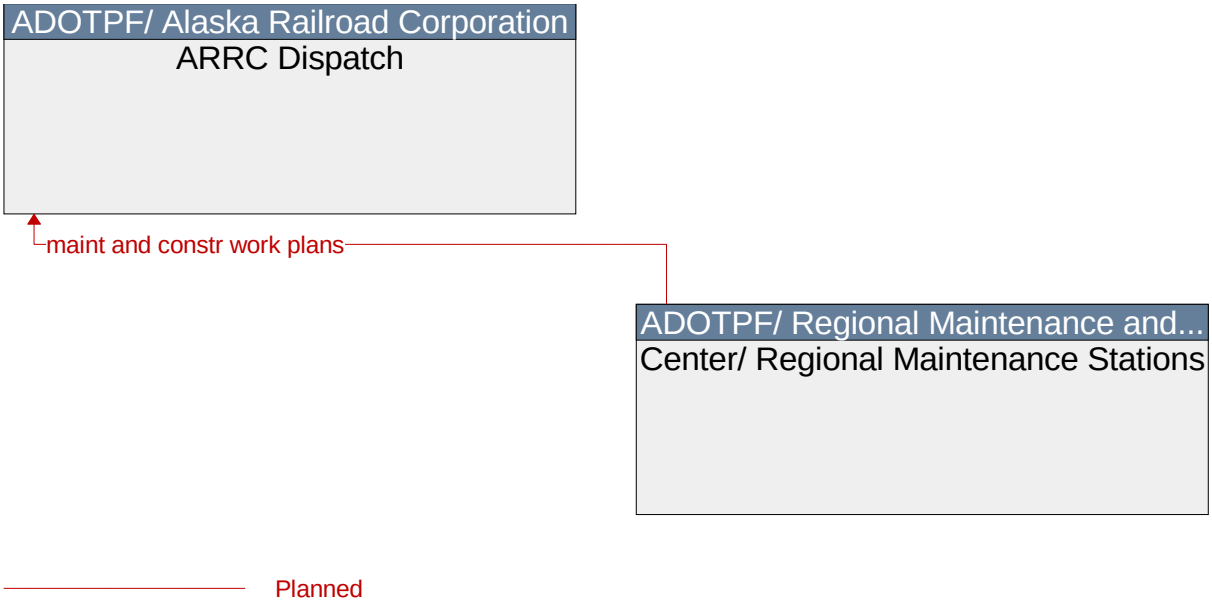


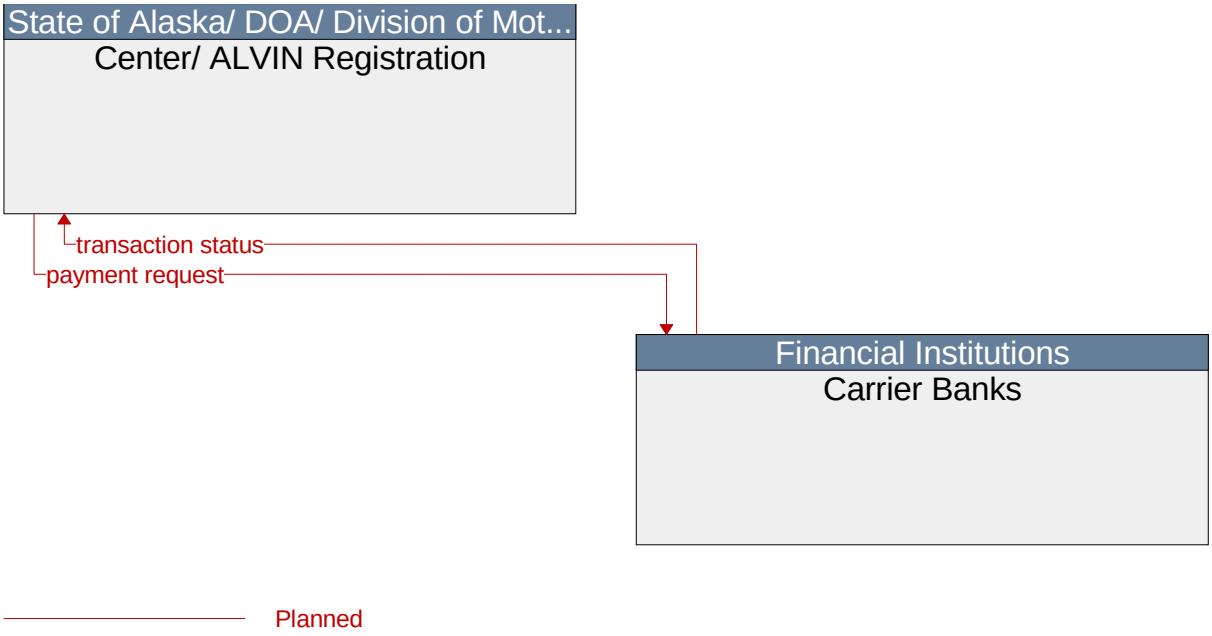

ADOTPF/ Alaska Railroad Corporation
ARRC Dispatch
hri advisories
railroad advisories
railroad schedules
traffic information coordination
ADOTPF/ Program Development
Center/ Anton Anderson Tunnel
Control System
Existing

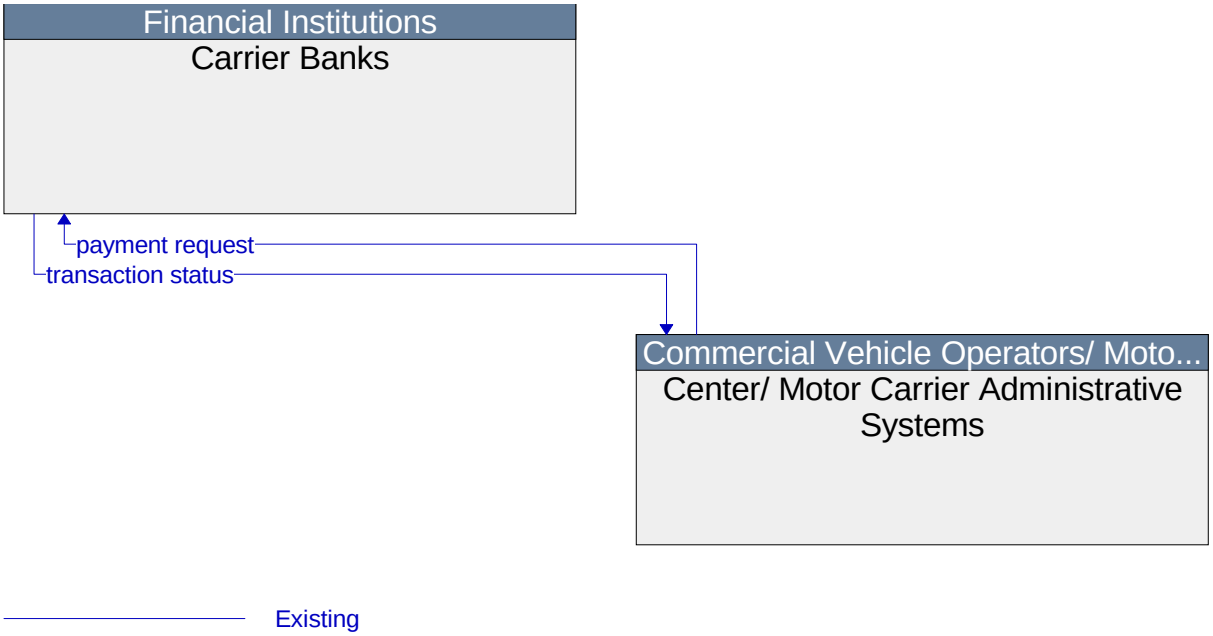

Law Enforcement Agencies
Center/ Law Enforcement Dispatch
emergency plan coordination
incident information
incident response status
threat information
ADOTPF/ Alaska Railroad Corporation
ARRC Dispatch
Existing
Planned

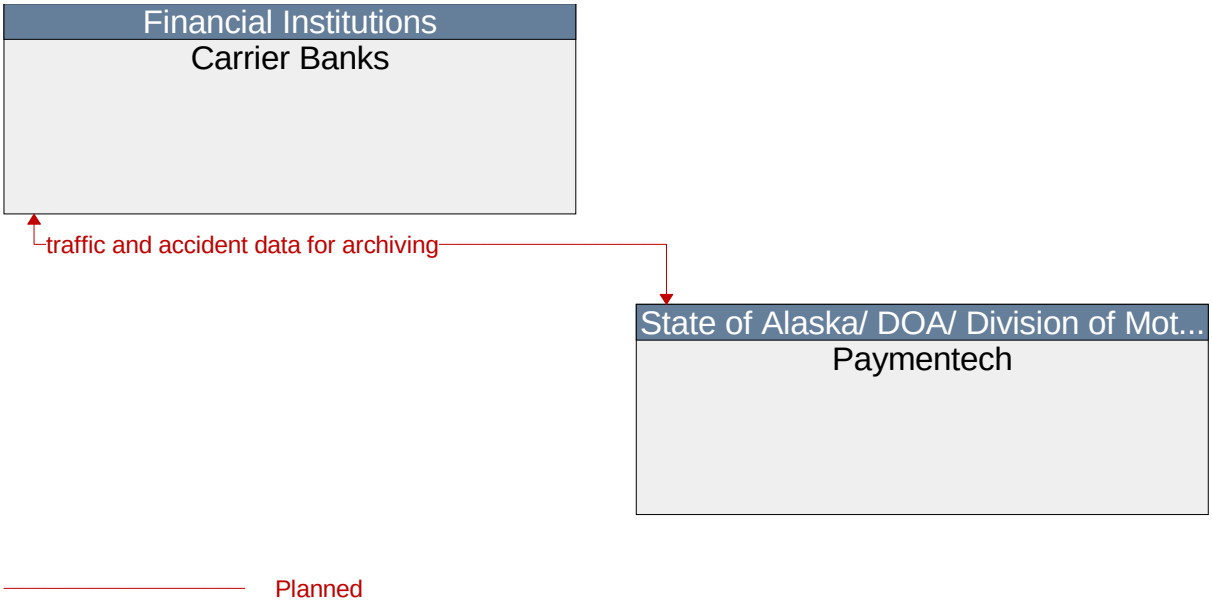

ADOTPF/ Alaska Railroad Corporation
ARRC Dispatch
threat information
MOA/ Anchorage Office of Emergenc...
Center/ MOA Emergency Operations Center
Planned

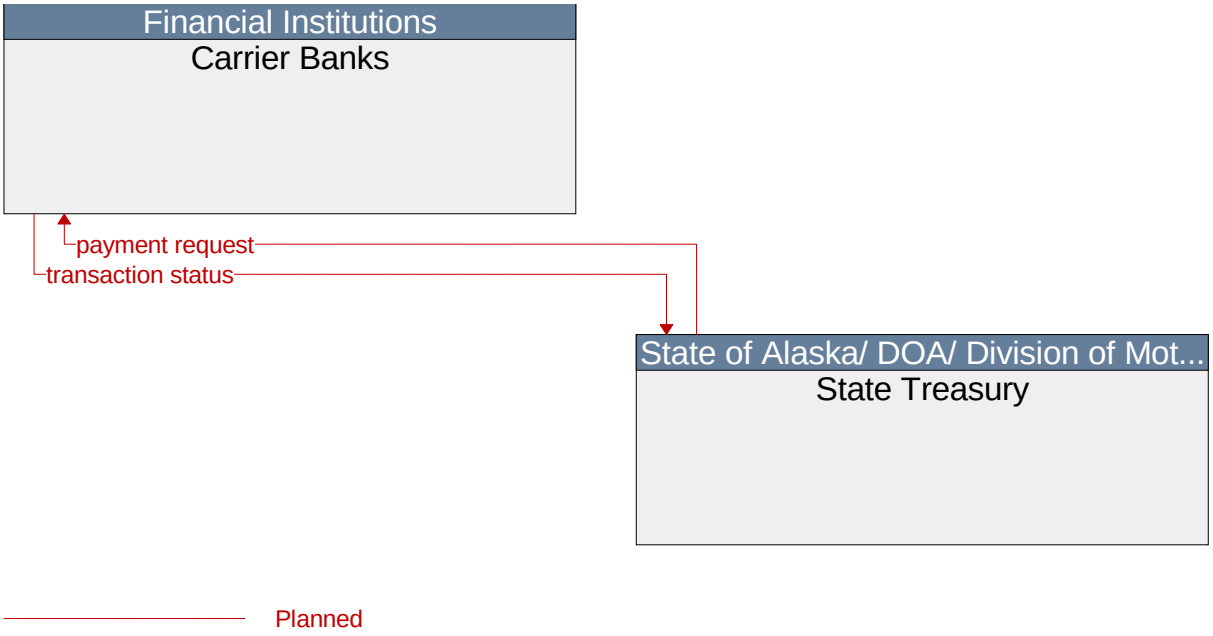

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
rail incident response status
railroad advisories
maint and constr work plans
threat information
emergency plan coordination
incident information
ADOTPF/ Alaska Railroad Corporation
ARRC Dispatch
Planned

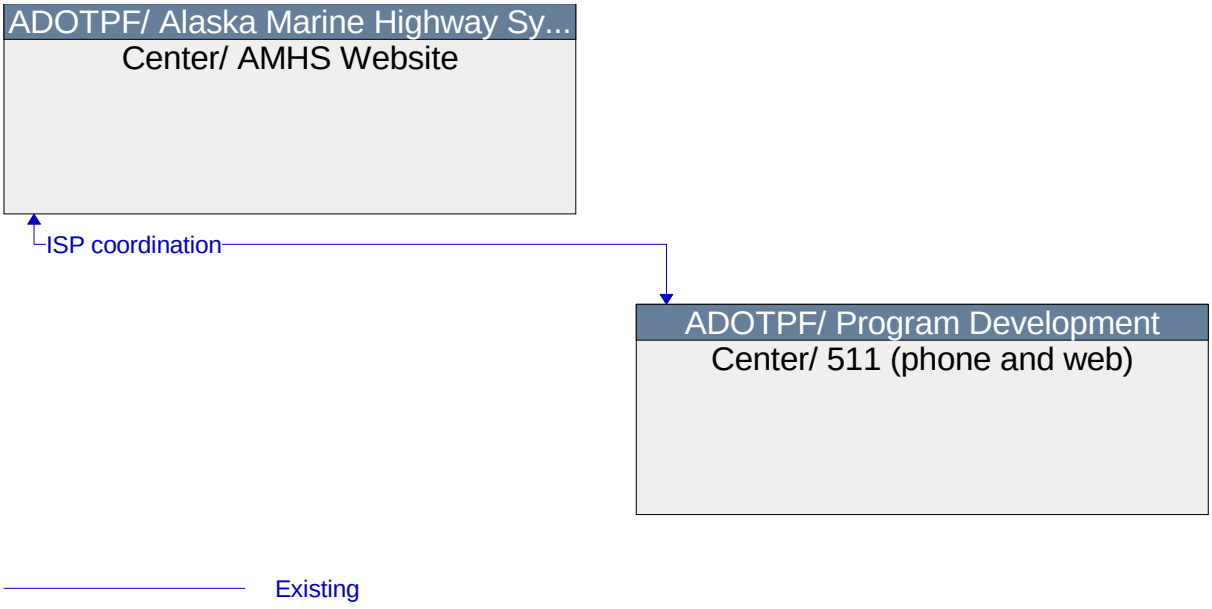

ADOTPF/ Alaska Railroad Corporation
ARRC Dispatch
maint and constr work plans
ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
Planned

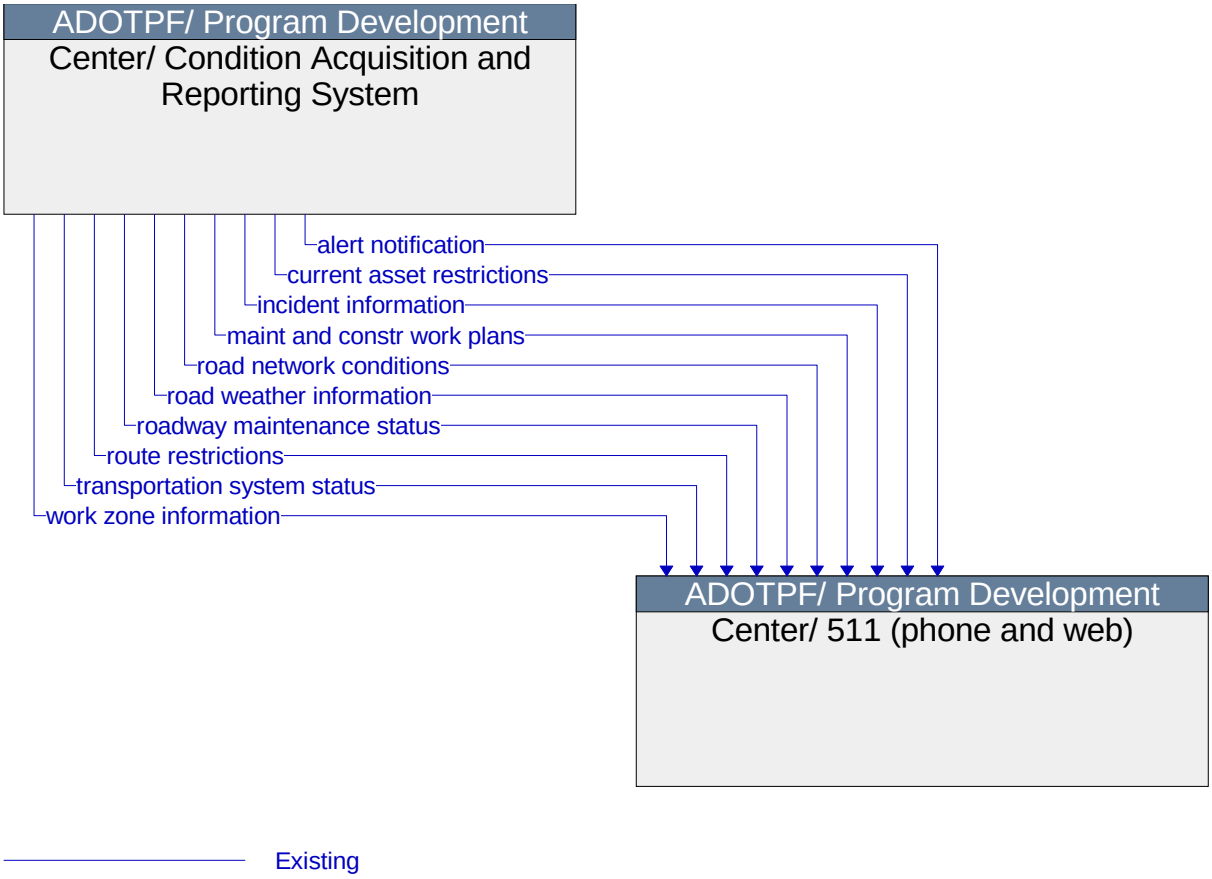

State of Alaska/ DOA/ Division of Mot...
Center/ ALVIN Registration
transaction status
payment request
Financial Institutions
Carrier Banks
Planned

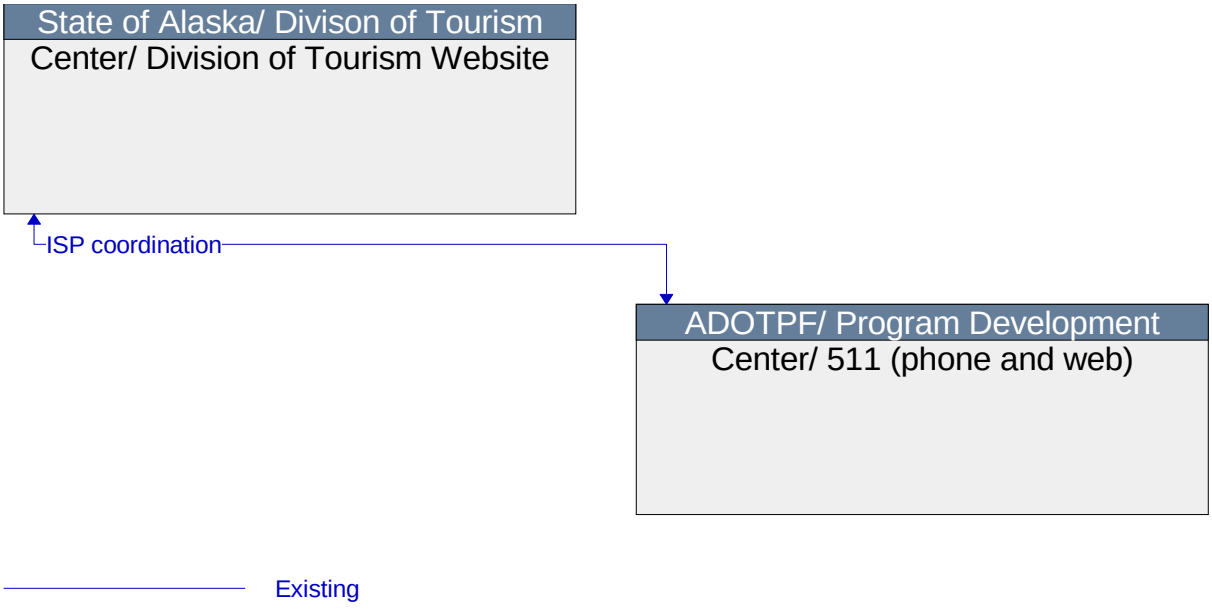

Financial Institutions
Carrier Banks
payment request
transaction status
Commercial Vehicle Operators/ Moto...
Center/ Motor Carrier Administrative Systems
Existing

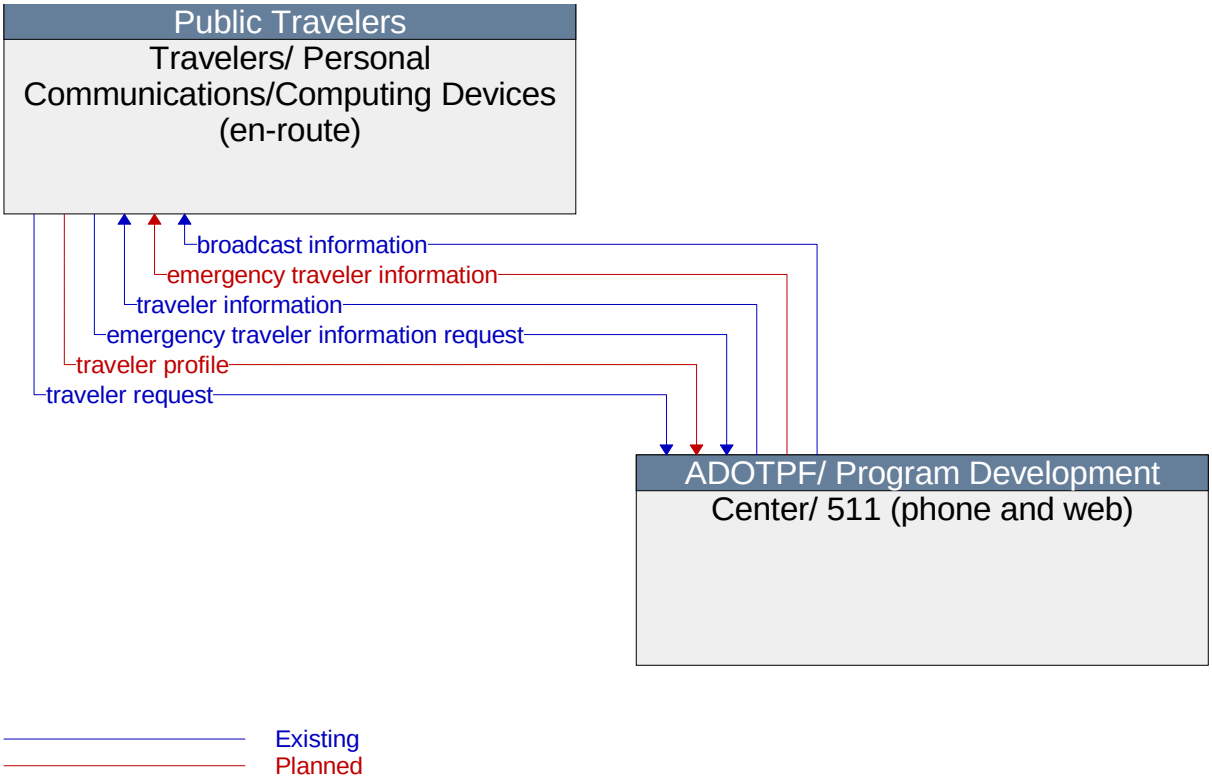

Financial Institutions
Carrier Banks
traffic and accident data for archiving
State of Alaska/ DOA/ Division of Mot...
Paymentech
Planned

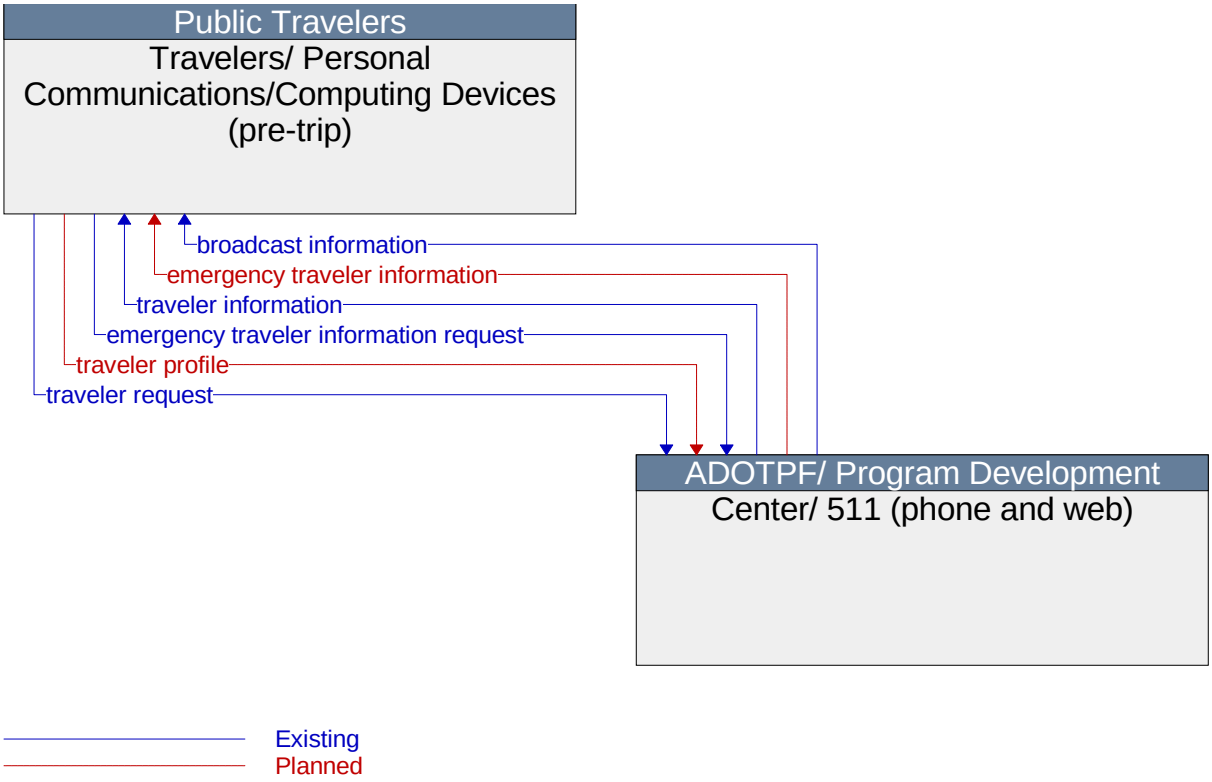

Financial Institutions
Carrier Banks
payment request
transaction status
State of Alaska/ DOA/ Division of Mot...
State Treasury
Planned

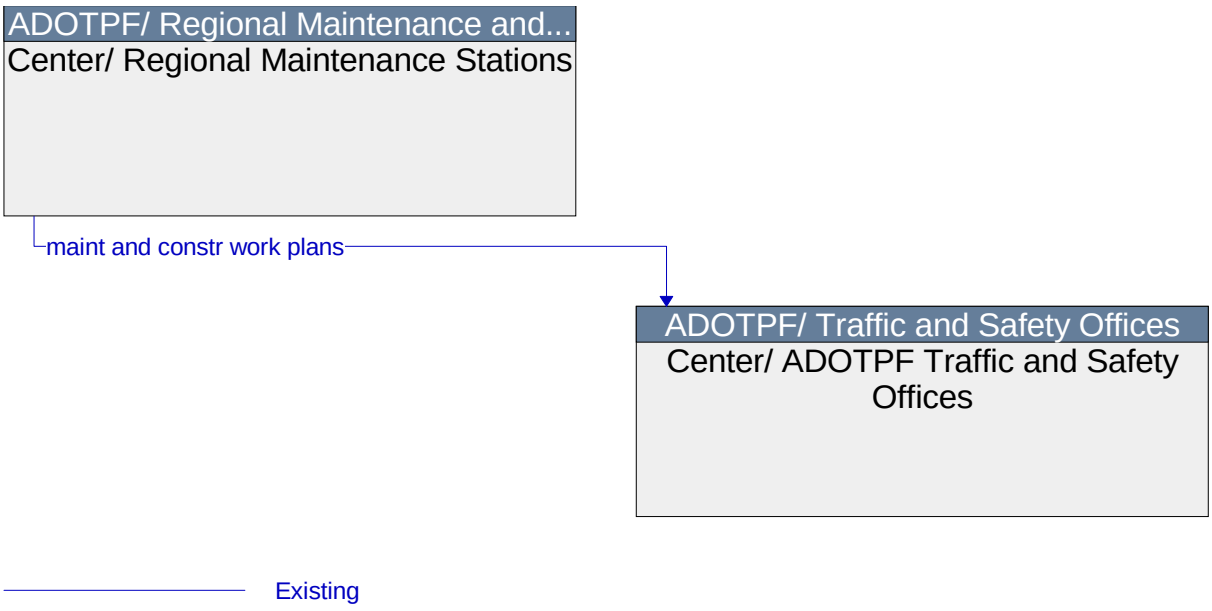

ADOTPF/ Alaska Marine Highway Sy...
Center/ AMHS Website
ISP coordination
ADOTPF/ Program Development
Center/ 511 (phone and web)
Existing

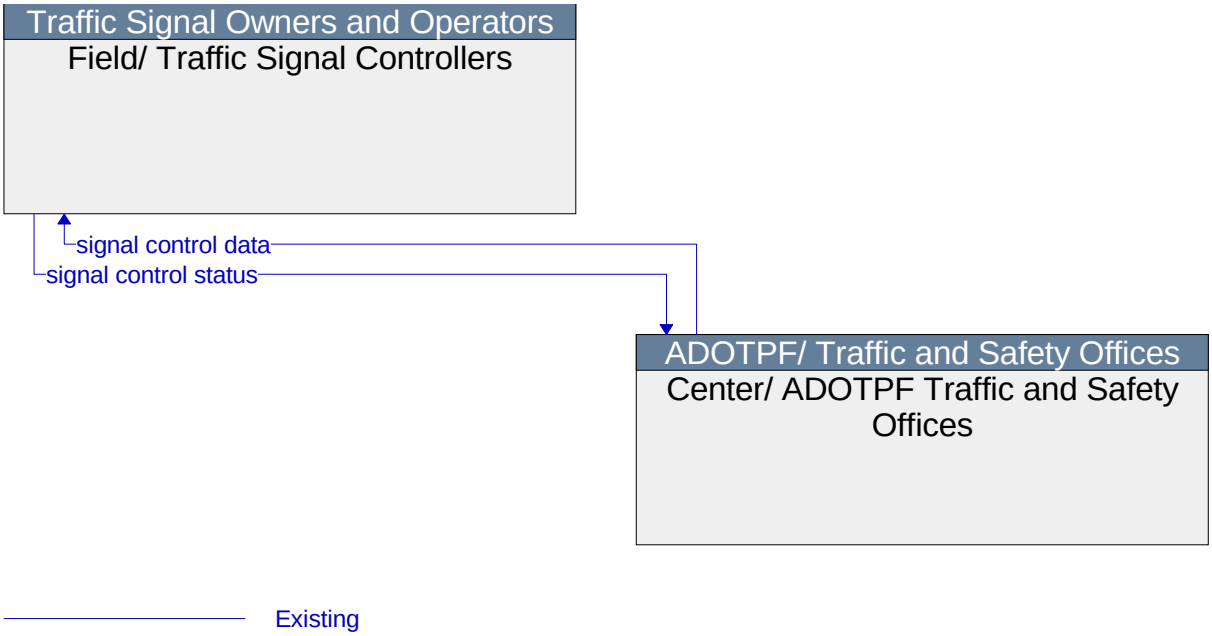

ADOTPF/ Program Development
Center/ Condition Acquisition and Reporting System
alert notification
current asset restrictions
incident information
maint and constr work plans
road network conditions
road weather information
roadway maintenance status
route restrictions
transportation system status
work zone information
ADOTPF/ Program Development
Center/ 511 (phone and web)
Existing

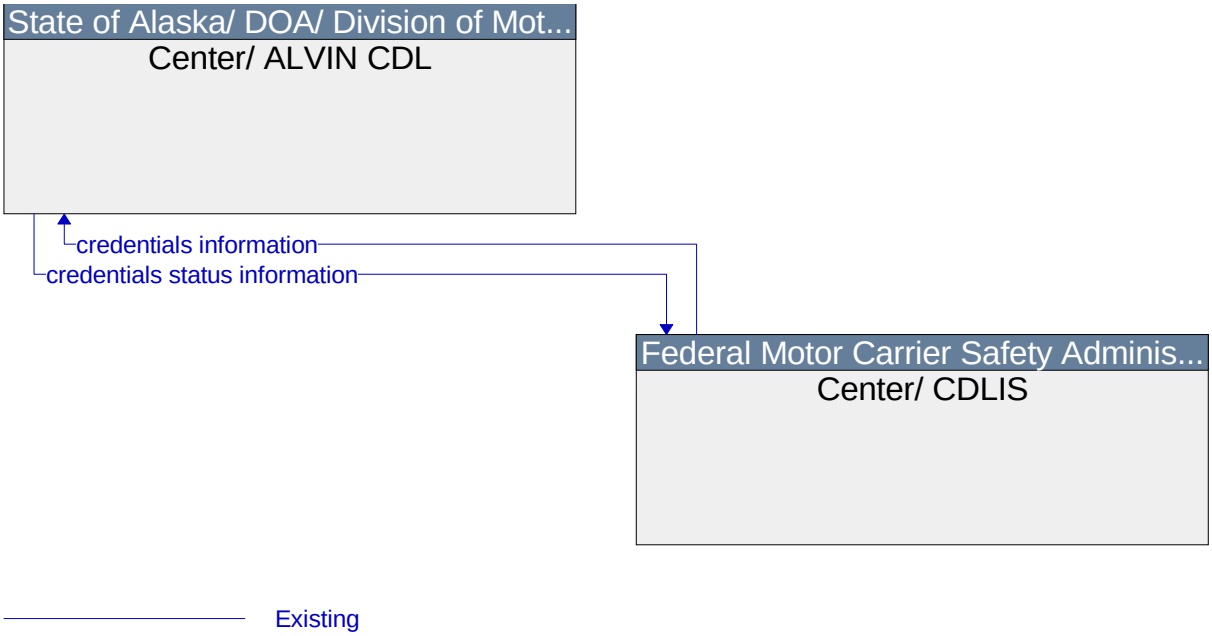

State of Alaska/ Divison of Tourism
Center/ Division of Tourism Website
ISP coordination
ADOTPF/ Program Development
Center/ 511 (phone and web)
Existing

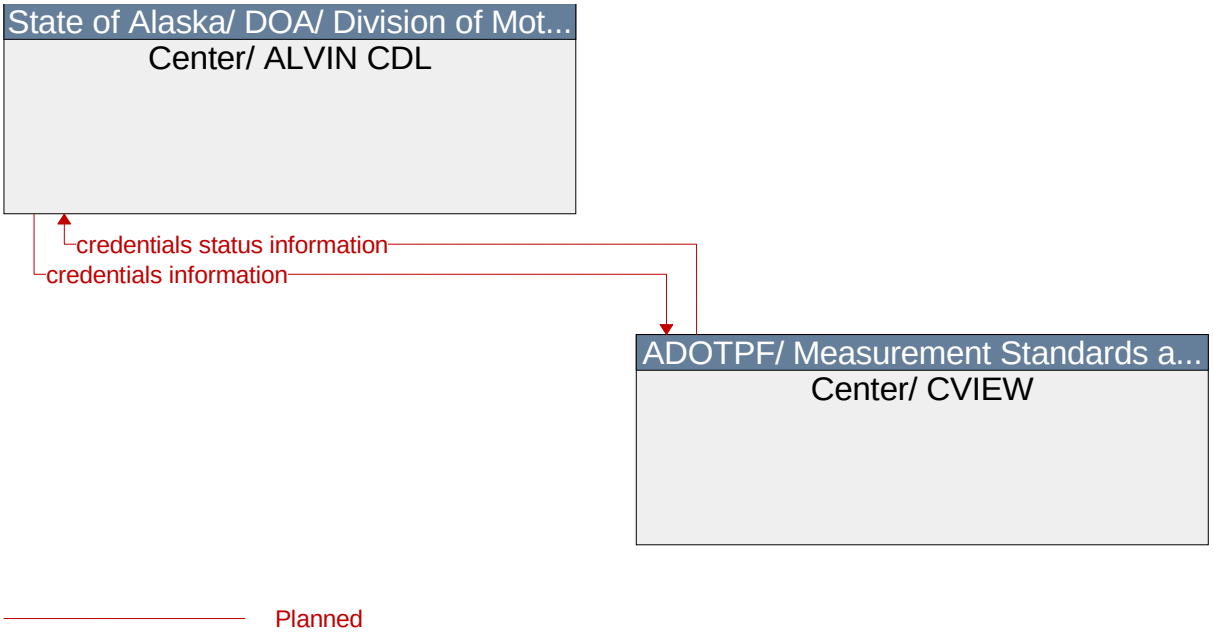

Public Travelers
Travelers/ Personal Communications/Computing Devices (en-route)
broadcast information
emergency traveler information
traveler information
emergency traveler information request
traveler profile
traveler request
ADOTPF/ Program Development
Center/ 511 (phone and web)
Existing
Planned


Public Travelers
Travelers/ Personal Communications/Computing Devices (pre-trip)
broadcast information
emergency traveler information
traveler information
emergency traveler information request
traveler profile
traveler request
ADOTPF/ Program Development
Center/ 511 (phone and web)
Existing
Planned


ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
maint and constr work plans
ADOTPF/ Traffic and Safety Offices
Center/ ADOTPF Traffic and Safety Offices
Existing


Traffic Signal Owners and Operators
Field/ Traffic Signal Controllers
signal control data
signal control status
ADOTPF/ Traffic and Safety Offices
Center/ ADOTPF Traffic and Safety Offices
Existing


State of Alaska/ DOA/ Division of Mot...
Center/ ALVIN CDL
credentials information
credentials status information
Federal Motor Carrier Safety Adminis...
Center/ CDLIS
Existing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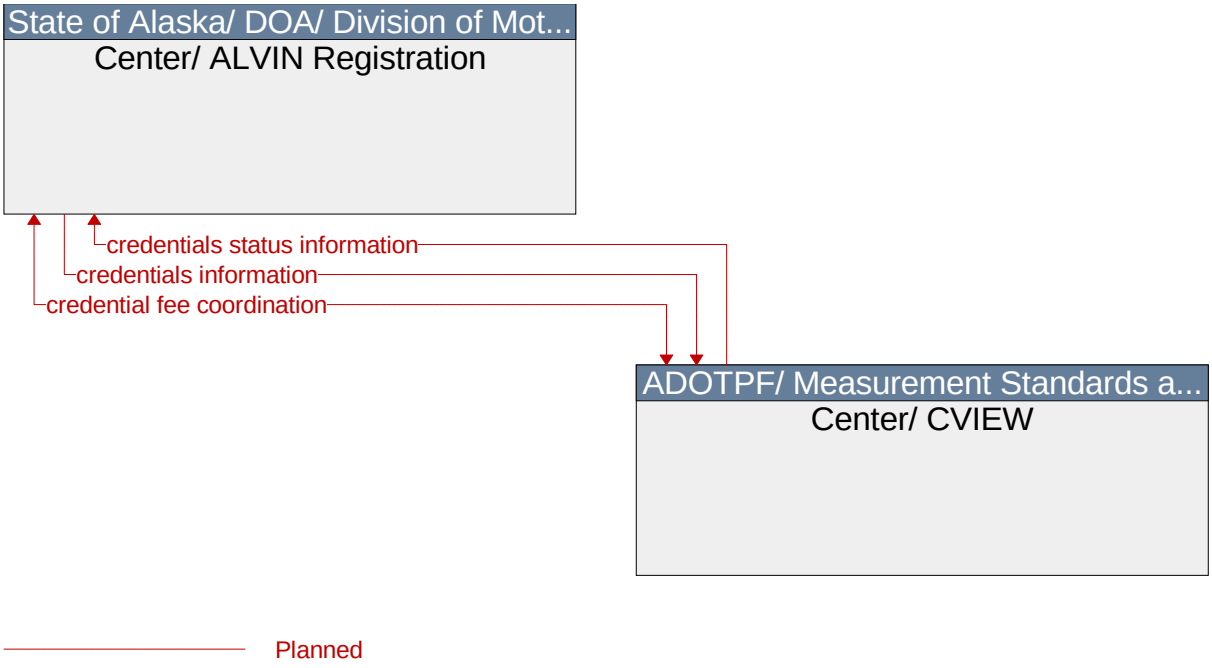
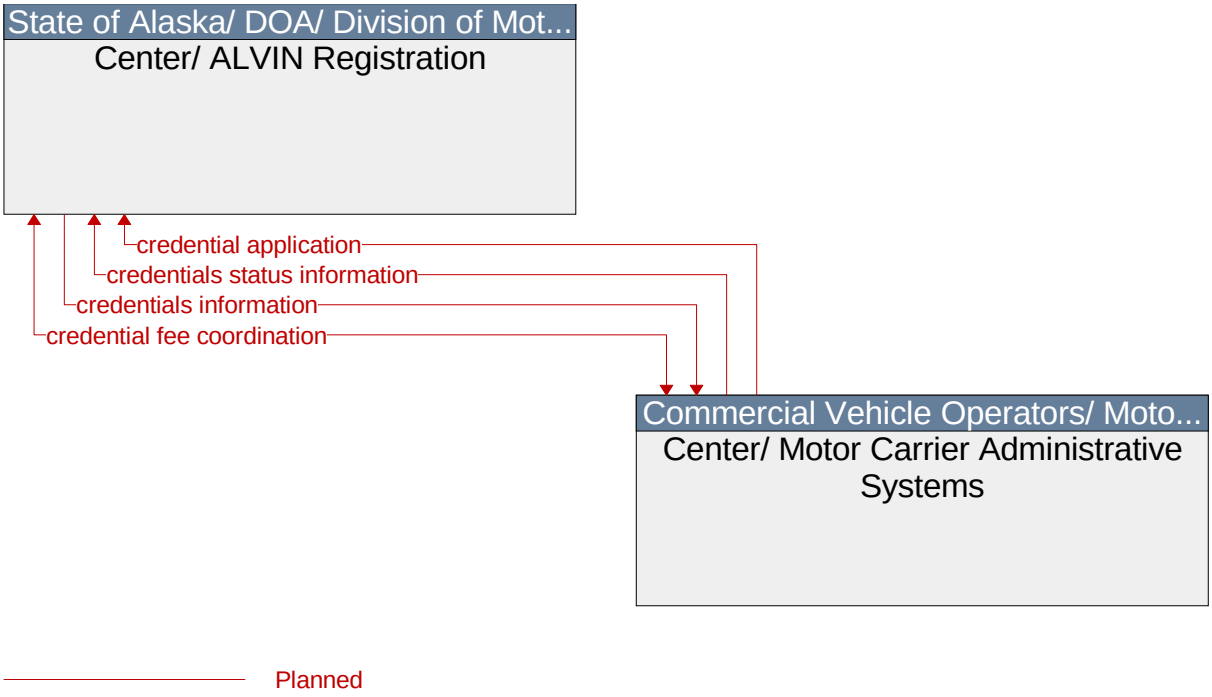
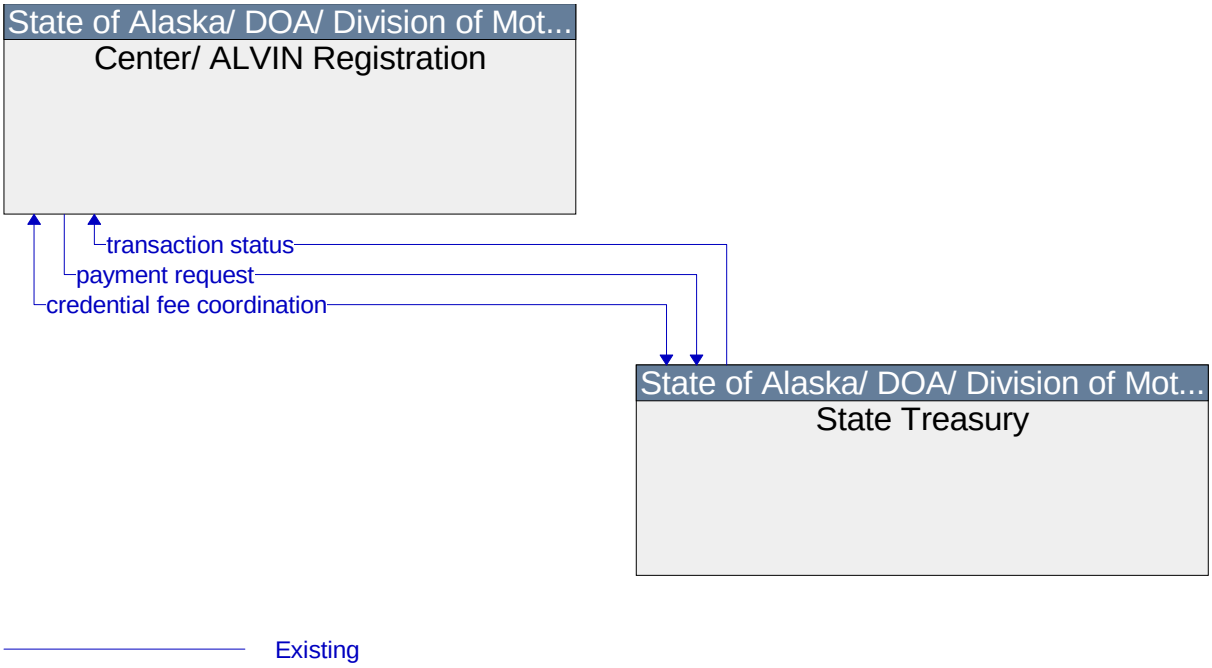
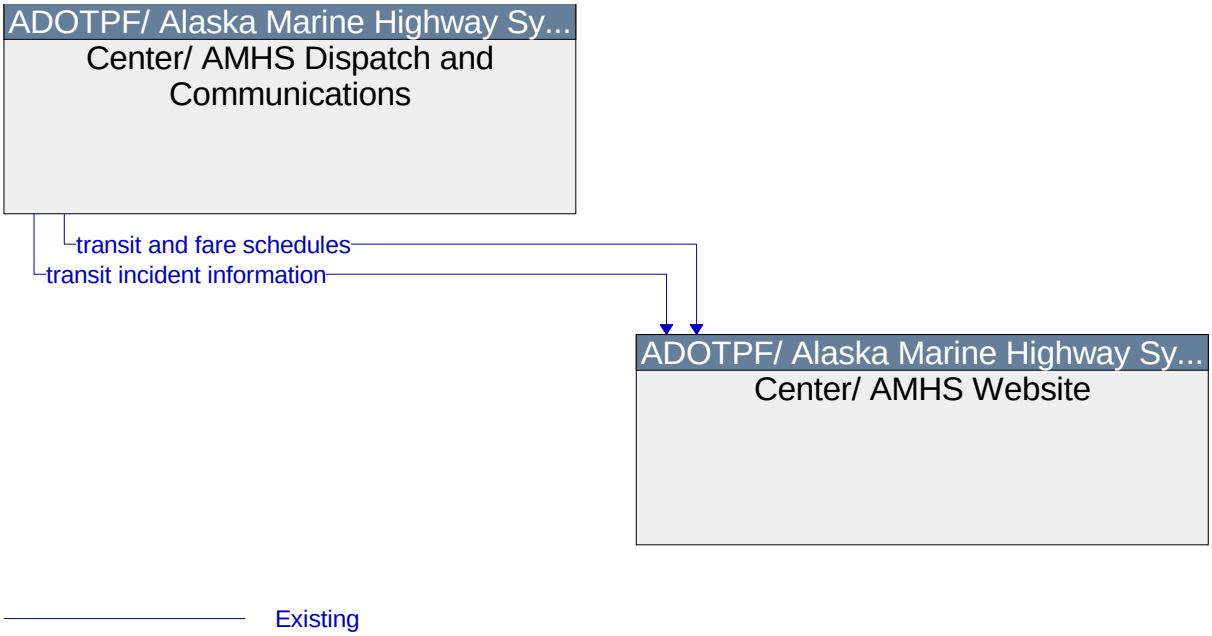
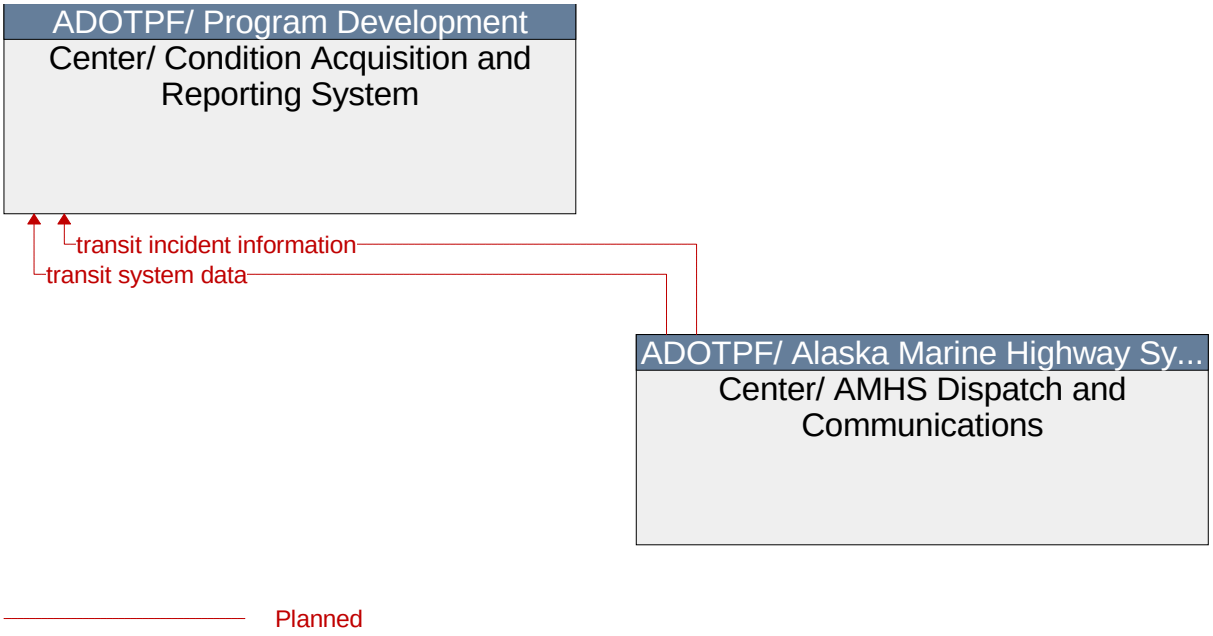
Center/ ALVIN CDL
credentials status information
credentials information
ADOTPF/ Measurement Standards a...
Center/ CVIEW
Planned

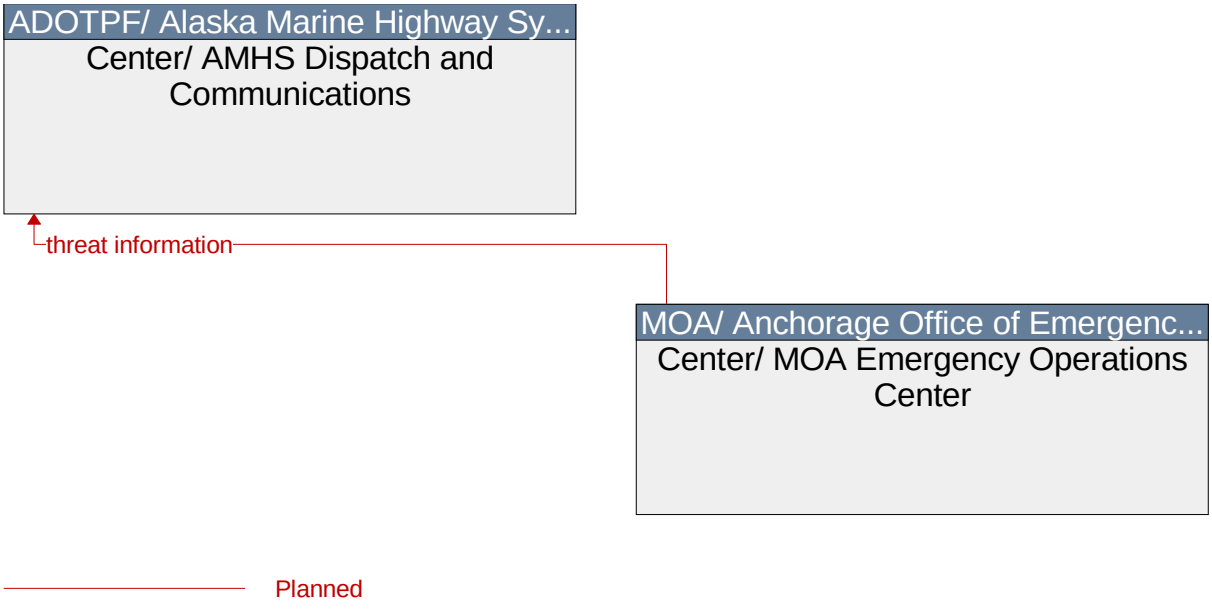

State of Alaska/ DOA/ Division of Mot...
Center/ ALVIN Registration
credentials status information
credentials information
credential fee coordination
ADOTPF/ Measurement Standards a...
Center/ CVIEW
Planned

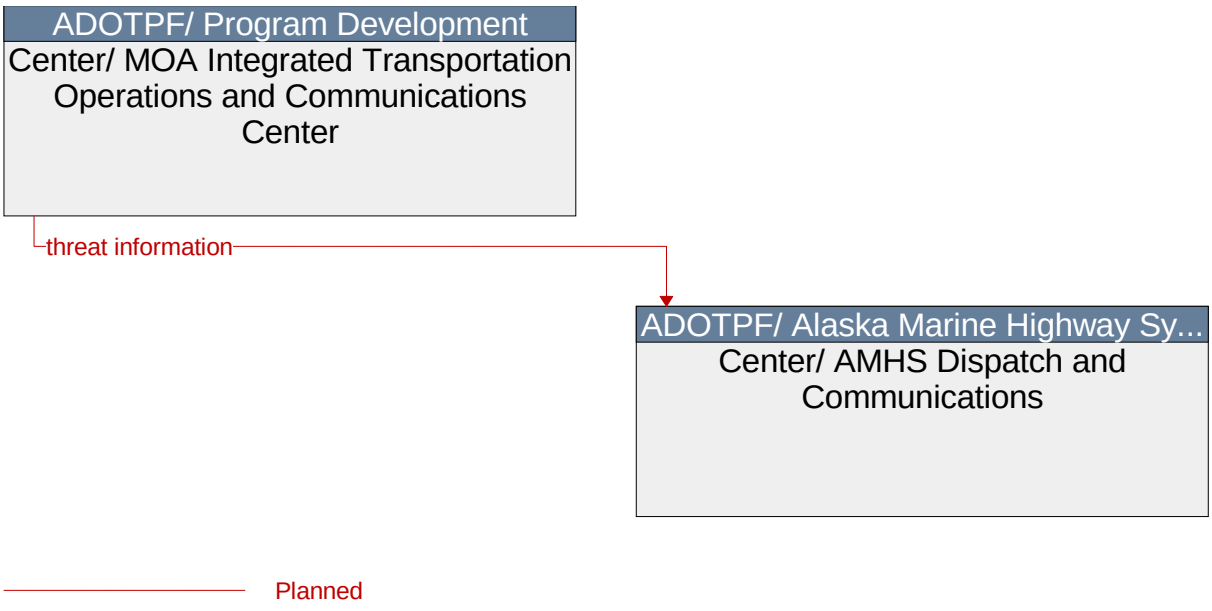

State of Alaska/ DOA/ Division of Mot...
Center/ ALVIN Registration
credential application
credentials status information
credentials information
credential fee coordination
Commercial Vehicle Operators/ Moto...
Center/ Motor Carrier Administrative Systems
Planned

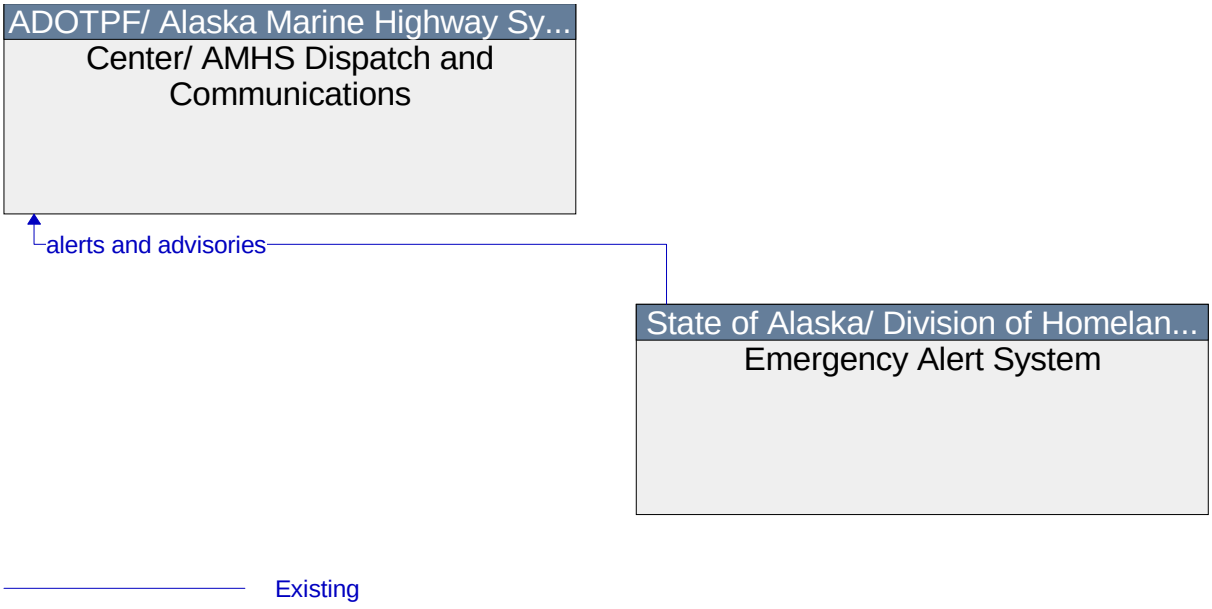

State of Alaska/ DOA/ Division of Mot...
Center/ ALVIN Registration
transaction status
payment request
credential fee coordination
State of Alaska/ DOA/ Division of Mot...
State Treasury
Existing

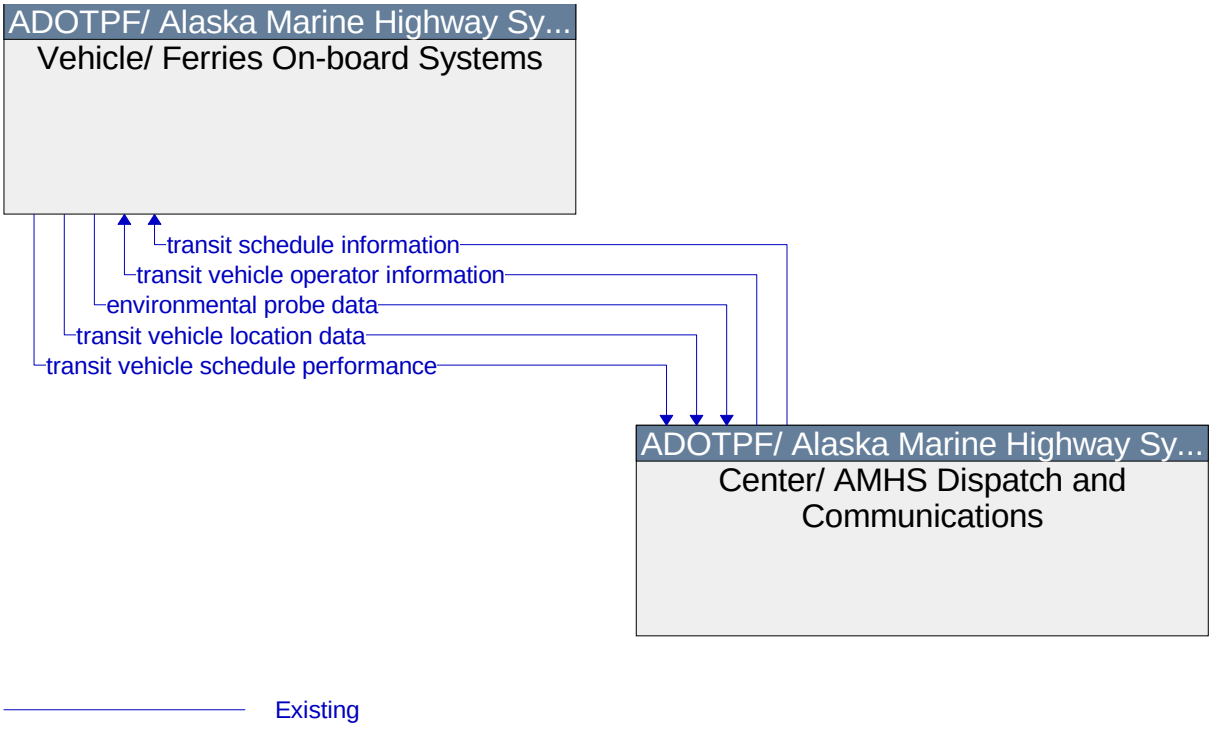

ADOTPF/ Alaska Marine Highway Sy...
Center/ AMHS Dispatch and Communications
transit and fare schedules
transit incident information
ADOTPF/ Alaska Marine Highway Sy...
Center/ AMHS Website
Existing

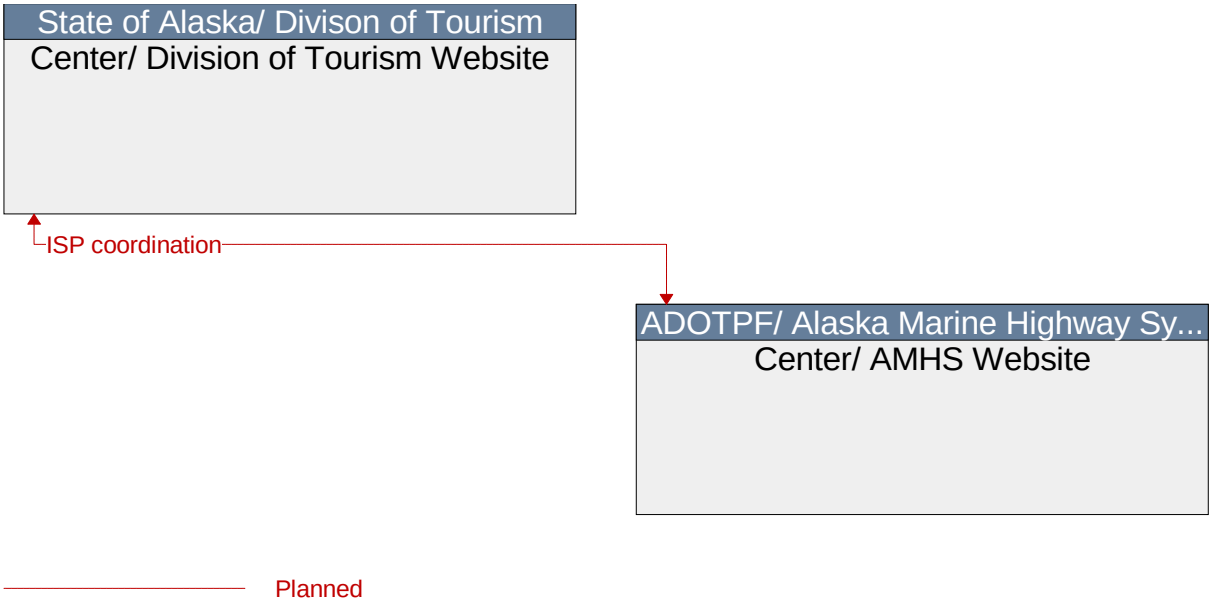

ADOTPF/ Program Development
Center/ Condition Acquisition and Reporting System
transit incident information
transit system data
ADOTPF/ Alaska Marine Highway Sy...
Center/ AMHS Dispatch and Communications
Planned

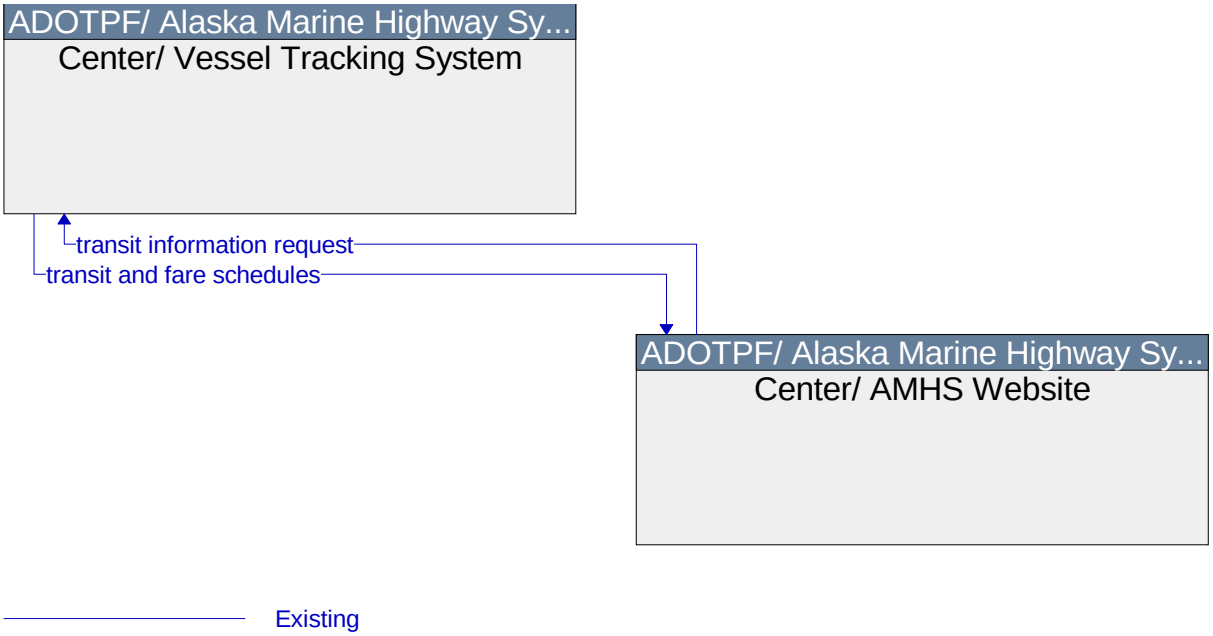

ADOTPF/ Alaska Marine Highway Sy...
Center/ AMHS Dispatch and Communications
threat information
MOA/ Anchorage Office of Emergenc...
Center/ MOA Emergency Operations Center
Planned

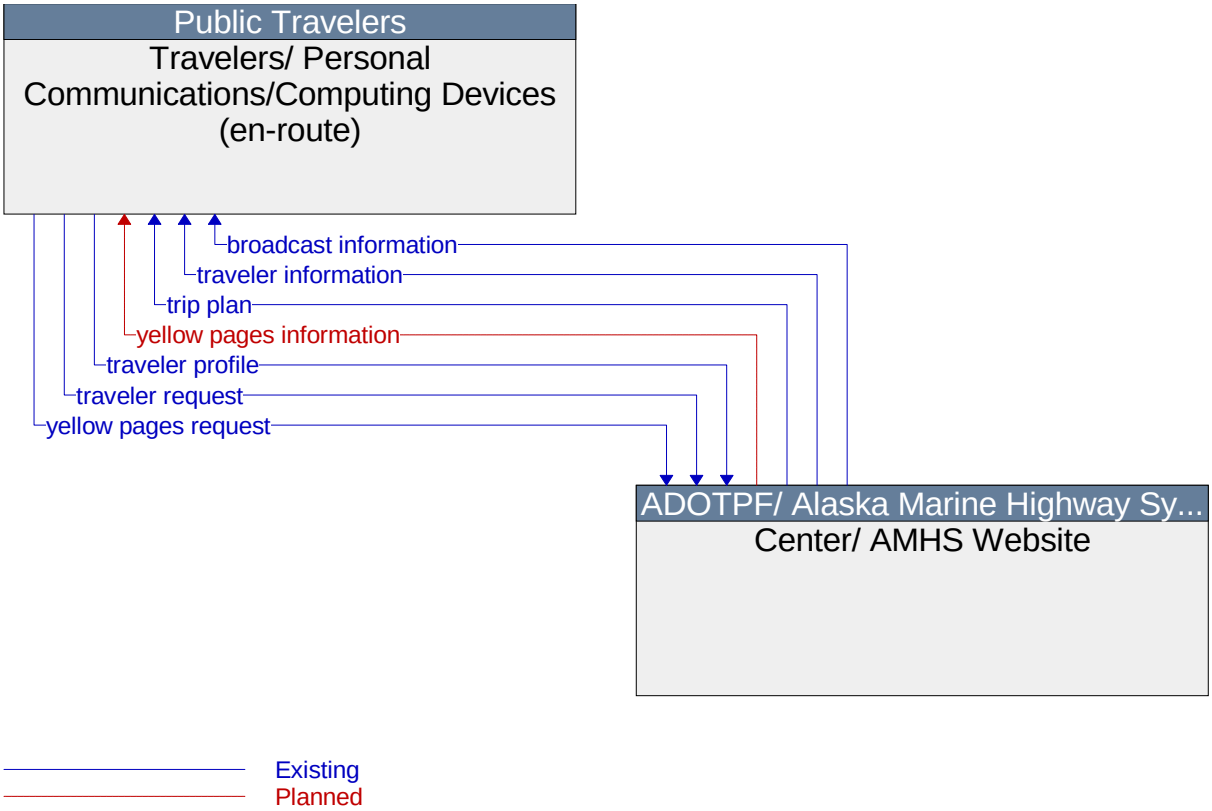

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
threat information
ADOTPF/ Alaska Marine Highway Sy...
Center/ AMHS Dispatch and Communications
Planned

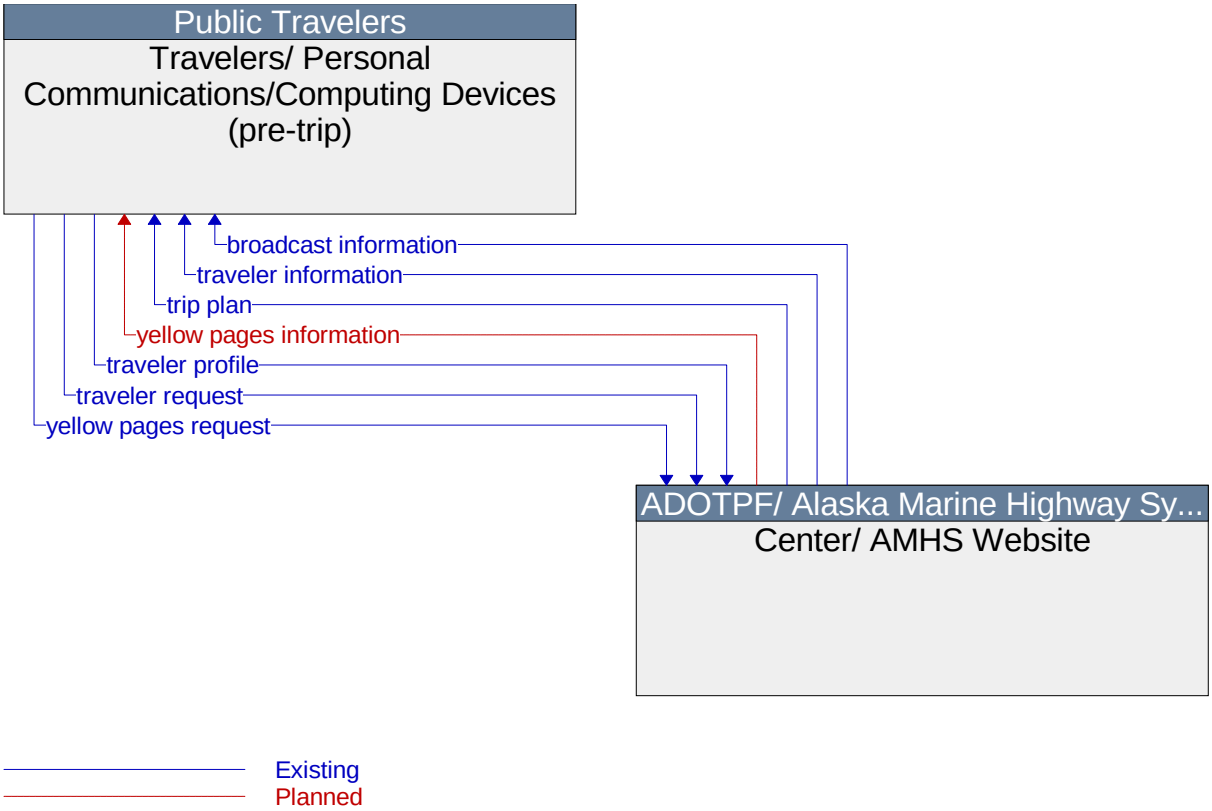

ADOTPF/ Alaska Marine Highway Sy...
Center/ AMHS Dispatch and Communications
alerts and advisories
State of Alaska/ Division of Homelan...
Emergency Alert System
Existing

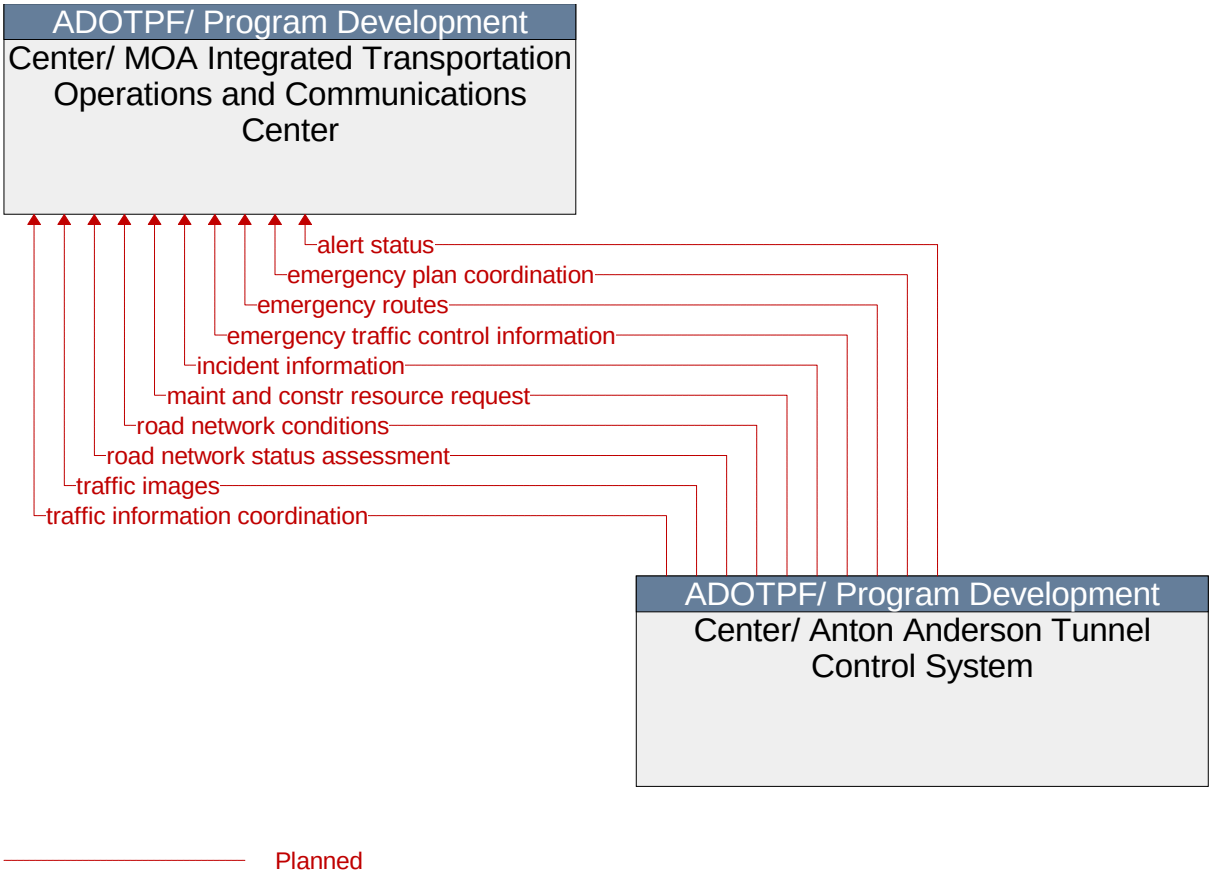

ADOTPF/ Alaska Marine Highway Sy...
Vehicle/ Ferries On-board Systems
transit schedule information
transit vehicle operator information
environmental probe data
transit vehicle location data
transit vehicle schedule performance
ADOTPF/ Alaska Marine Highway Sy...
Center/ AMHS Dispatch and Communications
Existing

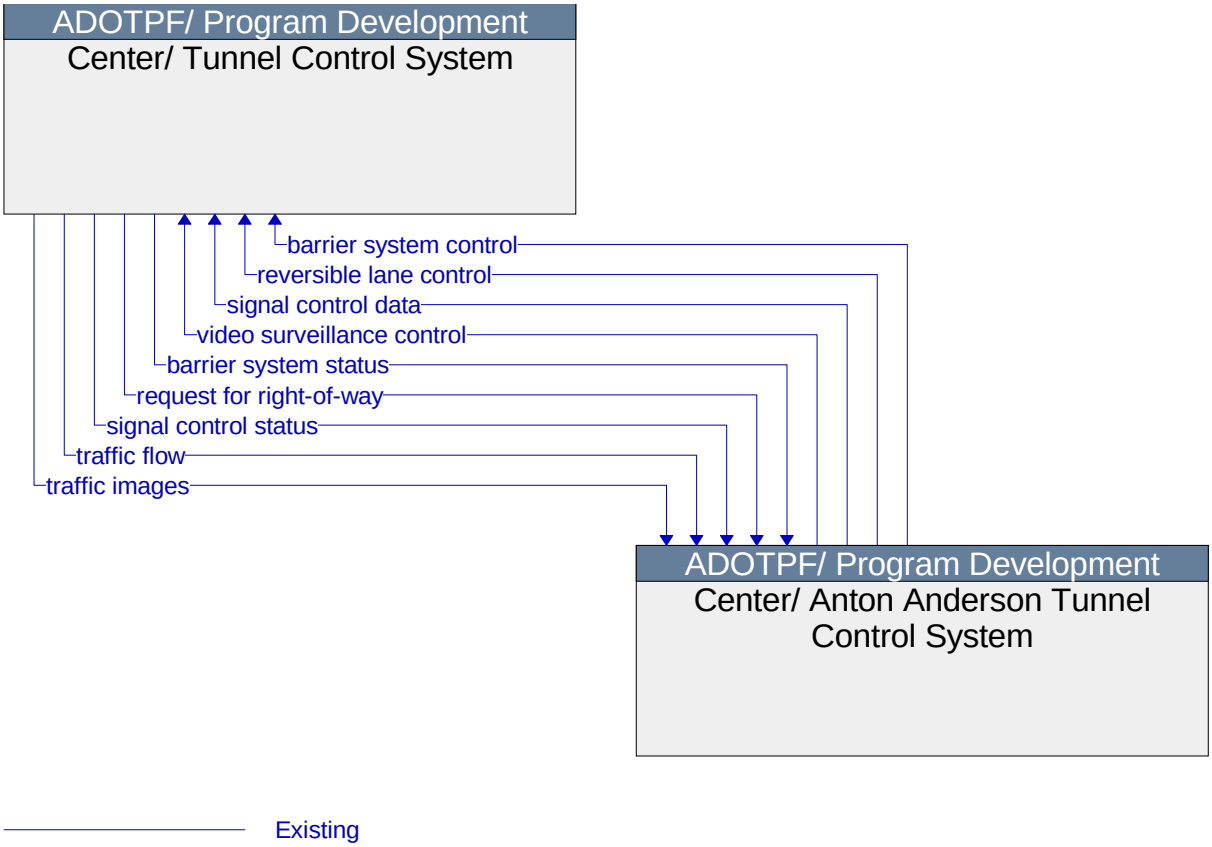

State of Alaska/ Divison of Tourism
Center/ Division of Tourism Website
ISP coordination
ADOTPF/ Alaska Marine Highway Sy...
Center/ AMHS Website
Planned

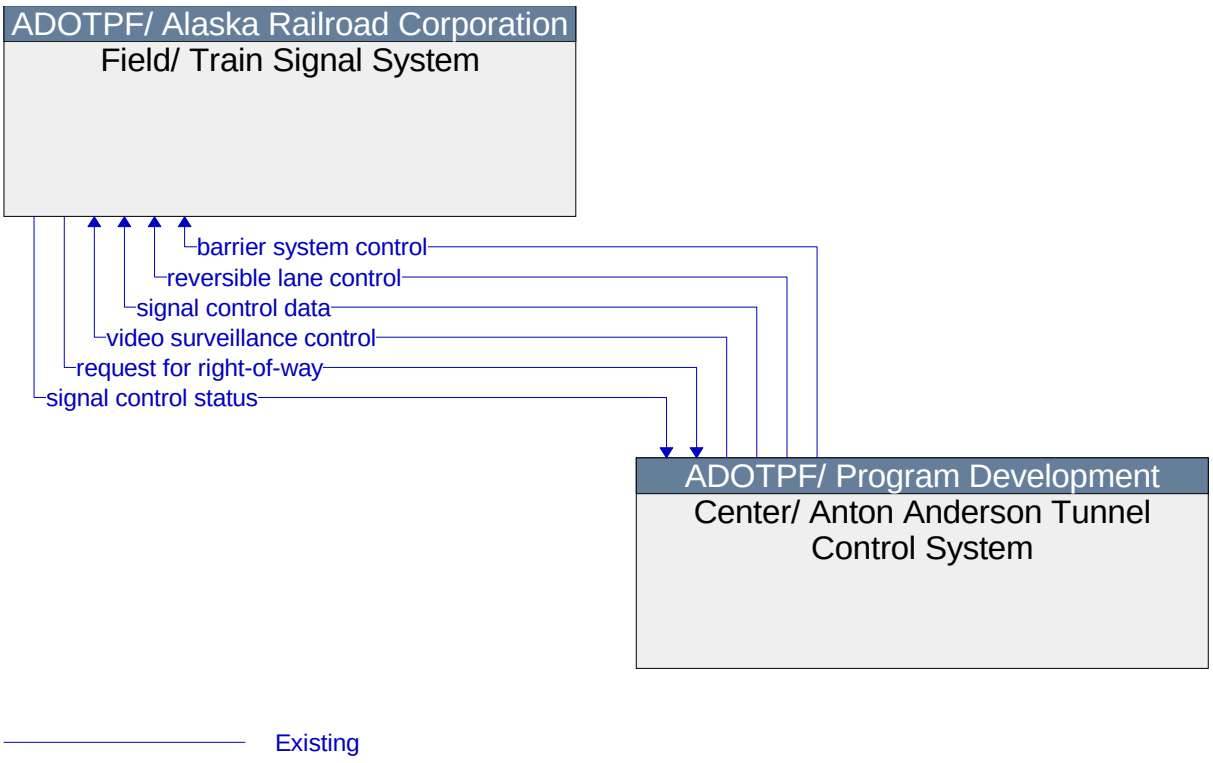

ADOTPF/ Alaska Marine Highway Sy...
Center/ Vessel Tracking System
transit information request
transit and fare schedules
ADOTPF/ Alaska Marine Highway Sy...
Center/ AMHS Website
Existing

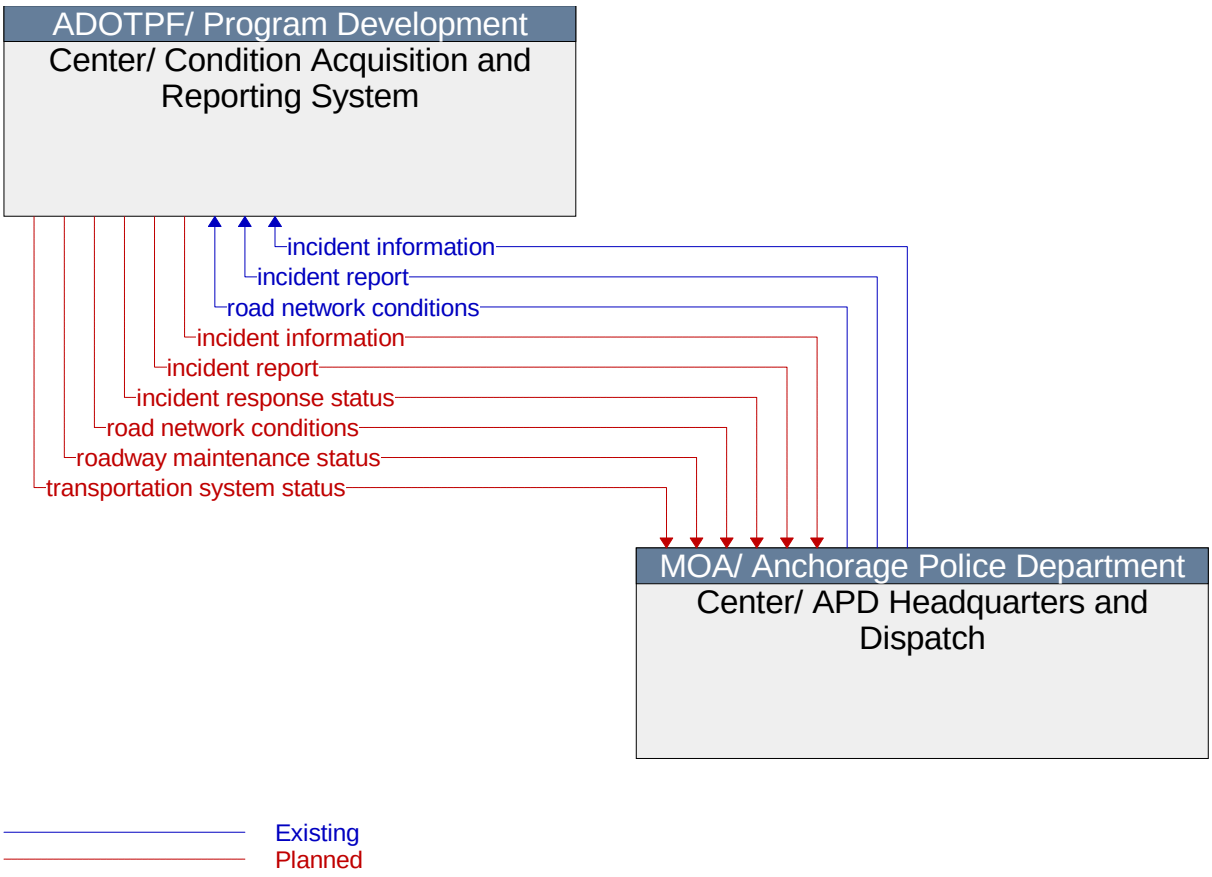

Public Travelers
Travelers/ Personal Communications/Computing Devices (en-route)
broadcast information
traveler information
trip plan
yellow pages information
traveler profile
traveler request
yellow pages request
ADOTPF/ Alaska Marine Highway Sy...
Center/ AMHS Website
Existing
Planned

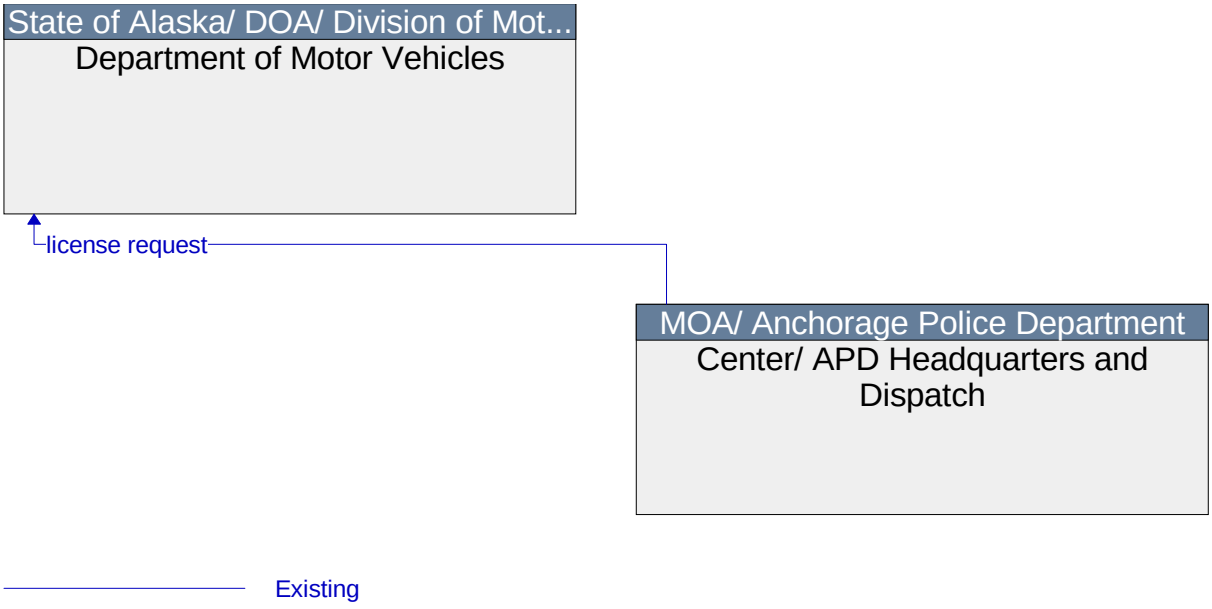

Public Travelers
Travelers/ Personal Communications/Computing Devices (pre-trip)
broadcast information
traveler information
trip plan
yellow pages information
traveler profile
traveler request
yellow pages request
ADOTPF/ Alaska Marine Highway Sy...
Center/ AMHS Website
Existing
Planned

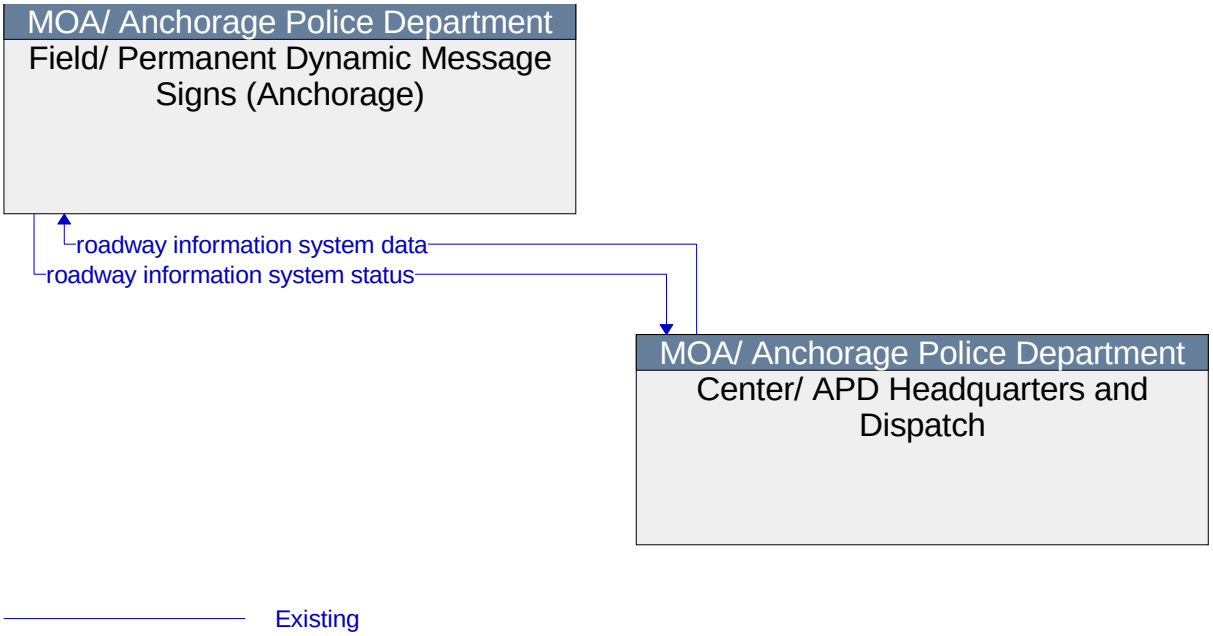

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
alert status
emergency plan coordination
emergency routes
emergency traffic control information
incident information
maint and constr resource request
road network conditions
road network status assessment
traffic images
traffic information coordination
ADOTPF/ Program Development
Center/ Anton Anderson Tunnel Control System
Planned

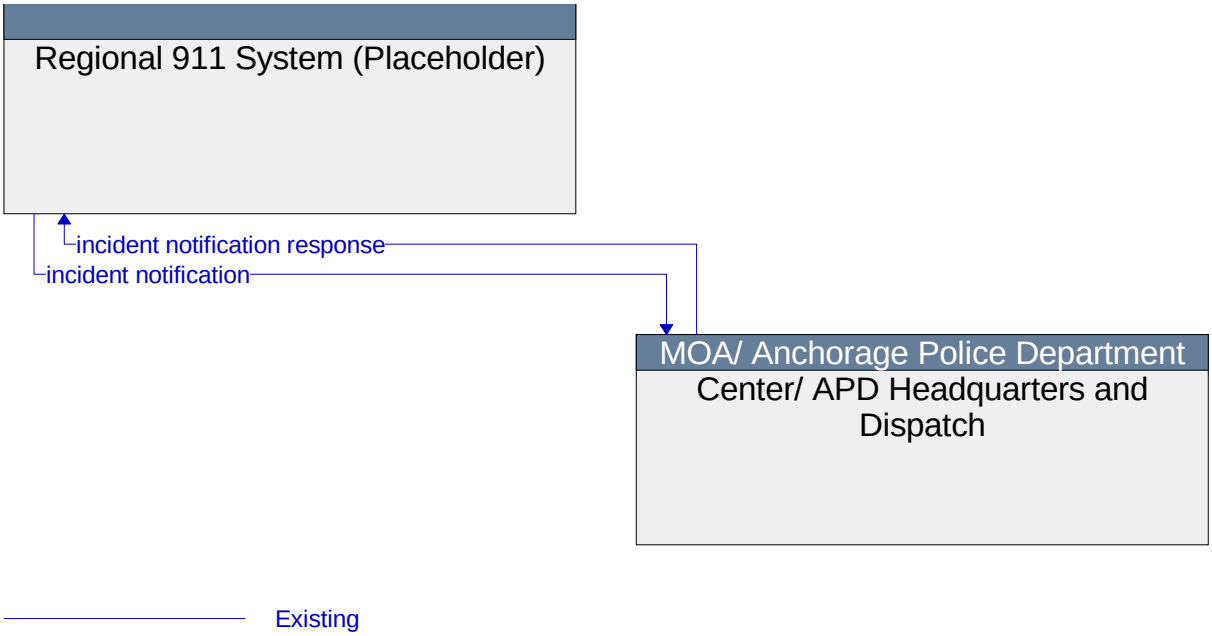

ADOTPF/ Program Development
Center/ Tunnel Control System
barrier system control
reversible lane control
signal control data
video surveillance control
barrier system status
request for right-of-way
signal control status
traffic flow
traffic images
ADOTPF/ Program Development
Center/ Anton Anderson Tunnel Control System
Existing

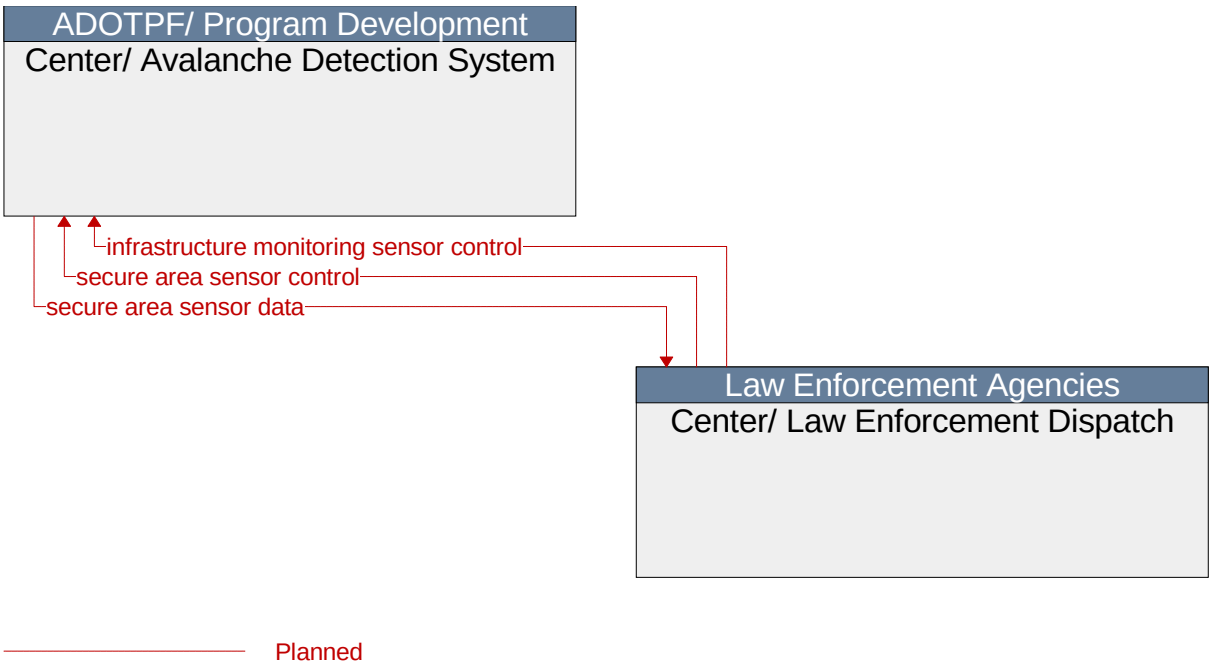

ADOTPF/ Alaska Railroad Corporation
Field/ Train Signal System
barrier system control
reversible lane control
signal control data
video surveillance control
request for right-of-way
signal control status
ADOTPF/ Program Development
Center/ Anton Anderson Tunnel Control System
Existing

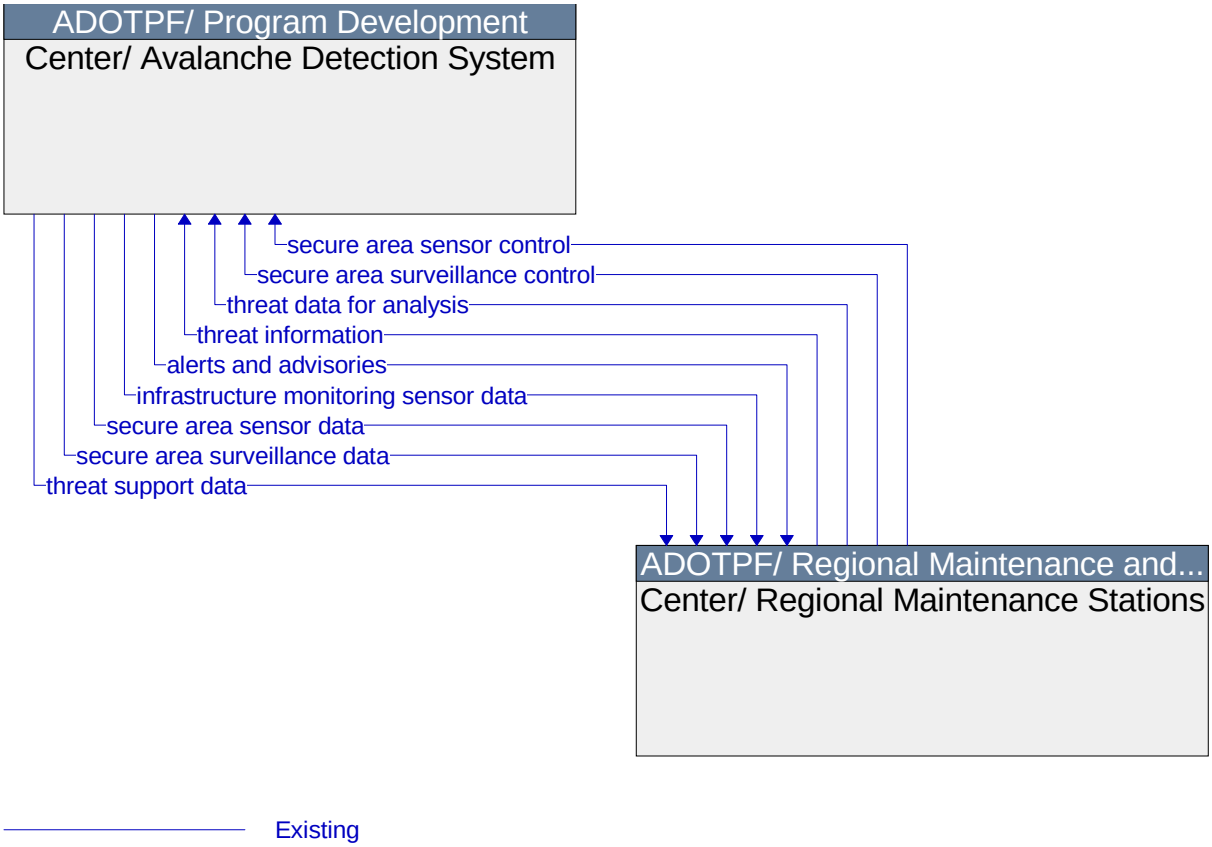

ADOTPF/ Program Development
Center/ Condition Acquisition and Reporting System
incident information
incident report
road network conditions
incident information
incident report
incident response status
road network conditions
roadway maintenance status
transportation system status
MOA/ Anchorage Police Department
Center/ APD Headquarters and Dispatch
Existing
Planned

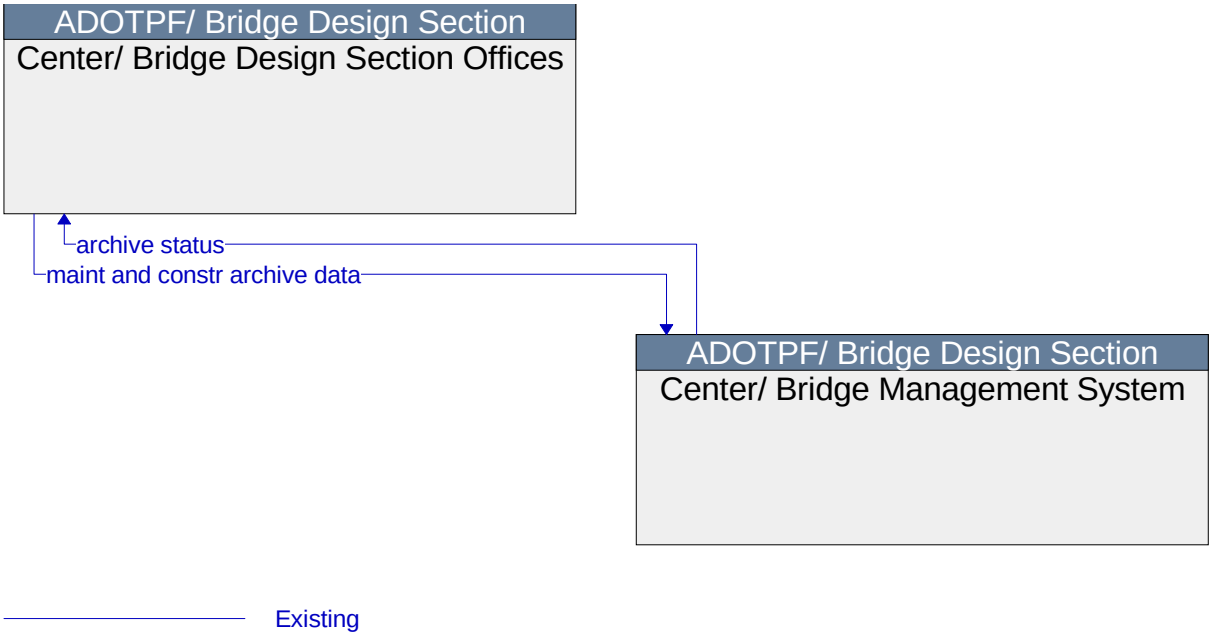

State of Alaska/ DOA/ Division of Mot...
Department of Motor Vehicles
license request
MOA/ Anchorage Police Department
Center/ APD Headquarters and Dispatch
Existing

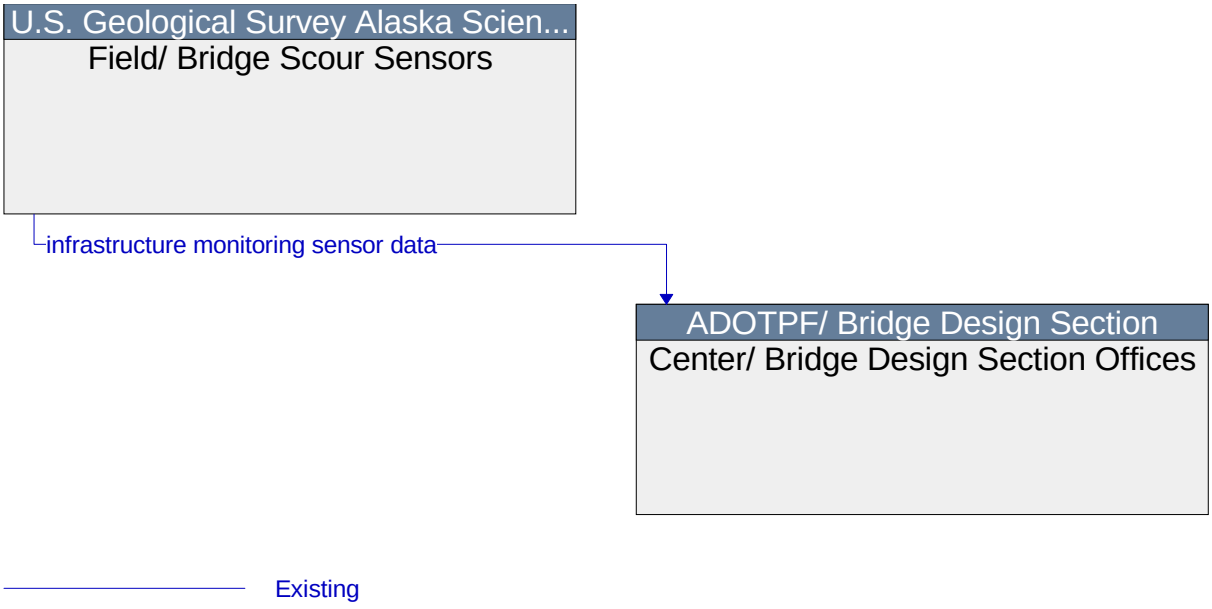

MOA/ Anchorage Police Department
Field/ Permanent Dynamic Message Signs (Anchorage)
roadway information system data
roadway information system status
MOA/ Anchorage Police Department
Center/ APD Headquarters and Dispatch
Existing

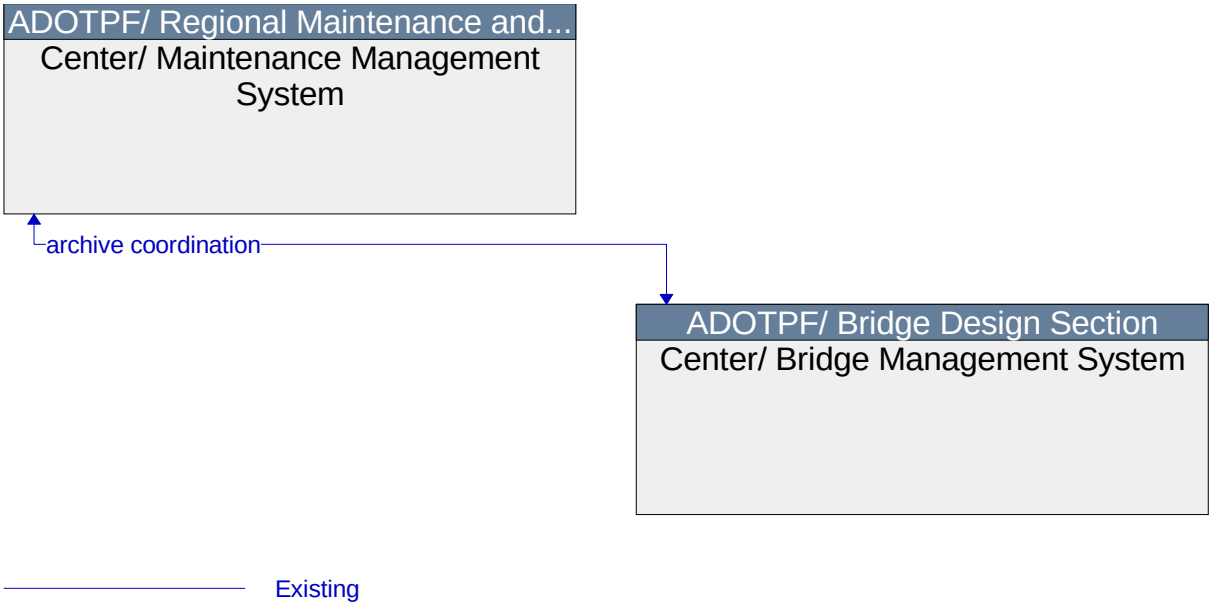

Regional 911 System (Placeholder)
incident notification response
incident notification
MOA/ Anchorage Police Department
Center/ APD Headquarters and Dispatch
Existing

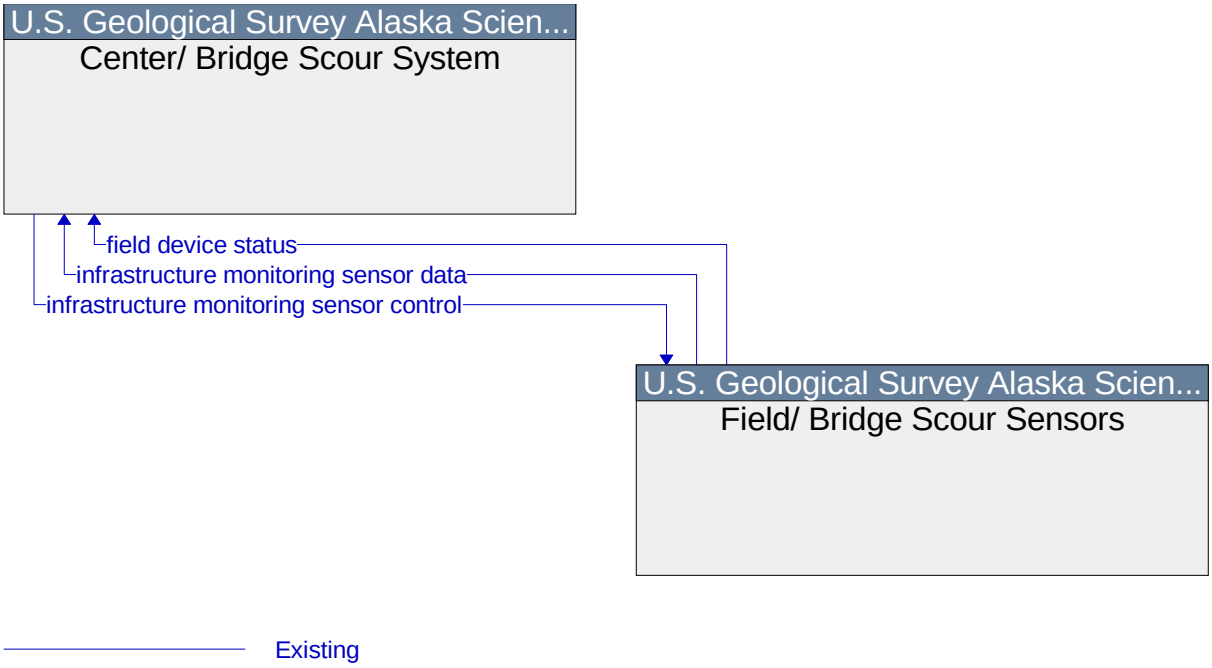

ADOTPF/ Program Development
Center/ Avalanche Detection System
infrastructure monitoring sensor control
secure area sensor control
secure area sensor data
Law Enforcement Agencies
Center/ Law Enforcement Dispatch
Planned

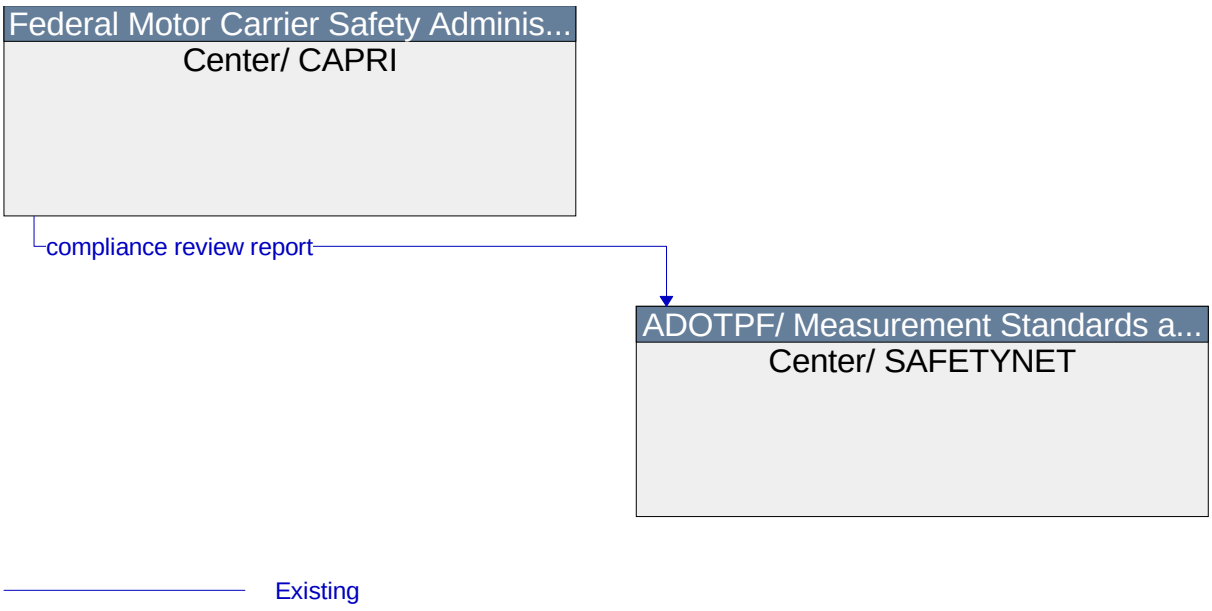

ADOTPF/ Program Development
Center/ Avalanche Detection System
secure area sensor control
secure area surveillance control
threat data for analysis
threat information
alerts and advisories
infrastructure monitoring sensor data
secure area sensor data
secure area surveillance data
threat support data
ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
Existing

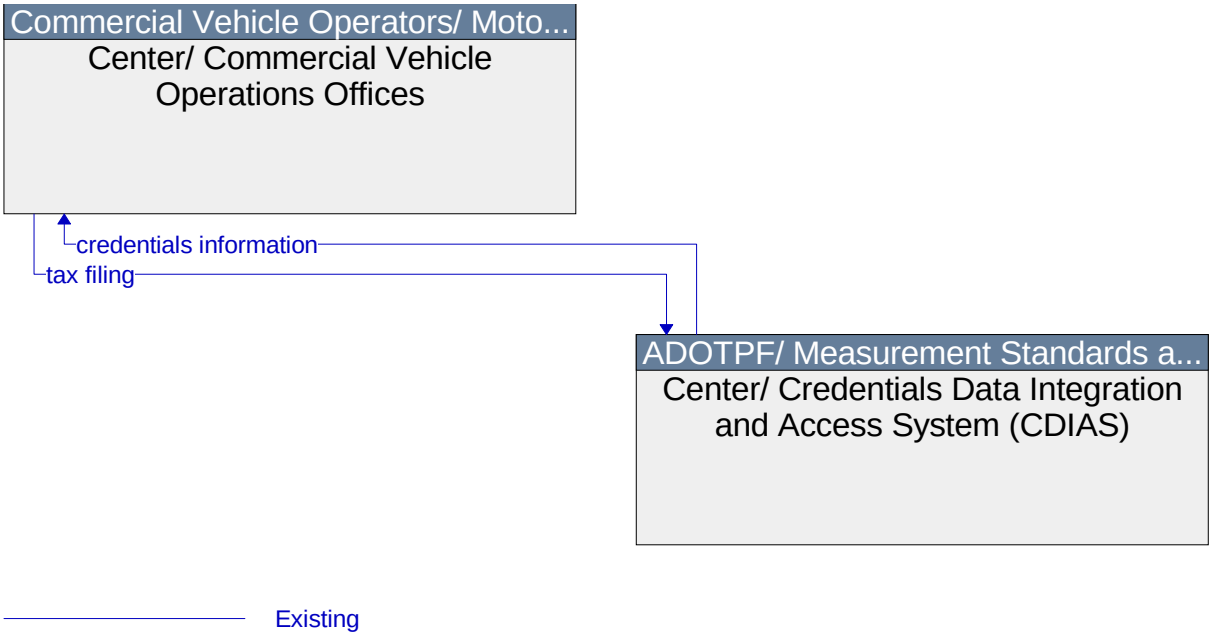

ADOTPF/ Bridge Design Section
Center/ Bridge Design Section Offices
archive status
maint and constr archive data
ADOTPF/ Bridge Design Section
Center/ Bridge Management System
Existing

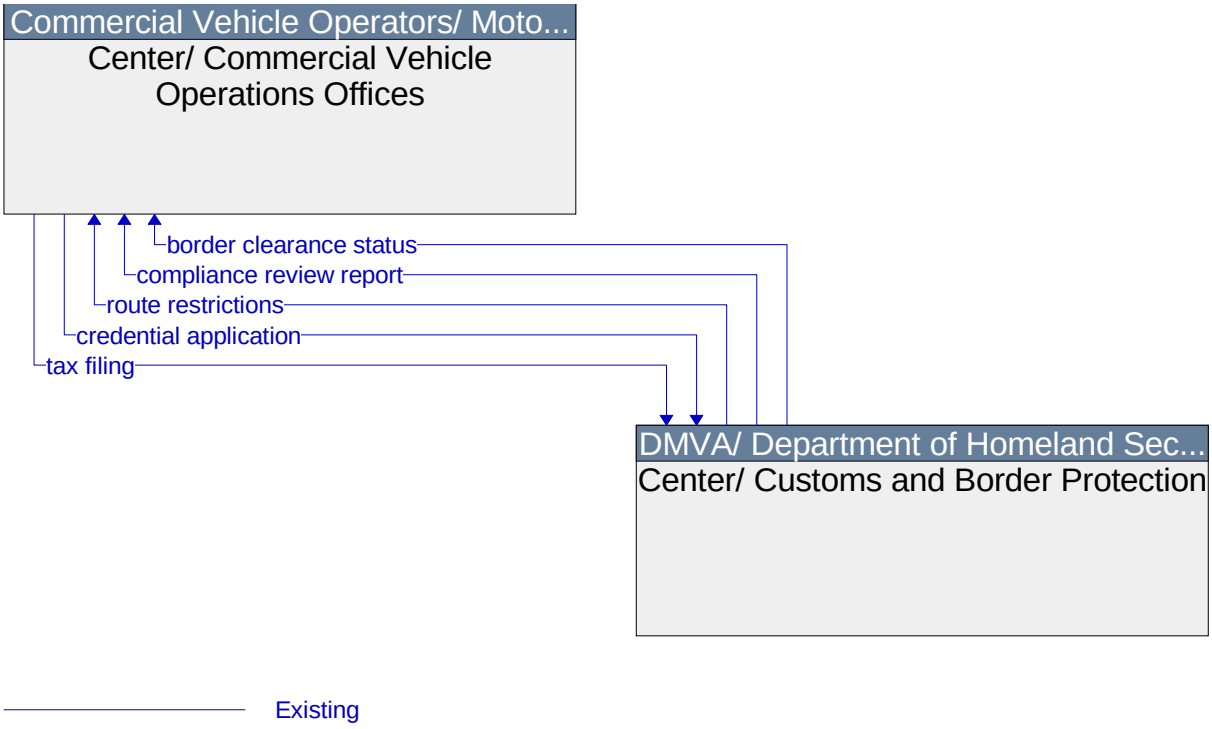

U.S. Geological Survey Alaska Scien...
Field/ Bridge Scour Sensors
infrastructure monitoring sensor data
ADOTPF/ Bridge Design Section
Center/ Bridge Design Section Offices
Existing

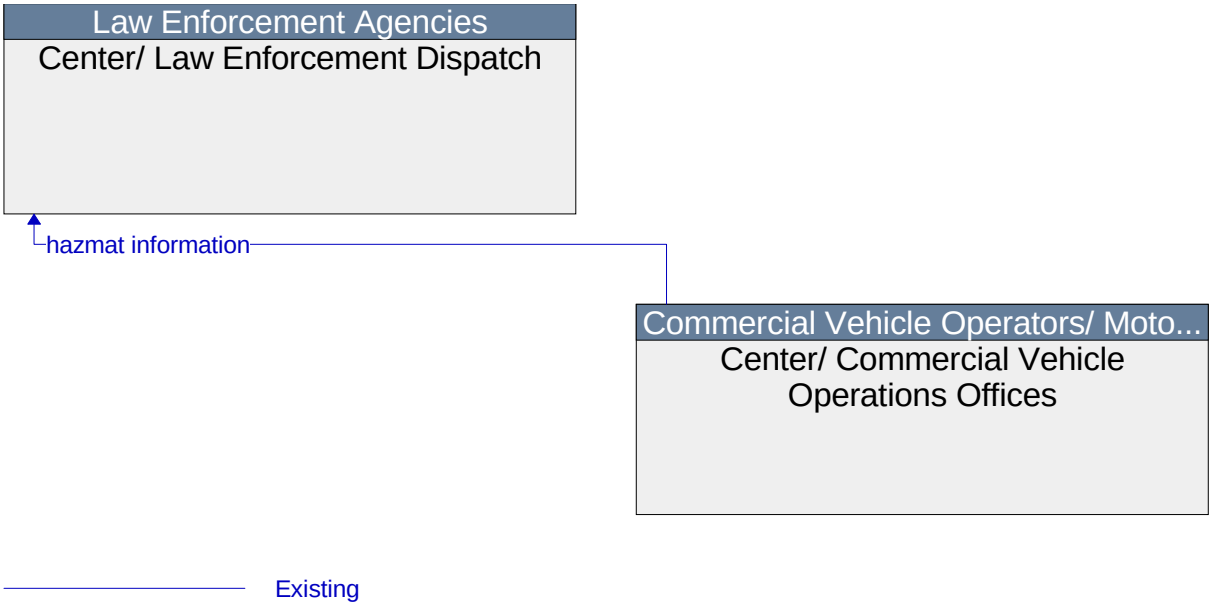

ADOTPF/ Regional Maintenance and...
Center/ Maintenance Management System
archive coordination
ADOTPF/ Bridge Design Section
Center/ Bridge Management System
Existing

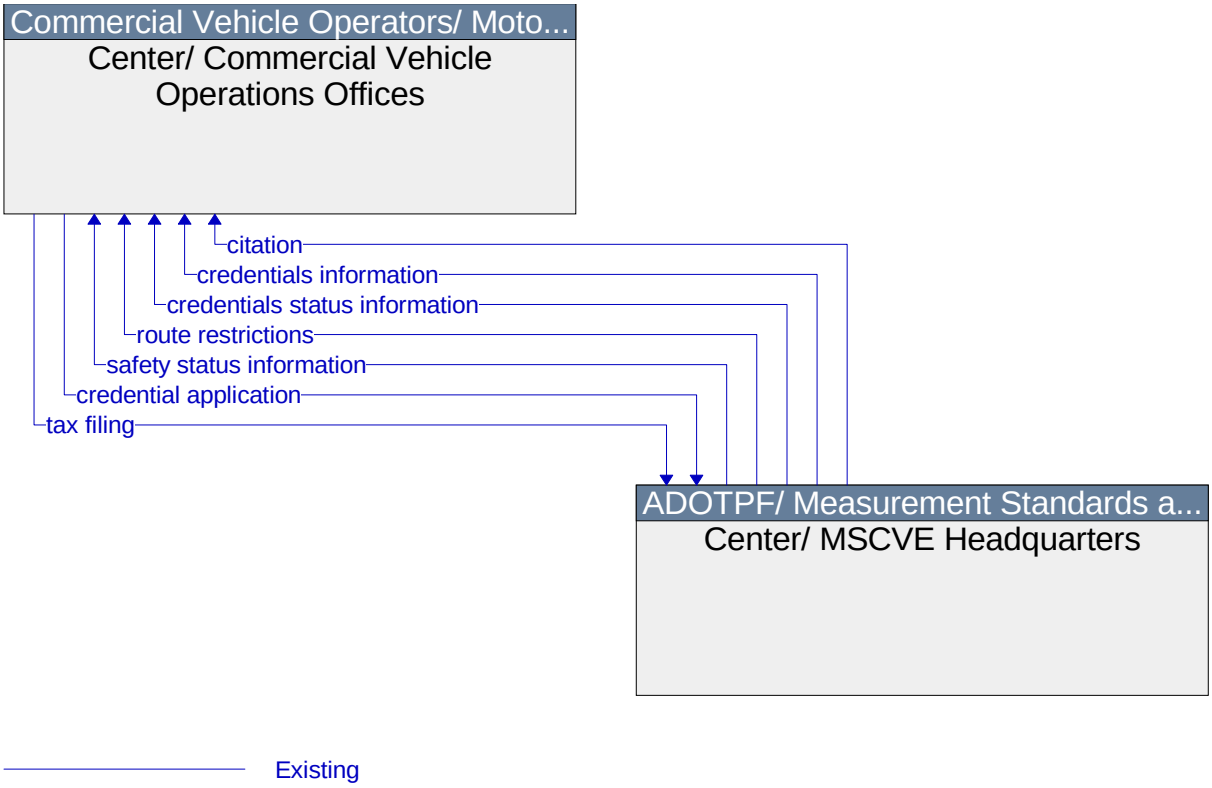

U.S. Geological Survey Alaska Scien...
Center/ Bridge Scour System
field device status
infrastructure monitoring sensor data
infrastructure monitoring sensor control
U.S. Geological Survey Alaska Scien...
Field/ Bridge Scour Sensors
Existing

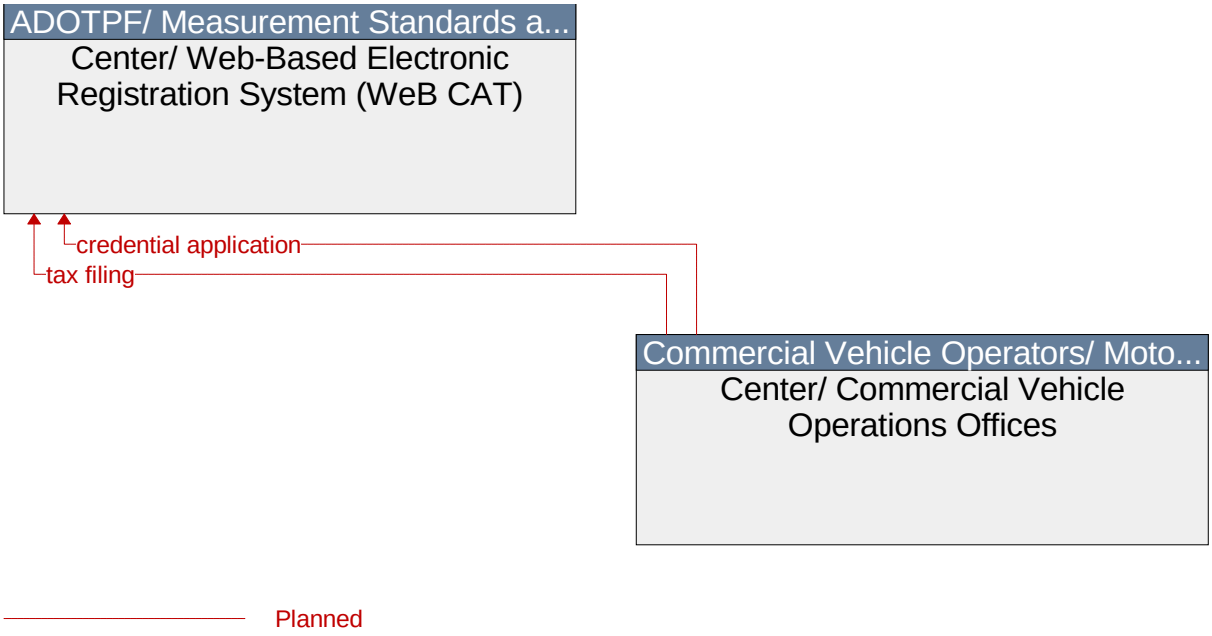

Federal Motor Carrier Safety Adminis...
Center/ CAPRI
compliance review report
ADOTPF/ Measurement Standards a...
Center/ SAFETYNET
Existing

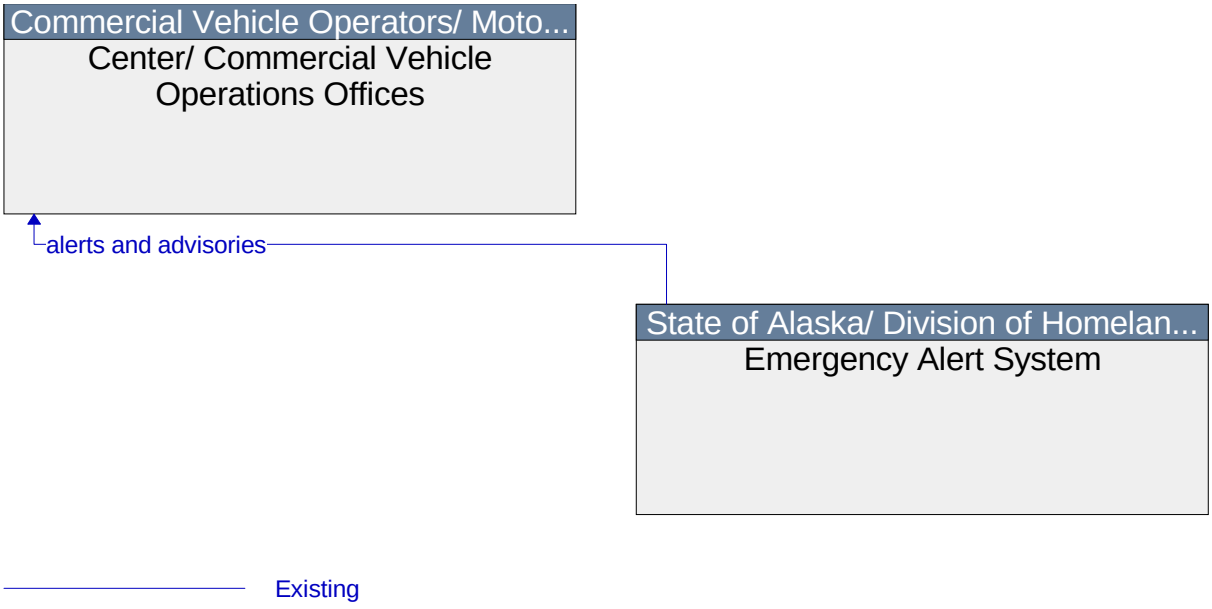

Commercial Vehicle Operators/ Moto...
Center/ Commercial Vehicle Operations Offices
credentials information
tax filing
ADOTPF/ Measurement Standards a...
Center/ Credentials Data Integration and Access System (CDIAS)
Existing

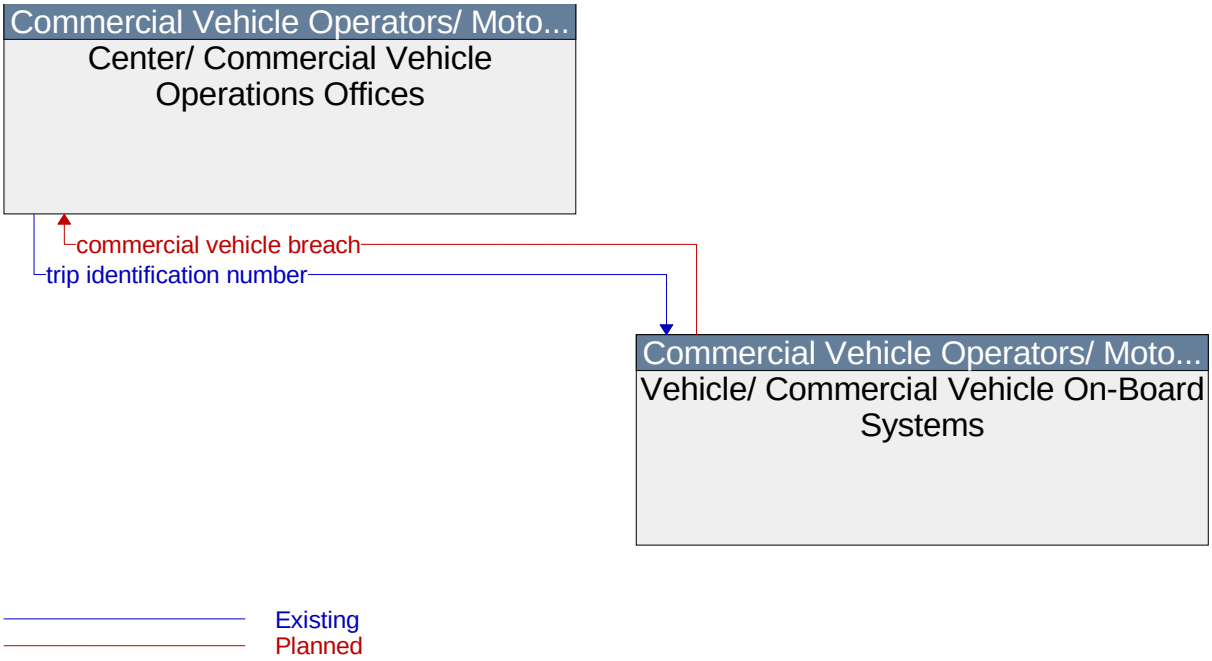

Commercial Vehicle Operators/ Moto...
Center/ Commercial Vehicle Operations Offices
border clearance status
compliance review report
route restrictions
credential application
tax filing
DMVA/ Department of Homeland Sec...
Center/ Customs and Border Protection
Existing

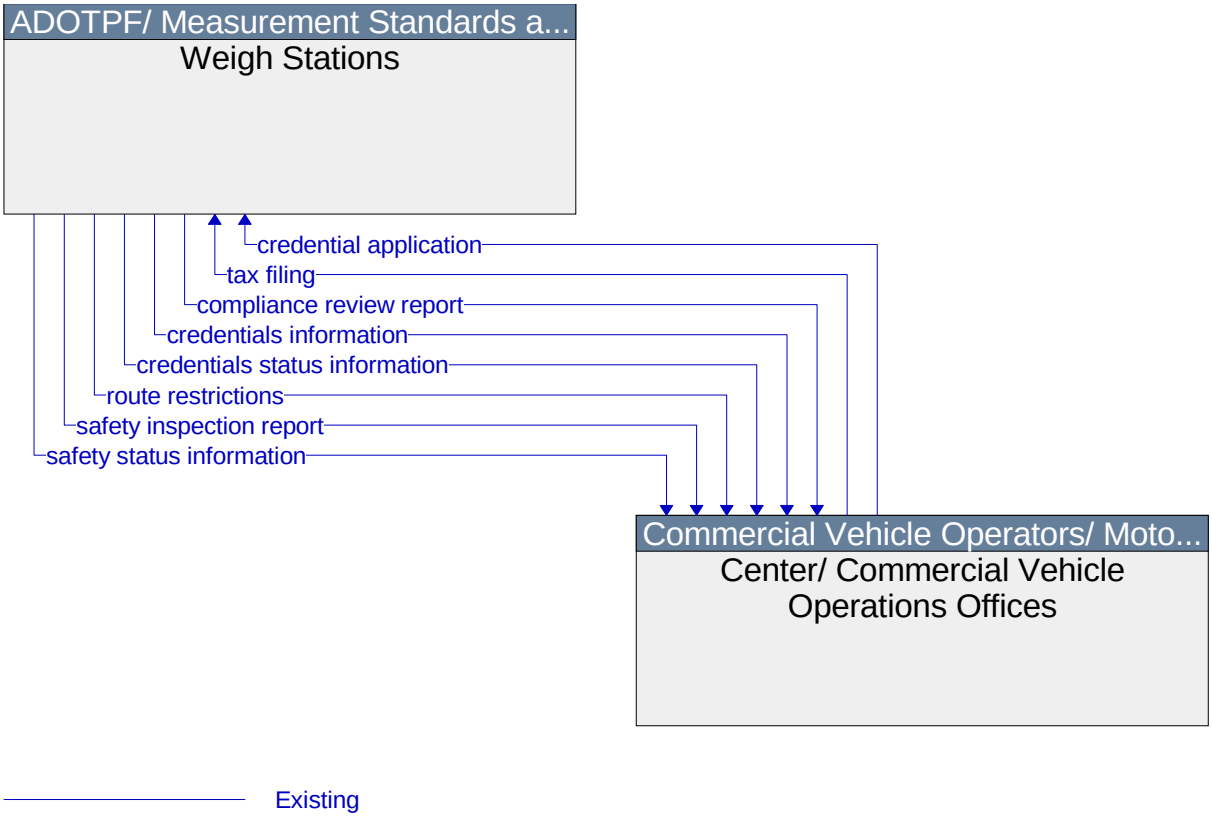

Law Enforcement Agencies
Center/ Law Enforcement Dispatch
hazmat information
Commercial Vehicle Operators/ Moto...
Center/ Commercial Vehicle Operations Offices
Existing

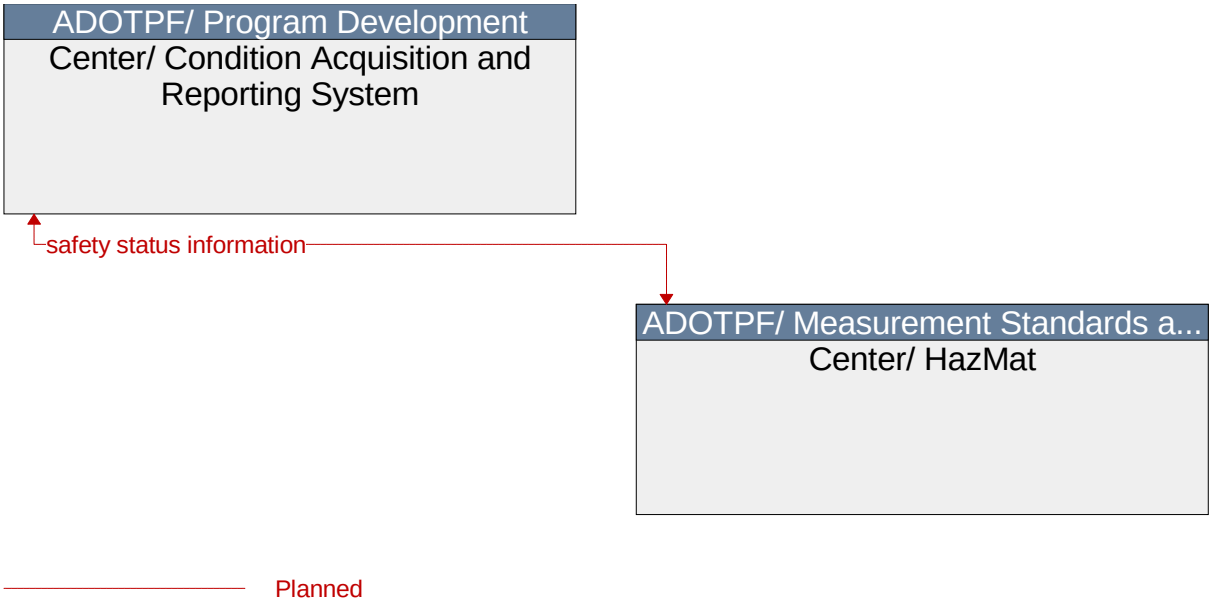

Commercial Vehicle Operators/ Moto...
Center/ Commercial Vehicle Operations Offices
citation
credentials information
credentials status information
route restrictions
safety status information
credential application
tax filing
ADOTPF/ Measurement Standards a...
Center/ MSCVE Headquarters
Existing

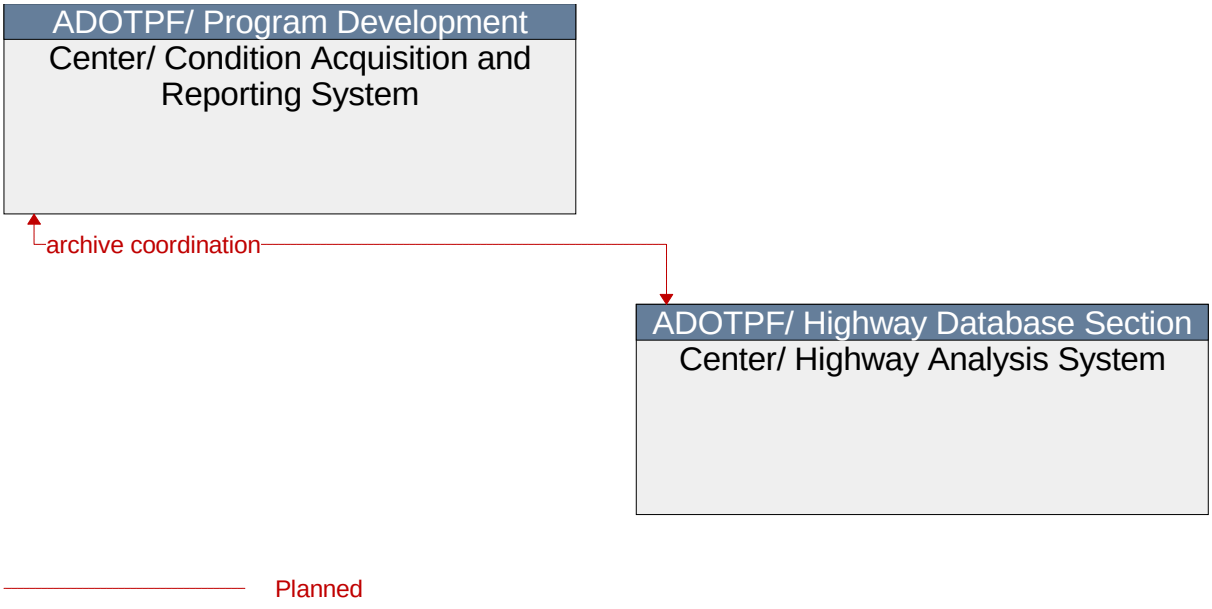

ADOTPF/ Measurement Standards a...
Center/ Web-Based Electronic Registration System (WeB CAT)
credential application
tax filing
Commercial Vehicle Operators/ Moto...
Center/ Commercial Vehicle Operations Offices
Planned

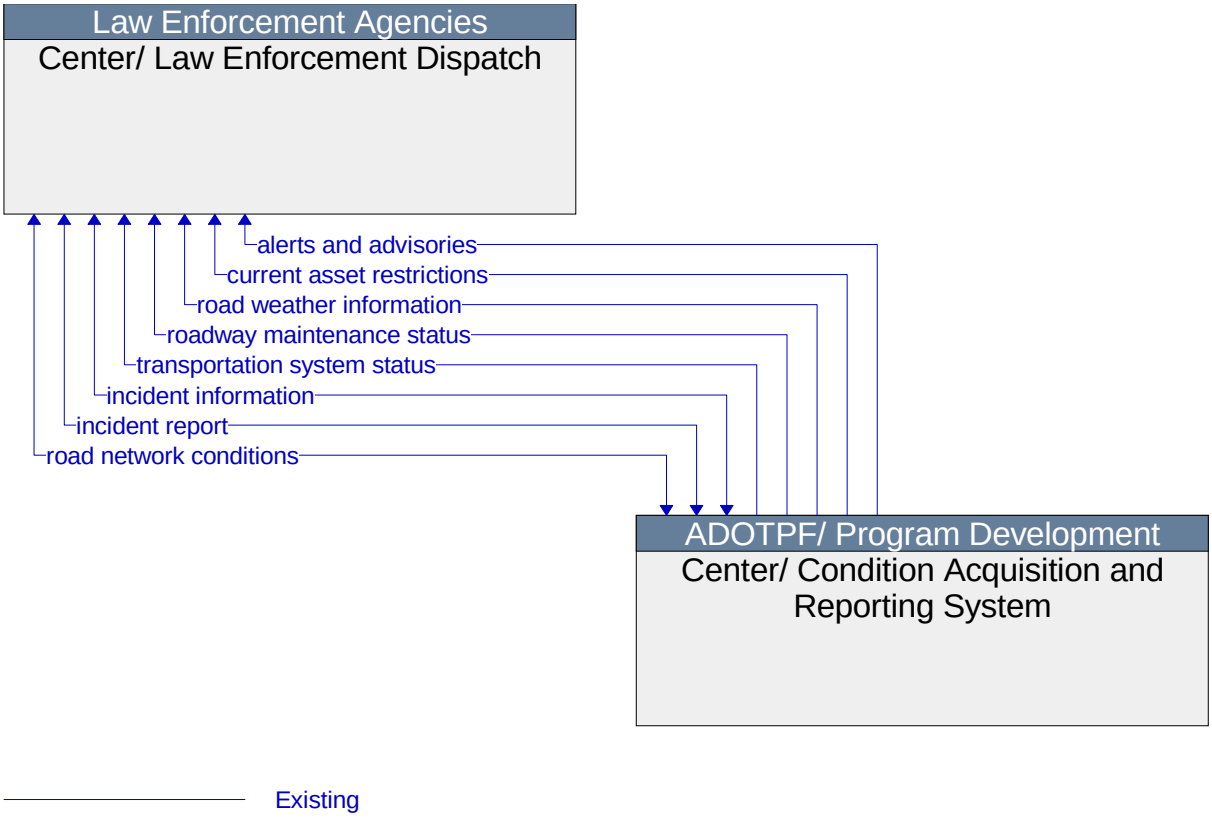

Commercial Vehicle Operators/ Moto...
Center/ Commercial Vehicle Operations Offices
alerts and advisories
State of Alaska/ Division of Homelan...
Emergency Alert System
Existing

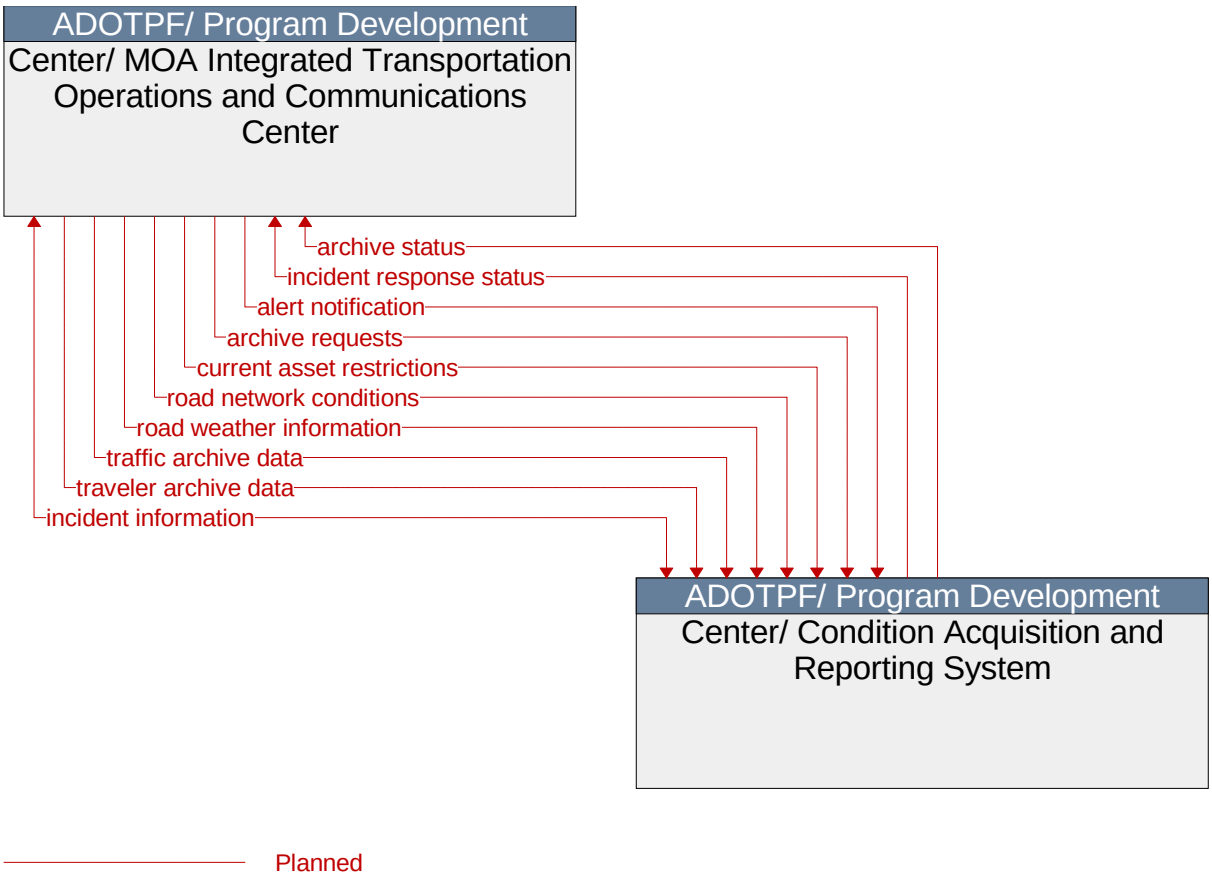

Commercial Vehicle Operators/ Moto...
Center/ Commercial Vehicle Operations Offices
commercial vehicle breach
trip identification number
Commercial Vehicle Operators/ Moto...
Vehicle/ Commercial Vehicle On-Board Systems
Existing
Planned

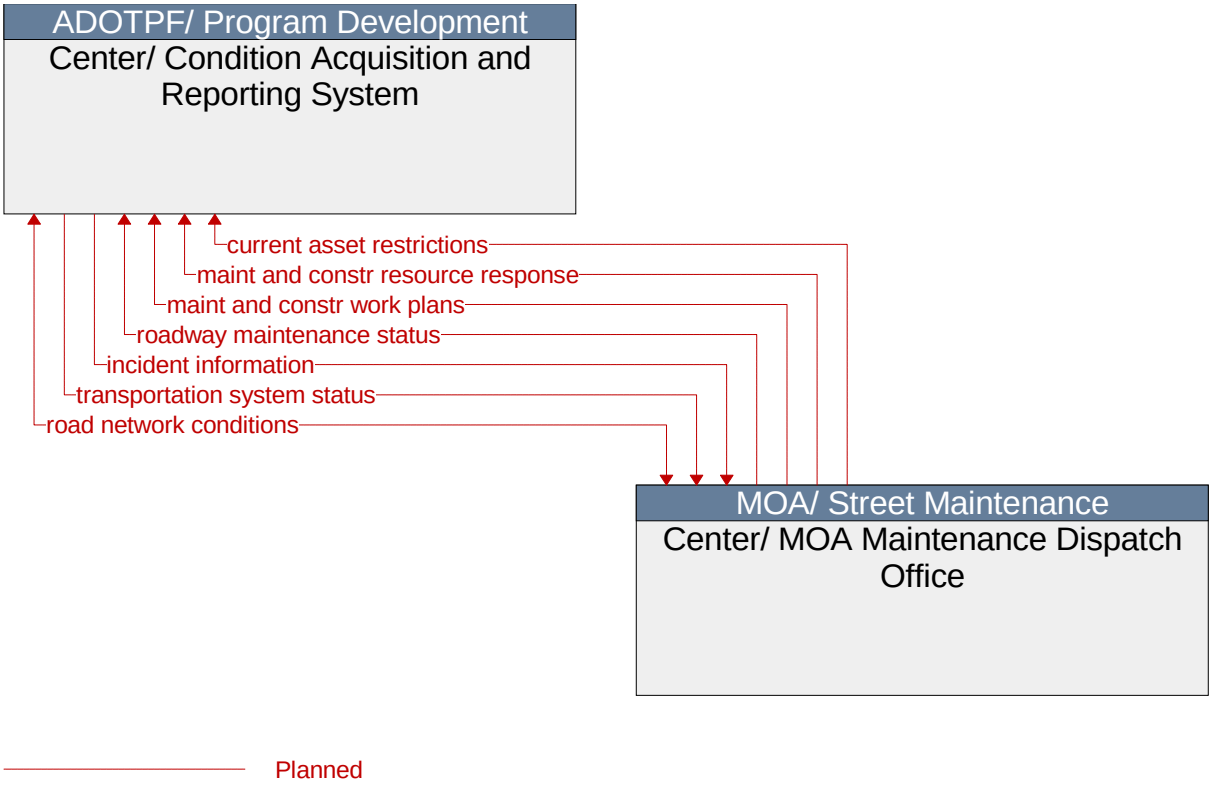

ADOTPF/ Measurement Standards a...
Weigh Stations
credential application
tax filing
compliance review report
credentials information
credentials status information
route restrictions
safety inspection report
safety status information
Commercial Vehicle Operators/ Moto...
Center/ Commercial Vehicle Operations Offices
Existing

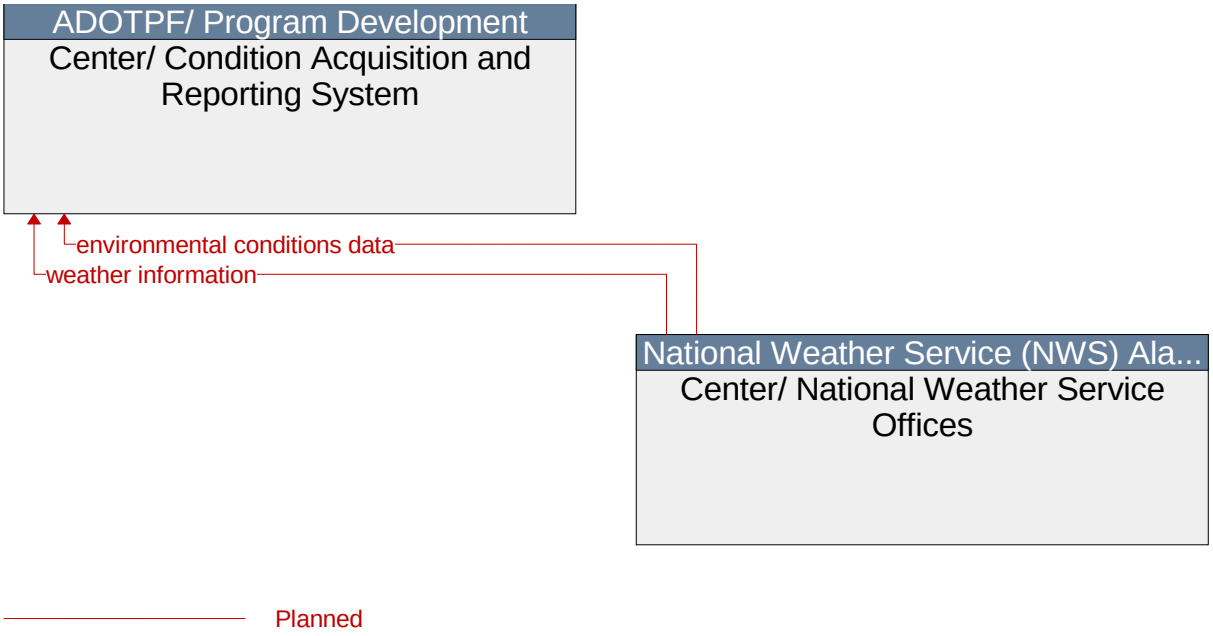

ADOTPF/ Program Development
Center/ Condition Acquisition and Reporting System
safety status information
ADOTPF/ Measurement Standards a...
Center/ HazMat
Planned

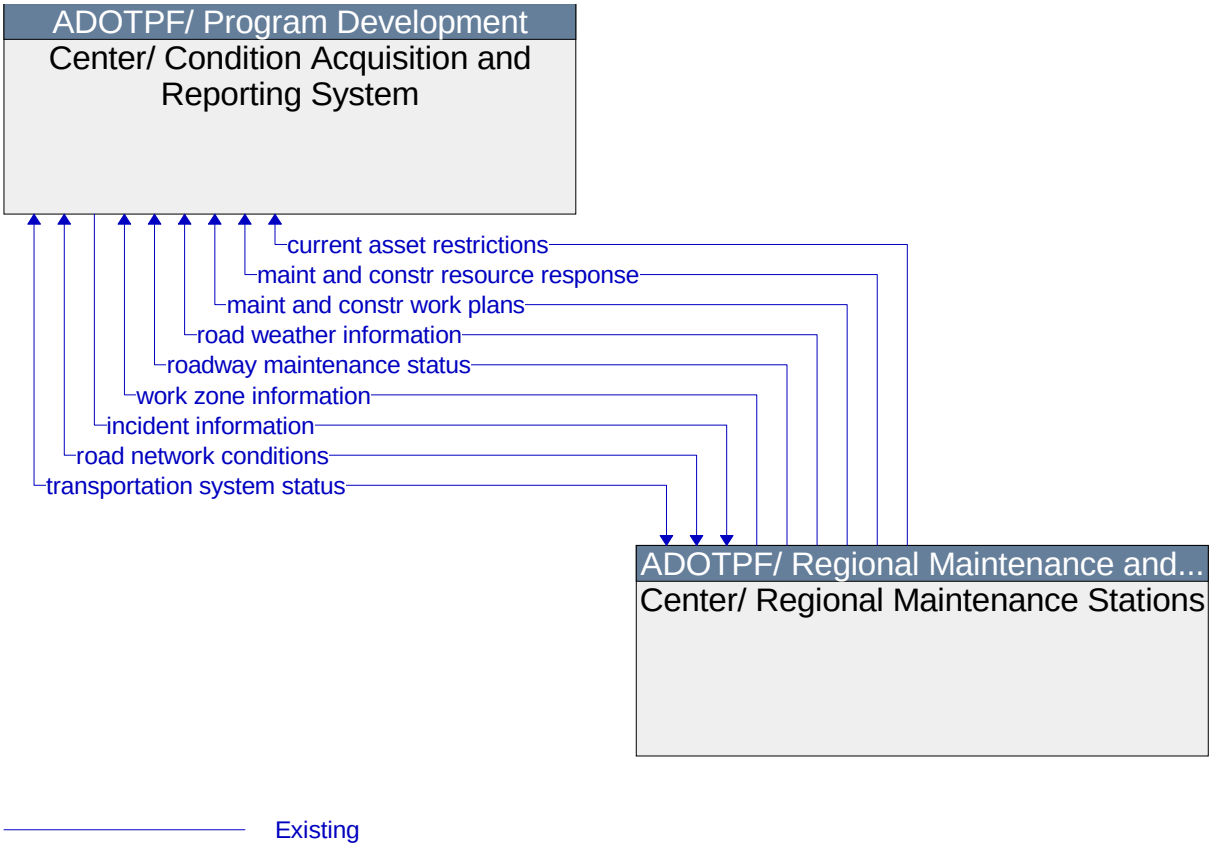

ADOTPF/ Program Development
Center/ Condition Acquisition and Reporting System
archive coordination
ADOTPF/ Highway Database Section
Center/ Highway Analysis System
Planned

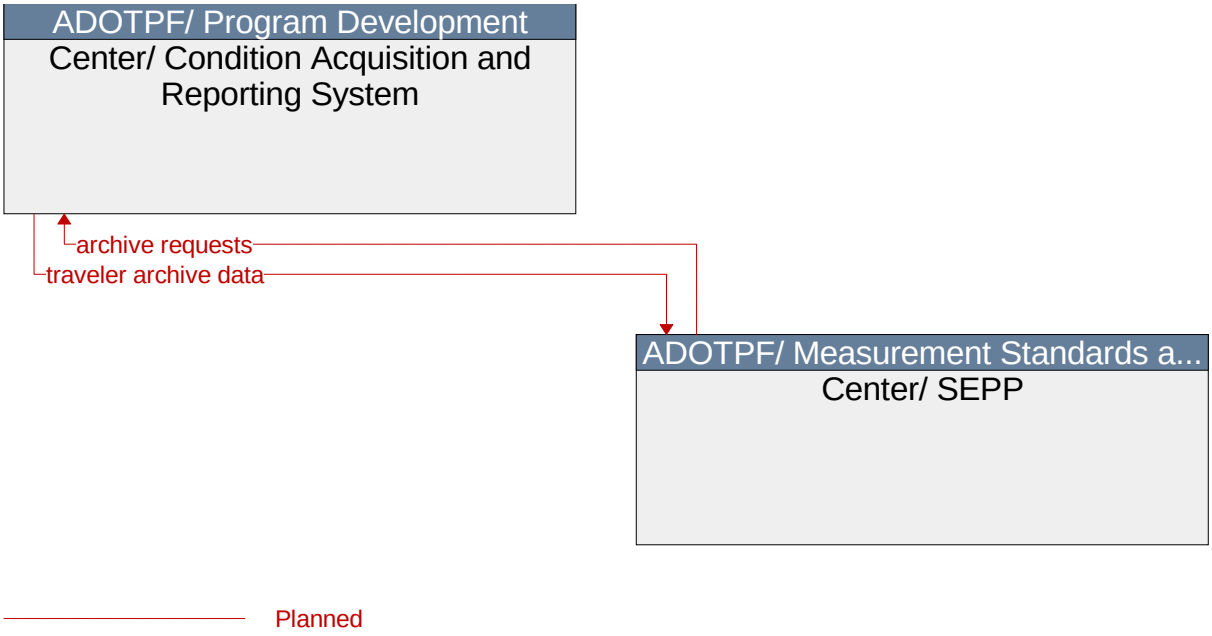

Law Enforcement Agencies
Center/ Law Enforcement Dispatch
alerts and advisories
current asset restrictions
road weather information
roadway maintenance status
transportation system status
incident information
incident report
road network conditions
ADOTPF/ Program Development
Center/ Condition Acquisition and Reporting System
Existing

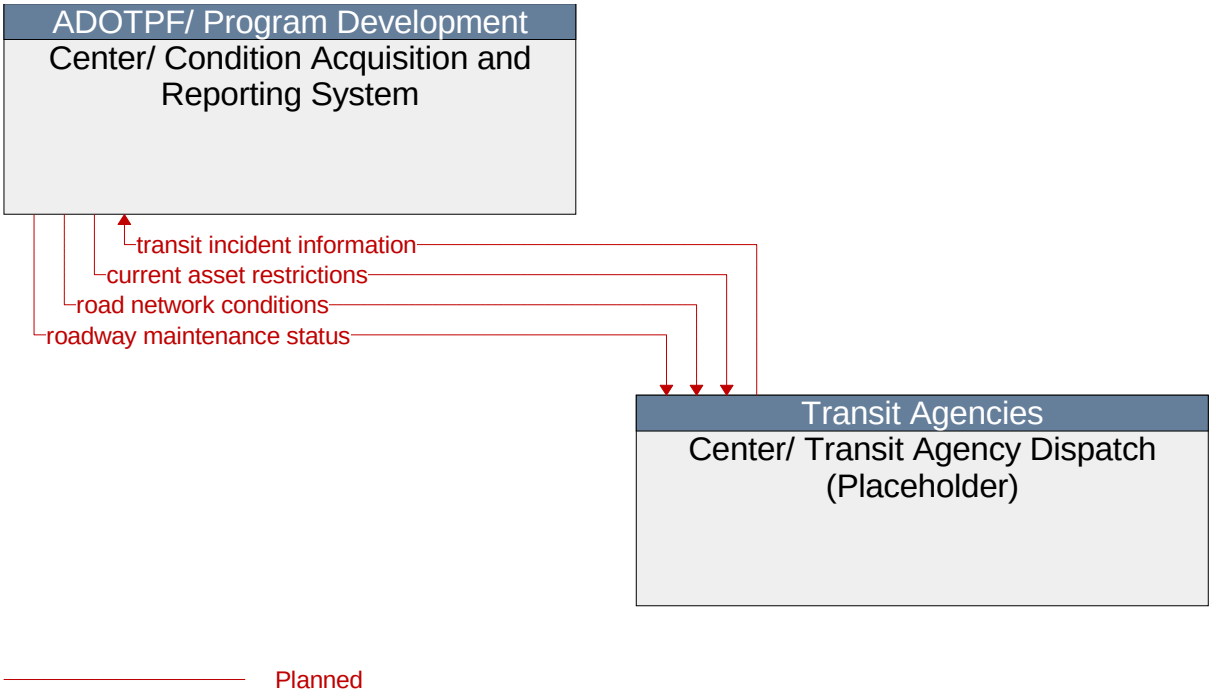

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
archive status
incident response status
alert notification
archive requests
current asset restrictions
road network conditions
road weather information
traffic archive data
traveler archive data
incident information
ADOTPF/ Program Development
Center/ Condition Acquisition and Reporting System
Planned

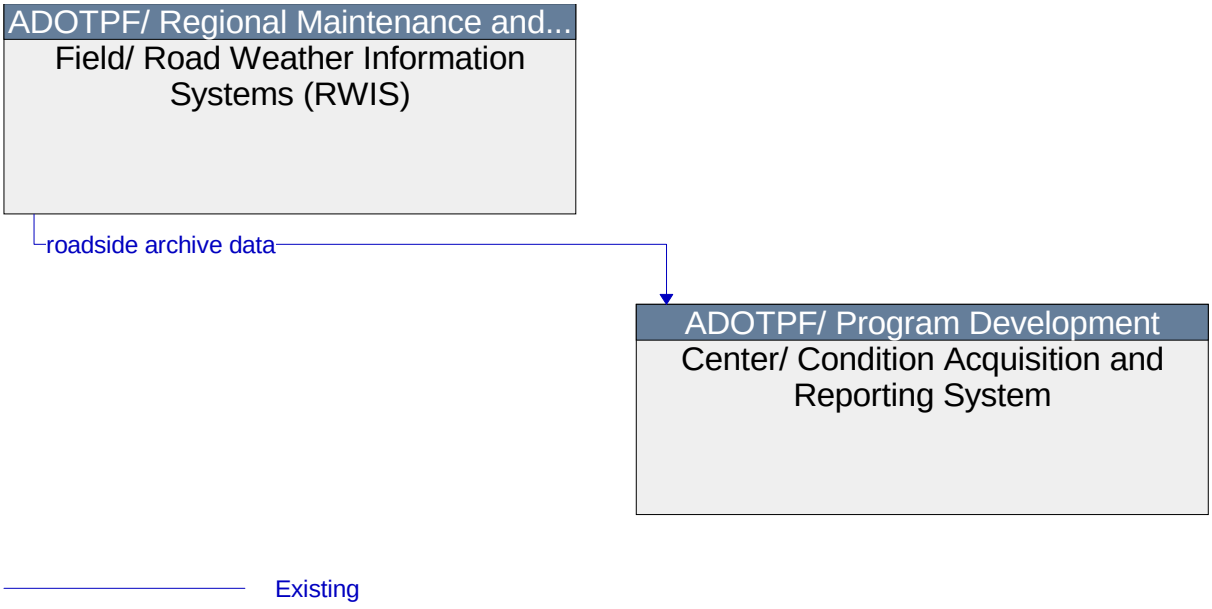

ADOTPF/ Program Development
Center/ Condition Acquisition and Reporting System
current asset restrictions
maint and constr resource response
maint and constr work plans
roadway maintenance status
incident information
transportation system status
road network conditions
MOA/ Street Maintenance
Center/ MOA Maintenance Dispatch Office
Planned

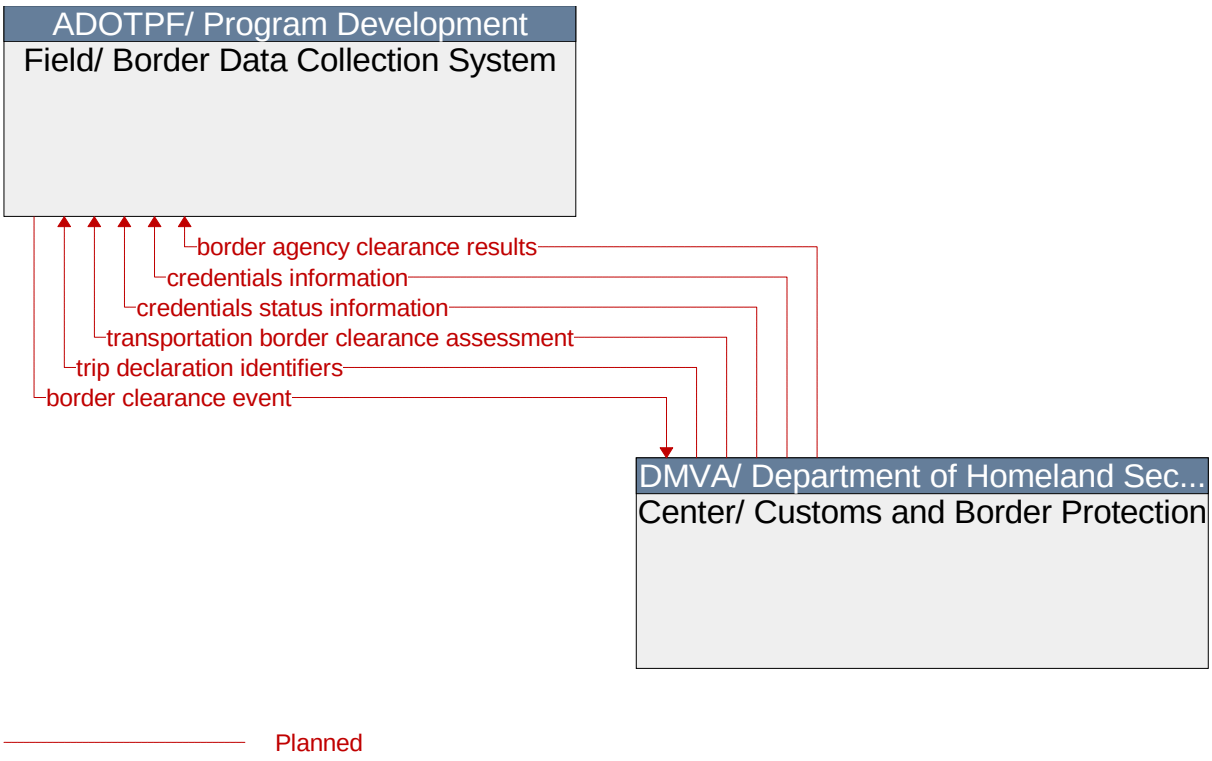

ADOTPF/ Program Development
Center/ Condition Acquisition and Reporting System
environmental conditions data
weather information
National Weather Service (NWS) Ala...
Center/ National Weather Service Offices
Planned

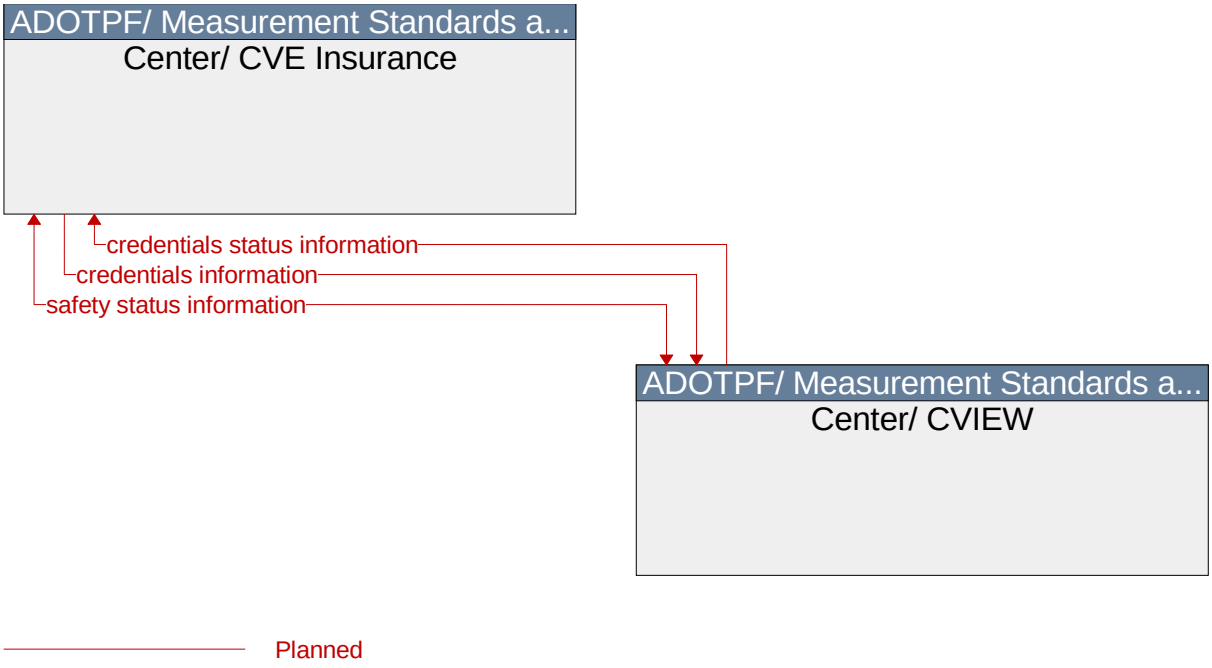

ADOTPF/ Program Development
Center/ Condition Acquisition and Reporting System
current asset restrictions
maint and constr resource response
maint and constr work plans
road weather information
roadway maintenance status
work zone information
incident information
road network conditions
transportation system status
ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
Existing

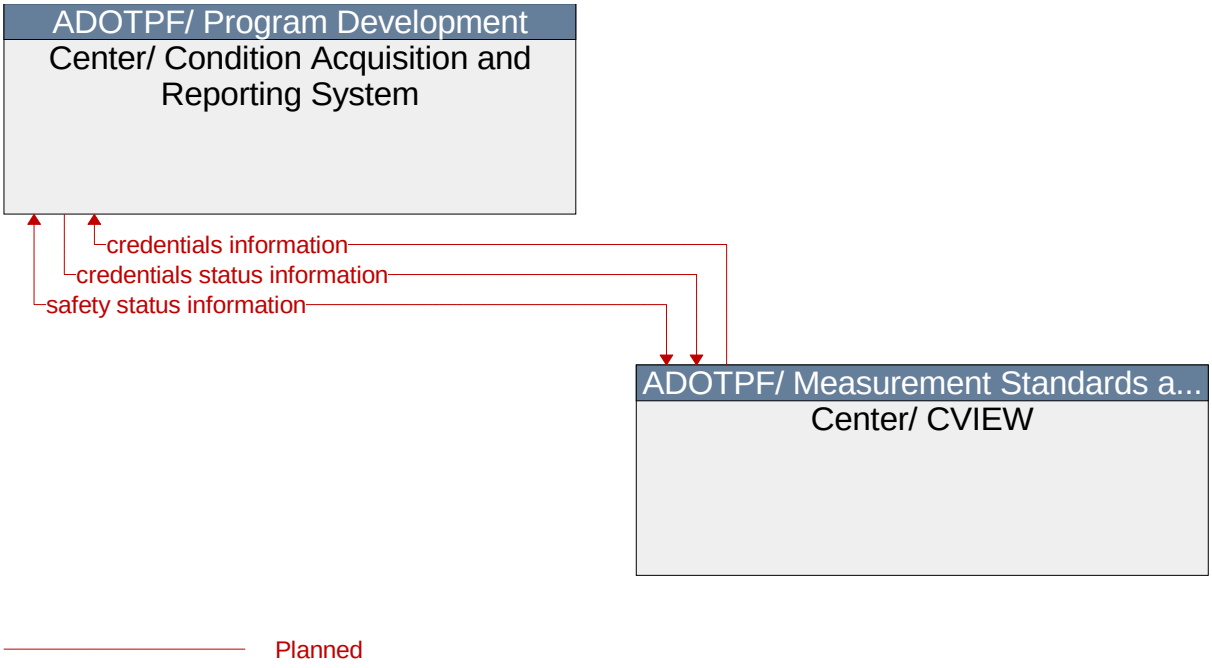

ADOTPF/ Program Development
Center/ Condition Acquisition and Reporting System
archive requests
traveler archive data
ADOTPF/ Measurement Standards a...
Center/ SEPP
Planned

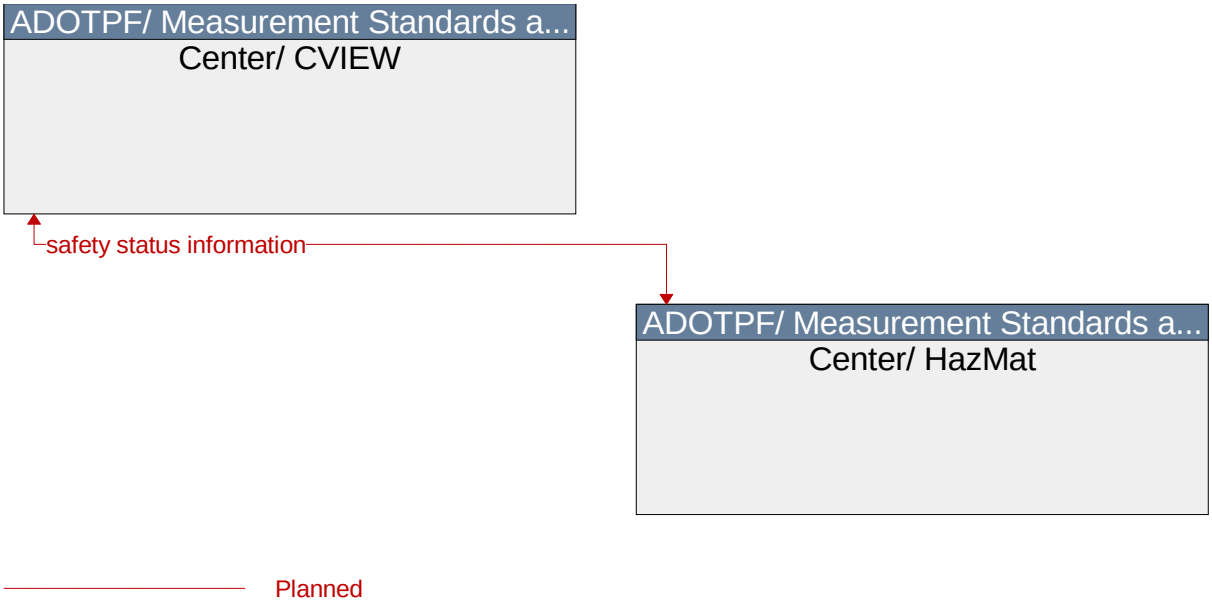

ADOTPF/ Program Development
Center/ Condition Acquisition and Reporting System
transit incident information
current asset restrictions
road network conditions
roadway maintenance status
Transit Agencies
Center/ Transit Agency Dispatch (Placeholder)
Planned

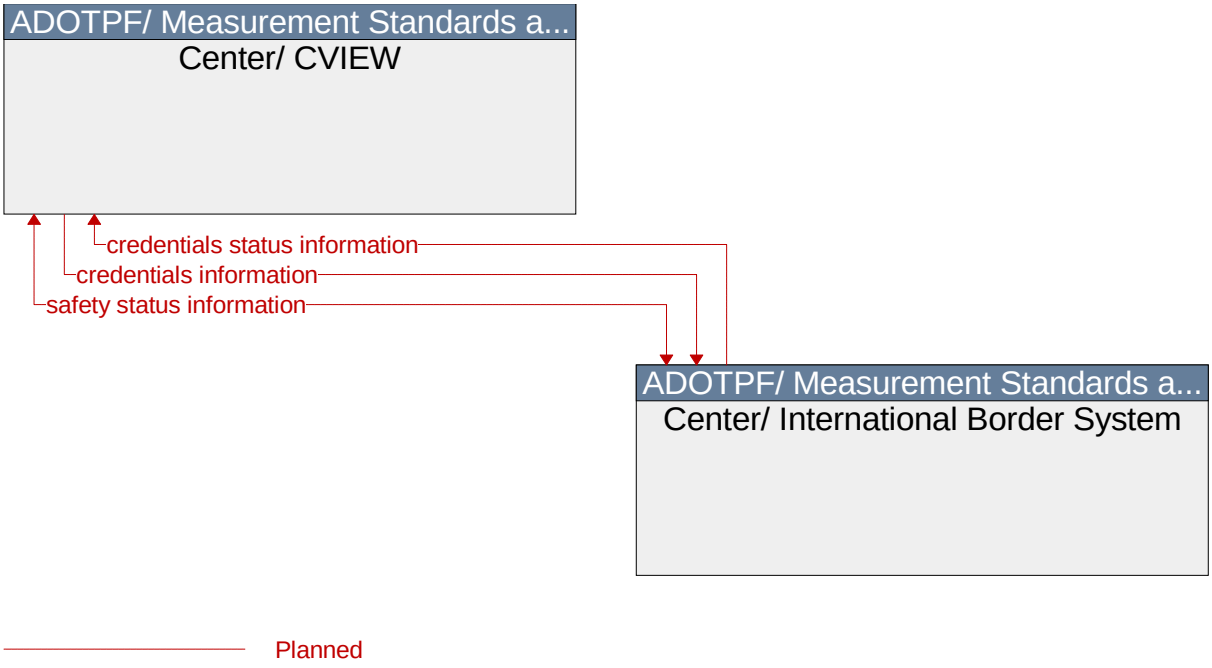

ADOTPF/ Regional Maintenance and...
Field/ Road Weather Information Systems (RWIS)
roadside archive data
ADOTPF/ Program Development
Center/ Condition Acquisition and Reporting System
Existing

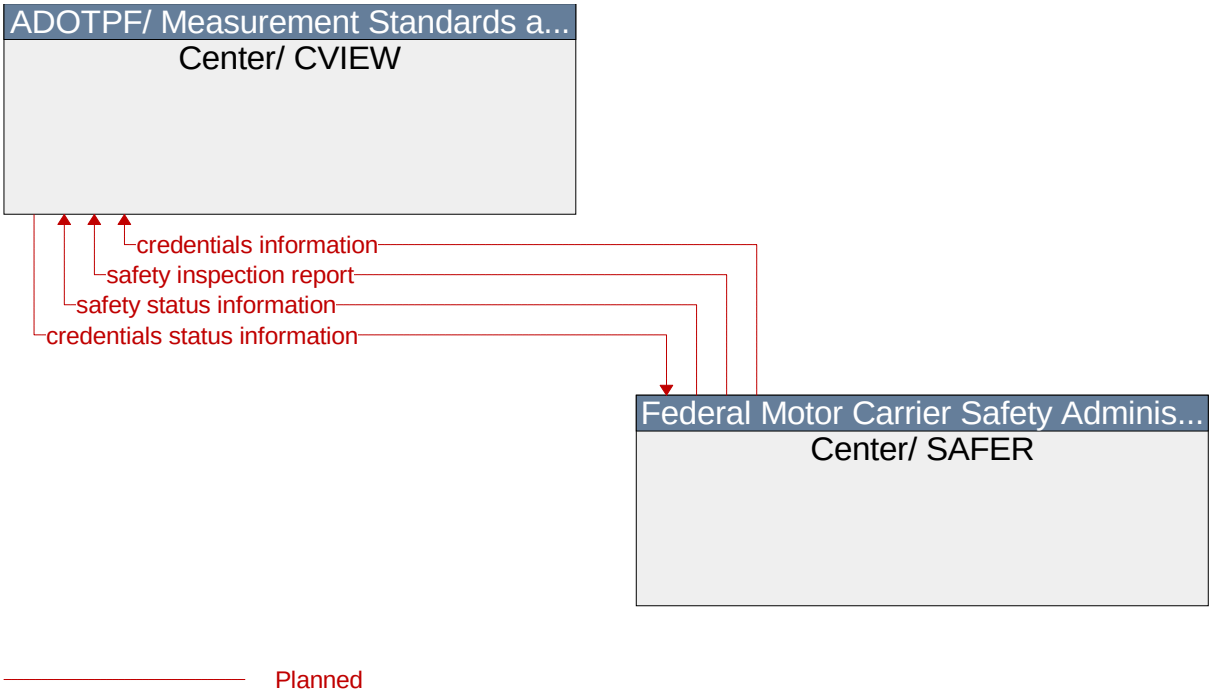

ADOTPF/ Program Development
Field/ Border Data Collection System
border agency clearance results
credentials information
credentials status information
transportation border clearance assessment
trip declaration identifiers
border clearance event
DMVA/ Department of Homeland Sec...
Center/ Customs and Border Protection
Planned

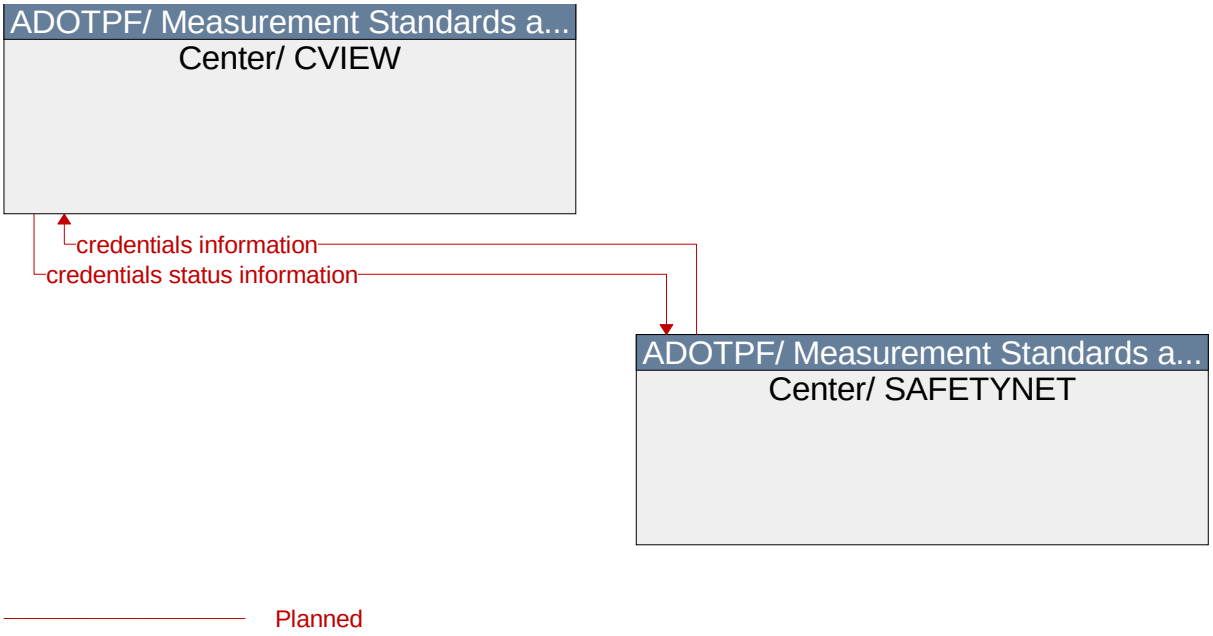

ADOTPF/ Measurement Standards a...
Center/ CVE Insurance
credentials status information
credentials information
safety status information
ADOTPF/ Measurement Standards a...
Center/ CVIEW
Planned

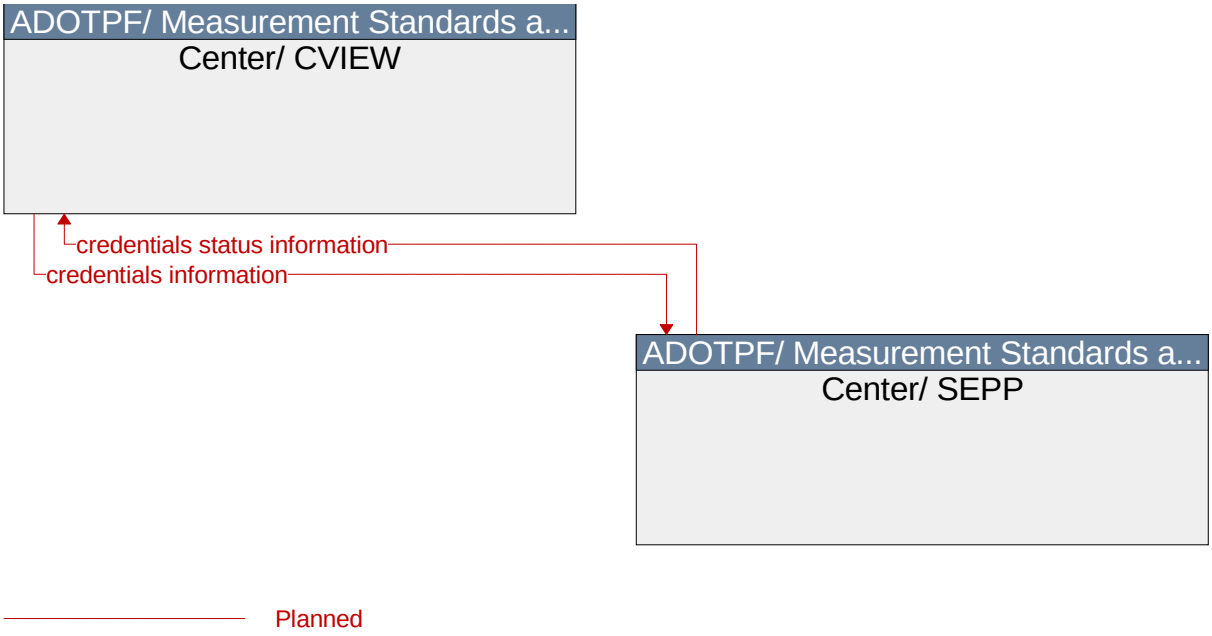

ADOTPF/ Program Development
Center/ Condition Acquisition and Reporting System
credentials information
credentials status information
safety status information
ADOTPF/ Measurement Standards a...
Center/ CVIEW
Planned

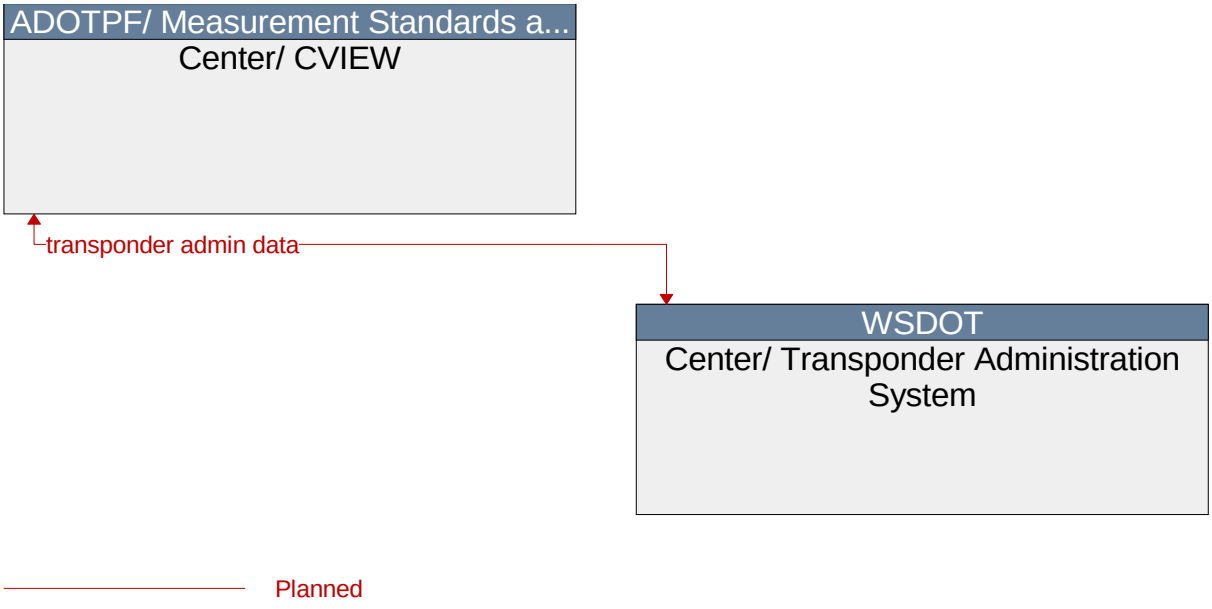

ADOTPF/ Measurement Standards a...
Center/ CVIEW
safety status information
ADOTPF/ Measurement Standards a...
Center/ HazMat
Planned

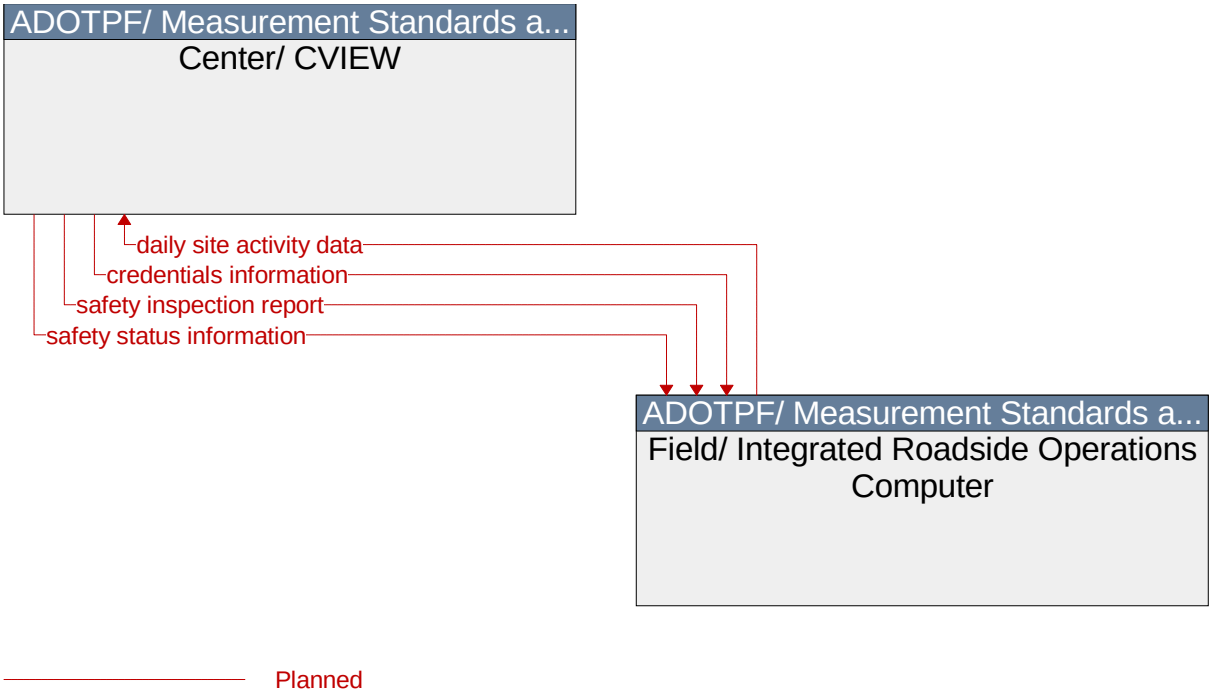

ADOTPF/ Measurement Standards a...
Center/ CVIEW
credentials status information
credentials information
safety status information
ADOTPF/ Measurement Standards a...
Center/ International Border System
Planned

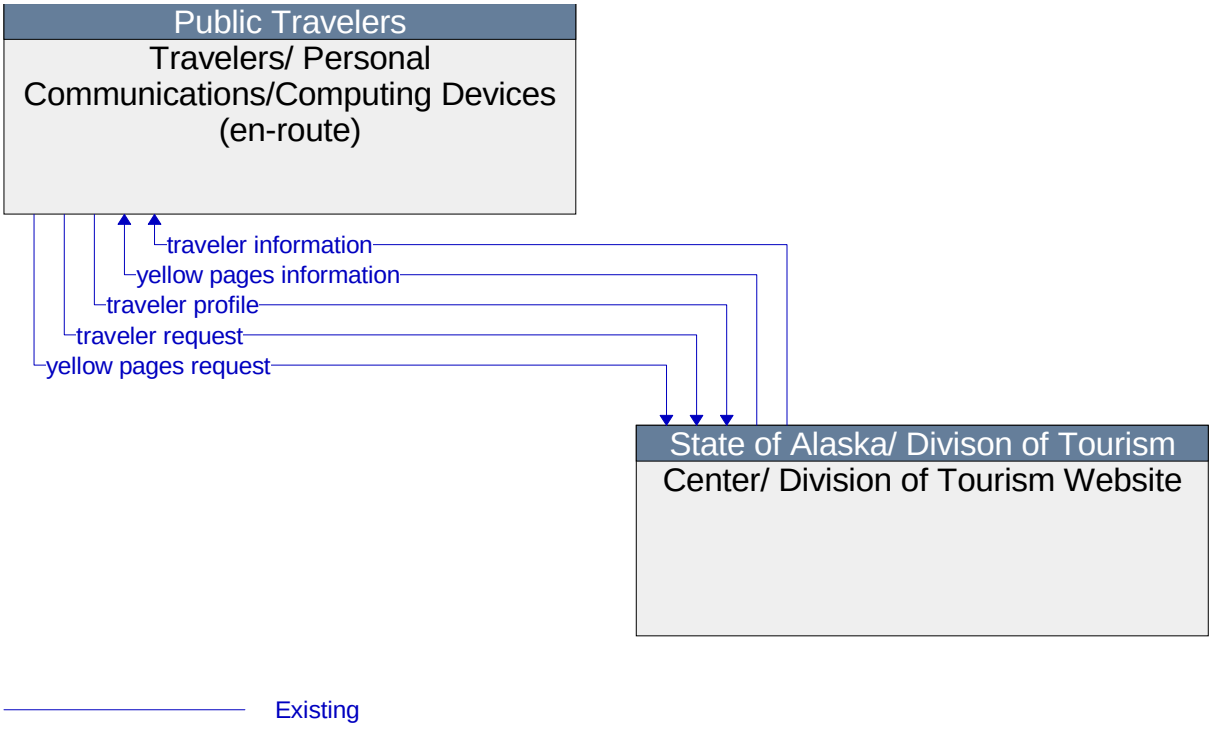

ADOTPF/ Measurement Standards a...
Center/ CVIEW
credentials information
safety inspection report
safety status information
credentials status information
Federal Motor Carrier Safety Adminis...
Center/ SAFER
Planned

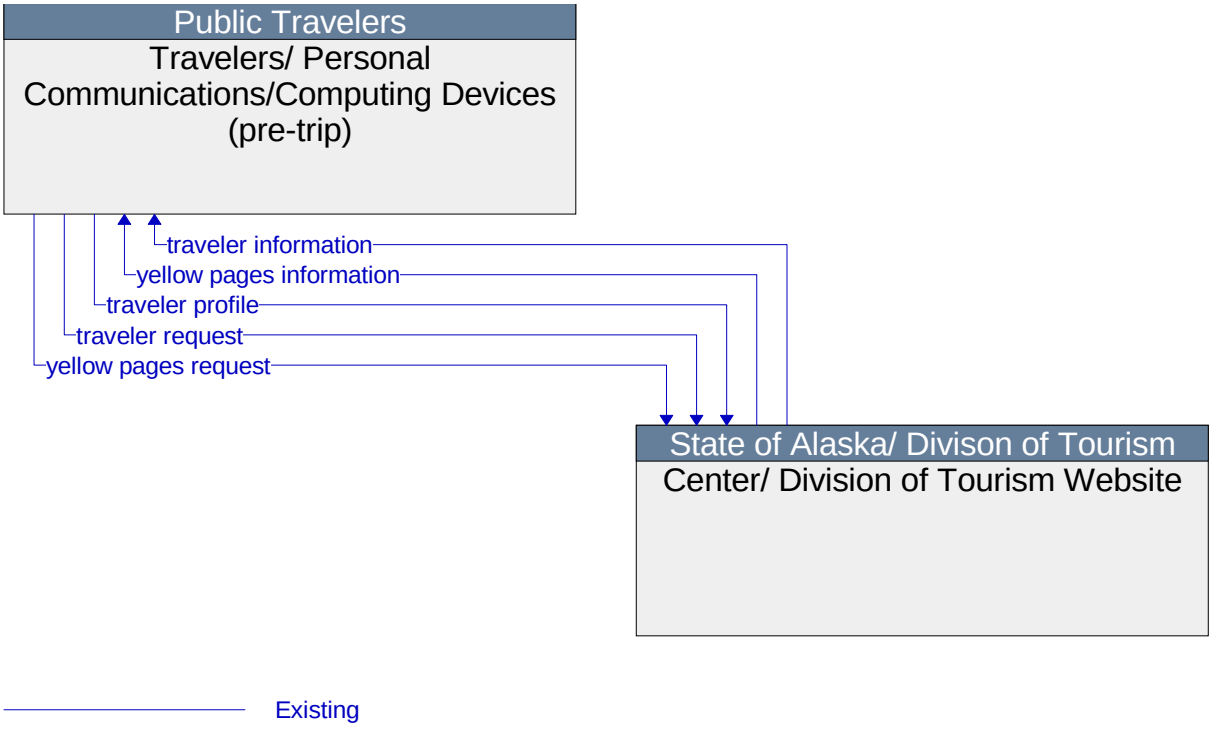

ADOTPF/ Measurement Standards a...
Center/ CVIEW
credentials information
credentials status information
ADOTPF/ Measurement Standards a...
Center/ SAFETYNET
Planned

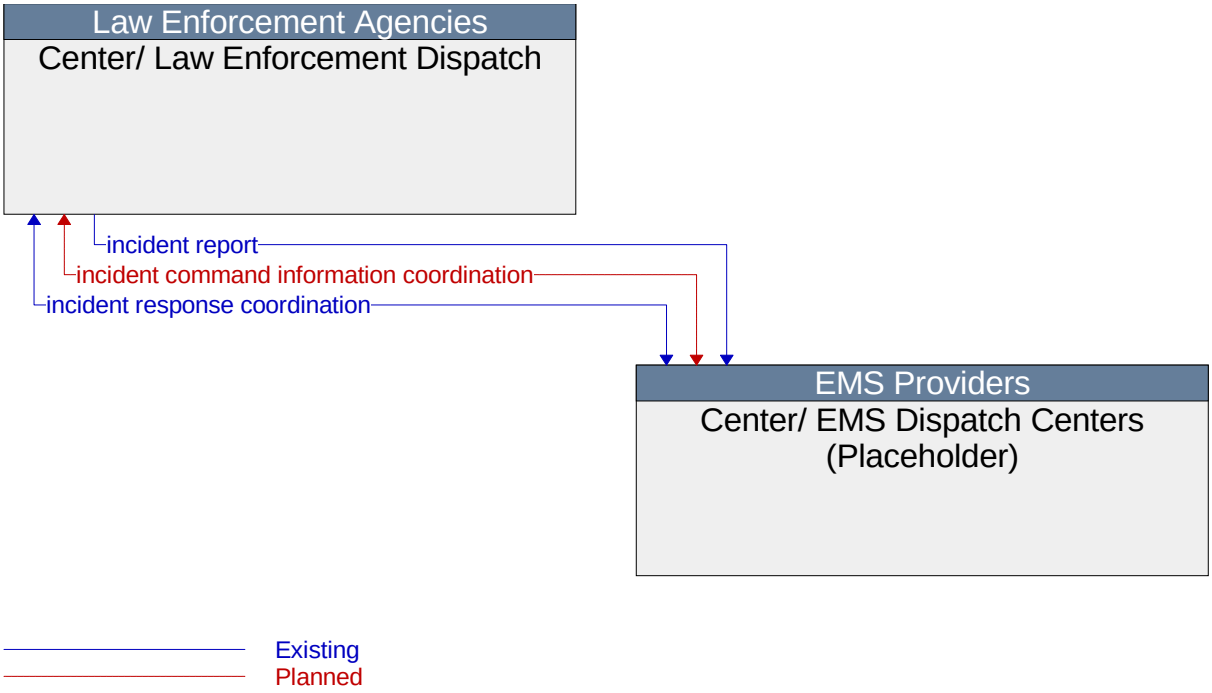

ADOTPF/ Measurement Standards a...
Center/ CVIEW
credentials status information
credentials information
ADOTPF/ Measurement Standards a...
Center/ SEPP
Planned

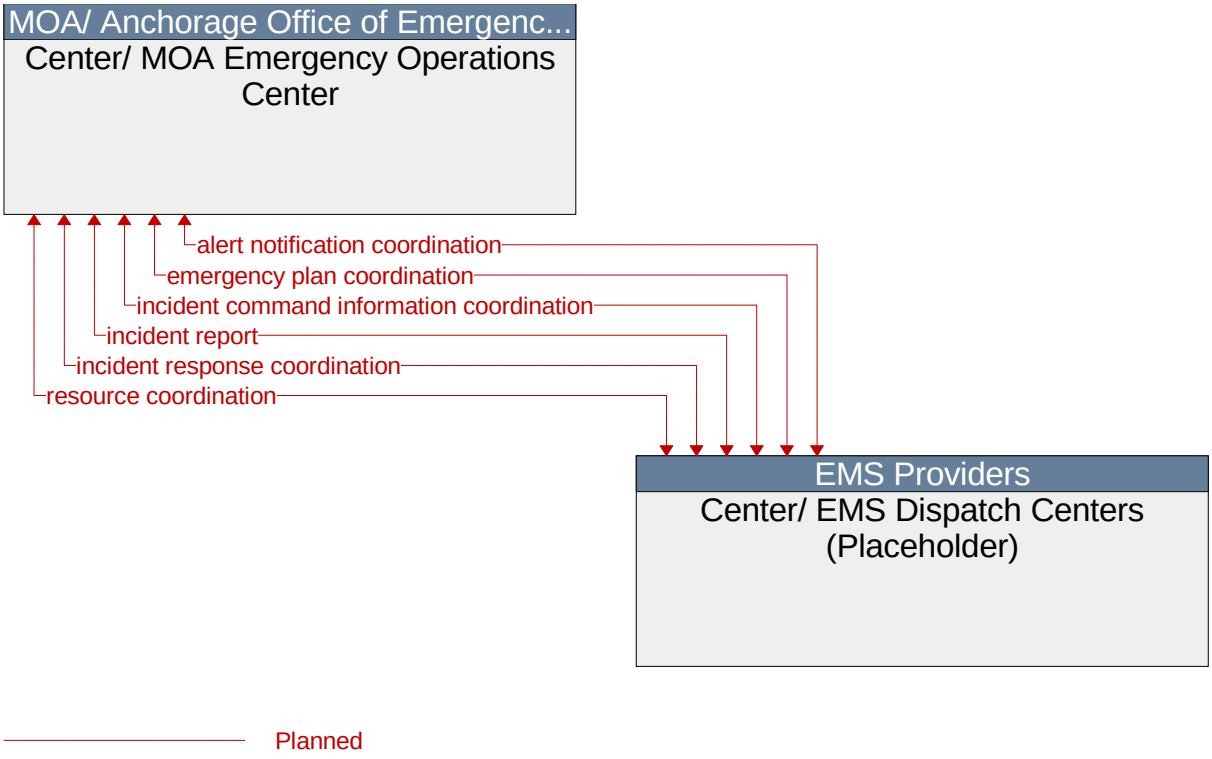

ADOTPF/ Measurement Standards a...
Center/ CVIEW
transponder admin data
WSDOT
Center/ Transponder Administration System
Planned

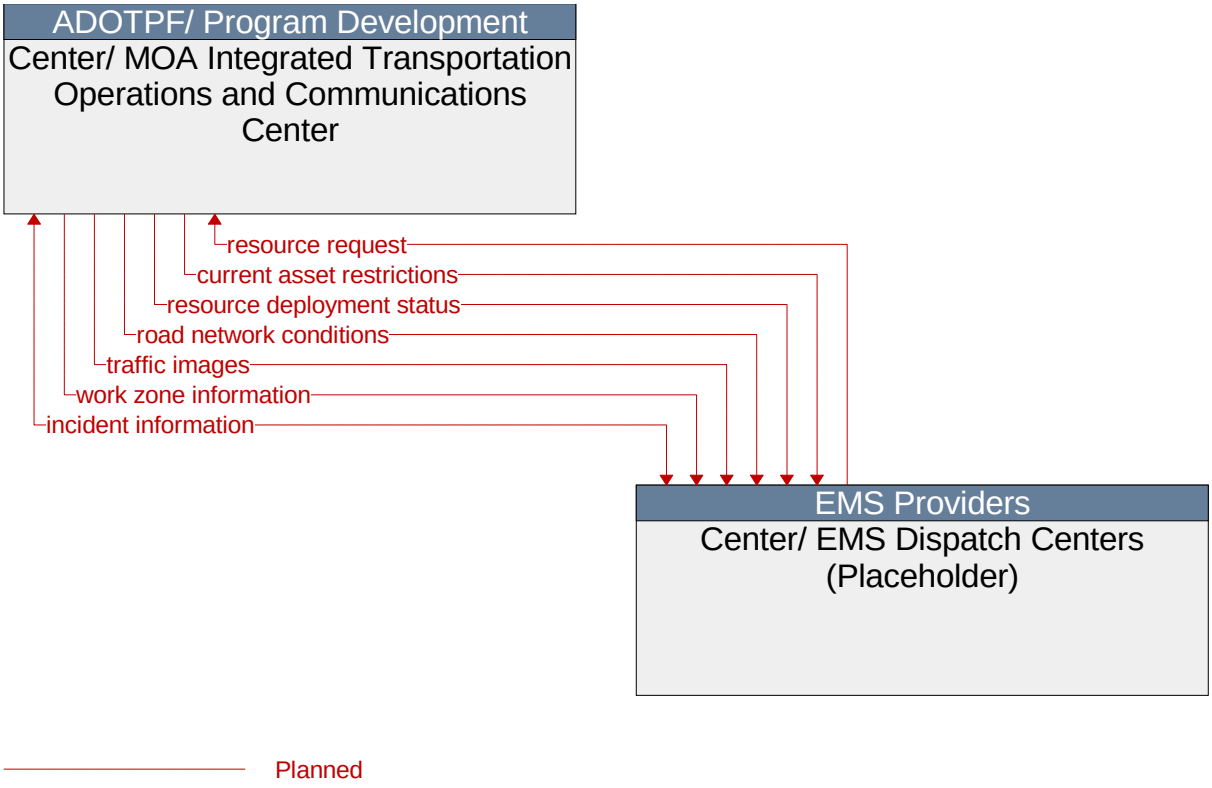

ADOTPF/ Measurement Standards a...
Center/ CVIEW
daily site activity data
credentials information
safety inspection report
safety status information
ADOTPF/ Measurement Standards a...
Field/ Integrated Roadside Operations Computer
Planned

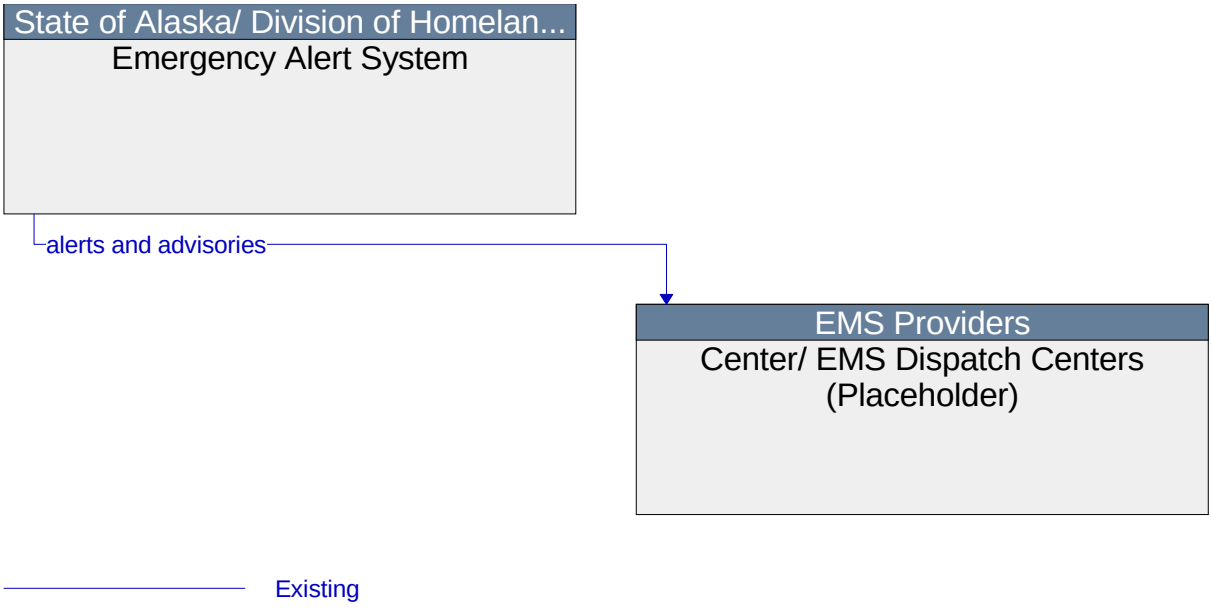

Public Travelers
Travelers/ Personal Communications/Computing Devices (en-route)
traveler information
yellow pages information
traveler profile
traveler request
yellow pages request
State of Alaska/ Divison of Tourism
Center/ Division of Tourism Website
Existing

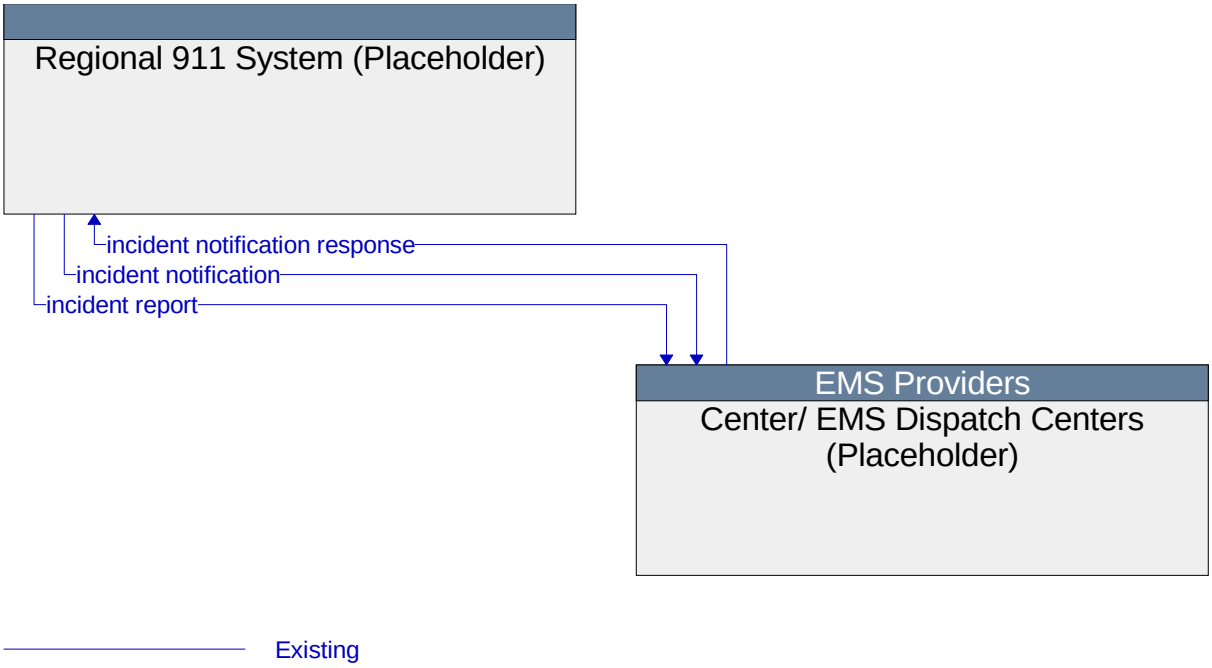

Public Travelers
Travelers/ Personal Communications/Computing Devices (pre-trip)
traveler information
yellow pages information
traveler profile
traveler request
yellow pages request
State of Alaska/ Divison of Tourism
Center/ Division of Tourism Website
Existing

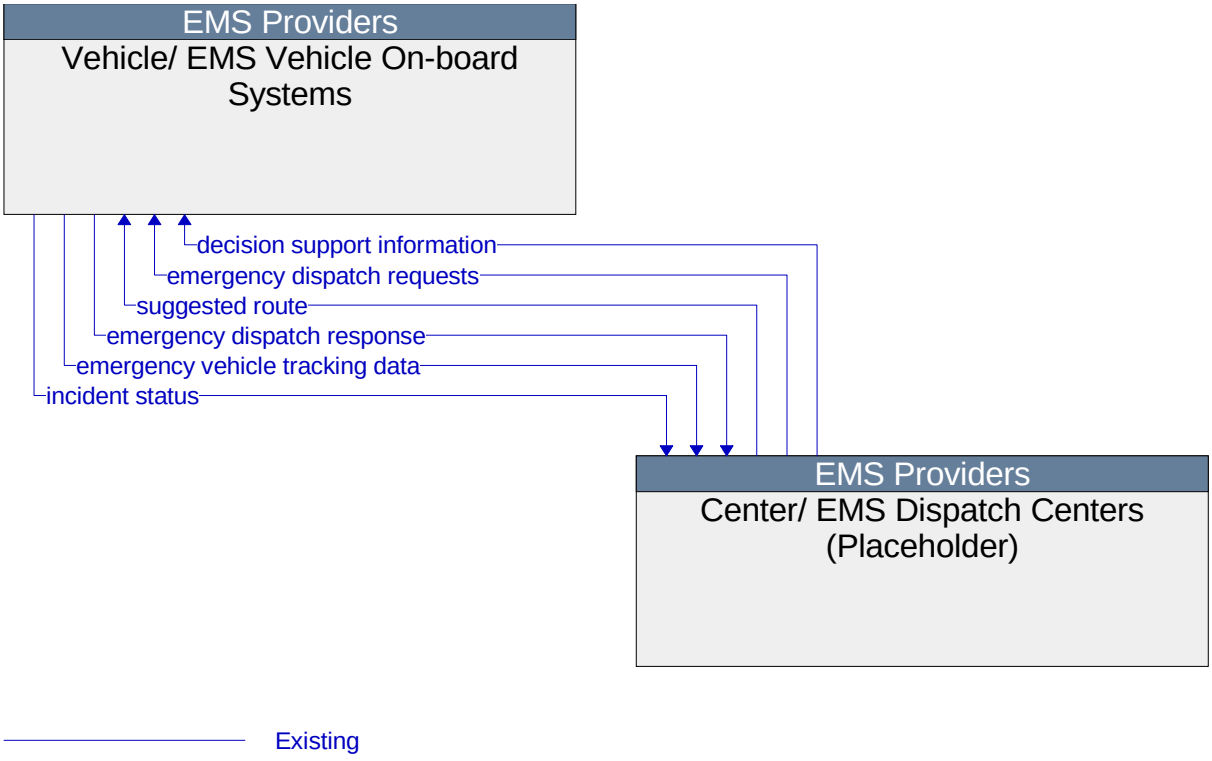

Law Enforcement Agencies
Center/ Law Enforcement Dispatch
incident report
incident command information coordination
incident response coordination
EMS Providers
Center/ EMS Dispatch Centers
(Placeholder)
Existing
Planned

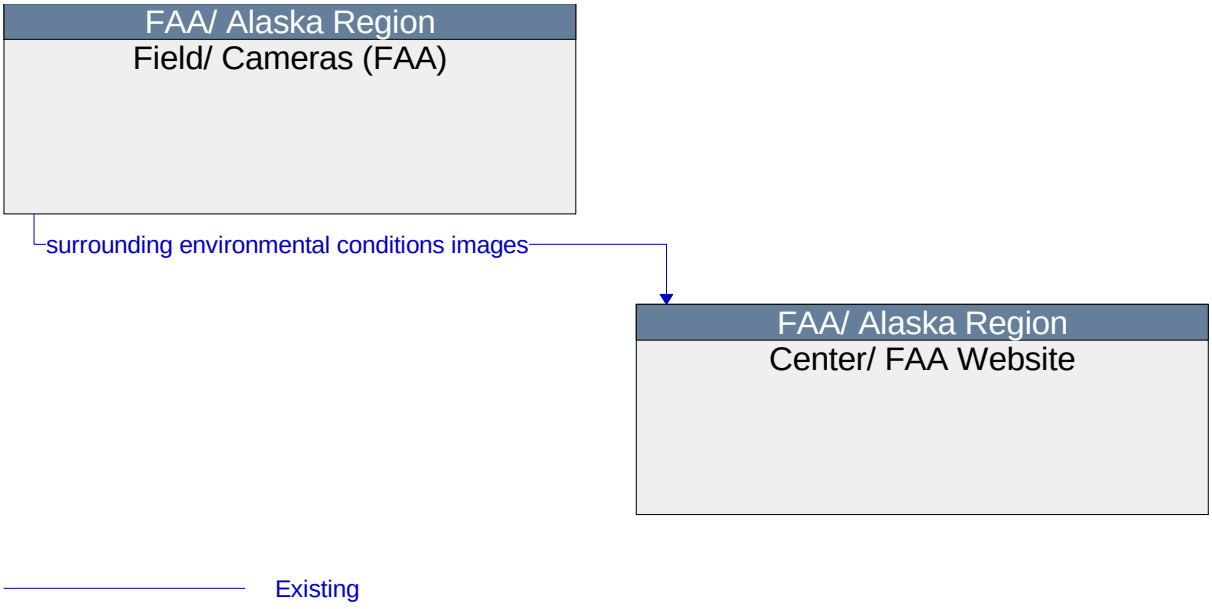

MOA/ Anchorage Office of Emergenc...
Center/ MOA Emergency Operations Center
alert notification coordination
emergency plan coordination
incident command information coordination
incident report
incident response coordination
resource coordination
EMS Providers
Center/ EMS Dispatch Centers (Placeholder)
Planned

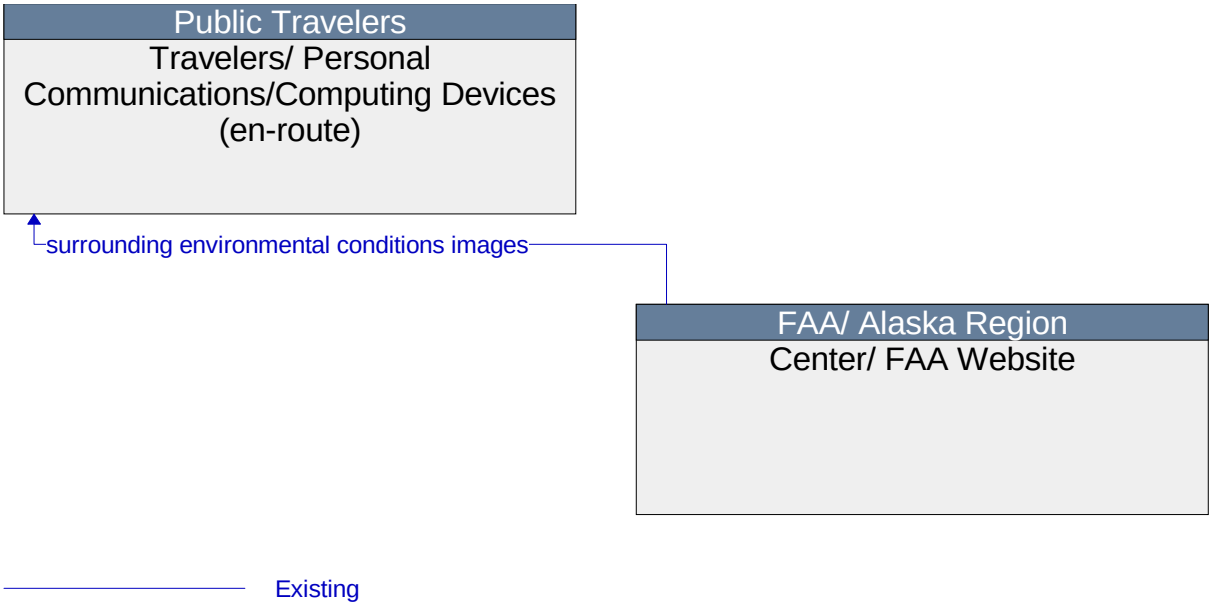

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
resource request
current asset restrictions
resource deployment status
road network conditions
traffic images
work zone information
incident information
EMS Providers
Center/ EMS Dispatch Centers (Placeholder)
Planned

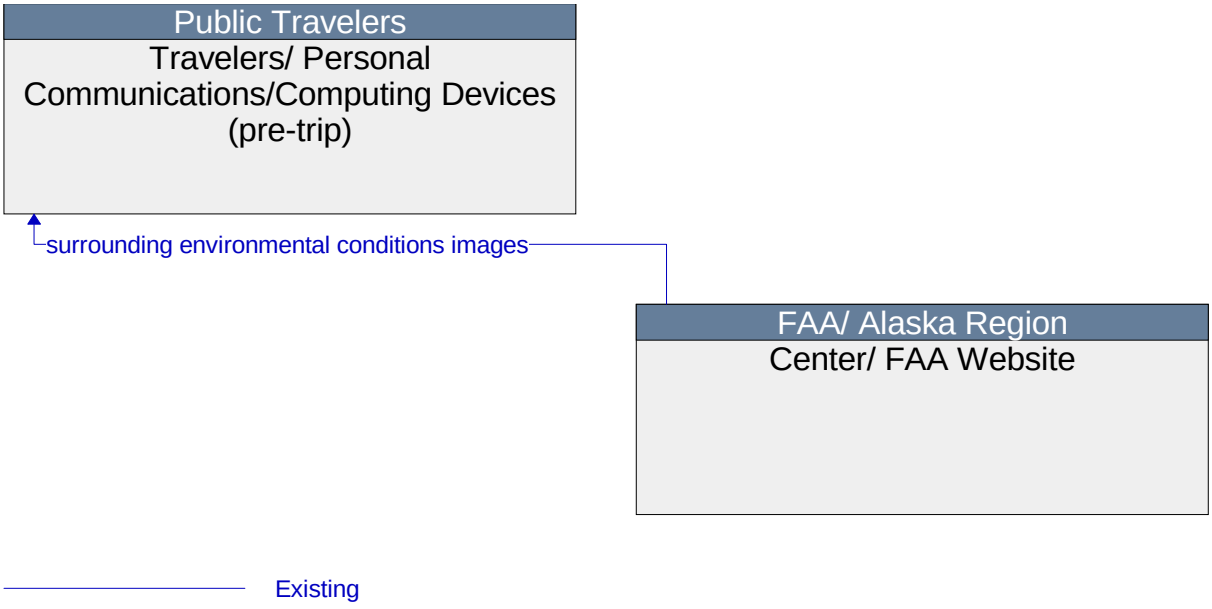

State of Alaska/ Division of Homelan...
Emergency Alert System
alerts and advisories
EMS Providers
Center/ EMS Dispatch Centers
(Placeholder)
Existing

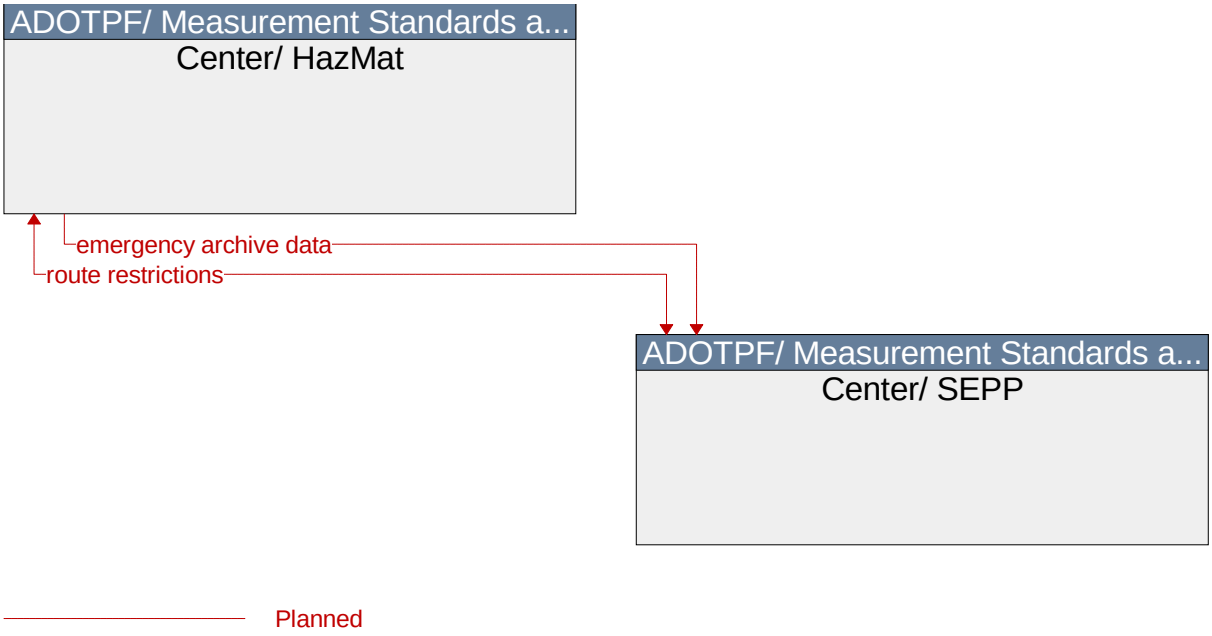

Regional 911 System (Placeholder)
incident notification response
incident notification
incident report
EMS Providers
Center/ EMS Dispatch Centers
(Placeholder)
Existing

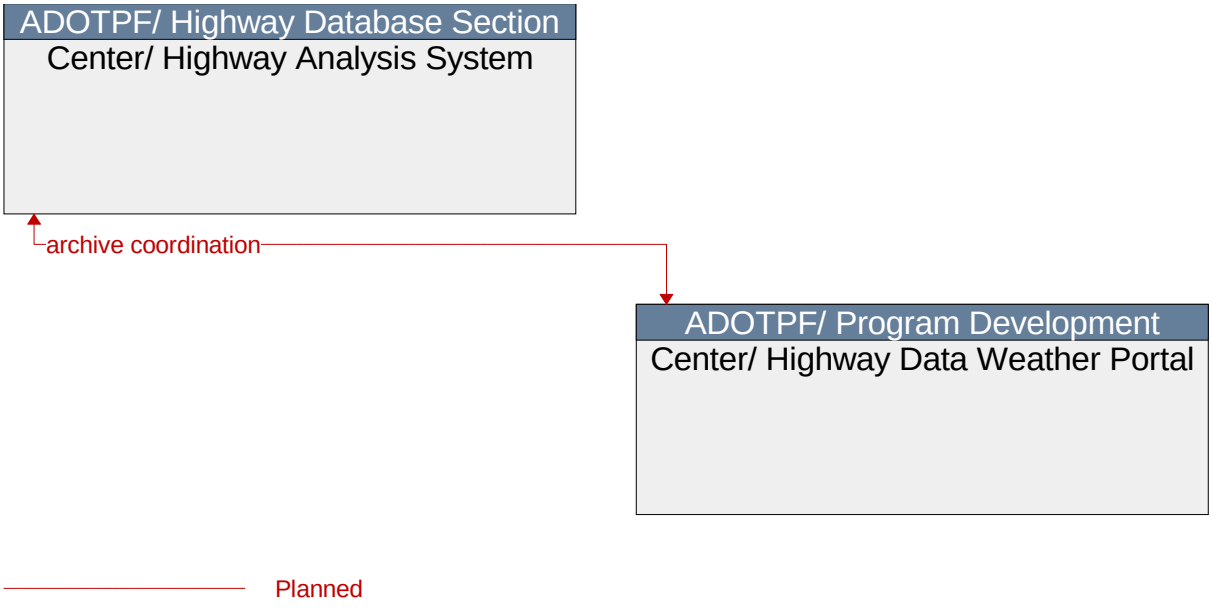

EMS Providers
Vehicle/ EMS Vehicle On-board Systems
decision support information
emergency dispatch requests
suggested route
emergency dispatch response
emergency vehicle tracking data
incident status
EMS Providers
Center/ EMS Dispatch Centers (Placeholder)
Existing

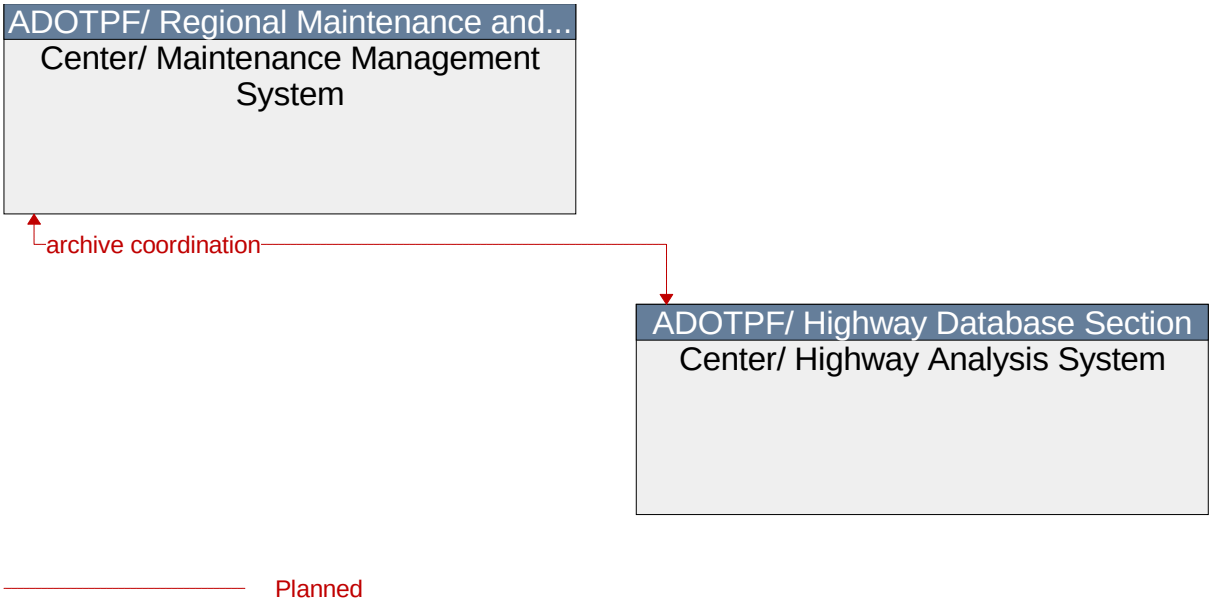

FAA/ Alaska Region
Field/ Cameras (FAA)
surrounding environmental conditions images
FAA/ Alaska Region
Center/ FAA Website
Existing

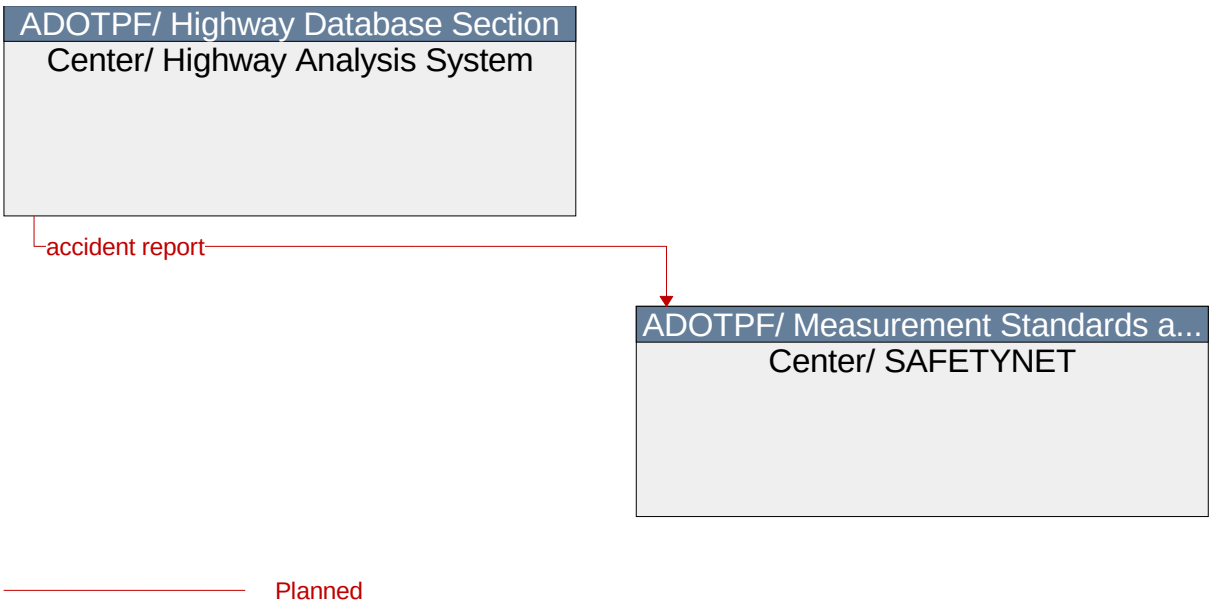

Public Travelers
Travelers/ Personal Communications/Computing Devices (en-route)
surrounding environmental conditions images
FAA/ Alaska Region
Center/ FAA Website
Existing

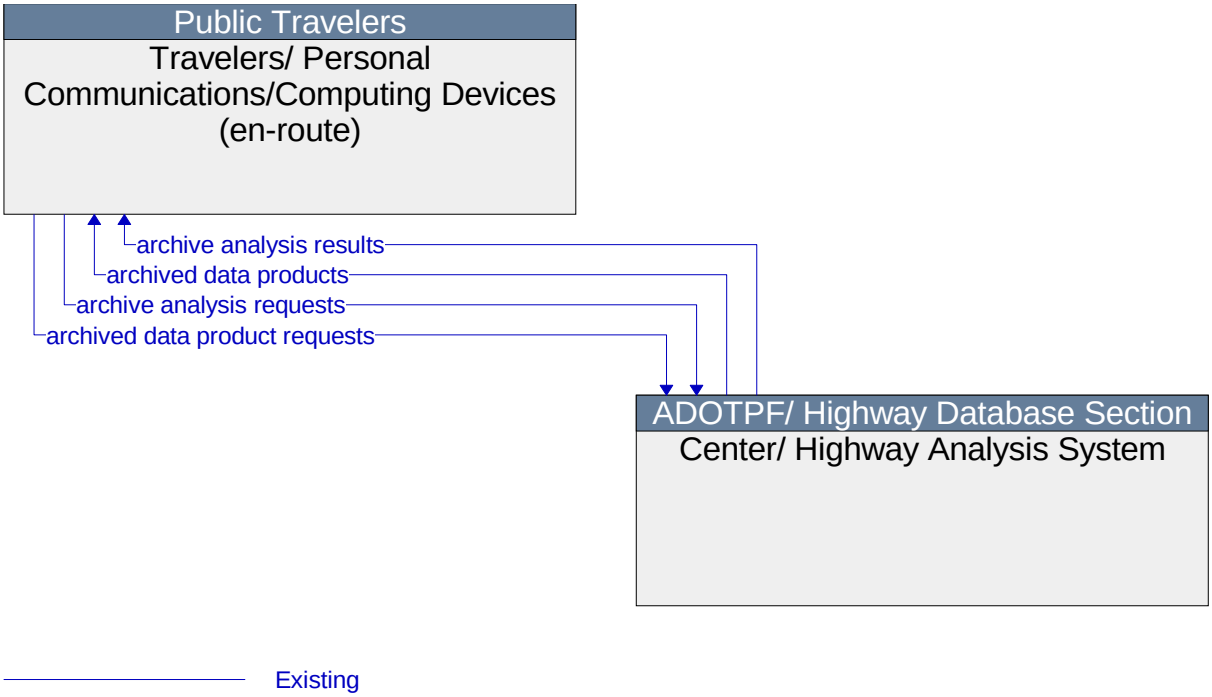

Public Travelers
Travelers/ Personal Communications/Computing Devices (pre-trip)
surrounding environmental conditions images
FAA/ Alaska Region
Center/ FAA Website
Existing

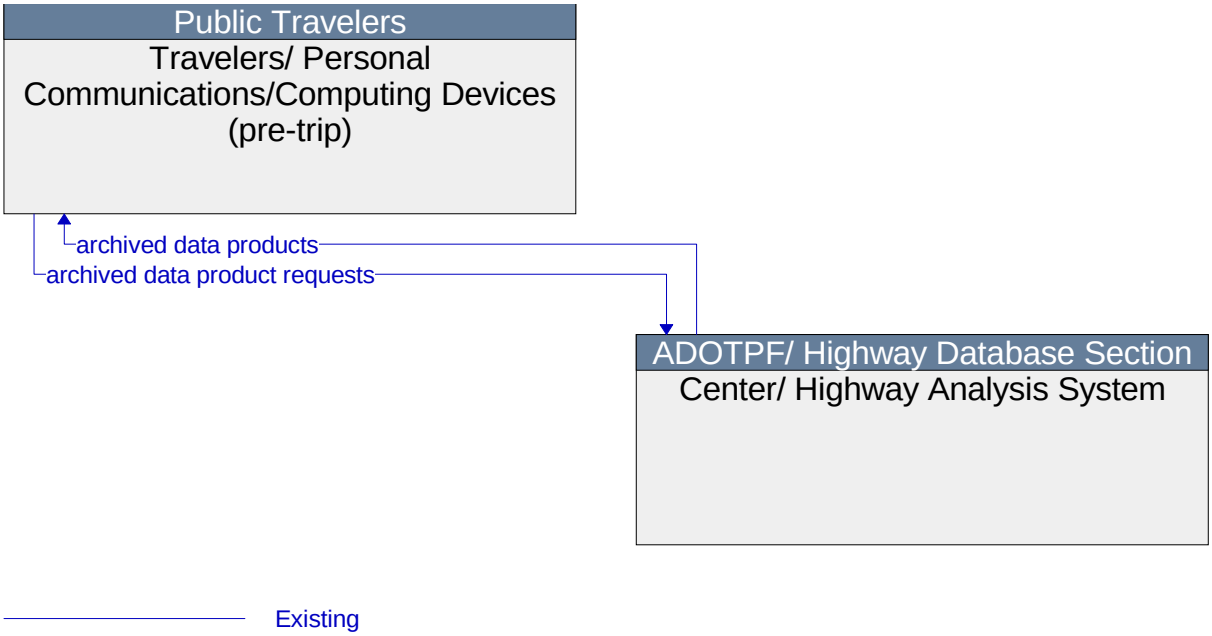

ADOTPF/ Measurement Standards a...
Center/ HazMat
emergency archive data
route restrictions
ADOTPF/ Measurement Standards a...
Center/ SEPP
Planned

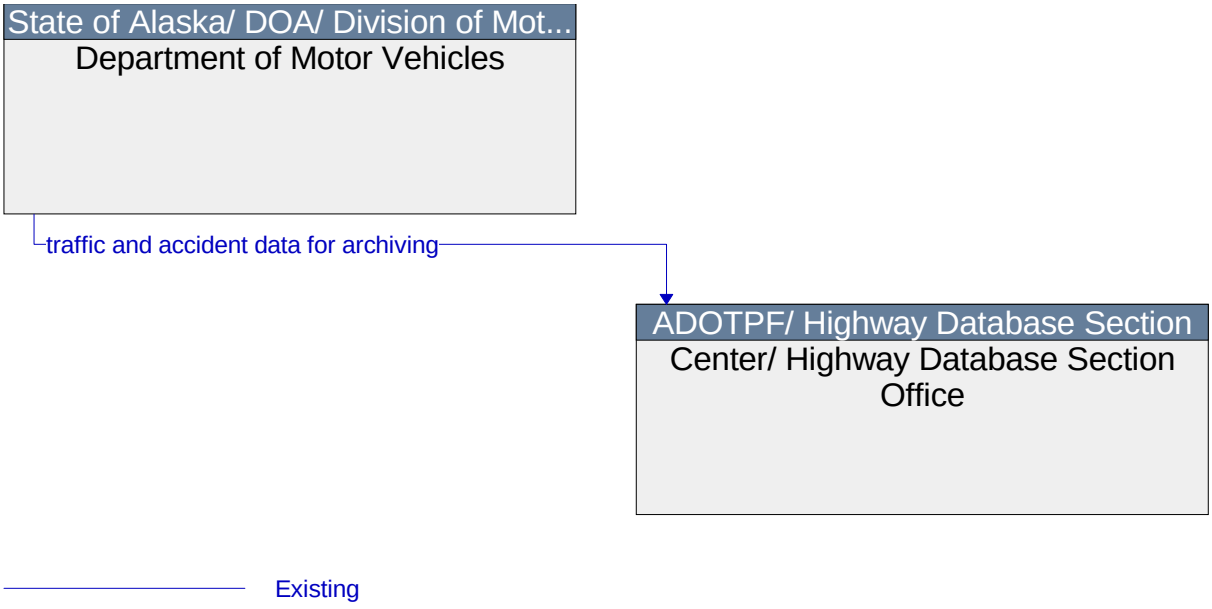

ADOTPF/ Highway Database Section
Center/ Highway Analysis System
archive coordination
ADOTPF/ Program Development
Center/ Highway Data Weather Portal
Planned

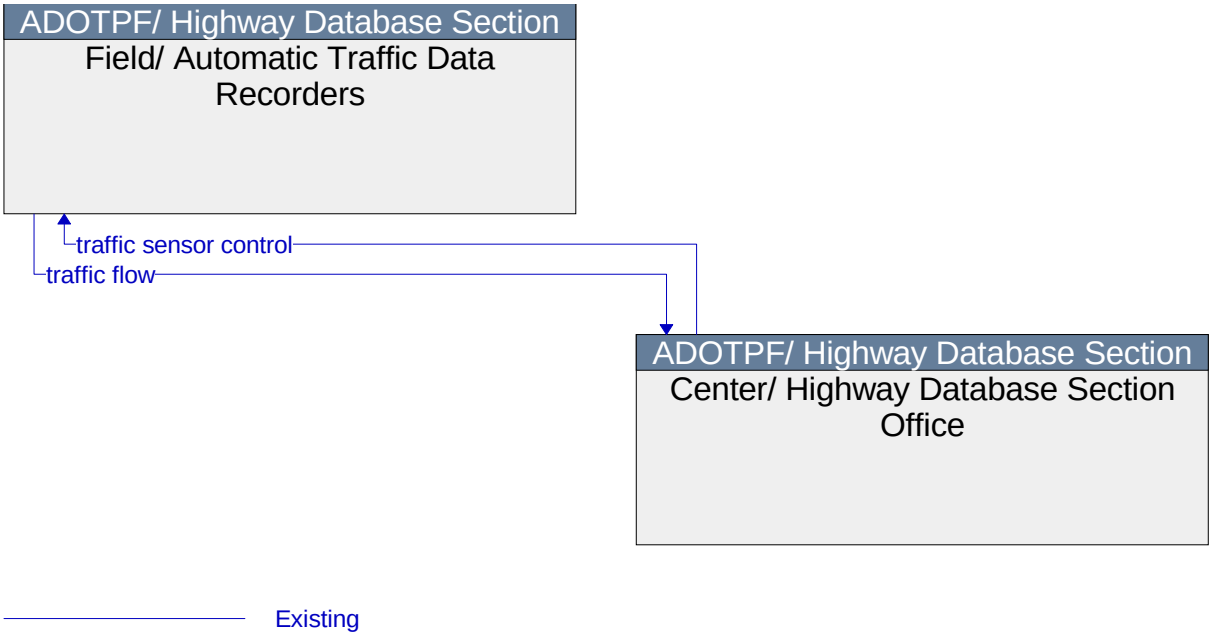

ADOTPF/ Regional Maintenance and...
Center/ Maintenance Management System
archive coordination
ADOTPF/ Highway Database Section
Center/ Highway Analysis System
Planned

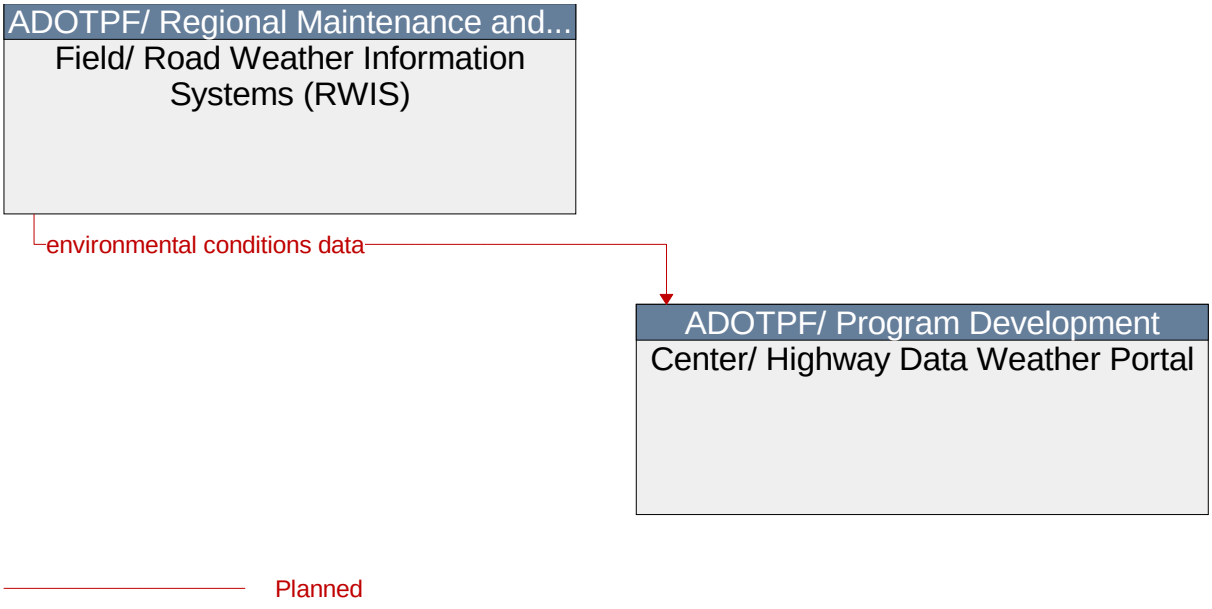

ADOTPF/ Highway Database Section
Center/ Highway Analysis System
accident report
ADOTPF/ Measurement Standards a...
Center/ SAFETYNET
Planned

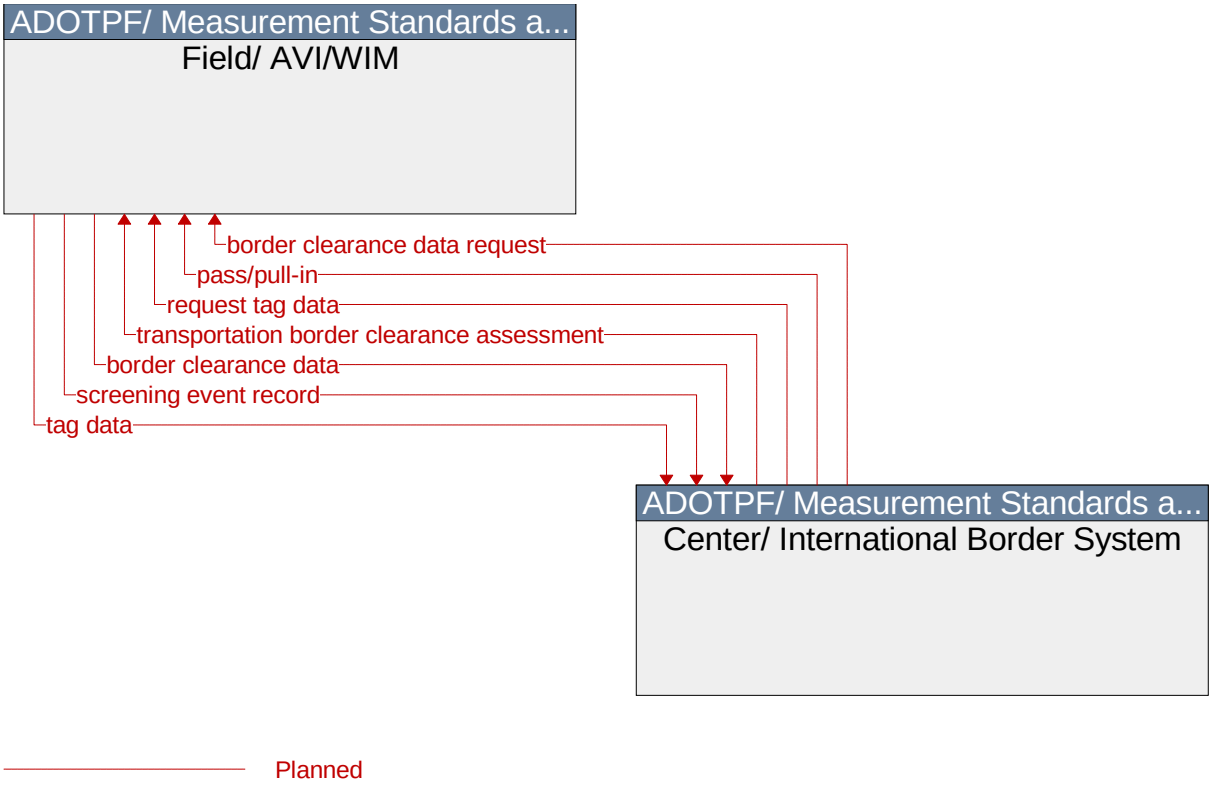

Public Travelers
Travelers/ Personal Communications/Computing Devices (en-route)
archive analysis results
archived data products
archive analysis requests
archived data product requests
ADOTPF/ Highway Database Section
Center/ Highway Analysis System
Existing

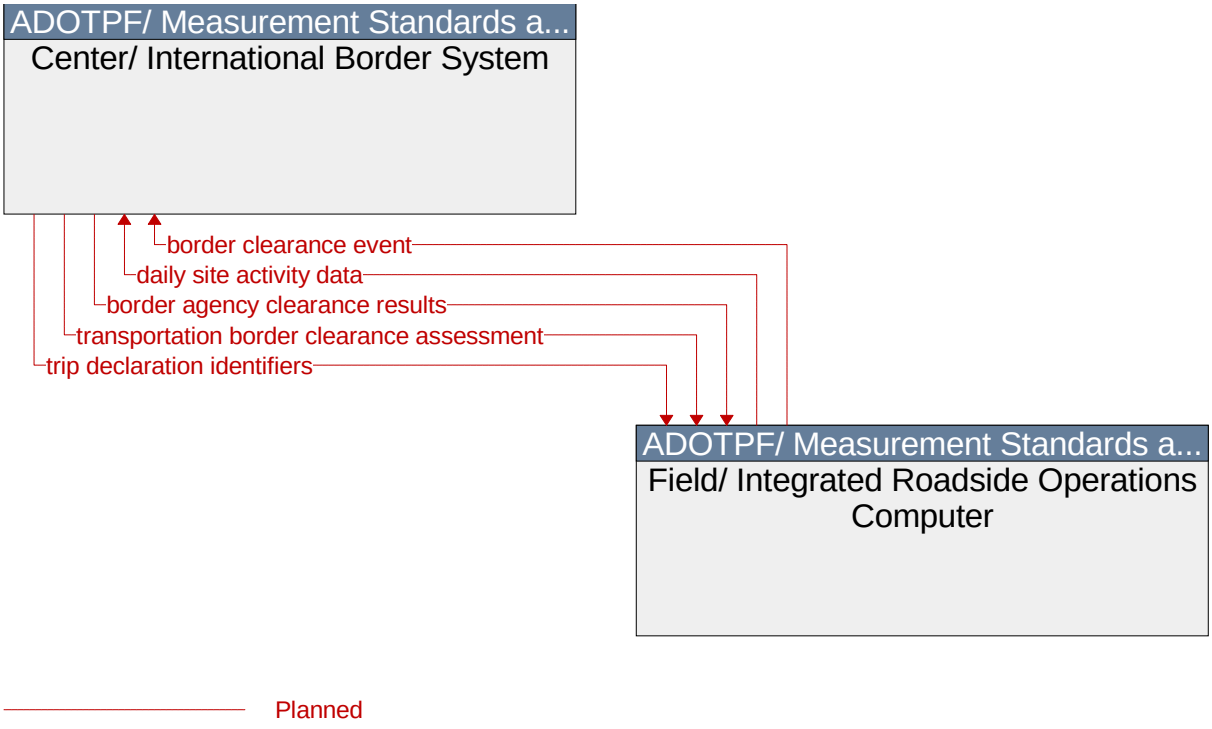

Public Travelers
Travelers/ Personal Communications/Computing Devices (pre-trip)
archived data products
archived data product requests
ADOTPF/ Highway Database Section
Center/ Highway Analysis System
Existing

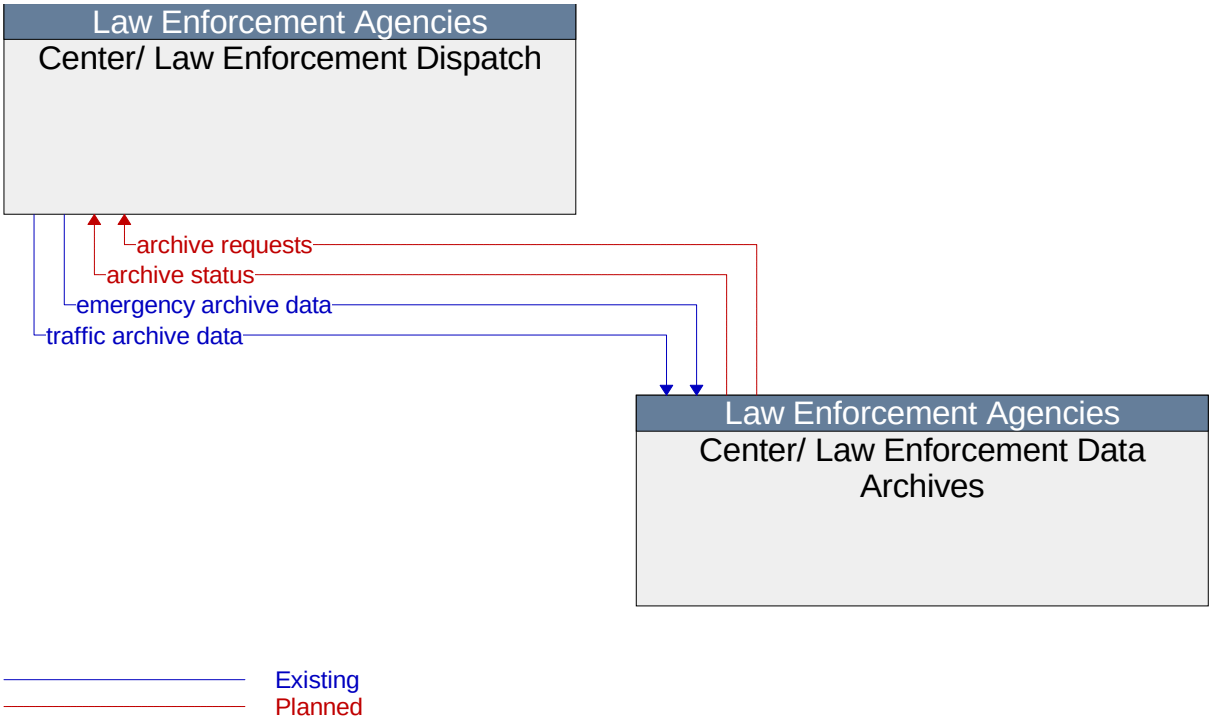

State of Alaska/ DOA/ Division of Mot...
Department of Motor Vehicles
traffic and accident data for archiving
ADOTPF/ Highway Database Section
Center/ Highway Database Section Office
Existing

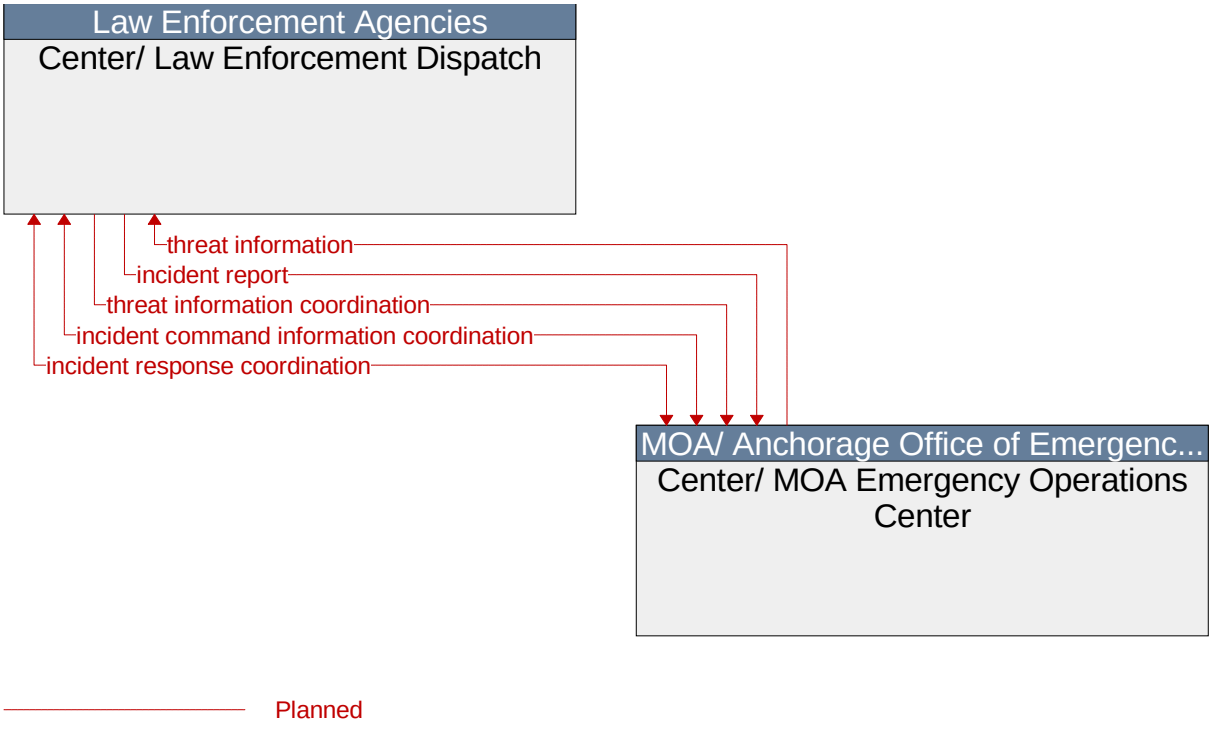

ADOTPF/ Highway Database Section
Field/ Automatic Traffic Data Recorders
traffic sensor control
traffic flow
ADOTPF/ Highway Database Section
Center/ Highway Database Section Office
Existing

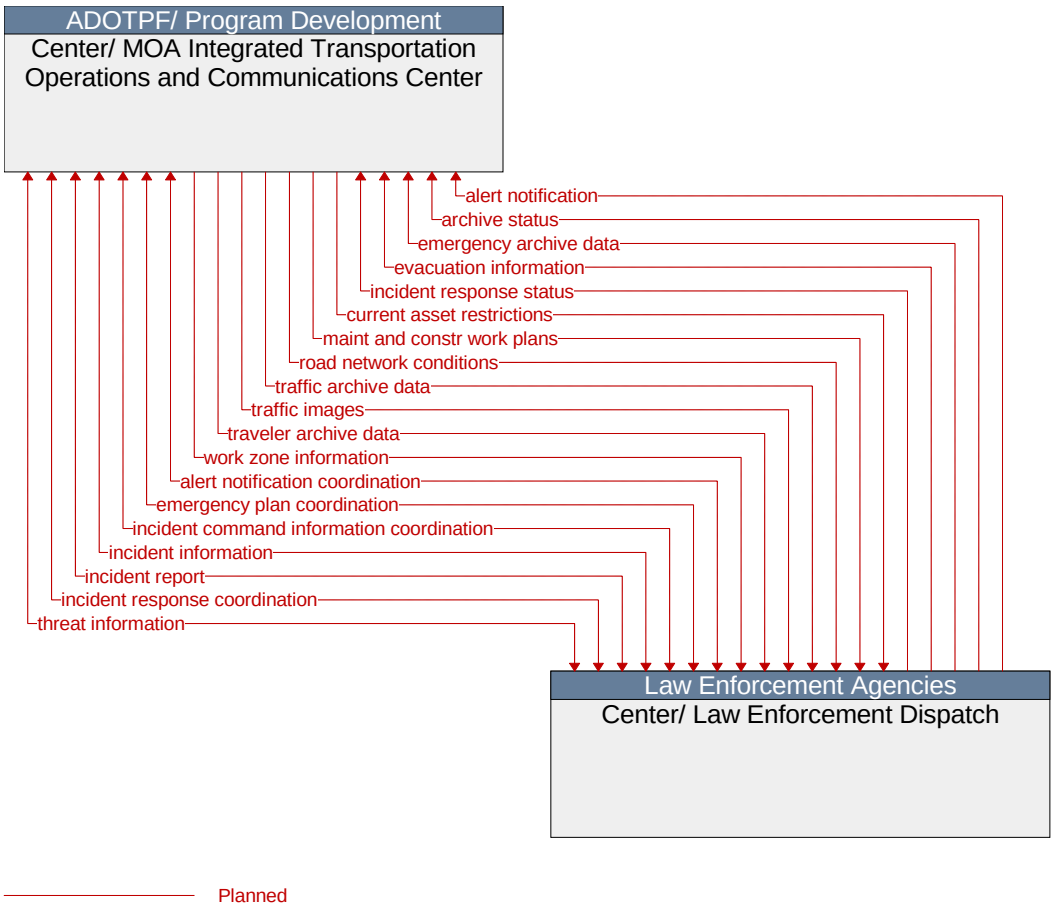

ADOTPF/ Regional Maintenance and...
Field/ Road Weather Information Systems (RWIS)
environmental conditions data
ADOTPF/ Program Development
Center/ Highway Data Weather Portal
Planned

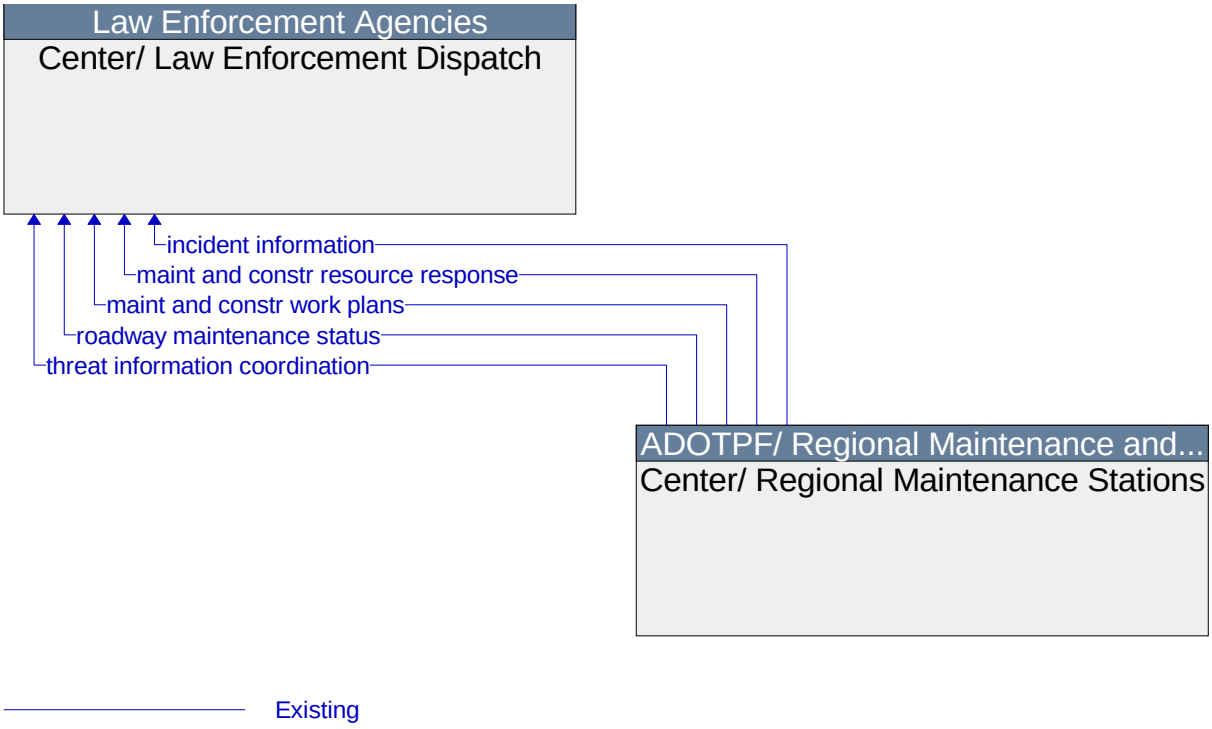

ADOTPF/ Measurement Standards a...
Field/ AVI/WIM
border clearance data request
pass/pull-in
request tag data
transportation border clearance assessment
border clearance data
screening event record
tag data
ADOTPF/ Measurement Standards a...
Center/ International Border System
Planned

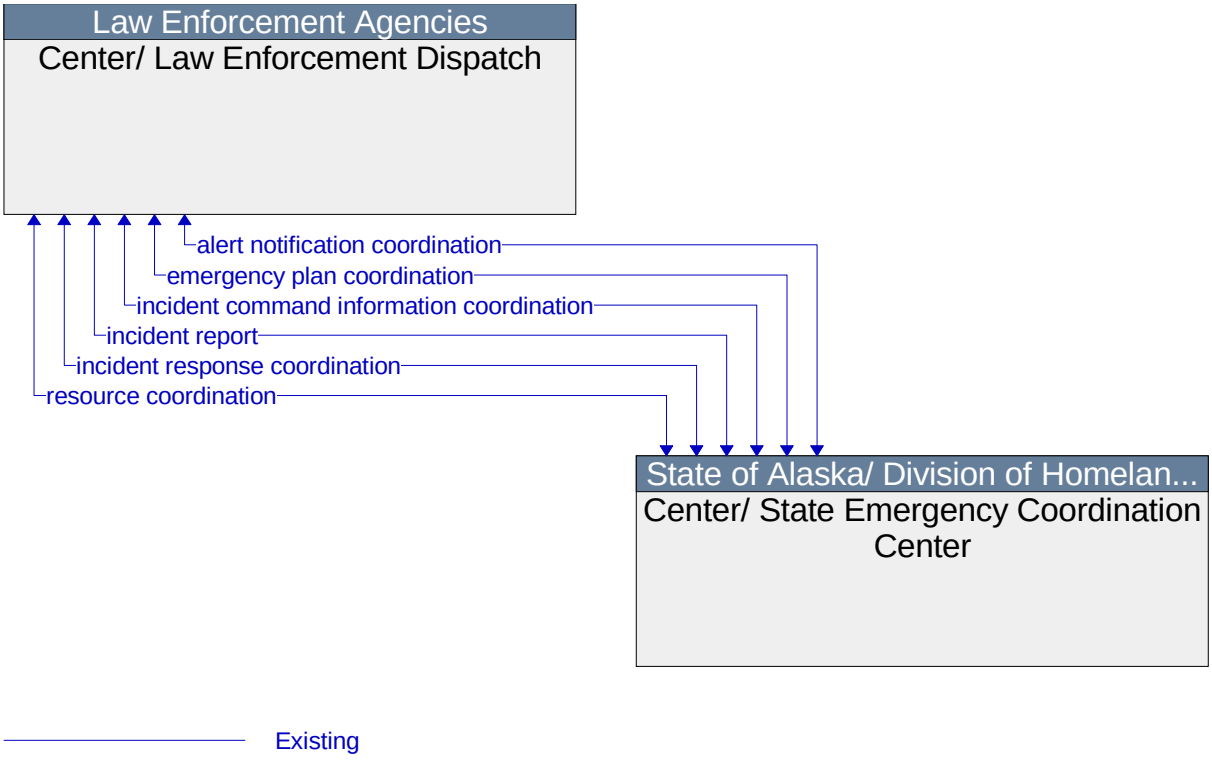

ADOTPF/ Measurement Standards a...
Center/ International Border System
border clearance event
daily site activity data
border agency clearance results
transportation border clearance assessment
trip declaration identifiers
ADOTPF/ Measurement Standards a...
Field/ Integrated Roadside Operations Computer
Planned

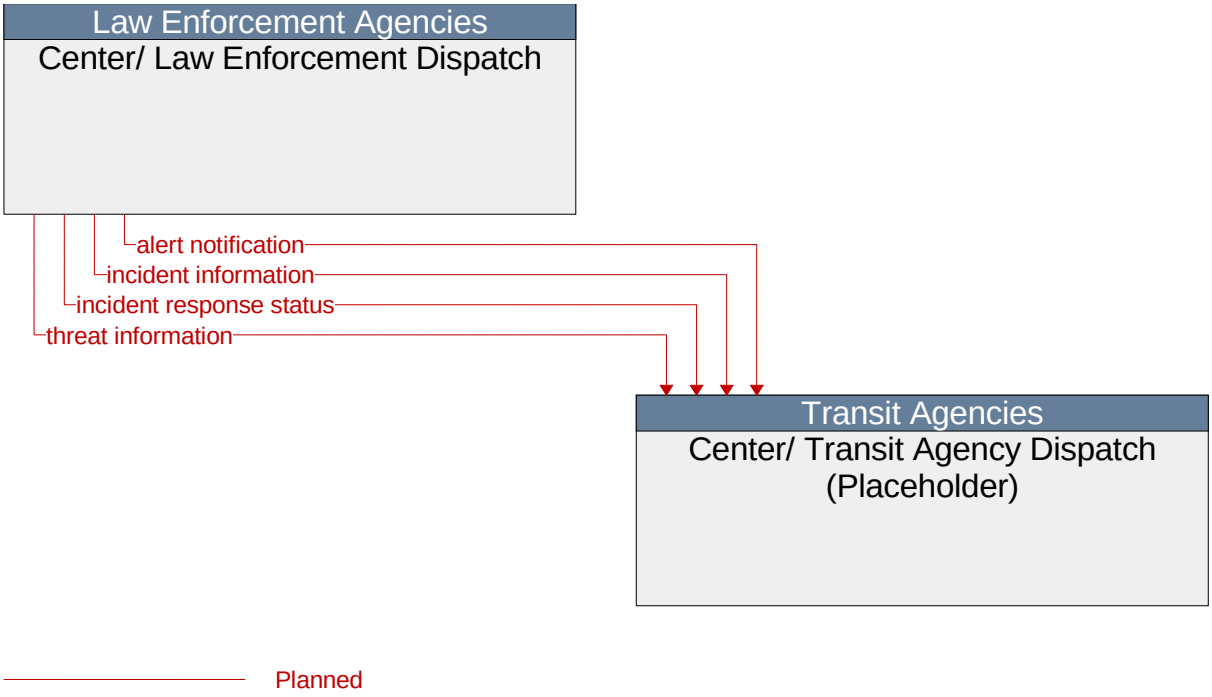

Law Enforcement Agencies
Center/ Law Enforcement Dispatch
archive requests
archive status
emergency archive data
traffic archive data
Law Enforcement Agencies
Center/ Law Enforcement Data Archives
Existing
Planned

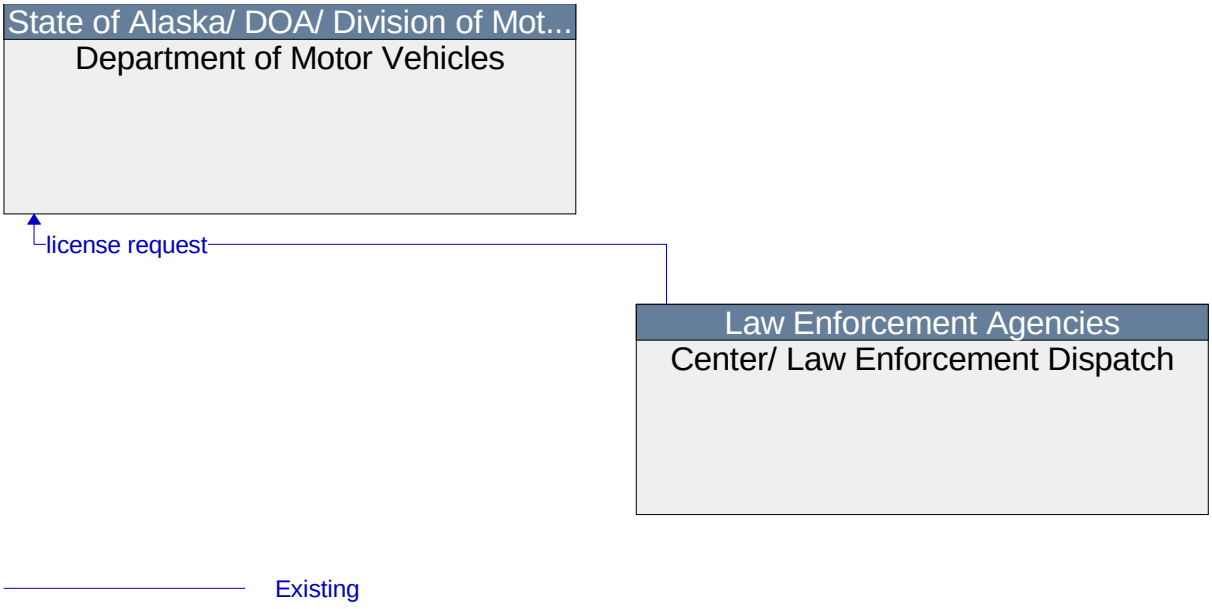

Law Enforcement Agencies
Center/ Law Enforcement Dispatch
threat information
incident report
threat information coordination
incident command information coordination
incident response coordination
MOA/ Anchorage Office of Emergenc...
Center/ MOA Emergency Operations Center
Planned

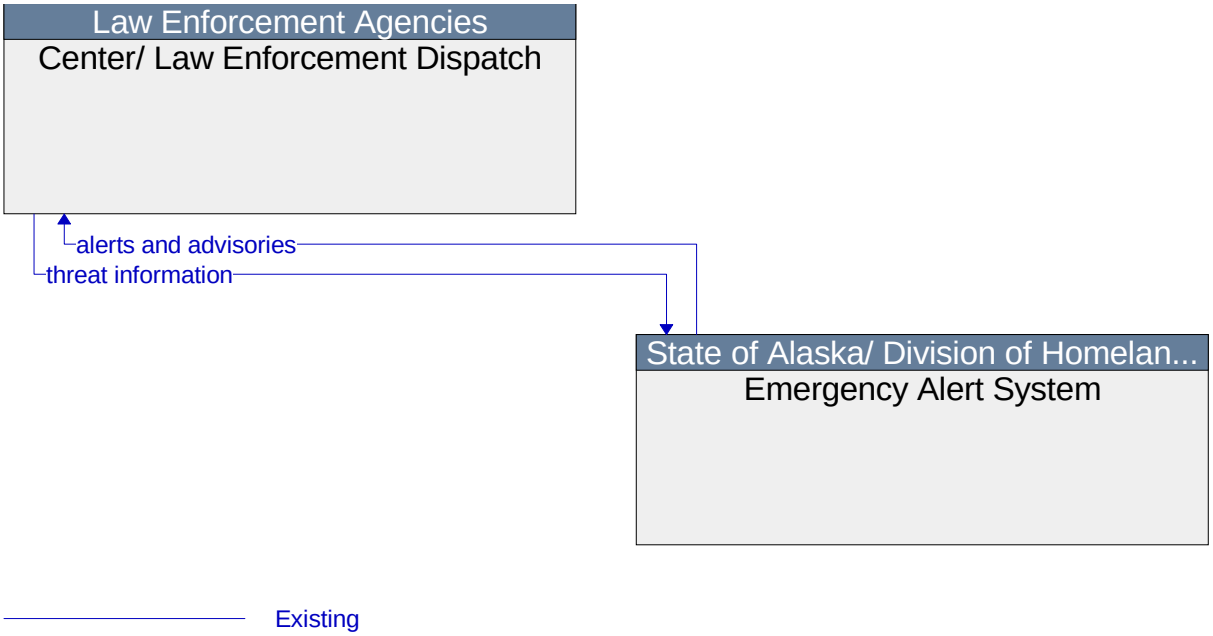

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
alert notification
archive status
emergency archive data
evacuation information
incident response status
current asset restrictions
maint and constr work plans
road network conditions
traffic archive data
traffic images
traveler archive data
work zone information
alert notification coordination
emergency plan coordination
incident command information coordination
incident information
incident report
incident response coordination
threat information
Law Enforcement Agencies
Center/ Law Enforcement Dispatch
Planned

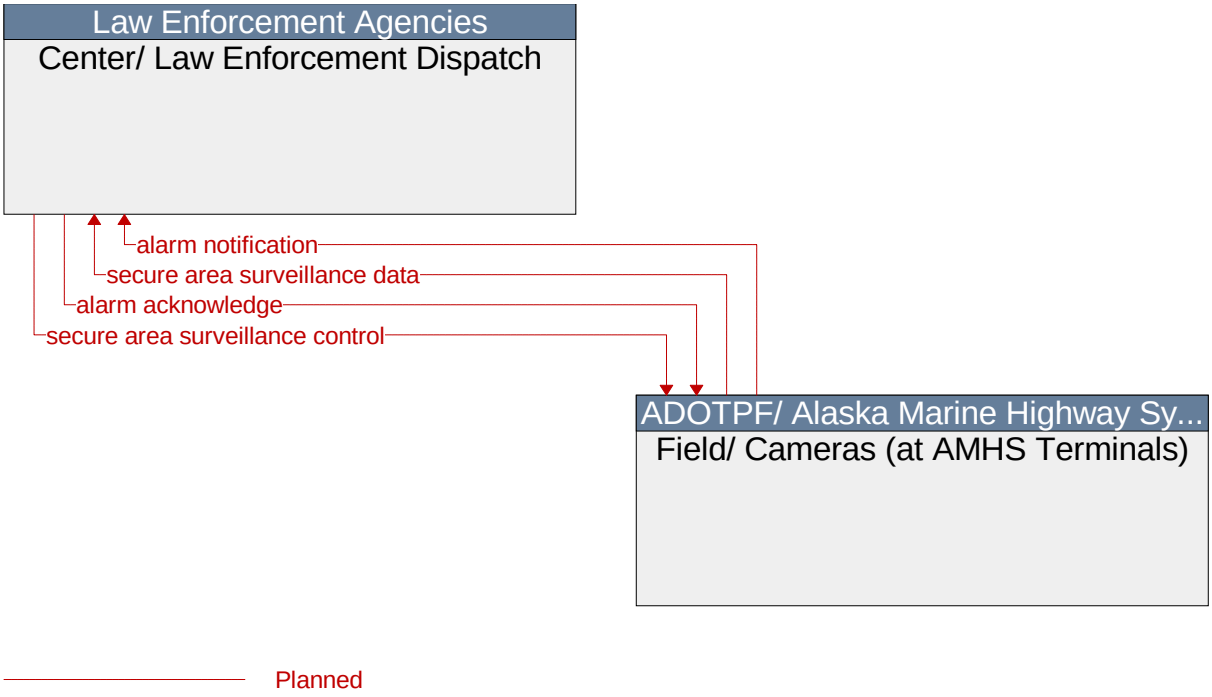

Law Enforcement Agencies
Center/ Law Enforcement Dispatch
incident information
maint and constr resource response
maint and constr work plans
roadway maintenance status
threat information coordination
ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
Existing

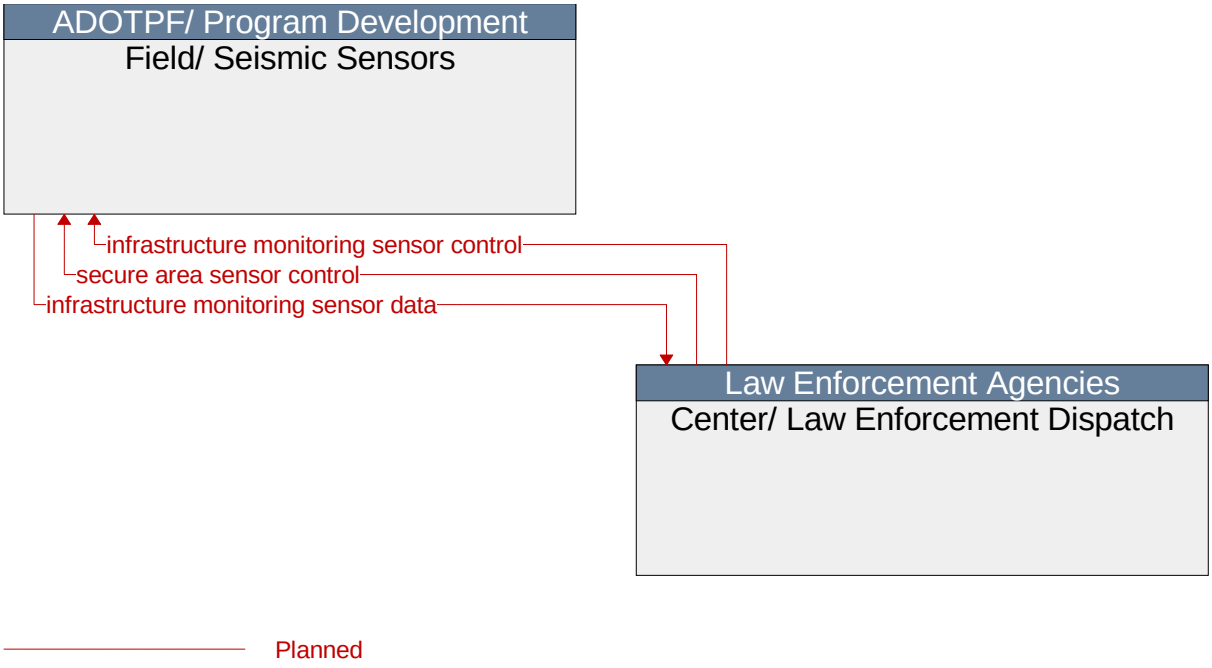

Law Enforcement Agencies
Center/ Law Enforcement Dispatch
alert notification coordination
emergency plan coordination
incident command information coordination
incident report
incident response coordination
resource coordination
State of Alaska/ Division of Homelan...
Center/ State Emergency Coordination Center
Existing

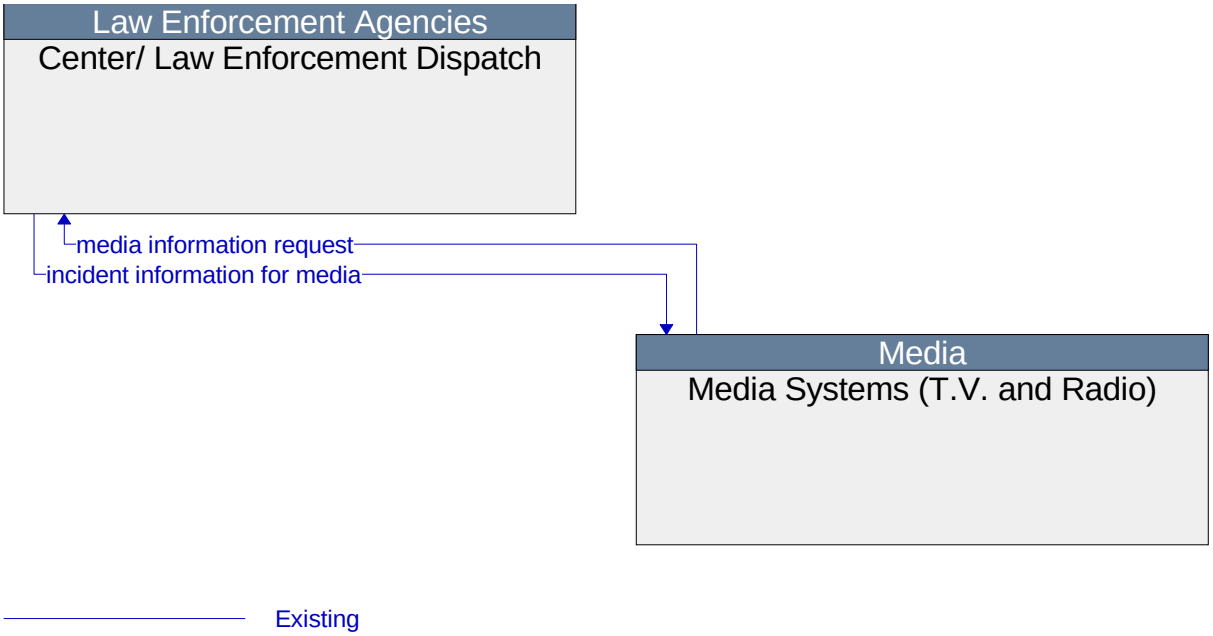

Law Enforcement Agencies
Center/ Law Enforcement Dispatch
alert notification
incident information
incident response status
threat information
Transit Agencies
Center/ Transit Agency Dispatch
(Placeholder)
Planned

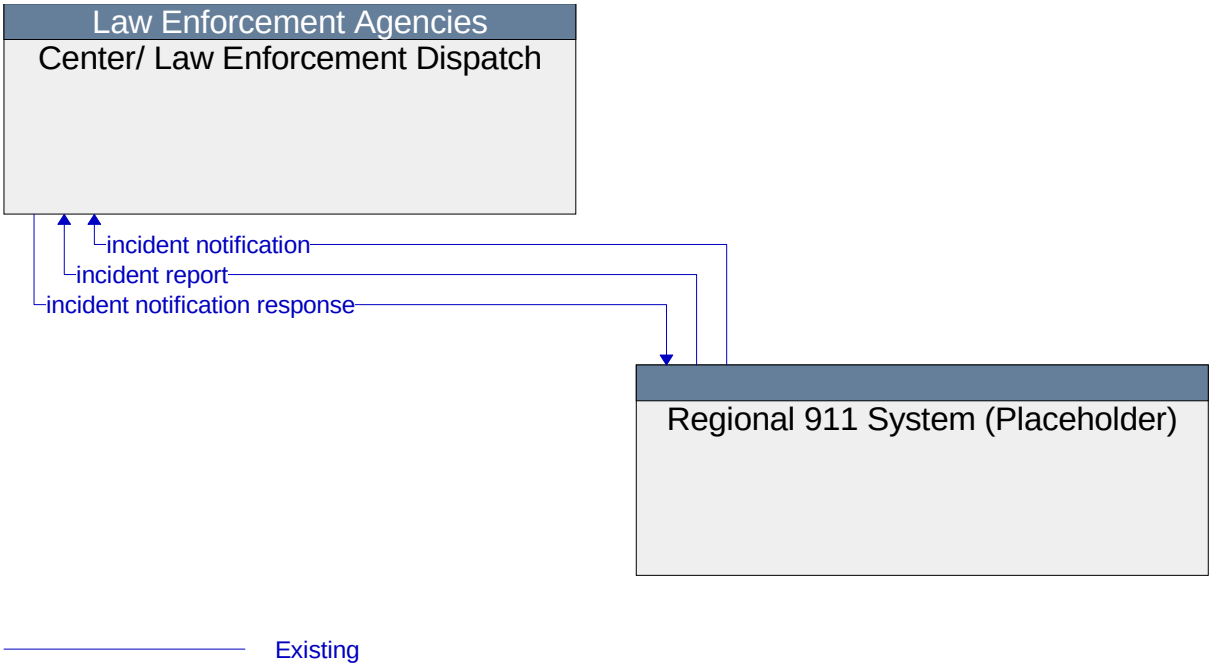

State of Alaska/ DOA/ Division of Mot...
Department of Motor Vehicles
license request
Law Enforcement Agencies
Center/ Law Enforcement Dispatch
Existing

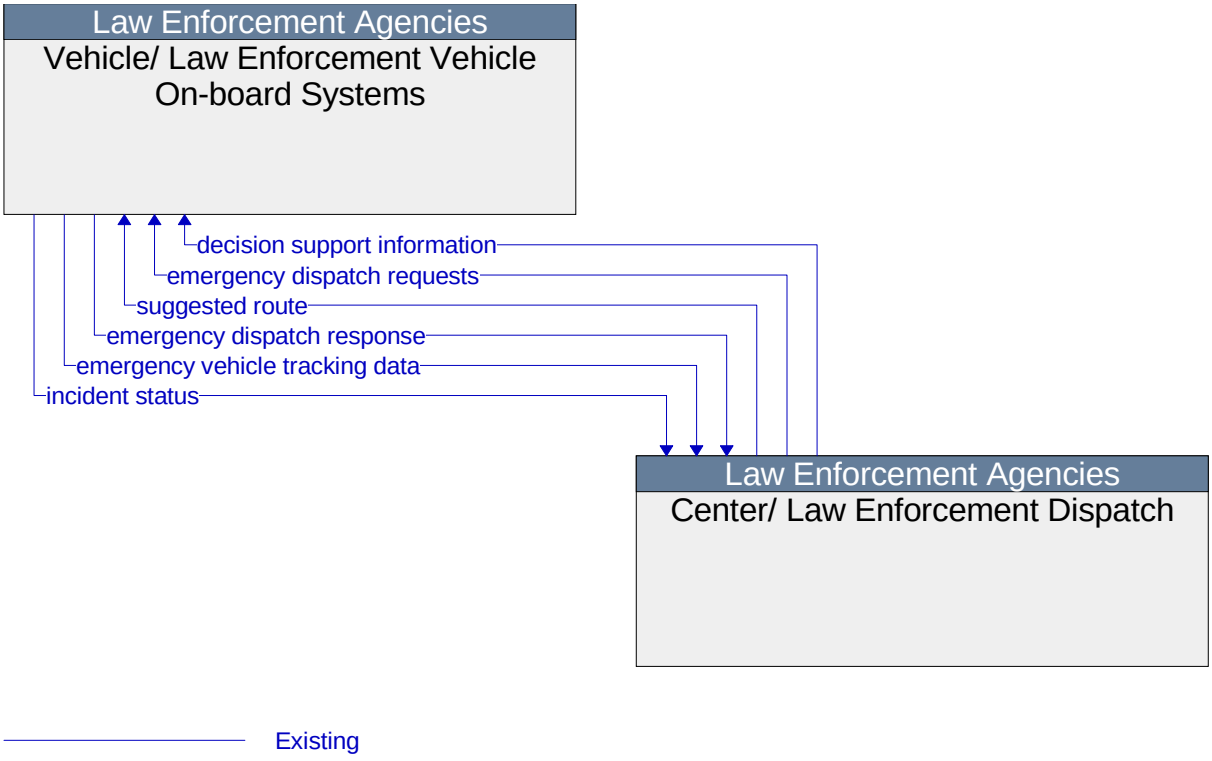

Law Enforcement Agencies
Center/ Law Enforcement Dispatch
alerts and advisories
threat information
State of Alaska/ Division of Homelan...
Emergency Alert System
Existing

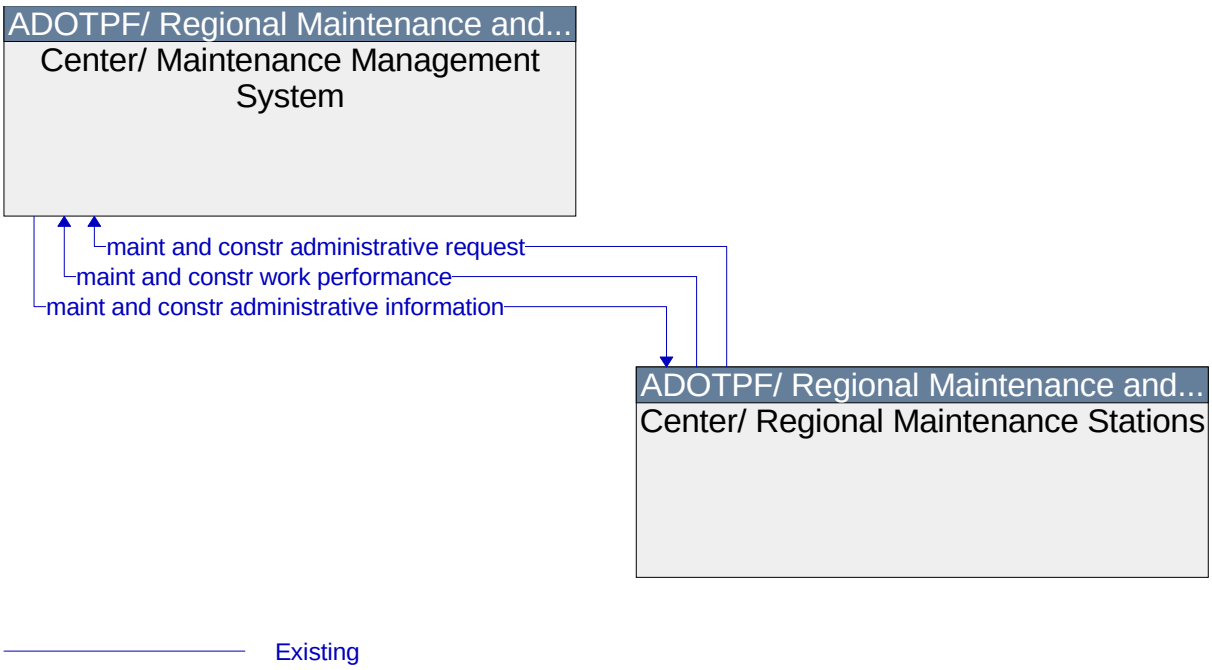

Law Enforcement Agencies
Center/ Law Enforcement Dispatch
alarm notification
secure area surveillance data
alarm acknowledge
secure area surveillance control
ADOTPF/ Alaska Marine Highway Sy...
Field/ Cameras (at AMHS Terminals)
Planned

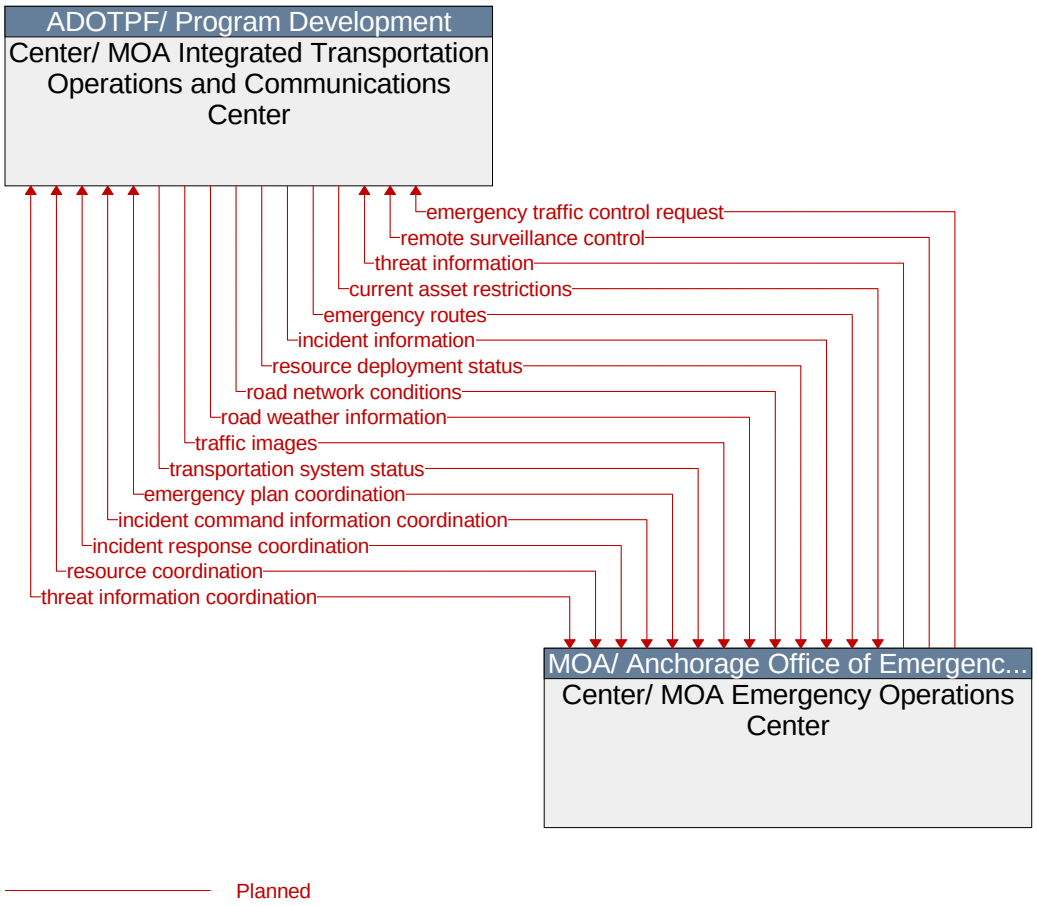

ADOTPF/ Program Development
Field/ Seismic Sensors
infrastructure monitoring sensor control
secure area sensor control
infrastructure monitoring sensor data
Law Enforcement Agencies
Center/ Law Enforcement Dispatch
Planned

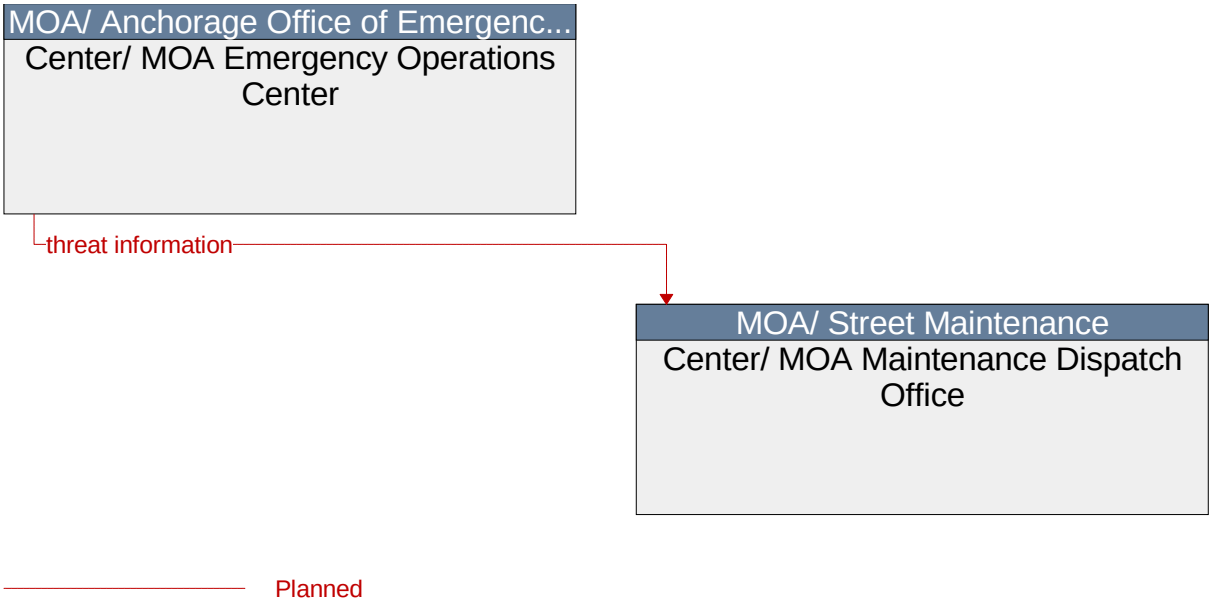

Law Enforcement Agencies
Center/ Law Enforcement Dispatch
media information request
incident information for media
Media
Media Systems (T.V. and Radio)
Existing

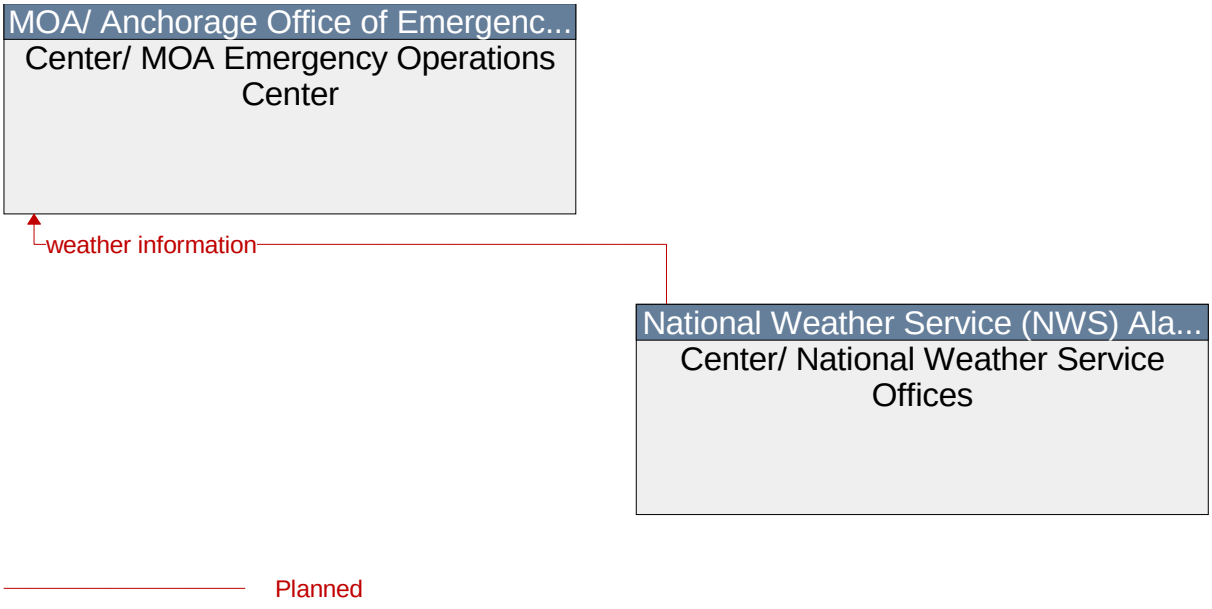

Law Enforcement Agencies
Center/ Law Enforcement Dispatch
incident notification
incident report
incident notification response
Regional 911 System (Placeholder)
Existing

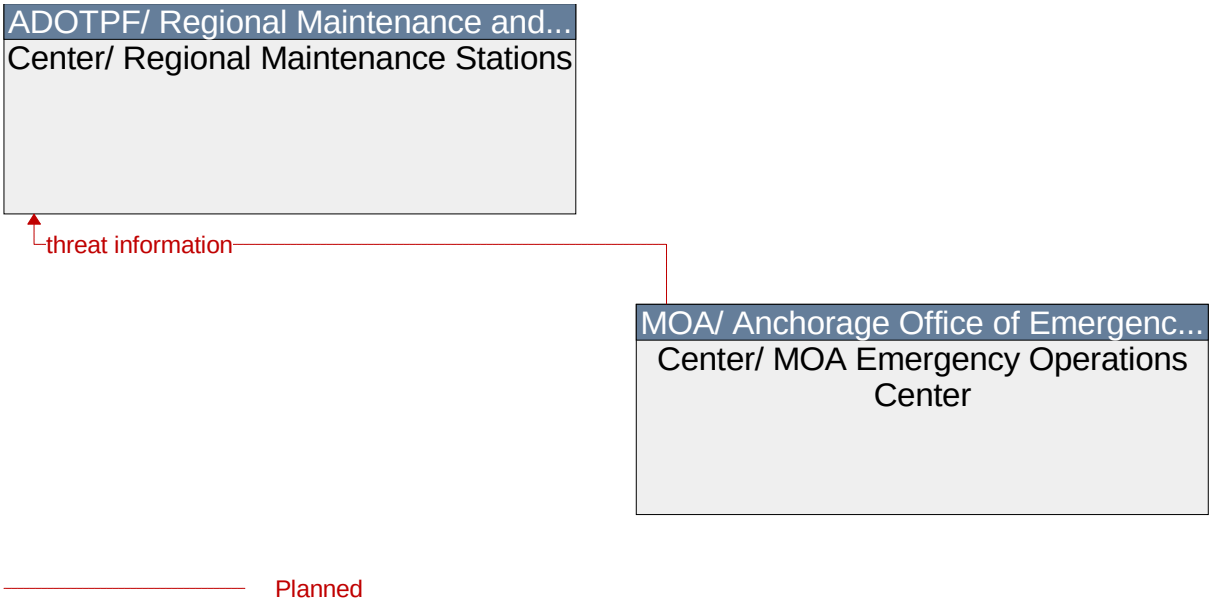

Law Enforcement Agencies
Vehicle/ Law Enforcement Vehicle On-board Systems
decision support information
emergency dispatch requests
suggested route
emergency dispatch response
emergency vehicle tracking data
incident status
Law Enforcement Agencies
Center/ Law Enforcement Dispatch
Existing

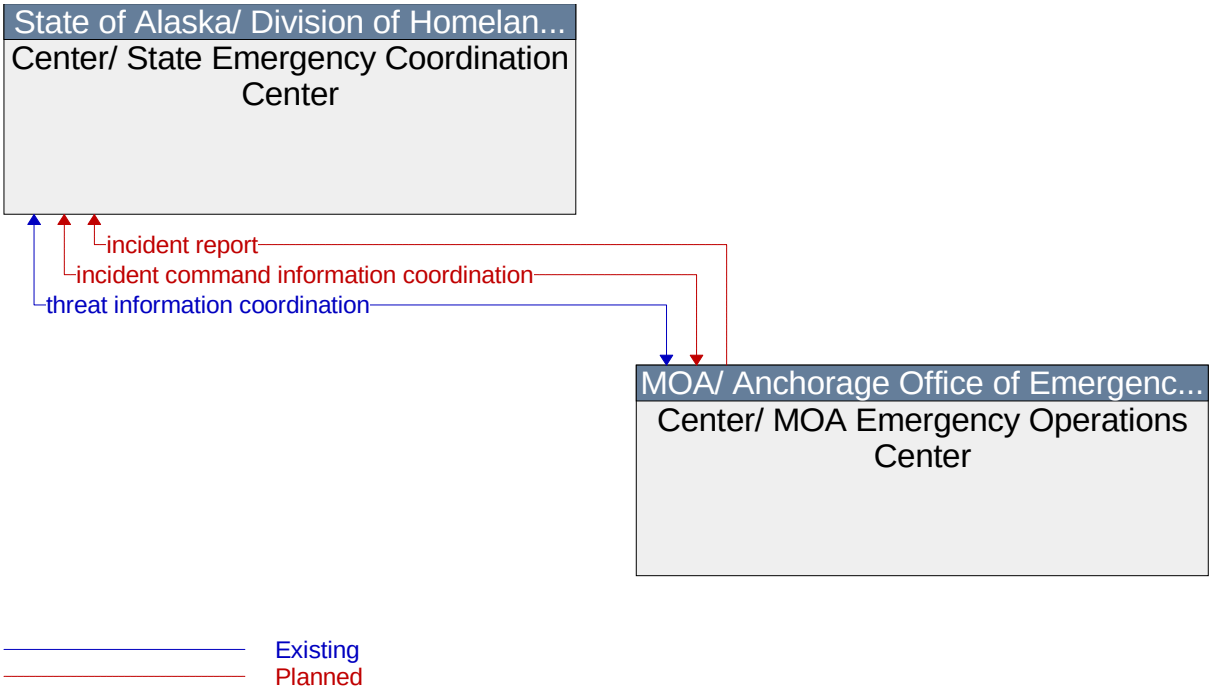

ADOTPF/ Regional Maintenance and...
Center/ Maintenance Management System
maint and constr administrative request
maint and constr work performance
maint and constr administrative information
ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
Existing

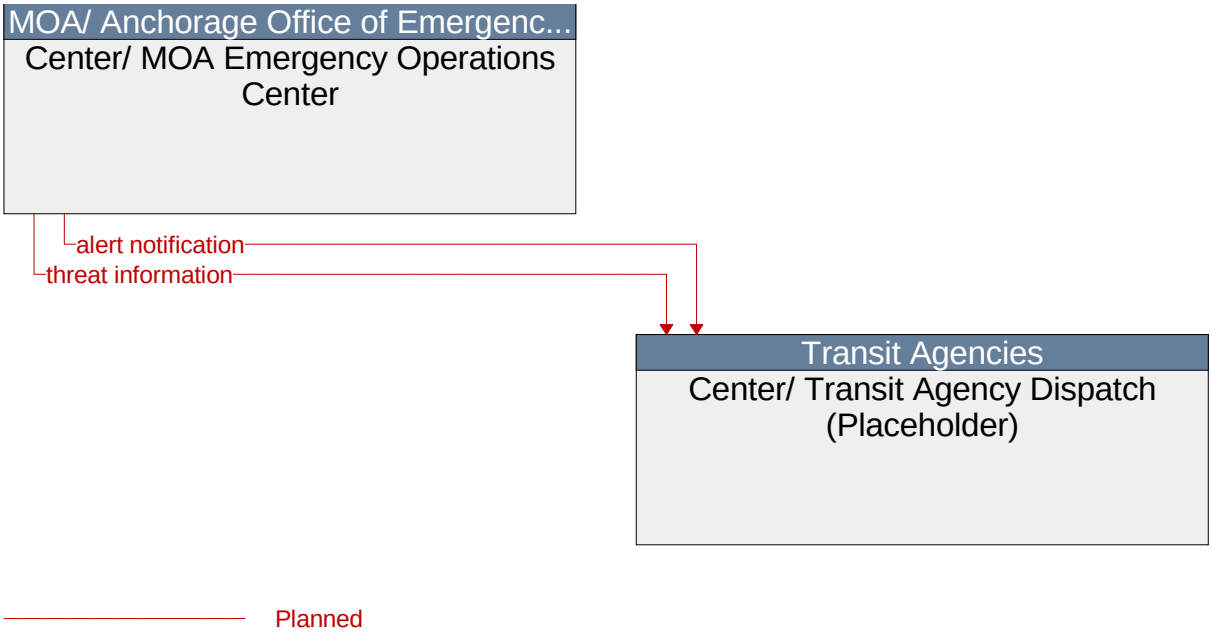

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
emergency traffic control request
remote surveillance control
threat information
current asset restrictions
emergency routes
incident information
resource deployment status
road network conditions
road weather information
traffic images
transportation system status
emergency plan coordination
incident command information coordination
incident response coordination
resource coordination
threat information coordination
MOA/ Anchorage Office of Emergenc...
Center/ MOA Emergency Operations Center
Planned

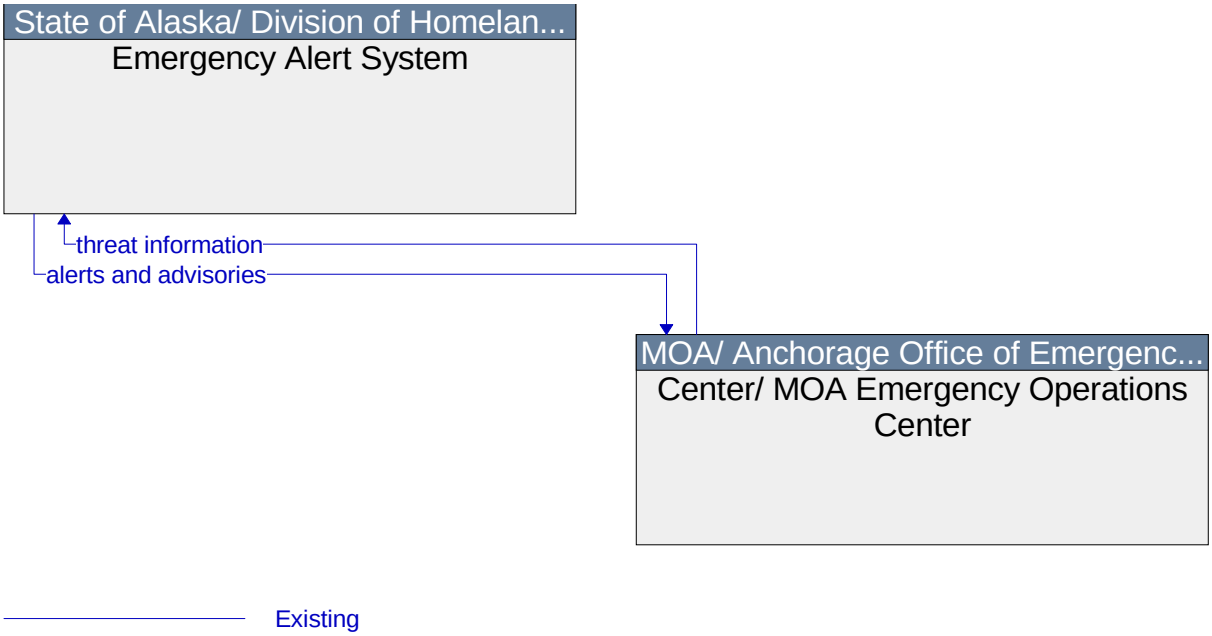

MOA/ Anchorage Office of Emergenc...
Center/ MOA Emergency Operations Center
threat information
MOA/ Street Maintenance
Center/ MOA Maintenance Dispatch Office
Planned

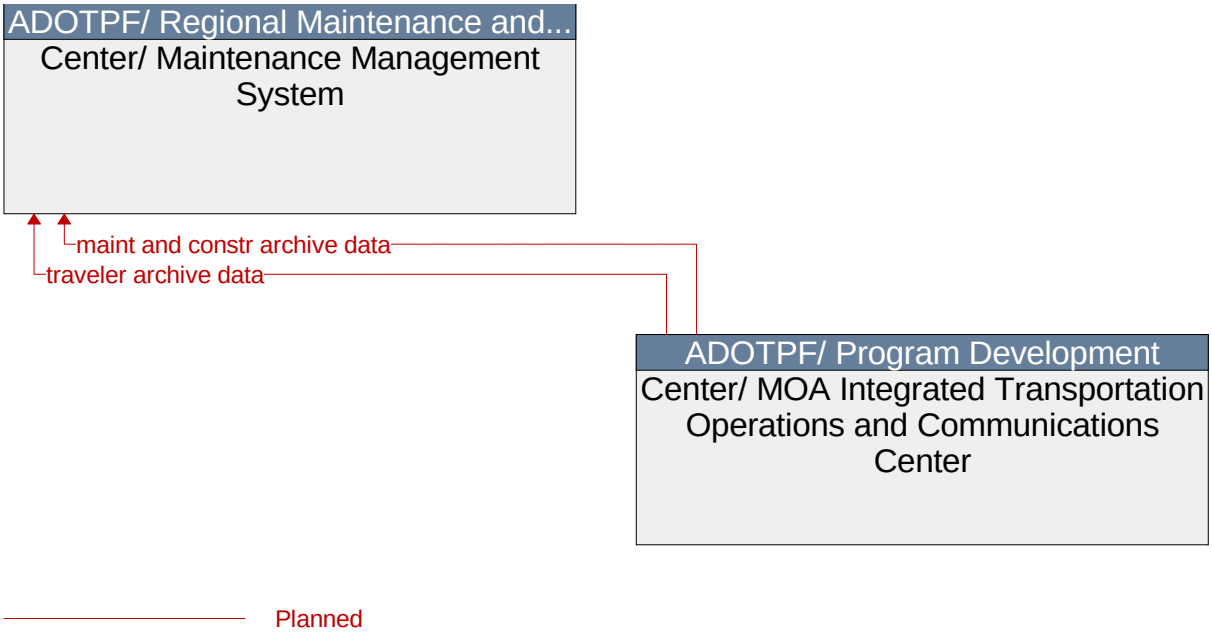

MOA/ Anchorage Office of Emergenc...
Center/ MOA Emergency Operations Center
weather information
National Weather Service (NWS) Ala...
Center/ National Weather Service Offices
Planned

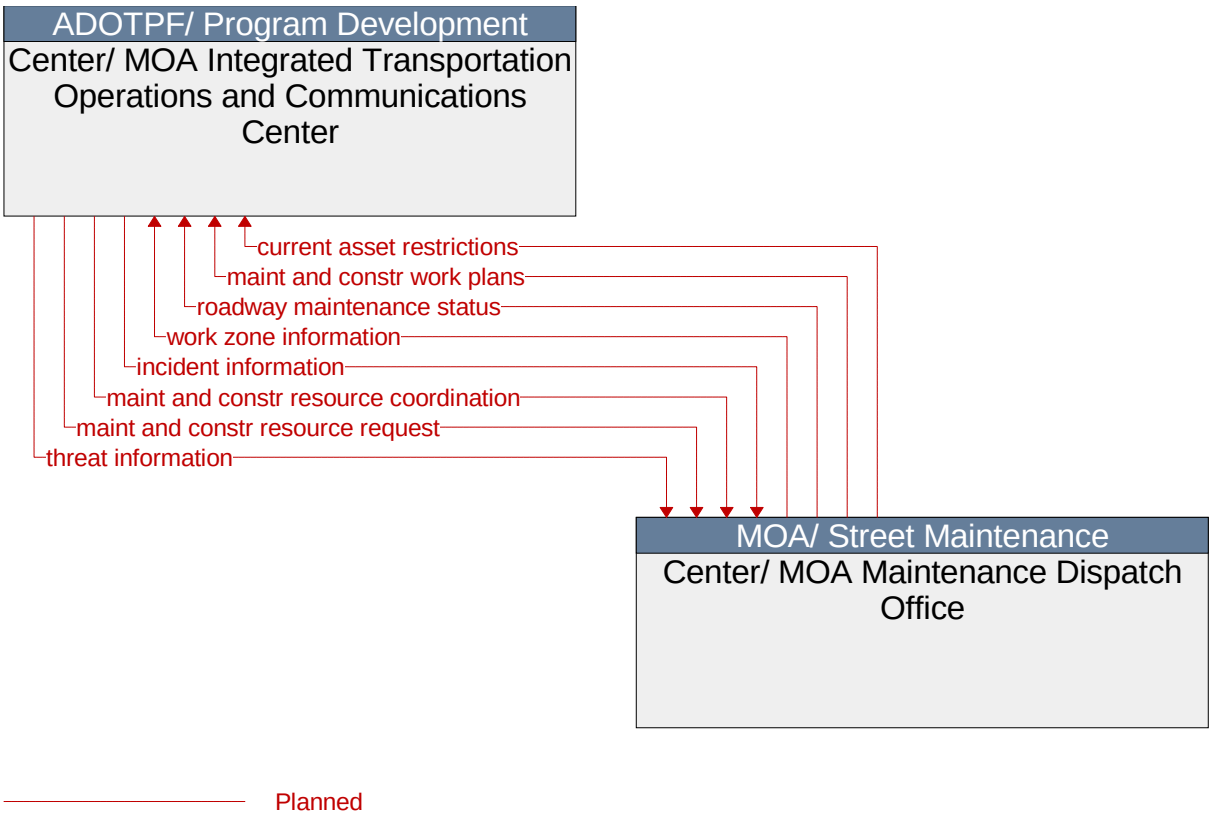

ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
threat information
MOA/ Anchorage Office of Emergenc...
Center/ MOA Emergency Operations Center
Planned

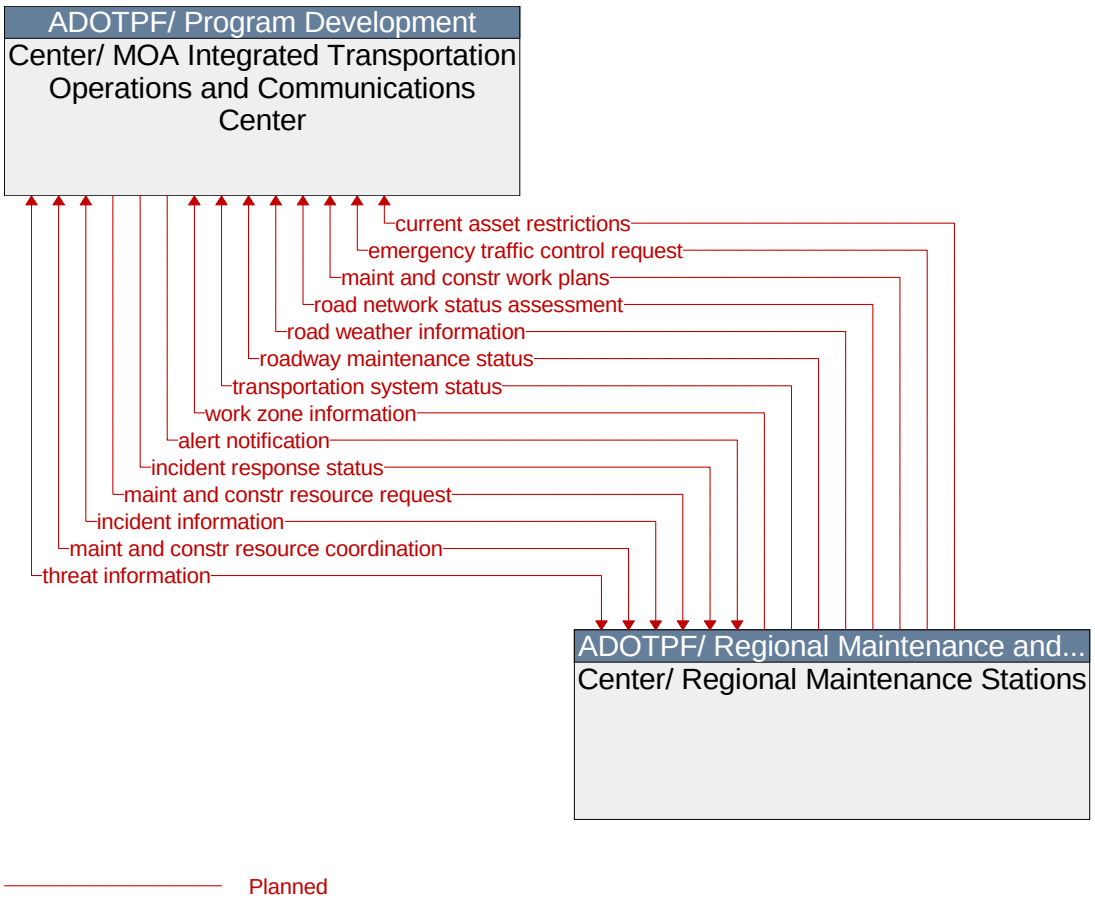

State of Alaska/ Division of Homelan...
Center/ State Emergency Coordination Center
incident report
incident command information coordination
threat information coordination
MOA/ Anchorage Office of Emergenc...
Center/ MOA Emergency Operations Center
Existing
Planned

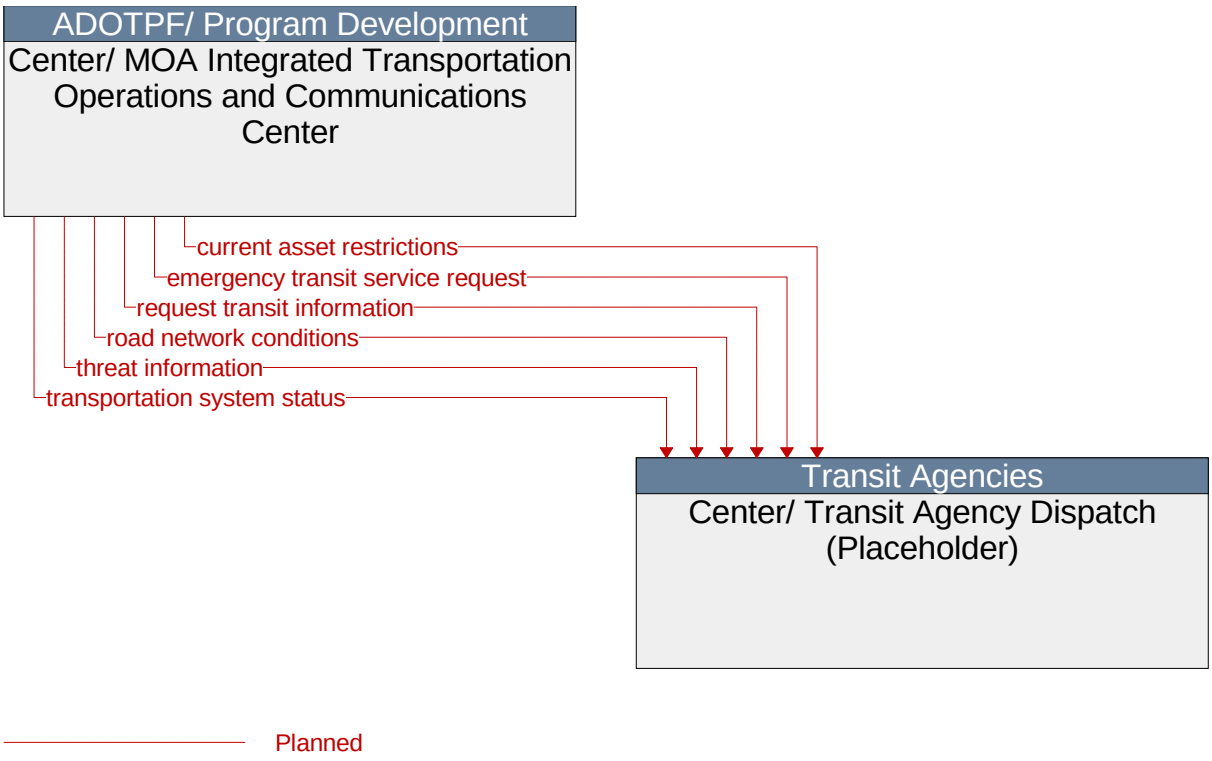

MOA/ Anchorage Office of Emergenc...
Center/ MOA Emergency Operations Center
alert notification
threat information
Transit Agencies
Center/ Transit Agency Dispatch (Placeholder)
Planned

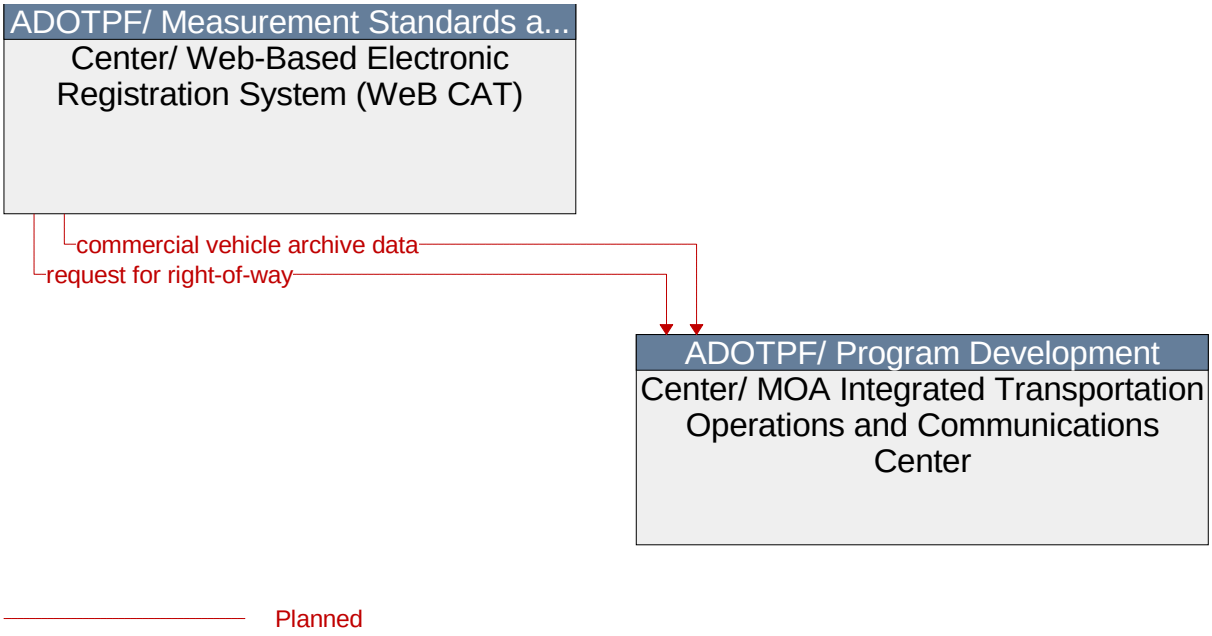

State of Alaska/ Division of Homelan...
Emergency Alert System
threat information
alerts and advisories
MOA/ Anchorage Office of Emergenc...
Center/ MOA Emergency Operations Center
Existing

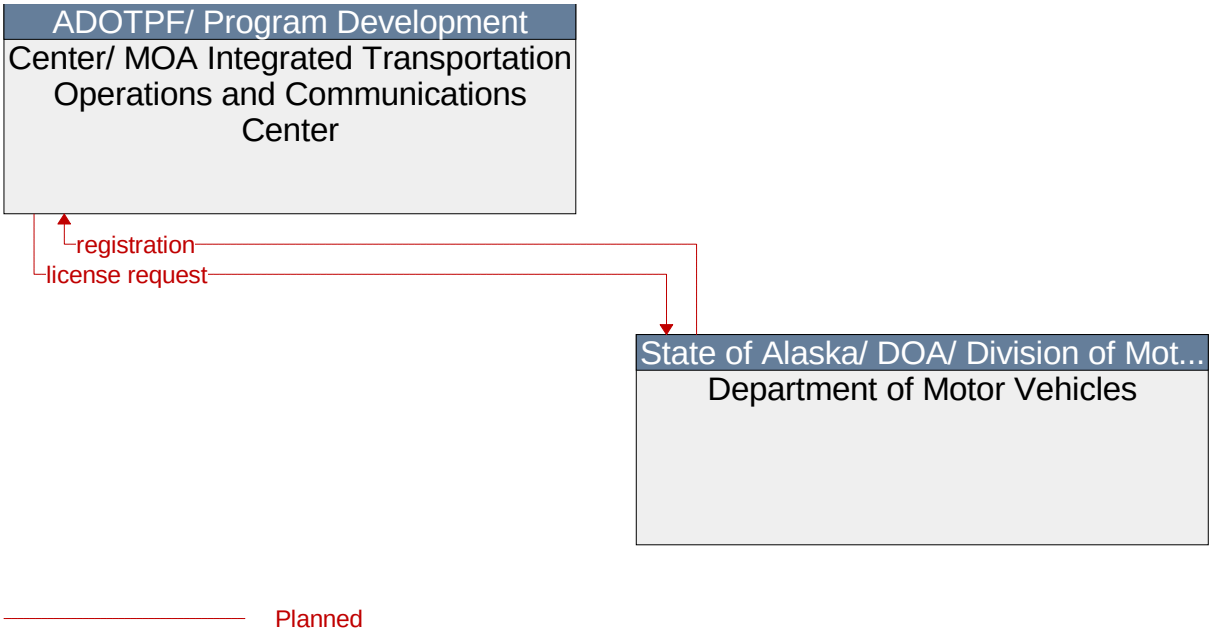

ADOTPF/ Regional Maintenance and...
Center/ Maintenance Management System
maint and constr archive data
traveler archive data
ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
Planned

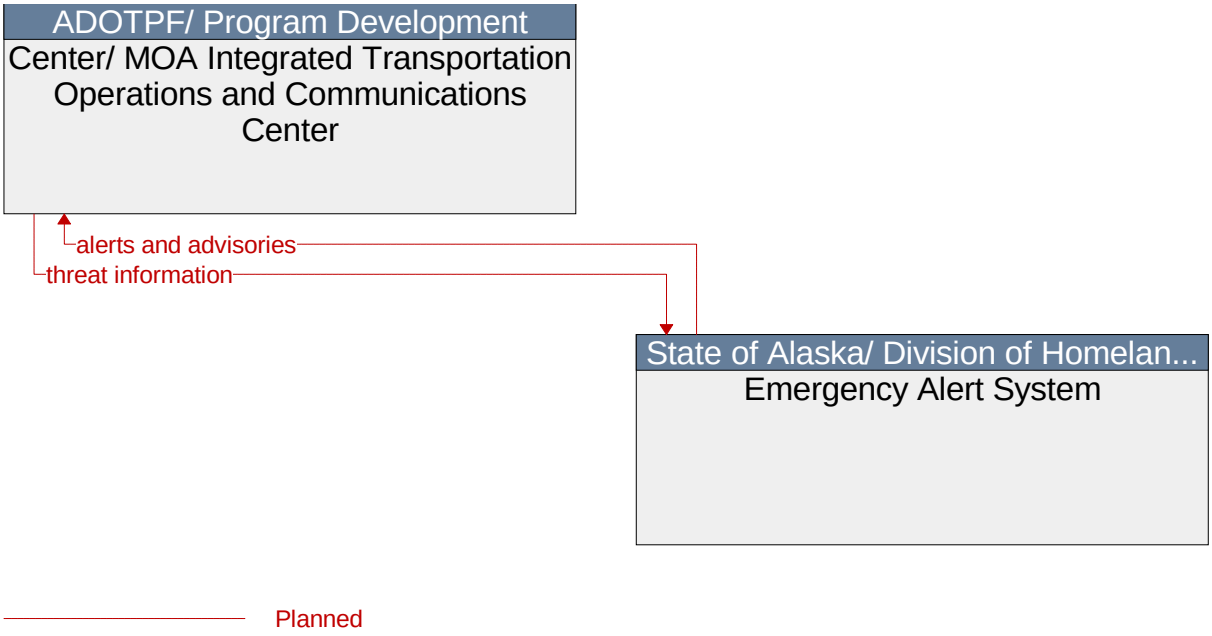

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
current asset restrictions
maint and constr work plans
roadway maintenance status
work zone information
incident information
maint and constr resource coordination
maint and constr resource request
threat information
MOA/ Street Maintenance
Center/ MOA Maintenance Dispatch Office
Planned

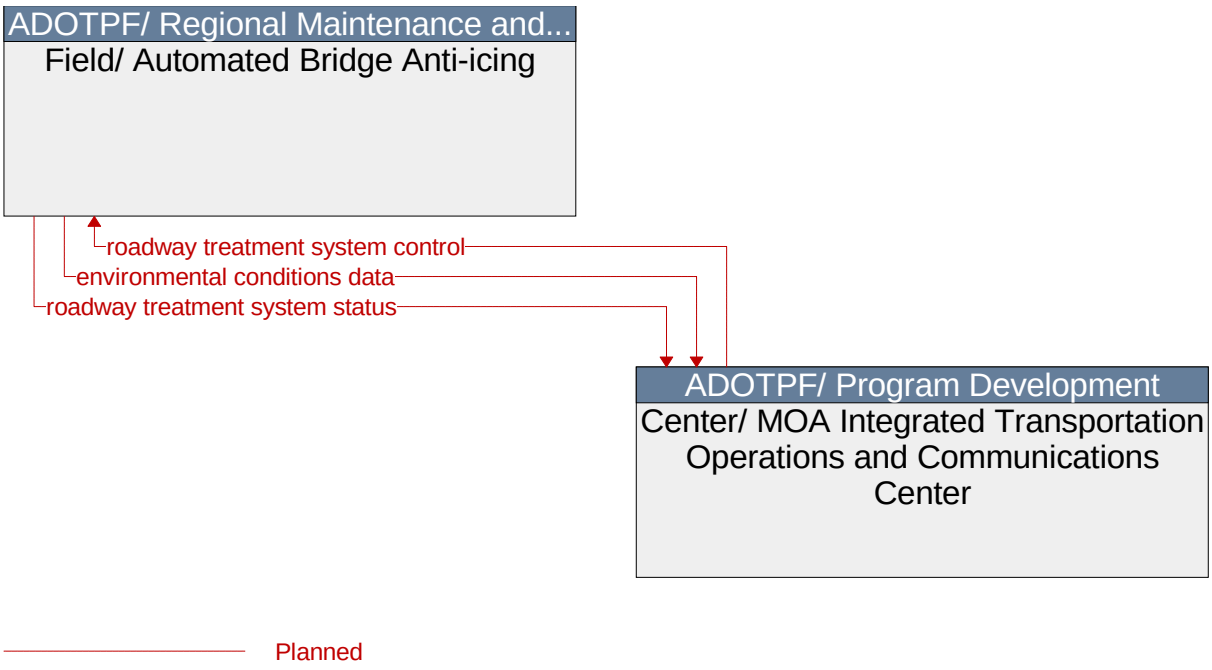

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
current asset restrictions
emergency traffic control request
maint and constr work plans
road network status assessment
road weather information
roadway maintenance status
transportation system status
work zone information
alert notification
incident response status
maint and constr resource request
incident information
maint and constr resource coordination
threat information
ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
Planned

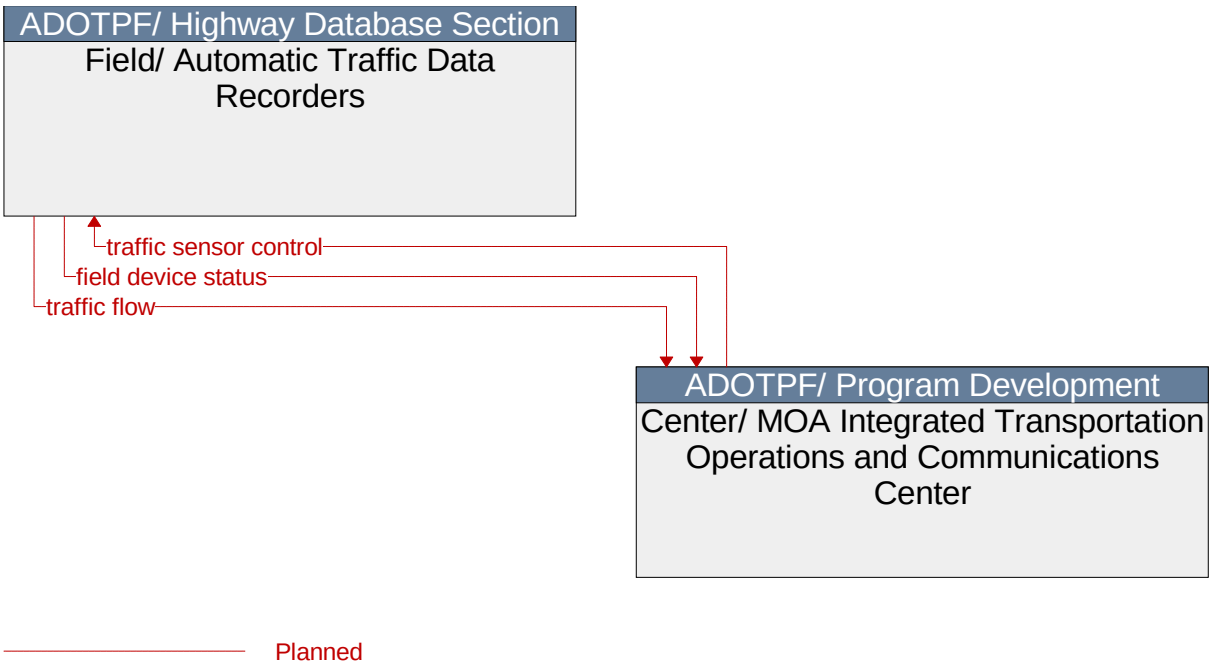

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
current asset restrictions
emergency transit service request
request transit information
road network conditions
threat information
transportation system status
Transit Agencies
Center/ Transit Agency Dispatch (Placeholder)
Planned

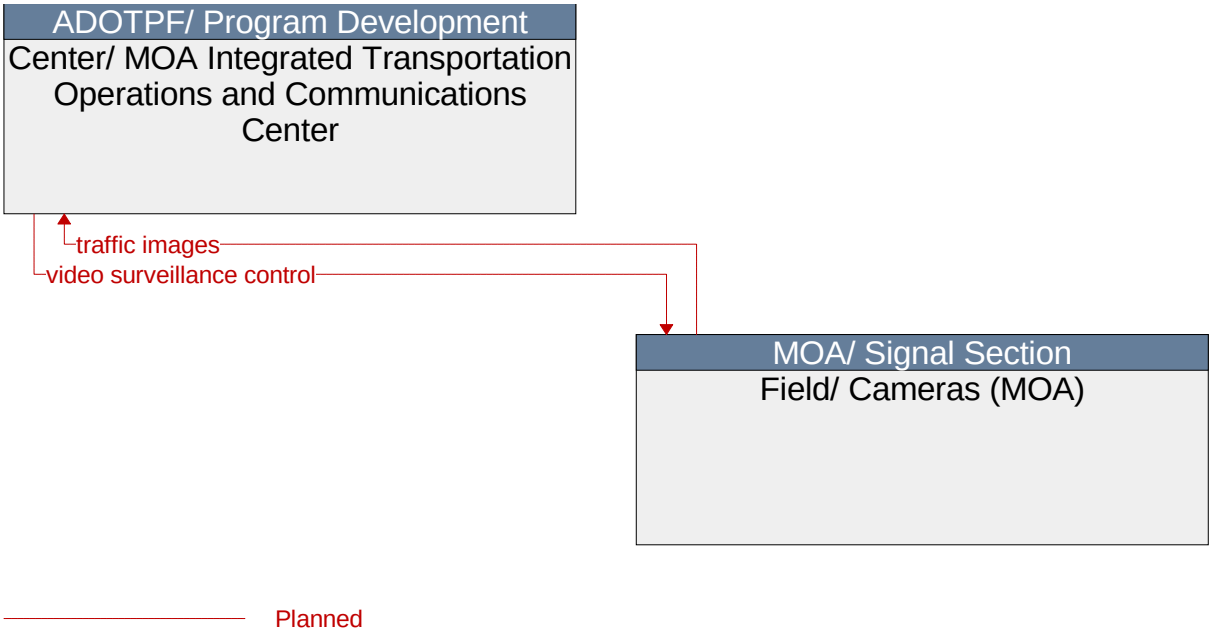

ADOTPF/ Measurement Standards a...
Center/ Web-Based Electronic Registration System (WeB CAT)
commercial vehicle archive data
request for right-of-way
ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
Planned

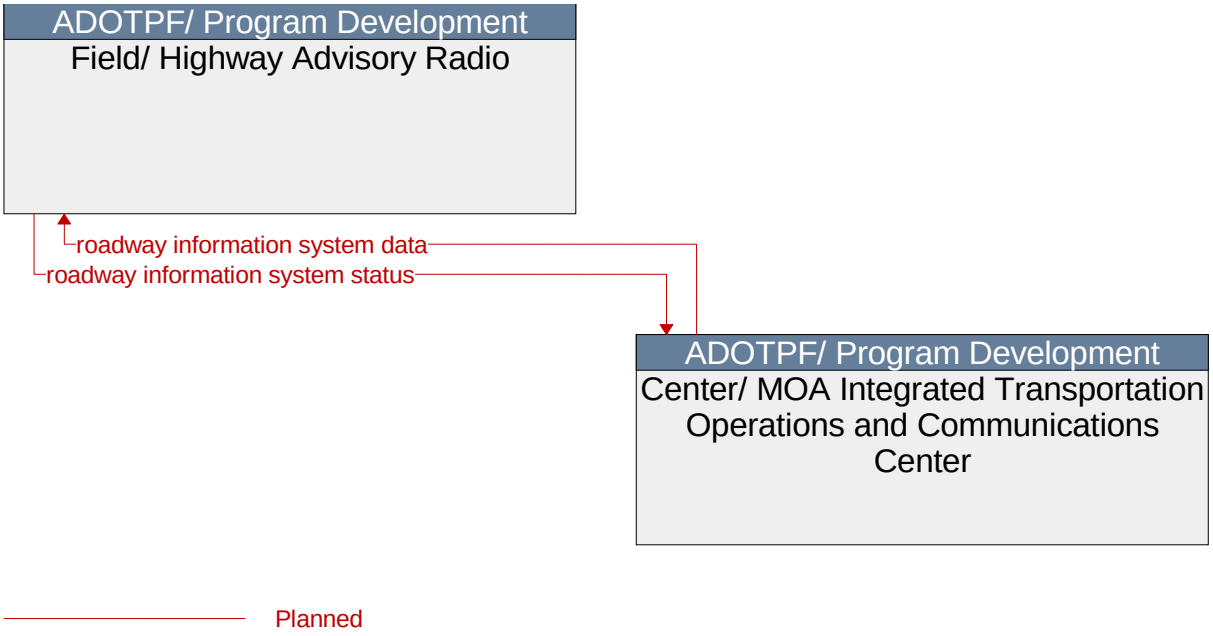

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
registration
license request
State of Alaska/ DOA/ Division of Mot...
Department of Motor Vehicles
Planned

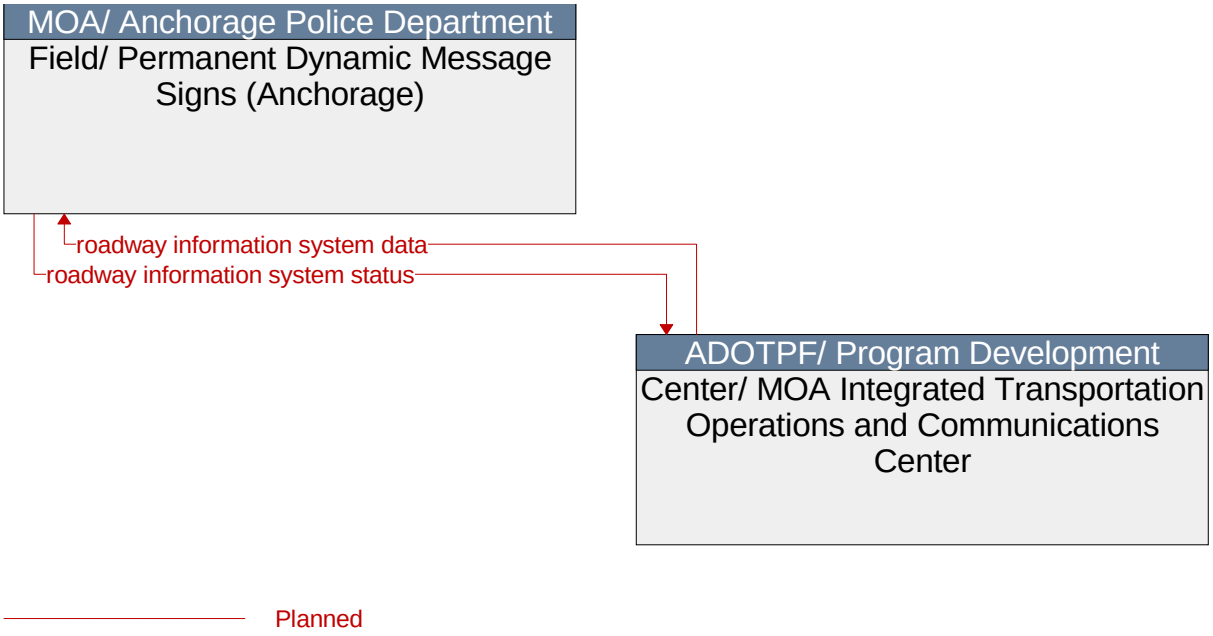

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
alerts and advisories
threat information
State of Alaska/ Division of Homelan...
Emergency Alert System
Planned

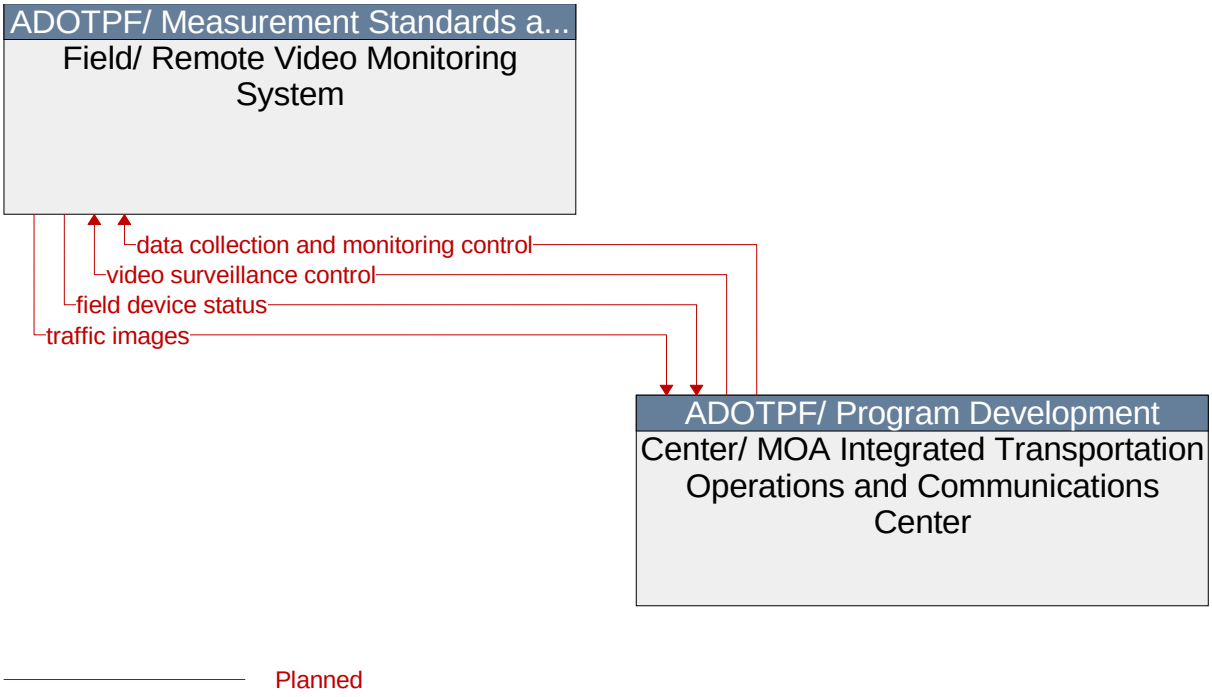

ADOTPF/ Regional Maintenance and...
Field/ Automated Bridge Anti-icing
roadway treatment system control
environmental conditions data
roadway treatment system status
ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
Planned

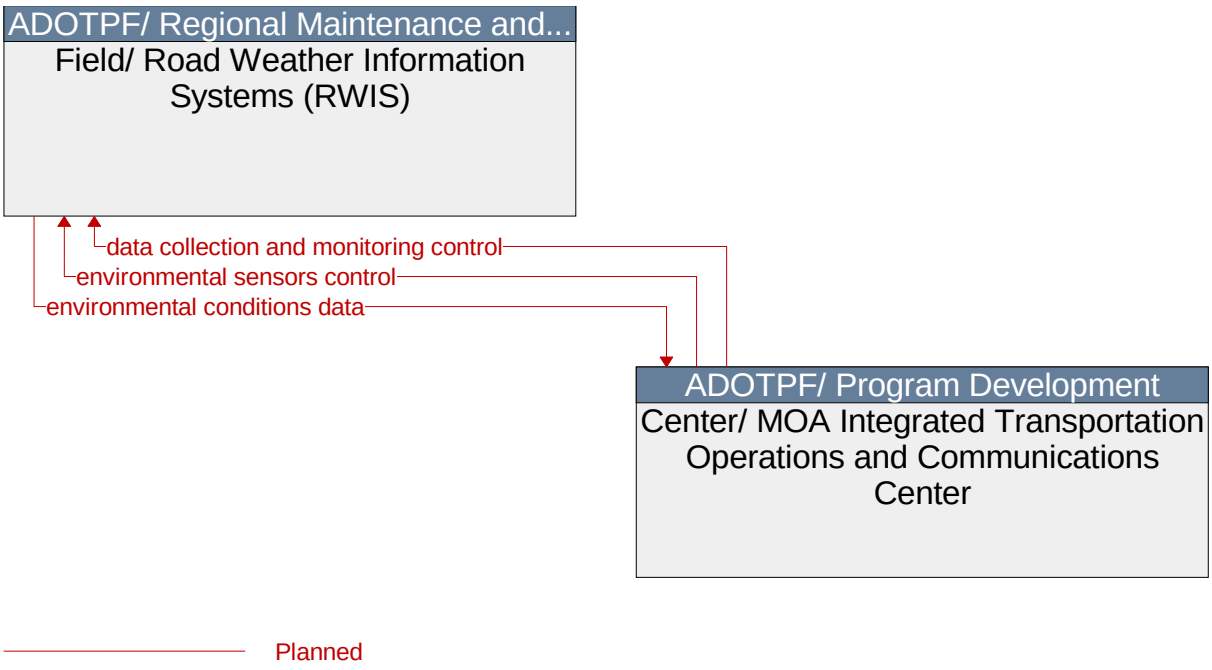

ADOTPF/ Highway Database Section
Field/ Automatic Traffic Data Recorders
traffic sensor control
field device status
traffic flow
ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
Planned

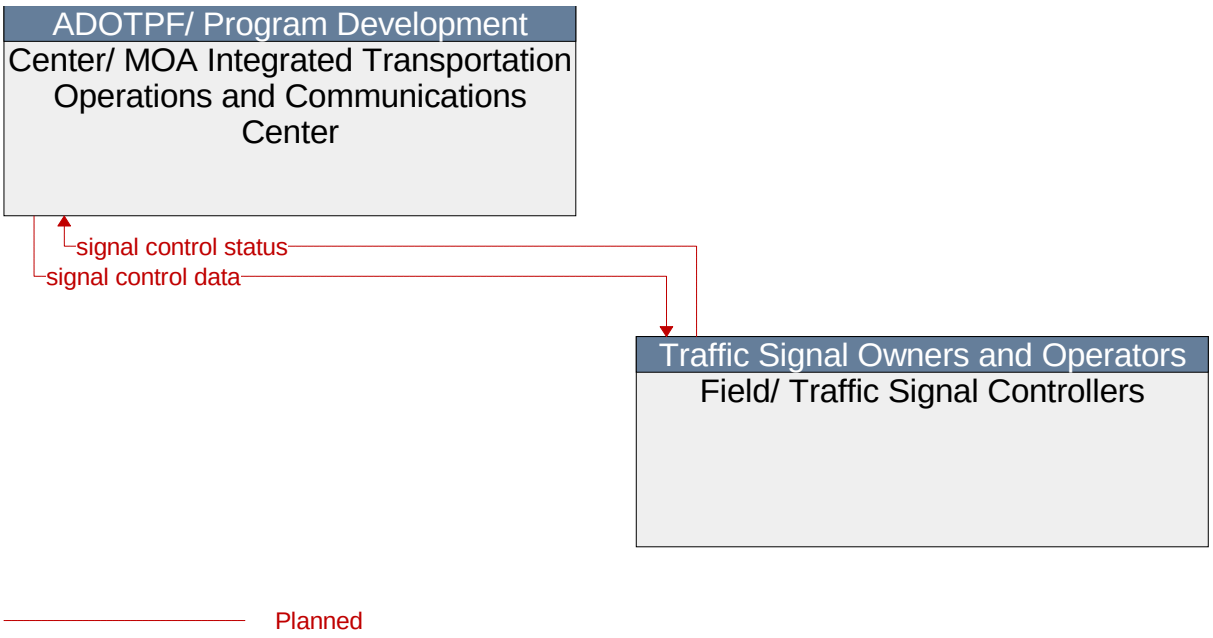

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
traffic images
video surveillance control
MOA/ Signal Section
Field/ Cameras (MOA)
Planned

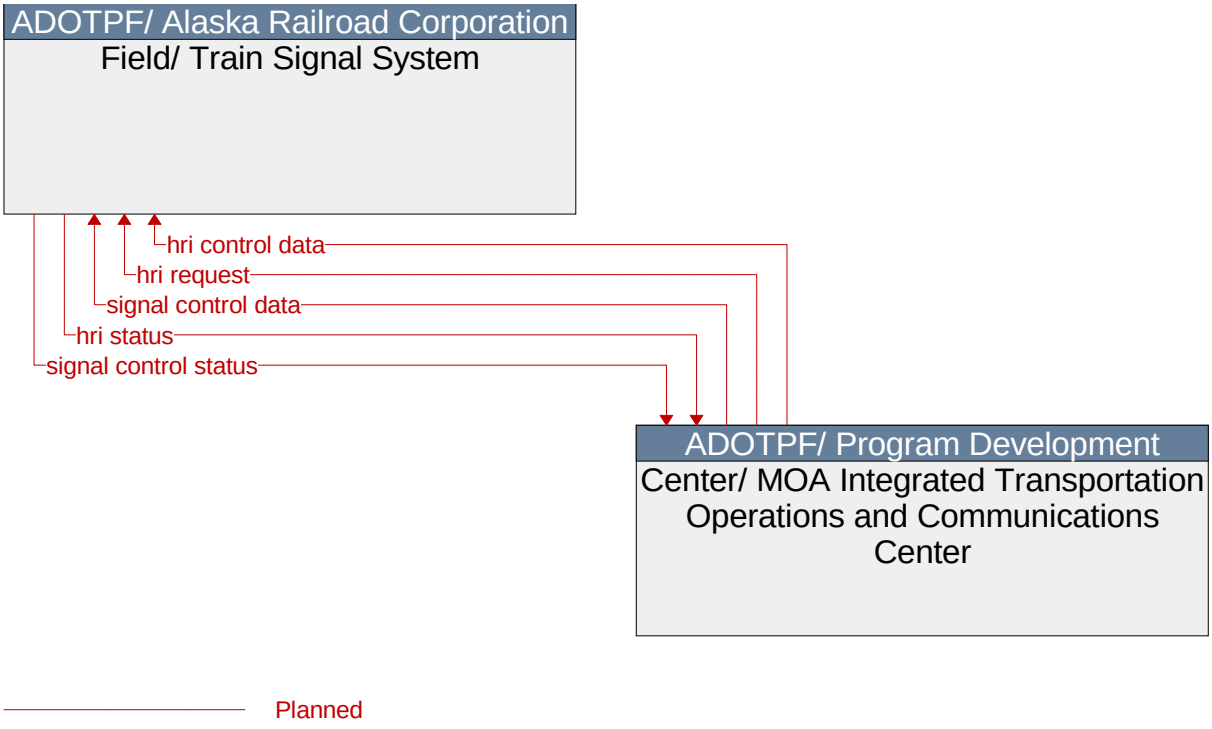

ADOTPF/ Program Development
Field/ Highway Advisory Radio
roadway information system data
roadway information system status
ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
Planned

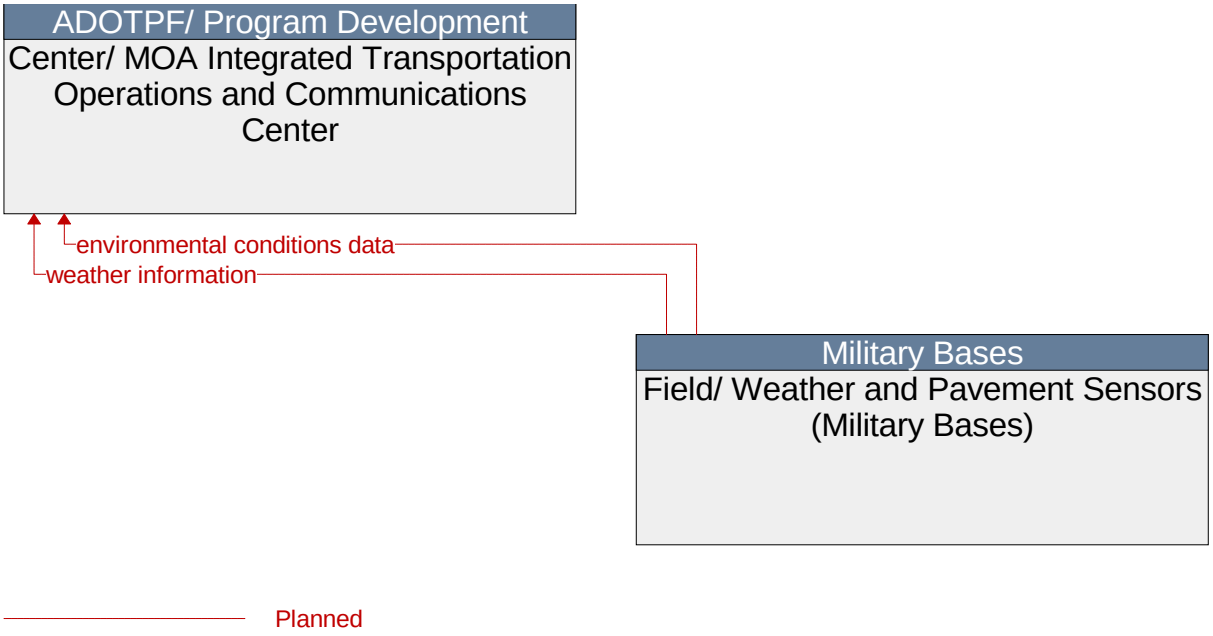

MOA/ Anchorage Police Department
Field/ Permanent Dynamic Message Signs (Anchorage)
roadway information system data
roadway information system status
ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
Planned

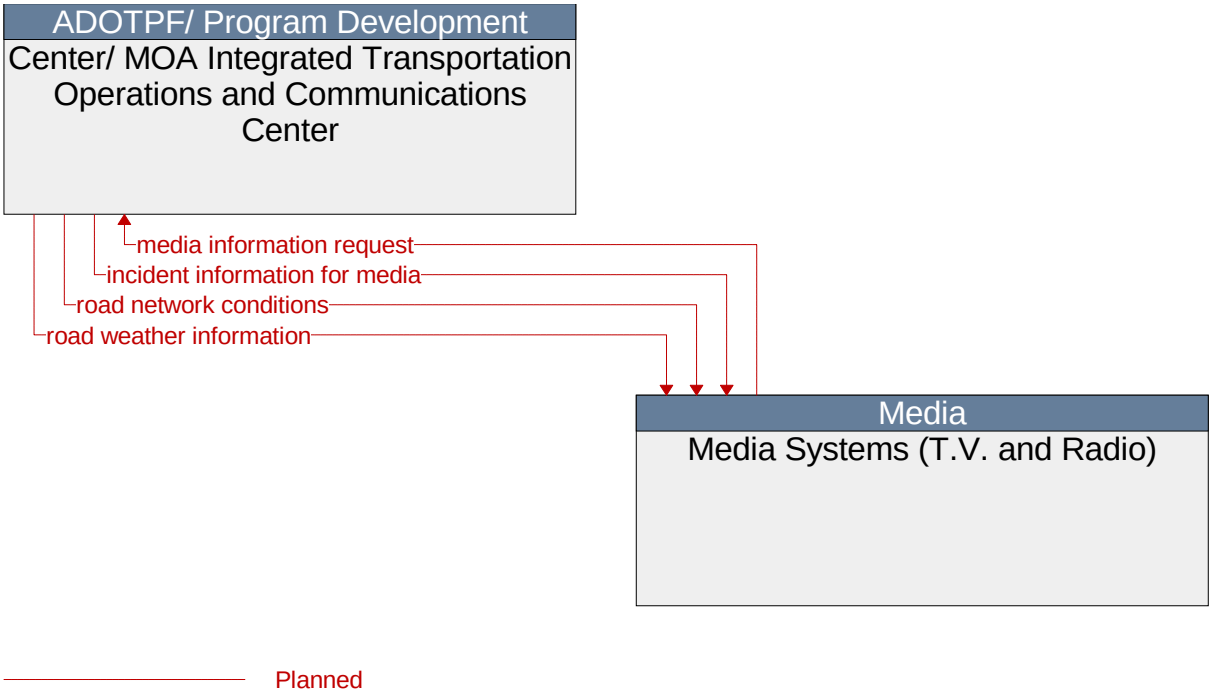

ADOTPF/ Measurement Standards a...
Field/ Remote Video Monitoring System
data collection and monitoring control
video surveillance control
field device status
traffic images
ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
Planned

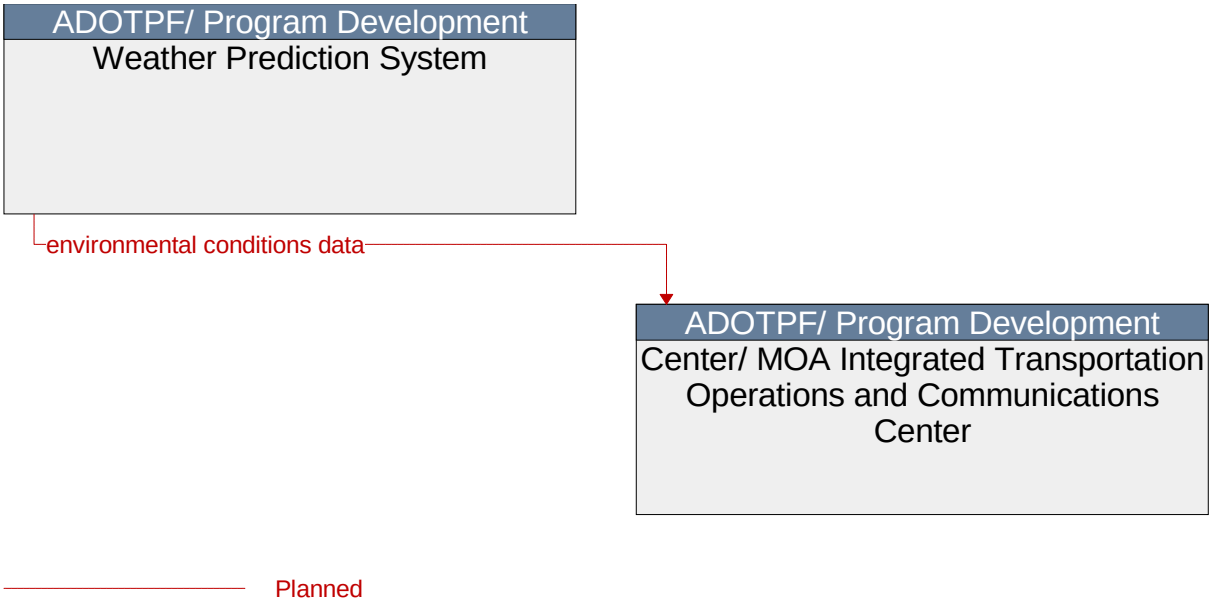

ADOTPF/ Regional Maintenance and...
Field/ Road Weather Information Systems (RWIS)
data collection and monitoring control
environmental sensors control
environmental conditions data
ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
Planned

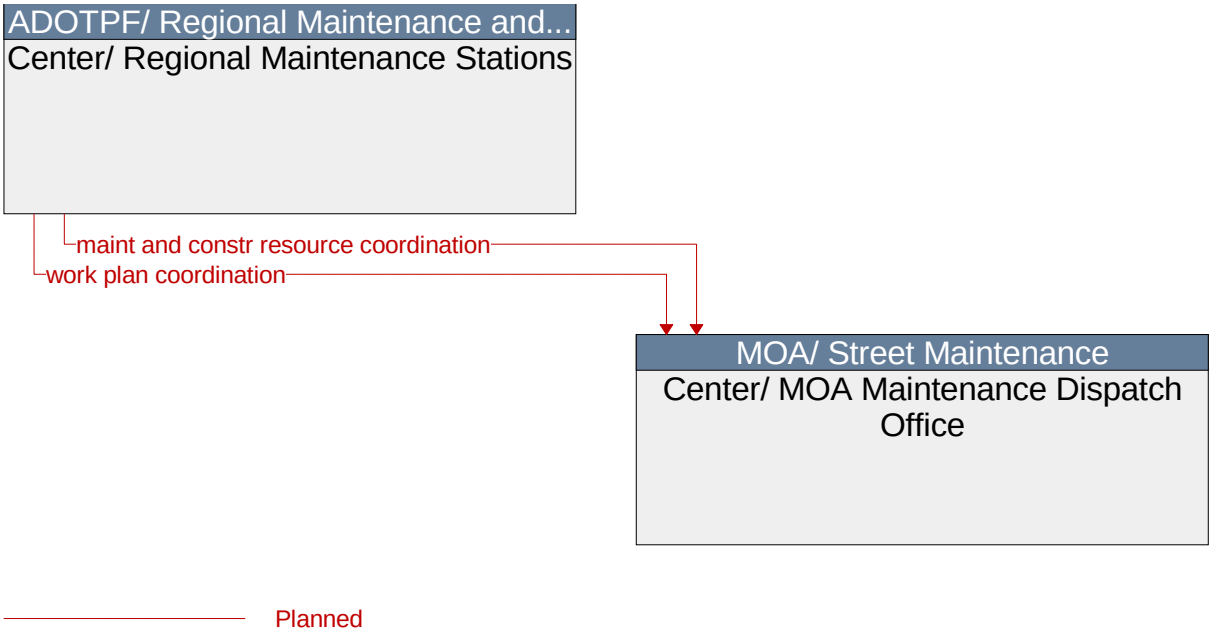

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
signal control status
signal control data
Traffic Signal Owners and Operators
Field/ Traffic Signal Controllers
Planned

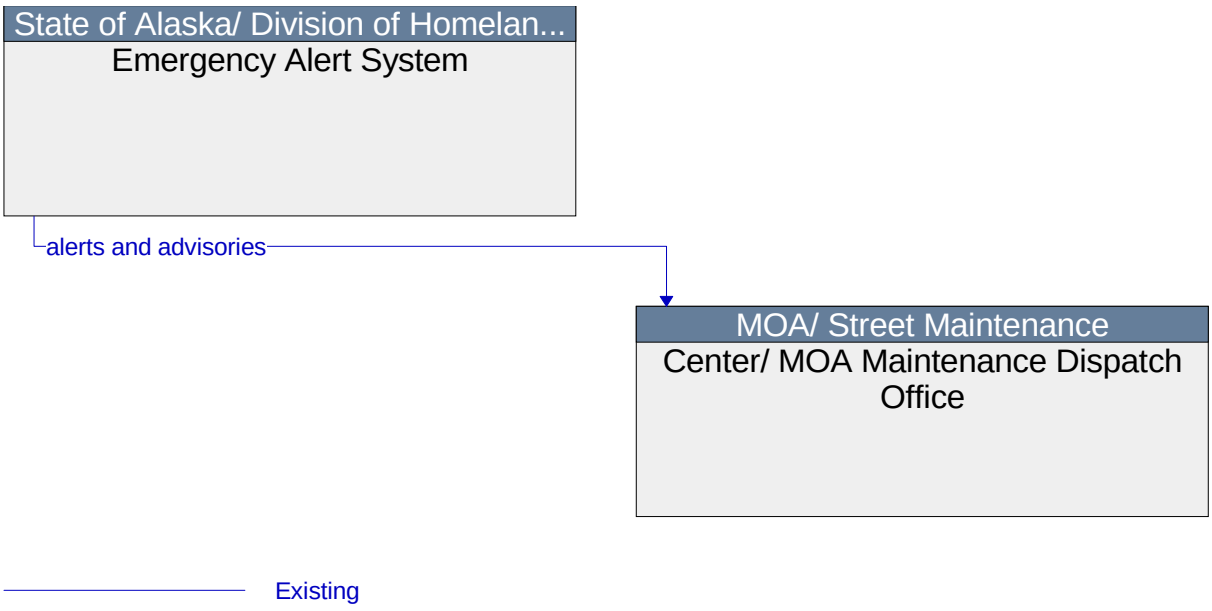

ADOTPF/ Alaska Railroad Corporation
Field/ Train Signal System
hri control data
hri request
signal control data
hri status
signal control status
ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
Planned

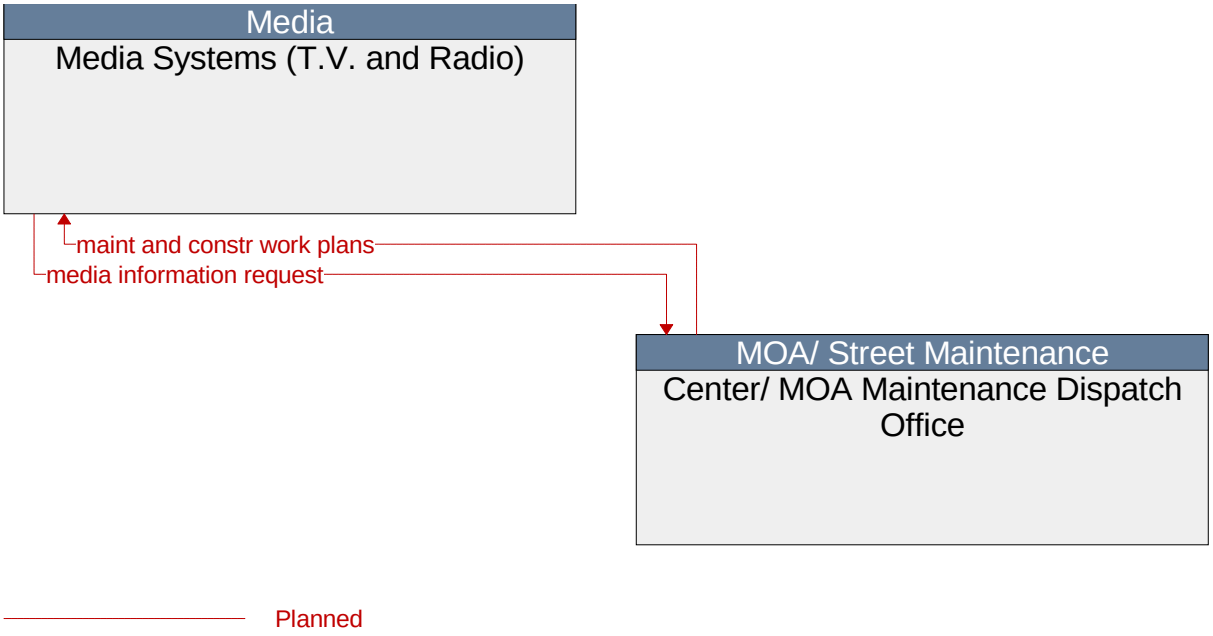

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
environmental conditions data
weather information
Military Bases
Field/ Weather and Pavement Sensors (Military Bases)
Planned

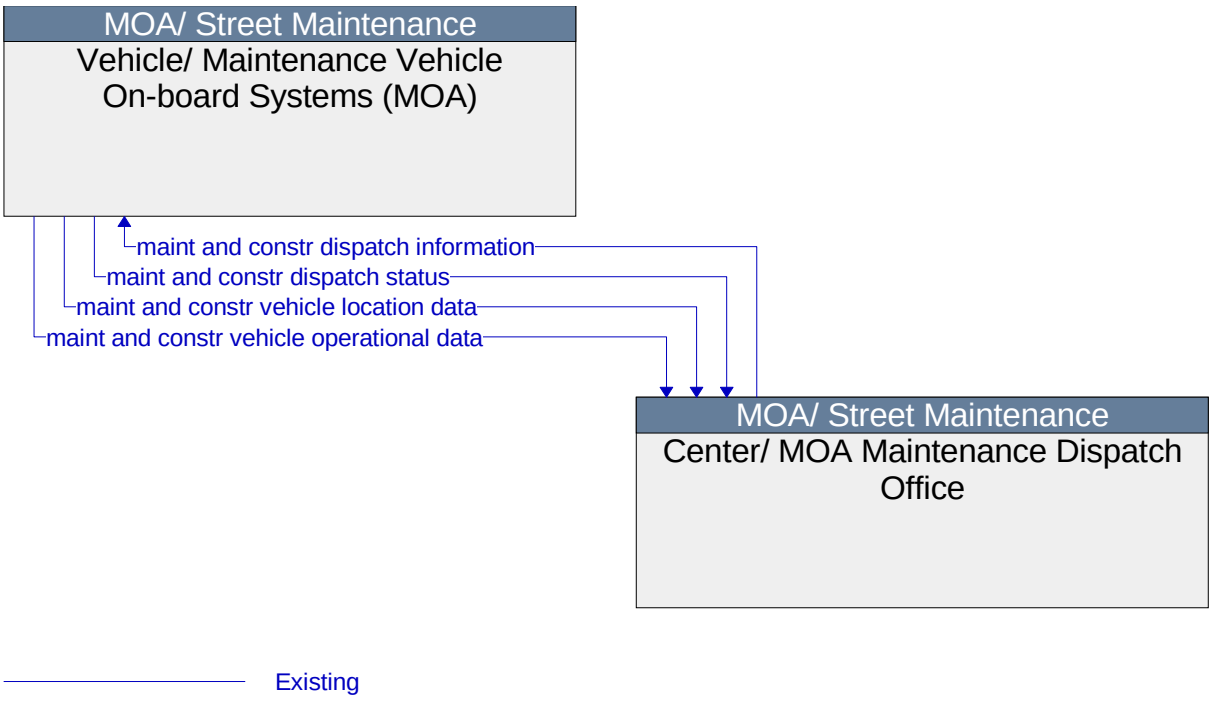

ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
media information request
incident information for media
road network conditions
road weather information
Media
Media Systems (T.V. and Radio)
Planned

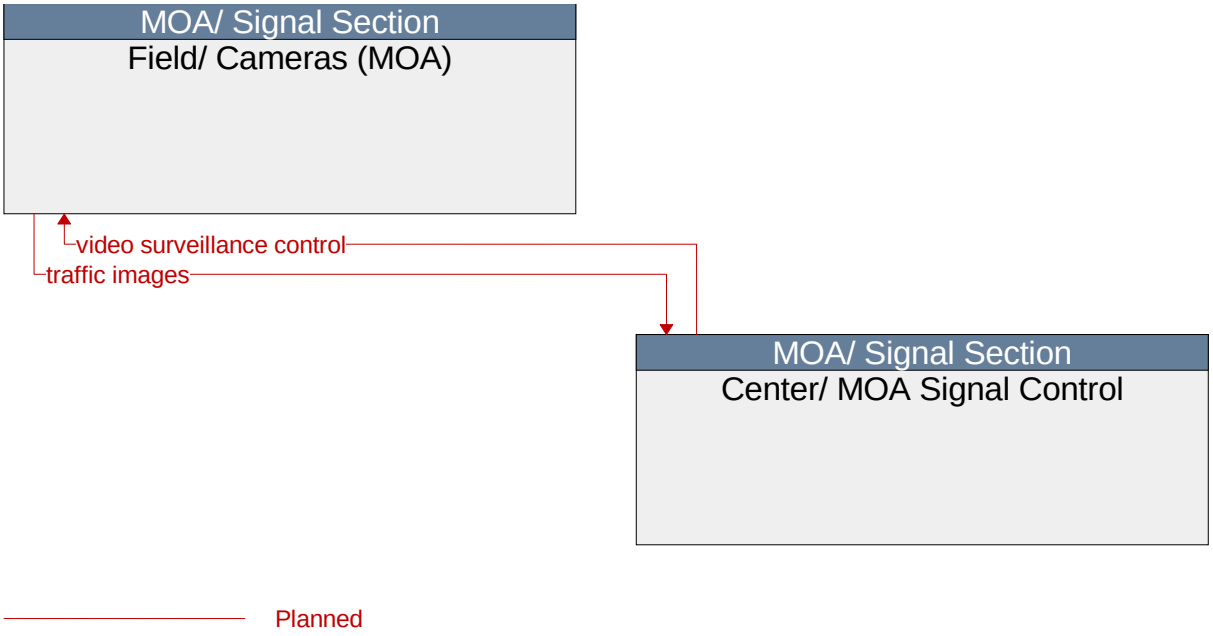

ADOTPF/ Program Development
Weather Prediction System
environmental conditions data
ADOTPF/ Program Development
Center/ MOA Integrated Transportation Operations and Communications Center
Planned

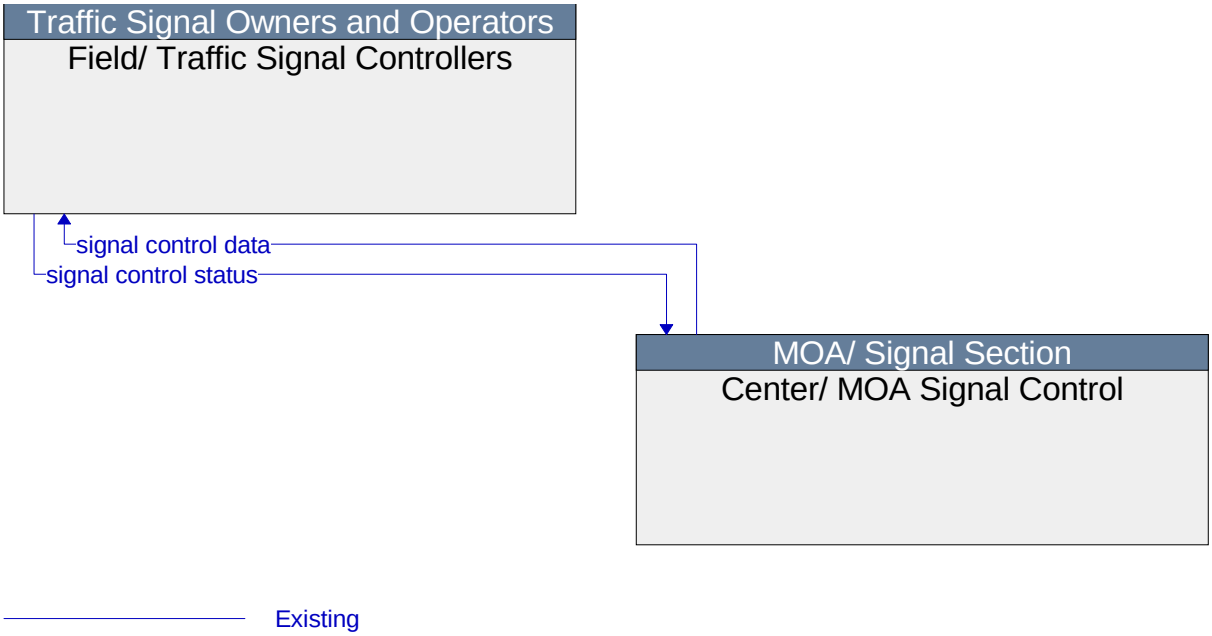

ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
maint and constr resource coordination
work plan coordination
MOA/ Street Maintenance
Center/ MOA Maintenance Dispatch Office
Planned

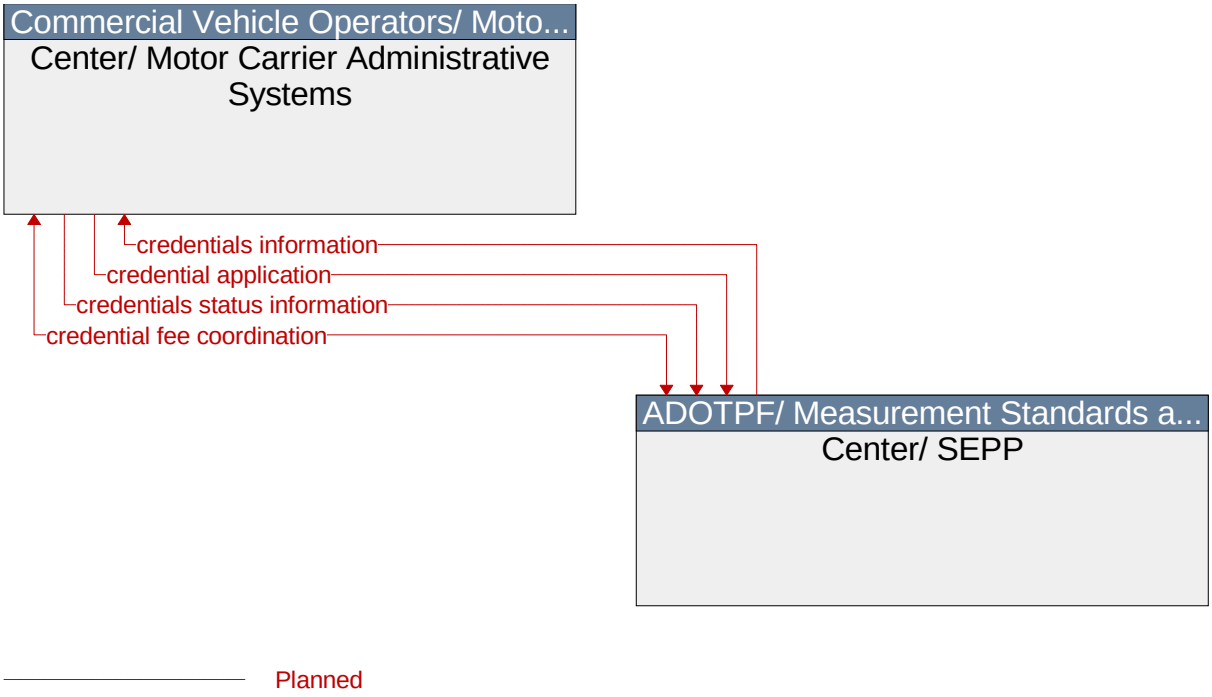

State of Alaska/ Division of Homelan...
Emergency Alert System
alerts and advisories
MOA/ Street Maintenance
Center/ MOA Maintenance Dispatch Office
Existing

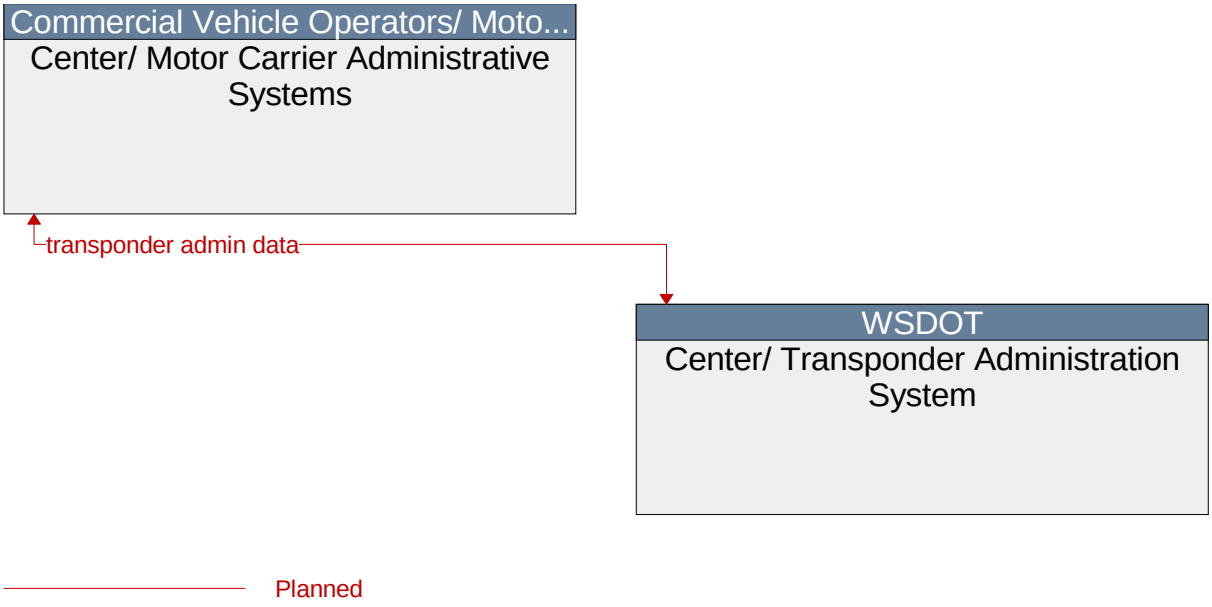

Media
Media Systems (T.V. and Radio)
maint and constr work plans
media information request
MOA/ Street Maintenance
Center/ MOA Maintenance Dispatch Office
Planned

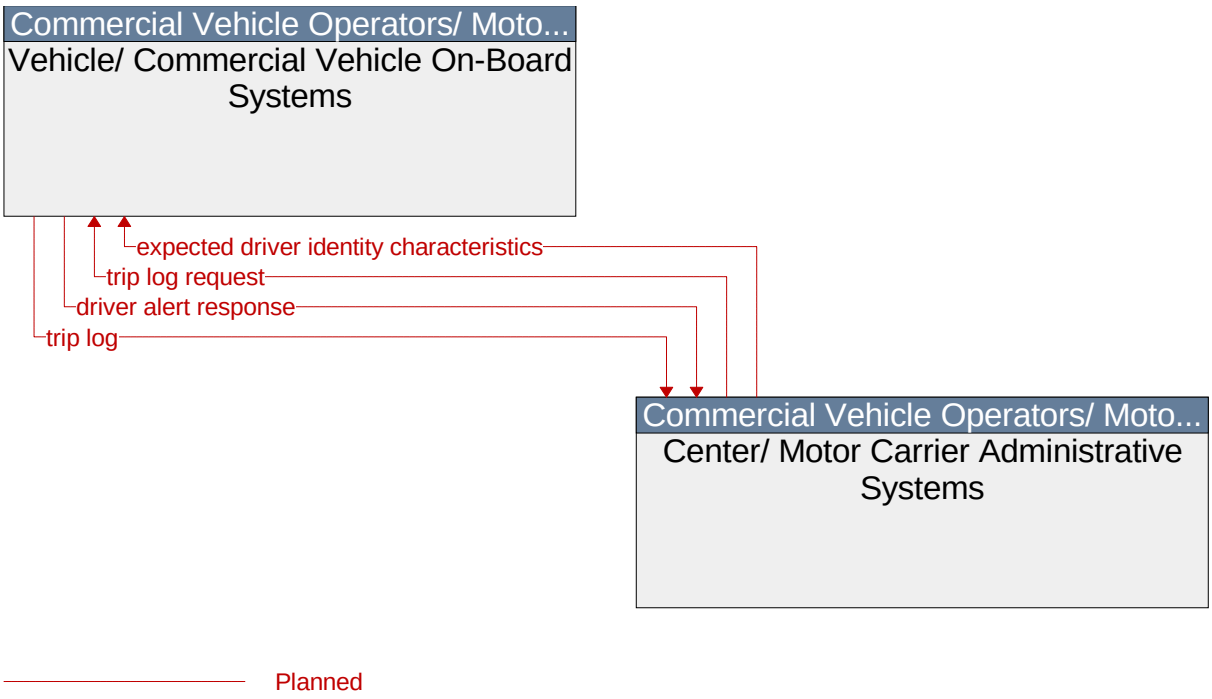

MOA/ Street Maintenance
Vehicle/ Maintenance Vehicle On-board Systems (MOA)
maint and constr dispatch information
maint and constr dispatch status
maint and constr vehicle location data
maint and constr vehicle operational data
MOA/ Street Maintenance
Center/ MOA Maintenance Dispatch Office
Existing

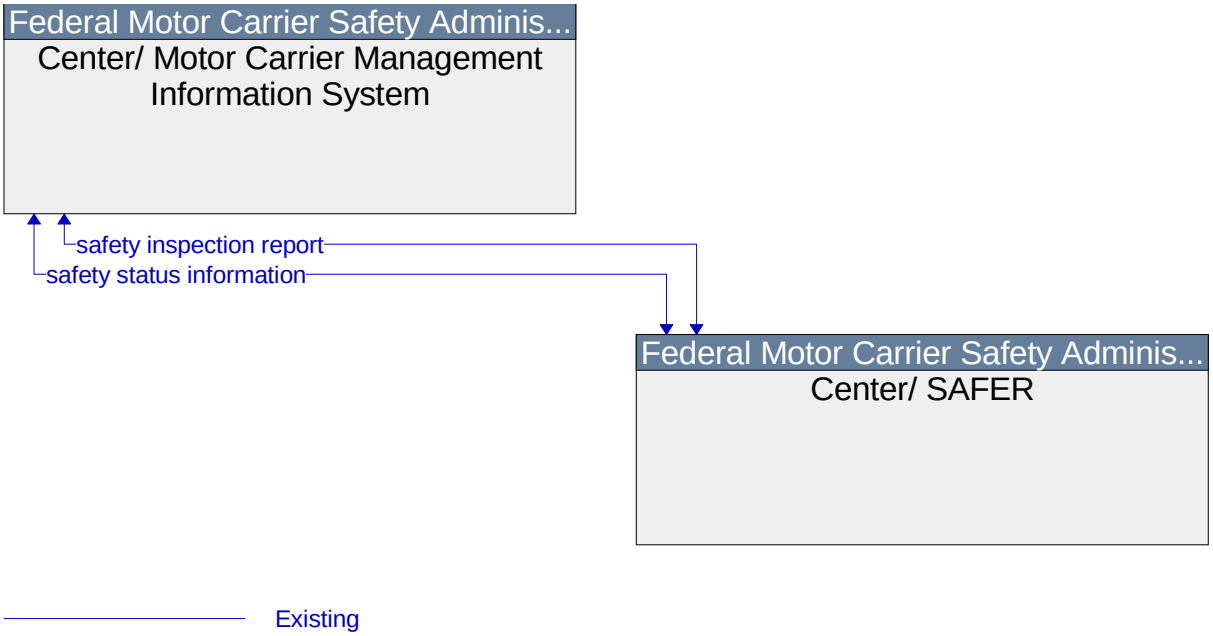

MOA/ Signal Section
Field/ Cameras (MOA)
video surveillance control
traffic images
MOA/ Signal Section
Center/ MOA Signal Control
Planned

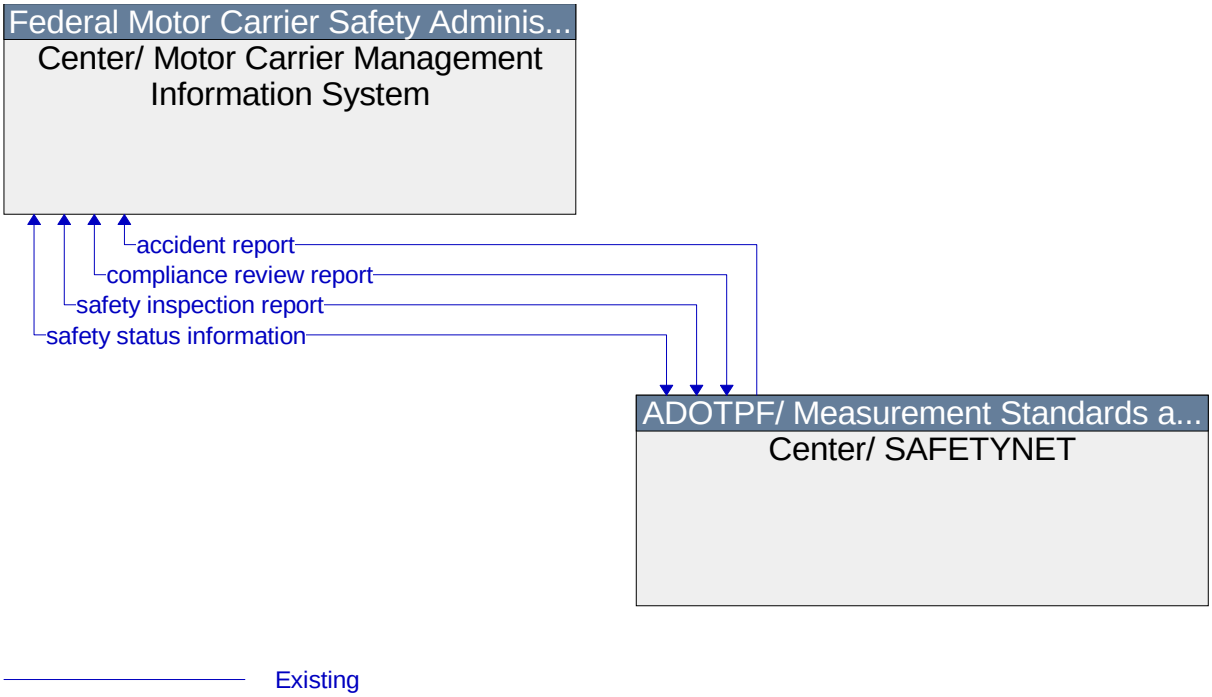

Traffic Signal Owners and Operators
Field/ Traffic Signal Controllers
signal control data
signal control status
MOA/ Signal Section
Center/ MOA Signal Control
Existing

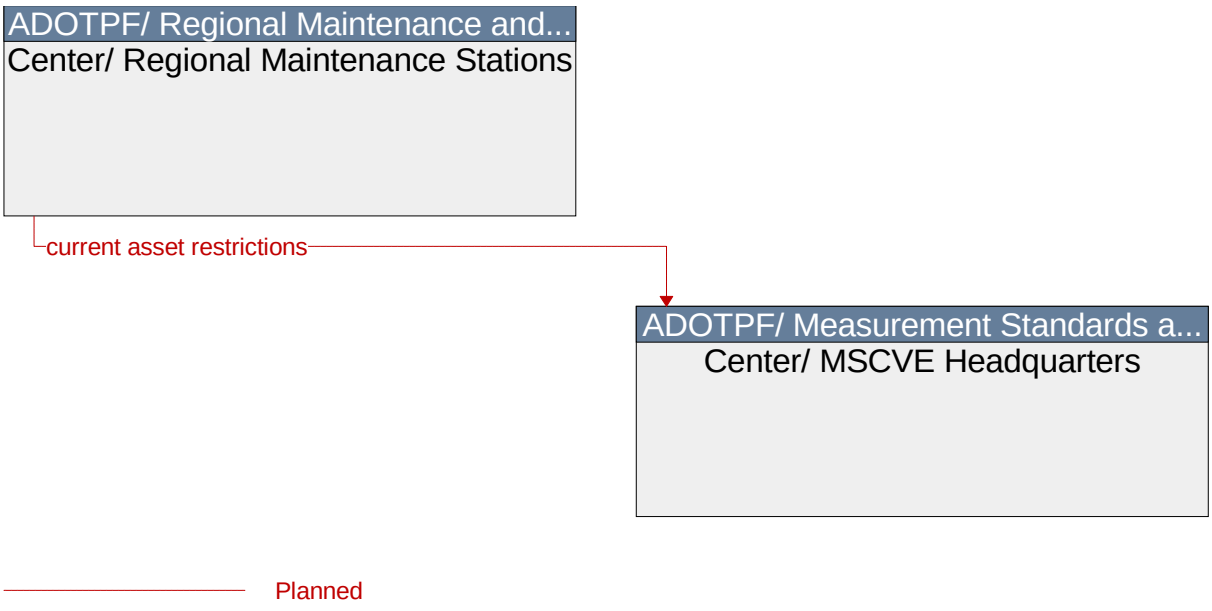

Commercial Vehicle Operators/ Moto...
Center/ Motor Carrier Administrative Systems
credentials information
credential application
credentials status information
credential fee coordination
ADOTPF/ Measurement Standards a...
Center/ SEPP
Planned

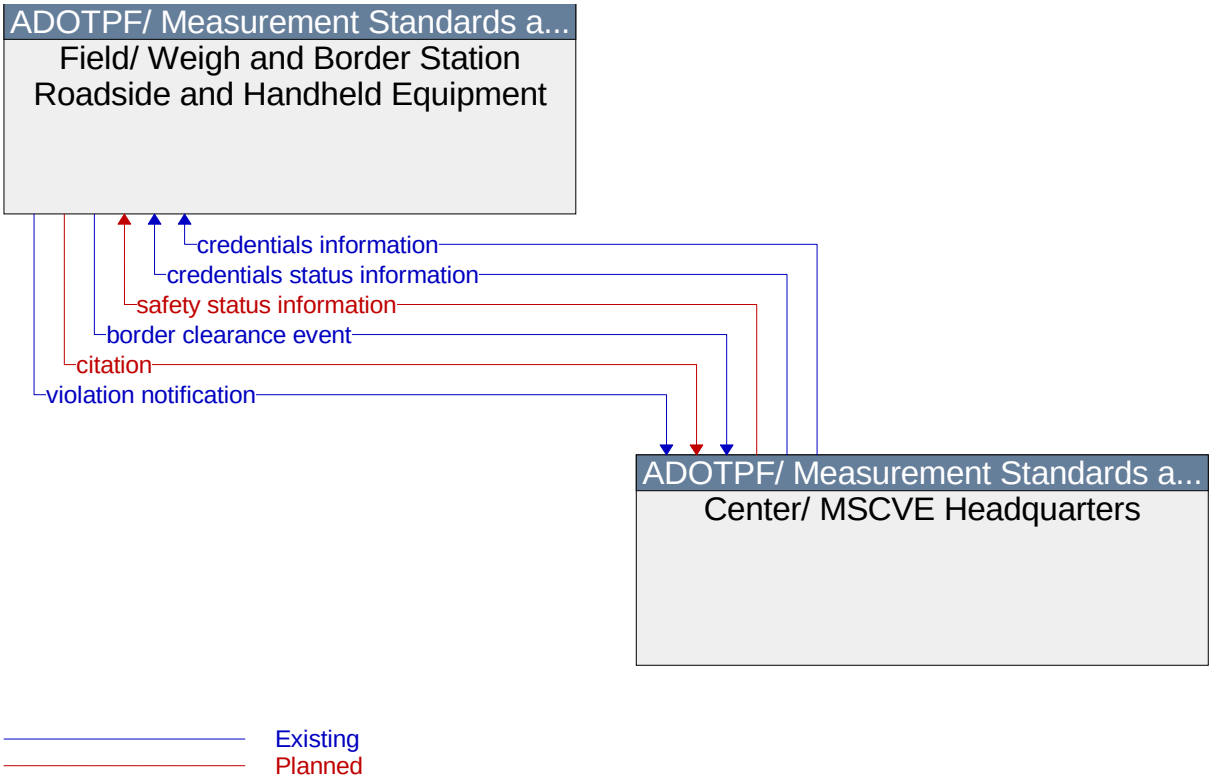

Commercial Vehicle Operators/ Moto...
Center/ Motor Carrier Administrative Systems
transponder admin data
WSDOT
Center/ Transponder Administration System
Planned

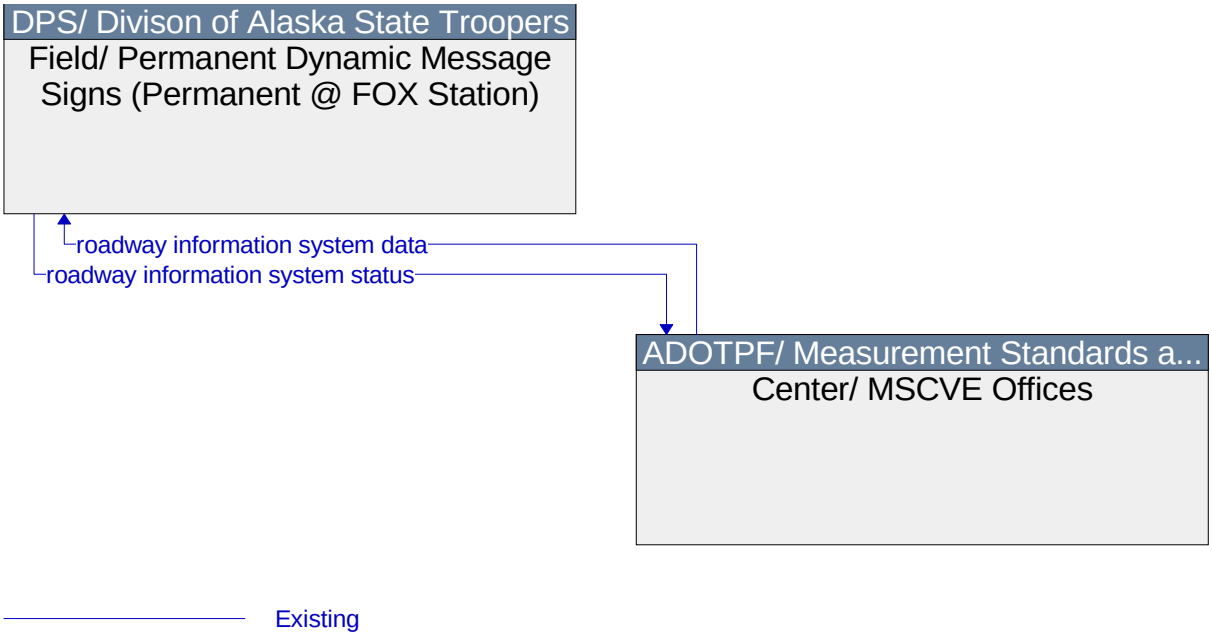

Commercial Vehicle Operators/ Moto...
Vehicle/ Commercial Vehicle On-Board Systems
expected driver identity characteristics
trip log request
driver alert response
trip log
Commercial Vehicle Operators/ Moto...
Center/ Motor Carrier Administrative Systems
Planned

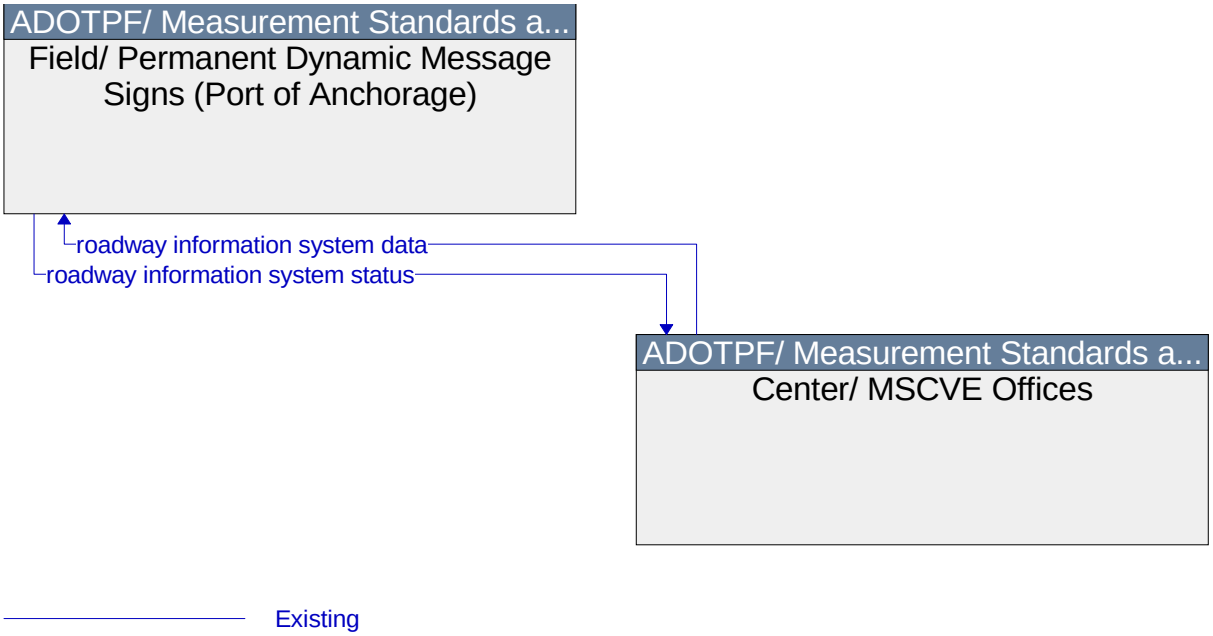

Federal Motor Carrier Safety Adminis...
Center/ Motor Carrier Management Information System
safety inspection report
safety status information
Federal Motor Carrier Safety Adminis...
Center/ SAFER
Existing

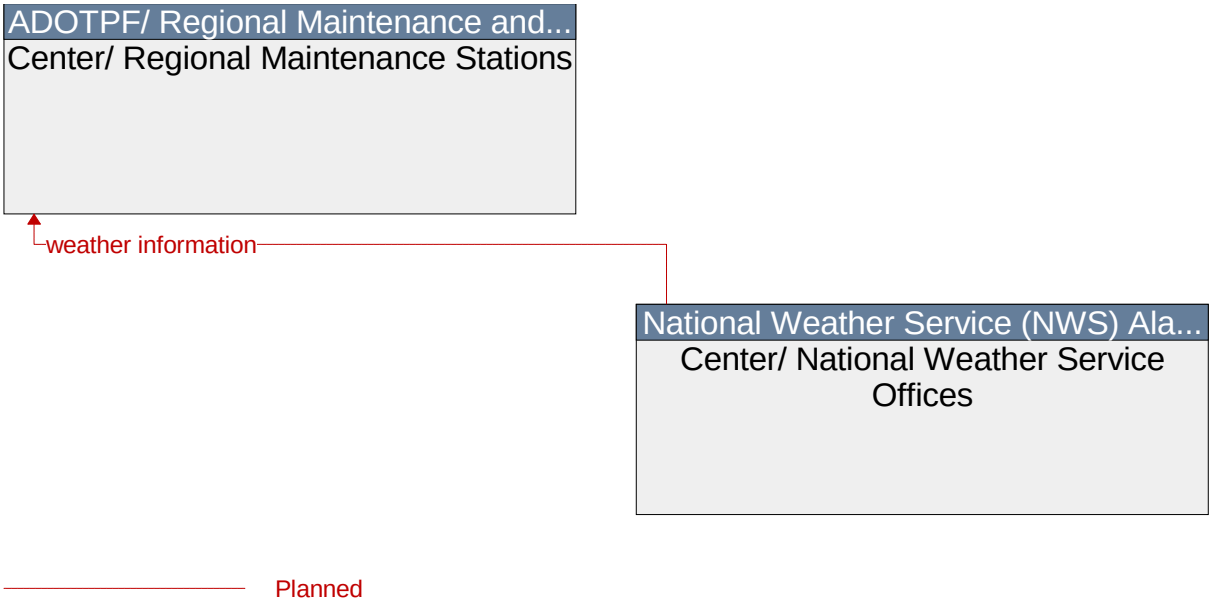

Federal Motor Carrier Safety Adminis...
Center/ Motor Carrier Management Information System
accident report
compliance review report
safety inspection report
safety status information
ADOTPF/ Measurement Standards a...
Center/ SAFETYNET
Existing

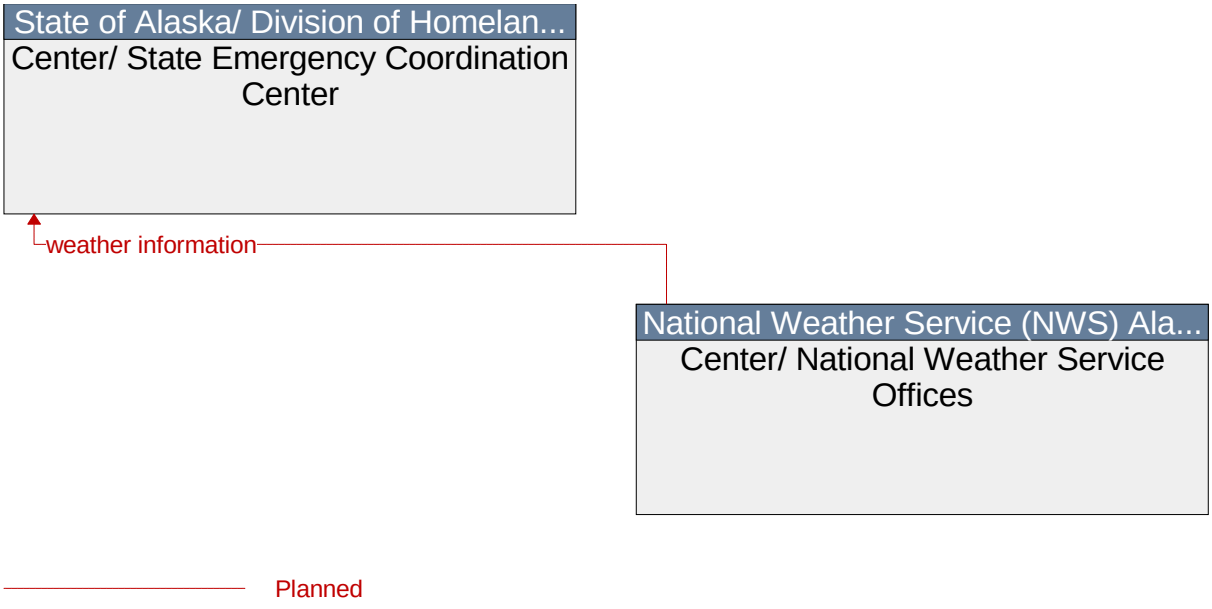

ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
current asset restrictions
ADOTPF/ Measurement Standards a...
Center/ MSCVE Headquarters
Planned

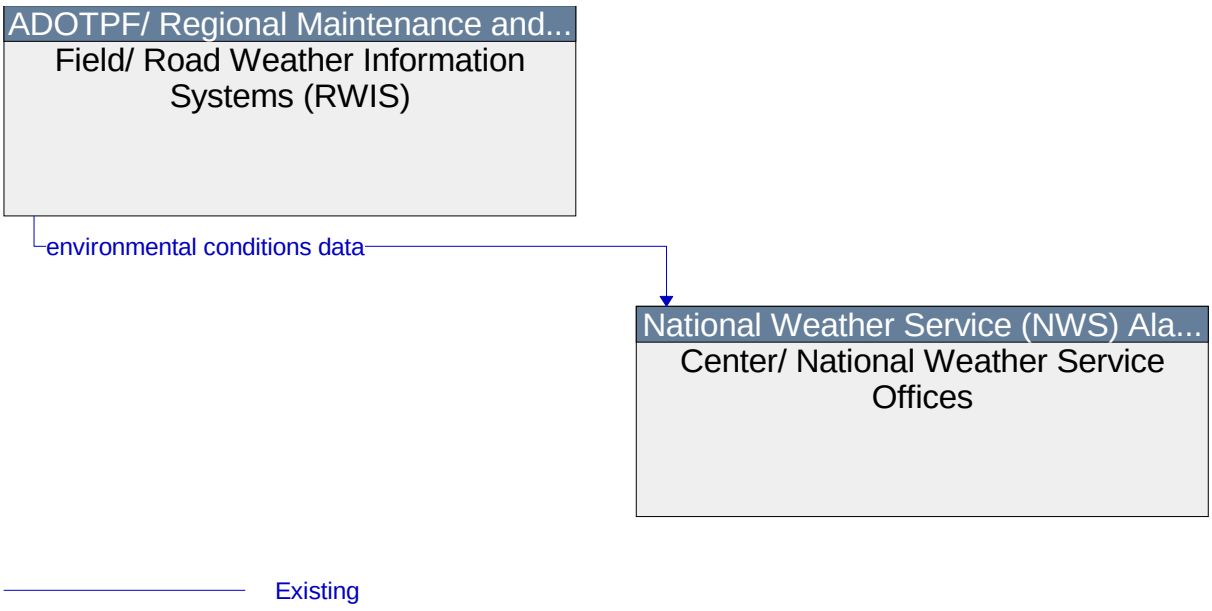

ADOTPF/ Measurement Standards a...
Field/ Weigh and Border Station Roadside and Handheld Equipment
credentials information
credentials status information
safety status information
border clearance event
citation
violation notification
ADOTPF/ Measurement Standards a...
Center/ MSCVE Headquarters
Existing
Planned

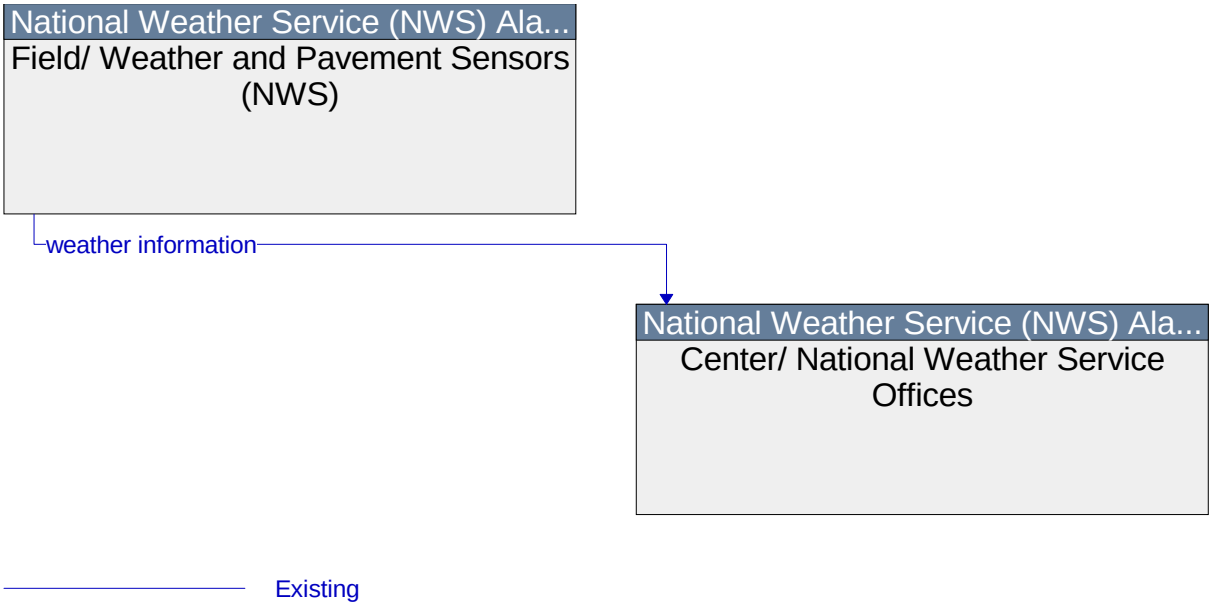

DPS/ Divison of Alaska State Troopers
Field/ Permanent Dynamic Message Signs (Permanent @ FOX Station)
roadway information system data
roadway information system status
ADOTPF/ Measurement Standards a...
Center/ MSCVE Offices
Existing

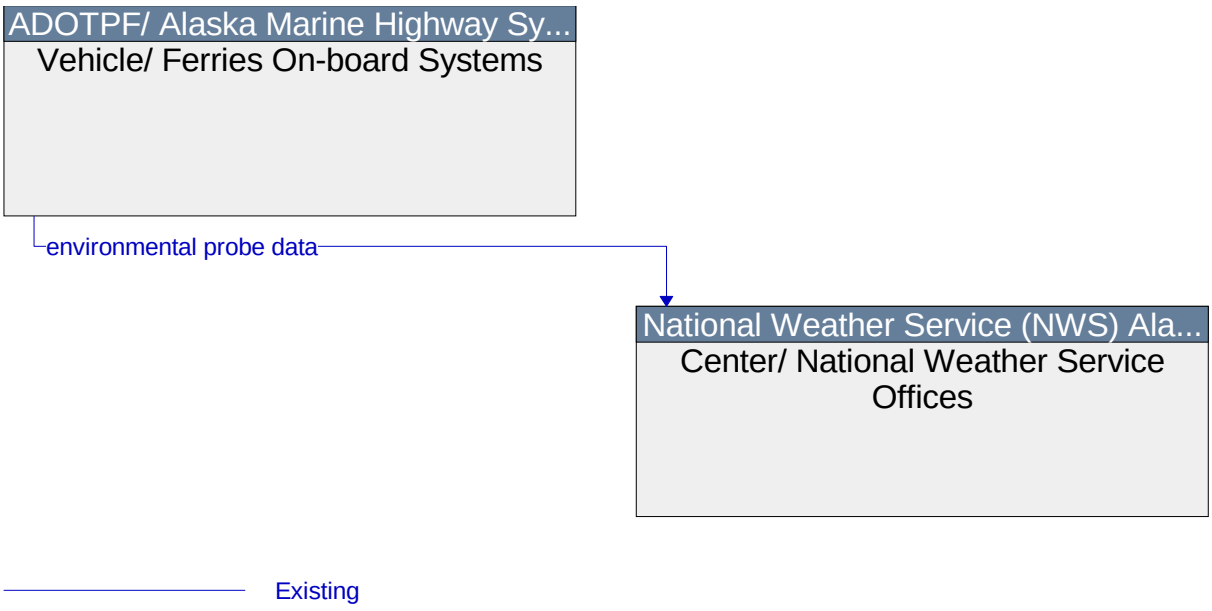

ADOTPF/ Measurement Standards a...
Field/ Permanent Dynamic Message Signs (Port of Anchorage)
roadway information system data
roadway information system status
ADOTPF/ Measurement Standards a...
Center/ MSCVE Offices
Existing

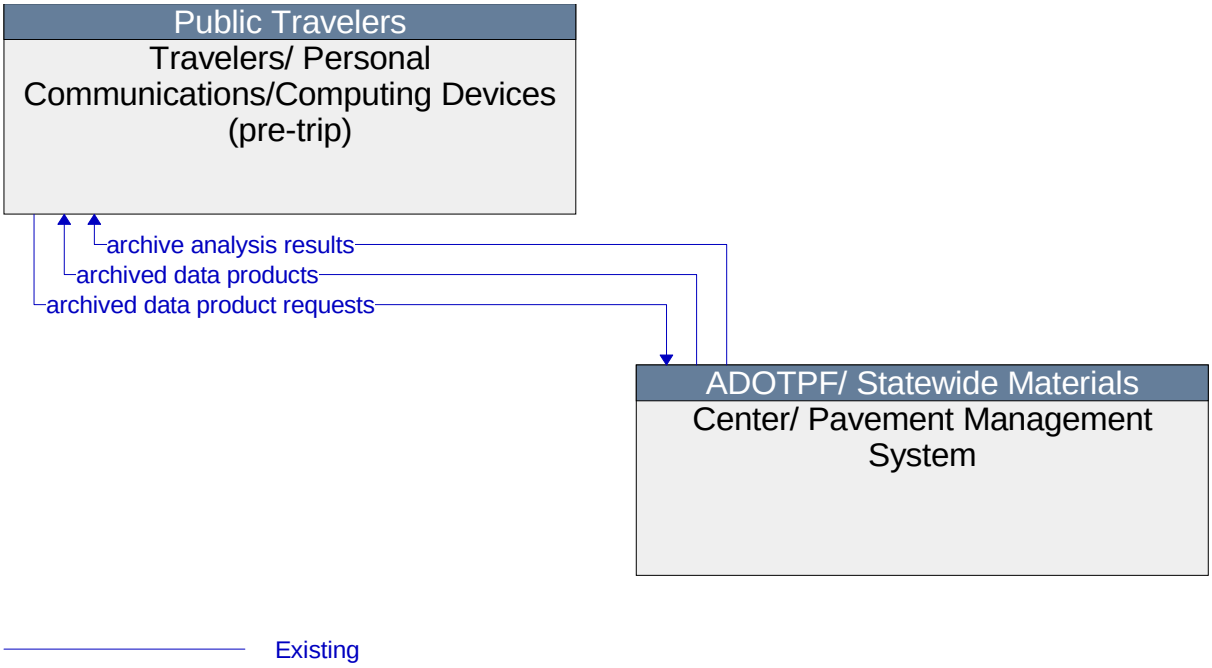

ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
weather information
National Weather Service (NWS) Ala...
Center/ National Weather Service Offices
Planned

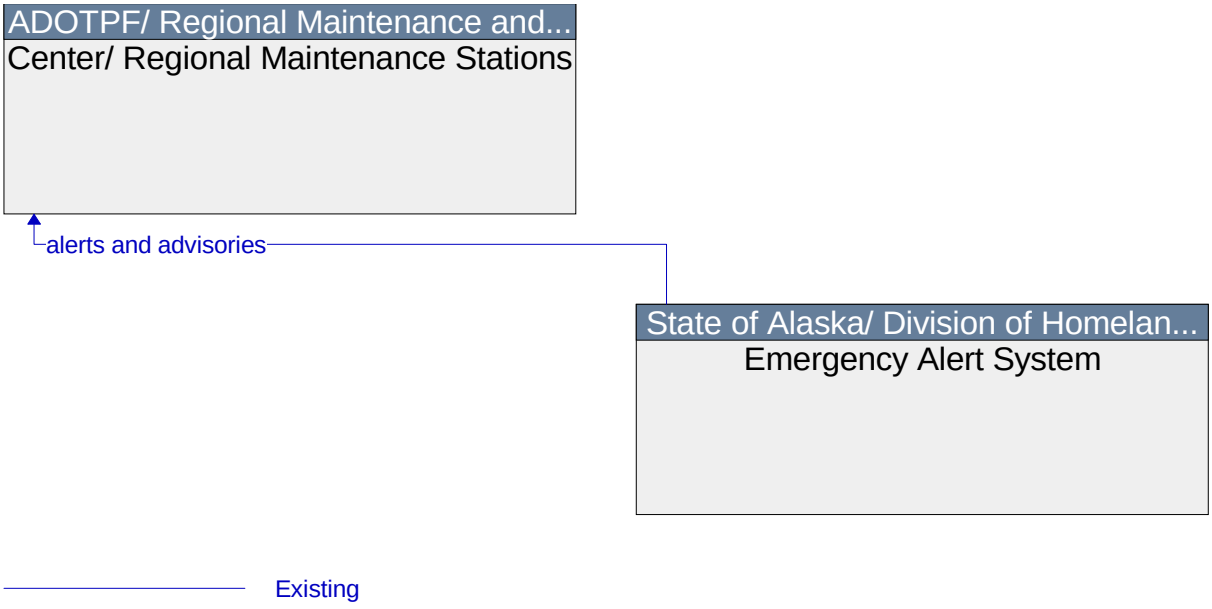

State of Alaska/ Division of Homelan...
Center/ State Emergency Coordination Center
weather information
National Weather Service (NWS) Ala...
Center/ National Weather Service Offices
Planned

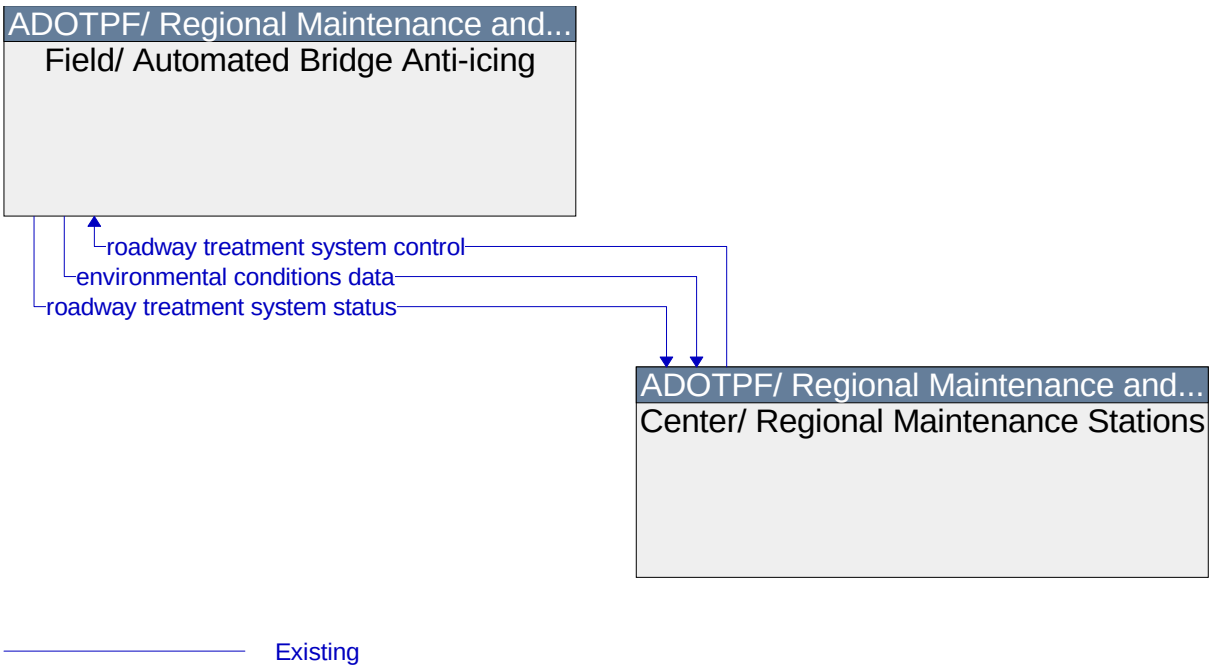

ADOTPF/ Regional Maintenance and...
Field/ Road Weather Information Systems (RWIS)
environmental conditions data
National Weather Service (NWS) Ala...
Center/ National Weather Service Offices
Existing

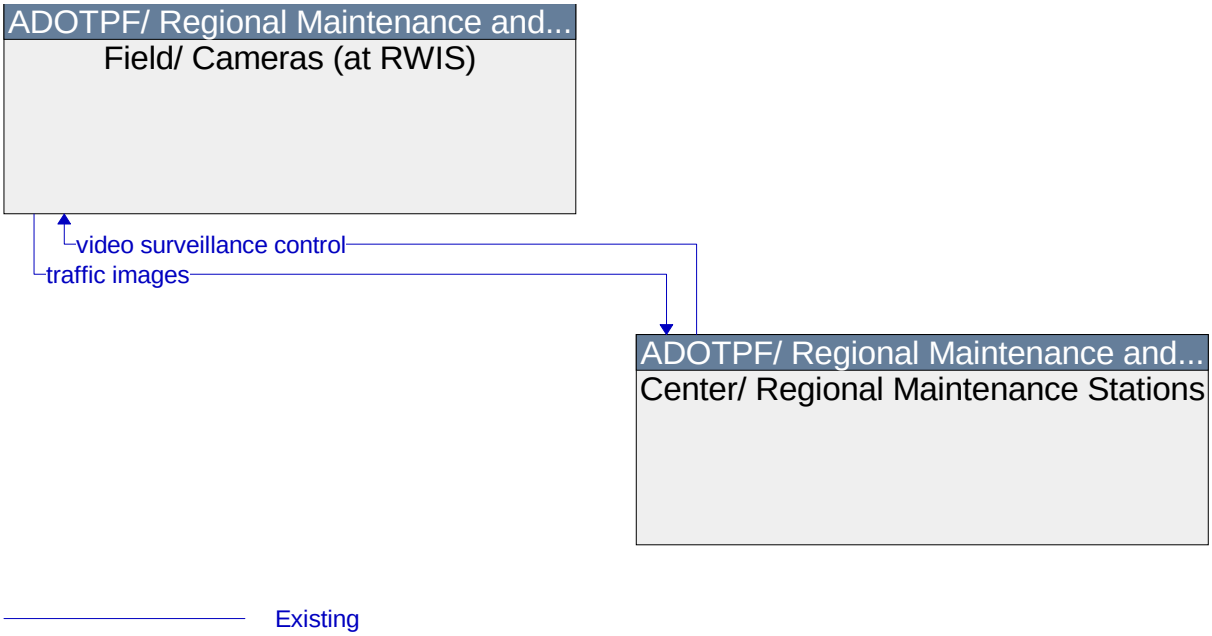

National Weather Service (NWS) Ala...
Field/ Weather and Pavement Sensors (NWS)
weather information
National Weather Service (NWS) Ala...
Center/ National Weather Service Offices
Existing

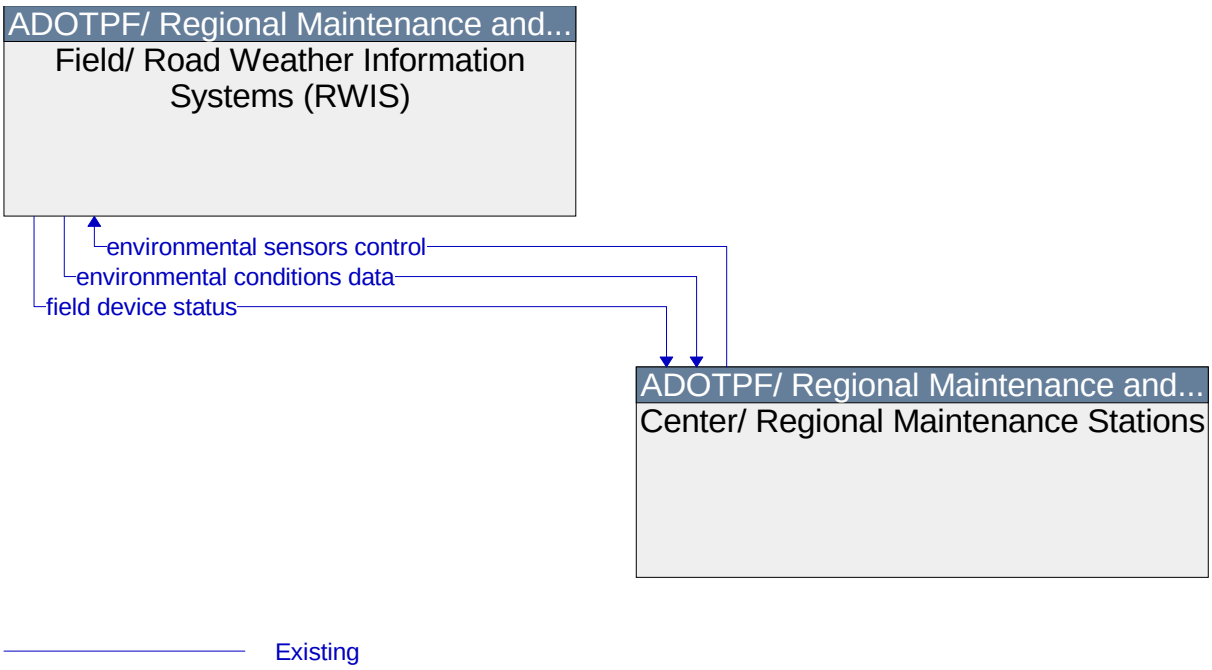

ADOTPF/ Alaska Marine Highway Sy...
Vehicle/ Ferries On-board Systems
environmental probe data
National Weather Service (NWS) Ala...
Center/ National Weather Service Offices
Existing

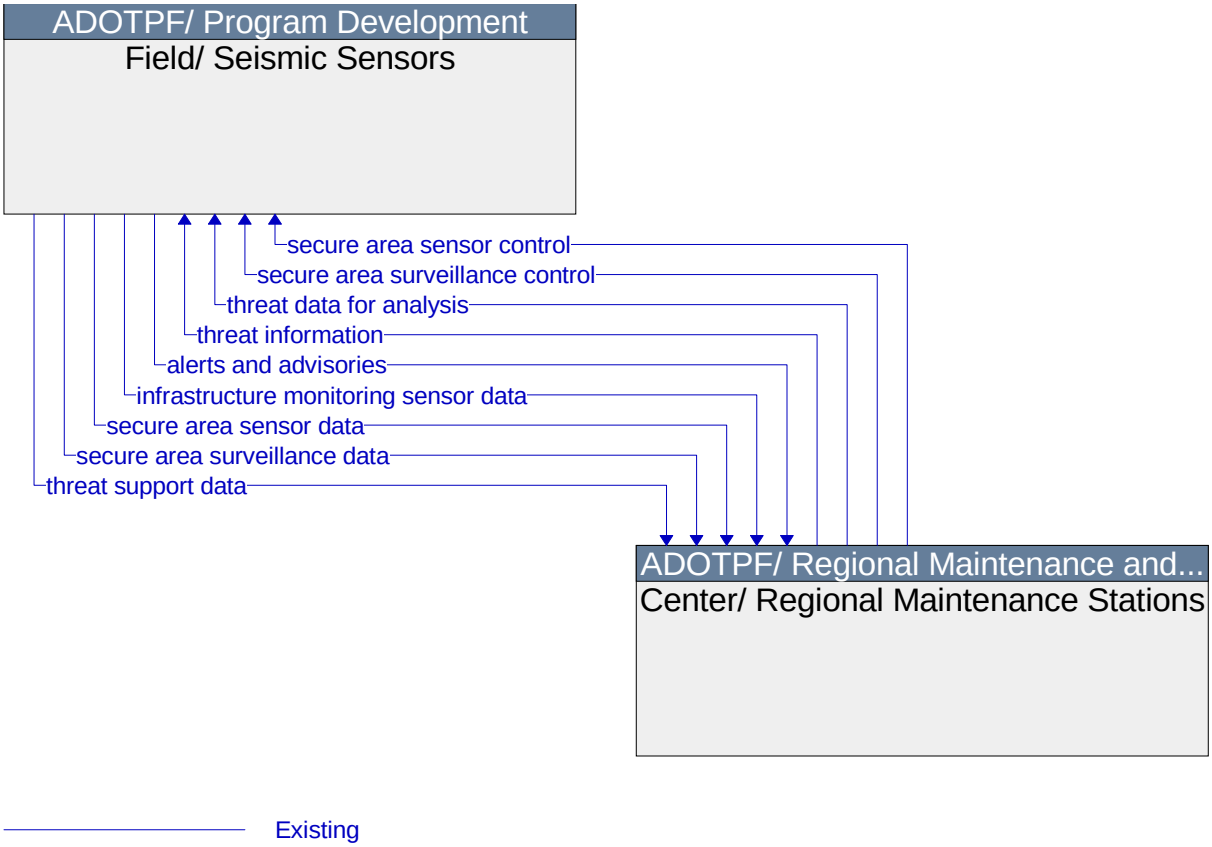

Public Travelers
Travelers/ Personal Communications/Computing Devices (pre-trip)
archive analysis results
archived data products
archived data product requests
ADOTPF/ Statewide Materials
Center/ Pavement Management System
Existing

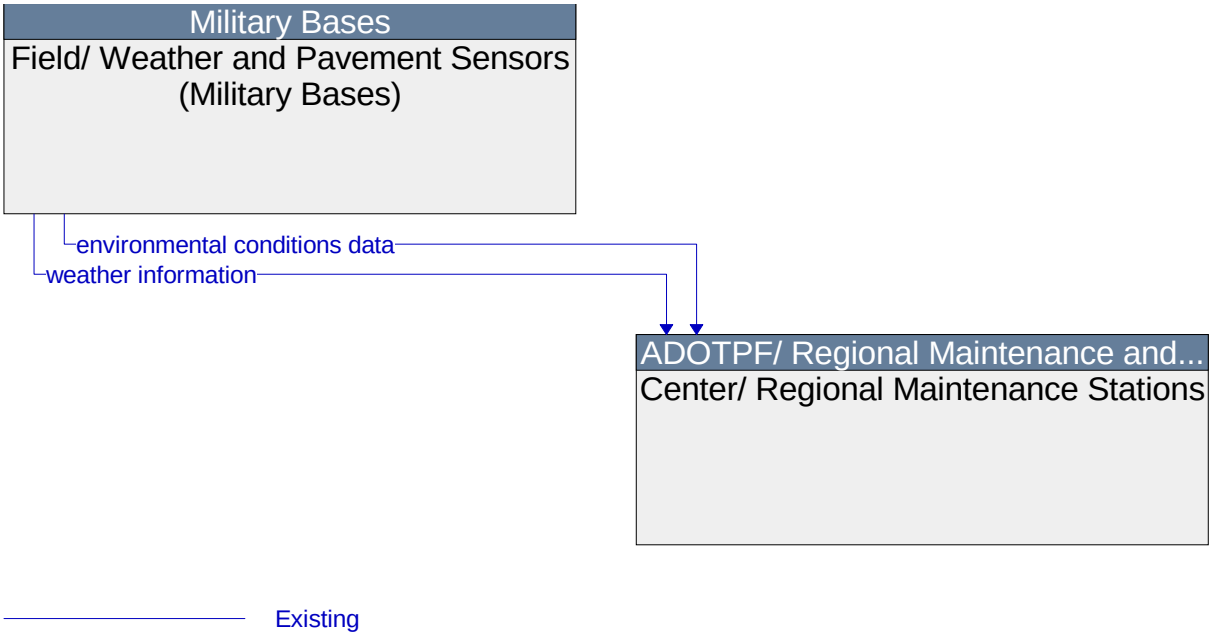

ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
alerts and advisories
State of Alaska/ Division of Homelan...
Emergency Alert System
Existing

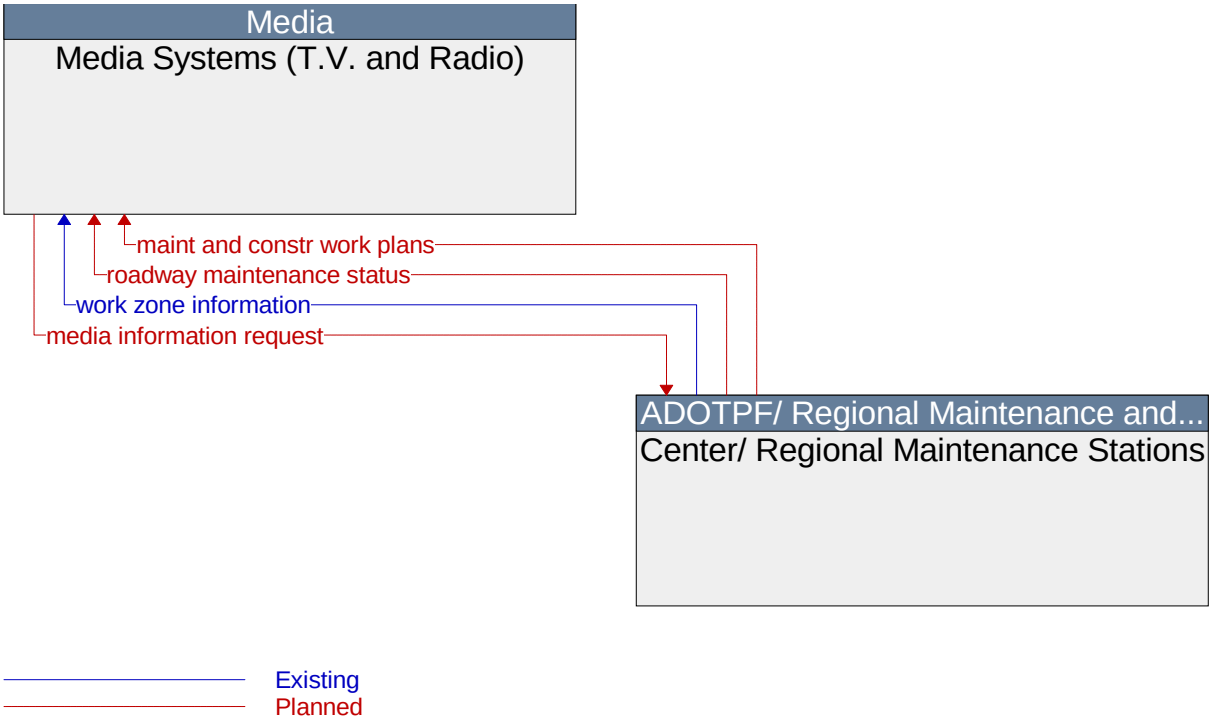

ADOTPF/ Regional Maintenance and...
Field/ Automated Bridge Anti-icing
roadway treatment system control
environmental conditions data
roadway treatment system status
ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
Existing

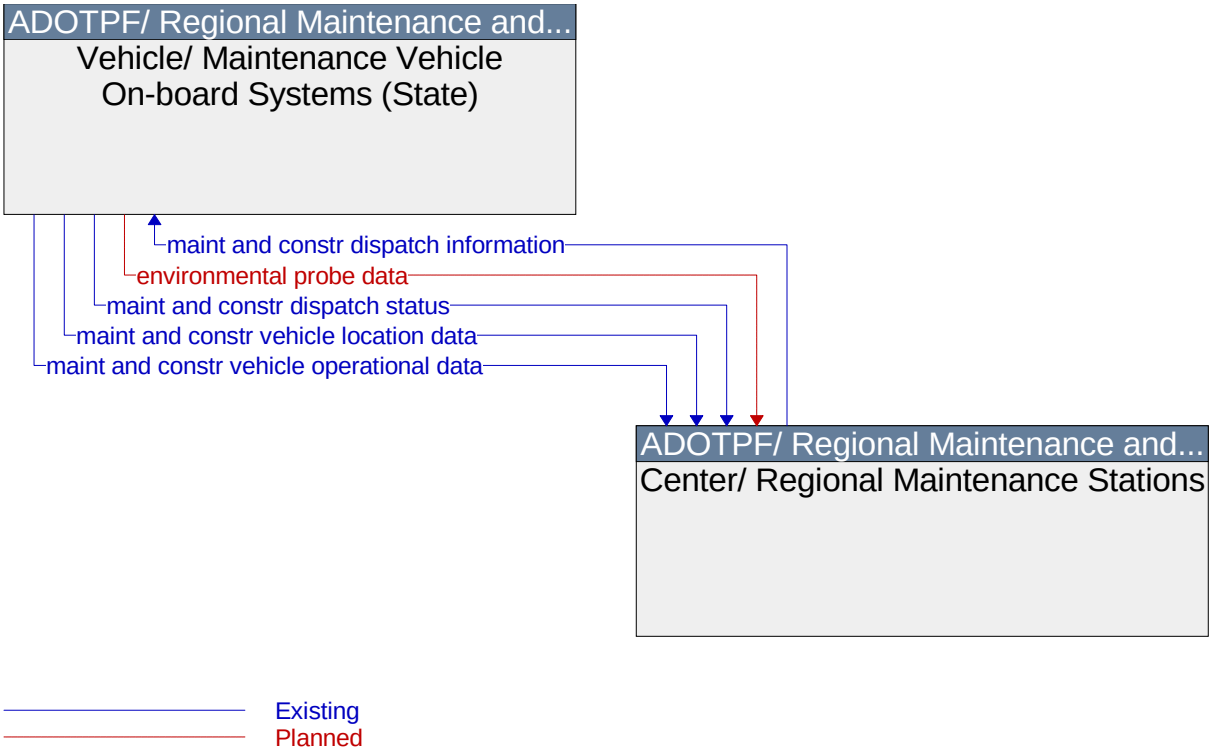

ADOTPF/ Regional Maintenance and...
Field/ Cameras (at RWIS)
video surveillance control
traffic images
ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
Existing

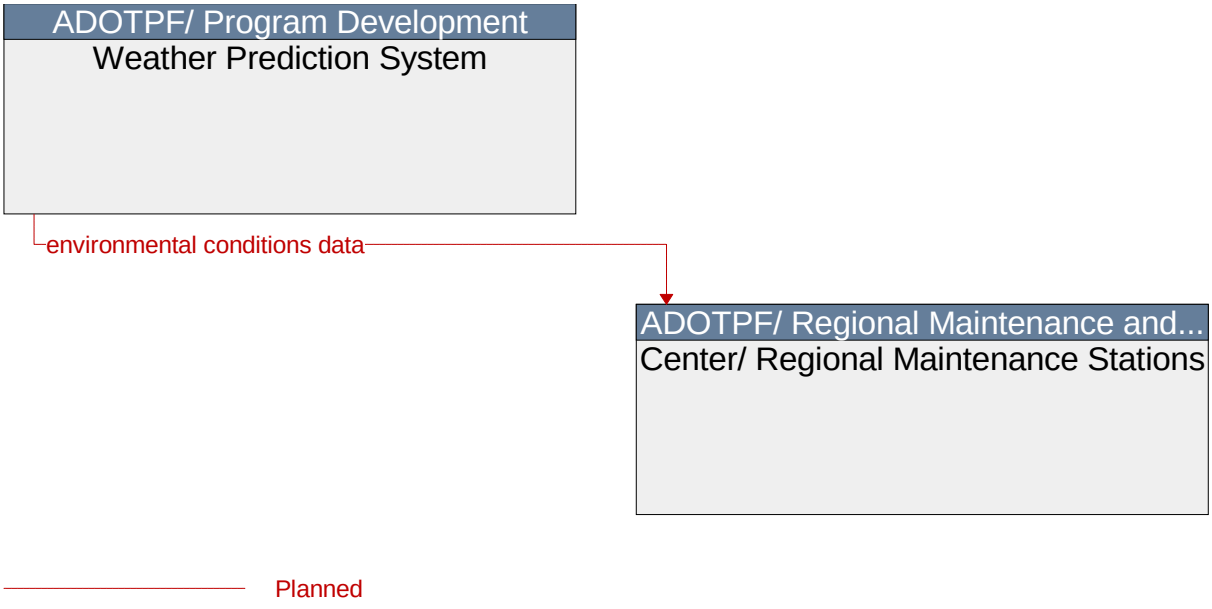

ADOTPF/ Regional Maintenance and...
Field/ Road Weather Information Systems (RWIS)
environmental sensors control
environmental conditions data
field device status
ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
Existing

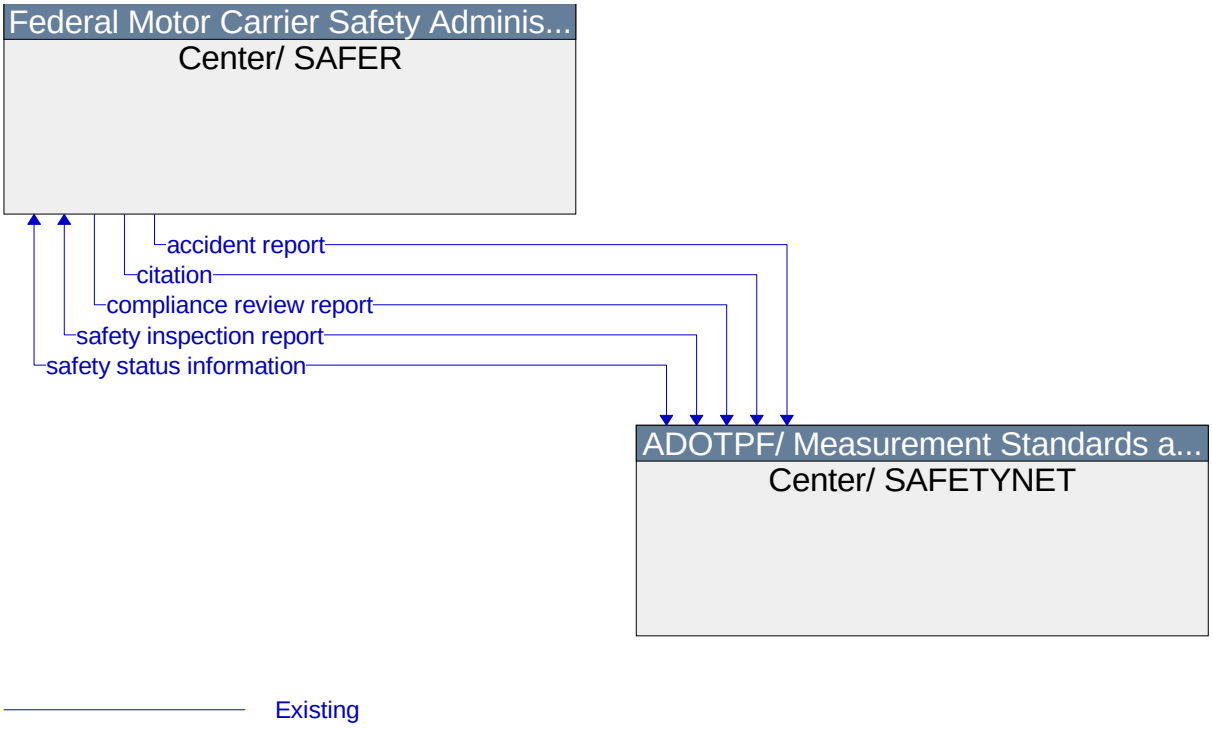

ADOTPF/ Program Development
Field/ Seismic Sensors
secure area sensor control
secure area surveillance control
threat data for analysis
threat information
alerts and advisories
infrastructure monitoring sensor data
secure area sensor data
secure area surveillance data
threat support data
ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
Existing

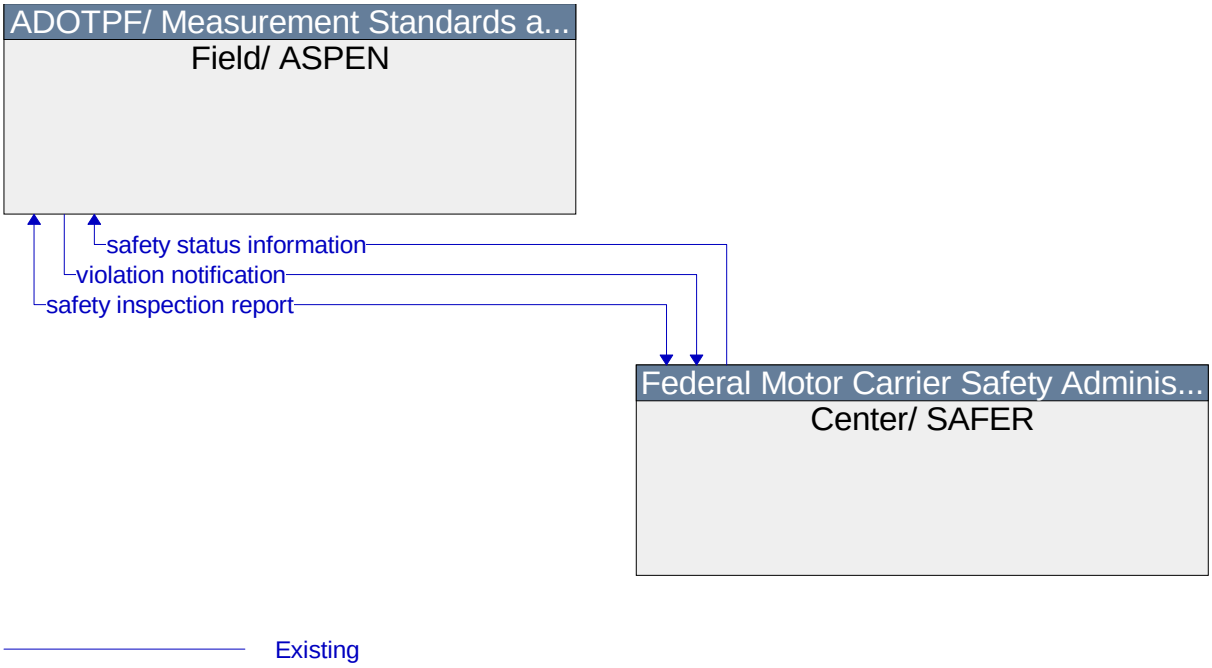

Military Bases
Field/ Weather and Pavement Sensors (Military Bases)
environmental conditions data
weather information
ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
Existing

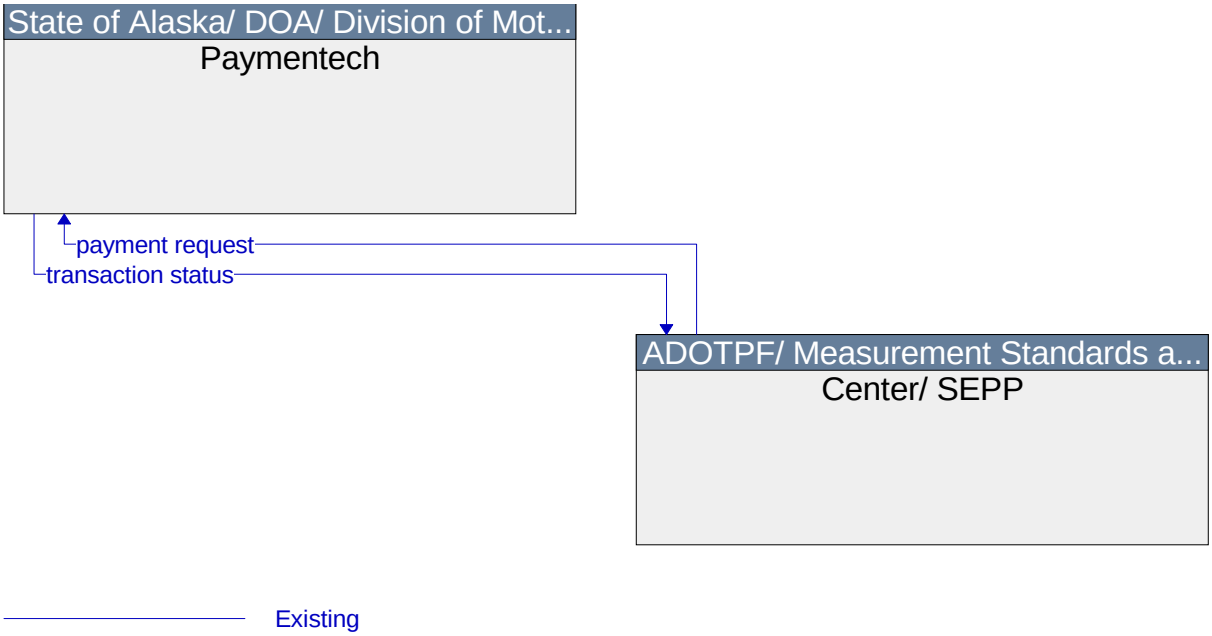

Media
Media Systems (T.V. and Radio)
maint and constr work plans
roadway maintenance status
work zone information
media information request
ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
Existing
Planned

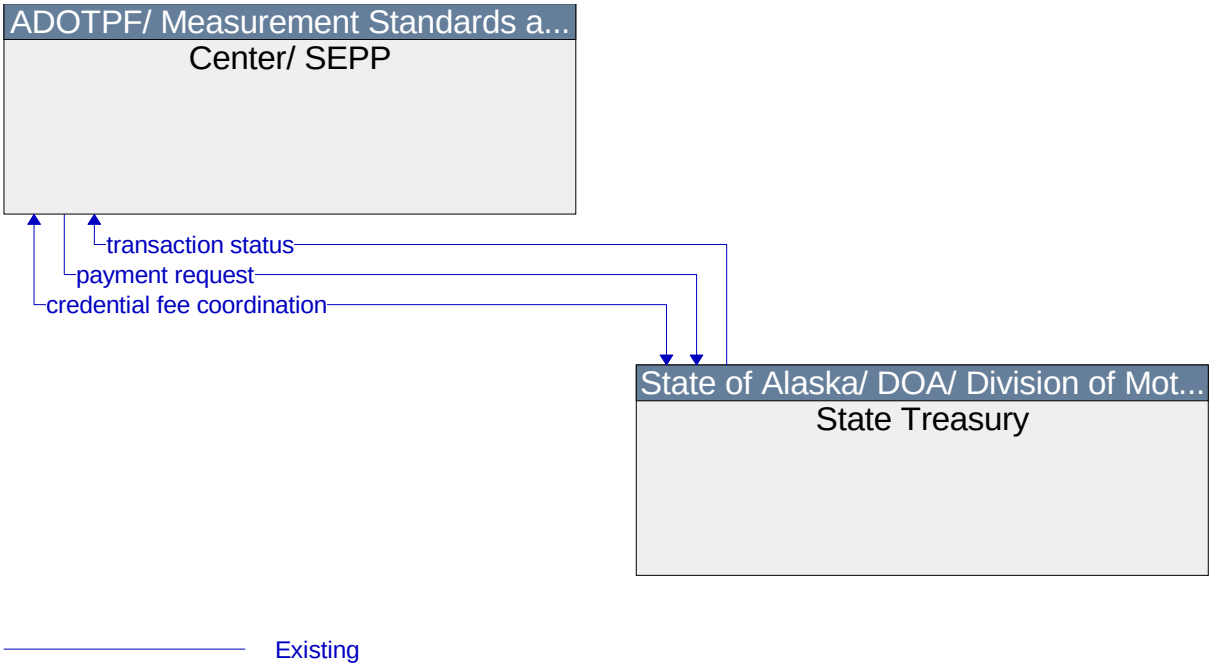

ADOTPF/ Regional Maintenance and...
Vehicle/ Maintenance Vehicle On-board Systems (State)
maint and constr dispatch information
environmental probe data
maint and constr dispatch status
maint and constr vehicle location data
maint and constr vehicle operational data
ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
Existing
Planned

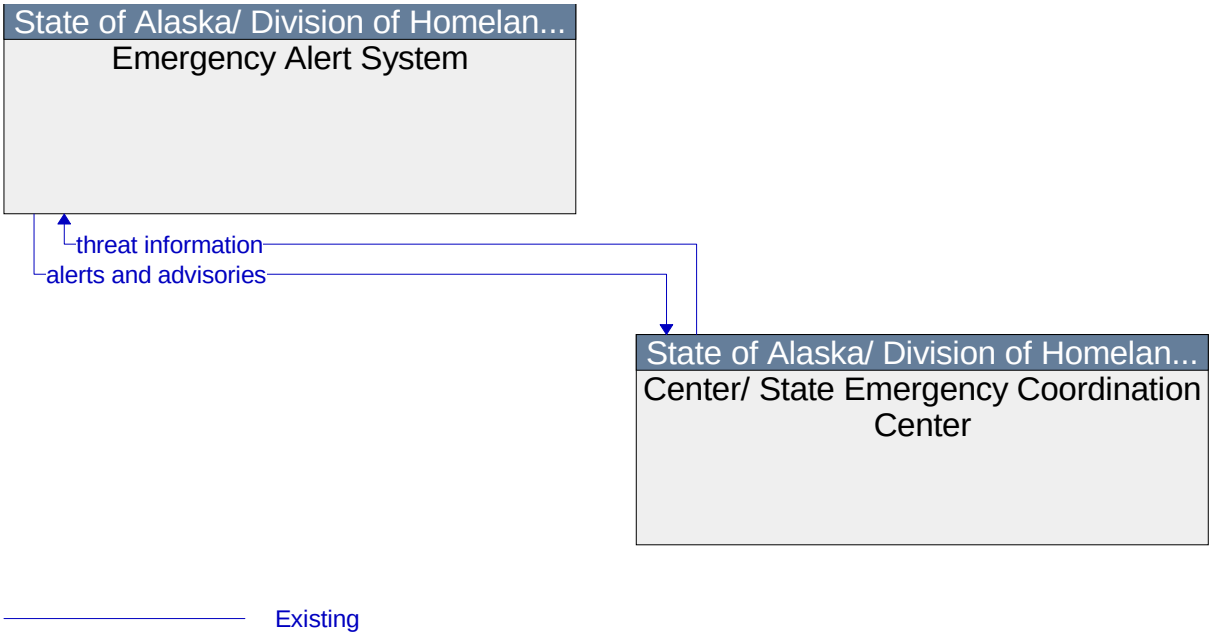

ADOTPF/ Program Development
Weather Prediction System
environmental conditions data
ADOTPF/ Regional Maintenance and...
Center/ Regional Maintenance Stations
Planned

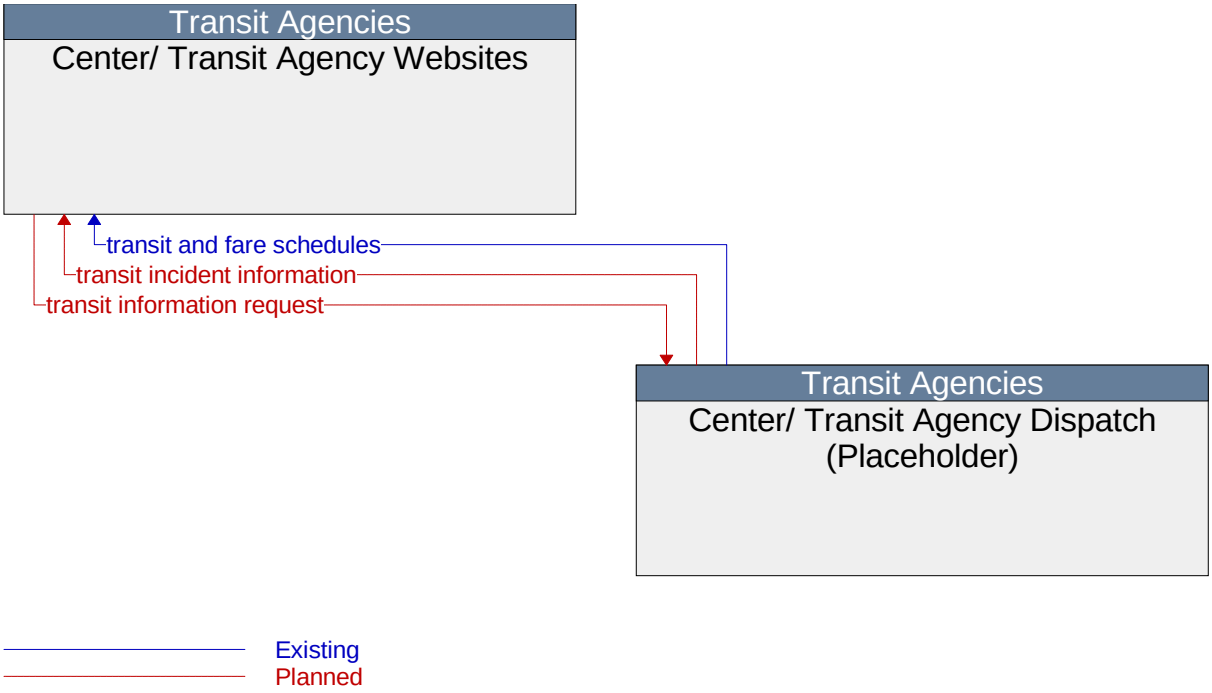

Federal Motor Carrier Safety Adminis...
Center/ SAFER
accident report
citation
compliance review report
safety inspection report
safety status information
ADOTPF/ Measurement Standards a...
Center/ SAFETYNET
Existing

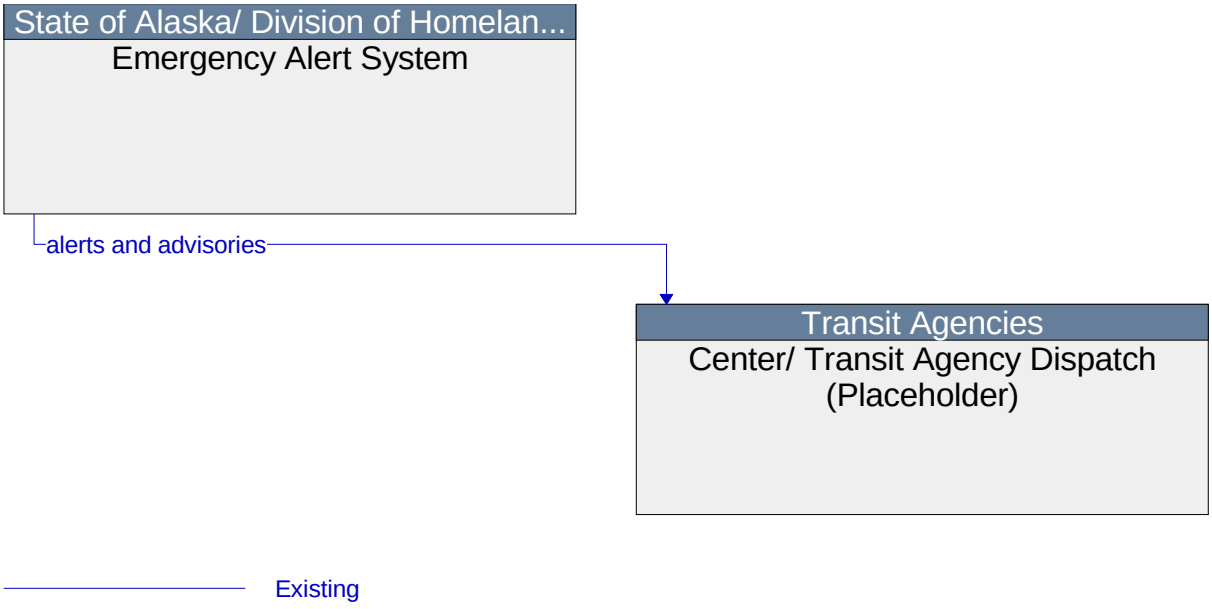

ADOTPF/ Measurement Standards a...
Field/ ASPEN
safety status information
violation notification
safety inspection report
Federal Motor Carrier Safety Adminis...
Center/ SAFER
Existing

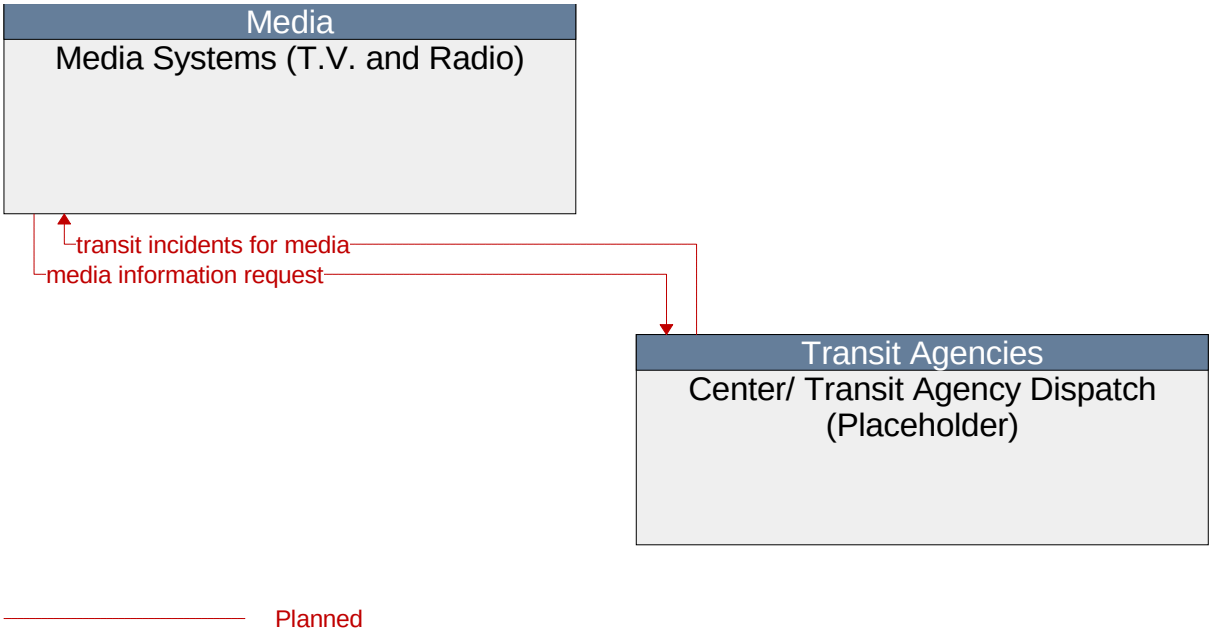

State of Alaska/ DOA/ Division of Mot...
Paymentech
payment request
transaction status
ADOTPF/ Measurement Standards a...
Center/ SEPP
Existing

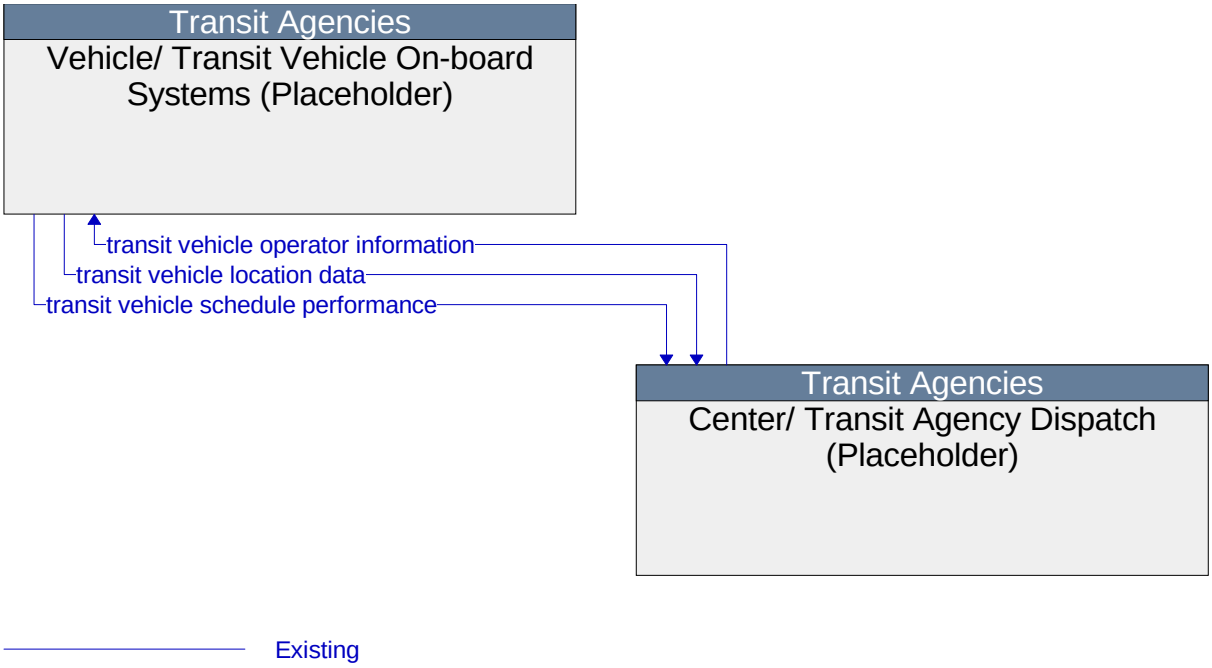

ADOTPF/ Measurement Standards a...
Center/ SEPP
transaction status
payment request
credential fee coordination
State of Alaska/ DOA/ Division of Mot...
State Treasury
Existing

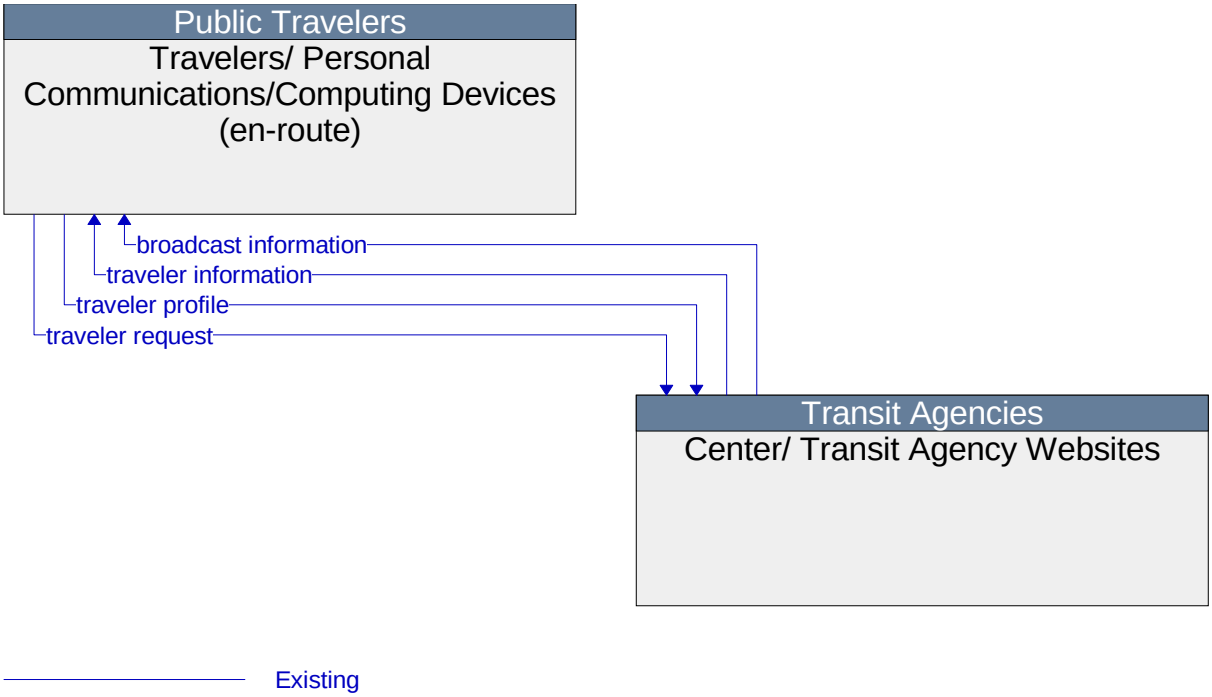

State of Alaska/ Division of Homelan...
Emergency Alert System
threat information
alerts and advisories
State of Alaska/ Division of Homelan...
Center/ State Emergency Coordination Center
Existing

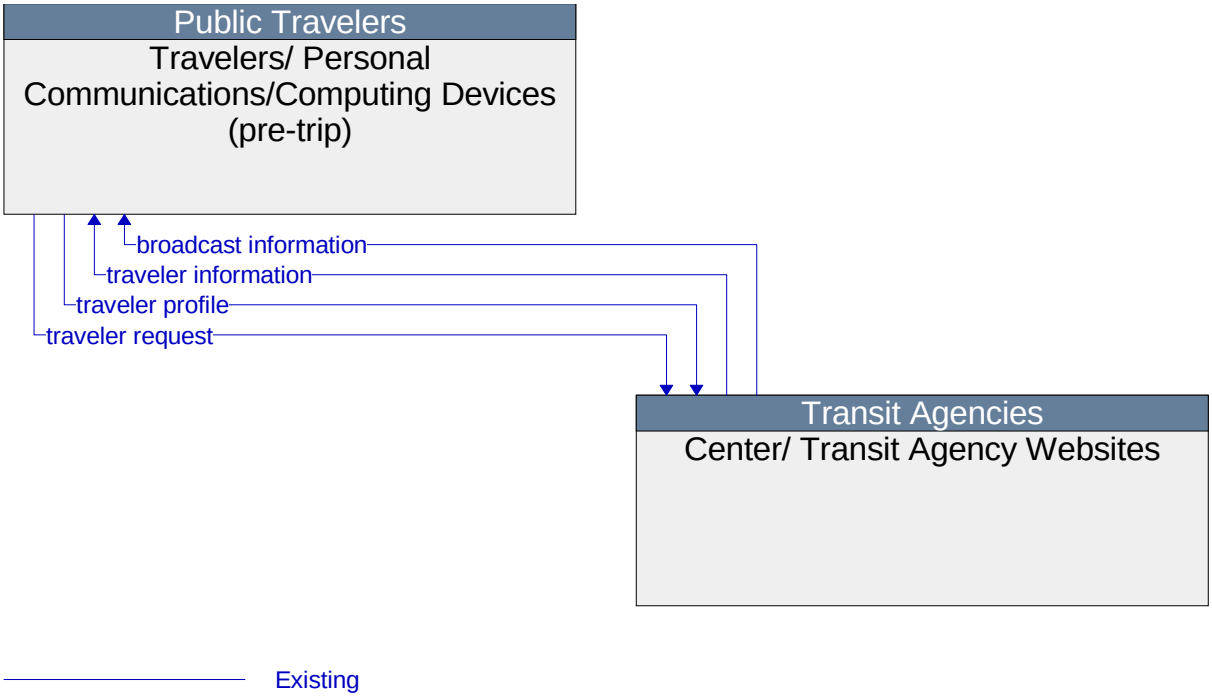

Transit Agencies
Center/ Transit Agency Websites
transit and fare schedules
transit incident information
transit information request
Transit Agencies
Center/ Transit Agency Dispatch
(Placeholder)
Existing
Planned

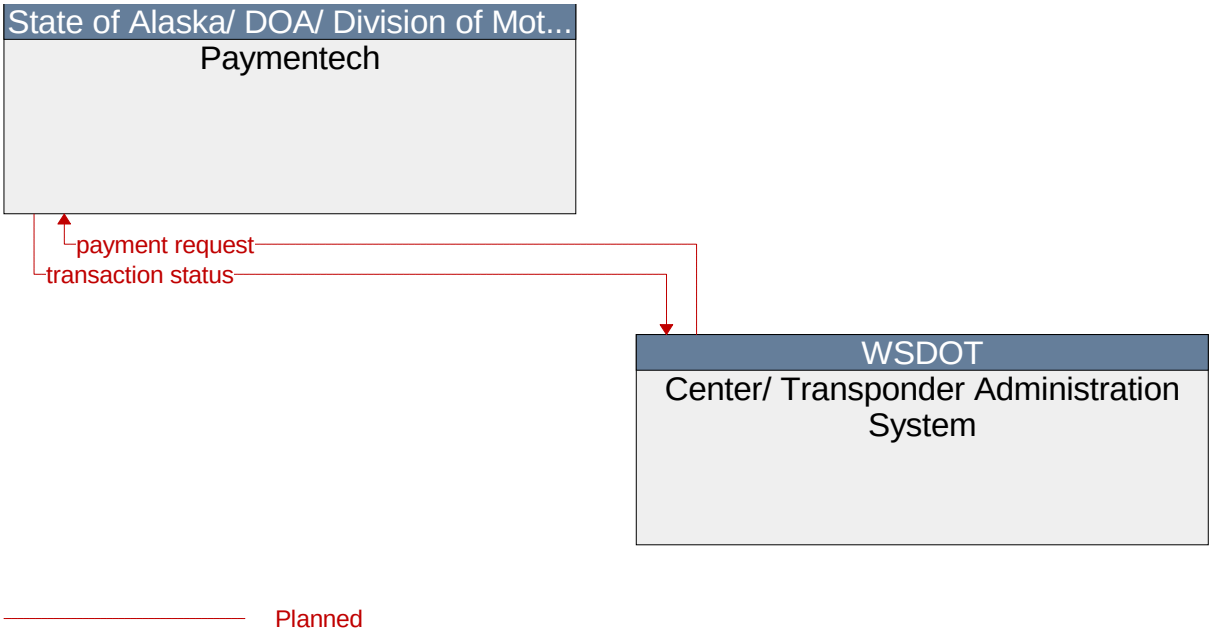

State of Alaska/ Division of Homelan...
Emergency Alert System
alerts and advisories
Transit Agencies
Center/ Transit Agency Dispatch (Placeholder)
Existing

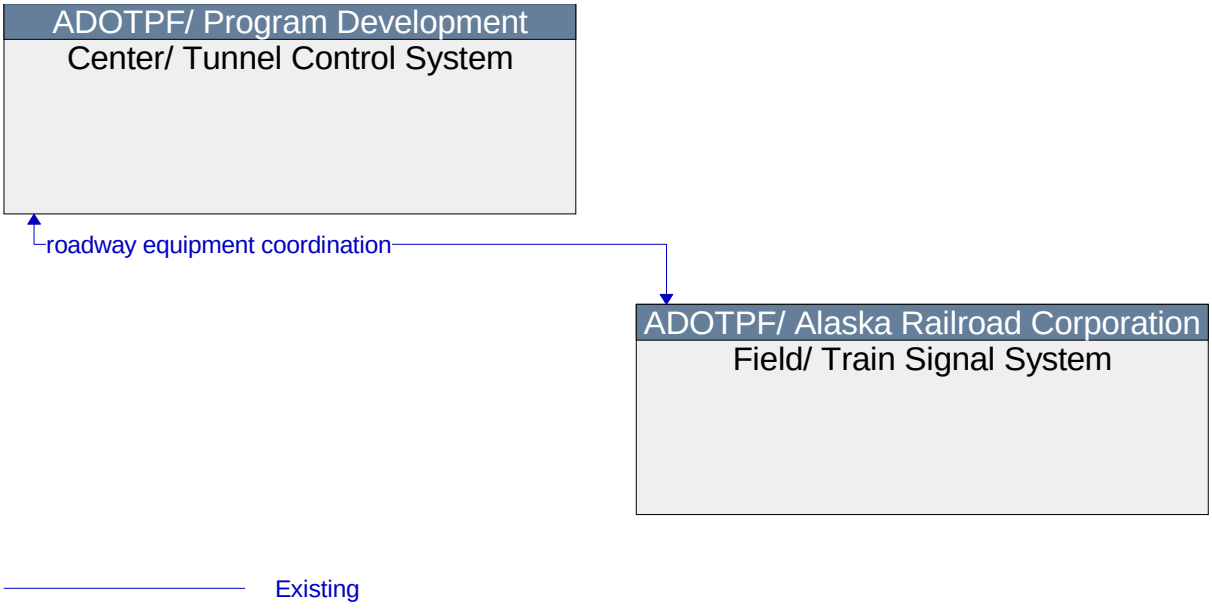

Media
Media Systems (T.V. and Radio)
transit incidents for media
media information request
Transit Agencies
Center/ Transit Agency Dispatch (Placeholder)
Planned

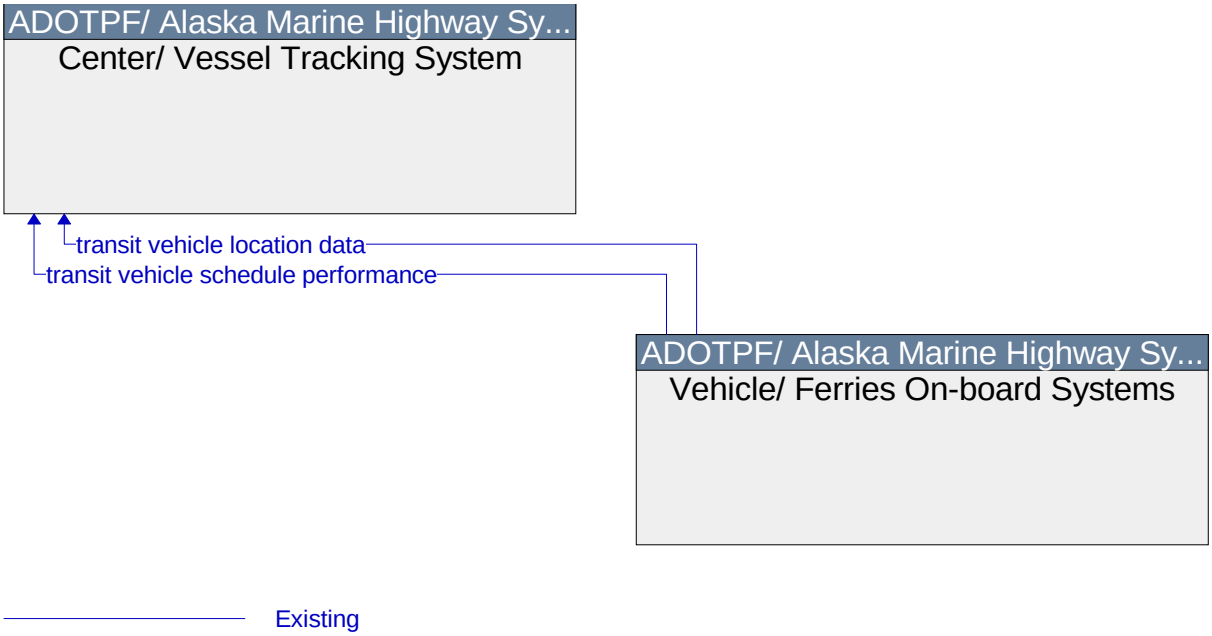

Transit Agencies
Vehicle/ Transit Vehicle On-board Systems (Placeholder)
transit vehicle operator information
transit vehicle location data
transit vehicle schedule performance
Transit Agencies
Center/ Transit Agency Dispatch (Placeholder)
Existing

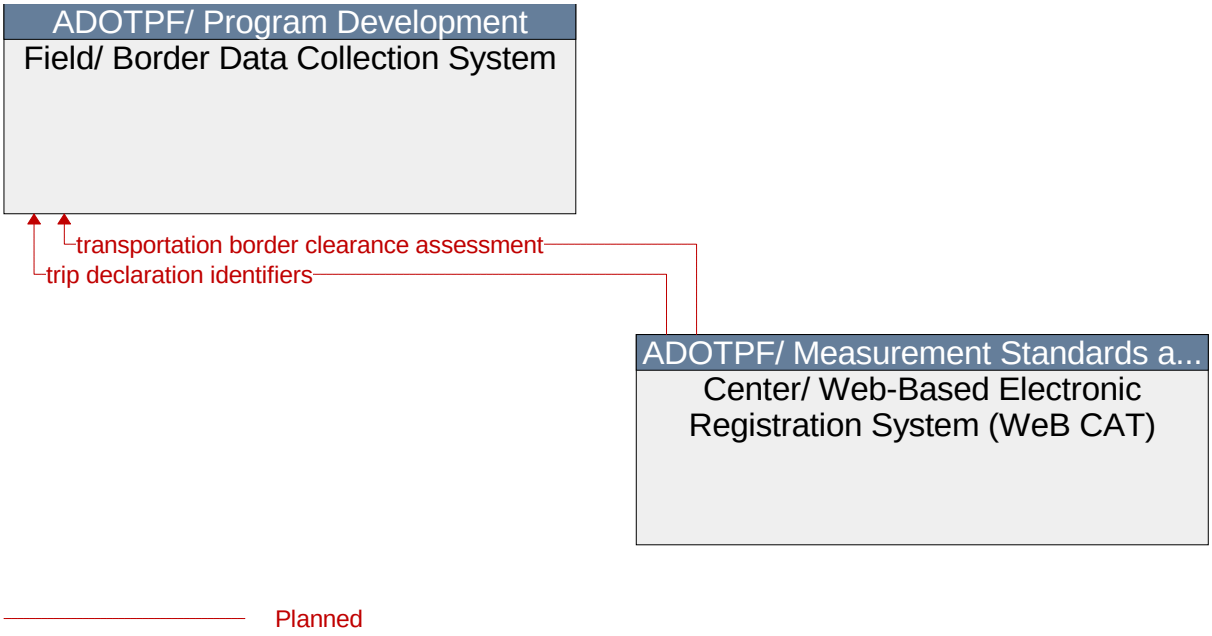

Public Travelers
Travelers/ Personal Communications/Computing Devices (en-route)
broadcast information
traveler information
traveler profile
traveler request
Transit Agencies
Center/ Transit Agency Websites
Existing

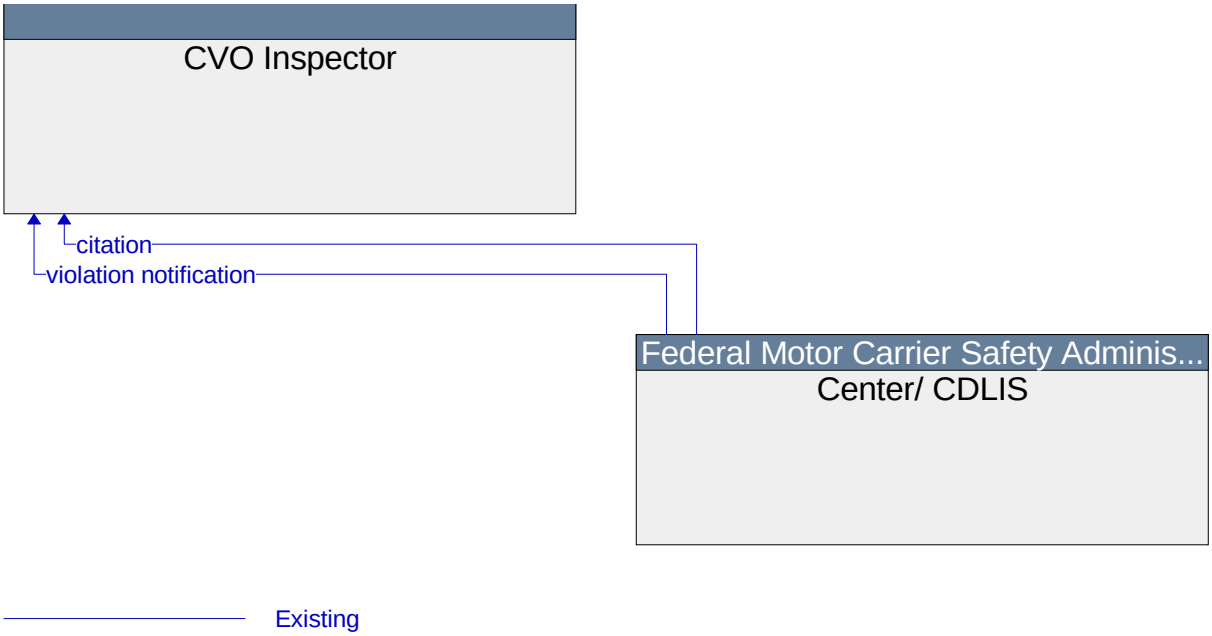

Public Travelers
Travelers/ Personal Communications/Computing Devices (pre-trip)
broadcast information
traveler information
traveler profile
traveler request
Transit Agencies
Center/ Transit Agency Websites
Existing

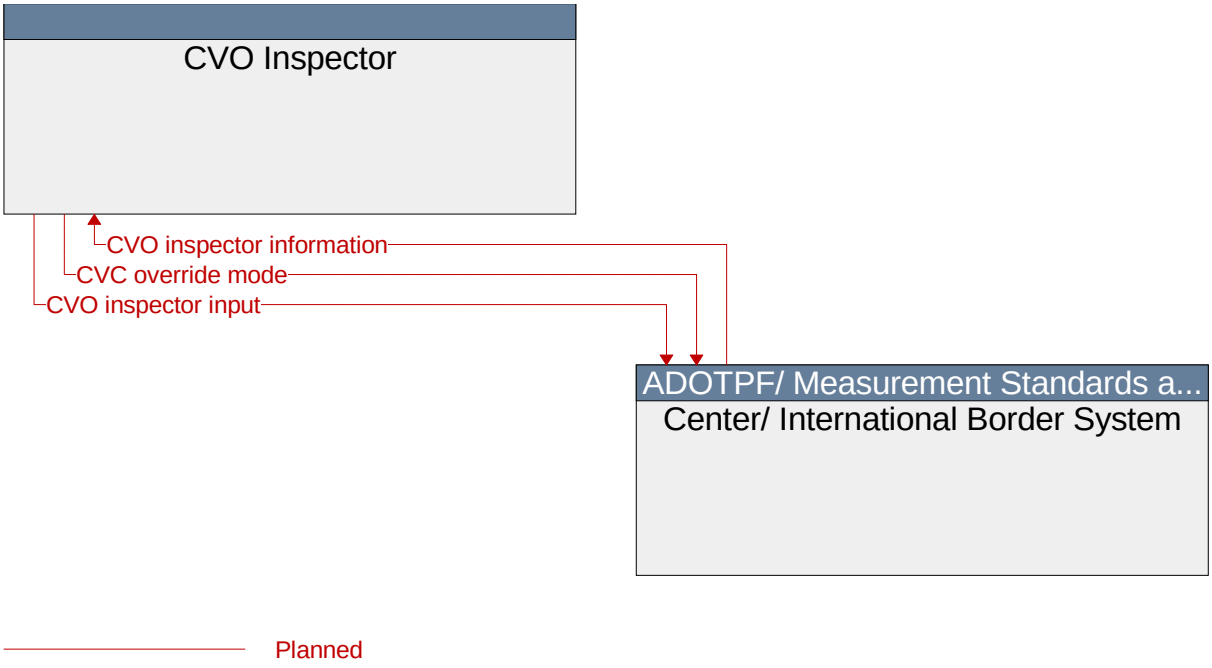

State of Alaska/ DOA/ Division of Mot...
Paymentech
payment request
transaction status
WSDOT
Center/ Transponder Administration System
Planned

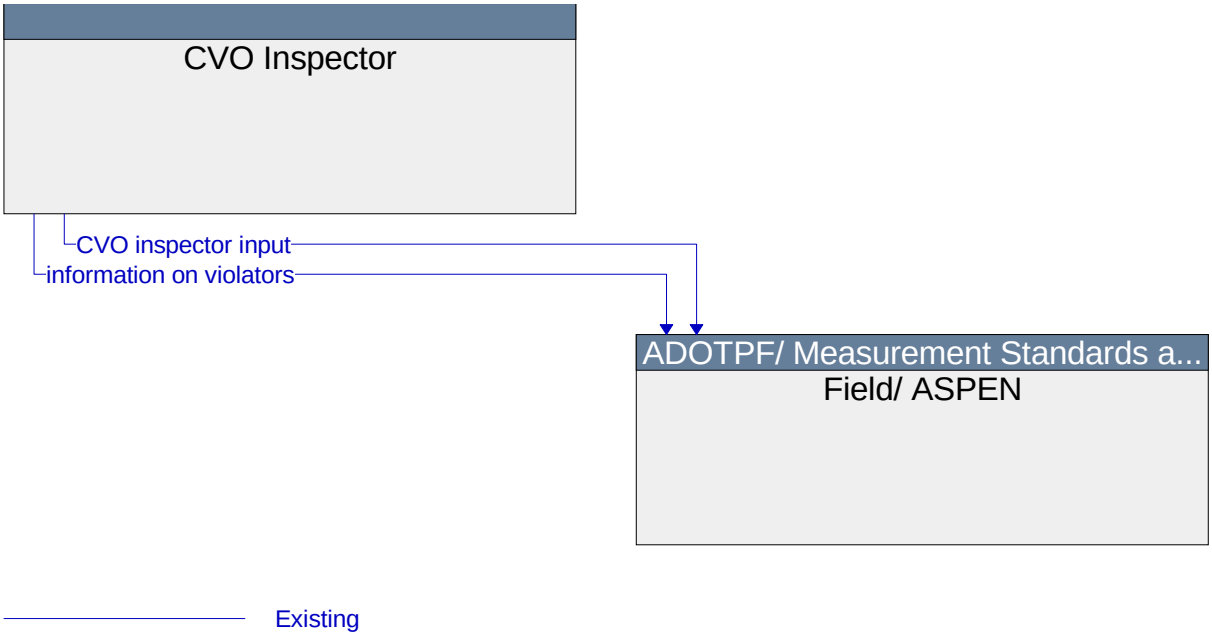

ADOTPF/ Program Development
Center/ Tunnel Control System
roadway equipment coordination
ADOTPF/ Alaska Railroad Corporation
Field/ Train Signal System
Existing

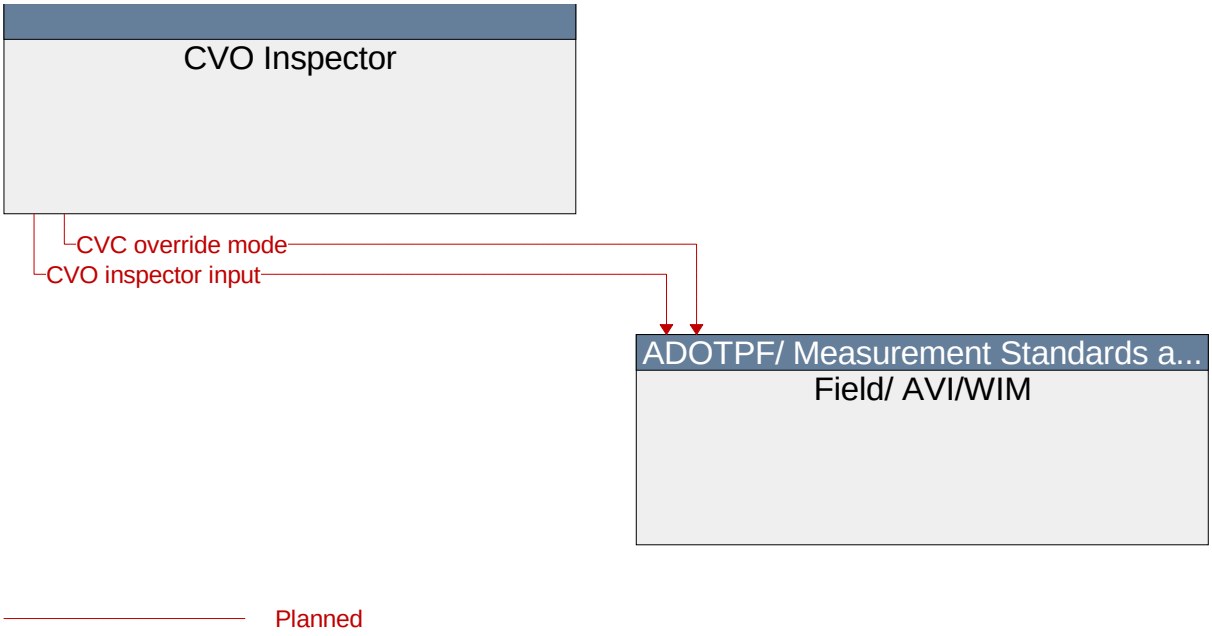

ADOTPF/ Alaska Marine Highway Sy...
Center/ Vessel Tracking System
transit vehicle location data
transit vehicle schedule performance
ADOTPF/ Alaska Marine Highway Sy...
Vehicle/ Ferries On-board Systems
Existing

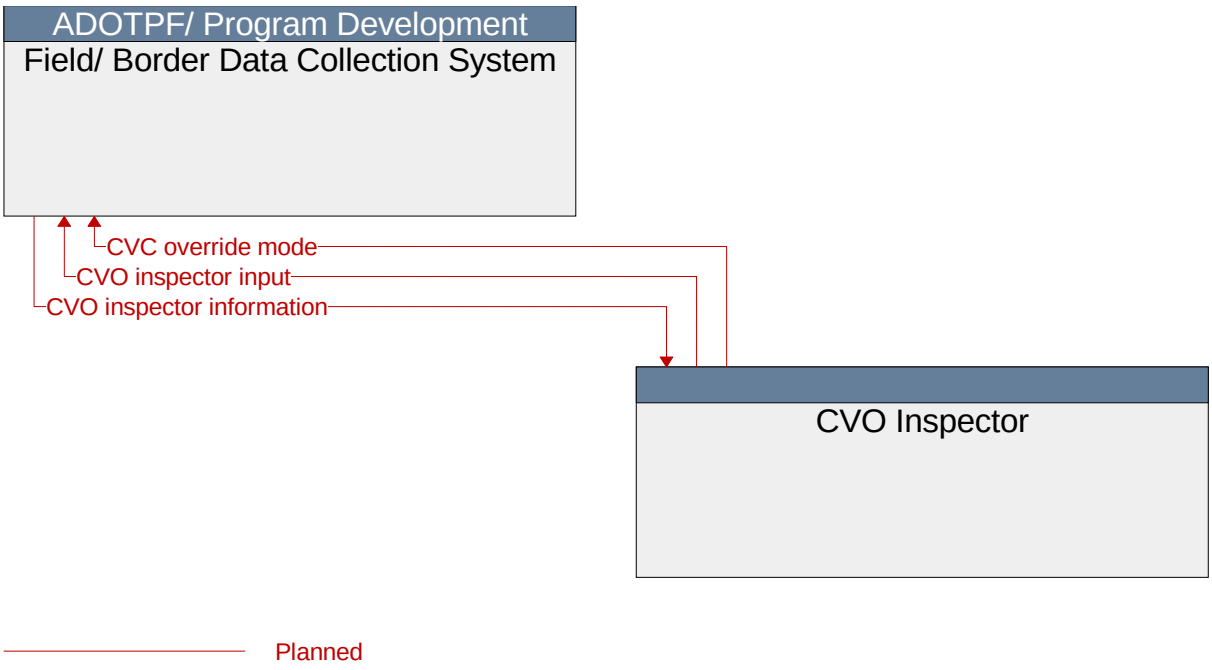

ADOTPF/ Program Development
Field/ Border Data Collection System
transportation border clearance assessment
trip declaration identifiers
ADOTPF/ Measurement Standards a...
Center/ Web-Based Electronic Registration System (WeB CAT)
Planned

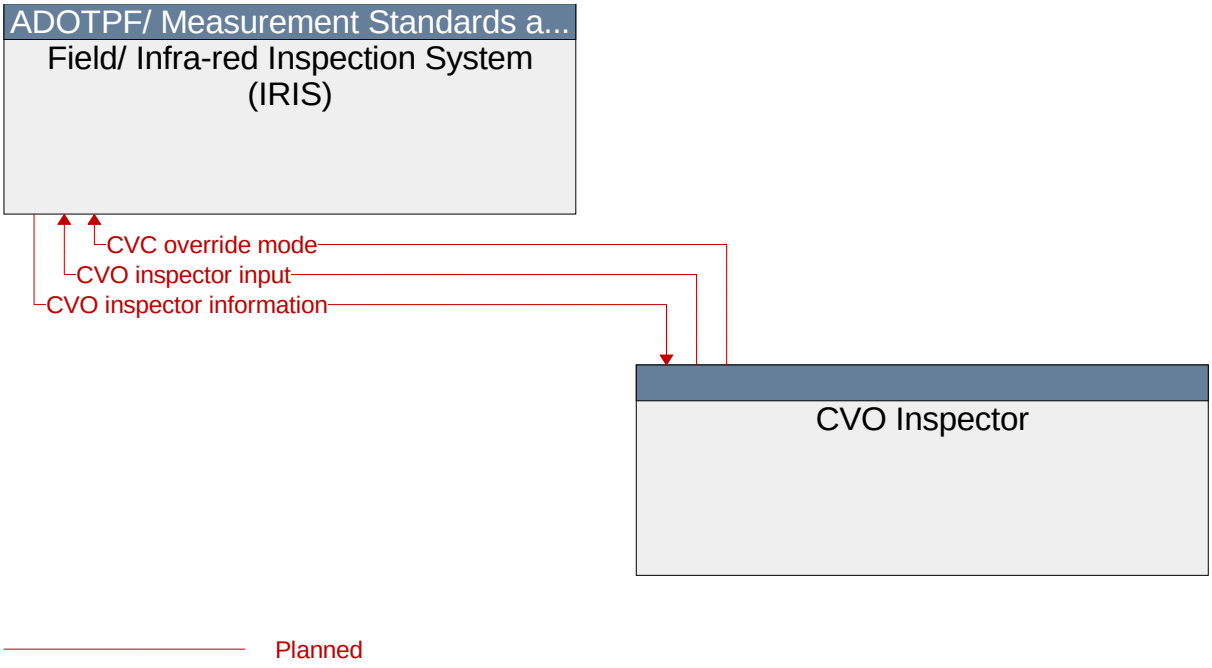

CVO Inspector
citation
violation notification
Federal Motor Carrier Safety Adminis...
Center/ CDLIS
Existing

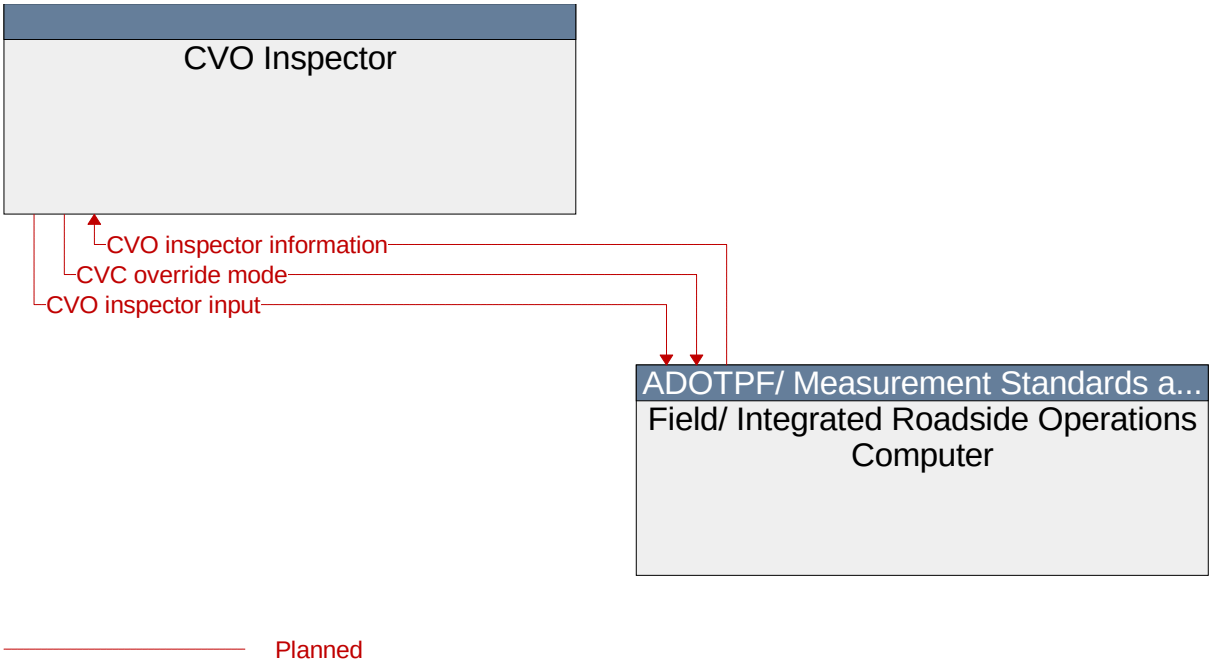

CVO Inspector
CVO inspector information
CVC override mode
CVO inspector input
ADOTPF/ Measurement Standards a...
Center/ International Border System
Planned

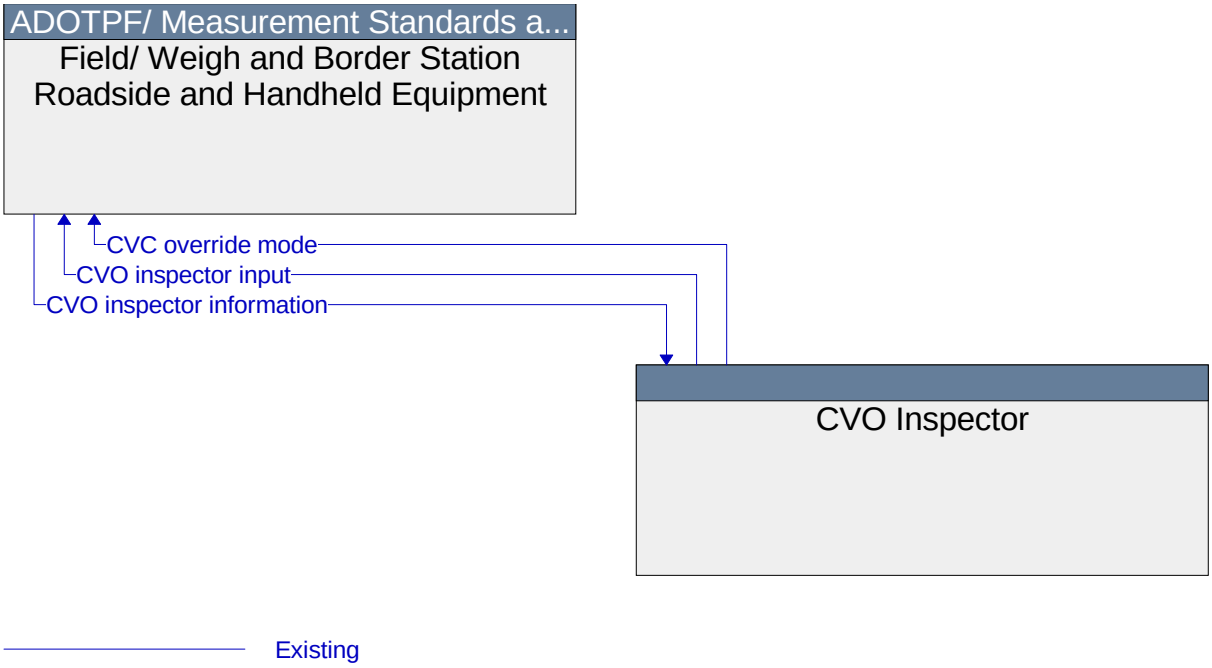

CVO Inspector
CVO inspector input
information on violators
ADOTPF/ Measurement Standards a...
Field/ ASPEN
Existing

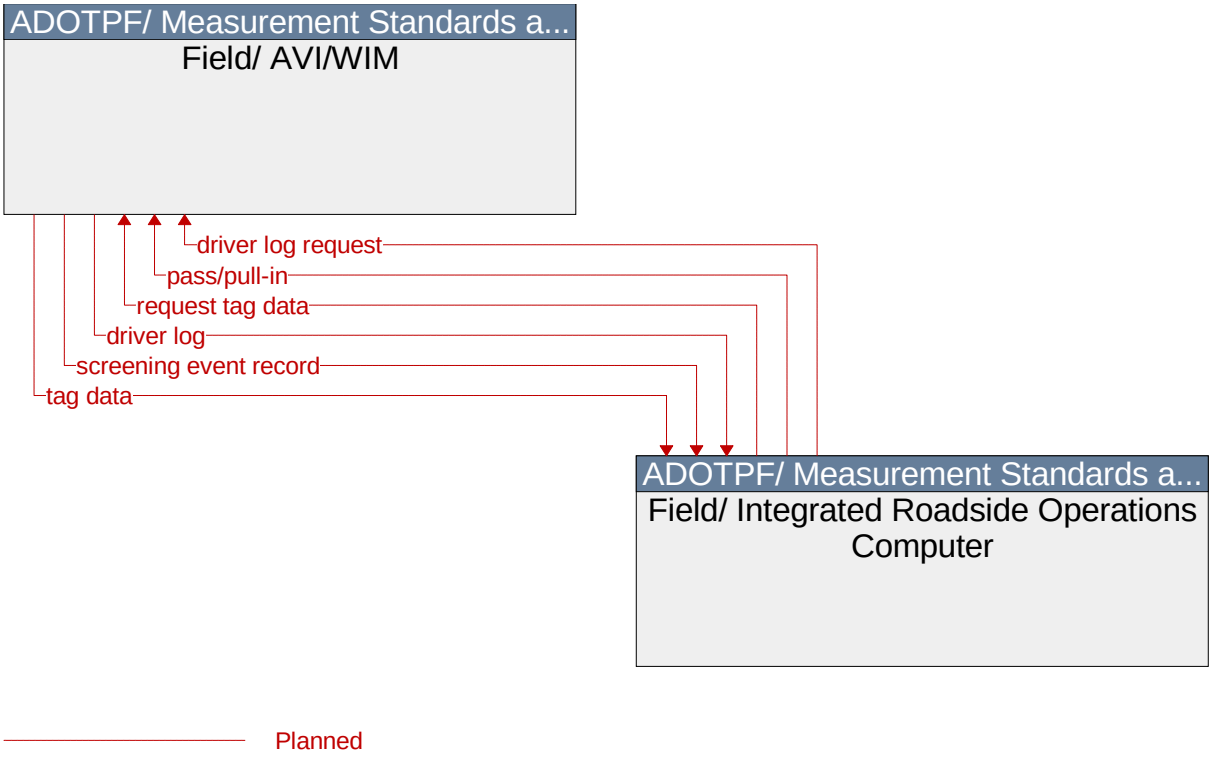

CVO Inspector
CVC override mode
CVO inspector input
ADOTPF/ Measurement Standards a...
Field/ AVI/WIM
Planned

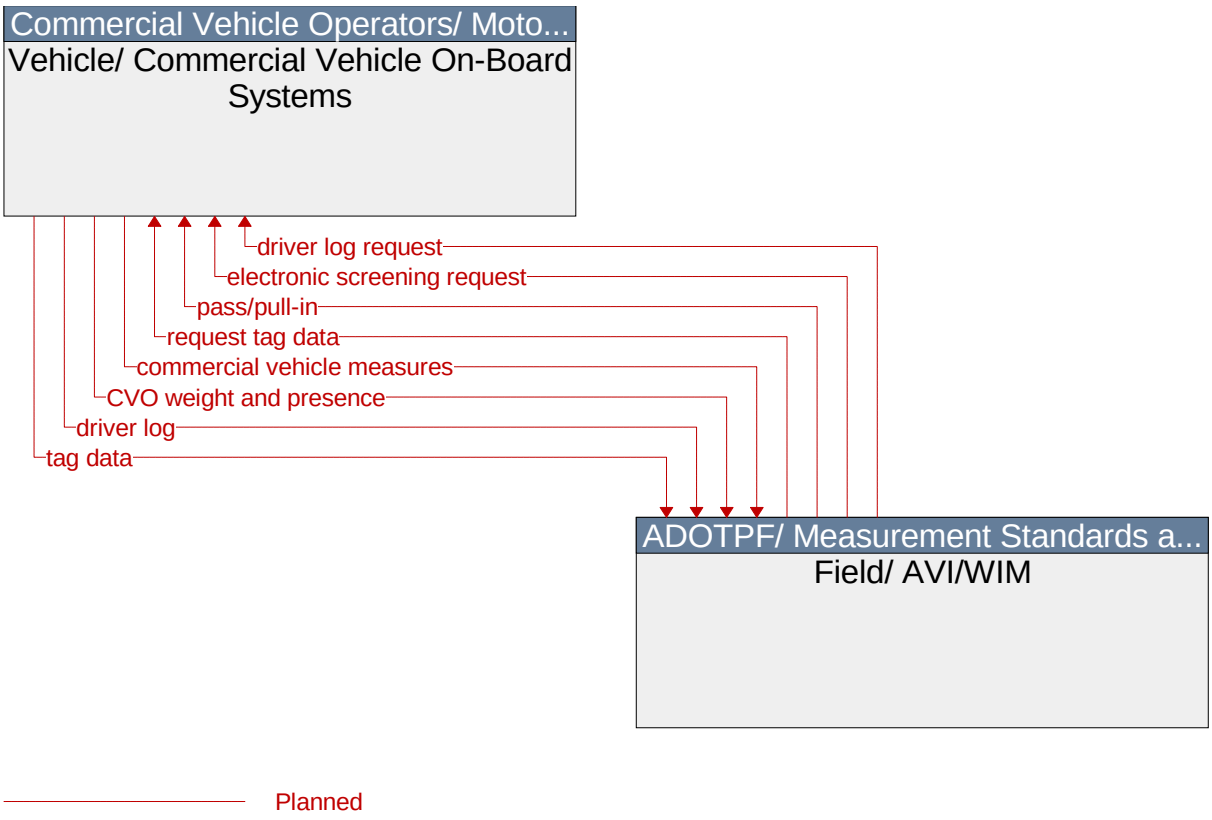

ADOTPF/ Program Development
Field/ Border Data Collection System
CVC override mode
CVO inspector input
CVO inspector information
CVO Inspector
Planned

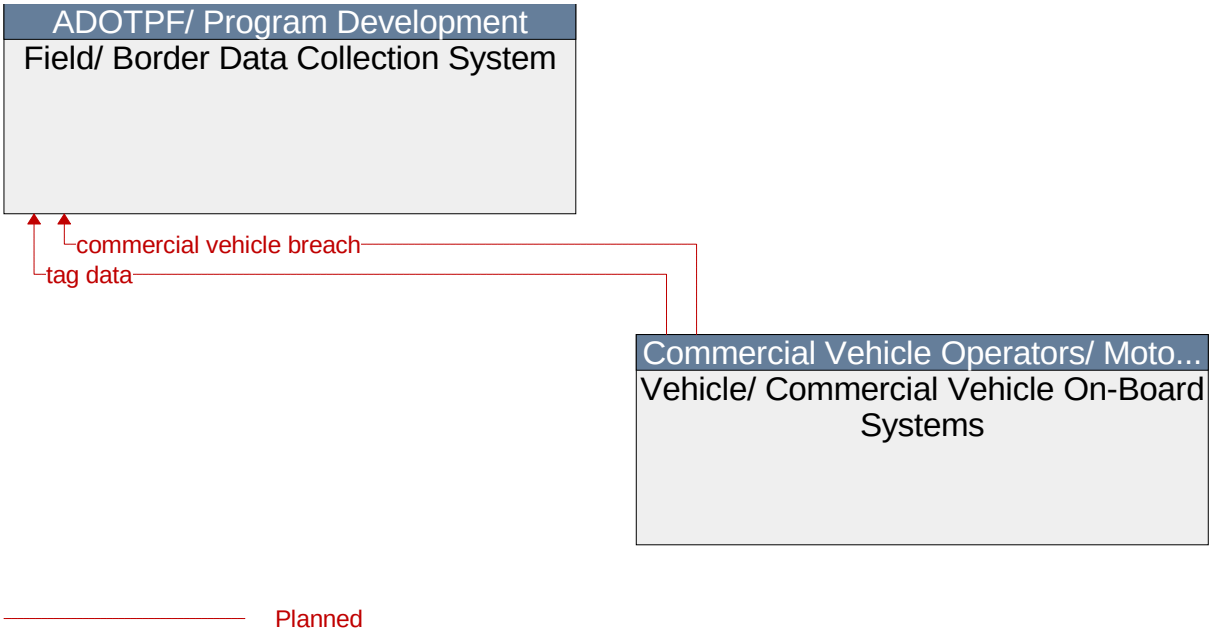

ADOTPF/ Measurement Standards a...
Field/ Infra-red Inspection System (IRIS)
CVC override mode
CVO inspector input
CVO inspector information
CVO Inspector
Planned

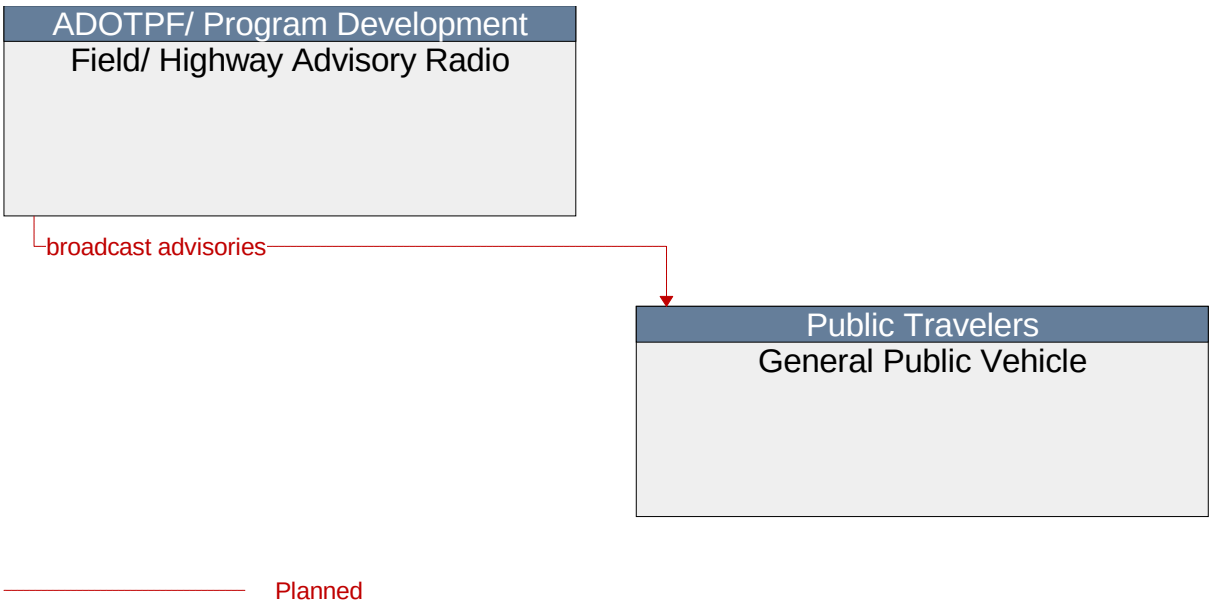

CVO Inspector
CVO inspector information
CVC override mode
CVO inspector input
ADOTPF/ Measurement Standards a...
Field/ Integrated Roadside Operations Computer
Planned

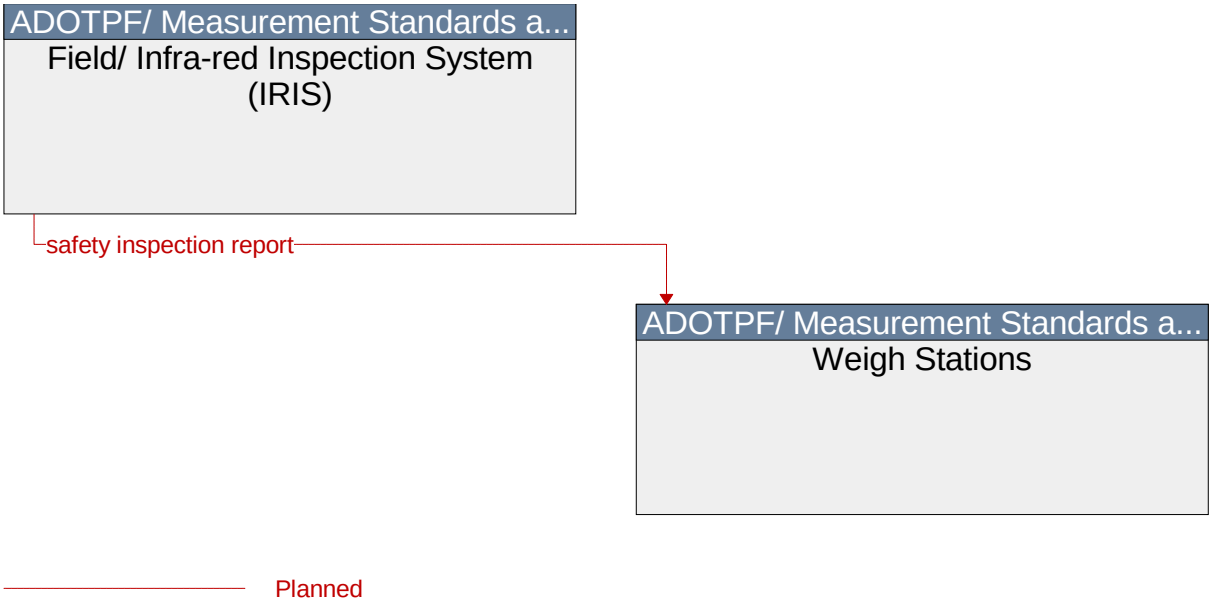

ADOTPF/ Measurement Standards a...
Field/ Weigh and Border Station Roadside and Handheld Equipment
CVC override mode
CVO inspector input
CVO inspector information
CVO Inspector
Existing

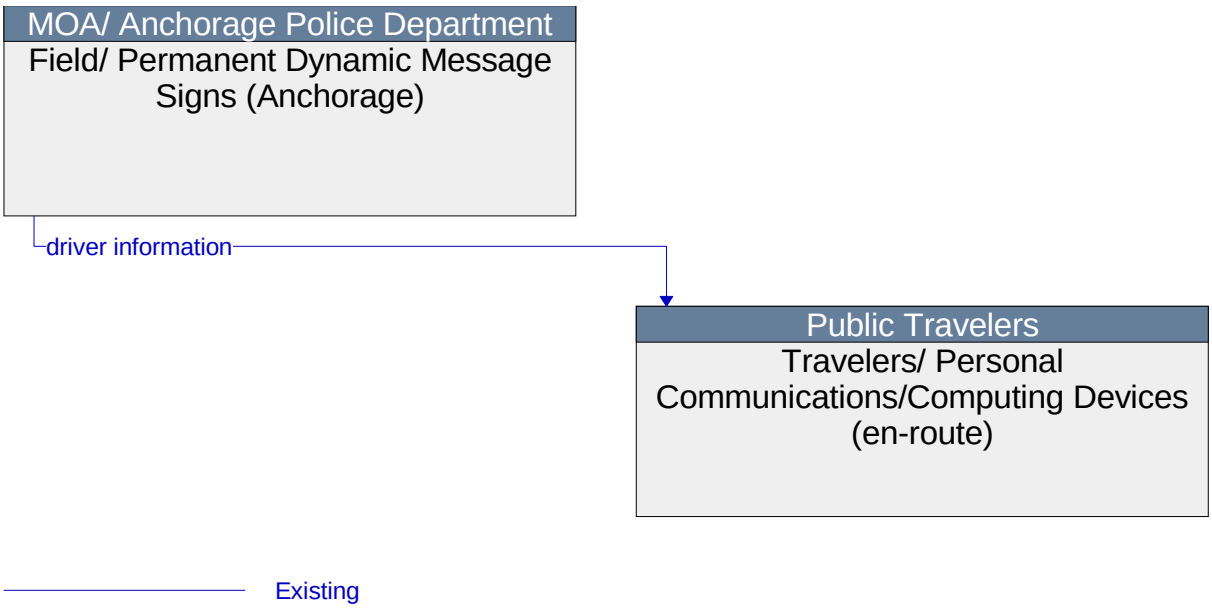

ADOTPF/ Measurement Standards a...
Field/ AVI/WIM
driver log request
pass/pull-in
request tag data
driver log
screening event record
tag data
ADOTPF/ Measurement Standards a...
Field/ Integrated Roadside Operations Computer
Planned

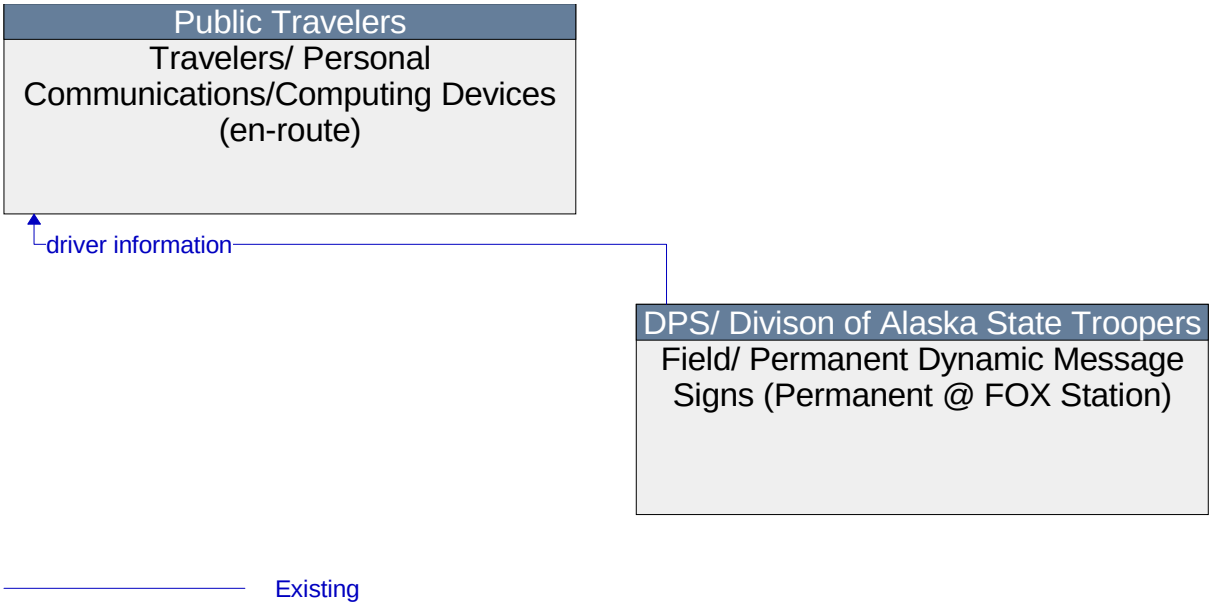

Commercial Vehicle Operators/ Moto...
Vehicle/ Commercial Vehicle On-Board Systems
driver log request
electronic screening request
pass/pull-in
request tag data
commercial vehicle measures
CVO weight and presence
driver log
tag data
ADOTPF/ Measurement Standards a...
Field/ AVI/WIM
Planned

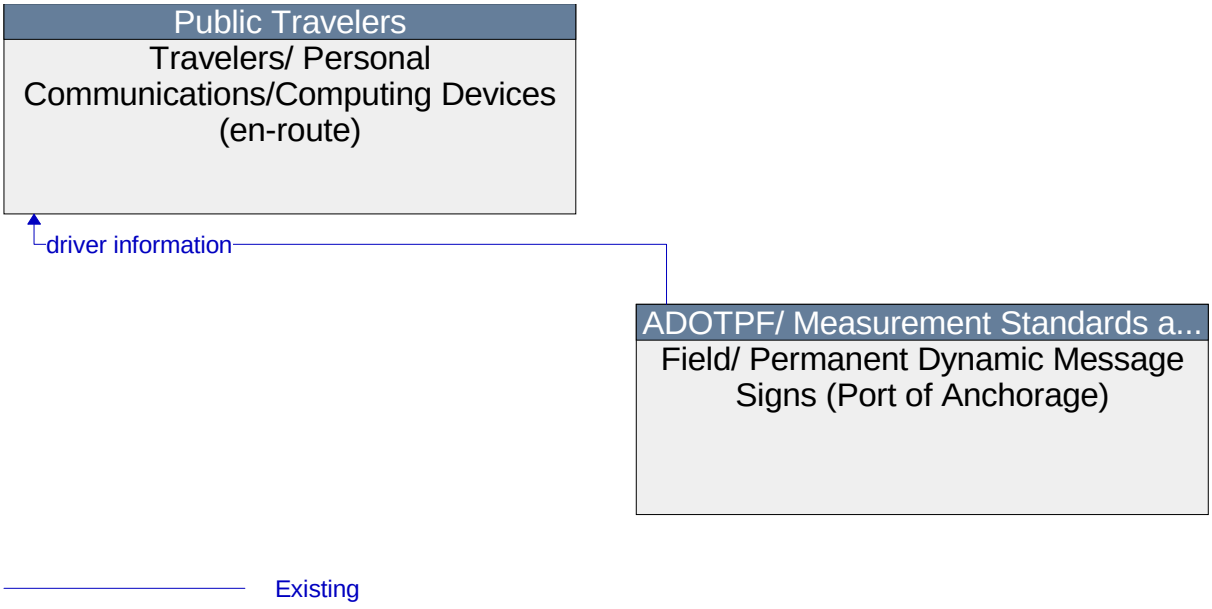

ADOTPF/ Program Development
Field/ Border Data Collection System
commercial vehicle breach
tag data
Commercial Vehicle Operators/ Moto...
Vehicle/ Commercial Vehicle On-Board Systems
Planned

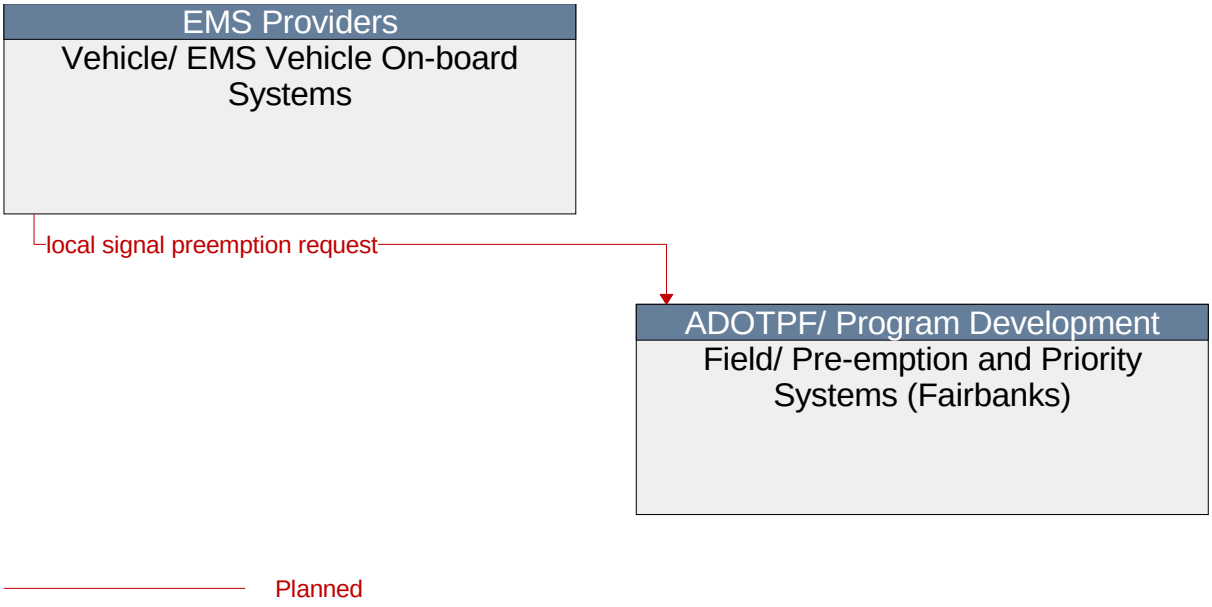

ADOTPF/ Program Development
Field/ Highway Advisory Radio
broadcast advisories
Public Travelers
General Public Vehicle
Planned

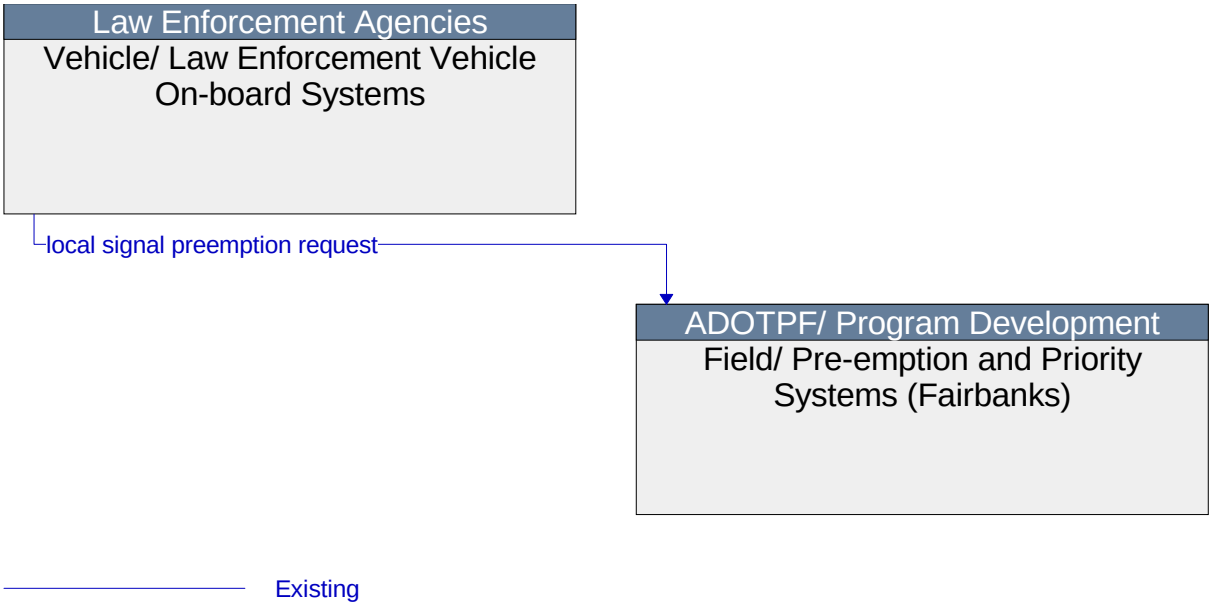

ADOTPF/ Measurement Standards a...
Field/ Infra-red Inspection System (IRIS)
safety inspection report
ADOTPF/ Measurement Standards a...
Weigh Stations
Planned

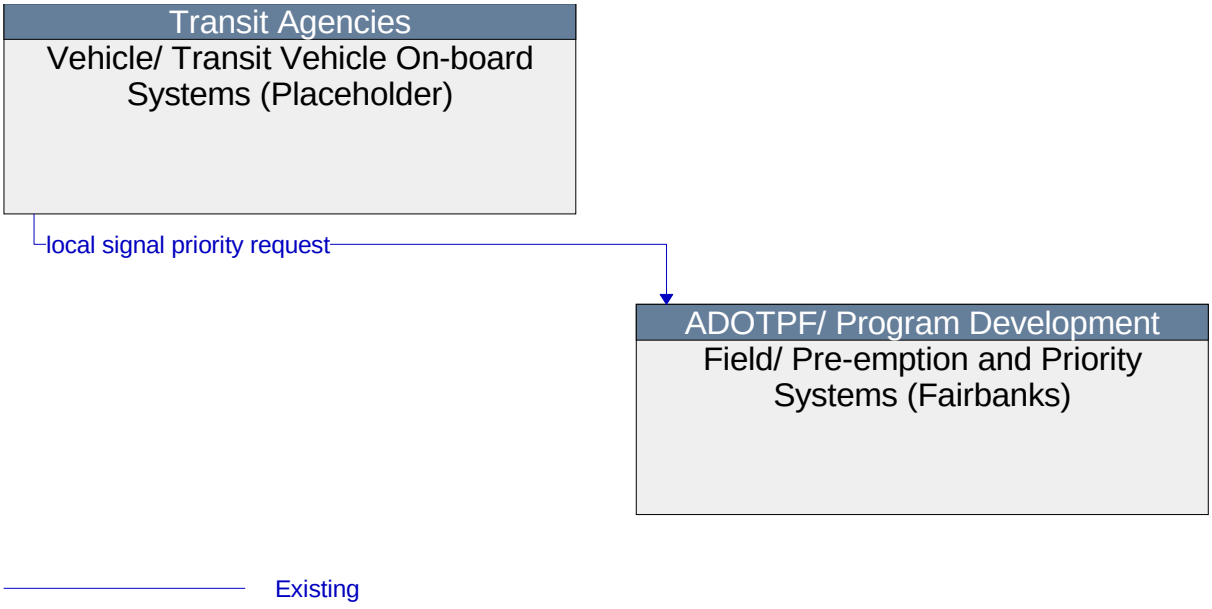

MOA/ Anchorage Police Department
Field/ Permanent Dynamic Message Signs (Anchorage)
driver information
Public Travelers
Travelers/ Personal Communications/Computing Devices (en-route)
Existing

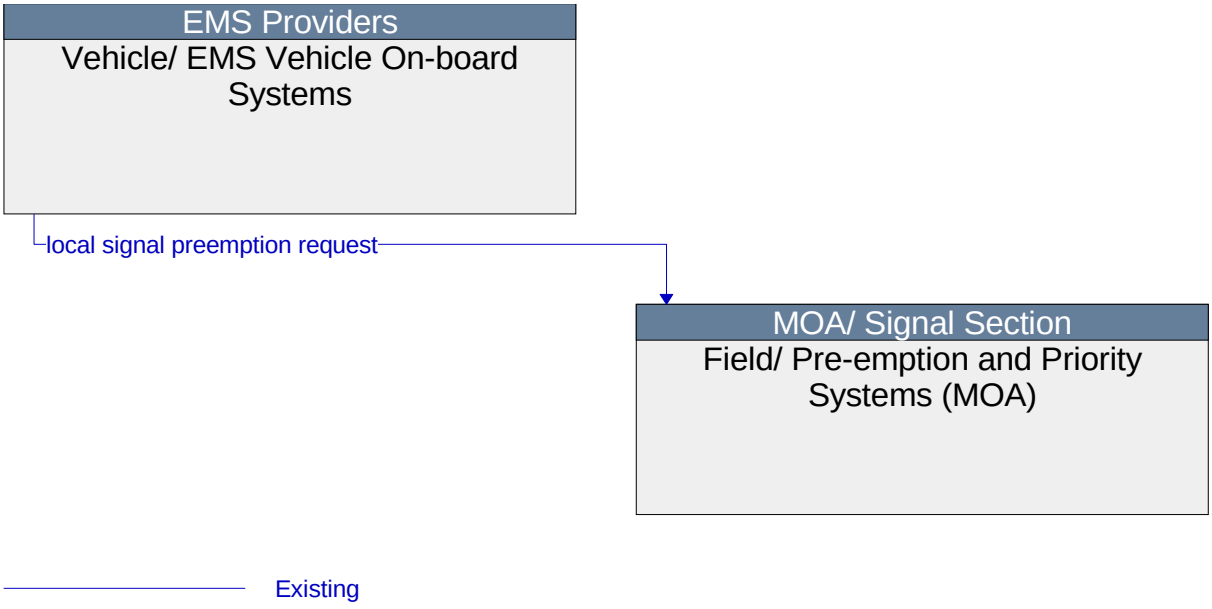

Public Travelers
Travelers/ Personal Communications/Computing Devices (en-route)
driver information
DPS/ Divison of Alaska State Troopers
Field/ Permanent Dynamic Message Signs (Permanent @ FOX Station)
Existing

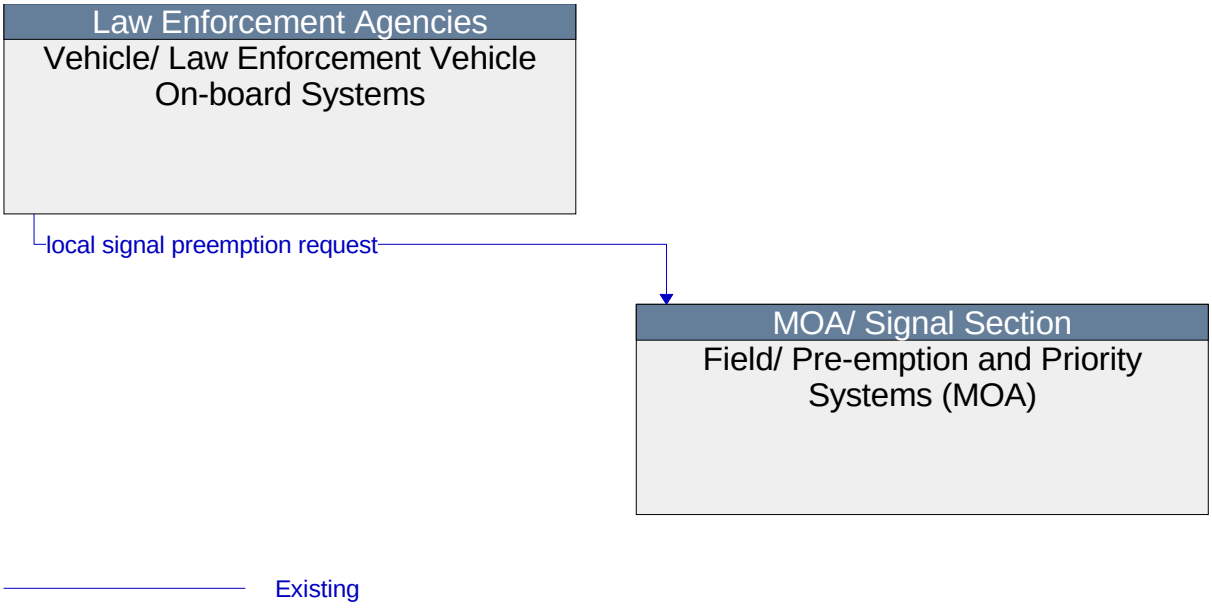

Public Travelers
Travelers/ Personal Communications/Computing Devices (en-route)
driver information
ADOTPF/ Measurement Standards a...
Field/ Permanent Dynamic Message Signs (Port of Anchorage)
Existing

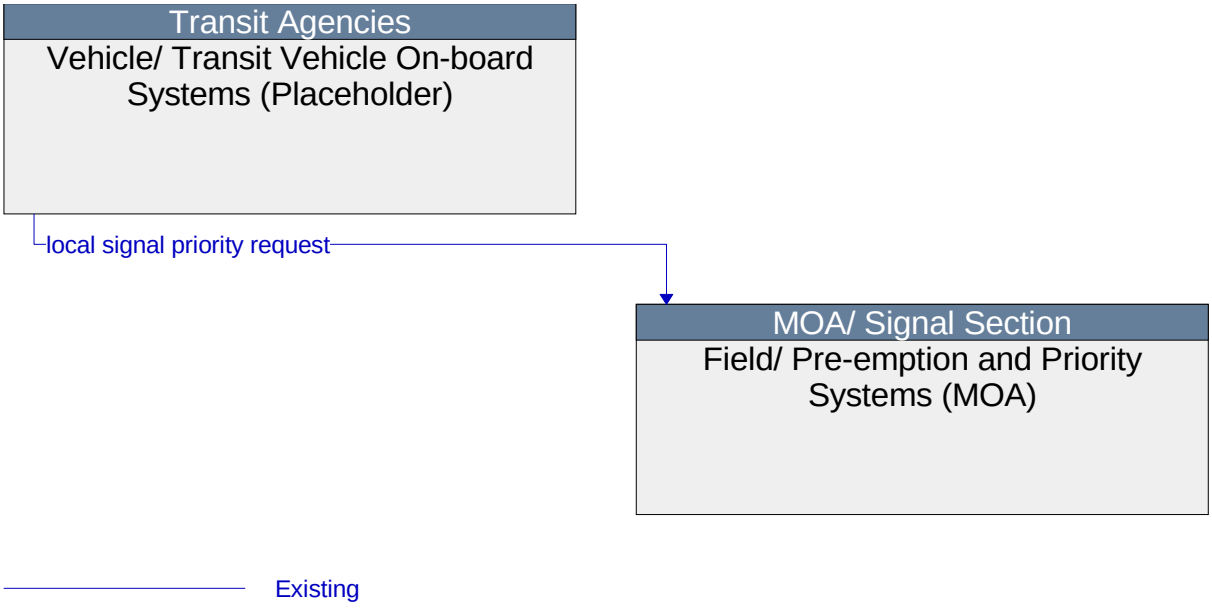

EMS Providers
Vehicle/ EMS Vehicle On-board Systems
local signal preemption request
ADOTPF/ Program Development
Field/ Pre-emption and Priority Systems (Fairbanks)
Planned

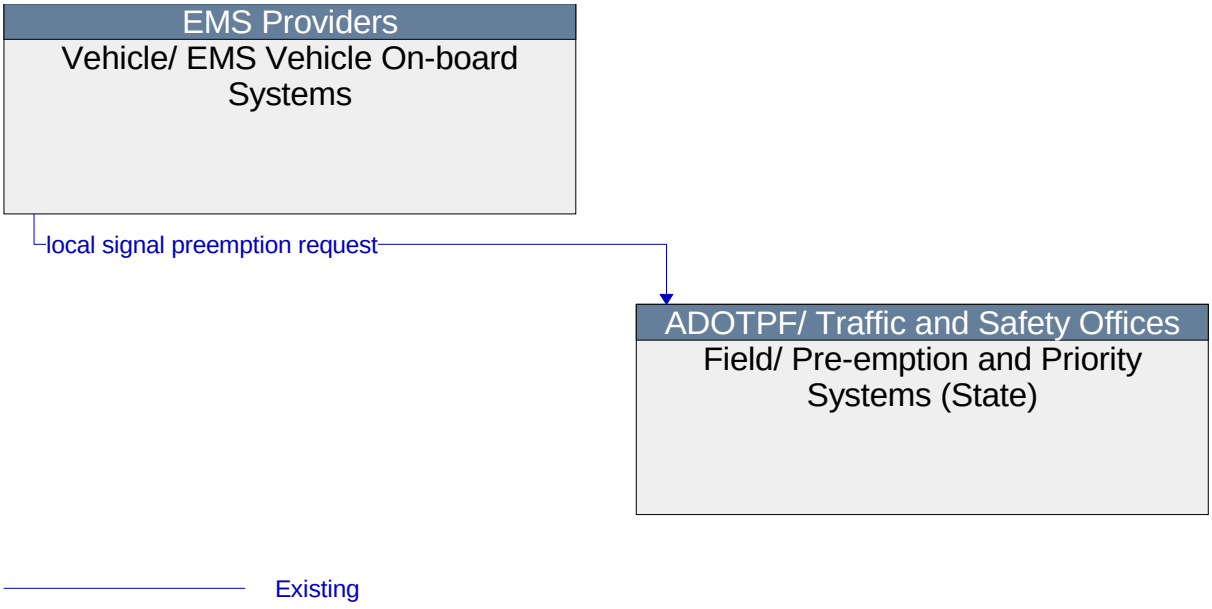

Law Enforcement Agencies
Vehicle/ Law Enforcement Vehicle On-board Systems
local signal preemption request
ADOTPF/ Program Development
Field/ Pre-emption and Priority Systems (Fairbanks)
Existing

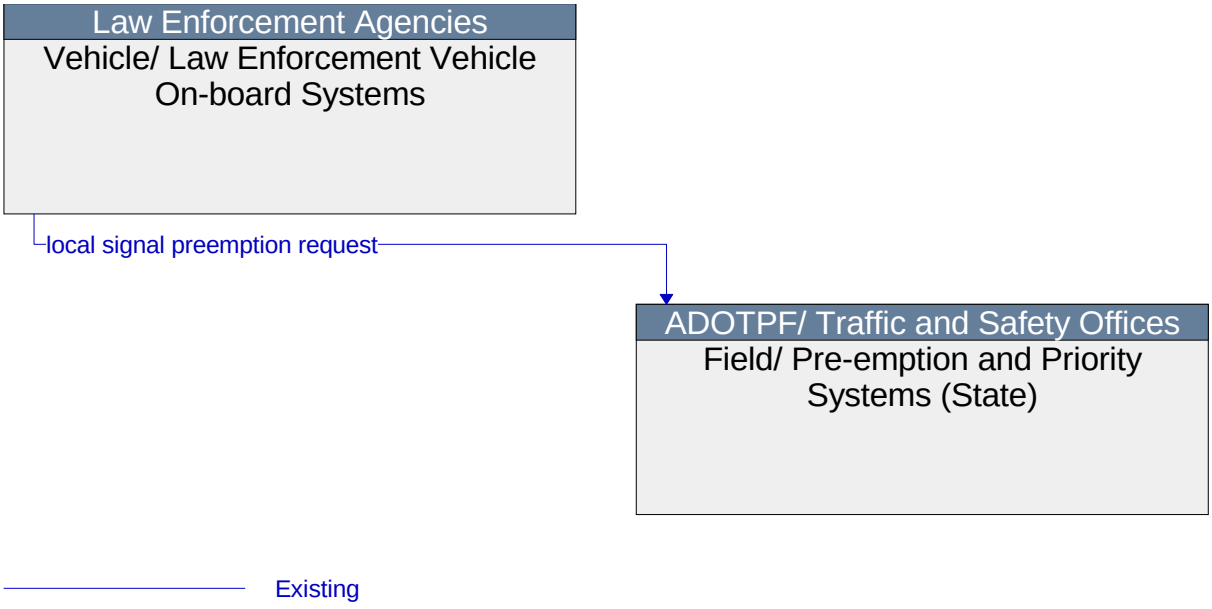

Transit Agencies
Vehicle/ Transit Vehicle On-board Systems (Placeholder)
local signal priority request
ADOTPF/ Program Development
Field/ Pre-emption and Priority Systems (Fairbanks)
Existing

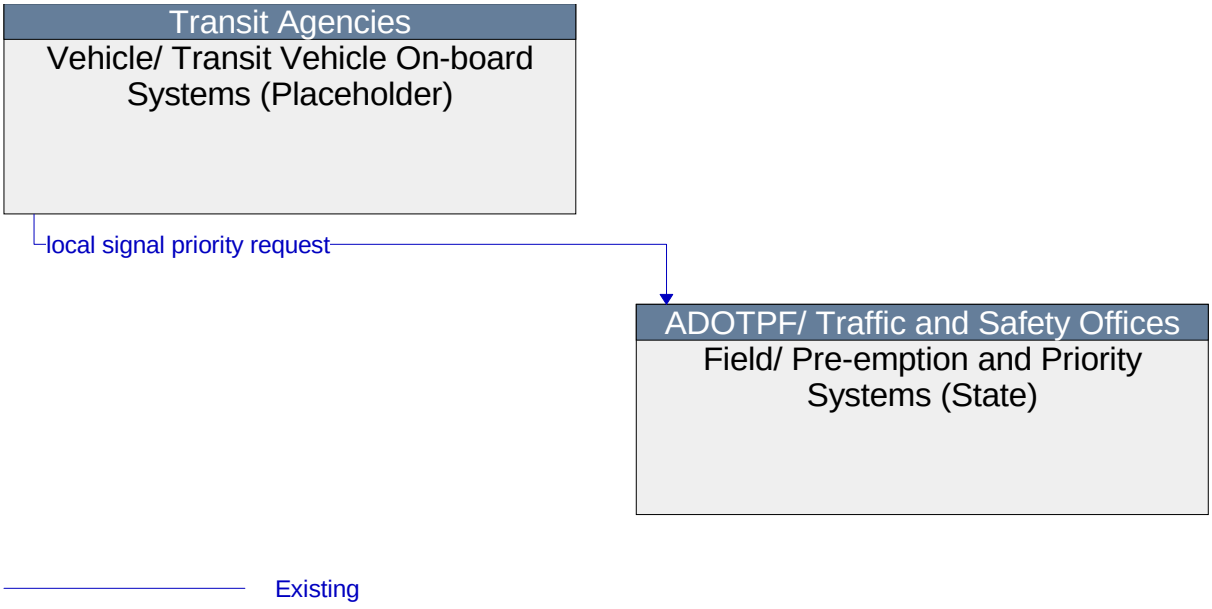

EMS Providers
Vehicle/ EMS Vehicle On-board Systems
local signal preemption request
MOA/ Signal Section
Field/ Pre-emption and Priority Systems (MOA)
Existing

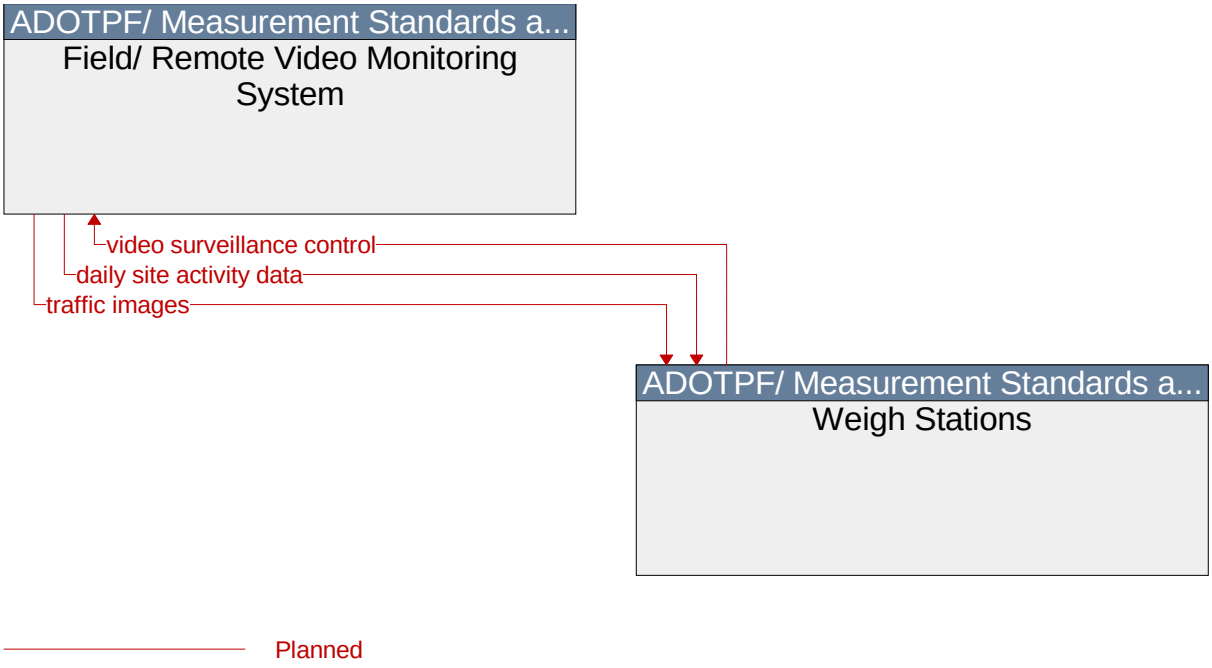

Law Enforcement Agencies
Vehicle/ Law Enforcement Vehicle On-board Systems
local signal preemption request
MOA/ Signal Section
Field/ Pre-emption and Priority Systems (MOA)
Existing

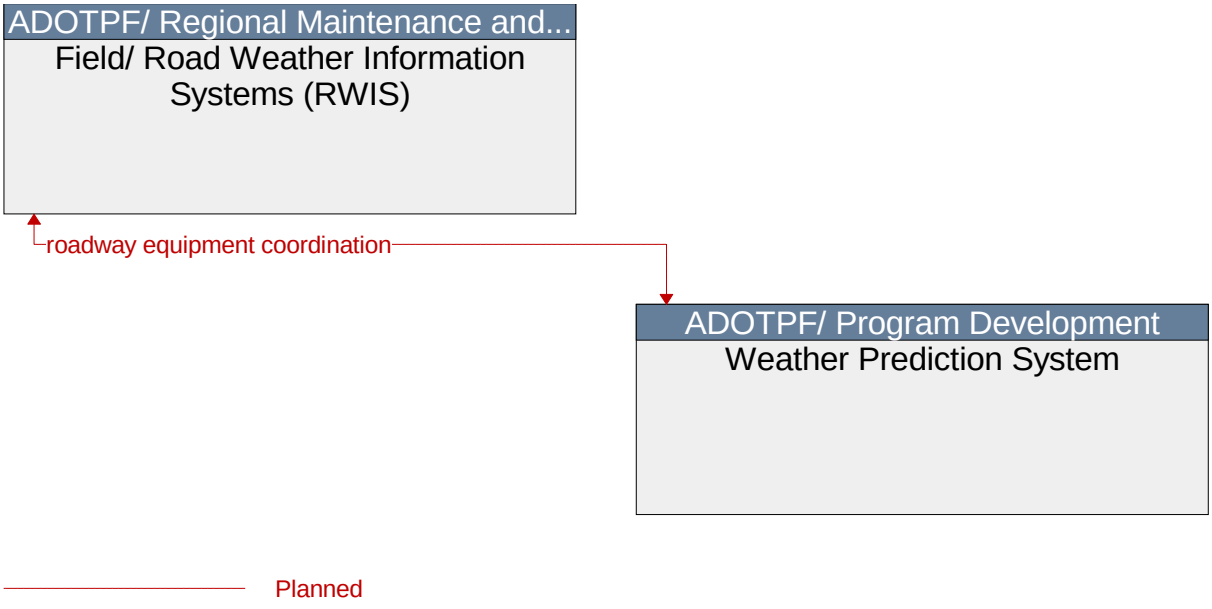

Transit Agencies
Vehicle/ Transit Vehicle On-board Systems (Placeholder)
local signal priority request
MOA/ Signal Section
Field/ Pre-emption and Priority Systems (MOA)
Existing

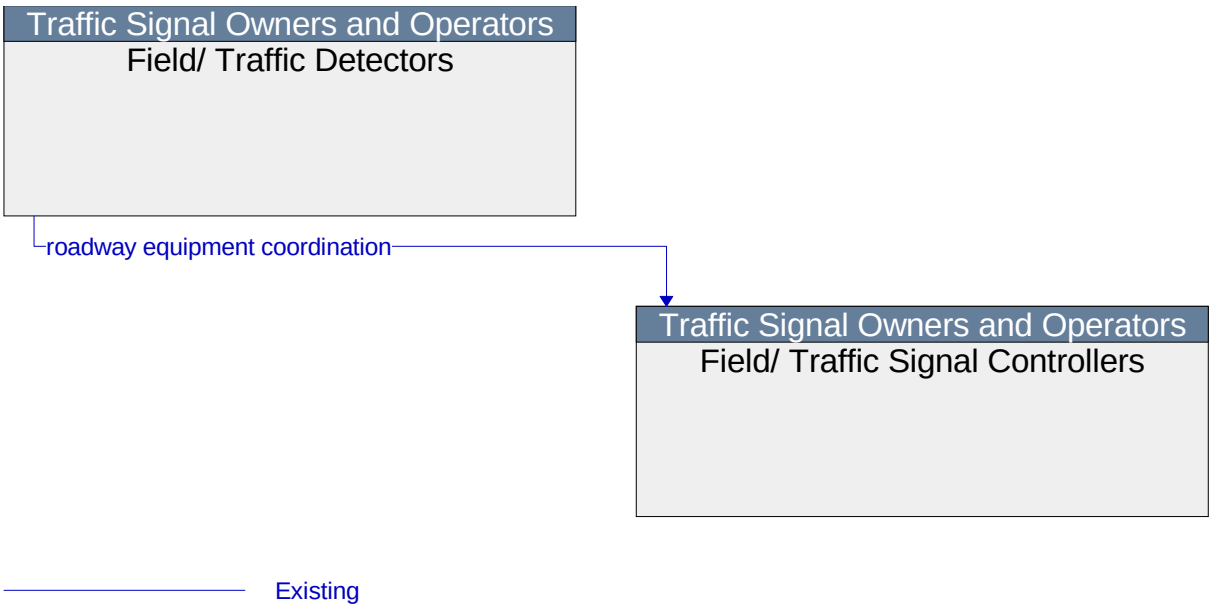

EMS Providers
Vehicle/ EMS Vehicle On-board Systems
local signal preemption request
ADOTPF/ Traffic and Safety Offices
Field/ Pre-emption and Priority Systems (State)
Existing

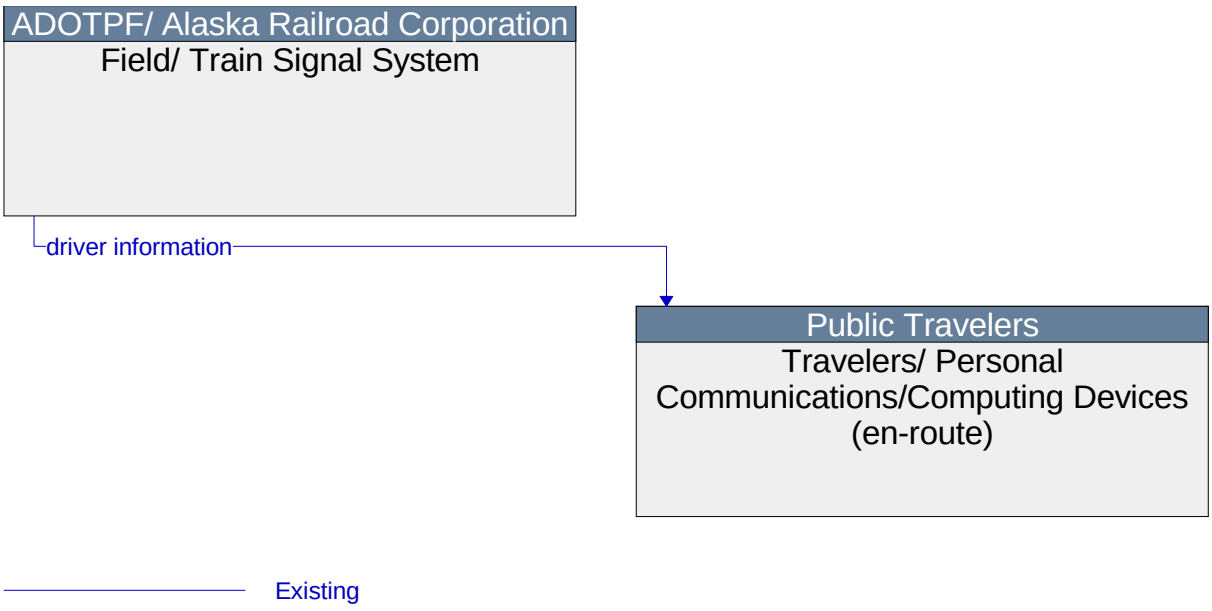

Law Enforcement Agencies
Vehicle/ Law Enforcement Vehicle On-board Systems
local signal preemption request
ADOTPF/ Traffic and Safety Offices
Field/ Pre-emption and Priority Systems (State)
Existing

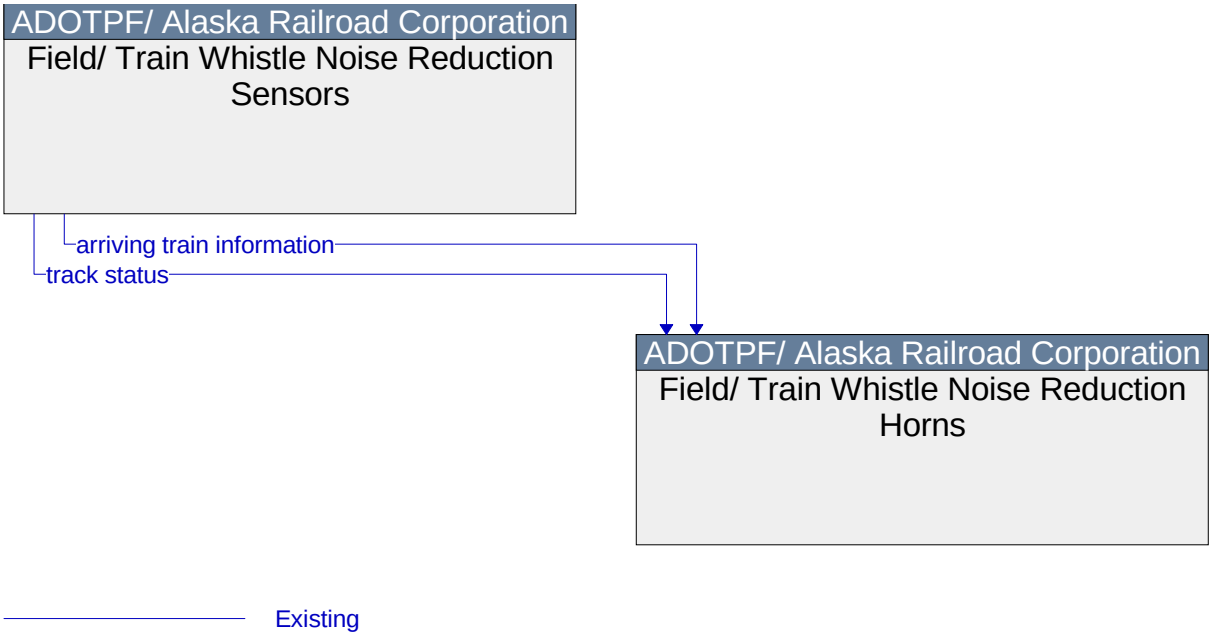

Transit Agencies
Vehicle/ Transit Vehicle On-board Systems (Placeholder)
local signal priority request
ADOTPF/ Traffic and Safety Offices
Field/ Pre-emption and Priority Systems (State)
Existing

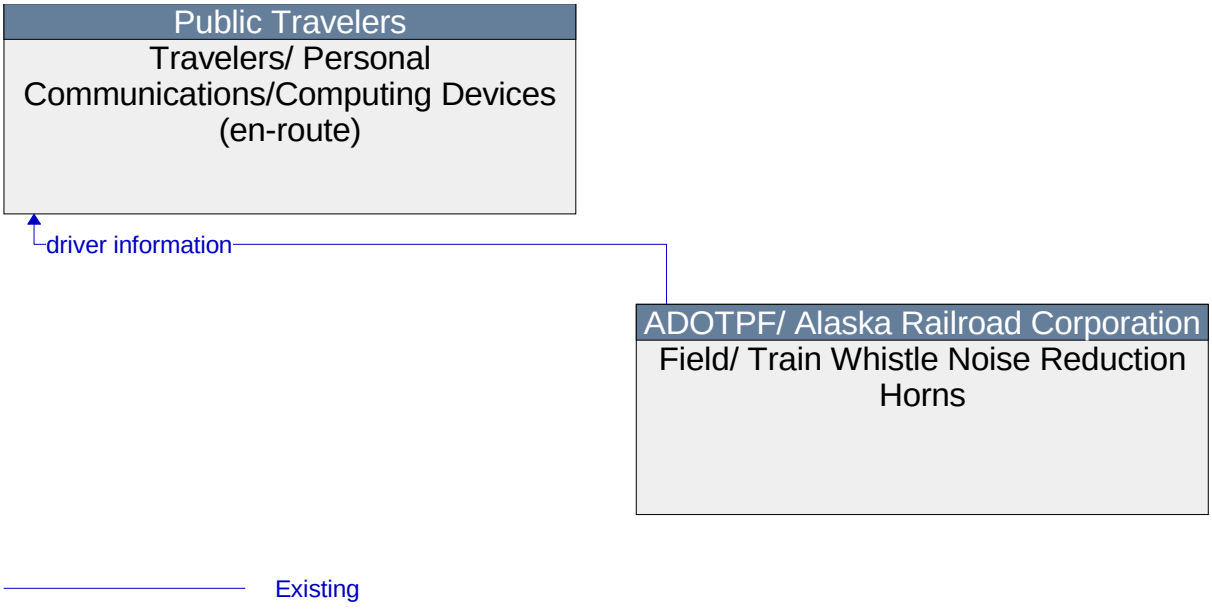

ADOTPF/ Measurement Standards a...
Field/ Remote Video Monitoring System
video surveillance control
daily site activity data
traffic images
ADOTPF/ Measurement Standards a...
Weigh Stations
Planned

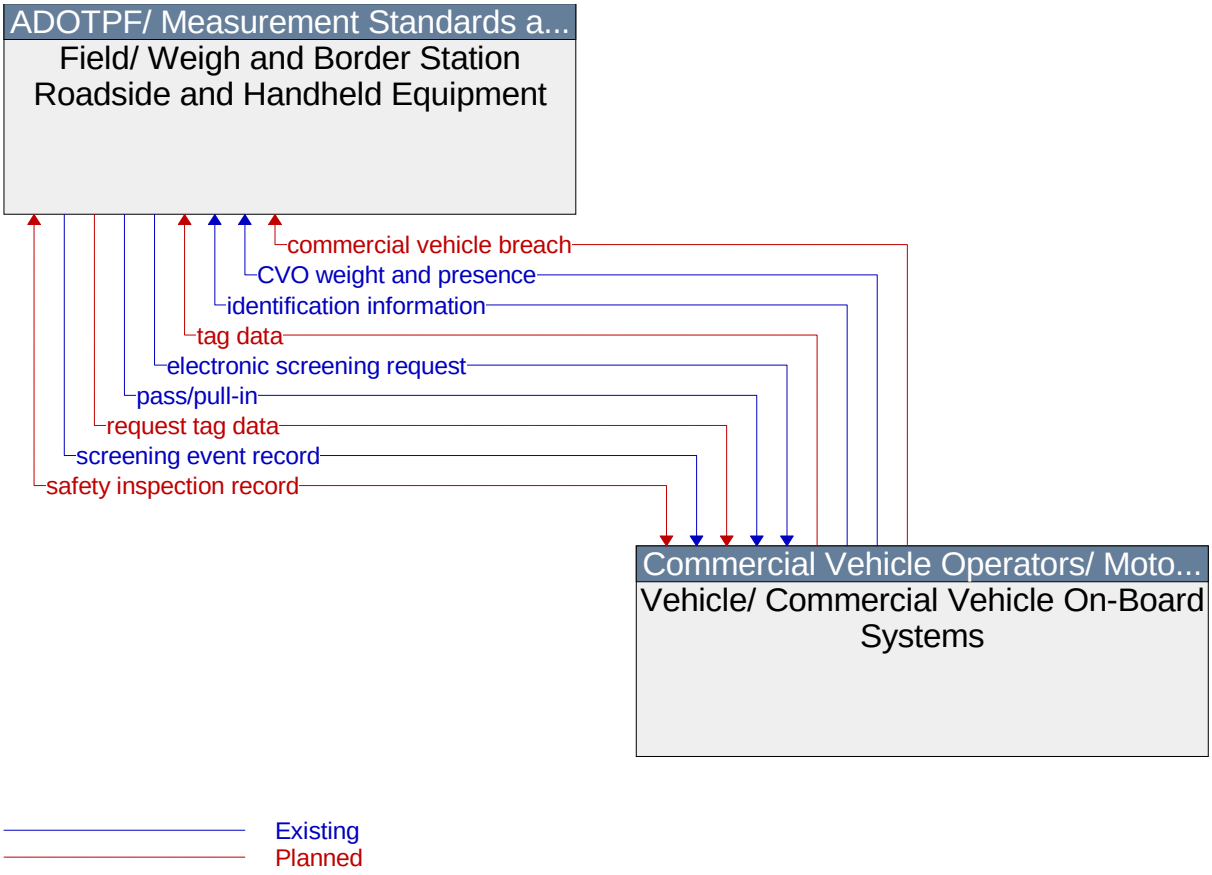

ADOTPF/ Regional Maintenance and...
Field/ Road Weather Information Systems (RWIS)
roadway equipment coordination
ADOTPF/ Program Development
Weather Prediction System
Planned

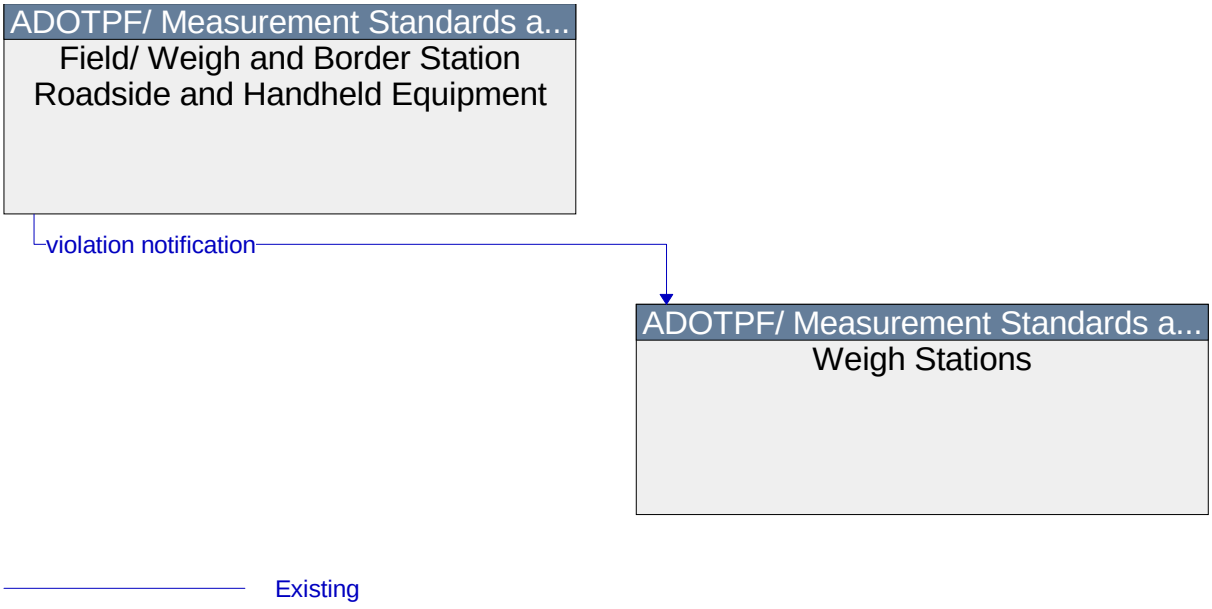

Traffic Signal Owners and Operators
Field/ Traffic Detectors
roadway equipment coordination
Traffic Signal Owners and Operators
Field/ Traffic Signal Controllers
Existing

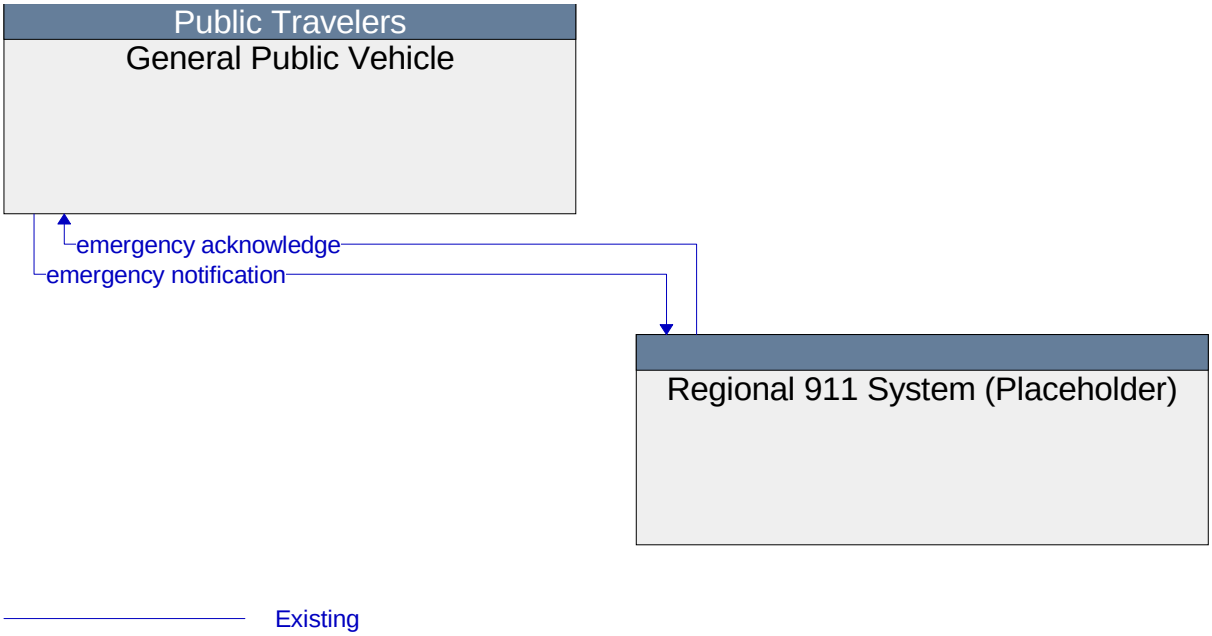

ADOTPF/ Alaska Railroad Corporation
Field/ Train Signal System
driver information
Public Travelers
Travelers/ Personal Communications/Computing Devices (en-route)
Existing

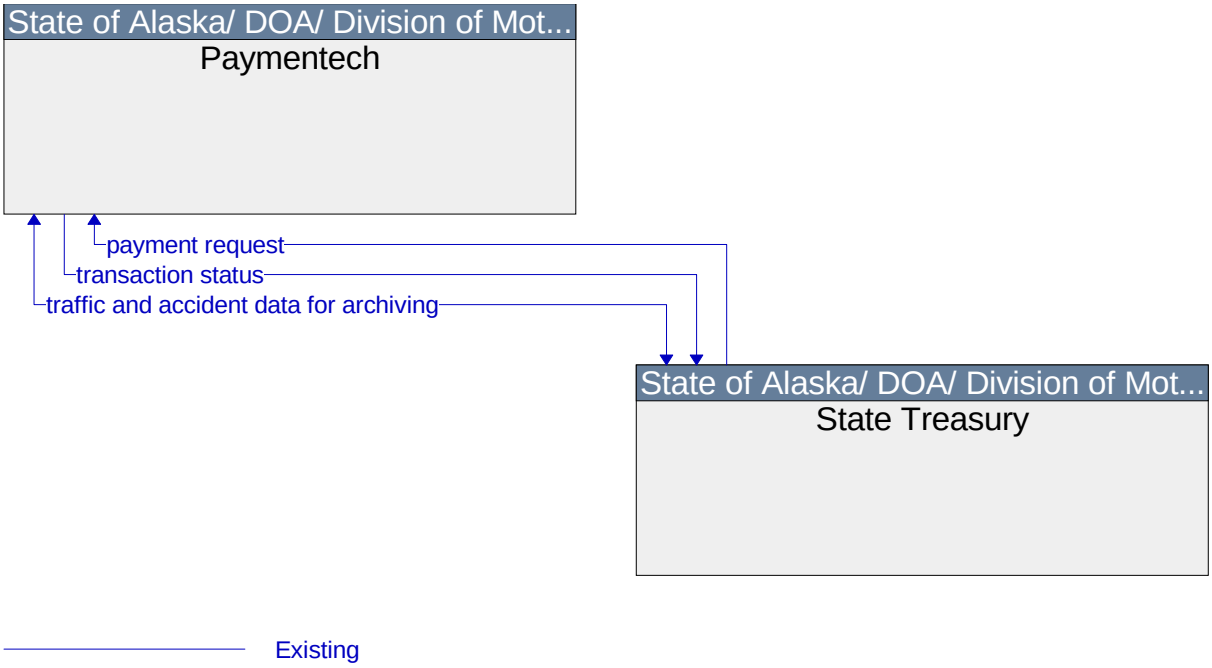

ADOTPF/ Alaska Railroad Corporation
Field/ Train Whistle Noise Reduction Sensors
arriving train information
track status
ADOTPF/ Alaska Railroad Corporation
Field/ Train Whistle Noise Reduction Horns
Existing

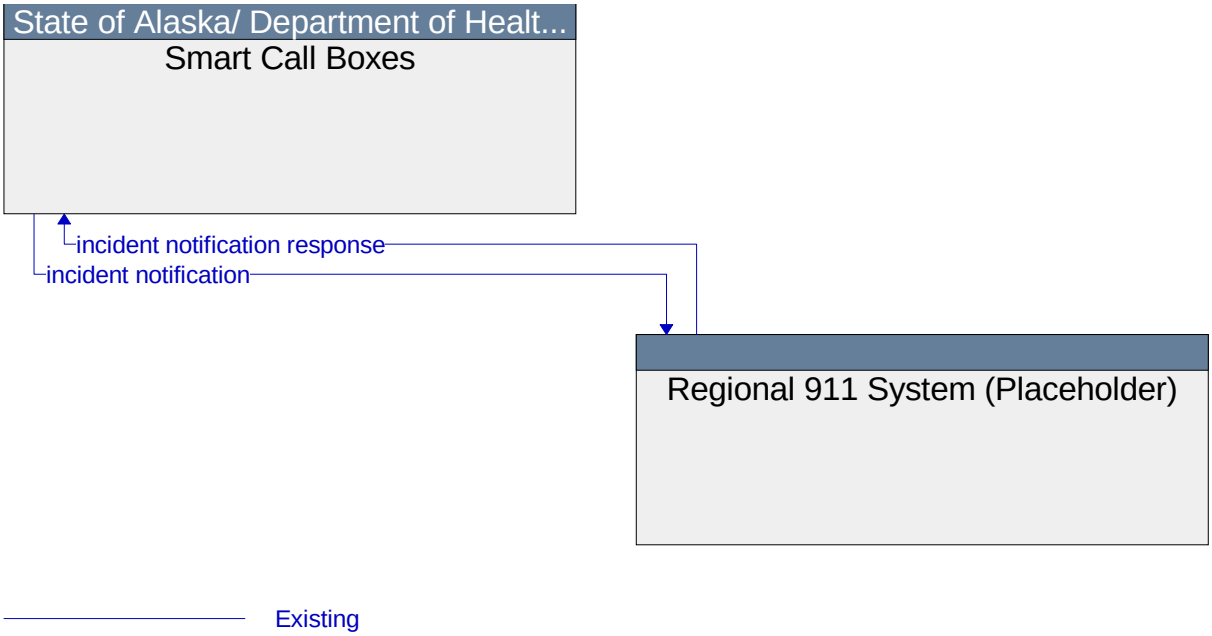

Public Travelers
Travelers/ Personal Communications/Computing Devices (en-route)
driver information
ADOTPF/ Alaska Railroad Corporation
Field/ Train Whistle Noise Reduction Horns
Existing

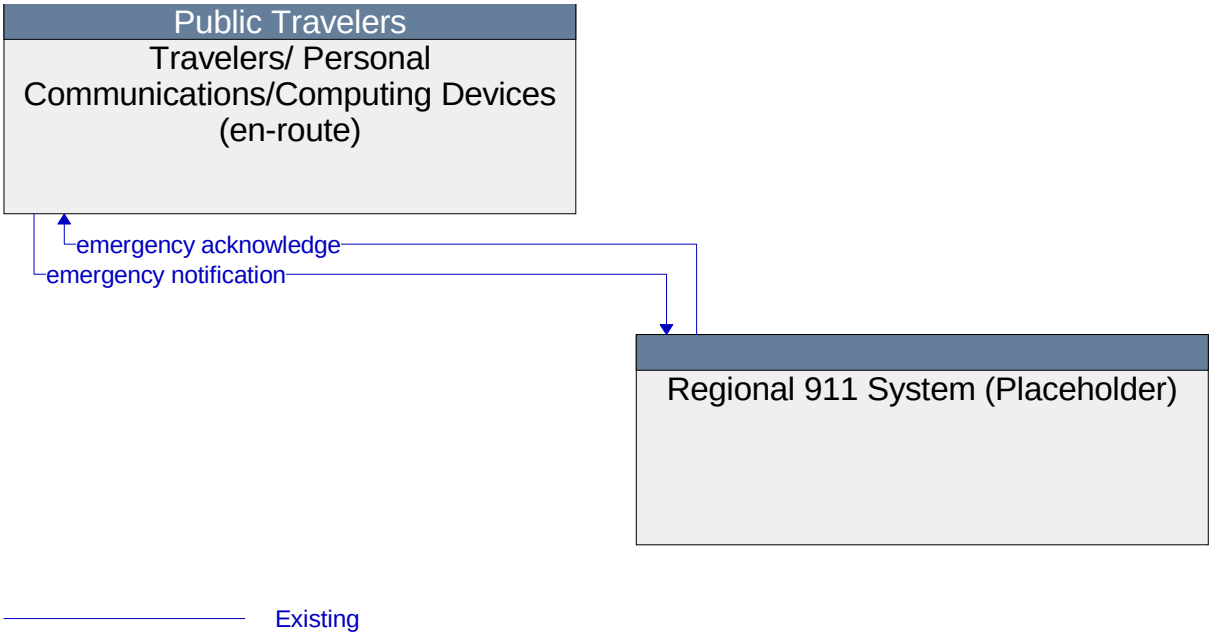

ADOTPF/ Measurement Standards a...
Field/ Weigh and Border Station Roadside and Handheld Equipment
commercial vehicle breach
CVO weight and presence
identification information
tag data
electronic screening request
pass/pull-in
request tag data
screening event record
safety inspection record
Commercial Vehicle Operators/ Moto...
Vehicle/ Commercial Vehicle On-Board Systems
Existing
Planned

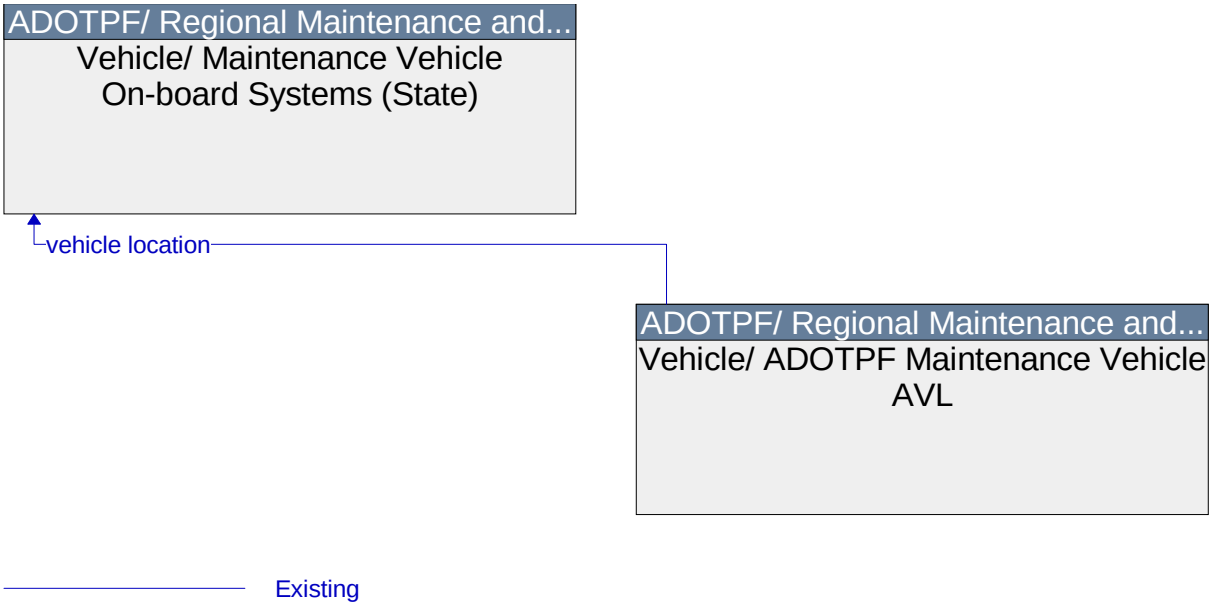

ADOTPF/ Measurement Standards a...
Field/ Weigh and Border Station Roadside and Handheld Equipment
violation notification
ADOTPF/ Measurement Standards a...
Weigh Stations
Existing

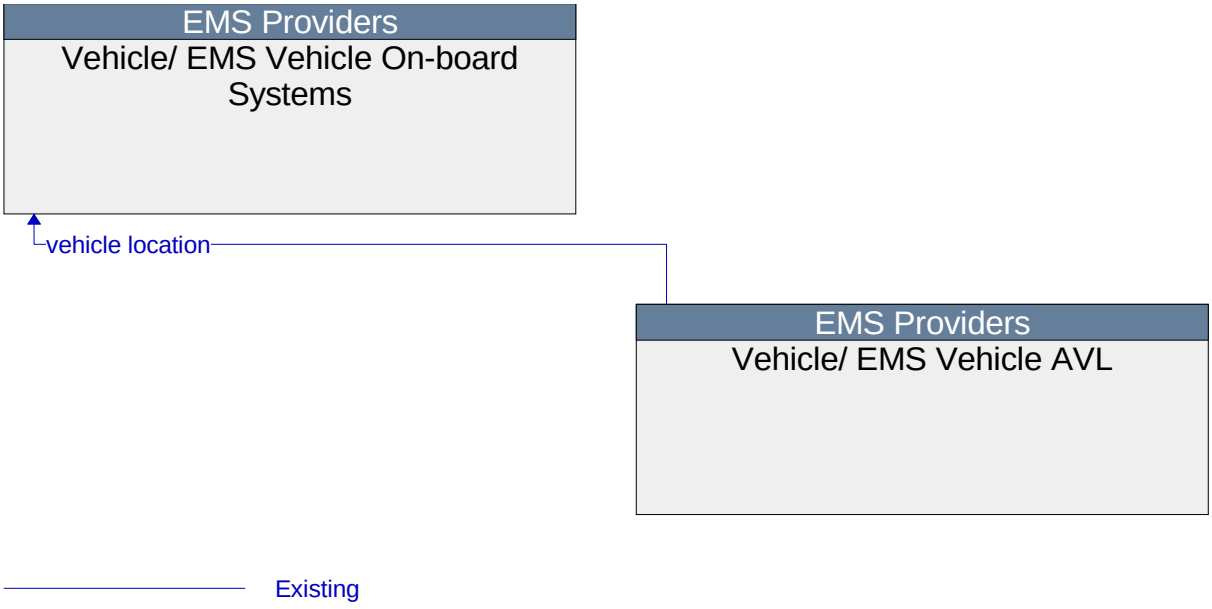

Public Travelers
General Public Vehicle
emergency acknowledge
emergency notification
Regional 911 System (Placeholder)
Existing

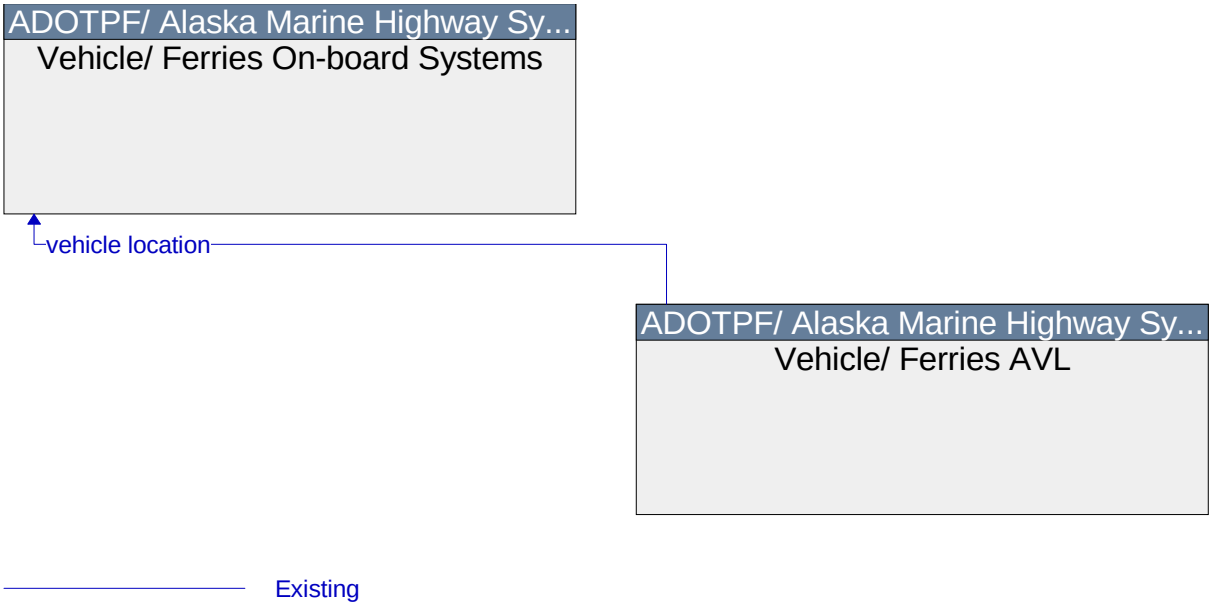

State of Alaska/ DOA/ Division of Mot...
Paymentech
payment request
transaction status
traffic and accident data for archiving
State of Alaska/ DOA/ Division of Mot...
State Treasury
Existing

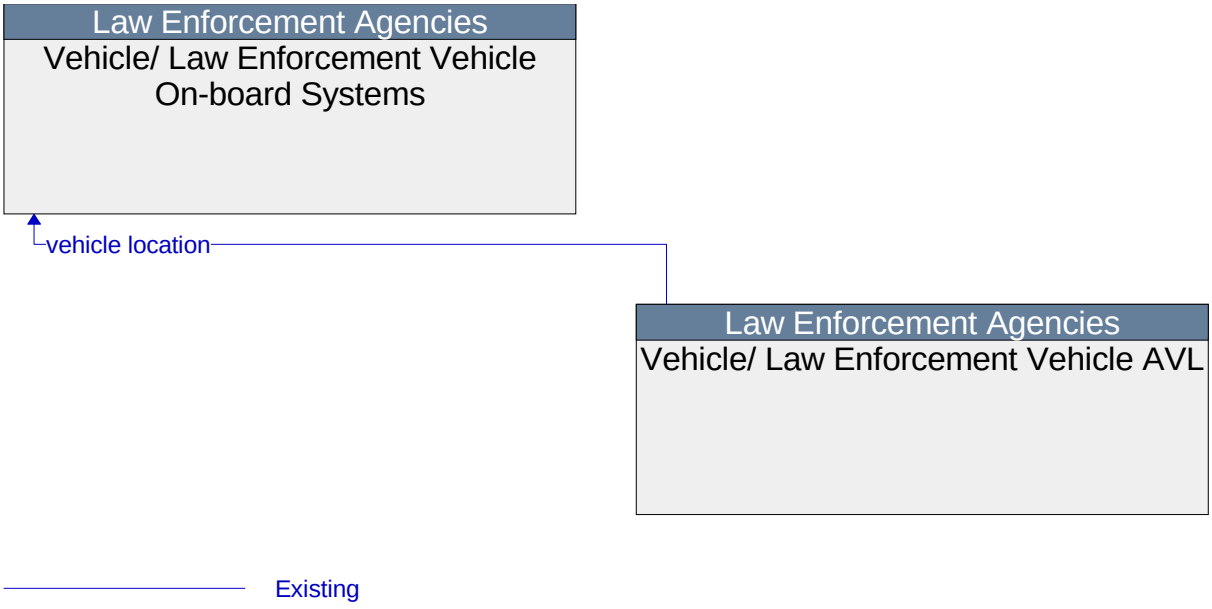

State of Alaska/ Department of Healt...
Smart Call Boxes
incident notification response
incident notification
Regional 911 System (Placeholder)
Existing


Public Travelers
Travelers/ Personal Communications/Computing Devices (en-route)
emergency acknowledge
emergency notification
Regional 911 System (Placeholder)
Existing


ADOTPF/ Regional Maintenance and...
Vehicle/ Maintenance Vehicle On-board Systems (State)
vehicle location
ADOTPF/ Regional Maintenance and...
Vehicle/ ADOTPF Maintenance Vehicle AVL
Existing


EMS Providers
Vehicle/ EMS Vehicle On-board Systems
vehicle location
EMS Providers
Vehicle/ EMS Vehicle AVL
Existing


ADOTPF/ Alaska Marine Highway Sy...
Vehicle/ Ferries On-board Systems
vehicle location
ADOTPF/ Alaska Marine Highway Sy...
Vehicle/ Ferries AVL
Existing


Law Enforcement Agencies
Vehicle/ Law Enforcement Vehicle On-board Systems
vehicle location
Law Enforcement Agencies
Vehicle/ Law Enforcement Vehicle AVL
Existing

5.8 Appendix D: Architecture Flows (Tabular)

Table 5-8:
Existing and Planned ITS Architecture Flows Between Alaska ITS Elements

Source Element	Flow Name	Destination Element	Flow Status
ARRC Dispatch	railroad advisories	Center/ Anton Anderson Tunnel Control System	Existing
	railroad schedules		Existing
	traffic information coordination		Existing
	asset status update	Center/ Computerized Materials and Maintenance Management System	Existing
	emergency plan coordination	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	incident information		Planned
	rail incident response status		Planned
	railroad advisories		Planned
Carrier Banks	transaction status	Center/ ALVIN Registration	Planned
	transaction status	Center/ Motor Carrier Administrative Systems	Existing
	traffic and accident data for archiving	Paymentech	Planned
	transaction status	State Treasury	Planned
Center/ 511 (phone and web)	ISP coordination	Center/ AMHS Website	Existing
	ISP coordination	Center/ Division of Tourism Website	Existing
	broadcast information	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
	emergency traveler information		Planned
	traveler information		Existing
	broadcast information	Travelers/ Personal Communications/Computing Devices (pre-trip)	Existing
	emergency traveler information		Planned
	traveler information		Existing
Center/ ADOTPF Traffic and Safety Offices	signal control data	Field/ Traffic Signal Controllers	Existing
Center/ ALVIN CDL	credentials status information	Center/ CDLIS	Existing
	credentials information	Center/ CVIEW	Planned
Center/ ALVIN Registration	payment request	Carrier Banks	Planned
	credential fee coordination	Center/ CVIEW	Planned
	credentials information		Planned
	credential fee coordination	Center/ Motor Carrier Administrative Systems	Planned
	credentials information		Planned
	credential fee coordination	State Treasury	Existing
	payment request		Existing
Center/ AMHS Dispatch and Communications	transit and fare schedules	Center/ AMHS Website	Existing
	transit incident information		Existing
	transit incident information	Center/ Condition Acquisition and Reporting System	Planned
	transit system data		Planned
	transit schedule information	Vehicle/ Ferries On-board Systems	Existing

Source Element	Flow Name	Destination Element	Flow Status
	transit vehicle operator information		Existing
Center/ AMHS Website	ISP coordination	Center/ 511 (phone and web)	Existing
	ISP coordination	Center/ Division of Tourism Website	Planned
	transit information request	Center/ Vessel Tracking System	Existing
	broadcast information	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
	traveler information		Existing
	trip plan		Existing
	yellow pages information		Planned
	broadcast information	Travelers/ Personal Communications/Computing Devices (pre-trip)	Existing
	traveler information		Existing
	trip plan		Existing
	yellow pages information		Planned
Center/ Anton Anderson Tunnel Control System	hri advisories	ARRC Dispatch	Existing
	traffic information coordination		Existing
	alert status	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	emergency plan coordination		Planned
	emergency routes		Planned
	emergency traffic control information		Planned
	incident information		Planned
	maint and constr resource request		Planned
	road network conditions		Planned
	road network status assessment		Planned
	traffic images		Planned
	traffic information coordination		Planned
	barrier system control	Center/ Tunnel Control System	Existing
	reversible lane control		Existing
	signal control data		Existing
	video surveillance control		Existing
	barrier system control	Field/ Train Signal System	Existing
	reversible lane control		Existing
	signal control data		Existing
	video surveillance control		Existing
Center/ APD Headquarters and Dispatch	incident information	Center/ Condition Acquisition and Reporting System	Existing
	incident report		Existing
	road network conditions		Existing
	license request	Department of Motor Vehicles	Existing
	roadway information system data	Field/ Permanent Dynamic Message Signs (Anchorage)	Existing
	incident notification response	Regional 911 System (Placeholder)	Existing
Center/ Avalanche Detection System	secure area sensor data	Center/ Law Enforcement Dispatch	Planned
	alerts and advisories	Center/ Regional Maintenance Stations	Existing
	infrastructure monitoring sensor data		Existing
	secure area sensor data		Existing

Source Element	Flow Name	Destination Element	Flow Status
	secure area surveillance data		Existing
	threat support data		Existing
Center/ Bridge Design Section Offices	maint and constr archive data	Center/ Bridge Management System	Existing
Center/ Bridge Management System	archive status	Center/ Bridge Design Section Offices	Existing
	archive coordination	Center/ Maintenance Management System	Existing
Center/ Bridge Scour System	infrastructure monitoring sensor control	Field/ Bridge Scour Sensors	Existing
Center/ CAPRI	compliance review report	Center/ SAFETYNET	Existing
Center/ CDLIS	credentials information	Center/ ALVIN CDL	Existing
	citation	CVO Inspector	Existing
	violation notification		Existing
Center/ Commercial Vehicle Operations Offices	tax filing	Center/ Credentials Data Integration and Access System (CDIAS)	Existing
	credential application	Center/ Customs and Border Protection	Existing
	tax filing		Existing
	hazmat information	Center/ Law Enforcement Dispatch	Existing
	credential application	Center/ MSCVE Headquarters	Existing
	tax filing		Existing
	credential application	Center/ Web-Based Electronic Registration System (WeB CAT)	Planned
	tax filing		Planned
	trip identification number	Vehicle/ Commercial Vehicle On-Board Systems	Existing
	credential application	Weigh Stations	Existing
	tax filing		Existing
Center/ Computerized Materials and Maintenance Management System	asset inventory	ARRC Dispatch	Existing
	asset restrictions		Existing
	maintenance and repair needs		Existing
Center/ Condition Acquisition and Reporting System	alert notification	Center/ 511 (phone and web)	Existing
	current asset restrictions		Existing
	incident information		Existing
	maint and constr work plans		Existing
	road network conditions		Existing
	road weather information		Existing
	roadway maintenance status		Existing
	route restrictions		Existing
	transportation system status		Existing
	work zone information		Existing
	incident information	Center/ APD Headquarters and Dispatch	Planned
	incident report		Planned
	incident response status		Planned
	road network conditions		Planned
	roadway maintenance status		Planned
	transportation system status		Planned
	credentials status information	Center/ CVIEW	Planned

Source Element	Flow Name	Destination Element	Flow Status
	safety status information		Planned
	safety status information	Center/ HazMat	Planned
	archive coordination	Center/ Highway Analysis System	Planned
	alerts and advisories	Center/ Law Enforcement Dispatch	Existing
	current asset restrictions		Existing
	incident information		Existing
	incident report		Existing
	road network conditions		Existing
	road weather information		Existing
	roadway maintenance status		Existing
	transportation system status		Existing
	archive status	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	incident information		Planned
	incident response status		Planned
	incident information	Center/ MOA Maintenance Dispatch Office	Planned
	road network conditions		Planned
	transportation system status		Planned
	incident information	Center/ Regional Maintenance Stations	Existing
	road network conditions		Existing
	transportation system status		Existing
	traveler archive data	Center/ SEPP	Planned
	current asset restrictions	Center/ Transit Agency Dispatch (Placeholder)	Planned
	road network conditions		Planned
	roadway maintenance status		Planned
Center/ Credentials Data Integration and Access System (CDIAS)	credentials information	Center/ Commercial Vehicle Operations Offices	Existing
Center/ Customs and Border Protection	border clearance status		Existing
	compliance review report		Existing
	route restrictions		Existing
	border agency clearance results	Field/ Border Data Collection System	Planned
	credentials information		Planned
	credentials status information		Planned
	transportation border clearance assessment		Planned
	trip declaration identifiers		Planned
Center/ CVE Insurance	credentials information	Center/ CVIEW	Planned
	safety status information		Planned
Center/ CVIEW	credentials status information	Center/ ALVIN CDL	Planned
	credential fee coordination	Center/ ALVIN Registration	Planned
	credentials status information		Planned
	credentials information	Center/ Condition Acquisition and Reporting System	Planned
	safety status information		Planned
	credentials status information	Center/ CVE Insurance	Planned

Source Element	Flow Name	Destination Element	Flow Status
	safety status information		Planned
	safety status information	Center/ HazMat	Planned
	credentials information	Center/ International Border System	Planned
	safety status information		Planned
	credentials status information	Center/ SAFER	Planned
	credentials status information	Center/ SAFETYNET	Planned
	credentials information	Center/ SEPP	Planned
	transponder admin data	Center/ Transponder Administration System	Planned
	credentials information	Field/ Integrated Roadside Operations Computer	Planned
	safety inspection report		Planned
	safety status information		Planned
Center/ Division of Tourism Website	ISP coordination	Center/ 511 (phone and web)	Existing
	ISP coordination	Center/ AMHS Website	Planned
	traveler information	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
	yellow pages information		Existing
	traveler information	Travelers/ Personal Communications/Computing Devices (pre-trip)	Existing
	yellow pages information		Existing
Center/ EMS Dispatch Centers (Placeholder)	incident command information coordination	Center/ Law Enforcement Dispatch	Planned
	incident response coordination		Existing
	alert notification coordination	Center/ MOA Emergency Operations Center	Planned
	emergency plan coordination		Planned
	incident command information coordination		Planned
	incident report		Planned
	incident response coordination		Planned
	resource coordination		Planned
	incident information	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	resource request		Planned
	incident notification response	Regional 911 System (Placeholder)	Existing
	decision support information	Vehicle/ EMS Vehicle On-board Systems	Existing
	emergency dispatch requests		Existing
	suggested route		Existing
Center/ FAA Website	surrounding environmental conditions images	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
	surrounding environmental conditions images	Travelers/ Personal Communications/Computing Devices (pre-trip)	Existing
Center/ HazMat	safety status information	Center/ Condition Acquisition and Reporting System	Planned
	safety status information	Center/ CVIEW	Planned
	emergency archive data	Center/ SEPP	Planned
	route restrictions		Planned
Center/ Highway Analysis System	archive coordination	Center/ Condition Acquisition and Reporting System	Planned
	archive coordination	Center/ Highway Data Weather Portal	Planned

Source Element	Flow Name	Destination Element	Flow Status
	archive coordination	Center/ Maintenance Management System	Planned
	accident report	Center/ SAFETYNET	Planned
	archive analysis results	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
	archived data products		Existing
	archived data products	Travelers/ Personal Communications/Computing Devices (pre-trip)	Existing
Center/ Highway Data Weather Portal	archive coordination	Center/ Highway Analysis System	Planned
Center/ Highway Database Section Office	traffic sensor control	Field/ Automatic Traffic Data Recorders	Existing
Center/ International Border System	credentials status information	Center/ CVIEW	Planned
	safety status information		Planned
	CVO inspector information	CVO Inspector	Planned
	border clearance data request	Field/ AVI/WIM	Planned
	pass/pull-in		Planned
	request tag data		Planned
	transportation border clearance assessment		Planned
	border agency clearance results	Field/ Integrated Roadside Operations Computer	Planned
	transportation border clearance assessment		Planned
	trip declaration identifiers		Planned
Center/ Law Enforcement Data Archives	archive requests	Center/ Law Enforcement Dispatch	Planned
	archive status		Planned
Center/ Law Enforcement Dispatch	emergency plan coordination	ARRC Dispatch	Planned
	incident information		Existing
	incident response status		Existing
	threat information		Planned
	infrastructure monitoring sensor control	Center/ Avalanche Detection System	Planned
	secure area sensor control		Planned
	incident information	Center/ Condition Acquisition and Reporting System	Existing
	incident report		Existing
	road network conditions		Existing
	incident command information coordination	Center/ EMS Dispatch Centers (Placeholder)	Planned
	incident report		Existing
	incident response coordination		Existing
	emergency archive data	Center/ Law Enforcement Data Archives	Existing
	traffic archive data		Existing
	incident command information coordination	Center/ MOA Emergency Operations Center	Planned
	incident report		Planned
	incident response coordination		Planned
	threat information coordination		Planned
	alert notification	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	alert notification coordination		Planned
	archive status		Planned
	emergency archive data		Planned
	emergency plan coordination		Planned

Source Element	Flow Name	Destination Element	Flow Status
	evacuation information		Planned
	incident command information coordination		Planned
	incident information		Planned
	incident report		Planned
	incident response coordination		Planned
	incident response status		Planned
	threat information		Planned
	alert notification coordination	Center/ State Emergency Coordination Center	Existing
	emergency plan coordination		Existing
	incident command information coordination		Existing
	incident report		Existing
	incident response coordination		Existing
	resource coordination		Existing
	alert notification	Center/ Transit Agency Dispatch (Placeholder)	Planned
	incident information		Planned
	incident response status		Planned
	threat information		Planned
	license request	Department of Motor Vehicles	Existing
	threat information	Emergency Alert System	Existing
	alarm acknowledge	Field/ Cameras (at AMHS Terminals)	Planned
	secure area surveillance control		Planned
	infrastructure monitoring sensor control	Field/ Seismic Sensors	Planned
	secure area sensor control		Planned
	incident information for media	Media Systems (T.V. and Radio)	Existing
	incident notification response	Regional 911 System (Placeholder)	Existing
	decision support information	Vehicle/ Law Enforcement Vehicle On-board Systems	Existing
	emergency dispatch requests		Existing
	suggested route		Existing
Center/ Maintenance Management System	archive coordination	Center/ Bridge Management System	Existing
	archive coordination	Center/ Highway Analysis System	Planned
	maint and constr administrative information	Center/ Regional Maintenance Stations	Existing
Center/ MOA Emergency Operations Center	threat information	ARRC Dispatch	Planned
	threat information	Center/ AMHS Dispatch and Communications	Planned
	alert notification coordination	Center/ EMS Dispatch Centers (Placeholder)	Planned
	emergency plan coordination		Planned
	incident command information coordination		Planned
	incident report		Planned
	incident response coordination		Planned
	resource coordination		Planned
	incident command information coordination	Center/ Law Enforcement Dispatch	Planned
	incident response coordination		Planned
	threat information		Planned

Source Element	Flow Name	Destination Element	Flow Status
	emergency plan coordination	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	emergency traffic control request		Planned
	incident command information coordination		Planned
	incident response coordination		Planned
	remote surveillance control		Planned
	resource coordination		Planned
	threat information		Planned
	threat information coordination		Planned
	threat information	Center/ MOA Maintenance Dispatch Office	Planned
	threat information	Center/ Regional Maintenance Stations	Planned
	incident command information coordination	Center/ State Emergency Coordination Center	Planned
	incident report		Planned
	threat information coordination		Existing
	alert notification	Center/ Transit Agency Dispatch (Placeholder)	Planned
	threat information		Planned
	threat information	Emergency Alert System	Existing
Center/ MOA Integrated Transportation Operations and Communications Center	emergency plan coordination	ARRC Dispatch	Planned
	incident information		Planned
	maint and constr work plans		Planned
	threat information		Planned
	threat information	Center/ AMHS Dispatch and Communications	Planned
	alert notification	Center/ Condition Acquisition and Reporting System	Planned
	archive requests		Planned
	current asset restrictions		Planned
	incident information		Planned
	road network conditions		Planned
	road weather information		Planned
	traffic archive data		Planned
	traveler archive data		Planned
	current asset restrictions	Center/ EMS Dispatch Centers (Placeholder)	Planned
	incident information		Planned
	resource deployment status		Planned
	road network conditions		Planned
	traffic images		Planned
	work zone information		Planned
	alert notification coordination	Center/ Law Enforcement Dispatch	Planned
	current asset restrictions		Planned
	emergency plan coordination		Planned
	incident command information coordination		Planned
	incident information		Planned
	incident report		Planned
	incident response coordination		Planned
	maint and constr work plans		Planned
	road network conditions		Planned

Source Element	Flow Name	Destination Element	Flow Status
	threat information		Planned
	traffic archive data		Planned
	traffic images		Planned
	traveler archive data		Planned
	work zone information		Planned
	maint and constr archive data	Center/ Maintenance Management System	Planned
	traveler archive data		Planned
	current asset restrictions	Center/ MOA Emergency Operations Center	Planned
	emergency plan coordination		Planned
	emergency routes		Planned
	incident command information coordination		Planned
	incident information		Planned
	incident response coordination		Planned
	resource coordination		Planned
	resource deployment status		Planned
	road network conditions		Planned
	road weather information		Planned
	threat information coordination		Planned
	traffic images		Planned
	transportation system status		Planned
	incident information	Center/ MOA Maintenance Dispatch Office	Planned
	maint and constr resource coordination		Planned
	maint and constr resource request		Planned
	threat information		Planned
	alert notification	Center/ Regional Maintenance Stations	Planned
	incident information		Planned
	incident response status		Planned
	maint and constr resource coordination		Planned
	maint and constr resource request		Planned
	threat information		Planned
	current asset restrictions	Center/ Transit Agency Dispatch (Placeholder)	Planned
	emergency transit service request		Planned
	request transit information		Planned
	road network conditions		Planned
	threat information		Planned
	transportation system status		Planned
	license request	Department of Motor Vehicles	Planned
	threat information	Emergency Alert System	Planned
	roadway treatment system control	Field/ Automated Bridge Anti-icing	Planned
	traffic sensor control	Field/ Automatic Traffic Data Recorders	Planned
	video surveillance control	Field/ Cameras (MOA)	Planned
	roadway information system data	Field/ Highway Advisory Radio	Planned

Source Element	Flow Name	Destination Element	Flow Status
	roadway information system data	Field/ Permanent Dynamic Message Signs (Anchorage)	Planned
	data collection and monitoring control	Field/ Remote Video Monitoring System	Planned
	video surveillance control		Planned
	data collection and monitoring control	Field/ Road Weather Information Systems (RWIS)	Planned
	environmental sensors control		Planned
	signal control data	Field/ Traffic Signal Controllers	Planned
	hri control data	Field/ Train Signal System	Planned
	hri request		Planned
	signal control data		Planned
	incident information for media	Media Systems (T.V. and Radio)	Planned
	road network conditions		Planned
	road weather information		Planned
Center/ MOA Maintenance Dispatch Office	current asset restrictions	Center/ Condition Acquisition and Reporting System	Planned
	maint and constr resource response		Planned
	maint and constr work plans		Planned
	road network conditions		Planned
	roadway maintenance status		Planned
	current asset restrictions	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	maint and constr work plans		Planned
	roadway maintenance status		Planned
	work zone information		Planned
	maint and constr work plans	Media Systems (T.V. and Radio)	Planned
	maint and constr dispatch information	Vehicle/ Maintenance Vehicle On-board Systems (MOA)	Existing
Center/ MOA Signal Control	video surveillance control	Field/ Cameras (MOA)	Planned
	signal control data	Field/ Traffic Signal Controllers	Existing
Center/ Motor Carrier Administrative Systems	payment request	Carrier Banks	Existing
	credential application	Center/ ALVIN Registration	Planned
	credential fee coordination		Planned
	credentials status information		Planned
	credential application	Center/ SEPP	Planned
	credential fee coordination		Planned
	credentials status information		Planned
	transponder admin data	Center/ Transponder Administration System	Planned
	expected driver identity characteristics	Vehicle/ Commercial Vehicle On-Board Systems	Planned
	trip log request		Planned
Center/ Motor Carrier Management Information System	safety inspection report	Center/ SAFER	Existing
	safety status information		Existing
	compliance review report	Center/ SAFETYNET	Existing
	safety inspection report		Existing
	safety status information		Existing
Center/ MSCVE Headquarters	citation	Center/ Commercial Vehicle Operations Offices	Existing

Source Element	Flow Name	Destination Element	Flow Status
	credentials information		Existing
	credentials status information		Existing
	route restrictions		Existing
	safety status information		Existing
	credentials information	Field/ Weigh and Border Station Roadside and Handheld Equipment	Existing
	credentials status information		Existing
	safety status information		Planned
Center/ MSCVE Offices	roadway information system data	Field/ Permanent Dynamic Message Signs (Permanent @ FOX Station)	Existing
	roadway information system data	Field/ Permanent Dynamic Message Signs (Port of Anchorage)	Existing
Center/ National Weather Service Offices	environmental conditions data	Center/ Condition Acquisition and Reporting System	Planned
	weather information		Planned
	weather information	Center/ MOA Emergency Operations Center	Planned
	weather information	Center/ Regional Maintenance Stations	Planned
	weather information	Center/ State Emergency Coordination Center	Planned
Center/ Pavement Management System	archive analysis results	Travelers/ Personal Communications/Computing Devices (pre-trip)	Existing
	archived data products		Existing
Center/ Regional Maintenance Stations	maint and constr work plans	ARRC Dispatch	Planned
	maint and constr work plans	Center/ ADOTPF Traffic and Safety Offices	Existing
	secure area sensor control	Center/ Avalanche Detection System	Existing
	secure area surveillance control		Existing
	threat data for analysis		Existing
	threat information		Existing
	current asset restrictions	Center/ Condition Acquisition and Reporting System	Existing
	maint and constr resource response		Existing
	maint and constr work plans		Existing
	road network conditions		Existing
	road weather information		Existing
	roadway maintenance status		Existing
	transportation system status		Existing
	work zone information		Existing
	incident information	Center/ Law Enforcement Dispatch	Existing
	maint and constr resource response		Existing
	maint and constr work plans		Existing
	roadway maintenance status		Existing
	threat information coordination		Existing
	maint and constr administrative request	Center/ Maintenance Management System	Existing
	maint and constr work performance		Existing
	current asset restrictions	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	emergency traffic control request		Planned
	incident information		Planned
	maint and constr resource coordination		Planned
	maint and constr work plans		Planned
	road network status assessment		Planned

Source Element	Flow Name	Destination Element	Flow Status
	road weather information		Planned
	roadway maintenance status		Planned
	threat information		Planned
	transportation system status		Planned
	work zone information		Planned
	maint and constr resource coordination	Center/ MOA Maintenance Dispatch Office	Planned
	work plan coordination		Planned
	current asset restrictions	Center/ MSCVE Headquarters	Planned
	roadway treatment system control	Field/ Automated Bridge Anti-icing	Existing
	video surveillance control	Field/ Cameras (at RWIS)	Existing
	environmental sensors control	Field/ Road Weather Information Systems (RWIS)	Existing
	secure area sensor control	Field/ Seismic Sensors	Existing
	secure area surveillance control		Existing
	threat data for analysis		Existing
	threat information		Existing
	maint and constr work plans	Media Systems (T.V. and Radio)	Planned
	roadway maintenance status		Planned
	work zone information		Existing
	maint and constr dispatch information	Vehicle/ Maintenance Vehicle On-board Systems (State)	Existing
Center/ SAFER	credentials information	Center/ CVIEW	Planned
	safety inspection report		Planned
	safety status information		Planned
	safety inspection report	Center/ Motor Carrier Management Information System	Existing
	safety status information		Existing
	accident report	Center/ SAFETYNET	Existing
	citation		Existing
	compliance review report		Existing
	safety inspection report		Existing
	safety status information		Existing
	safety inspection report	Field/ ASPEN	Existing
	safety status information		Existing
Center/ SAFETYNET	credentials information	Center/ CVIEW	Planned
	accident report	Center/ Motor Carrier Management Information System	Existing
	compliance review report		Existing
	safety inspection report		Existing
	safety status information		Existing
	safety inspection report	Center/ SAFER	Existing
	safety status information		Existing
Center/ SEPP	archive requests	Center/ Condition Acquisition and Reporting System	Planned
	credentials status information	Center/ CVIEW	Planned
	route restrictions	Center/ HazMat	Planned

Source Element	Flow Name	Destination Element	Flow Status
	credential fee coordination	Center/ Motor Carrier Administrative Systems	Planned
	credentials information		Planned
	payment request	Paymentech	Existing
	credential fee coordination	State Treasury	Existing
	payment request		Existing
Center/ State Emergency Coordination Center	alert notification coordination	Center/ Law Enforcement Dispatch	Existing
	emergency plan coordination		Existing
	incident command information coordination		Existing
	incident report		Existing
	incident response coordination		Existing
	resource coordination		Existing
	incident command information coordination	Center/ MOA Emergency Operations Center	Planned
	threat information coordination		Existing
	threat information	Emergency Alert System	Existing
Center/ Transit Agency Dispatch (Placeholder)	transit incident information	Center/ Condition Acquisition and Reporting System	Planned
	transit and fare schedules	Center/ Transit Agency Websites	Existing
	transit incident information		Planned
	transit incidents for media	Media Systems (T.V. and Radio)	Planned
	transit vehicle operator information	Vehicle/ Transit Vehicle On-board Systems (Placeholder)	Existing
Center/ Transit Agency Websites	transit information request	Center/ Transit Agency Dispatch (Placeholder)	Planned
	broadcast information	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
	traveler information		Existing
	broadcast information	Travelers/ Personal Communications/Computing Devices (pre-trip)	Existing
	traveler information		Existing
Center/ Transponder Administration System	transponder admin data	Center/ CVIEW	Planned
	transponder admin data	Center/ Motor Carrier Administrative Systems	Planned
	payment request	Paymentech	Planned
Center/ Tunnel Control System	barrier system status	Center/ Anton Anderson Tunnel Control System	Existing
	request for right-of-way		Existing
	signal control status		Existing
	traffic flow		Existing
	traffic images		Existing
	roadway equipment coordination	Field/ Train Signal System	Existing
Center/ Vessel Tracking System	transit and fare schedules	Center/ AMHS Website	Existing
Center/ Web-Based Electronic Registration System (WeB CAT)	commercial vehicle archive data	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	request for right-of-way		Planned
	transportation border clearance assessment	Field/ Border Data Collection System	Planned
	trip declaration identifiers		Planned
CVO Inspector	CVC override mode	Center/ International Border System	Planned
	CVO inspector input		Planned

Source Element	Flow Name	Destination Element	Flow Status
	CVO inspector input	Field/ ASPEN	Existing
	information on violators		Existing
	CVC override mode	Field/ AVI/WIM	Planned
	CVO inspector input		Planned
	CVC override mode	Field/ Border Data Collection System	Planned
	CVO inspector input		Planned
	CVC override mode	Field/ Infra-red Inspection System (IRIS)	Planned
	CVO inspector input		Planned
	CVC override mode	Field/ Integrated Roadside Operations Computer	Planned
	CVO inspector input		Planned
	CVC override mode	Field/ Weigh and Border Station Roadside and Handheld Equipment	Existing
	CVO inspector input		Existing
Department of Motor Vehicles	traffic and accident data for archiving	Center/ Highway Database Section Office	Existing
	registration	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
Emergency Alert System	alerts and advisories	Center/ AMHS Dispatch and Communications	Existing
	alerts and advisories	Center/ Commercial Vehicle Operations Offices	Existing
	alerts and advisories	Center/ EMS Dispatch Centers (Placeholder)	Existing
	alerts and advisories	Center/ Law Enforcement Dispatch	Existing
	alerts and advisories	Center/ MOA Emergency Operations Center	Existing
	alerts and advisories	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	alerts and advisories	Center/ MOA Maintenance Dispatch Office	Existing
	alerts and advisories	Center/ Regional Maintenance Stations	Existing
	alerts and advisories	Center/ State Emergency Coordination Center	Existing
	alerts and advisories	Center/ Transit Agency Dispatch (Placeholder)	Existing
Field/ ASPEN	safety inspection report	Center/ SAFER	Existing
	violation notification		Existing
Field/ Automated Bridge Anti-icing	environmental conditions data	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	roadway treatment system status		Planned
	environmental conditions data	Center/ Regional Maintenance Stations	Existing
	roadway treatment system status		Existing
Field/ Automatic Traffic Data Recorders	traffic flow	Center/ Highway Database Section Office	Existing
	field device status	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	traffic flow		Planned
Field/ AVI/WIM	border clearance data	Center/ International Border System	Planned
	screening event record		Planned
	tag data		Planned
	driver log	Field/ Integrated Roadside Operations Computer	Planned
	screening event record		Planned
	tag data		Planned

Source Element	Flow Name	Destination Element	Flow Status
	driver log request	Vehicle/ Commercial Vehicle On-Board Systems	Planned
	electronic screening request		Planned
	pass/pull-in		Planned
	request tag data		Planned
Field/ Border Data Collection System	border clearance event	Center/ Customs and Border Protection	Planned
	CVO inspector information	CVO Inspector	Planned
Field/ Bridge Scour Sensors	infrastructure monitoring sensor data	Center/ Bridge Design Section Offices	Existing
	field device status	Center/ Bridge Scour System	Existing
	infrastructure monitoring sensor data		Existing
Field/ Cameras (at AMHS Terminals)	alarm notification	Center/ Law Enforcement Dispatch	Planned
	secure area surveillance data		Planned
Field/ Cameras (at RWIS)	traffic images	Center/ Regional Maintenance Stations	Existing
Field/ Cameras (FAA)	surrounding environmental conditions images	Center/ FAA Website	Existing
Field/ Cameras (MOA)	traffic images	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	traffic images	Center/ MOA Signal Control	Planned
Field/ Highway Advisory Radio	roadway information system status	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	broadcast advisories	General Public Vehicle	Planned
Field/ Infra-red Inspection System (IRIS)	CVO inspector information	CVO Inspector	Planned
	safety inspection report	Weigh Stations	Planned
Field/ Integrated Roadside Operations Computer	daily site activity data	Center/ CVIEW	Planned
	border clearance event	Center/ International Border System	Planned
	daily site activity data		Planned
	CVO inspector information	CVO Inspector	Planned
	driver log request	Field/ AVI/WIM	Planned
	pass/pull-in		Planned
	request tag data	Field/ AVI/WIM	Planned
Field/ Permanent Dynamic Message Signs (Anchorage)	roadway information system status	Center/ APD Headquarters and Dispatch	Existing
	roadway information system status	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	driver information	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
Field/ Permanent Dynamic Message Signs (Permanent @ FOX Station)	roadway information system status	Center/ MSCVE Offices	Existing
	driver information	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
Field/ Permanent Dynamic Message Signs (Port of Anchorage)	roadway information system status	Center/ MSCVE Offices	Existing
	driver information	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
Field/ Remote Video Monitoring System	field device status	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	traffic images		Planned

Source Element	Flow Name	Destination Element	Flow Status
	daily site activity data	Weigh Stations	Planned
	traffic images		Planned
Field/ Road Weather Information Systems (RWIS)	roadside archive data	Center/ Condition Acquisition and Reporting System	Existing
	environmental conditions data	Center/ Highway Data Weather Portal	Planned
	environmental conditions data	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	environmental conditions data	Center/ National Weather Service Offices	Existing
	environmental conditions data	Center/ Regional Maintenance Stations	Existing
	field device status		Existing
	roadway equipment coordination	Weather Prediction System	Planned
Field/ Seismic Sensors	infrastructure monitoring sensor data	Center/ Law Enforcement Dispatch	Planned
	alerts and advisories	Center/ Regional Maintenance Stations	Existing
	infrastructure monitoring sensor data		Existing
	secure area sensor data		Existing
	secure area surveillance data		Existing
	threat support data		Existing
Field/ Traffic Detectors	roadway equipment coordination	Field/ Traffic Signal Controllers	Existing
Field/ Traffic Signal Controllers	signal control status	Center/ ADOTPF Traffic and Safety Offices	Existing
	signal control status	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	signal control status	Center/ MOA Signal Control	Existing
Field/ Train Signal System	request for right-of-way	Center/ Anton Anderson Tunnel Control System	Existing
	signal control status		Existing
	hri status	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	signal control status	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	roadway equipment coordination	Center/ Tunnel Control System	Existing
	driver information	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
Field/ Train Whistle Noise Reduction Horns	driver information	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
Field/ Train Whistle Noise Reduction Sensors	arriving train information	Field/ Train Whistle Noise Reduction Horns	Existing
	track status		Existing
Field/ Weather and Pavement Sensors (Military Bases)	environmental conditions data	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	weather information		Planned
	environmental conditions data	Center/ Regional Maintenance Stations	Existing
	weather information		Existing
Field/ Weather and Pavement Sensors (NWS)	weather information	Center/ National Weather Service Offices	Existing
Field/ Weigh and Border Station Roadside and Handheld Equipment	border clearance event	Center/ MSCVE Headquarters	Existing
	citation		Planned
	violation notification		Existing

Source Element	Flow Name	Destination Element	Flow Status
	CVO inspector information	CVO Inspector	Existing
	electronic screening request	Vehicle/ Commercial Vehicle On-Board Systems	Existing
	pass/pull-in		Existing
	request tag data		Planned
	safety inspection record		Planned
	screening event record		Existing
	violation notification	Weigh Stations	Existing
General Public Vehicle	emergency notification	Regional 911 System (Placeholder)	Existing
Media Systems (T.V. and Radio)	media information request	Center/ Law Enforcement Dispatch	Existing
	media information request	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	media information request	Center/ MOA Maintenance Dispatch Office	Planned
	media information request	Center/ Regional Maintenance Stations	Planned
	media information request	Center/ Transit Agency Dispatch (Placeholder)	Planned
Paymentech	traffic and accident data for archiving	Carrier Banks	Planned
	transaction status	Center/ SEPP	Existing
	transaction status	Center/ Transponder Administration System	Planned
	traffic and accident data for archiving	State Treasury	Existing
	transaction status		Existing
Regional 911 System (Placeholder)	incident notification	Center/ APD Headquarters and Dispatch	Existing
	incident notification	Center/ EMS Dispatch Centers (Placeholder)	Existing
	incident report		Existing
	incident notification	Center/ Law Enforcement Dispatch	Existing
	incident report		Existing
	emergency acknowledge	General Public Vehicle	Existing
	incident notification response	Smart Call Boxes	Existing
	emergency acknowledge	Travelers/ Personal Communications/Computing Devices (en-route)	Existing
Smart Call Boxes	incident notification	Regional 911 System (Placeholder)	Existing
State Treasury	payment request	Carrier Banks	Planned
	credential fee coordination	Center/ ALVIN Registration	Existing
	transaction status		Existing
	credential fee coordination	Center/ SEPP	Existing
	transaction status		Existing
	payment request	Paymentech	Existing
	traffic and accident data for archiving		Existing
Travelers/ Personal Communications/Computing Devices (en-route)	emergency traveler information request	Center/ 511 (phone and web)	Existing
	traveler profile		Planned
	traveler request		Existing
	traveler profile	Center/ AMHS Website	Existing
	traveler request		Existing

Source Element	Flow Name	Destination Element	Flow Status
	yellow pages request		Existing
	traveler profile	Center/ Division of Tourism Website	Existing
	traveler request		Existing
	yellow pages request		Existing
	archive analysis requests	Center/ Highway Analysis System	Existing
	archived data product requests		Existing
	traveler profile	Center/ Transit Agency Websites	Existing
	traveler request		Existing
	emergency notification	Regional 911 System (Placeholder)	Existing
Travelers/ Personal Communications/Computing Devices (pre-trip)	emergency traveler information request	Center/ 511 (phone and web)	Existing
	traveler profile		Planned
	traveler request		Existing
	traveler profile	Center/ AMHS Website	Existing
	traveler request	Center/ AMHS Website	Existing
	yellow pages request		Existing
	traveler profile	Center/ Division of Tourism Website	Existing
	traveler request		Existing
	yellow pages request		Existing
	archived data product requests	Center/ Highway Analysis System	Existing
	archived data product requests	Center/ Pavement Management System	Existing
	traveler profile	Center/ Transit Agency Websites	Existing
	traveler request		Existing
Vehicle/ ADOTPF Maintenance Vehicle AVL	vehicle location	Vehicle/ Maintenance Vehicle On-board Systems (State)	Existing
Vehicle/ Commercial Vehicle On-Board Systems	commercial vehicle breach	Center/ Commercial Vehicle Operations Offices	Planned
	driver alert response	Center/ Motor Carrier Administrative Systems	Planned
	trip log		Planned
	commercial vehicle measures	Field/ AVI/WIM	Planned
	CVO weight and presence		Planned
	driver log		Planned
	tag data		Planned
	commercial vehicle breach	Field/ Border Data Collection System	Planned
	tag data		Planned
	commercial vehicle breach	Field/ Weigh and Border Station Roadside and Handheld Equipment	Planned
	CVO weight and presence		Existing
	identification information		Existing
	safety inspection record		Planned
	tag data		Planned
Vehicle/ EMS Vehicle AVL	vehicle location	Vehicle/ EMS Vehicle On-board Systems	Existing
Vehicle/ EMS Vehicle On-board Systems	emergency dispatch response	Center/ EMS Dispatch Centers (Placeholder)	Existing
	emergency vehicle tracking data		Existing
	incident status		Existing
	local signal preemption request	Field/ Pre-emption and Priority Systems (Fairbanks)	Planned

Source Element	Flow Name	Destination Element	Flow Status
	local signal preemption request	Field/ Pre-emption and Priority Systems (MOA)	Existing
	local signal preemption request	Field/ Pre-emption and Priority Systems (State)	Existing
Vehicle/ Ferries AVL	vehicle location	Vehicle/ Ferries On-board Systems	Existing
Vehicle/ Ferries On-board Systems	environmental probe data	Center/ AMHS Dispatch and Communications	Existing
	transit vehicle location data		Existing
	transit vehicle schedule performance	Center/ AMHS Dispatch and Communications	Existing
	environmental probe data	Center/ National Weather Service Offices	Existing
	transit vehicle location data	Center/ Vessel Tracking System	Existing
	transit vehicle schedule performance		Existing
Vehicle/ Law Enforcement Vehicle AVL	vehicle location	Vehicle/ Law Enforcement Vehicle On-board Systems	Existing
Vehicle/ Law Enforcement Vehicle On-board Systems	emergency dispatch response	Center/ Law Enforcement Dispatch	Existing
	emergency vehicle tracking data		Existing
	incident status		Existing
	local signal preemption request	Field/ Pre-emption and Priority Systems (Fairbanks)	Existing
	local signal preemption request	Field/ Pre-emption and Priority Systems (MOA)	Existing
	local signal preemption request	Field/ Pre-emption and Priority Systems (State)	Existing
Vehicle/ Maintenance Vehicle On-board Systems (MOA)	maint and constr dispatch status	Center/ MOA Maintenance Dispatch Office	Existing
	maint and constr vehicle location data		Existing
	maint and constr vehicle operational data		Existing
Vehicle/ Maintenance Vehicle On-board Systems (State)	environmental probe data	Center/ Regional Maintenance Stations	Planned
	maint and constr dispatch status		Existing
	maint and constr vehicle location data		Existing
	maint and constr vehicle operational data		Existing
Vehicle/ MOA Maintenance Vehicle AVL	vehicle location	Vehicle/ Maintenance Vehicle On-board Systems (MOA)	Existing
Vehicle/ Transit Vehicle AVL (Placeholder)	vehicle location	Vehicle/ Transit Vehicle On-board Systems (Placeholder)	Existing
Vehicle/ Transit Vehicle On-board Systems (Placeholder)	transit vehicle location data	Center/ Transit Agency Dispatch (Placeholder)	Existing
	transit vehicle schedule performance		Existing
	local signal priority request	Field/ Pre-emption and Priority Systems (Fairbanks)	Existing
	local signal priority request	Field/ Pre-emption and Priority Systems (MOA)	Existing
	local signal priority request	Field/ Pre-emption and Priority Systems (State)	Existing
Weather Prediction System	environmental conditions data	Center/ MOA Integrated Transportation Operations and Communications Center	Planned
	environmental conditions data	Center/ Regional Maintenance Stations	Planned
	roadway equipment coordination	Field/ Road Weather Information Systems (RWIS)	Planned
Weigh Stations	compliance review report	Center/ Commercial Vehicle Operations Offices	Existing
	credentials information		Existing
	credentials status information		Existing
	route restrictions		Existing
	safety inspection report		Existing

Source Element	Flow Name	Destination Element	Flow Status
	safety status information		Existing
	video surveillance control	Field/ Remote Video Monitoring System	Planned

5.9 Appendix E: Architecture Flow Definitions

The National ITS Architecture provides a comprehensive listing of high-level information flows that are commonly exchanged between various types of ITS elements. This listing is not intended to represent all the possible types of information that can be exchanged, but rather it is intended to provide a high-level representation of the types of data in which specific information may fall. Therefore, information flows from the National ITS Architecture help further define the framework, in which system development and integration will occur. In this regard it helps identify specific standards that may be used to ensure that systems can be easily integrated and remain interoperable well into the future. Architecture flows for the National ITS Architecture that are relevant to the Alaska Iways Architecture are listed and defined in Table 5-9.

Table 5-9:
National ITS Architecture Flows and Definitions Included in Alaska Iways Architecture

Architecture Flow Name	Architecture Flow Definition
accident report	Report of commercial vehicle safety accident. The information may be provided as a response to a real-time query or proactively by the source. The query flow is not explicitly shown.
alarm acknowledge	Confirmation that alarm was received, instructions and additional information for the alarm initiator, and requests for additional information.
alarm notification	Notification of activation of an audible or silent alarm by a traveler in a public area or by a transit vehicle operator using an on-board device.
alert notification	Notification of a major emergency such as a natural or man-made disaster, civil emergency, or child abduction for distribution to the public. The flow identifies the alert originator, the nature of the emergency, the geographic area affected by the emergency, the effective time period, and information and instructions necessary for the public to respond to the alert. This flow may also identify specific information that should not be released to the public.
alert notification coordination	Coordination of emergency alerts to be distributed to the public. This includes notification of a major emergency such as a natural or man-made disaster, civil emergency, or child abduction for distribution to the public and status of the public notification.
alert status	Information indicating the current status of the emergency alert including identification of the traveler and driver information systems that are being used to provide the alert.
alerts and advisories	Assessments (general incident and vulnerability awareness information), advisories (identification of threats or recommendations to increase preparedness levels), and alerts (information on imminent or in-progress emergencies). This flow also provides supporting descriptive detail on incidents, threats, and vulnerabilities to increase preparedness and support effective response to threats against the surface transportation system.
archive 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 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.
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.
asset inventory	Information on pavement, bridges, signs and other assets. This includes asset location, installation information, materials information, vendor/contractor information, current maintenance status, and a variety of other information (e.g., video logs) that define the transportation infrastructure.
asset restrictions	Restrictions levied on transportation asset usage based on infrastructure design, surveys, tests, or analyses. This includes standard height, width, and weight restrictions by facility as well as special restrictions such as spring weight restrictions and temporary bridge weight restrictions.
asset status update	Changes to status of pavement, bridges, signs and other assets resulting from maintenance or construction activities or infrastructure monitoring. The updates may include changes in installation information, materials information, vendor/contractor information, condition, and current maintenance status. In addition to infrastructure asset updates, the information provided may also include status of the maintenance and construction support assets, including vehicle and equipment utilization and repair records.
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. Recipients may include trade regulatory agencies that do not receive status information directly from U.S. Customs (e.g., other transportation agencies with trade related responsibilities, such as NHTSA, MARAD, etc.).
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 information	General broadcast information that contains link travel times, incidents, advisories, transit services and a myriad of other traveler 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.
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.
commercial vehicle breach	Information about a breach or tamper event on a Commercial Vehicle or its attached freight equipment which includes identity, type of breach, location, and time.
commercial vehicle measures	Commercial vehicle and driver status measured by on-board ITS equipment.
compliance review report	Report containing results of carrier compliance review, including concomitant out-of-service notifications, carrier warnings/notifications. The information may be provided as a response to a real-time query of proactively by the source. The query flow is not explicitly shown.
credential application	Application for commercial vehicle credentials. Authorization for payment is included.
credential fee coordination	Jurisdiction's rates for various credentials (IRP, IFTA, etc.) that are exchanged between agencies.
credentials information	Response containing full credentials information. "Response" may be provided in reaction to a real-time query or a standing request for updated information. The query flow is not explicitly shown.
credentials status information	Credentials information such as registration, licensing, insurance, check flags, and electronic screening enrollment data. A unique identifier is included. Corresponds to the credentials portion of CVISN "snapshots." The status information may be provided as a response to a real-time query or as a result of a standing request for updated information (subscription). This may also include information about non-U.S. fleets for use by U.S. authorities, and information regarding U.S. fleets made available to Mexican and Canadian authorities. The query flow is not explicitly shown.
current asset restrictions	Restrictions levied on transportation asset usage based on infrastructure design, surveys, tests, or analyses. This includes standard facility design height, width, and weight restrictions, special restrictions such as spring weight restrictions, and temporary facility restrictions that are imposed during maintenance and construction.
CVC override mode	This flow represents the tactile or auditory interface with ITS equipment containing the manual override of automated pass/pull-in decisions generated by the Commercial Vehicle Check station.
CVO inspector information	This flow represents the visual or auditory interface with ITS equipment containing credential, safety, and preclearance information and instructions to the commercial vehicle inspector.
CVO inspector input	This flow represents the tactile or auditory interface with ITS

	equipment containing requests from the commercial vehicle inspector to operate the commercial vehicle inspection station.
CVO weight and presence	Physical attribute of commercial vehicle that can be measured (for example, weight, number of axels, axel spacing, etc.).
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.
decision support information	Information provided to support effective and safe incident response, including local traffic, road, and weather conditions, hazardous material information, and the current status of resources that have been allocated to an incident.
driver alert response	Commercial Vehicle Driver response to a breach alert for a Freight Equipment breach or tamper event.
driver information	General advisory and traffic control information provided to the driver while en route.
driver log	A daily log showing hours in service for the current driver.
driver log request	Request for driver log data.
electronic screening request	Request for identification data to support electronic screening.
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 dispatch requests	Emergency vehicle dispatch instructions including incident location and available information concerning the incident.
emergency dispatch response	Request for additional emergency dispatch information (e.g., a suggested route) and provision of en route status.
emergency plan coordination	Information that supports coordination of emergency management plans, continuity of operations plans, emergency response and recovery plans, evacuation plans, and other emergency plans between agencies. This includes general plans that are coordinated prior to an incident and shorter duration tactical plans that are prepared during an incident.
emergency 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 transit service request	Request to modify transit service and fare schedules to address

	emergencies, including requests for transit services to evacuate people from and/or deploy response agency personnel to an emergency scene. The request may poll for resource availability or request pre-staging, staging, or immediate dispatch of transit resources.
emergency 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.
emergency vehicle tracking data	The current location and operating status of the emergency vehicle.
environmental conditions data	Current road conditions (e.g., surface temperature, subsurface temperature, moisture, icing, treatment status) and surface weather conditions (e.g., air temperature, wind speed, precipitation, visibility) as measured and reported by environmental sensors.
environmental probe data	Current environmental conditions (e.g., air temperature, wind speed, surface temperature) as measured by vehicle-based environmental sensors. In addition to environmental sensor inputs, this flow may also include vehicle control system information that may indicate adverse road surface conditions (e.g., traction control system activations).
environmental sensors control	Data used to configure and control environmental sensors.
evacuation information	Evacuation instructions and information including evacuation zones, evacuation times, and reentry times.
expected driver identity characteristics	Driver identification information e.g. encrypted PIN codes issued to drivers, encrypted driver biometric parameters.
field device status	Reports from field equipment (sensors, signals, signs, controllers, etc.) which indicate current operational status.
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.
hri advisories	Notification of Highway-Rail Intersection equipment failure, intersection blockage, or other condition requiring attention, and maintenance activities at or near highway rail intersections.
hri control data	Data required for HRI information transmitted at railroad grade crossings and within railroad operations.
hri request	A request for highway-rail intersection status or a specific control request intended to modify HRI operation.
hri status	Status of the highway-rail intersection equipment including both the current state or mode of operation and the current equipment condition.
identification information	The physical characteristics of a commercial vehicle that can be used to determine a vehicle's identity, such as a license plate number, USDOT number, ICC number, bar code, etc.
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.
incident information for media	Report of current desensitized incident information prepared for public dissemination through the media.
incident notification	The notification of an incident including its nature, severity, and location.
incident notification response	Interactive acknowledgement and verification of the incident information received, requests for additional information, and general information on incident response status.
incident report	Report of an identified incident including incident location, type, severity and other information necessary to initiate an appropriate incident response.
incident response coordination	Incident response procedures and current incident response status that are shared between allied response agencies to support a coordinated response to incidents. This flow provides current situation information, including a summary of incident status and its impact on the transportation system and other infrastructure, and current and planned response activities. This flow also coordinates a positive hand off of responsibility for all or part of an incident response between agencies.
incident response status	Status of the current incident response including a summary of incident status and its impact on the transportation system, traffic management strategies implemented at the site (e.g., closures, diversions, traffic signal control overrides), and current and planned response activities.
incident status	Information gathered at the incident site that more completely characterizes the incident and provides current incident response status.
information on violators	Information on violators provided by a law enforcement agency. May include information about commercial vehicle violations or other kinds of violations associated with the particular entity. 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.
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.
ISP coordination	Coordination and exchange of transportation information between centers. This flow allows a broad range of transportation information collected by one ISP to be redistributed to many other ISPs and their clients.
license request	Request supporting registration data based on license plate read during violation.
local signal preemption request	Direct control signal or message to a signalized intersection that results in preemption of the current control plan and grants right-of-way to the requesting vehicle.
local signal priority request	Request from a vehicle to a signalized intersection for priority at that intersection.
maint and constr administrative information	Administrative information that is provided to support maintenance and construction operations. This information includes: equipment

	and consumables resupply purchase request status, personnel qualifications including training and special certifications, environmental regulations and rules that may impact maintenance activities, and requests and project requirements from contract administration.
maint and constr administrative request	Requests for maintenance and construction administrative information or services. Requests include: requests to purchasing for equipment and consumables resupply and requests to human resources that manage training and special certification for field crews and other personnel.
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 work performance	Overall project status and work performance information provided to support contract administration.
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 and repair needs	Recommended strategies and schedules for maintenance of the transportation infrastructure.
media information request	Request from the media for current transportation information.
pass/pull-in	Command to commercial vehicle to pull into or bypass inspection station.
payment request	Request for payment from financial institution.
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.
registration	Registered owner of vehicle and associated vehicle information.
remote surveillance control	The control commands used to remotely operate another center's sensors or surveillance equipment so that roadside surveillance assets can be shared by more than one agency.
request for right-of-way	Forwarded request from signal prioritization, signal preemption, pedestrian call, multi-modal crossing activation, or other source for right-of-way.
request tag data	Request for tag information including credit identity, stored value card cash, etc.
request transit information	Request for transit service information and current transit status.
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 traffic management 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 traffic management 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.
reversible lane control	Control of automated reversible lane configuration and driver information systems.
road network conditions	Current and forecasted traffic information, road and weather conditions, traffic incident information, and other road network status. Either raw data, processed data, or some combination of both may be provided by this architecture flow. Information on diversions and alternate routes, closures, and special traffic restrictions (lane/shoulder use, weight restrictions, width restrictions, HOV requirements) in effect is also included.
road network status assessment	Assessment of damage sustained by the road network including location and extent of the damage, estimate of remaining capacity, required closures, alternate routes, necessary restrictions, and time frame for repair and recovery.
road weather information	Road conditions and weather information that are made available by road maintenance operations to other transportation system operators.
roadside archive data	A broad set of data derived from roadside sensors that includes current traffic conditions, environmental conditions, and any other data that can be directly collected by roadside sensors. This data also indicates the status of the sensors and reports of any identified sensor faults.
roadway equipment coordination	The direct flow of information between field equipment. This includes transfer of information between sensors and driver information

	systems or control devices (traffic signals, ramp meters, etc.), direct coordination between adjacent control devices, interfaces between detection and warning or alarm systems, and any other direct communications between field equipment. Both peer-to-peer and master-slave communications between field devices are covered by this flow.
roadway information system data	Information used to initialize, configure, and control roadside systems that provide driver information (e.g., dynamic message signs, highway advisory radio, beacon systems). This flow can provide message content and delivery attributes, local message store maintenance requests, control mode commands, status queries, and all other commands and associated parameters that support remote management of these systems.
roadway information system status	Current operating status of dynamic message signs, highway advisory radios, beacon systems, or other configurable field equipment that provides dynamic information to the driver.
roadway maintenance status	Summary of maintenance fleet operations affecting the road network. This includes the status of winter maintenance (snow plow schedule and current status).
roadway treatment system control	Control data for remotely located, automated devices, that affect the roadway surface (e.g. de-icing applications).
roadway treatment system status	Current operational status of automated roadway treatment devices (e.g., anti-icing systems).
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 record	Record containing results of commercial vehicle safety inspection.
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, inspection summaries, and violation summaries. A unique identifier is included. Corresponds to the safety 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 event record	Results of CVO electronic screening activity.
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.

signal control data	Information used to configure and control traffic signal systems.
signal control status	Status of surface street signal controls.
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.
tax filing	Commercial vehicle tax filing data. Authorization for payment is included.
threat data for analysis	Data from surveillance or sensor equipment in secure areas provided for further analysis.
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.
threat support data	Information provided to help receiving agency identify possible threats, including biometric image processing support data.
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 flow	Raw and/or processed traffic detector data which allows derivation of traffic flow variables (e.g., speed, volume, and density measures) and associated information (e.g., congestion, potential incidents).
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 the operational status of the surveillance system.
traffic information coordination	Traffic information exchanged between TMC's. Normally would include incidents, congestion data, traffic data, signal timing plans, and real-time signal control information.
traffic sensor control	Information used to configure and control traffic sensor systems.
transaction status	Response to transaction request. Normally dealing with a request for payment.
transit and fare schedules	Transit service information including routes, schedules, schedule adherence, and fare information. Includes transit service information during evacuation.
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 request	Request for transit operations information including schedule and fare information. The request can be a subscription that initiates as-needed information updates as well as a one-time request for information.
transit schedule information	Current and projected transit schedule adherence.
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 vehicle location data	Current transit vehicle location and related operational conditions

	data provided by a transit vehicle.
transit vehicle operator information	
transit vehicle schedule performance	Estimated times of arrival and anticipated schedule deviations reported by a transit vehicle.
transponder admin data	
transportation border clearance assessment	Notification regarding the granting of permission for commercial freight shipment to enter the U.S. Includes directions for commercial driver to proceed to nearest vehicle weigh and inspection station for further review if required.
transportation system status	Current status and condition of transportation infrastructure (e.g., tunnels, bridges, interchanges, TMC offices, maintenance facilities). In case of disaster or major incident, this flow provides an assessment of damage sustained by the surface transportation system including location and extent of the damage, estimate of remaining capacity and necessary restrictions, and time frame for repair and recovery.
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	Traveler information comprised of traffic and road conditions, advisories, incidents, payment information, transit services, and many other travel-related data updates and confirmations.
traveler profile	Information about a traveler including equipment capabilities, personal preferences and recurring trip characteristics.
traveler request	Request by a traveler to summon assistance, request information, make a reservation, or initiate any other traveler service.
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 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).
trip log request	Request for trip log.
trip plan	A sequence of links and special instructions comprising of a trip plan indicating efficient routes for navigating the links. Normally coordinated with traffic conditions, other incidents, preemption and prioritization plans.
vehicle location	Location of a vehicle calculated on-board the vehicle.
video surveillance control	Information used to configure and control video surveillance systems.
violation notification	Notification to enforcement agency of a violation. The violation notification flow describes the statute or regulation that was violated and how it was violated (e. g., overweight on specific axle by xxx pounds or which brake was out of adjustment and how far out of adjustment it was). A violation differs from a citation because it is not adjudicated by the courts.
weather information	Accumulated forecasted and current weather data (e.g., temperature, pressure, wind speed, wind direction, humidity, precipitation, visibility, light conditions, etc.).
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.
yellow pages information	Travel service information covering tourist attractions, lodging, restaurants, service stations, emergency services, and other services and businesses of interest to the traveler.
yellow pages request	Request for information through a yellow pages type service.