

# Akron Regional ITS Architecture Documentation

## Final

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Prepared by

ConSysTec Corp.

The logo for ConSysTec Corp. features the company name in a sans-serif font, with a purple circle partially overlapping the word "Corp".

HNTB Corp.

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## Revision History

Filename	Version	Date	Author	Comment
Akron Regional ITS Architecture Doc-v1(04-25-04)	0.00.1	04/25/04	B. Eisenhart	Full draft
Akron Regional ITS Architecture Doc-v2	1.0	8/15/04	B. Eisenhart	Initial Release
Akron Regional ITS Architecture Doc-v2a	1.0	9/13/04	B. Eisenhart	A spelling error was fixed, otherwise document is unchanged

# 1. Introduction

The *Akron Regional Intelligent Transportation Systems (ITS) Architecture* is a roadmap for transportation systems integration in the Portage and Summit Counties over the next 15 years. The architecture has been developed through a cooperative effort by the region's transportation agencies, covering all modes and all roads in the region. The architecture represents a shared vision of how each agency's systems will work together in the future, sharing information and resources to provide a safer, more efficient, and more effective transportation system for travelers in the region.

The architecture is an important new tool that will be used by:

- Operating Agencies to recognize and plan for transportation integration opportunities in the region.
- Planning Agencies to better reflect integration opportunities and operational needs into the transportation planning process.
- Other organizations and individuals that use the transportation system in the region.

The architecture provides an overarching framework that spans all of these organizations and individual transportation projects. Using the architecture, each transportation project can be viewed as an element of the overall transportation system, providing visibility into the relationship between individual transportation projects and ways to cost-effectively build an integrated transportation system over time. The architecture is described by this document, by a Turbo Architecture database and by a hyperlinked website that can be found at <http://www.consystec.com/ohio/akron/akronintro.htm>.

## 1.1. Document Overview

This document is organized into twelve main sections. Section 1 provides introductory information. Section 2 describes the process used to develop the regional ITS architecture. The stakeholders are identified in Section 3, while their systems are inventoried in Section 4. The transportation services, information exchanges, functional requirements, and standards associated with the systems are discussed in Sections 5, 6, 7, and 8, respectively. Section 9 describes regional projects and sequencing, while Section 10 discusses the agreements needed between stakeholders to maximize system benefits. Finally, Section 11 provides guidance on using the regional ITS architecture and Section 12 summarizes the architecture maintenance plan.

## 1.2. Description of the Region

The Akron region considered in the development of the regional ITS architecture includes two counties: Portage and Summit. The region covers the area of Akron Metropolitan Area Transportation Study (AMATS). The primary east-west Interstates in the region are the Ohio Turnpike (Interstate 80) and I-76. The primary north-south Interstate in the region is I-77. In addition, State Road 8 provides a primary north-south connection, while SR 43 and SR 44 provide north-south access in Portage County.

The regional ITS architecture for the Akron region provides approximately a 15-year outlook for ITS activities in the region. The architecture addresses existing ITS systems as well as those planned for development over the next 15 years. It represents a snapshot of the currently anticipated projects based on information from stakeholders. As such, the architecture will require regular updates to ensure that it maintains accurate representation of the region. The architecture covers services across a broad range of ITS, including traffic management, transit management, traveler information, emergency services, archived data management, maintenance and construction operations, and electronic payment. Commercial vehicle services are covered only as they relate to regional integration, but a more complete coverage of these would be expected at a statewide architecture level.

## **2. Regional ITS Architecture Development Process**

### ***2.1. Process used to create the architecture.***

Development of the Akron Regional ITS Architecture relied heavily on stakeholder input to ensure that the ITS architecture reflected local and regional needs and plans. A five-step process was used to develop the ITS architecture: 1) create an initial draft inventory of architecture elements and a draft set of customized ITS Services to be provided, 2) conduct stakeholder outreach through a one day Workshop, 3) create a draft ITS architecture for review, and 4) conduct stakeholder review of the draft ITS architecture, 5) finalize the ITS architecture based on review comments. The development of the Akron Regional ITS Architecture was performed in parallel with the development of a Canton Regional ITS Architecture.

#### **1) Create Initial Inventory and Services**

The initial draft set of ITS elements covering both Akron and Canton was created based on a previously created Akron regional ITS architecture effort and on interviews with key stakeholders. Interviews were held in February through April 2003 with the following agencies:

- METRO
- Summit County Engineer
- City of Akron Engineer
- Ohio State Highway Patrol
- ODOT District 3
- ODOT District 4
- SARTA
- Stark County Engineer
- Metro Traffic

The Akron- Canton architecture elements identified through this review were mapped to National ITS Architecture Version 4 entities (subsystems and terminators). This created an initial inventory mapped to the National ITS Architecture. The existing and planned ITS projects were used to establish an initial list of services that the elements of the architecture would provide. The elements and their mapping to National ITS Architecture entities were

entered into the software tool Turbo Architecture (version 2.0 was used for the development). For each existing or future service expected in the region, the market package diagram for that service from the National ITS Architecture was edited so that each National ITS Architecture subsystem or terminator was associated with the local stakeholder element name. In some cases, multiple instances of the market package were developed, where the service has more than one instance in the region. This set of customized market packages using the draft elements was created in preparation for stakeholder outreach.

## **2) Stakeholder Outreach- one-day Workshop**

A wide array of stakeholders across all aspects of surface transportation in the region was invited to a one- day Workshop that was held on May 14, 2003. A key overall objective of the workshop was that the resultant Regional ITS Architecture should be a *consensus architecture*, that is, each of the participants *understands and agrees* to the ITS elements and specific information exchanges between the ITS elements identified in the architecture that they participated in defining. *(This is not to say that the resulting ITS Architecture has credible funding identified that would lead to full deployment. The ITS architecture only identifies ITS elements and interfaces that the stakeholders agree to. Existing funding processes will continue to be used to decide how to allocate limited resources to which ITS elements and interfaces for deployment.)* The workshop also incorporated training in the National ITS Architecture and regional ITS architecture so that stakeholders would understand and more fully participate in the ITS Architecture development process. The morning of the workshop focused on refinement of the draft inventory, with each participant's ITS elements being discussed and clarified. In addition the services planned at local, regional, and statewide levels were discussed. In the second half of the workshop these customized market packages were reviewed with the stakeholders to identify which elements are associated with each market package (or transportation service), and to identify the interconnections associated with the market packages.

## **3) Create a Draft Architecture for Review**

Following the Workshop, a draft architecture was created. Using the customized market package diagrams (as modified during the workshop), the Turbo Architecture database was completed to create a draft ITS architecture. This involved the following activities:

- Updating the ITS inventory
- Revising the customized market packages
- Creating a Turbo Architecture database that represents the sum of all of the customized market packages.

In addition to creating the Turbo Architecture database and the customized set of market packages a high level *Architecture Interconnect Diagram (AID*, also known as a *Sausage Diagram*) of all the elements in the ITS architecture was created. Also developed was a hypertext version of the complete Turbo Architecture database placed on a generally accessible website ([www.consystec.com](http://www.consystec.com)). This website described each ITS element of the ITS architecture and all of its interconnections with other elements of the architecture. The website was developed using additional software tools that go beyond the basic Turbo Architecture software.

Stakeholders were notified by email and by a letter that a review period has commenced, and feedback was solicited. Stakeholders were encouraged to review the regional ITS architecture on the website, and were encouraged to provide feedback electronically from the website. Comments received starting at this point in the process were maintained in a database. These stakeholders' comments and their dispositions are summarized in Appendix A.

#### **4) Conduct stakeholder review of the draft ITS architecture**

In addition to the stakeholder website review, a half-day draft ITS architecture review meeting was held on August 5, 2003. At the workshop, stakeholders reviewed the customized market packages.

#### **5) Finalize the architecture based on review comments.**

Following the architecture review workshop, the draft architecture was revised based on comments from the workshop and a new version of the website was generated. Additional architecture aspects such as operational concepts, functional requirements, project sequencing, and agreements were developed and additional stakeholder review comments were solicited. The information has been compiled in this draft final report.

In recognition of the dynamic nature of ITS activities (i.e. ITS elements and interfaces that at one time are designated *future*, and later become *existing*) and because stakeholder requirements in a region that drive an ITS architecture will evolve, a maintenance plan was developed to provide a systematic means of keeping the architecture updated.

## **2.2. Requirements of the Final FHWA Rule and FTA Policy on Architecture**

The FHWA Final Rule (23CFR 940) and FTA Policy on Intelligent Transportation System Architecture and Standards, which took effect on April 8, 2001 defines a set of requirements that regional ITS architectures should meet. Table 1 shows how the requirements of the rule are met by the outputs developed for the Akron-Canton Regional ITS Architecture.

**Table 1: Mapping of Requirements to Architecture Outputs**

<b>Regional ITS Architecture Requirements</b>	<b>Where Requirements documented</b>
Description of region	Geographic definition, as well as timeframe and scope of services are given in Section 1.2 of this document.
Identification of participating agencies and other stakeholders	Listing of stakeholders and their definitions is given in Section 3.1 of this document. An inventory of the elements operated by the stakeholders is contained in Section 4 of this document. The same information is also available in the hyperlinked web site and in the Turbo Architecture database.

Regional ITS Architecture Requirements	Where Requirements documented
An operational concept that identifies the roles and responsibilities of participating agencies and stakeholders	The operational concept is defined in Section 3.2 of this document.
A list of any agreements (existing or new) required for operations	A discussion of existing and needed new agreements is given in Section 0 of this document
System functional requirements;	The functional requirements of the ITS systems are described in an overview in Section 7 of this document, and are provided in detail in the hyperlinked web site.
Interface requirements and information exchanges with planned and existing systems and subsystems	The Interfaces and information flows are described in an overview in Section 6 of the document, and are described in detail in the hyperlinked web site and in the Turbo Architecture database.
Identification of ITS standards supporting regional and national interoperability	An overview of the ITS standards is given in Section 8 of the document. The detailed listing of ITS standards applicable to each interface in the architecture is described in the hyperlinked web site and in the Turbo Architecture database.
The sequence of projects required for implementation	Projects and their sequencing are covered in Section 9 of this document.

## 3. Identification of Stakeholders

### 3.1. Regional Stakeholders

Stakeholder coordination and involvement is one of the key elements of the development of a regional ITS architecture. Because ITS often transcends traditional transportation infrastructure, it is important to consider a range of stakeholders beyond the traditional traffic, transit, and maintenance areas. In addition, it is important to consider stakeholders at a statewide level or stakeholders in adjoining regions.

A group of Core Stakeholders was involved through the development of the architecture, from initial interviews to the two workshops. These core stakeholders included:

- METRO
- Summit County Engineer
- City of Akron Engineer
- Ohio State Highway Patrol
- ODOT District 3
- ODOT District 4

The Akron Regional ITS architecture includes a wide range of stakeholders. Table 2 identifies the stakeholders and provides a description of the agency, department, or organization represented by the stakeholder. This table includes the full range of stakeholders assigned to both Akron and Canton regions.



**Table 2: Stakeholders**

Stakeholder Name	Stakeholder Description
Akron-Canton Airport	Regional Airport is located in city of Green, Ohio
Akron Metropolitan Area Transportation Study (AMATS)	MPO for Summit and Portage Counties.
City of Akron	Various agencies of Akron municipal government, including Fire and Police department.
City of Akron Department of Public Safety	Includes Fire Department (which provides Fire, EMS and emergency call taking for the City of Akron) and Police Department.
City of Akron Engineering Bureau	Responsible for planning and implementation of public improvement projects.
City of Akron Public Works Bureau	The Highway Maintenance Division of the Public Works Bureau is responsible for roadway maintenance in the City of Akron.
City of Akron Traffic Engineering	Provides traffic operations for the City of Akron
City of Canton	Various agencies of Canton municipal government.
City of Canton Director of Public Safety	Department of Public Safety covers police, fire, traffic engineering and building zoning.
City of Canton Street Department	Responsible for street repair and maintenance including snow and ice control in the City of Canton.
City of Canton Traffic Engineering	Agency responsible for traffic operations within the City of Canton.
City of Cuyahoga Falls	Various agencies of city of Cuyahoga Falls such as public safety.
City of Cuyahoga Falls Public Works	Agency responsible for roadway maintenance in the city of Cuyahoga Falls.
City of Cuyahoga Falls Technical Services	The Technical Service Department is responsible for the maintenance and repair of electro-mechanical and electronic devices used by our Safety Forces, Service Departments and the citizens of Cuyahoga Falls. This includes traffic signals, mobile data terminals in our police vehicles, lights and sirens for safety vehicles, portable two-way radios, telephones, cellular telephones, pagers and virtually any electronic device used by any of the city departments.
Commercial Fleet Management	
County Government	County government of the counties that border the region (Carroll, Columbiana, Cuyahoga, Mahoning, Medina, Trumbull, Tuscarawas, and Wayne).
County Sheriff	County public safety and law enforcement.
Crash Record Users	Agencies that use crash records.
Financial Institutions	Financial companies involved in electronic payment transactions.
General Public	Private travelers.
Greater Cleveland Regional Transit Authority (RTA)	Provides bus, rail and paratransit service for the greater Cleveland metropolitan region.
Kent State University	Major public university in the region

Stakeholder Name	Stakeholder Description
Metro Regional Transit Authority (METRO)	Public transportation provider for Summit County. As of February 2002, METRO's fleet totaled 204 passenger revenue vehicles. This includes 136 large buses, 68 paratransit buses and four trolleys
Metro-Networks	Private company that provides Traveler Information to Northeast Ohio
Municipal DPW and Services	Agencies in the municipalities of the region (other than Akron, Canton, and Cuyahoga Falls) responsible for roadway maintenance.
Municipal Engineering and Service Depts	Represents the traffic sections of municipalities in the region other than Akron, Canton, and Cuyahoga Falls.
Municipalities and Townships	Represents municipal and township government. The major municipalities and townships (with population greater than approximately 10,000 in the 2000 Census) are listed by county. For Portage County they are: Cities of Kent, Aurora, Streetsboro, and Ravenna. For Stark County they are: Cities of Massillon, Alliance and North Canton, and Townships of Jackson, Plain, Perry, Lake, and Canton. For Summit County they are: Cities of Stow, Barberton, Green, Hudson, and Tallmadge, and Townships of Springfield, Copley, and Franklin.
Muskingum Watershed Conservancy District	The Muskingum Watershed Conservancy District is dedicated to conservation and recreation conducted in harmony with flood control in the area of Ohio drained by the Muskingum River and its tributaries, which includes Summit and Stark Counties.
National Weather Service	US Agency, part of National Oceanic and Atmospheric Administration, that is responsible for national and local weather forecasting.
ODOT	Includes ODOT Central Office and Districts 4, 3, and 12. Responsible for planning, designing, and maintaining state and interstate highways and arterials.
Ohio Department of Public Safety	Statewide agency responsible for emergency operations.
Ohio EPA	Ohio Environmental Protection Agency
Ohio State Highway Patrol (OSHP)	Agency responsible for public safety of rural highways and freeways, Ohio Turnpike, and state owned or leased buildings.
Ohio Turnpike Commission (OTC)	Agency responsible construction, maintenance, and operations of the Ohio Turnpike.
Portage Area Regional Transportation Authority (PARTA)	Regional Transportation authority for Portage County.
Portage County	Various agencies of Stark County.
Portage County Emergency Management Agency	Portage County EMA is tasked with planning, training and assisting with the coordination of disasters in Portage County.
Portage County Engineer	Agency responsible for roadway maintenance and traffic operations for Portage County.
Portage County Sheriff	County public safety for Portage County.
Private Ambulance Companies	Private companies who provide ambulance or EMS services in

Stakeholder Name	Stakeholder Description
	the region.
Private Commercial Carriers	Private companies managing fleets of commercial vehicles.
Private Maintenance Contractor	Private maintenance contractors who perform maintenance on regional signal systems, HAR, DMS, lighting systems, and pumping stations.
Private Paratransit Service Providers	Organizations operating paratransit operations such as dial a ride
Private Tow/ Wrecker Companies	Represents private towing companies operating in the region.
Railroad Operator	Represents private freight rail operators active in the region.
Regional Event Organizations	Represents the many organizations whose facilities hold events that have significant impact on traffic or transit.
Regional Hospital Organizations	Children's Hospital, SUMMA Hospital, Mercy Medical Center, Akron General, etc.
Regional Public Safety	Represents public safety agencies at the state, county, and municipal level.
School Districts	School districts in the region.
Special Police Departments	University police, Park District Police, etc.
Stark Area Regional Transit Authority (SARTA)	Regional Transit Authority for Stark County, OH. Provides fixed route bus and paratransit service
Stark County	Various agencies of Stark County.
Stark County Area Transportation Study (SCATS)	MPO for Stark County
Stark County EMA	Emergency Management Agency is responsible for emergency operations center, emergency planning, and disaster response and evacuation for Stark County.
Stark County Engineer	Agency responsible for roadway maintenance and traffic operations for Stark County.
Stark County Sheriff	County public safety for Stark County.
Summit County	Various agencies of Summit County.
Summit County EMA	Emergency Management Agency is responsible for emergency operations center, emergency planning, and disaster response and evacuation for Summit County.
Summit County Engineer	Agency responsible for roadway maintenance and traffic operations for Summit County.
Summit County Sheriff	County public safety for Summit County.
Traffic Data Users	Agencies that use traffic data and traffic count data.
TV and Radio Stations	Television, Radio, and Print Media. Includes TV network affiliates

The stakeholders listed in Table 2 represent a mix of specific agencies or organizations and generic names used to represent a variety of stakeholders. Examples of specific agency or organizations would be Metro Regional Transit Authority (METRO). An example of a generic stakeholder name would be Municipal Engineering and Service, which represents any of the municipal agencies in the region responsible for traffic signal systems or other, related ITS elements.

### **3.2. Operational Concept**

An Operational Concept documents each stakeholder's current and future roles and responsibilities in the operation of the regional ITS systems. The operational concept documents these roles and responsibilities across a range of transportation services. The services covered are:

- **Traffic Signal Control:** the development of signaling systems that react to changing traffic conditions and provide coordinated intersection timing over a corridor, an area, or multiple jurisdictions.
- **Freeway Control:** the development of systems to monitor freeway (or tollway) traffic flow and roadway conditions, and provide strategies such as ramp metering or lane access control to improve the flow of traffic on the freeway. Includes systems to provide information to travelers on the roadway.
- **Incident Management:** the development of systems to provide rapid and effective response to incidents. Includes systems to detect and verify incidents, along with coordinated agency response to the incidents.
- **Transit Management:** the development of systems to more efficiently manage fleets of transit vehicles or transit rail. Includes systems to provide transit traveler information both pre-trip and during the trip.
- **Traveler Information:** the development of systems to provide static and real time transportation information to travelers.
- **Emergency Management:** the development of systems to provide emergency call taking, public safety dispatch, and emergency operations center operations.
- **Maintenance and Construction Management:** the development of systems to manage the maintenance of roadways in the region, including winter snow and ice clearance. Includes the managing of construction operations.
- **Archive Data Management:** the development of systems to collect transportation data for use in non-operational purposes (e.g. planning and research).
- **Electronic Payment:** the development of electronic fare payment systems for use by transit and other agencies (e.g. parking).

Table 3 identifies the roles and responsibilities of key stakeholders for a range of transportation services.

**Table 3: Stakeholder Roles and Responsibilities**

Transportation Service	Stakeholder	Roles/ Responsibilities
Traffic Signal Control	ODOT District 4	<ul style="list-style-type: none"> <li>• Operate traffic signal systems on state owned arterials.</li> <li>• Interconnect with signal systems operated by counties or municipalities adjoining the ODOT systems.</li> </ul>
	City of Akron Traffic Engineering	<ul style="list-style-type: none"> <li>• Operate traffic signal systems for City of Akron</li> <li>• Interconnect with signal systems operated by municipalities adjoining the city.</li> <li>• Provide intersection signal priority for METRO buses.</li> </ul>
	City of Canton Traffic Engineering	<ul style="list-style-type: none"> <li>• Operate traffic signal systems for City of Canton.</li> <li>• Interconnect with signal systems operated by municipalities adjoining the city.</li> </ul>
	City of Cuyahoga Falls Technical Services	<ul style="list-style-type: none"> <li>• Operate traffic signal systems for City of Cuyahoga Falls.</li> <li>• Interconnect with signal systems operated by municipalities adjoining the city (Future).</li> </ul>
	Summit County Engineer	<ul style="list-style-type: none"> <li>• Operate traffic signal systems for Summit County</li> <li>• Interconnect with signal systems operated by municipalities and counties adjoining the Summit County systems.</li> </ul>
	Stark County Engineer	<ul style="list-style-type: none"> <li>• Operate traffic signal systems for Stark County</li> <li>• Interconnect with signal systems operated by municipalities and counties adjoining the Stark County systems.</li> </ul>
	Portage County Engineer	<ul style="list-style-type: none"> <li>• Operate traffic signal systems for Portage County</li> <li>• Interconnect with signal systems operated by municipalities and counties adjoining the Portage County systems.</li> </ul>
	Municipal Engineering and Service Departments	<ul style="list-style-type: none"> <li>• Operate traffic signal systems for municipality owned arterials.</li> <li>• Interconnect with signal systems in adjacent jurisdictions.</li> </ul>
Freeway Control	ODOT District 4	<ul style="list-style-type: none"> <li>• Monitor traffic sensors on expressways.</li> <li>• Determine travel times for expressways.</li> <li>• Operate ramp meters on entrances to expressways.</li> <li>• Operate traffic information devices on expressways (e.g. DMS and Highway Advisory Radios- HAR).</li> <li>• Provide traffic information report to other agencies.</li> </ul>
Incident Management	ODOT District 4	<ul style="list-style-type: none"> <li>• Perform limited network surveillance for detection and verification of incidents.</li> <li>• Operate Freeway Service Vehicles.</li> <li>• Provide incident information to travelers via traffic information devices on expressways (e.g. DMS and Highway Advisory Radios- HAR).</li> </ul>

Transportation Service	Stakeholder	Roles/ Responsibilities
	City of Akron Traffic Engineering	<ul style="list-style-type: none"> <li>Perform incident detection and verification for arterial streets in the City of Akron through video surveillance.</li> <li>Coordinate incident response with Summit County Sheriff and City of Akron Public Safety (Police, Fire, and EMS).</li> <li>Operate Dynamic Message Signs on City of Akron arterials to inform travelers of incidents.</li> </ul>
	City of Akron Public Safety	<ul style="list-style-type: none"> <li>Receive emergency calls for incidents within the City of Akron.</li> <li>Dispatch Police, Fire, and EMS to incidents within the City and adjacent communities.</li> <li>Provide incident information to traffic and public safety agencies.</li> </ul>
	Summit County Sheriff	<ul style="list-style-type: none"> <li>Receive emergency calls for incidents within the Summit County.</li> <li>Dispatch Police, Fire, and EMS to incidents within the County.</li> <li>Provide incident information to traffic and public safety agencies.</li> </ul>
	Ohio Department of Public Safety	<ul style="list-style-type: none"> <li>Dispatch State Highway Patrol vehicles for incidents on expressways and Tollway.</li> <li>Coordinate incident response with ODOT.</li> <li>Provide incident information to traffic and public safety agencies.</li> </ul>
	Municipalities	<ul style="list-style-type: none"> <li>Perform incident detection and verification for arterial streets within municipalities in the region.</li> <li>Dispatch Police, Fire, and EMS to incidents within the municipalities.</li> <li>Coordinate incident response for incidents within the municipality.</li> </ul>
	City of Cuyahoga Falls Technical Services	<ul style="list-style-type: none"> <li>Perform incident detection and verification for arterial streets in the City of Cuyahoga Falls through video surveillance.</li> <li>Coordinate incident response with, City of Cuyahoga Falls Public Safety, Summit County Sheriff and City of Akron Public Safety (Police, Fire, and EMS).</li> <li>Operate Dynamic Message Signs on City of Cuyahoga Falls arterials to inform travelers of incidents (Future).</li> </ul>
	City of Cuyahoga Falls Public Safety	<ul style="list-style-type: none"> <li>Receive emergency calls for incidents within the City of Cuyahoga Falls.</li> <li>Dispatch Police, Fire, and EMS to incidents within the City and adjacent communities.</li> <li>Provide incident information to traffic and public safety agencies.</li> </ul>

Transportation Service	Stakeholder	Roles/ Responsibilities
	City of Canton Traffic Engineering	<ul style="list-style-type: none"> <li>Perform incident detection and verification for arterial streets in the City of Canton through video surveillance.</li> <li>Coordinate incident response with, City of Canton Public Safety (Police, Fire, and EMS), and Stark County Sheriff.</li> <li>Operate Dynamic Message Signs on City of Canton arterials to inform travelers of incidents.</li> </ul>
	City of Canton Public Safety	<ul style="list-style-type: none"> <li>Receive emergency calls for incidents within the City of Canton.</li> <li>Dispatch Police, Fire, and EMS to incidents within the City.</li> <li>Provide incident information to traffic and public safety agencies.</li> </ul>
Transit Management	METRO Regional Transit Authority	<ul style="list-style-type: none"> <li>Provide fixed route bus service for Summit County, with connecting service up to Cleveland.</li> <li>Provide paratransit service for Summit County.</li> <li>Provide on-board functionality needed to implement bus signal priority at city, county or state controlled intersections.</li> </ul>
	Stark Area Regional Transportation Authority	<ul style="list-style-type: none"> <li>Provides fixed route bus operations for Stark County.</li> <li>Provide paratransit services to Stark County.</li> </ul>
	Portage Area Regional Transportation Authority	<ul style="list-style-type: none"> <li>Provides fixed route bus operations for Portage County.</li> <li>Provide paratransit services to Portage County.</li> <li></li> </ul>
	School Districts	<ul style="list-style-type: none"> <li>Provide fixed route school bus services to the region.</li> </ul>
Traveler Information	ODOT District 4	<ul style="list-style-type: none"> <li>Provide traffic and maintenance information for region to the public via website.</li> </ul>
	Metro-Networks	<ul style="list-style-type: none"> <li>Provide value added regional traveler information including subscription services</li> <li></li> </ul>
	City of Akron	<ul style="list-style-type: none"> <li>Provide traffic and maintenance information for City of Akron to the public via website.</li> </ul>
	City of Canton	<ul style="list-style-type: none"> <li>Provide traffic and maintenance information for City of Canton to the public via website.</li> </ul>
	City of Cuyahoga Falls	<ul style="list-style-type: none"> <li>Provide traffic and maintenance information for City of Cuyahoga Falls to the public via website (Future).</li> </ul>
	Metro Regional Transit Authority	<ul style="list-style-type: none"> <li>Provide transit information for METRO Services the public via website.</li> </ul>
	Stark Area Regional Transit Authority	<ul style="list-style-type: none"> <li>Provide transit information for SARTA Services the public via website.</li> </ul>



Transportation Service	Stakeholder	Roles/ Responsibilities
	Portage Area Regional Transit Authority	<ul style="list-style-type: none"> <li>Provide transit information for PARTA Services the public via website.</li> </ul>
	AMATS	<ul style="list-style-type: none"> <li>Provide traffic and maintenance information for Summit and Portage Counties to the public via website.</li> </ul>
	SCATS	<ul style="list-style-type: none"> <li>Provide traffic and maintenance information for Stark Counties to the public via website.</li> </ul>
Emergency Management	City of Akron Public Safety	<ul style="list-style-type: none"> <li>Provide emergency call taking (9-1-1) for City of Akron.</li> <li>Dispatch City of Akron police, fire, and EMS.</li> <li>Develop city wide emergency preparedness plan.</li> <li>Provide Emergency Operations Center for City of Akron, directing emergency operations during major emergencies and disasters.</li> </ul>
	City of Canton Public Safety	<ul style="list-style-type: none"> <li>Provide emergency call taking (9-1-1) for City of Canton.</li> <li>Dispatch County Sheriff, fire and EMS for City of Canton.</li> </ul>
	City of Canton Director of Public Safety	<ul style="list-style-type: none"> <li>Develop city wide emergency preparedness plan.</li> <li>Provide Emergency Operations Center for City of Canton responsible for directing emergency operations during major emergencies and disasters.</li> </ul>
	City of Cuyahoga Falls Public Safety	<ul style="list-style-type: none"> <li>Provide emergency call taking (9-1-1) for City of Cuyahoga Falls.</li> <li>Dispatch police, fire and EMS for City of Cuyahoga Falls and adjacent communities.</li> </ul>
	Summit County Sheriff	<ul style="list-style-type: none"> <li>Provide emergency call taking (9-1-1) for unincorporated parts of county.</li> <li>Dispatch County Sheriff, fire and EMS for unincorporated parts of county.</li> </ul>
	Summit County EMA	<ul style="list-style-type: none"> <li>Develop county wide emergency preparedness plan.</li> <li>Provide Emergency Operations Center for Summit County responsible for directing emergency operations during major emergencies and disasters.</li> </ul>
	Portage County Sheriff	<ul style="list-style-type: none"> <li>Provide emergency call taking (9-1-1) for unincorporated parts of county.</li> <li>Dispatch County Sheriff, fire and EMS for unincorporated parts of county.</li> </ul>
	Portage County EMA	<ul style="list-style-type: none"> <li>Develop county wide emergency preparedness plan.</li> <li>Provide Emergency Operations Center for Portage County responsible for directing emergency operations during major emergencies and disasters.</li> </ul>



Transportation Service	Stakeholder	Roles/ Responsibilities
	Stark County Sheriff	<ul style="list-style-type: none"> <li>Provide emergency call taking (9-1-1) for unincorporated parts of county.</li> <li>Dispatch County Sheriff, fire and EMS for unincorporated parts of county.</li> </ul>
	Stark County EMA	<ul style="list-style-type: none"> <li>Develop county wide emergency preparedness plan.</li> <li>Provide Emergency Operations Center for Stark County responsible for directing emergency operations during major emergencies and disasters.</li> </ul>
	Municipalities and Townships	<ul style="list-style-type: none"> <li>Provide emergency call taking (9-1-1) for municipalities and townships in the region.</li> <li>Dispatch police, fire and EMS for municipalities and townships in the region.</li> </ul>
Maintenance and Construction Management	City of Akron PWB	<ul style="list-style-type: none"> <li>Provide maintenance of arterials in the city including snow and ice control and pavement maintenance.</li> <li>Maintains City of Akron signalized intersection equipment.</li> </ul>
	ODOT District 4	<ul style="list-style-type: none"> <li>Provide maintenance of state highways in the region including snow and ice control and pavement maintenance.</li> </ul>
	Ohio Turnpike Commission	<ul style="list-style-type: none"> <li>Provides maintenance of tollways including snow and ice control and pavement maintenance.</li> </ul>
	Municipalities	<ul style="list-style-type: none"> <li>Provide maintenance of municipal roads including snow and ice control and pavement maintenance.</li> </ul>
	Private Maintenance Companies	<ul style="list-style-type: none"> <li>Provide maintenance of signals, DMS, HAR, lighting systems, and pumping stations.</li> <li>Contracted by municipalities and counties in the region.</li> </ul>
	City of Canton Street Department	<ul style="list-style-type: none"> <li>Provide maintenance of municipal roads including snow and ice control and pavement maintenance.</li> </ul>
	City of Canton	<ul style="list-style-type: none"> <li>Provide maintenance of signals, DMS, HAR, lighting systems, and pumping stations.</li> </ul>
	City of Cuyahoga Falls Technical Services	<ul style="list-style-type: none"> <li>Provide maintenance of signals, DMS, and HAR.</li> </ul>
	City of Cuyahoga Falls Public Works	<ul style="list-style-type: none"> <li>Provide maintenance of municipal roads including snow and ice control and pavement maintenance.</li> </ul>
	Portage County Engineer	<ul style="list-style-type: none"> <li>Provide maintenance of County roads including snow and ice control and pavement maintenance.</li> </ul>
	Stark County Engineer	<ul style="list-style-type: none"> <li>Provide maintenance of County roads including snow and ice control and pavement maintenance.</li> </ul>
	Summit County Engineer	<ul style="list-style-type: none"> <li>Provide maintenance of County roads including snow and ice control and pavement maintenance.</li> </ul>
Archived Data Management	AMATS	<ul style="list-style-type: none"> <li>Collect and archive traffic count data for Summit and Portage County.</li> </ul>

Transportation Service	Stakeholder	Roles/ Responsibilities
	SCATS	<ul style="list-style-type: none"> <li>Collect and archive traffic count data for Summit and Stark County.</li> </ul>
Electronic Payment	Metro Regional Transit Authority	<ul style="list-style-type: none"> <li>Operate an electronic fare payment system for use on-board buses and at roadside facilities.</li> </ul>

## 4. Inventory

Each stakeholder agency, company, or group owns, operates, maintains or plans ITS systems in the region. A regional ITS architecture inventory is a list of “elements” that represent all existing and planned ITS systems in a region as well as non-ITS systems that provide information to or get information from the ITS systems. The focus of the inventory is on those systems that support, or may support, interfaces that cross stakeholder boundaries (e.g., inter-agency interfaces, public/private interfaces).

The vast majority of the inventory represents ITS systems in the five-county region, but the inventory does contain some elements that represent systems in adjoining regions, or systems that exist at a statewide level. An example of an element in an adjoining region would be the GCRTA Communications Center, which represents the transit agency in the adjoining Cleveland region. It would interface with both traffic and transit elements in the Akron-Canton regions. An example of a statewide element is the ODOT Statewide EOC, which is a State Emergency Operations Center in Columbus that interfaces to Emergency Operations Centers within the regions. As part of the long-term maintenance of the Akron-Canton Regional ITS Architecture it will be necessary to coordinate the “inter-regional” interfaces with these elements that are outside the region.

Each element in the inventory is described by a name, the associated stakeholder, a description, general status (e.g. existing or planned), and the associated subsystems or terminators from the National ITS Architecture.

### 4.1. Systems by Stakeholder

Table 4 sorts the inventory by stakeholder so that each stakeholder can easily identify all the relevant elements that are defined in the architecture. For each element in the inventory the table provides an element description and an indication of whether the element exists or is planned.

The majority of elements in the inventory represent a specific existing or planned system. Some examples of specific systems are the City of Akron TMC, City of Canton Signal Control System and ODOT District 4 Maintenance Garages.

Some of the elements represent sets of devices, rather than a single specific system or device. An example of this type of element is the element “ODOT District 4 Field Equipment”. This element represents all of the traffic signals, traffic detectors, CCTV, Dynamic Message Signs

(DMS) and Highway Advisory Radio (HAR) that are or will be operated by ODOT. The element describes the type of devices, not the specific number of devices. For example, the element calls out DMS, but does say how many there are, or their precise location.

A third type of element in the inventory is a “generic” element that represents all of the systems of a certain type in the region. An example of this type of element is Municipal and Township Public Safety Dispatch, which represents the many municipal and township public safety answering points (PSAPs) in the region. These generic elements have been created for two primary reasons. First, they represent elements with similar types of interfaces, so from a standardization standpoint, describing how one of the major elements in the region (e.g. the ODOT Akron-Canton Freeway Management Center) interfaces with various PSAPs would be the same. Second, describing many (there are over 50 PSAPs in the region) systems with a single element helps keep the architecture from growing too large.

**Table 4: Inventory sorted by Stakeholder**

Stakeholder Name	Element Name	Element Description	Status
Akron-Canton Airport	Akron-Canton Airport	Located in the City of Green, OH. Services 10% of Northeast Ohio's air travelers. Expansion plans are underway. www.akroncantonairport.com	Existing
Akron Metropolitan Area Transportation Study (AMATS)	AMATS Traffic Count Data Archive	Historical archive of traffic counts for the AMATS region.	Existing
Akron Metropolitan Area Transportation Study (AMATS)	AMATS Web Services	Web site (www.ci.akron.oh.us/AMATS) and other internet based services.	Existing
City of Akron	City of Akron 311 Non-Emergency Information System	Automated phone system that receives "non-emergency" calls such as service requests. Some of these may be incidents that need reporting.	Planned
City of Akron	City of Akron Maintenance Vehicles	1000 units (includes compressors and road signs). 70 units for snow removal. Anticipate GPS for entire fleet by end of year	Existing
City of Akron	City of Akron Website	www.ci.akron.oh.us	Existing
City of Akron Department of Public Safety	City of Akron Emergency Operations Center	Uses computer aided dispatch of emergency vehicles	Existing
City of Akron Department of Public Safety	City of Akron Emergency Vehicles	Police, Fire, and EMS vehicles	Existing
City of Akron Department of Public Safety	City of Akron Public Safety Dispatch	Dispatch of Police, Fire, and EMS.	Existing
City of Akron Engineering Bureau	Akron Engineering Bureau	Responsible for planning and implementation of public improvement projects including road construction on city owned roads.	Existing
City of Akron Public Works Bureau	City of Akron Highway Maintenance Department	All maintenance/landscaping/hazard removal on its roadways. Also provides mowing, striping, trash removal on interstates within city limits through an ODOT contract.	Existing
City of Akron Traffic Engineering	City of Akron Field Equipment	Traffic signals, 4 non-traffic cameras (in the future) - 2 fixed, 2 controllable. DMS in the future, and closed loop control of the signals. Transit priority via center-to-center. Planned: Preemption for emergency vehicles (sonic). RWIS.	Existing

Stakeholder Name	Element Name	Element Description	Status
City of Akron Traffic Engineering	City of Akron TMC	400 signals, most electromechanical, 3 closed loop systems (Market Street, downtown, western edge), wired by phone, future all fiber optic interconnect, no signal pre-empt, have not used real time adaptive control for 7 years - faster w/o - system still intact for large scale emergency, 3 system loops collect volume - not speed data	Existing
City of Canton	City of Canton Comm Center	Dispatch of Police, Fire, and EMS for City of Canton. Canton Police manage freeways inside the city limits, and assist Sheriff's Office in emergencies.	Existing
City of Canton	City of Canton Emergency Vehicles	City of Canton Police, Fire, EMS vehicles.	Existing
City of Canton	City of Canton Public Website	www.cityofcanton.com Post upcoming construction on internet. Also, safety forces and media receive faxes regarding upcoming construction information. Video of I-77 construction is available on the web.	Existing
City of Canton	City of Canton Street Dept Dispatch	Street Department dispatches all maintenance vehicles during business hours, main dispatch handles them after hours. The DMV tracks preventative maintenance for vehicles.	Existing
City of Canton	City of Canton Traffic Signal Dispatch	Dispatch of assets to perform signal maintenance in City of Canton.	Existing
City of Canton Director of Public Safety	City of Canton Emergency Operations Center	Use computer-aided dispatch. Dispatch center notifies radio stations by telephone of any major incidents based on 911 cell phone calls.	Existing
City of Canton Street Department	City of Canton Maintenance Dispatch	Street Department dispatches all maintenance vehicles during business hours, main dispatch handles them after hours. The DMV tracks preventative maintenance for vehicles.	Existing
City of Canton Street Department	City of Canton Maintenance Vehicles	Street Department and Park Department own 237 vehicles. city has 61 plows and is responsible for salting and plowing roadways within the city limits	Existing
City of Canton Traffic Engineering	City of Canton Field Equipment	The city owns several portable variable message signs that are used near construction sites. Three cameras are installed at Metro Hospital to observe traffic on I-77 throughout the current construction zone. Cameras will be donated to the hospital for parking lot monitoring after construction is complete. Planned: DMS, Preemption for	Existing

Stakeholder Name	Element Name	Element Description	Status
		emergency vehicles (sonic), RWIS.	
City of Canton Traffic Engineering	City of Canton Signal Control System	210 signals and 30 flashers, 9 closed loop systems encompassing 180 signals - 3 manufacturers. Predominantly time of day control, plan to be adaptive after major conversion to central based software that will monitor and communicate with one central computer. Sound pre-emption used for emergency vehicles in some locations, plans for at least 180 signals to be equipped with sound pre-emption after improvements. Several signals within 200 feet of a railroad crossing, some coordination with signals. System loops collect volume, speed, and classification data for the city, but the data is not shared with the public or other agencies on a real-time basis.	Existing
City of Cuyahoga Falls	City of Cuyahoga Falls Emergency Vehicles	Police, Fire, and EMS vehicles.	Existing
City of Cuyahoga Falls	City of Cuyahoga Falls Public Safety Dispatch	Dispatch of Police, Fire, EMS	Existing
City of Cuyahoga Falls	City of Cuyahoga Falls Website	City website which includes traffic information.	Planned
City of Cuyahoga Falls Public Works	City of Cuyahoga Falls Maintenance Dispatch	Dispatches maintenance vehicles for performing roadway maintenance (including snow plowing and road treatment).	Existing
City of Cuyahoga Falls Public Works	City of Cuyahoga Falls Maintenance Vehicles	Maintenance vehicles dispatched by City of Cuyahoga Falls. Plans include AVL.	Existing
City of Cuyahoga Falls Technical Services	City of Cuyahoga Falls Field Equipment	Traffic signals, monitoring cameras, video detection, grade crossing preemption and emergency vehicle preemption (sonic for police and fire). MDTs in police and fire vehicles. Train surveillance system to identify closings due to trains and notify fire department.	Existing
City of Cuyahoga Falls Technical Services	City of Cuyahoga Falls Signal Control System	Control of traffic signals in the city.	Existing
City of Cuyahoga Falls Technical Services	City of Cuyahoga Falls Traffic Services Dispatch	Dispatch of assets for the maintenance of field equipment.	Existing
Commercial Fleet Management	Fleet and Freight Management Systems	Generic fleet management systems; must interface to ISP and EM to obtain information concerning traffic/suggested routes, and to emergency management for hazmat information.	Planned

Stakeholder Name	Element Name	Element Description	Status
County Government	Other County Maintenance Garages	Represents county maintenance garages and dispatch in the counties that border the region (Carroll, Columbiana, Cuyahoga, Mahoning, Medina, Trumbull, Tuscarawas, and Wayne).	Existing
County Local Emergency Planning Committee	County LEPC database	Collect HAZMAT and traffic count information. One in each county,	Existing
County Sheriff	County Emergency Vehicles	Sheriff vehicles	Existing
County Sheriff	Other County Public Safety	Represents County sheriff and county PSAPs for counties bordering on the region (Carroll, Columbiana, Cuyahoga, Mahoning, Medina, Trumbull, Tuscarawas, and Wayne).	Existing
Crash Record Users	Crash Records Database Users	Agencies and systems that access crash record databases	Planned
Financial Institutions	Financial Institutions	Systems of financial companies involved in electronic payment transactions.	Planned
General Public	Traveler Information Device	Personal devices used by the traveling public. Includes PCs, pagers, etc.	Existing
Greater Cleveland Regional Transit Authority (RTA)	GCRTA Administration	Administrative functions of METRO that will handle reconciliation of regional electronic fare system.	Existing
Greater Cleveland Regional Transit Authority (RTA)	GCRTA Communications Center	Includes the train control system, the bus control system, and the traveler information services for RTA. Paratransit and subscription service to be provided in future.	Existing
Kent State University	Kent State Bus Operations Center	Bus Operations on the Kent State Campus.	Existing
Metro Regional Transit Authority (METRO)	METRO Administration	Administrative functions of METRO that will handle reconciliation of regional electronic fare system.	Existing
Metro Regional Transit Authority (METRO)	METRO Dispatch	Dispatch of fixed route and paratransit systems for Summit County.	Existing
Metro Regional Transit Authority (METRO)	METRO Fixed Route Vehicles	216 busses, 41 routes, 5 express routes. Vehicles have cameras, hard drive, and panic buttons.	Existing
Metro Regional Transit Authority (METRO)	METRO Kiosks	Kiosk planned for transit center to replace personnel. Currently use magnetic strip fare cards. Main Street transitway at Rolling Acres Mall is camera monitored.	Planned
Metro Regional Transit Authority (METRO)	METRO Maintenance Operations	Do not currently have ability to track vehicles. Contract with Mechanic s on Wheels when towing is necessary. Contracts out most	Existing

Stakeholder Name	Element Name	Element Description	Status
		maintenance, lease Goodyear tires.	
Metro Regional Transit Authority (METRO)	METRO Paratransit Vehicles	Demand response - 72 vehicles, ADA eligible or over 62 w/in 3/4 mile of fixed route. Para-transit anywhere within Summit County. Have AVL in 45 paratransit vehicles.	Existing
Metro Regional Transit Authority (METRO)	METRO Passenger Facilities	Facilities such as Rolling Acres, Main Street, and the proposed downtown transfer station. Element represents passenger information and passenger security systems.	Existing
Metro Regional Transit Authority (METRO)	METRO Transit Traveler Information System	www.akronmetro.org Real time informational signs would be nice, but not sure how cost effective they are.	Existing
Metro Regional Transit Authority (METRO)	Regional Smart Card Reconciliation Network	System that provides fare reconciliation between peer agencies using a common travel card.	Planned
Metro Regional Transit Authority (METRO)	Regional Traveler Smart Card	Smart Card used by Metro and other systems.	Planned
Metro-Networks	Metro Information Systems	Traveler information via radio, television, and Internet.	Existing
Municipal DPW and Services*	Municipal Maintenance Dispatch	Represents the dispatch of maintenance vehicles that are owned and operated by municipalities in both Akron and Canton areas. Sometimes these cities contract out the service. The major municipalities and townships (with population greater than approximately 10,000 in the 2000 Census) are listed by county. For Portage County they are: Cities of Kent, Aurora, Streetsboro, and Ravenna. For Stark County they are: Cities of Massillon, Alliance and North Canton, and Townships of Jackson, Plain, Perry, Lake, and Canton. For Summit County they are: Cities of Stow, Barberton, Green, Hudson, and Tallmadge, and Townships of Springfield, Copley, and Franklin.	Existing
Municipal DPW and Services	Municipal Maintenance Vehicles	Represents the snow plows and other maintenance vehicles that are owned and operated by municipalities in both Akron and Canton areas. This includes cities surrounding Akron and Canton like Kent, Hudson, and Barberton.	Existing
Municipal Engineering and Service Depts*	Municipal Signal Control Systems	This element represents the traffic control systems of cities and municipalities in the region other than Akron, Canton, and Cuyahoga	Existing



Stakeholder Name	Element Name	Element Description	Status
		Falls. The major municipalities and townships (with population greater than approximately 10,000 in the 2000 Census) are listed by county. For Portage County they are: Cities of Kent, Aurora, Streetsboro, and Ravenna. For Stark County they are: Cities of Massillon, Alliance and North Canton, and Townships of Jackson, Plain, Perry, Lake, and Canton. For Summit County they are: Cities of Stow, Barberton, Green, Hudson, and Tallmadge, and Townships of Springfield, Copley, and Franklin.	
Municipal Engineering and Service Depts	Municipal Field Equipment	This includes signals, closed loop control, preemption for emergency vehicles (sonic or optical) operated by municipalities in the region. Video detection. RWIS and dynamic message signs are also possibilities.	Existing
Municipalities and Townships	Municipal and Township Public Safety Dispatch	Represents local FDs, PDs and (often private) EMS dispatch functions.	Existing
Municipalities and Townships*	Municipal Emergency Vehicles	Police, Fire, and EMS vehicles in municipalities.	Existing
Municipalities and Townships*	Municipal Websites	Websites for municipalities that provide some form of traveler information.	Planned
Muskingum Watershed Conservancy District	Muskingum Watershed Conservancy District Office	Maintains flood control reservoirs, which flood a large number of roads when dams are closed.	Existing
National Weather Service	Weather Information Providers	NWS, Accuweather, etc.	Existing
ODOT	ODOT 511 Information System	Traveler information by dialing 511 number; provided by ODOT and private partnership.	Planned
ODOT	ODOT Akron-Canton Freeway Management Center	Represents current traffic management capability of ODOT District 4 Office, as well as planned center to provide traffic management and incident management on freeways and major state roads in the Akron and Canton areas. May include dispatch of freeway service patrol in the future.	Existing
ODOT	ODOT Central Office	Central statewide traffic operations center for ODOT. Manages the BuckEyeTraffic.org website. For redundancy, able to remotely operate district traffic management centers.	Existing

Stakeholder Name	Element Name	Element Description	Status
ODOT	ODOT Central Office Website	Aggregate weather info from RWIS stations in each county.	Existing
ODOT	ODOT District 11 Office	Responsible for traffic and maintenance for District 11, which adjoins the region.	Existing
ODOT	ODOT District 12 Freeway Management Center	Control system to manage lane restrictions, closures, future ramp meters, incidents; includes OTIS web page for giving information about road work and snow). Also dispatches the road CrewZers.	Planned
ODOT	ODOT District 12 Maintenance Garages	Dispatch function for ODOT roadway and equipment maintenance vehicles. These garages are county based. Provide roadway and equipment maintenance for ODOT assets in the district.	Existing
ODOT	ODOT District 3 Maintenance Garages	Dispatch function for ODOT roadway and equipment maintenance vehicles. These garages are county based. Provide roadway and equipment maintenance for ODOT assets in the district.	Existing
ODOT	ODOT District 3 Office	Responsible for traffic and maintenance for District 3, which adjoins the region.	Existing
ODOT	ODOT District 4 Field Equipment	2 HAR stations( one in Akron and one in Canton area), 7 cameras to monitor work zones - 5 at the SR 8 project and 2 at Mercy Hospital that are broadcast over channel 2. Dynamic message signs. In future to include traffic detection devices, CCTV for incident management and possibly road weather stations.	Existing
ODOT	ODOT District 4 Maintenance Garages	County based garages responsible for roadway and equipment maintenance.	Existing
ODOT	ODOT District 4 Maintenance Vehicles	District maintenance vehicles, Including snow plows. District is considering GPS units for tracking.	Existing
ODOT	ODOT District 4 Outposts	ODOT materials and equipment storage facilities within the district.	Existing
ODOT	ODOT District 4 Signal Control System	274 signals maintained by District 4. ~40 are in Summit County and ~60 are in Stark County. Volume loops at SR 18 near I-77 in Montrose, future plans at Stark 62 (2005) and I-77 and Arlington Road (2003). Signal pre-emption using Opticom at SR 18 and Cleveland/Massillon Road, with future expansion into Bath, Copley Township, and City of Fairlawn.	Existing
ODOT	ODOT District 4 Web Services	www.dot.state.oh.us/dist4 Construction rollout - ODOT invites all	Existing

Stakeholder Name	Element Name	Element Description	Status
		media for one day before the construction season for the year begins to discuss planned work, the interstate construction brochure is handed out at this time - it is also distributed to rest areas, AAA, county fairs, and placed on the web. Construction Updates - Each week from approximately April through September e-mails are sent to the media and public safety agencies.	
ODOT	ODOT Freeway Service Patrol Vehicles	Would be dispatched from the Akron-Canton FMC.	Planned
ODOT	ODOT Traffic Data Archive System	Statewide archive of traffic data. Inputs data from new automatic traffic counters	Existing
Ohio Department of Public Safety	Ohio DPS Crash Records Database	State Highway Patrol collects information and sends to this DB.	Planned
Ohio Department of Public Safety	Ohio Statewide EOC	Statewide EOC is located in Columbus.	Existing
Ohio EPA	Ohio EPA Northeast District Office	Ohio Environmental Protection Agency Northeast District Office is located in Twinsburg. It has responsibility for Air Pollution Control, Surface Water, Drinking & Ground Waters, Solid and Infectious Waste, Hazardous Waste Management, Emergency & Remedial Response.	Existing
Ohio State Highway Patrol (OSHP)	Ohio State Highway Patrol Posts	Two in this region (Ravenna Post and Canton Post).	Existing
Ohio State Highway Patrol (OSHP)	Ohio State Highway Patrol Vehicles	ITS equipment inside highway patrol vehicles.	Existing
Ohio Turnpike Commission (OTC)	OTC Central Dispatch	Dispatch maintenance and incident management (private tow/wreckers, local/municipal fire/EMS). (Collocated with Highway Patrol). Dispatch contractors for construction and sometimes maintenance.	Existing
Portage Area Regional Transportation Authority (PARTA)	PARTA Dispatch	Dispatch function for fixed route and praatransit transit vehicles in Portage County.	Existing
Portage Area Regional	PARTA Fixed Route Vehicles	Fixed Route Transit Vehicles operated in Portage County.	Existing

Stakeholder Name	Element Name	Element Description	Status
Transportation Authority (PARTA)			
Portage Area Regional Transportation Authority (PARTA)	PARTA Paratransit Vehicles	Paratransit vehicles operated in Portage County.	Existing
Portage Area Regional Transportation Authority (PARTA)	PARTA Transit Traveler Information System	Transit traveler information system providing static information, and in the future real time information.	Existing
Portage County	Portage County Maintenance Vehicles	Represents the snow plows and other maintenance vehicles that are owned and operated by Portage County.	Existing
Portage County	Portage County Website	County website with traffic or incident data.	Existing
Portage County Emergency Management Agency	Portage County Emergency Management Operations	Represents normal administrative functions of Portage County Emergency Management Agency and Emergency Operations Center that becomes operational during disasters or major emergencies.	Existing
Portage County Engineer	Portage County Field Equipment	RWIS planned.	Existing
Portage County Engineer	Portage County Maintenance Dispatch	Dispatch function for roadway and equipment maintenance in Portage County.	Existing
Portage County Engineer	Portage County Signal Control Systems	This element represents current and future signal systems owned and operated by Portage County.	Planned
Portage County Sheriff	Portage County Public Safety Dispatch	Dispatch of Sheriff, Fire, and EMS for the county.	Existing
Private Ambulance Companies	Private Ambulance Dispatch	Vehicle dispatch function of private ambulance companies in the region.	Existing
Private Commercial Carriers	Commercial Vehicles	Commercial Vehicles with automated mayday alarms.	Existing
Private Maintenance Contractor	Roadwise Website	Website with work zone and construction information for Akron area.	Existing
Private Paratransit Service Providers	Private Paratransit Systems Dispatch	Private transit systems that provide service to elderly and handicapped riders.	Existing
Private Tow/ Wrecker Companies	Private Towing Dispatch	Dispatch function for private tow/ wrecker companies in the region.	Existing
Railroad Operator	Railroad Operations Center	Source of information for train crossing times/durations for	Existing

Stakeholder Name	Element Name	Element Description	Status
		coordination to reroute vehicles (passenger, commercial, transit, emergency) around RR tracks. CSX, Norfolk Southern & Lake Erie railroads are in the region.	
Railroad Operator	Railroad Wayside Equipment	Active highway/rail interfaces (flashing lights and gates when train is detected)	Existing
Regional Event Organizations	Regional Event Operations	Six Flags, Blossom Music Center, World Series of Golf, Football Hall of Fame Festival, All American Soap Box Derby, etc.	Existing
Regional Hospital Organizations	Regional Hospitals and Trauma Centers	Hospitals and trauma centers in the region.	Existing
Regional Public Safety	Akron - Canton Regional Incident and Mutual Aid Network	Regional public safety communications network.	Planned
School Districts	School Buses	School Buses operated by area school districts.	Existing
School Districts	School District Dispatch	Dispatching systems for school districts buses.	Existing
Special Police Departments	Special Police Dispatch	Dispatch of public safety for special jurisdictions. E.g. University of Akron, Kent State, and park police.	Existing
Special Police Departments	Special Police Vehicles	Police vehicles operated by Special Police forces.	Existing
Stark Area Regional Transit Authority (SARTA)	SARTA Fixed Route Dispatch	Dispatch of fixed route transit vehicles. Plans for AVL in 2004.	Existing
Stark Area Regional Transit Authority (SARTA)	SARTA Fixed Route Vehicles	43 fixed route vehicles (1 express route). New buses are equipped with cameras.	Existing
Stark Area Regional Transit Authority (SARTA)	SARTA Fleet Maintenance	FLEET-NET Maintenance Scheduling System. Have a body shop, lease Firestone tires.	Existing
Stark Area Regional Transit Authority (SARTA)	SARTA Information Signs	Information displays at stops or transfer facilities.	Planned
Stark Area Regional Transit Authority (SARTA)	SARTA Paratransit Dispatch	Dispatch function for SARTA Paratransit System.	Existing
Stark Area Regional Transit Authority (SARTA)	SARTA Paratransit Vehicles	Paratransit vehicles operating in Stark County.	Existing
Stark Area Regional Transit Authority (SARTA)	SARTA Transit Traveler Information System	www.sartaonline.com also use print media, quarterly public meetings, bus ads and have plans for e-mail distribution list.	Existing

Stakeholder Name	Element Name	Element Description	Status
Stark County	Stark County Website	County website with traffic or incident data.	Existing
Stark County Area Transportation Study (SCATS)	SCATS Traffic Count Data Archive	Historical archive of traffic counts for the SCATS region.	Existing
Stark County Area Transportation Study (SCATS)	SCATS Web Services	Web site and other internet based services.	Existing
Stark County EMA	Stark County Emergency Operations Center	Responsible for emergency response to larger emergencies within county.	Existing
Stark County Engineer	Stark County Field Equipment	RWIS planned.	Existing
Stark County Engineer	Stark County Maintenance Dispatch	Department handles all maintenance/landscaping/hazard removal on roadways, bridges, and all interchanges land outside the limited access. Responsible for signage, pavement, pavement markings, and guardrail on all county routes.	Existing
Stark County Engineer	Stark County Maintenance Vehicles	Use software to automate maintenance scheduling for vehicles. Includes snow plows. 20 trucks for winter road maintenance activities	Existing
Stark County Engineer	Stark County Signal Control System	73 signals, 17 flashers: isolated free running, loop detection, semi-actuated, 6 pre-timed electro-mechanical controllers, signal pre-emption at 2 locations by fire stations, One signal within 200' of a railroad crossing near Timken Plant - not interconnected. No signal priority . Would like to have video surveillance at some point.	Existing
Stark County Sheriff	Stark County Public Safety Dispatch	Dispatch of Sheriff, Fire, and EMS in the county.	Existing
Summit County EMA	Summit County Emergency Operations Center	Responsible for emergency response to larger emergencies within county.	Existing
Summit County Engineer	Summit County Engineer Website	www.co.summit.oh.us Work zones, construction, detour information is communicated through e-mail and backed up by fax to newspapers, radio stations, police and fire. Physical mail drop is initiated for large projects with "Dear neighbor" letter including GIS map, contact info and more details.	Existing
Summit County Engineer	Summit County Field Equipment	Own 2 mobile dynamic message signs used for construction zones	Existing

Stakeholder Name	Element Name	Element Description	Status
		RWIS.	
Summit County Engineer	Summit County Maintenance Dispatch	Department handles all maintenance/landscaping/hazard removal of 250 miles of roadways. Also responsible for signage, pavement, pavement markings, and guardrail on all county routes.	Existing
Summit County Engineer	Summit County Maintenance Vehicles	33 trucks, 9 on order. Looking into GPS systems for vehicles. Plan to tie into county's 800 MhZ system. In the process of automating vehicle maintenance scheduling with custom software. Includes snow plows. Average snow storm uses 12 trucks.	Existing
Summit County Engineer	Summit County Signal Control System	25 signals, majority use loop detection, SR 18 east to I-77 from Springside to Cleveland/Massillon (four signals) synchronized. Data is monitored by Fairlawn Police Station. One mechanical controller, no preemption for emergency or transit vehicles, no signals within 200' of a railroad crossing, system loops collect volume, speed, and classification data - data is not used.	Existing
Summit County Sheriff	Summit County Public Safety Dispatch	Overweight and over-sized load enforcement is coordinated with the Sheriff's department. They have 20 portable scales.	Existing
Traffic Data Users	Traffic Data Users	Agencies and systems that use traffic data and traffic count data.	Planned
Traveler Information Providers	Private Traveler Information Providers	Private companies providing traveler information services in the region.	Planned
TV and Radio Stations	TV and Radio Stations	Local TV, radio, and newspapers.	Existing

**Note: the stakeholder assignments for several elements (marked with an “\*”) have been corrected from the version shown on the website referenced in this document.**

## 4.2. Systems by Architecture Entity

Each element in the regional architecture inventory is mapped to one or more entities from the National ITS Architecture. In the current version of the National ITS Architecture (version 4.0) there are 92 entities defined. These 21 subsystems and 71 terminators describe a wide array of systems that provide ITS services, or interface with systems that provide ITS services. The mapping of regional architecture elements to National ITS Architecture entities has two primary benefits. First it allows the full set of information flows contained in the National ITS Architecture to be used in the description of regional ITS architecture interfaces, and second, it allows the elements of the regional architecture to be grouped by like entity. Table 5 provided just such a sorting of inventory elements by entity. This table allows the users of the architecture to immediately identify all the elements that have functions relating to transit management, or traffic management.

The Akron-Canton Regional ITS Architecture inventory contains the following number of elements mapped to different types of entities:

Archived Data Management: 5  
Emergency Management: 21  
Information Service Providers: 18  
Maintenance and Construction Management: 20  
Roadway: 8  
Traffic Management: 14  
Transit Management: 13

**Table 5: Inventory Sorted by Entity**

Entity Name	Element Name	Stakeholder Name	Status
Archived Data Management Subsystem	AMATS Traffic Count Data Archive	Akron Metropolitan Area Transportation Study (AMATS)	Existing
Archived Data Management Subsystem	County LEPC database	County Local Emergency Planning Committee	Existing
Archived Data Management Subsystem	ODOT Traffic Data Archive System	ODOT	Existing
Archived Data Management Subsystem	Ohio DPS Crash Records Database	Ohio Department of Public Safety	Planned
Archived Data Management Subsystem	SCATS Traffic Count Data Archive	Stark County Area Transportation Study (SCATS)	Existing
Archived Data User Systems	Crash Records Database Users	Crash Record Users	Planned
Archived Data User Systems	Traffic Data Users	Traffic Data Users	Planned
Care Facility	Regional Hospitals and Trauma Centers	Regional Hospital Organizations	Existing
Commercial Vehicle Subsystem	Commercial Vehicles	Private Commercial Carriers	Existing



Entity Name	Element Name	Stakeholder Name	Status
Emergency Management	City of Akron 311 Non-Emergency Information System	City of Akron	Planned
Emergency Management	City of Akron Emergency Operations Center	City of Akron Department of Public Safety	Existing
Emergency Management	City of Akron Public Safety Dispatch	City of Akron Department of Public Safety	Existing
Emergency Management	City of Canton Comm Center	City of Canton	Existing
Emergency Management	City of Canton Emergency Operations Center	City of Canton Director of Public Safety	Existing
Emergency Management	City of Cuyahoga Falls Public Safety Dispatch	City of Cuyahoga Falls	Existing
Emergency Management	Municipal and Township Public Safety Dispatch	Municipalities and Townships	Existing
Emergency Management	Muskingum Watershed Conservancy District Office	Muskingum Watershed Conservancy District	Existing
Emergency Management	ODOT Akron-Canton Freeway Management Center	ODOT	Existing
Emergency Management	Ohio State Highway Patrol Posts	Ohio State Highway Patrol (OSHP)	Existing
Emergency Management	Ohio Statewide EOC	Ohio Department of Public Safety	Existing
Emergency Management	Other County Public Safety	County Sheriff	Existing
Emergency Management	Portage County Emergency Management Operations	Portage County Emergency Management Agency	Existing
Emergency Management	Portage County Public Safety Dispatch	Portage County Sheriff	Existing
Emergency Management	Private Ambulance Dispatch	Private Ambulance Companies	Existing
Emergency Management	Private Towing Dispatch	Private Tow/ Wrecker Companies	Existing
Emergency Management	Special Police Dispatch	Special Police Departments	Existing
Emergency Management	Stark County Emergency Operations Center	Stark County EMA	Existing
Emergency Management	Stark County Public Safety Dispatch	Stark County Sheriff	Existing
Emergency Management	Summit County Emergency Operations Center	Summit County EMA	Existing
Emergency Management	Summit County Public Safety Dispatch	Summit County Sheriff	Existing
Emergency Vehicle Subsystem	City of Akron Emergency Vehicles	City of Akron Department of Public Safety	Existing
Emergency Vehicle Subsystem	City of Canton Emergency Vehicles	City of Canton	Existing
Emergency Vehicle Subsystem	City of Cuyahoga Falls Emergency Vehicles	City of Cuyahoga Falls	Existing

Entity Name	Element Name	Stakeholder Name	Status
Emergency Vehicle Subsystem	County Emergency Vehicles	County Sheriff	Existing
Emergency Vehicle Subsystem	Municipal Emergency Vehicles	Municipalities and Townships-2	Existing
Emergency Vehicle Subsystem	ODOT Freeway Service Patrol Vehicles	ODOT	Planned
Emergency Vehicle Subsystem	Ohio State Highway Patrol Vehicles	Ohio State Highway Patrol (OSHP)	Existing
Emergency Vehicle Subsystem	Special Police Vehicles	Special Police Departments	Existing
Event Promoters	Regional Event Operations	Regional Event Organizations	Existing
Financial Institution	Financial Institutions	Financial Institutions	Planned
Fleet and Freight Management	Fleet and Freight Management Systems	Commercial Fleet Management	Planned
Information Service Provider	AMATS Web Services	Akron Metropolitan Area Transportation Study (AMATS)	Existing
Information Service Provider	City of Akron Website	City of Akron	Existing
Information Service Provider	City of Canton Public Website	City of Canton	Existing
Information Service Provider	City of Cuyahoga Falls Website	City of Cuyahoga Falls	Planned
Information Service Provider	Metro Information Systems	Metro-Networks	Existing
Information Service Provider	METRO Transit Traveler Information System	Metro Regional Transit Authority (METRO)	Existing
Information Service Provider	Municipal Websites	Municipalities and Townships-2	Planned
Information Service Provider	ODOT 511 Information System	ODOT	Planned
Information Service Provider	ODOT Central Office Website	ODOT	Existing
Information Service Provider	ODOT District 4 Web Services	ODOT	Existing
Information Service Provider	PARTA Transit Traveler Information System	Portage Area Regional Transportation Authority (PARTA)	Existing
Information Service Provider	Portage County Website	Portage County	Existing
Information Service Provider	Private Traveler Information Providers	Traveler Information Providers	Planned
Information Service Provider	Roadwise Website	Private Maintenance Contractor	Existing
Information Service Provider	SARTA Transit Traveler Information System	Stark Area Regional Transit Authority (SARTA)	Existing

Entity Name	Element Name	Stakeholder Name	Status
Information Service Provider	SCATS Web Services	Stark County Area Transportation Study (SCATS)	Existing
Information Service Provider	Stark County Website	Stark County	Existing
Information Service Provider	Summit County Engineer Website	Summit County Engineer	Existing
Maintenance and Construction Management	Akron Engineering Bureau	City of Akron Engineering Bureau	Existing
Maintenance and Construction Management	City of Akron Highway Maintenance Department	City of Akron Public Works Bureau	Existing
Maintenance and Construction Management	City of Akron TMC	City of Akron Traffic Engineering	Existing
Maintenance and Construction Management	City of Canton Maintenance Dispatch	City of Canton Street Department	Existing
Maintenance and Construction Management	City of Canton Street Dept Dispatch	City of Canton	Existing
Maintenance and Construction Management	City of Canton Traffic Signal Dispatch	City of Canton	Existing
Maintenance and Construction Management	City of Cuyahoga Falls Maintenance Dispatch	City of Cuyahoga Falls Public Works	Existing
Maintenance and Construction Management	City of Cuyahoga Falls Traffic Services Dispatch	City of Cuyahoga Falls Technical Services	Existing
Maintenance and Construction Management	Municipal Maintenance Dispatch	Municipal DPW and Services	Existing
Maintenance and Construction Management	ODOT Akron-Canton Freeway Management Center	ODOT	Existing
Maintenance and Construction Management	ODOT District 11 Office	ODOT	Existing
Maintenance and Construction Management	ODOT District 12 Maintenance Garages	ODOT	Existing
Maintenance and Construction Management	ODOT District 3 Maintenance Garages	ODOT	Existing
Maintenance and Construction Management	ODOT District 3 Office	ODOT	Existing
Maintenance and Construction Management	ODOT District 4 Maintenance Garages	ODOT	Existing
Maintenance and Construction Management	OTC Central Dispatch	Ohio Turnpike Commission (OTC)	Existing
Maintenance and Construction Management	Other County Maintenance Garages	County Government	Existing
Maintenance and Construction Management	Portage County Maintenance Dispatch	Portage County Engineer	Existing
Maintenance and Construction Management	Stark County Maintenance Dispatch	Stark County Engineer	Existing
Maintenance and Construction Management	Summit County Maintenance Dispatch	Summit County Engineer	Existing

Entity Name	Element Name	Stakeholder Name	Status
Maintenance and Construction Vehicle	City of Akron Maintenance Vehicles	City of Akron	Existing
Maintenance and Construction Vehicle	City of Canton Maintenance Vehicles	City of Canton Street Department	Existing
Maintenance and Construction Vehicle	City of Cuyahoga Falls Maintenance Vehicles	City of Cuyahoga Falls Public Works	Existing
Maintenance and Construction Vehicle	Municipal Maintenance Vehicles	Municipalities and Townships-2	Existing
Maintenance and Construction Vehicle	ODOT District 4 Maintenance Vehicles	ODOT	Existing
Maintenance and Construction Vehicle	Portage County Maintenance Vehicles	Portage County	Existing
Maintenance and Construction Vehicle	Stark County Maintenance Vehicles	Stark County Engineer	Existing
Maintenance and Construction Vehicle	Summit County Maintenance Vehicles	Summit County Engineer	Existing
Media	TV and Radio Stations	TV and Radio Stations	Existing
Multimodal Transportation Service Provider	Akron-Canton Airport	Akron-Canton Airport	Existing
Other EM	Akron - Canton Regional Incident and Mutual Aid Network	Regional Public Safety	Planned
Other EM	Ohio EPA Northeast District Office	Ohio EPA	Existing
Personal Information Access	Traveler Information Device	General Public	Existing
Rail Operations	Railroad Operations Center	Railroad Operator	Existing
Remote Traveler Support	METRO Kiosks	Metro Regional Transit Authority (METRO)	Planned
Remote Traveler Support	METRO Passenger Facilities	Metro Regional Transit Authority (METRO)	Existing
Remote Traveler Support	SARTA Information Signs	Stark Area Regional Transit Authority (SARTA)	Planned
Roadway Subsystem	City of Akron Field Equipment	City of Akron Traffic Engineering	Existing
Roadway Subsystem	City of Canton Field Equipment	City of Canton Traffic Engineering	Existing
Roadway Subsystem	City of Cuyahoga Falls Field Equipment	City of Cuyahoga Falls Technical Services	Existing
Roadway Subsystem	Municipal Field Equipment	Municipal Engineering and Service Depts	Existing
Roadway Subsystem	ODOT District 4 Field Equipment	ODOT	Existing
Roadway Subsystem	Portage County Field Equipment	Portage County Engineer	Existing
Roadway Subsystem	Stark County Field Equipment	Stark County Engineer	Existing
Roadway Subsystem	Summit County Field	Summit County Engineer	Existing

Entity Name	Element Name	Stakeholder Name	Status
	Equipment		
Storage Facility	ODOT District 4 Outposts	ODOT	Existing
Traffic Management	City of Akron TMC	City of Akron Traffic Engineering	Existing
Traffic Management	City of Canton Signal Control System	City of Canton Traffic Engineering	Existing
Traffic Management	City of Cuyahoga Falls Signal Control System	City of Cuyahoga Falls Technical Services	Existing
Traffic Management	Municipal Signal Control Systems	Municipal Engineering and Service	Existing
Traffic Management	ODOT Akron-Canton Freeway Management Center	ODOT	Existing
Traffic Management	ODOT Central Office	ODOT	Existing
Traffic Management	ODOT District 11 Office	ODOT	Existing
Traffic Management	ODOT District 12 Freeway Management Center	ODOT	Planned
Traffic Management	ODOT District 3 Office	ODOT	Existing
Traffic Management	ODOT District 4 Signal Control System	ODOT	Existing
Traffic Management	OTC Central Dispatch	Ohio Turnpike Commission (OTC)	Existing
Traffic Management	Portage County Signal Control Systems	Portage County Engineer	Planned
Traffic Management	Stark County Signal Control System	Stark County Engineer	Existing
Traffic Management	Summit County Signal Control System	Summit County Engineer	Existing
Transit Management	GCRTA Administration	Greater Cleveland Regional Transit Authority (RTA)	Existing
Transit Management	GCRTA Communications Center	Greater Cleveland Regional Transit Authority (RTA)	Existing
Transit Management	Kent State Bus Operations Center	Kent State University	Existing
Transit Management	METRO Administration	Metro Regional Transit Authority (METRO)	Existing
Transit Management	METRO Dispatch	Metro Regional Transit Authority (METRO)	Existing
Transit Management	METRO Maintenance Operations	Metro Regional Transit Authority (METRO)	Existing
Transit Management	PARTA Dispatch	Portage Area Regional Transportation Authority (PARTA)	Existing
Transit Management	Private Paratransit Systems Dispatch	Private Paratransit Service Providers	Existing
Transit Management	Regional Smart Card Reconciliation Network	Metro Regional Transit Authority (METRO)	Planned

Entity Name	Element Name	Stakeholder Name	Status
Transit Management	SARTA Fixed Route Dispatch	Stark Area Regional Transit Authority (SARTA)	Existing
Transit Management	SARTA Fleet Maintenance	Stark Area Regional Transit Authority (SARTA)	Existing
Transit Management	SARTA Paratransit Dispatch	Stark Area Regional Transit Authority (SARTA)	Existing
Transit Management	School District Dispatch	School Districts	Existing
Transit Vehicle Subsystem	METRO Fixed Route Vehicles	Metro Regional Transit Authority (METRO)	Existing
Transit Vehicle Subsystem	METRO Paratransit Vehicles	Metro Regional Transit Authority (METRO)	Existing
Transit Vehicle Subsystem	PARTA Fixed Route Vehicles	Portage Area Regional Transportation Authority (PARTA)	Existing
Transit Vehicle Subsystem	PARTA Paratransit Vehicles	Portage Area Regional Transportation Authority (PARTA)	Existing
Transit Vehicle Subsystem	SARTA Fixed Route Vehicles	Stark Area Regional Transit Authority (SARTA)	Existing
Transit Vehicle Subsystem	SARTA Paratransit Vehicles	Stark Area Regional Transit Authority (SARTA)	Existing
Transit Vehicle Subsystem	School Buses	School Districts	Existing
Traveler Card	Regional Traveler Smart Card	Metro Regional Transit Authority (METRO)	Planned
Wayside Equipment	Railroad Wayside Equipment	Railroad Operator	Existing
Weather Service	Weather Information Providers	National Weather Service	Existing

## 5. Market Packages

The ITS systems in the region currently provide a wide array of transportation services and that list will grow as more systems are developed or upgraded. The services are described by the set of market packages that are shown in Table 6. This table provides for each market package the status (is it currently provided or planned) and the primary elements associated with the market package. The version of Turbo Architecture used to develop the architecture (Version 2.0) only allows a single status for each market package. Based on this limitation, the status of existing was chosen if one or more of the elements in the region is providing this service. An example of an existing service is Surface Street Control.



**Table 6: Regional Market Packages**

<b>Market Package</b>	<b>Market Package Name</b>	<b>Element</b>	<b>Status</b>
AD1	ITS Data Mart	AMATS Traffic Count Data Archive	Planned
AD1	ITS Data Mart	City of Akron Field Equipment	Planned
AD1	ITS Data Mart	City of Akron TMC	Planned
AD1	ITS Data Mart	City of Canton Field Equipment	Planned
AD1	ITS Data Mart	City of Canton Signal Control System	Planned
AD1	ITS Data Mart	City of Cuyahoga Falls Signal Control System	Planned
AD1	ITS Data Mart	Crash Records Database Users	Planned
AD1	ITS Data Mart	Municipal Signal Control Systems	Planned
AD1	ITS Data Mart	ODOT Akron-Canton Freeway Management Center	Planned
AD1	ITS Data Mart	ODOT Traffic Data Archive System	Planned
AD1	ITS Data Mart	Ohio DPS Crash Records Database	Planned
AD1	ITS Data Mart	Ohio State Highway Patrol Posts	Planned
AD1	ITS Data Mart	Portage County Public Safety Dispatch	Planned
AD1	ITS Data Mart	Portage County Signal Control Systems	Planned
AD1	ITS Data Mart	SCATS Traffic Count Data Archive	Planned
AD1	ITS Data Mart	Stark County Field Equipment	Planned
AD1	ITS Data Mart	Stark County Public Safety Dispatch	Planned
AD1	ITS Data Mart	Stark County Signal Control System	Planned
AD1	ITS Data Mart	Summit County Public Safety Dispatch	Planned
AD1	ITS Data Mart	Summit County Signal Control System	Planned
AD1	ITS Data Mart	Traffic Data Users	Planned
APTS1	Transit Vehicle Tracking	METRO Dispatch	Existing
APTS1	Transit Vehicle Tracking	METRO Fixed Route Vehicles	Existing
APTS1	Transit Vehicle Tracking	METRO Paratransit Vehicles	Existing
APTS1	Transit Vehicle Tracking	PARTA Dispatch	Existing
APTS1	Transit Vehicle Tracking	PARTA Fixed Route Vehicles	Existing
APTS1	Transit Vehicle Tracking	PARTA Paratransit Vehicles	Existing
APTS1	Transit Vehicle Tracking	SARTA Fixed Route Dispatch	Existing
APTS1	Transit Vehicle Tracking	SARTA Fixed Route Vehicles	Existing
APTS1	Transit Vehicle Tracking	SARTA Paratransit Dispatch	Existing
APTS1	Transit Vehicle Tracking	SARTA Paratransit Vehicles	Existing
APTS2	Transit Fixed-Route Operations	Akron Engineering Bureau	Planned
APTS2	Transit Fixed-Route Operations	City of Akron Highway Maintenance Department	Planned
APTS2	Transit Fixed-Route Operations	City of Akron TMC	Planned
APTS2	Transit Fixed-Route Operations	City of Canton Maintenance Dispatch	Planned
APTS2	Transit Fixed-Route Operations	City of Canton Signal Control System	Planned
APTS2	Transit Fixed-Route Operations	City of Canton Street Dept Dispatch	Planned
APTS2	Transit Fixed-Route Operations	City of Cuyahoga Falls Maintenance Dispatch	Planned
APTS2	Transit Fixed-Route Operations	City of Cuyahoga Falls Signal Control System	Planned

Market Package	Market Package Name	Element	Status
APTS2	Transit Fixed-Route Operations	METRO Dispatch	Planned
APTS2	Transit Fixed-Route Operations	METRO Fixed Route Vehicles	Planned
APTS2	Transit Fixed-Route Operations	Municipal Maintenance Dispatch	Planned
APTS2	Transit Fixed-Route Operations	Municipal Signal Control Systems	Planned
APTS2	Transit Fixed-Route Operations	ODOT Akron-Canton Freeway Management Center	Planned
APTS2	Transit Fixed-Route Operations	ODOT District 12 Freeway Management Center	Planned
APTS2	Transit Fixed-Route Operations	ODOT District 4 Maintenance Garages	Planned
APTS2	Transit Fixed-Route Operations	ODOT District 4 Signal Control System	Planned
APTS2	Transit Fixed-Route Operations	PARTA Dispatch	Planned
APTS2	Transit Fixed-Route Operations	PARTA Fixed Route Vehicles	Planned
APTS2	Transit Fixed-Route Operations	Portage County Maintenance Dispatch	Planned
APTS2	Transit Fixed-Route Operations	Portage County Signal Control Systems	Planned
APTS2	Transit Fixed-Route Operations	SARTA Fixed Route Dispatch	Planned
APTS2	Transit Fixed-Route Operations	SARTA Fixed Route Vehicles	Planned
APTS2	Transit Fixed-Route Operations	School Buses	Planned
APTS2	Transit Fixed-Route Operations	School District Dispatch	Planned
APTS2	Transit Fixed-Route Operations	Stark County Maintenance Dispatch	Planned
APTS2	Transit Fixed-Route Operations	Stark County Signal Control System	Planned
APTS2	Transit Fixed-Route Operations	Summit County Maintenance Dispatch	Planned
APTS2	Transit Fixed-Route Operations	Summit County Signal Control System	Planned
APTS3	Demand Response Transit Operations	Akron Engineering Bureau	Planned
APTS3	Demand Response Transit Operations	City of Akron Highway Maintenance Department	Planned
APTS3	Demand Response Transit Operations	City of Akron TMC	Planned
APTS3	Demand Response Transit Operations	City of Canton Maintenance Dispatch	Planned
APTS3	Demand Response Transit Operations	City of Canton Signal Control System	Planned
APTS3	Demand Response Transit Operations	City of Canton Street Dept Dispatch	Planned
APTS3	Demand Response Transit Operations	City of Cuyahoga Falls Maintenance Dispatch	Planned
APTS3	Demand Response Transit Operations	City of Cuyahoga Falls Signal Control System	Planned
APTS3	Demand Response Transit Operations	METRO Dispatch	Planned
APTS3	Demand Response Transit Operations	Metro Information Systems	Planned
APTS3	Demand Response Transit Operations	METRO Paratransit Vehicles	Planned
APTS3	Demand Response Transit Operations	METRO Transit Traveler Information System	Planned



Market Package	Market Package Name	Element	Status
APTS3	Demand Response Transit Operations	Municipal Maintenance Dispatch	Planned
APTS3	Demand Response Transit Operations	Municipal Signal Control Systems	Planned
APTS3	Demand Response Transit Operations	ODOT Akron-Canton Freeway Management Center	Planned
APTS3	Demand Response Transit Operations	ODOT District 12 Freeway Management Center	Planned
APTS3	Demand Response Transit Operations	ODOT District 4 Maintenance Garages	Planned
APTS3	Demand Response Transit Operations	ODOT District 4 Signal Control System	Planned
APTS3	Demand Response Transit Operations	PARTA Dispatch	Planned
APTS3	Demand Response Transit Operations	PARTA Paratransit Vehicles	Planned
APTS3	Demand Response Transit Operations	PARTA Transit Traveler Information System	Planned
APTS3	Demand Response Transit Operations	Portage County Maintenance Dispatch	Planned
APTS3	Demand Response Transit Operations	Portage County Signal Control Systems	Planned
APTS3	Demand Response Transit Operations	SARTA Paratransit Dispatch	Planned
APTS3	Demand Response Transit Operations	SARTA Paratransit Vehicles	Planned
APTS3	Demand Response Transit Operations	SARTA Transit Traveler Information System	Planned
APTS3	Demand Response Transit Operations	Stark County Maintenance Dispatch	Planned
APTS3	Demand Response Transit Operations	Stark County Signal Control System	Planned
APTS3	Demand Response Transit Operations	Summit County Maintenance Dispatch	Planned
APTS3	Demand Response Transit Operations	Summit County Signal Control System	Planned
APTS4	Transit Passenger and Fare Management	Financial Institutions	Planned
APTS4	Transit Passenger and Fare Management	GCRTA Administration	Planned
APTS4	Transit Passenger and Fare Management	METRO Administration	Planned
APTS4	Transit Passenger and Fare Management	METRO Dispatch	Planned
APTS4	Transit Passenger and Fare Management	METRO Fixed Route Vehicles	Planned
APTS4	Transit Passenger and Fare Management	METRO Kiosks	Planned

Market Package	Market Package Name	Element	Status
	Management		
APTS4	Transit Passenger and Fare Management	METRO Paratransit Vehicles	Planned
APTS4	Transit Passenger and Fare Management	METRO Transit Traveler Information System	Planned
APTS4	Transit Passenger and Fare Management	Regional Smart Card Reconciliation Network	Planned
APTS4	Transit Passenger and Fare Management	Regional Traveler Smart Card	Planned
APTS5	Transit Security	City of Akron Public Safety Dispatch	Existing
APTS5	Transit Security	City of Canton Comm Center	Existing
APTS5	Transit Security	City of Cuyahoga Falls Public Safety Dispatch	Existing
APTS5	Transit Security	METRO Dispatch	Existing
APTS5	Transit Security	METRO Fixed Route Vehicles	Existing
APTS5	Transit Security	METRO Paratransit Vehicles	Existing
APTS5	Transit Security	METRO Passenger Facilities	Existing
APTS5	Transit Security	Municipal and Township Public Safety Dispatch	Existing
APTS5	Transit Security	PARTA Dispatch	Existing
APTS5	Transit Security	PARTA Fixed Route Vehicles	Existing
APTS5	Transit Security	PARTA Paratransit Vehicles	Existing
APTS5	Transit Security	Portage County Public Safety Dispatch	Existing
APTS5	Transit Security	SARTA Fixed Route Dispatch	Existing
APTS5	Transit Security	SARTA Fixed Route Vehicles	Existing
APTS5	Transit Security	SARTA Paratransit Dispatch	Existing
APTS5	Transit Security	SARTA Paratransit Vehicles	Existing
APTS5	Transit Security	Stark County Public Safety Dispatch	Existing
APTS5	Transit Security	Summit County Public Safety Dispatch	Existing
APTS6	Transit Maintenance	METRO Dispatch	Planned
APTS6	Transit Maintenance	METRO Fixed Route Vehicles	Planned
APTS6	Transit Maintenance	METRO Maintenance Operations	Planned
APTS6	Transit Maintenance	METRO Paratransit Vehicles	Planned
APTS6	Transit Maintenance	PARTA Dispatch	Planned
APTS6	Transit Maintenance	PARTA Fixed Route Vehicles	Planned
APTS6	Transit Maintenance	PARTA Paratransit Vehicles	Planned
APTS6	Transit Maintenance	SARTA Fixed Route Dispatch	Planned
APTS6	Transit Maintenance	SARTA Fixed Route Vehicles	Planned
APTS6	Transit Maintenance	SARTA Fleet Maintenance	Planned
APTS6	Transit Maintenance	SARTA Paratransit Dispatch	Planned
APTS6	Transit Maintenance	SARTA Paratransit Vehicles	Planned
APTS7	Multi-modal Coordination	Akron-Canton Airport	Existing
APTS7	Multi-modal Coordination	City of Akron Field Equipment	Existing
APTS7	Multi-modal Coordination	City of Akron TMC	Existing
APTS7	Multi-modal Coordination	GCRTA Communications Center	Existing

Market Package	Market Package Name	Element	Status
APTS7	Multi-modal Coordination	Kent State Bus Operations Center	Existing
APTS7	Multi-modal Coordination	METRO Dispatch	Existing
APTS7	Multi-modal Coordination	METRO Fixed Route Vehicles	Existing
APTS7	Multi-modal Coordination	PARTA Dispatch	Existing
APTS7	Multi-modal Coordination	Private Paratransit Systems Dispatch	Existing
APTS7	Multi-modal Coordination	SARTA Fixed Route Dispatch	Existing
APTS7	Multi-modal Coordination	SARTA Paratransit Dispatch	Existing
APTS8	Transit Traveler Information	METRO Dispatch	Planned
APTS8	Transit Traveler Information	METRO Fixed Route Vehicles	Planned
APTS8	Transit Traveler Information	METRO Kiosks	Planned
APTS8	Transit Traveler Information	METRO Transit Traveler Information System	Planned
APTS8	Transit Traveler Information	PARTA Dispatch	Planned
APTS8	Transit Traveler Information	PARTA Transit Traveler Information System	Planned
APTS8	Transit Traveler Information	SARTA Fixed Route Dispatch	Planned
APTS8	Transit Traveler Information	SARTA Fixed Route Vehicles	Planned
APTS8	Transit Traveler Information	SARTA Information Signs	Planned
APTS8	Transit Traveler Information	SARTA Transit Traveler Information System	Planned
APTS8	Transit Traveler Information	Traveler Information Device	Planned
ATIS1	Broadcast Traveler Information	AMATS Web Services	Planned
ATIS1	Broadcast Traveler Information	City of Akron TMC	Planned
ATIS1	Broadcast Traveler Information	City of Akron Website	Planned
ATIS1	Broadcast Traveler Information	City of Canton Public Website	Planned
ATIS1	Broadcast Traveler Information	City of Canton Signal Control System	Planned
ATIS1	Broadcast Traveler Information	City of Cuyahoga Falls Signal Control System	Planned
ATIS1	Broadcast Traveler Information	City of Cuyahoga Falls Website	Planned
ATIS1	Broadcast Traveler Information	Metro Information Systems	Planned
ATIS1	Broadcast Traveler Information	METRO Kiosks	Planned
ATIS1	Broadcast Traveler Information	ODOT 511 Information System	Planned
ATIS1	Broadcast Traveler Information	ODOT Akron-Canton Freeway Management Center	Planned
ATIS1	Broadcast Traveler Information	ODOT Central Office Website	Planned
ATIS1	Broadcast Traveler Information	ODOT District 4 Signal Control System	Planned
ATIS1	Broadcast Traveler Information	ODOT District 4 Web Services	Planned
ATIS1	Broadcast Traveler Information	SCATS Web Services	Planned
ATIS1	Broadcast Traveler Information	Stark County Signal Control System	Planned
ATIS1	Broadcast Traveler Information	Summit County Signal Control System	Planned
ATIS1	Broadcast Traveler Information	Traveler Information Device	Planned
ATIS1	Broadcast Traveler Information	TV and Radio Stations	Planned
ATMS01	Network Surveillance	AMATS Web Services	Planned
ATMS01	Network Surveillance	City of Akron Field Equipment	Planned
ATMS01	Network Surveillance	City of Akron TMC	Planned

Market Package	Market Package Name	Element	Status
ATMS01	Network Surveillance	City of Akron Website	Planned
ATMS01	Network Surveillance	City of Canton Field Equipment	Planned
ATMS01	Network Surveillance	City of Canton Public Website	Planned
ATMS01	Network Surveillance	City of Canton Signal Control System	Planned
ATMS01	Network Surveillance	City of Cuyahoga Falls Field Equipment	Planned
ATMS01	Network Surveillance	City of Cuyahoga Falls Signal Control System	Planned
ATMS01	Network Surveillance	City of Cuyahoga Falls Website	Planned
ATMS01	Network Surveillance	Metro Information Systems	Planned
ATMS01	Network Surveillance	Municipal Websites	Planned
ATMS01	Network Surveillance	ODOT Akron-Canton Freeway Management Center	Planned
ATMS01	Network Surveillance	ODOT District 4 Field Equipment	Planned
ATMS01	Network Surveillance	ODOT District 4 Web Services	Planned
ATMS01	Network Surveillance	Portage County Field Equipment	Planned
ATMS01	Network Surveillance	Portage County Signal Control Systems	Planned
ATMS01	Network Surveillance	Portage County Website	Planned
ATMS01	Network Surveillance	SCATS Web Services	Planned
ATMS01	Network Surveillance	Stark County Field Equipment	Planned
ATMS01	Network Surveillance	Stark County Signal Control System	Planned
ATMS01	Network Surveillance	Stark County Website	Planned
ATMS01	Network Surveillance	Summit County Engineer Website	Planned
ATMS01	Network Surveillance	Summit County Field Equipment	Planned
ATMS01	Network Surveillance	Summit County Signal Control System	Planned
ATMS03	Surface Street Control	City of Akron Field Equipment	Existing
ATMS03	Surface Street Control	City of Akron TMC	Existing
ATMS03	Surface Street Control	City of Canton Field Equipment	Existing
ATMS03	Surface Street Control	City of Canton Signal Control System	Existing
ATMS03	Surface Street Control	City of Cuyahoga Falls Field Equipment	Existing
ATMS03	Surface Street Control	City of Cuyahoga Falls Signal Control System	Existing
ATMS03	Surface Street Control	Municipal Field Equipment	Existing
ATMS03	Surface Street Control	Municipal Signal Control Systems	Existing
ATMS03	Surface Street Control	ODOT District 4 Field Equipment	Existing
ATMS03	Surface Street Control	ODOT District 4 Signal Control System	Existing
ATMS03	Surface Street Control	Portage County Field Equipment	Existing
ATMS03	Surface Street Control	Portage County Signal Control Systems	Existing
ATMS03	Surface Street Control	Stark County Field Equipment	Existing
ATMS03	Surface Street Control	Stark County Signal Control System	Existing
ATMS03	Surface Street Control	Summit County Field Equipment	Existing
ATMS03	Surface Street Control	Summit County Signal Control System	Existing
ATMS04	Freeway Control	ODOT Akron-Canton Freeway Management Center	Planned
ATMS04	Freeway Control	ODOT District 4 Field Equipment	Planned
ATMS06	Traffic Information Dissemination	City of Akron Field Equipment	Existing

Market Package	Market Package Name	Element	Status
ATMS06	Traffic Information Dissemination	City of Akron Public Safety Dispatch	Existing
ATMS06	Traffic Information Dissemination	City of Akron TMC	Existing
ATMS06	Traffic Information Dissemination	City of Akron Website	Existing
ATMS06	Traffic Information Dissemination	City of Canton Comm Center	Existing
ATMS06	Traffic Information Dissemination	City of Canton Field Equipment	Existing
ATMS06	Traffic Information Dissemination	City of Canton Public Website	Existing
ATMS06	Traffic Information Dissemination	City of Canton Signal Control System	Existing
ATMS06	Traffic Information Dissemination	City of Cuyahoga Falls Field Equipment	Existing
ATMS06	Traffic Information Dissemination	City of Cuyahoga Falls Public Safety Dispatch	Existing
ATMS06	Traffic Information Dissemination	City of Cuyahoga Falls Signal Control System	Existing
ATMS06	Traffic Information Dissemination	City of Cuyahoga Falls Website	Existing
ATMS06	Traffic Information Dissemination	METRO Dispatch	Existing
ATMS06	Traffic Information Dissemination	Municipal and Township Public Safety Dispatch	Existing
ATMS06	Traffic Information Dissemination	ODOT 511 Information System	Existing
ATMS06	Traffic Information Dissemination	ODOT Akron-Canton Freeway Management Center	Existing
ATMS06	Traffic Information Dissemination	ODOT District 4 Field Equipment	Existing
ATMS06	Traffic Information Dissemination	ODOT District 4 Web Services	Existing
ATMS06	Traffic Information Dissemination	Ohio State Highway Patrol Posts	Existing
ATMS06	Traffic Information Dissemination	PARTA Dispatch	Existing
ATMS06	Traffic Information Dissemination	Portage County Public Safety Dispatch	Existing
ATMS06	Traffic Information Dissemination	SARTA Fixed Route Dispatch	Existing
ATMS06	Traffic Information Dissemination	Stark County Public Safety Dispatch	Existing
ATMS06	Traffic Information Dissemination	Summit County Public Safety Dispatch	Existing
ATMS06	Traffic Information Dissemination	TV and Radio Stations	Existing
ATMS07	Regional Traffic Control	City of Akron TMC	Planned
ATMS07	Regional Traffic Control	City of Canton Signal Control System	Planned
ATMS07	Regional Traffic Control	City of Cuyahoga Falls Signal Control System	Planned
ATMS07	Regional Traffic Control	Municipal Signal Control Systems	Planned
ATMS07	Regional Traffic Control	ODOT Akron-Canton Freeway Management Center	Planned
ATMS07	Regional Traffic Control	ODOT Central Office	Planned
ATMS07	Regional Traffic Control	ODOT District 11 Office	Planned
ATMS07	Regional Traffic Control	ODOT District 12 Freeway Management Center	Planned
ATMS07	Regional Traffic Control	ODOT District 3 Office	Planned
ATMS07	Regional Traffic Control	ODOT District 4 Signal Control System	Planned
ATMS07	Regional Traffic Control	OTC Central Dispatch	Planned
ATMS07	Regional Traffic Control	Portage County Signal Control Systems	Planned
ATMS07	Regional Traffic Control	Stark County Signal Control System	Planned
ATMS07	Regional Traffic Control	Summit County Signal Control System	Planned



Market Package	Market Package Name	Element	Status
ATMS08	Incident Management System	City of Akron Emergency Operations Center	Planned
ATMS08	Incident Management System	City of Akron Emergency Vehicles	Planned
ATMS08	Incident Management System	City of Akron Highway Maintenance Department	Planned
ATMS08	Incident Management System	City of Akron Public Safety Dispatch	Planned
ATMS08	Incident Management System	City of Akron TMC	Planned
ATMS08	Incident Management System	City of Canton Comm Center	Planned
ATMS08	Incident Management System	City of Canton Emergency Operations Center	Planned
ATMS08	Incident Management System	City of Canton Emergency Vehicles	Planned
ATMS08	Incident Management System	City of Canton Maintenance Dispatch	Planned
ATMS08	Incident Management System	City of Canton Signal Control System	Planned
ATMS08	Incident Management System	City of Canton Street Dept Dispatch	Planned
ATMS08	Incident Management System	City of Canton Traffic Signal Dispatch	Planned
ATMS08	Incident Management System	City of Cuyahoga Falls Emergency Vehicles	Planned
ATMS08	Incident Management System	City of Cuyahoga Falls Maintenance Dispatch	Planned
ATMS08	Incident Management System	City of Cuyahoga Falls Public Safety Dispatch	Planned
ATMS08	Incident Management System	City of Cuyahoga Falls Signal Control System	Planned
ATMS08	Incident Management System	County Emergency Vehicles	Planned
ATMS08	Incident Management System	Municipal and Township Public Safety Dispatch	Planned
ATMS08	Incident Management System	Municipal Emergency Vehicles	Planned
ATMS08	Incident Management System	Municipal Maintenance Dispatch	Planned
ATMS08	Incident Management System	Municipal Signal Control Systems	Planned
ATMS08	Incident Management System	Muskingum Watershed Conservancy District Office	Planned
ATMS08	Incident Management System	ODOT Akron-Canton Freeway Management Center	Planned
ATMS08	Incident Management System	ODOT District 12 Freeway Management Center	Planned
ATMS08	Incident Management System	ODOT District 12 Maintenance Garages	Planned
ATMS08	Incident Management System	ODOT District 3 Maintenance Garages	Planned
ATMS08	Incident Management System	ODOT District 4 Maintenance Garages	Planned
ATMS08	Incident Management System	Ohio State Highway Patrol Posts	Planned
ATMS08	Incident Management System	Ohio State Highway Patrol Vehicles	Planned
ATMS08	Incident Management System	OTC Central Dispatch	Planned
ATMS08	Incident Management System	Other County Maintenance Garages	Planned
ATMS08	Incident Management System	Other County Public Safety	Planned
ATMS08	Incident Management System	Portage County Maintenance Dispatch	Planned
ATMS08	Incident Management System	Portage County Public Safety Dispatch	Planned
ATMS08	Incident Management System	Portage County Signal Control Systems	Planned
ATMS08	Incident Management System	Regional Event Operations	Planned
ATMS08	Incident Management System	Special Police Dispatch	Planned

Market Package	Market Package Name	Element	Status
ATMS08	Incident Management System	Special Police Vehicles	Planned
ATMS08	Incident Management System	Stark County Emergency Operations Center	Planned
ATMS08	Incident Management System	Stark County Maintenance Dispatch	Planned
ATMS08	Incident Management System	Stark County Public Safety Dispatch	Planned
ATMS08	Incident Management System	Stark County Signal Control System	Planned
ATMS08	Incident Management System	Summit County Emergency Operations Center	Planned
ATMS08	Incident Management System	Summit County Maintenance Dispatch	Planned
ATMS08	Incident Management System	Summit County Public Safety Dispatch	Planned
ATMS08	Incident Management System	Summit County Signal Control System	Planned
ATMS13	Standard Railroad Grade Crossing	City of Akron Field Equipment	Planned
ATMS13	Standard Railroad Grade Crossing	City of Akron TMC	Planned
ATMS13	Standard Railroad Grade Crossing	City of Canton Field Equipment	Planned
ATMS13	Standard Railroad Grade Crossing	City of Canton Signal Control System	Planned
ATMS13	Standard Railroad Grade Crossing	City of Cuyahoga Falls Field Equipment	Planned
ATMS13	Standard Railroad Grade Crossing	City of Cuyahoga Falls Signal Control System	Planned
ATMS13	Standard Railroad Grade Crossing	Municipal Field Equipment	Planned
ATMS13	Standard Railroad Grade Crossing	Municipal Signal Control Systems	Planned
ATMS13	Standard Railroad Grade Crossing	Railroad Wayside Equipment	Planned
ATMS14	Advanced Railroad Grade Crossing	City of Akron Field Equipment	Planned
ATMS14	Advanced Railroad Grade Crossing	City of Akron TMC	Planned
ATMS14	Advanced Railroad Grade Crossing	City of Canton Field Equipment	Planned
ATMS14	Advanced Railroad Grade Crossing	City of Canton Signal Control System	Planned
ATMS14	Advanced Railroad Grade Crossing	City of Cuyahoga Falls Field Equipment	Planned
ATMS14	Advanced Railroad Grade Crossing	City of Cuyahoga Falls Signal Control System	Planned
ATMS14	Advanced Railroad Grade Crossing	Railroad Operations Center	Planned
ATMS14	Advanced Railroad Grade Crossing	Railroad Wayside Equipment	Planned
ATMS15	Railroad Operations Coordination	City of Akron TMC	Planned
ATMS15	Railroad Operations Coordination	City of Canton Signal Control System	Planned
ATMS15	Railroad Operations Coordination	City of Cuyahoga Falls Signal Control System	Planned
ATMS15	Railroad Operations Coordination	Municipal Signal Control Systems	Planned
ATMS15	Railroad Operations Coordination	ODOT Akron-Canton Freeway Management Center	Planned
ATMS15	Railroad Operations Coordination	Portage County Signal Control Systems	Planned
ATMS15	Railroad Operations Coordination	Railroad Operations Center	Planned
ATMS15	Railroad Operations Coordination	Stark County Signal Control System	Planned
ATMS15	Railroad Operations Coordination	Summit County Signal Control System	Planned
CVO10	HAZMAT Management	City of Akron Emergency Operations Center	Planned
CVO10	HAZMAT Management	City of Akron Public Safety Dispatch	Planned
CVO10	HAZMAT Management	City of Canton Comm Center	Planned
CVO10	HAZMAT Management	City of Canton Emergency Operations Center	Planned

Market Package	Market Package Name	Element	Status
CVO10	HAZMAT Management	City of Cuyahoga Falls Public Safety Dispatch	Planned
CVO10	HAZMAT Management	Commercial Vehicles	Planned
CVO10	HAZMAT Management	Fleet and Freight Management Systems	Planned
CVO10	HAZMAT Management	Municipal and Township Public Safety Dispatch	Planned
CVO10	HAZMAT Management	Ohio State Highway Patrol Posts	Planned
CVO10	HAZMAT Management	Portage County Emergency Management Operations	Planned
CVO10	HAZMAT Management	Portage County Public Safety Dispatch	Planned
CVO10	HAZMAT Management	Stark County Emergency Operations Center	Planned
CVO10	HAZMAT Management	Stark County Public Safety Dispatch	Planned
CVO10	HAZMAT Management	Summit County Emergency Operations Center	Planned
CVO10	HAZMAT Management	Summit County Public Safety Dispatch	Planned
EM1	Emergency Response	Akron - Canton Regional Incident and Mutual Aid Network	Planned
EM1	Emergency Response	City of Akron 311 Non-Emergency Information System	Planned
EM1	Emergency Response	City of Akron Emergency Operations Center	Planned
EM1	Emergency Response	City of Akron Public Safety Dispatch	Planned
EM1	Emergency Response	City of Canton Comm Center	Planned
EM1	Emergency Response	City of Canton Emergency Operations Center	Planned
EM1	Emergency Response	City of Cuyahoga Falls Public Safety Dispatch	Planned
EM1	Emergency Response	Municipal and Township Public Safety Dispatch	Planned
EM1	Emergency Response	Ohio State Highway Patrol Posts	Planned
EM1	Emergency Response	Ohio Statewide EOC	Planned
EM1	Emergency Response	Other County Public Safety	Planned
EM1	Emergency Response	Portage County Emergency Management Operations	Planned
EM1	Emergency Response	Portage County Public Safety Dispatch	Planned
EM1	Emergency Response	Private Ambulance Dispatch	Planned
EM1	Emergency Response	Private Towing Dispatch	Planned
EM1	Emergency Response	Special Police Dispatch	Planned
EM1	Emergency Response	Stark County Emergency Operations Center	Planned
EM1	Emergency Response	Stark County Public Safety Dispatch	Planned
EM1	Emergency Response	Summit County Emergency Operations Center	Planned
EM1	Emergency Response	Summit County Public Safety Dispatch	Planned
EM2	Emergency Routing	City of Akron Emergency Vehicles	Planned
EM2	Emergency Routing	City of Akron Field Equipment	Planned
EM2	Emergency Routing	City of Akron Public Safety Dispatch	Planned
EM2	Emergency Routing	City of Akron TMC	Planned



Market Package	Market Package Name	Element	Status
EM2	Emergency Routing	City of Canton Comm Center	Planned
EM2	Emergency Routing	City of Canton Emergency Vehicles	Planned
EM2	Emergency Routing	City of Canton Field Equipment	Planned
EM2	Emergency Routing	City of Canton Signal Control System	Planned
EM2	Emergency Routing	Ohio State Highway Patrol Posts	Planned
EM2	Emergency Routing	Ohio State Highway Patrol Vehicles	Planned
EM2	Emergency Routing	Regional Hospitals and Trauma Centers	Planned
EM4	Roadway Service Patrols	ODOT Akron-Canton Freeway Management Center	Planned
EM4	Roadway Service Patrols	ODOT Freeway Service Patrol Vehicles	Planned
MC01	Maintenance and Construction Vehicle Tracking	City of Akron Highway Maintenance Department	Planned
MC01	Maintenance and Construction Vehicle Tracking	City of Akron Maintenance Vehicles	Planned
MC01	Maintenance and Construction Vehicle Tracking	City of Canton Maintenance Dispatch	Planned
MC01	Maintenance and Construction Vehicle Tracking	City of Canton Maintenance Vehicles	Planned
MC01	Maintenance and Construction Vehicle Tracking	City of Canton Street Dept Dispatch	Planned
MC01	Maintenance and Construction Vehicle Tracking	City of Cuyahoga Falls Maintenance Dispatch	Planned
MC01	Maintenance and Construction Vehicle Tracking	City of Cuyahoga Falls Maintenance Vehicles	Planned
MC01	Maintenance and Construction Vehicle Tracking	City of Cuyahoga Falls Traffic Services Dispatch	Planned
MC01	Maintenance and Construction Vehicle Tracking	Municipal Maintenance Dispatch	Planned
MC01	Maintenance and Construction Vehicle Tracking	Municipal Maintenance Vehicles	Planned
MC01	Maintenance and Construction Vehicle Tracking	ODOT District 4 Maintenance Garages	Planned
MC01	Maintenance and Construction Vehicle Tracking	ODOT District 4 Maintenance Vehicles	Planned
MC01	Maintenance and Construction Vehicle Tracking	Portage County Maintenance Dispatch	Planned
MC01	Maintenance and Construction Vehicle Tracking	Portage County Maintenance Vehicles	Planned
MC01	Maintenance and Construction Vehicle Tracking	Stark County Maintenance Dispatch	Planned
MC01	Maintenance and Construction Vehicle Tracking	Stark County Maintenance Vehicles	Planned
MC01	Maintenance and Construction Vehicle Tracking	Summit County Maintenance Dispatch	Planned
MC01	Maintenance and Construction Vehicle Tracking	Summit County Maintenance Vehicles	Planned

Market Package	Market Package Name	Element	Status
MC02	Maintenance and Construction Vehicle Maintenance	City of Akron Highway Maintenance Department	Planned
MC02	Maintenance and Construction Vehicle Maintenance	City of Akron Maintenance Vehicles	Planned
MC02	Maintenance and Construction Vehicle Maintenance	City of Canton Maintenance Dispatch	Planned
MC02	Maintenance and Construction Vehicle Maintenance	City of Canton Maintenance Vehicles	Planned
MC02	Maintenance and Construction Vehicle Maintenance	City of Canton Street Dept Dispatch	Planned
MC02	Maintenance and Construction Vehicle Maintenance	City of Cuyahoga Falls Maintenance Dispatch	Planned
MC02	Maintenance and Construction Vehicle Maintenance	City of Cuyahoga Falls Maintenance Vehicles	Planned
MC02	Maintenance and Construction Vehicle Maintenance	City of Cuyahoga Falls Traffic Services Dispatch	Planned
MC02	Maintenance and Construction Vehicle Maintenance	Municipal Maintenance Dispatch	Planned
MC02	Maintenance and Construction Vehicle Maintenance	Municipal Maintenance Vehicles	Planned
MC02	Maintenance and Construction Vehicle Maintenance	ODOT District 4 Maintenance Garages	Planned
MC02	Maintenance and Construction Vehicle Maintenance	ODOT District 4 Maintenance Vehicles	Planned
MC02	Maintenance and Construction Vehicle Maintenance	Portage County Maintenance Dispatch	Planned
MC02	Maintenance and Construction Vehicle Maintenance	Portage County Maintenance Vehicles	Planned
MC02	Maintenance and Construction Vehicle Maintenance	Stark County Maintenance Dispatch	Planned
MC02	Maintenance and Construction Vehicle Maintenance	Stark County Maintenance Vehicles	Planned
MC02	Maintenance and Construction Vehicle Maintenance	Summit County Maintenance Dispatch	Planned
MC02	Maintenance and Construction Vehicle Maintenance	Summit County Maintenance Vehicles	Planned
MC03	Road Weather Data Collection	ODOT Akron-Canton Freeway Management Center	Existing
MC03	Road Weather Data Collection	ODOT Central Office	Existing
MC03	Road Weather Data Collection	ODOT District 4 Field Equipment	Existing
MC03	Road Weather Data Collection	Portage County Field Equipment	Existing
MC03	Road Weather Data Collection	Portage County Maintenance Dispatch	Existing
MC03	Road Weather Data Collection	Portage County Signal Control Systems	Existing
MC03	Road Weather Data Collection	Summit County Field Equipment	Existing
MC03	Road Weather Data Collection	Summit County Maintenance Dispatch	Existing
MC03	Road Weather Data Collection	Summit County Signal Control System	Existing

Market Package	Market Package Name	Element	Status
MC03	Road Weather Data Collection	Weather Information Providers	Existing
MC04	Weather Information Processing and Distribution	City of Akron Public Safety Dispatch	Planned
MC04	Weather Information Processing and Distribution	City of Akron TMC	Planned
MC04	Weather Information Processing and Distribution	City of Canton Comm Center	Planned
MC04	Weather Information Processing and Distribution	City of Canton Signal Control System	Planned
MC04	Weather Information Processing and Distribution	City of Cuyahoga Falls Public Safety Dispatch	Planned
MC04	Weather Information Processing and Distribution	City of Cuyahoga Falls Signal Control System	Planned
MC04	Weather Information Processing and Distribution	METRO Dispatch	Planned
MC04	Weather Information Processing and Distribution	Metro Information Systems	Planned
MC04	Weather Information Processing and Distribution	ODOT 511 Information System	Planned
MC04	Weather Information Processing and Distribution	ODOT Akron-Canton Freeway Management Center	Planned
MC04	Weather Information Processing and Distribution	ODOT Central Office	Planned
MC04	Weather Information Processing and Distribution	ODOT District 4 Web Services	Planned
MC04	Weather Information Processing and Distribution	Ohio State Highway Patrol Posts	Planned
MC04	Weather Information Processing and Distribution	PARTA Dispatch	Planned
MC04	Weather Information Processing and Distribution	Railroad Operations Center	Planned
MC04	Weather Information Processing and Distribution	SARTA Fixed Route Dispatch	Planned
MC04	Weather Information Processing and Distribution	SARTA Paratransit Dispatch	Planned
MC04	Weather Information Processing and Distribution	School District Dispatch	Planned
MC04	Weather Information Processing and Distribution	TV and Radio Stations	Planned
MC04	Weather Information Processing and Distribution	Weather Information Providers	Planned
MC05	Roadway Automated Treatment	ODOT District 4 Field Equipment	Planned
MC05	Roadway Automated Treatment	ODOT District 4 Maintenance Garages	Planned
MC06	Winter Maintenance	City of Akron Highway Maintenance Department	Planned
MC06	Winter Maintenance	City of Akron Maintenance Vehicles	Planned
MC06	Winter Maintenance	City of Akron Public Safety Dispatch	Planned

Market Package	Market Package Name	Element	Status
MC06	Winter Maintenance	City of Akron TMC	Planned
MC06	Winter Maintenance	City of Akron Website	Planned
MC06	Winter Maintenance	City of Canton Comm Center	Planned
MC06	Winter Maintenance	City of Canton Maintenance Dispatch	Planned
MC06	Winter Maintenance	City of Canton Maintenance Vehicles	Planned
MC06	Winter Maintenance	City of Canton Public Website	Planned
MC06	Winter Maintenance	City of Canton Signal Control System	Planned
MC06	Winter Maintenance	City of Canton Street Dept Dispatch	Planned
MC06	Winter Maintenance	City of Cuyahoga Falls Maintenance Dispatch	Planned
MC06	Winter Maintenance	City of Cuyahoga Falls Maintenance Vehicles	Planned
MC06	Winter Maintenance	City of Cuyahoga Falls Public Safety Dispatch	Planned
MC06	Winter Maintenance	City of Cuyahoga Falls Signal Control System	Planned
MC06	Winter Maintenance	City of Cuyahoga Falls Website	Planned
MC06	Winter Maintenance	METRO Dispatch	Planned
MC06	Winter Maintenance	Metro Information Systems	Planned
MC06	Winter Maintenance	Municipal and Township Public Safety Dispatch	Planned
MC06	Winter Maintenance	Municipal Maintenance Dispatch	Planned
MC06	Winter Maintenance	Municipal Maintenance Vehicles	Planned
MC06	Winter Maintenance	Municipal Signal Control Systems	Planned
MC06	Winter Maintenance	ODOT Akron-Canton Freeway Management Center	Planned
MC06	Winter Maintenance	ODOT District 12 Maintenance Garages	Planned
MC06	Winter Maintenance	ODOT District 3 Maintenance Garages	Planned
MC06	Winter Maintenance	ODOT District 4 Maintenance Garages	Planned
MC06	Winter Maintenance	ODOT District 4 Maintenance Vehicles	Planned
MC06	Winter Maintenance	ODOT District 4 Outposts	Planned
MC06	Winter Maintenance	ODOT District 4 Signal Control System	Planned
MC06	Winter Maintenance	ODOT District 4 Web Services	Planned
MC06	Winter Maintenance	Ohio State Highway Patrol Posts	Planned
MC06	Winter Maintenance	OTC Central Dispatch	Planned
MC06	Winter Maintenance	PARTA Dispatch	Planned
MC06	Winter Maintenance	Portage County Maintenance Dispatch	Planned
MC06	Winter Maintenance	Portage County Public Safety Dispatch	Planned
MC06	Winter Maintenance	SARTA Fixed Route Dispatch	Planned
MC06	Winter Maintenance	SARTA Paratransit Dispatch	Planned
MC06	Winter Maintenance	School District Dispatch	Planned
MC06	Winter Maintenance	Stark County Maintenance Dispatch	Planned
MC06	Winter Maintenance	Stark County Public Safety Dispatch	Planned
MC06	Winter Maintenance	Stark County Signal Control System	Planned
MC06	Winter Maintenance	Summit County Maintenance Dispatch	Planned

Market Package	Market Package Name	Element	Status
MC06	Winter Maintenance	Summit County Public Safety Dispatch	Planned
MC06	Winter Maintenance	Summit County Signal Control System	Planned
MC06	Winter Maintenance	Weather Information Providers	Planned
MC07	Roadway Maintenance and Construction	City of Akron Field Equipment	Planned
MC07	Roadway Maintenance and Construction	City of Akron Highway Maintenance Department	Planned
MC07	Roadway Maintenance and Construction	City of Akron Maintenance Vehicles	Planned
MC07	Roadway Maintenance and Construction	City of Akron TMC	Planned
MC07	Roadway Maintenance and Construction	City of Canton Field Equipment	Planned
MC07	Roadway Maintenance and Construction	City of Canton Maintenance Dispatch	Planned
MC07	Roadway Maintenance and Construction	City of Canton Maintenance Vehicles	Planned
MC07	Roadway Maintenance and Construction	City of Canton Signal Control System	Planned
MC07	Roadway Maintenance and Construction	City of Canton Street Dept Dispatch	Planned
MC07	Roadway Maintenance and Construction	City of Canton Traffic Signal Dispatch	Planned
MC07	Roadway Maintenance and Construction	City of Cuyahoga Falls Field Equipment	Planned
MC07	Roadway Maintenance and Construction	City of Cuyahoga Falls Maintenance Dispatch	Planned
MC07	Roadway Maintenance and Construction	City of Cuyahoga Falls Maintenance Vehicles	Planned
MC07	Roadway Maintenance and Construction	City of Cuyahoga Falls Signal Control System	Planned
MC07	Roadway Maintenance and Construction	City of Cuyahoga Falls Traffic Services Dispatch	Planned
MC07	Roadway Maintenance and Construction	ODOT Akron-Canton Freeway Management Center	Planned
MC07	Roadway Maintenance and Construction	ODOT District 4 Field Equipment	Planned
MC07	Roadway Maintenance and Construction	ODOT District 4 Maintenance Garages	Planned
MC07	Roadway Maintenance and Construction	ODOT District 4 Maintenance Vehicles	Planned
MC07	Roadway Maintenance and Construction	ODOT District 4 Outposts	Planned
MC07	Roadway Maintenance and Construction	ODOT District 4 Signal Control System	Planned
MC08	Work Zone Management	Akron Engineering Bureau	Planned
MC08	Work Zone Management	AMATS Web Services	Planned

Market Package	Market Package Name	Element	Status
MC08	Work Zone Management	City of Akron Field Equipment	Planned
MC08	Work Zone Management	City of Akron Highway Maintenance Department	Planned
MC08	Work Zone Management	City of Akron Maintenance Vehicles	Planned
MC08	Work Zone Management	City of Akron Public Safety Dispatch	Planned
MC08	Work Zone Management	City of Akron TMC	Planned
MC08	Work Zone Management	City of Akron Website	Planned
MC08	Work Zone Management	City of Canton Comm Center	Planned
MC08	Work Zone Management	City of Canton Field Equipment	Planned
MC08	Work Zone Management	City of Canton Maintenance Dispatch	Planned
MC08	Work Zone Management	City of Canton Maintenance Vehicles	Planned
MC08	Work Zone Management	City of Canton Public Website	Planned
MC08	Work Zone Management	City of Canton Signal Control System	Planned
MC08	Work Zone Management	City of Canton Street Dept Dispatch	Planned
MC08	Work Zone Management	City of Cuyahoga Falls Field Equipment	Planned
MC08	Work Zone Management	City of Cuyahoga Falls Maintenance Dispatch	Planned
MC08	Work Zone Management	City of Cuyahoga Falls Maintenance Vehicles	Planned
MC08	Work Zone Management	City of Cuyahoga Falls Public Safety Dispatch	Planned
MC08	Work Zone Management	City of Cuyahoga Falls Signal Control System	Planned
MC08	Work Zone Management	City of Cuyahoga Falls Website	Planned
MC08	Work Zone Management	Metro Information Systems	Planned
MC08	Work Zone Management	Municipal and Township Public Safety Dispatch	Planned
MC08	Work Zone Management	Municipal Field Equipment	Planned
MC08	Work Zone Management	Municipal Maintenance Dispatch	Planned
MC08	Work Zone Management	Municipal Maintenance Vehicles	Planned
MC08	Work Zone Management	Municipal Signal Control Systems	Planned
MC08	Work Zone Management	Municipal Websites	Planned
MC08	Work Zone Management	ODOT 511 Information System	Planned
MC08	Work Zone Management	ODOT Akron-Canton Freeway Management Center	Planned
MC08	Work Zone Management	ODOT District 12 Maintenance Garages	Planned
MC08	Work Zone Management	ODOT District 3 Maintenance Garages	Planned
MC08	Work Zone Management	ODOT District 4 Field Equipment	Planned
MC08	Work Zone Management	ODOT District 4 Maintenance Garages	Planned
MC08	Work Zone Management	ODOT District 4 Maintenance Vehicles	Planned
MC08	Work Zone Management	ODOT District 4 Signal Control System	Planned
MC08	Work Zone Management	ODOT District 4 Web Services	Planned
MC08	Work Zone Management	Ohio State Highway Patrol Posts	Planned
MC08	Work Zone Management	Other County Maintenance Garages	Planned
MC08	Work Zone Management	Other County Public Safety	Planned



Market Package	Market Package Name	Element	Status
MC08	Work Zone Management	Portage County Field Equipment	Planned
MC08	Work Zone Management	Portage County Maintenance Dispatch	Planned
MC08	Work Zone Management	Portage County Maintenance Vehicles	Planned
MC08	Work Zone Management	Portage County Public Safety Dispatch	Planned
MC08	Work Zone Management	Portage County Signal Control Systems	Planned
MC08	Work Zone Management	Portage County Website	Planned
MC08	Work Zone Management	Stark County Field Equipment	Planned
MC08	Work Zone Management	Stark County Maintenance Dispatch	Planned
MC08	Work Zone Management	Stark County Maintenance Vehicles	Planned
MC08	Work Zone Management	Stark County Public Safety Dispatch	Planned
MC08	Work Zone Management	Stark County Signal Control System	Planned
MC08	Work Zone Management	Stark County Website	Planned
MC08	Work Zone Management	Summit County Engineer Website	Planned
MC08	Work Zone Management	Summit County Field Equipment	Planned
MC08	Work Zone Management	Summit County Maintenance Dispatch	Planned
MC08	Work Zone Management	Summit County Maintenance Vehicles	Planned
MC08	Work Zone Management	Summit County Public Safety Dispatch	Planned
MC08	Work Zone Management	Summit County Signal Control System	Planned
MC09	Work Zone Safety Monitoring	ODOT District 4 Field Equipment	Planned
MC09	Work Zone Safety Monitoring	ODOT District 4 Maintenance Garages	Planned
MC09	Work Zone Safety Monitoring	ODOT District 4 Maintenance Vehicles	Planned
MC10	Maintenance and Construction Activity Coordination	Akron Engineering Bureau	Planned
MC10	Maintenance and Construction Activity Coordination	AMATS Web Services	Planned
MC10	Maintenance and Construction Activity Coordination	City of Akron Highway Maintenance Department	Planned
MC10	Maintenance and Construction Activity Coordination	City of Akron TMC	Planned
MC10	Maintenance and Construction Activity Coordination	City of Akron Website	Planned
MC10	Maintenance and Construction Activity Coordination	City of Canton Maintenance Dispatch	Planned
MC10	Maintenance and Construction Activity Coordination	City of Canton Public Website	Planned
MC10	Maintenance and Construction Activity Coordination	City of Canton Signal Control System	Planned
MC10	Maintenance and Construction Activity Coordination	City of Canton Street Dept Dispatch	Planned
MC10	Maintenance and Construction Activity Coordination	City of Cuyahoga Falls Maintenance Dispatch	Planned
MC10	Maintenance and Construction Activity Coordination	City of Cuyahoga Falls Signal Control System	Planned
MC10	Maintenance and Construction Activity Coordination	City of Cuyahoga Falls Website	Planned
MC10	Maintenance and Construction Activity Coordination	Metro Information Systems	Planned



Market Package	Market Package Name	Element	Status
	Activity Coordination		
MC10	Maintenance and Construction Activity Coordination	Municipal Maintenance Dispatch	Planned
MC10	Maintenance and Construction Activity Coordination	Municipal Websites	Planned
MC10	Maintenance and Construction Activity Coordination	ODOT 511 Information System	Planned
MC10	Maintenance and Construction Activity Coordination	ODOT Akron-Canton Freeway Management Center	Planned
MC10	Maintenance and Construction Activity Coordination	ODOT District 12 Maintenance Garages	Planned
MC10	Maintenance and Construction Activity Coordination	ODOT District 3 Maintenance Garages	Planned
MC10	Maintenance and Construction Activity Coordination	ODOT District 4 Maintenance Garages	Planned
MC10	Maintenance and Construction Activity Coordination	ODOT District 4 Signal Control System	Planned
MC10	Maintenance and Construction Activity Coordination	ODOT District 4 Web Services	Planned
MC10	Maintenance and Construction Activity Coordination	OTC Central Dispatch	Planned
MC10	Maintenance and Construction Activity Coordination	Other County Maintenance Garages	Planned
MC10	Maintenance and Construction Activity Coordination	Portage County Maintenance Dispatch	Planned
MC10	Maintenance and Construction Activity Coordination	Portage County Signal Control Systems	Planned
MC10	Maintenance and Construction Activity Coordination	Portage County Website	Planned
MC10	Maintenance and Construction Activity Coordination	Railroad Operations Center	Planned
MC10	Maintenance and Construction Activity Coordination	Roadwise Website	Planned
MC10	Maintenance and Construction Activity Coordination	SCATS Web Services	Planned
MC10	Maintenance and Construction Activity Coordination	Stark County Maintenance Dispatch	Planned
MC10	Maintenance and Construction Activity Coordination	Stark County Website	Planned
MC10	Maintenance and Construction Activity Coordination	Summit County Engineer Website	Planned
MC10	Maintenance and Construction Activity Coordination	Summit County Maintenance Dispatch	Planned
MC10	Maintenance and Construction Activity Coordination	Summit County Signal Control System	Planned

## 6. Interfaces and Information Exchanges

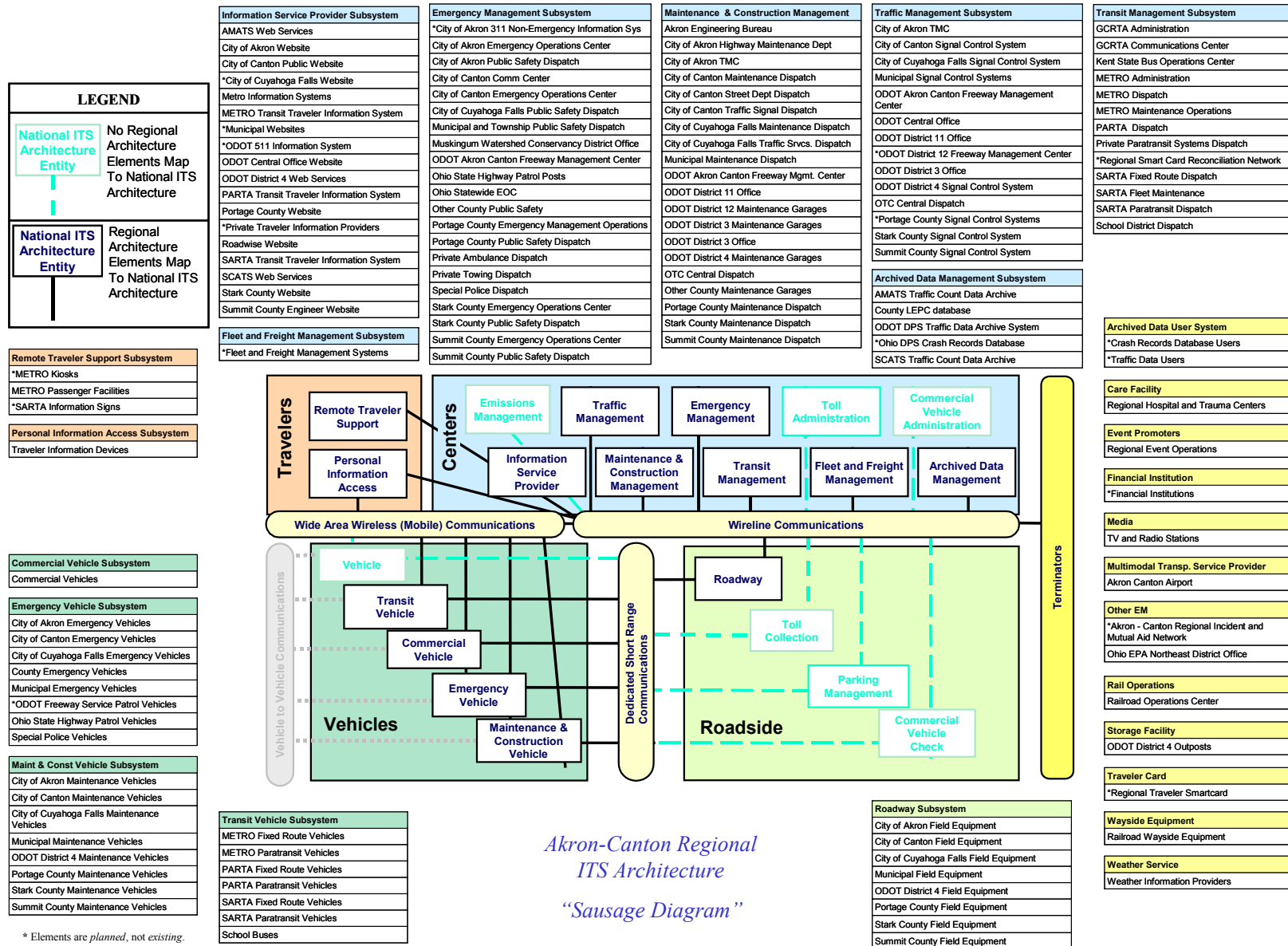
### 6.1. *Top Level Regional System Interconnect Diagram*

A system interconnect diagram, or sausage diagram, shows the systems and primary types of interconnections in the region. The National ITS Architecture interconnect diagram has been customized for the Akron and Canton regions based on the information gathered from the stakeholders and system inventory. Figure 1 on the following page summarizes the existing and planned ITS elements for the regions in the context of a physical interconnect. Elements (and their primary associated National ITS Architecture entity) are called out in the boxes surrounding the main interconnect diagram. In the center of the figure the rectangles represent the subsystems of the National ITS Architecture. The Akron-Canton Regional ITS architecture has elements that map to 14 of the 21 subsystems of the National ITS Architecture. In addition, the regional ITS architecture has elements that map to 9 terminators of the National ITS Architecture. These terminators are shown on the right side of the diagram and include entities such as Care Facilities (which map to Regional Hospital Trauma Centers).

The diagram also identifies the three basic types of communications used to interconnect the elements of the architecture. (Note: It does not describe the exact interconnections between the elements.) These communications types are defined as:

- **Wireline Communications:** A communications link serving stationary sources. It may be implemented using a variety of public or private communications networks that may physically include wireless (e.g., microwave) as well as wireline infrastructure. Both dedicated and shared communications resources may be used.
- **Wide Area Wireless Communications:** A communications link that provides communications via a wireless device between a user and an infrastructure-based system. Both broadcast (one-way) and interactive (two-way) communications services are grouped into wide-area wireless communications. These links support a range of services including real-time traveler information and various forms of fleet communications.
- **Dedicated Short Range Communications:** A wireless communications channel used for close-proximity communications between vehicles and the immediate infrastructure. It supports location-specific communications for ITS capabilities such as toll collection, transit vehicle management, driver information, and automated commercial vehicle operations.

**Figure 1: Akron- Canton Regional System Interconnect Diagram**



\* Elements are planned, not existing.

December 11, 2003

## 6.2. Customized Market Packages

The market packages of the National ITS Architecture were customized to reflect the unique systems and connections of the Akron-Canton regions. Each market package is shown graphically, with the market package name, the entity from the National ITS Architecture, and the specific Akron-Canton elements associated with the entity. In addition the market packages show the information flows that move between elements.

Figure 2 is an example of an ATMS market package for Surface Street Control that has been customized for the Akron-Canton regions. This market package shows the two subsystems, Traffic Management and Roadway, and the associated elements. Information flows (called “architecture flows” in the National ITS Architecture) between the subsystems indicate what information is being shared. The market packages that were customized for the Akron-Canton regions are shown in Appendix B. These market packages can also be found on the Akron-Canton web page by selecting the “Market Packages” button. Market packages are grouped by functional areas (e.g. Traffic Management, Maintenance and Construction, and Public Transportation) and each set of customized market packages can be viewed by clicking on the Market Package Diagram icon under each area heading. It is important to note that while the market package table on the web page shows all of the market packages from the National ITS Architecture, only those selected for the Akron-Canton regions are included in the diagrams. The selected market packages on the web page also are highlighted in the web page table with bold print and are indicated as existing or planned.

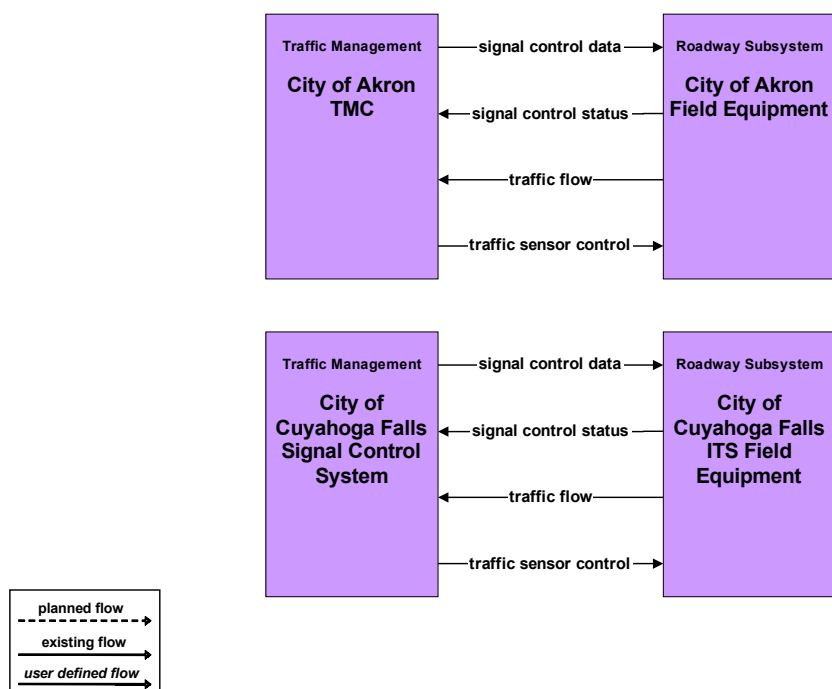


Figure 2: Example Customized Market Package

### 6.3. Regional Architecture Information Flows

While it is important to identify the various systems and stakeholders as part of a regional ITS architecture, a primary purpose of the architecture is to identify the *connectivity* between transportation systems in the region. The interconnect diagram shown previously in Figure 1 showed the high level relationships of the elements in the region. The customized market packages represent services that can be deployed as an integrated capability, and the market package diagrams show the information flows between the subsystems and terminators that are most important to the operation of the market packages. How these systems interface with each other is an integral part of the overall architecture.

There are 129 different elements identified as part of the Akron-Canton Regional ITS Architecture. These elements include city, county, and state traffic operations centers, transit centers, transit vehicles, public safety dispatch centers, media outlets, and others—essentially all of the existing and planned physical components that contribute to the regional intelligent transportation system. Interfaces have been defined for each element in the architecture. For example, the ODOT Akron-Canton Freeway Management Center has planned interfaces with 49 other elements in the region ranging from field equipment to transit centers. Some of the interfaces are far less complex. For example the Akron-Canton Airport has interfaces with only two other elements in the architecture.

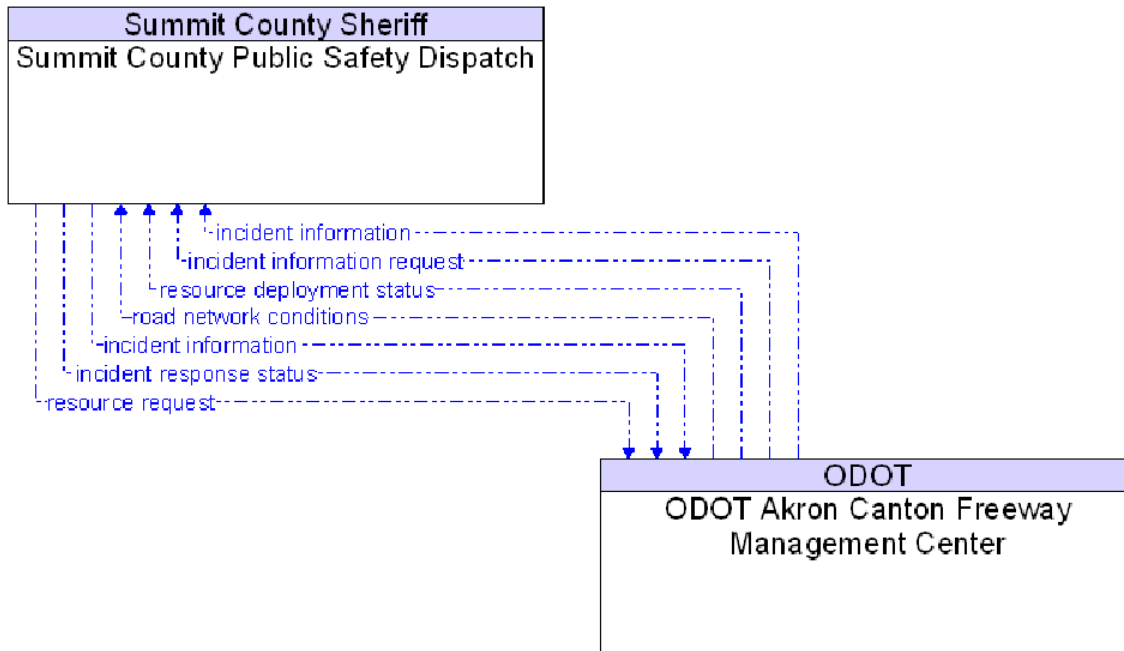
Elements and their interfaces are accessible via the Akron-Canton Regional ITS Architecture web page by clicking on the “Interfaces” button. On the web page elements are listed alphabetically in the column on the left, and each entry in the Interfacing Element column on the right is a link to more detailed information about the particular interface.

Architecture flows between the elements define specific information that is exchanged by the elements. Each architecture flow has a direction, name and definition. Most of the architecture flows match ones from the National ITS Architecture (the mapping of elements to National ITS Architecture entities allowed the developers to match the architecture flows to the appropriate interfaces.) In some cases new user defined flows have been created for interfaces or connectivities that are not expressed in the National ITS Architecture. These architecture flows define the interface requirements between the various elements in the regional architecture.

An example of the architecture flows between two elements is shown in Figure 3. In this interface the flows that go between the ODOT Akron-Canton Freeway Management Center and the Summit County Public Safety Dispatch are shown. The ODOT Akron-Canton Freeway Management Center is under development, so all the flows on this interface are shown as planned.

Each of the individual element interfaces can be accessed on the Akron-Canton Regional ITS Architecture web page by clicking on the “Interfaces” button. Selecting any of the interfacing elements from the column on the right will display an interface diagram and architecture flows between two specific elements, similar to the diagram shown in Figure 3. Each architecture flow is defined, and any standards associated with that data flow are noted.

## Interface: ODOT Akron Canton Freeway Management Center To Summit County Public Safety Dispatch



**Figure 3: Example of Architecture Flows Between Elements.**

## 7. Functional Requirements

Functional requirements are a description of the functions or activities that are currently performed by the ITS elements or that are planned to be performed in the future. For the Akron-Canton Regional ITS Architecture, these functions have been developed by using the functional assignments underlying the National ITS Architecture and the mapping from transportation services to elements shown in Appendix C: Functional Requirements.

In the National ITS Architecture a market package is defined by subsystems, equipment packages, and architecture flows, all of which operate together to perform a particular transportation service. Equipment Packages represent pieces of a subsystem that perform a single function. (Note there are no equipment packages defined for the Terminators of the National ITS Architecture, since they represent systems on the boundary of the architecture and do not have functional descriptions within the architecture.) For example the Surface Street Control market package is composed of the two Traffic Management Subsystem equipment packages TMC Signal Control and Traffic Maintenance and the two Roadway Subsystem with its two equipment packages Roadway Signal Control and Roadway Equipment Coordination.

The definitions of these four equipment packages, copied from version 4.0 of the National ITS Architecture are:

- **TMC Signal Control-** This Equipment package provides the capability for traffic managers to monitor and manage the traffic flow at signalized intersections. This capability includes analyzing and reducing the collected data from traffic surveillance equipment and developing and implementing control plans for signalized intersections. Control plans may be developed and implemented that coordinate signals at many intersections under the domain of a single traffic management subsystem. In advanced implementations, this package collects route planning information and integrates and uses this information in predicting future traffic conditions and optimizing the traffic control strategy for these conditions. These capabilities are achieved through real-time communication of logged routes from an Information Service Provider. The planned control strategies can be passed back to the Information Service Provider so that the intended strategies can be reflected in future route planning.
- **Traffic Maintenance-** This equipment package provides monitoring and remote diagnostics of field equipment to detect field equipment failures, issues problem reports, and tracks the repair or replacement of the failed equipment.
- **Roadway Signal Controls-** This equipment package provides the capabilities to control traffic signals at major intersections and on main highways for urban areas. This Equipment package is generally constrained to a single jurisdiction.
- **Roadway Equipment Coordination-** This equipment package coordinates field equipment that is distributed along the roadway by supporting direct communications between field equipment. This includes coordination between remote sensors and field devices (e.g., Dynamic Message Signs) and coordination between the field devices themselves (e.g., coordination between traffic controllers that are controlling adjacent intersections.).

The approach used in the Akron-Canton regional ITS architecture is to begin with the mapping of equipment packages to market packages to elements as an initial definition of the functions being performed by each element. Then this mapping is tailored to provide a more accurate picture of the functions performed by the element. In doing this mapping to equipment packages and then tailoring the architecture has moved beyond the range of capabilities provided by the Turbo Architecture tool. Using additional code we have extended the basic Turbo Architecture database to include this customized equipment package information.

The details of this functional definition are provided on the hyperlinked web site version of the architecture. To access the functions for each element that has been mapped to a subsystem entity (eg. traffic management subsystem) the user must click on the Functionality Details icon. This will provide a listing of the equipment packages, along with their definitions that have been assigned to the element.

For example, the City of Akron TMC element has the following equipment packages assigned to it:

- Collect Traffic Surveillance
- HRI Traffic Management
- Rail Operations Coordination



- TMC Environmental Monitoring
- TMC Incident Detection
- TMC Incident Dispatch Coordination/Communication
- TMC Regional Traffic Control
- TMC Signal Control
- TMC Traffic Information Dissemination
- TMC Work Zone Traffic Management
- Traffic Data Collection
- Traffic Maintenance

This represents a first level of detail that can be obtained in the hyperlinked web site in connection with functionality. For each of the equipment packages shown there is another “Details” icon. Selecting this link will take the user to additional levels of detail about the function. The hyperlinked web site uses the relationships inherent in the National ITS Architecture (equipment packages are mapped to process specifications which are mapped to user service requirements) to provide the additional levels of detail.

The assignment of equipment packages to elements (the first level of detail discussed above) is provided in this document in Appendix C. For additional details of functionality, refer to the web site as described above.

## 8. Standards

### 8.1. *Discussion of key standards in the region*

ITS standards establish a common way in which devices connect and communicate with one another. This allows transportation agencies to implement systems that cost-effectively exchange pertinent data and accommodate equipment replacement, system upgrades, and system expansion. Standards benefit the traveling public by providing products that will function consistently and reliably throughout the region. ITS standards contribute to a safer and more efficient transportation system, facilitate regional interoperability, and promote an innovative and competitive market for transportation products and services.

- **Use of ITS standards is very important to project development in the Akron-Canton regions.**

Table 7 identifies the ITS standards that are potentially applicable to the regions. This table was created by taking the standards information available in the Turbo Architecture database (which identifies standards applicable to each architecture flow) and taking the total set of standards that result from all of the selected flows. The table provides the status of the standards effort as of December 2003 (the most recent update of the information).

The following section explains how to identify the specific applicable standards for an individual interface. The table lists the name of the standard in the first column and the Standards Development Organization (SDO) and number of the standard in the second column. Regular updates of SDO activities will help ensure that the latest standards are utilized. The SDOs listed above include:

- American Association of State Highway and Transportation Officials (AASHTO)
- American National Standards Institute (ANSI)
- American Society for Testing and Materials (ASTM)
- Institute of Electrical and Electronics Engineers (IEEE)
- Institute of Transportation Engineers (ITE)
- National Equipment Manufacturers Association (NEMA)
- Society of Automotive Engineers (SAE)

**Table 7: Applicable ITS Standards**

SDO	Standard Title	Standard DocID
AASHTO/ITE/NEMA	Data Collection & Monitoring Devices	NTCIP 1206
AASHTO/ITE/NEMA	Data Dictionary for Closed Circuit Television (CCTV)	NTCIP 1205
AASHTO/ITE/NEMA	Global Object Definitions	NTCIP 1201
AASHTO/ITE/NEMA	Message Set for Weather Reports (Future Standard)	NTCIP 1301
AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	See notes below
AASHTO/ITE/NEMA	NTCIP Center-to-Field Standards Group	See notes below
AASHTO/ITE/NEMA	Object Definitions for Actuated Traffic Signal Controller Units	NTCIP 1202
AASHTO/ITE/NEMA	Object Definitions for Dynamic Message Signs	NTCIP 1203
AASHTO/ITE/NEMA	Object Definitions for Environmental Sensor Stations & Roadside Weather Information System	NTCIP 1204
AASHTO/ITE/NEMA	Object Definitions for Video Switches	NTCIP 1208
AASHTO/ITE/NEMA	Objects for Signal Control Priority	NTCIP 1211
AASHTO/ITE/NEMA	Objects for Signal Systems Master	NTCIP 1210
AASHTO/ITE/NEMA	Ramp Meter Controller Objects	NTCIP 1207
AASHTO/ITE/NEMA	TCIP - Common Public Transportation (CPT) Business Area Standard	NTCIP 1401
AASHTO/ITE/NEMA	TCIP - Control Center (CC) Business Area Standard	NTCIP 1407
AASHTO/ITE/NEMA	TCIP - Fare Collection (FC) Business Area Standard	NTCIP 1408
AASHTO/ITE/NEMA	TCIP - Incident Management (IM) Business Area Standard	NTCIP 1402
AASHTO/ITE/NEMA	TCIP - Onboard (OB) Business Area Standard	NTCIP 1406
AASHTO/ITE/NEMA	TCIP - Passenger Information (PI) Business Area Standard	NTCIP 1403
AASHTO/ITE/NEMA	TCIP - Scheduling/Runcutting (SCH) Business Area Standard	NTCIP 1404
AASHTO/ITE/NEMA	TCIP - Spatial Representation (SP) Business Area Standard	NTCIP 1405
AASHTO/ITE/NEMA	Transportation System Sensor Objects	NTCIP 1209
ASTM	ADMS Data Dictionary Specifications	ASTM DD 17.54.00.2
ASTM	Standard Provisional Specification for Dedicated Short Range Communication (DSRC) Data Link Layer	ASTM PS 105-99
ASTM	Standard Specification for Dedicated Short Range Communication (DSRC) Physical Layer using Microwave in the 902-928 MHz Band	ASTM E2158-01
IEEE	Standard for Common Incident Management Message Sets (IMMS) for use by EMCs	IEEE 1512-2000
IEEE	Standard for Hazardous Material IMMS for use by EMCs	IEEE 1512.3-2002
IEEE	Standard for Interface Between the Rail Subsystem and the Highway Subsystem at a Highway Rail Intersection	IEEE 1570-2002
IEEE	Standard for Message Sets for Vehicle/Roadside Communications	IEEE Std 1455-1999
IEEE	Standard for Public Safety IMMS for use by EMCs	IEEE P1512.2
IEEE	Standard for Traffic Incident Management Message Sets for Use by	IEEE 1512.1-2003

SDO	Standard Title	Standard DocID
	EMCs	
ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
SAE	Data Dictionary for Advanced Traveler Information System (ATIS)	SAE J2353
SAE	Message Set for Advanced Traveler Information System (ATIS)	SAE J2354
SAE	Messages for Handling Strings and Look-Up Tables in ATIS Standards	SAE J2540
SAE	On-Board Land Vehicle Mayday Reporting Interface	SAE J2313
SAE	Rules for Standardizing Street Names and Route IDs	SAE J2529
SAE	Standard for ATIS Message Sets Delivered Over Bandwidth Restricted Media	SAE J2369

**Notes:**

The following definitions come from Version 4.0 of the National ITS Architecture. For a more up to date description of the following standards groups, please refer to the National ITS Architecture website.

**NTCIP C2F: NTCIP Center-to-Field Standards Group**

The table above specifies the NTCIP Center-to-Field Standards Group, which addresses the communications protocols between a center and the ITS field devices it manages. The family includes the communications profiles that cover the interfaces between a traffic management center and dynamic message signs, ramp meters, environmental sensors, or CCTVs under its control. These protocols are common across all Center-to-Field interfaces in the National ITS Architecture, and rather than repeat the entire list for each architecture flow, we have created this summary entry – the NTCIP C2C Group of communications standards.

The “vocabulary” (objects) is specific to the actual architecture flow in the National ITS Architecture and is therefore mapped to the corresponding Data Object standard. (In the example above, the “Object Definitions for Dynamic Message Signs” standard would be mapped to the specific control and data flows between the Traffic Management Subsystem and the Roadway DMS equipment).

In order to satisfy a wide spectrum of system and regional communications requirements, Center-to-Field ITS deployments should each implement the combinations of the following NTCIP C2F communications protocols that best meet their needs.

This Group includes the following Standards Activities:

- NTCIP 1101: Simple Transportation Management Framework (STMF)
- NTCIP 1102: Base Standard: Octet Encoding Rules (OER)
- NTCIP 1103: Simple Transportation Management Protocol (STMP)
- NTCIP 2101: Point to Multi-Point Protocol Using RS-232 Subnetwork Profile
- NTCIP 2102: Subnet Profile for PMPP Over FSK modems
- NTCIP 2103: Subnet Profile for Point-to-Point Protocol using RS 232

NTCIP 2104: Subnet Profile for Ethernet  
NTCIP 2201: Transportation Transport Profile  
NTCIP 2202: Internet (TCP/IP and UDP/IP) Transport Profile  
NTCIP 2301: Application Profile for Simple Transportation Management Framework (STMF)  
NTCIP 2302: Application Profile for Trivial File Transfer Protocol  
NTCIP 2303: Application Profile for File Transfer Protocol (FTP)

## **NTCIP C2C: NTCIP Center-to-Center Standards Group**

The table above specifies the NTCIP Center-to-Center (NTCIP C2C) Group of Standards, which address the communications protocols between two centers (e.g. two traffic management centers exchanging information to facilitate regional coordination of traffic signals). Some of the communication protocols covered by this family are CORBA, DATEX-ASN and FTP. These protocols are common across all Center-to-Center interfaces in the National ITS Architecture, and rather than repeat the entire list for each architecture flow, we have created this summary entry – the NTCIP C2C Group of communications standards.

The standards that describe the “vocabulary” (data elements and messages) are mapped to specific architecture flows rather than the entire set of NTCIP C2C interfaces. In the regional traffic coordination example above, the “Traffic Management Data Dictionary” and the “Message Set for External TMC Communications” standards would be mapped to the specific flows between two Traffic Management Subsystems.

In order to satisfy a wide spectrum of system and regional communications requirements, Center-to-Center ITS deployments should each implement the combinations of the following NTCIP C2C communications protocols that best meet their needs.

This Group includes the following Standards Activities:

NTCIP 1102: Base Standard: Octet Encoding Rules (OER)  
NTCIP 1104: CORBA Naming Convention  
NTCIP 1105: CORBA Security Service  
NTCIP 1106: CORBA Near-Real Time Data Service  
NTCIP 2104: Subnet Profile for Ethernet  
NTCIP 2202: Internet (TCP/IP and UDP/IP) Transport Profile  
NTCIP 2303: Application Profile for File Transfer Protocol (FTP)  
NTCIP 2304: Application Profile for Data Exchange ASN.1 (DATEX)  
NTCIP 2305: Application Profile for Common Object Request Broker Architecture (CORBA)  
NTCIP 2501: Information Profile for DATEX  
NTCIP 2502: Information Profile for CORBA

## **8.2. Reference to the detailed standards information on the Web Site**

The previous section provides a general discussion of the standards environment in the region. However the architecture does contain a far more detailed standards view, one that maps

applicable standards to the individual information flow that goes from one element to another. This detailed information is contained in the hyperlinked web site and can be accessed in two different ways. Each element description page has a set of links that describe the information flowing to and from the element to other elements of the architecture. Selecting any of these interface links brings the user an interface page. For example, the interface between the planned ODOT Akron Canton Freeway Management Center and the planned ODOT District 12 Freeway Management Center is shown in

**Figure 4.** The information flow in the diagram is defined at the bottom of the page and has a standards icon following the definitions. Selecting the standards icon will provide the applicable standards for the flow. An example, for the traffic control coordination flow, is shown in Figure 5 . A second way to access standards information on the web site is to select the Standards button on the left side of the page. The standards web page has a list of standards organized by SDO, with each of the standards title a hot link to a detail page. Figure 6 shows an example of a portion of the web page the user sees when they select the standard Object Definitions for Dynamic Message Signs.

**Figure 4: Example of Interface**

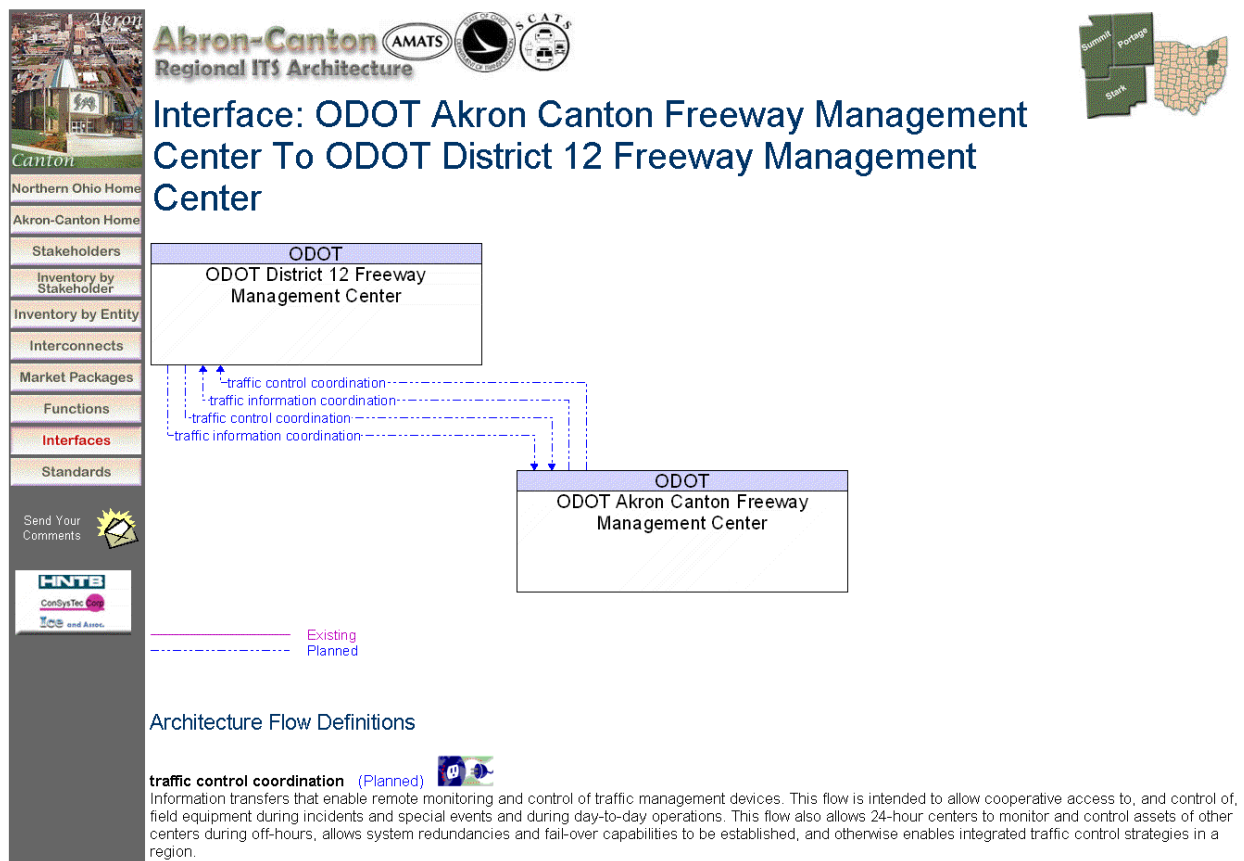








Figure 5 : Example of standards mapping page

## Standards Support For traffic control coordination

Type	SDO	Title	Document ID
Message Sets	AASHTO/ITE/NEMA	Objects for Signal Systems Master	NTCIP 1210
	ITE	Message Sets for External TMC Communication (MS/ETMCC)	ITE TM 2.01
Data Elements	AASHTO/ITE/NEMA	Objects for Signal Systems Master	NTCIP 1210
	ITE	Standard for Functional Level Traffic Management Data Dictionary (TMDD)	ITE TM 1.03
Communications	AASHTO/ITE/NEMA	NTCIP Center-to-Center Standards Group	<a href="#">View List</a>

Figure 6: Example of Standards Mapping

## NTCIP 1203: Object Definitions for Dynamic Message Signs

Source Element	Destination Element	Flow
Akron Engineering Bureau	City of Akron Field Equipment	roadway information system status
City of Akron Field Equipment	Akron Engineering Bureau	roadway information system data
	City of Akron TMC	roadway information system data
City of Akron TMC	City of Akron Field Equipment	roadway information system status
City of Canton Field Equipment	City of Canton Signal Control System	roadway information system data
	City of Canton Street Dept Dispatch	roadway information system data
City of Canton Signal Control System	City of Canton Field Equipment	roadway information system status
City of Canton Street Dept Dispatch	City of Canton Field Equipment	roadway information system status
City of Cuyahoga Falls Field Equipment	City of Cuyahoga Falls Maintenance Dispatch	roadway information system data
	City of Cuyahoga Falls Signal Control System	roadway information system data
City of Cuyahoga Falls Maintenance Dispatch	City of Cuyahoga Falls Field Equipment	roadway information system status
City of Cuyahoga Falls Signal Control System	City of Cuyahoga Falls Field Equipment	roadway information system status
Municipal Field Equipment	Municipal Maintenance Dispatch	roadway information system data
Municipal Maintenance Dispatch	Municipal Field Equipment	roadway information system status
ODOT Akron Canton Freeway Management Center	ODOT District 4 Field Equipment	roadway information system status
ODOT District 4 Field Equipment	ODOT Akron Canton Freeway Management Center	roadway information system data
	ODOT District 4 Maintenance Garages	roadway information system data
ODOT District 4 Maintenance Garages	ODOT District 4 Field Equipment	roadway information system status
Portage County Field Equipment	Portage County Maintenance Dispatch	roadway information system data
Portage County Maintenance Dispatch	Portage County Field Equipment	roadway information system status
Stark County Field Equipment	Stark County Maintenance Dispatch	roadway information system data
Stark County Maintenance Dispatch	Stark County Field Equipment	roadway information system status
Summit County Field Equipment	Summit County Maintenance Dispatch	roadway information system data
Summit County Maintenance Dispatch	Summit County Field Equipment	roadway information system status

## 9. Regional Projects

The regional ITS architecture defines a number of planned elements, interfaces, and information flows. As regional plans are developed these parts of the regional ITS architecture will be implemented by a series of projects. Table 8 provides a summary of regional projects that have been identified. The Timeframe column represents the following information about when the project is planned for implementation:

- Short Term- 1-5 years
- Mid Term- 6-10 years
- Long Term- 11-15 years.

The projects listed represent a very small percentage of the interfaces of the Regional ITS Architecture. Over time additional projects will be developed to address further aspects of the architecture. In general terms the projects listed in Table 8 are not implemented independently of each other but have a sequencing that relates to the dependencies of the projects.



**Table 8: Projects**

<b>Akron Project</b>	<b>Description</b>	<b>Timeframe</b>	<b>Market Packages</b>
Akron-Canton Freeway Management System	Adding Weather systems (RWIS) and Freeway Service Patrol for the Akron area.	Short Term	MC03: Road Weather Data Collection MC04: Weather Information Processing and Distribution EM4: Roadway Service Patrols
Akron-Canton Freeway Management System	Add the TMC facility along with , DMS, HAR, CCTV, Flow detection, hybrid communications system, , ramp metering, and web services	Long Term	ATMS01: Network Surveillance ATMS04: Freeway Control ATMS06: Traffic Information Dissemination ATMS07: Regional Traffic Control ATMS08: Incident Management System
METRO AVL Phase II	-New radio system & mobile data computers on all demand responsive buses -AVL System for fixed route buses -Upgrade flex routing system -On-board security cameras -Upgrade of automated scheduling information system	Short Term	APTS1: Transit Vehicle Tracking APTS2: Transit Fixed-Route Operations APTS3: Demand Response Transit Operations APTS5: Transit Security
METRO AVL Phase III	-Stop enunciators -Electronic passenger information -Automated real-time information at transit centers and malls -Vehicle monitoring system for maintenance	Short Term	APTS6: Transit Maintenance APTS8: Transit Traveler Information
METRO Electronic Payment System	Upgrade fareboxes to accept smart cards.	Short Term	APTS4: Transit Passenger and Fare Management
METRO Security and Surveillance Upgrades	Increase the number of cameras at transit station, transfer facilities, and stops.	Short Term	APTS5: Transit Security

Akron Project	Description	Timeframe	Market Packages
ODOT GPS System	Currently planned for ODOT maintenance and construction vehicles.	Short Term	MC01: Maintenance and Construction Vehicle Tracking
PARTA AVL System	New radio system and mobile data computers on all demand response buses.	Short Term	APTS1: Transit Vehicle Tracking APTS3: Demand Response Transit Operations
PARTA Paratransit Scheduling System	Upgrades planned to make the scheduling system more efficient once the AVL system comes online.	Short Term	APTS3: Demand Response Transit Operations
Signal System Upgrades	Signal system upgrades are planned for several locations throughout the region (ongoing).	Short to Mid Term	ATMS03: Surface Street Control ATMS07: Regional Traffic Control

## 10. Agreements

There are several types of arrangements associated with the interfaces included with the projects discussed previously. Data exchanges between systems require agreements on the transmission protocol and data formats to ensure compatibility. Coordinating field device operations owned by different agencies requires defined procedures for submitting message requests and rules governing when such requests can be honored. Such coordination can be done with informal arrangements such as a Memorandum of Understanding (MOU). Sharing control of field devices operated by different agencies involves more liability issues, which requires more formal agreements. Coordinated incident response may also require formal agreements, but also requires group training of personnel from various agencies. While all interfaces involve agreements for data compatibility, agreements for procedure and operation as well as training can also be critical elements to optimizing the benefits of the architecture.

There are several existing agreements in the region. ODOT District 4 has agreements with the Cities of Akron for maintenance of the freeways within the city limits. The City of Akron has written agreements with Cuyahoga Falls and Summit County for signal maintenance. There are numerous other unwritten signal maintenance agreements between ODOT and various municipalities.

The following are a list of potential agreements that could be needed for the region.

- Endorsement of Coordinated Incident Management Handbook Practices
- Multi-State Incident Response Teams in State Border Regions
- Endorsement of Accident Database and Reporting System
- Multi-State Virtual Weigh Stations
- Multi-State "One-Stop" Shopping for Commercial Vehicle Interstate Credentials
- Multi-Agency Interactive Transit Information Kiosks
- Multi-Jurisdictional Paratransit Coordination
- Multi-Agency Communication Infrastructure Sharing
- Inter-Agency Traffic Signal Coordination
- Multi-Agency Limited Liability Agreements
- Multi-State Agreement for Coordinated DMS Message Placement
- Interstate Electronic Toll Collection Interoperability
- Multi-Agency Radio Communication Integration
- Multi-State 511 Traveler Information System
- Inter-Agency Jurisdictional Construction and Maintenance Coordination
- Public-Private Partnership for Video Images
- Data Archiving Systems
- Regional ITS Architecture Maintenance

The Regional ITS Architecture can be used to determine a set of agreements that may need to be put into place in order to implement the interconnections described by the architecture. Table 9 identifies agreements that may be needed between pairs of stakeholders described in the Akron ITS Architecture. The table was created by identifying element interfaces where the elements are owned, operated, or maintained by different stakeholders. This large list of potential

interfaces was then reviewed to remove many of the interfaces between different stakeholders of the same agency, and to remove interfaces that won't need agreements (such as the interface between web sites and the private users that access them).

**Table 9: Needs for Future Agreements**

Stakeholder A	Stakeholder B	Reason for Agreement
Akron Metropolitan Area Transportation Study (AMATS)	City of Akron	Sharing of data to go on websites
Akron Metropolitan Area Transportation Study (AMATS)	City of Akron Traffic Engineering	Collection of field data for archiving
Akron Metropolitan Area Transportation Study (AMATS)	City of Cuyahoga Falls	Sharing of data to go on websites
Akron Metropolitan Area Transportation Study (AMATS)	City of Cuyahoga Falls Technical Services	Collecting data to put into an archive
Akron Metropolitan Area Transportation Study (AMATS)	Metro-Networks	Sharing of data to go on websites
Akron Metropolitan Area Transportation Study (AMATS)	Municipal Engineering and Service	Collecting data to put into an archive
Akron Metropolitan Area Transportation Study (AMATS)	ODOT	Sharing of data to go on websites, including road network conditions
Akron Metropolitan Area Transportation Study (AMATS)	Portage County Engineer	Collecting data to put into an archive
Akron Metropolitan Area Transportation Study (AMATS)	Summit County Engineer	Collecting data to put into an archive
City of Akron	Akron Metropolitan Area Transportation Study (AMATS)	Sharing of data to go on websites
City of Akron	City of Cuyahoga Falls	Sharing of data to go on websites
City of Akron	Metro-Networks	Sharing of data to go on websites
City of Akron	ODOT	Sharing of data to go on websites, including road network conditions
City of Akron	Ohio State Highway Patrol (OSHP)	Providing incident reports
City of Akron	Summit County Sheriff	Providing incident reports
City of Akron	TV and Radio Stations	Providing traveler information for media
City of Akron Department of Public Safety	City of Cuyahoga Falls	Sharing incident reports or performing incident response coordination
City of Akron Department of Public Safety	Commercial Fleet Management	Requesting hazmat information when a crash involving a hazmat vehicle has occurred.
City of Akron Department of Public Safety	Metro Regional Transit Authority (METRO)	Coordination of transit emergency data
City of Akron Department of Public Safety	Municipalities and Townships	Sharing incident reports or performing incident response coordination
City of Akron Department of Public Safety	ODOT	Sharing incident information. Providing incident response status. Making resource requests.

Stakeholder A	Stakeholder B	Reason for Agreement
City of Akron Department of Public Safety	Ohio Department of Public Safety	Sharing incident reports or performing incident response coordination
City of Akron Department of Public Safety	Ohio EPA	Providing reports of hazmat spills.
City of Akron Department of Public Safety	Ohio State Highway Patrol (OSHP)	Sharing incident reports or performing incident response coordination
City of Akron Department of Public Safety	Portage County Sheriff	Sharing incident reports or performing incident response coordination
City of Akron Department of Public Safety	Private Ambulance Companies	Sharing incident reports or performing incident response coordination
City of Akron Department of Public Safety	Private Tow/ Wrecker Companies	Sharing incident reports or performing incident response coordination
City of Akron Department of Public Safety	Regional Hospital Organizations	Requesting care facility status or providing patient status
City of Akron Department of Public Safety	Regional Public Safety	Sharing incident reports or performing incident response coordination
City of Akron Department of Public Safety	Stark County EMA	Sharing incident reports or performing incident response coordination
City of Akron Department of Public Safety	Stark County Sheriff	Sharing incident reports or performing incident response coordination
City of Akron Department of Public Safety	Summit County EMA	Sharing incident reports or performing incident response coordination
City of Akron Department of Public Safety	Summit County Sheriff	Sharing incident reports or performing incident response coordination
City of Akron Engineering Bureau	Akron Metropolitan Area Transportation Study (AMATS)	Providing work zone information
City of Akron Engineering Bureau	City of Canton	Providing work zone information
City of Akron Engineering Bureau	Metro Regional Transit Authority (METRO)	Providing work zone information, current asset restrictions, and roadway maintenance status.
City of Akron Engineering Bureau	Metro-Networks	Providing work plans, current asset restrictions, and roadway maintenance status.
City of Akron Engineering Bureau	ODOT	Providing work plans, work zone information, current asset restrictions, and roadway maintenance status.
City of Akron Engineering Bureau	Railroad Operator	Providing work plans.
City of Akron Engineering Bureau	Summit County Engineer	Providing work plans and work zone information.
City of Akron Engineering Bureau	Summit County Sheriff	Providing work zone information
City of Akron Public Works Bureau	City of Cuyahoga Falls Public Works	Providing work plans and work zone information.

Stakeholder A	Stakeholder B	Reason for Agreement
City of Akron Public Works Bureau	Metro Regional Transit Authority (METRO)	Providing work zone information, current asset restrictions, and roadway maintenance status.
City of Akron Public Works Bureau	Metro-Networks	Providing work zone information, current asset restrictions, and roadway maintenance status.
City of Akron Public Works Bureau	Municipal DPW and Services	Coordination of maintenance resources
City of Akron Public Works Bureau	Municipalities and Townships	Responding to maintenance resource requests and providing roadway maintenance status.
City of Akron Public Works Bureau	ODOT	Providing work plans, work zone information, current asset restrictions, and roadway maintenance status. Coordination of maintenance resources.
City of Akron Public Works Bureau	Ohio State Highway Patrol (OSHP)	Responding to maintenance resource requests and providing roadway maintenance status. Sharing incident information.
City of Akron Public Works Bureau	Railroad Operator	Providing work plans.
City of Akron Public Works Bureau	School Districts	Responding to maintenance resource requests and providing roadway maintenance status.
City of Akron Public Works Bureau	Summit County Engineer	Coordination of maintenance resources and work plans. Providing work zone information and roadway maintenance status.
City of Akron Public Works Bureau	Summit County Sheriff	Responding to maintenance resource requests and providing roadway maintenance status.
City of Akron Traffic Engineering	Akron Metropolitan Area Transportation Study (AMATS)	Providing traffic information for archiving.
City of Akron Traffic Engineering	City of Canton Traffic Engineering	Sharing traffic information.
City of Akron Traffic Engineering	City of Cuyahoga Falls	Providing road network conditions.
City of Akron Traffic Engineering	City of Cuyahoga Falls Technical Services	Sharing of traffic information and sharing of device control.
City of Akron Traffic Engineering	Metro Regional Transit Authority (METRO)	Providing road network conditions and coordinating transit signal priority.
City of Akron Traffic Engineering	Metro-Networks	Providing road network conditions.
City of Akron Traffic Engineering	Municipal Engineering and Service	Sharing of traffic information and sharing of device control.
City of Akron Traffic Engineering	Municipalities and Townships	Providing road network conditions.

Stakeholder A	Stakeholder B	Reason for Agreement
City of Akron Traffic Engineering	ODOT	Sharing of traffic information and sharing of device control.
City of Akron Traffic Engineering	Ohio State Highway Patrol (OSHP)	Providing road network conditions.
City of Akron Traffic Engineering	Railroad Operator	Providing advisories regarding highway rail intersections.
City of Akron Traffic Engineering	School Districts	Providing road network conditions.
City of Akron Traffic Engineering	Summit County Engineer	Sharing traffic information.
City of Akron Traffic Engineering	Summit County Sheriff	Sharing incident information. Providing road network conditions and status of resource deployment.
City of Akron Traffic Engineering	TV and Radio Stations	Providing road network conditions.
City of Cuyahoga Falls	Akron Metropolitan Area Transportation Study (AMATS)	Sharing of information for websites.
City of Cuyahoga Falls	City of Akron	Sharing of information for websites.
City of Cuyahoga Falls	City of Akron Department of Public Safety	Sharing incident reports or performing incident response coordination
City of Cuyahoga Falls	City of Canton	Sharing incident reports or performing incident response coordination
City of Cuyahoga Falls	City of Cuyahoga Falls Public Works	Sharing incident information. Requesting maintenance resources and providing incident response status.
City of Cuyahoga Falls	Commercial Fleet Management	Requesting hazmat information when a crash involving a hazmat vehicle has occurred.
City of Cuyahoga Falls	Metro Regional Transit Authority (METRO)	Coordination of transit emergency data.
City of Cuyahoga Falls	Metro-Networks	Sharing of information for websites.
City of Cuyahoga Falls	Municipalities and Townships	Sharing incident reports or performing incident response coordination
City of Cuyahoga Falls	ODOT	Sharing incident information. Providing incident response status. Making resource requests.
City of Cuyahoga Falls	Ohio EPA	Providing reports of hazmat spills.
City of Cuyahoga Falls	Ohio State Highway Patrol (OSHP)	Sharing incident reports or performing incident response coordination
City of Cuyahoga Falls	Private Ambulance Companies	Sharing incident reports or performing incident response coordination
City of Cuyahoga Falls	Private Tow/ Wrecker Companies	Sharing incident reports or performing incident response coordination
City of Cuyahoga Falls	Regional Public Safety	Sharing incident reports or performing incident response coordination
City of Cuyahoga Falls	Summit County EMA	Sharing incident reports or performing incident response coordination



Stakeholder A	Stakeholder B	Reason for Agreement
City of Cuyahoga Falls	Summit County Sheriff	Sharing incident reports or performing incident response coordination
City of Cuyahoga Falls Public Works	City of Akron Public Works Bureau	Coordinate maintenance resources. Provide work zone information.
City of Cuyahoga Falls Public Works	Metro Regional Transit Authority (METRO)	Providing work zone information, current asset restrictions, and roadway maintenance status. Coordination of maintenance resources.
City of Cuyahoga Falls Public Works	Metro-Networks	Providing work plans, work zone information, and current asset restrictions.
City of Cuyahoga Falls Public Works	Municipal DPW and Services	Coordinate maintenance resources.
City of Cuyahoga Falls Public Works	ODOT	Providing work plans, work zone information, current asset restrictions, and roadway maintenance status. Coordination of maintenance resources.
City of Cuyahoga Falls Public Works	Ohio State Highway Patrol (OSHP)	Provide roadway maintenance status and maintenance resource response status.
City of Cuyahoga Falls Public Works	Railroad Operator	Provide maintenance work plans.
City of Cuyahoga Falls Public Works	School Districts	Providing work zone information, current asset restrictions, and roadway maintenance status.
City of Cuyahoga Falls Public Works	Summit County Engineer	Providing work plans, work zone information, current asset restrictions, and roadway maintenance status. Coordination of maintenance resources and work plans.
City of Cuyahoga Falls Public Works	Summit County Sheriff	Providing work zone information and roadway maintenance status.
City of Cuyahoga Falls Technical Services	Akron Metropolitan Area Transportation Study (AMATS)	Provide traffic information for archiving
City of Cuyahoga Falls Technical Services	City of Akron	Providing road network conditions.
City of Cuyahoga Falls Technical Services	City of Akron Department of Public Safety	Providing road network conditions.
City of Cuyahoga Falls Technical Services	City of Akron Traffic Engineering	Sharing traffic information or sharing of control of traffic devices
City of Cuyahoga Falls Technical Services	Metro Regional Transit Authority (METRO)	Providing road network conditions.
City of Cuyahoga Falls Technical Services	Metro-Networks	Providing road network conditions.
City of Cuyahoga Falls Technical Services	Municipal Engineering and Service	Sharing traffic information or sharing of control of traffic devices
City of Cuyahoga Falls Technical Services	Municipalities and Townships	Providing road network conditions.

Stakeholder A	Stakeholder B	Reason for Agreement
City of Cuyahoga Falls Technical Services	ODOT	Sharing of traffic information and sharing of device control.
City of Cuyahoga Falls Technical Services	Ohio State Highway Patrol (OSHP)	Providing road network conditions.
City of Cuyahoga Falls Technical Services	Railroad Operator	Providing highway rail intersection status
City of Cuyahoga Falls Technical Services	School Districts	Providing road network conditions.
City of Cuyahoga Falls Technical Services	Summit County Engineer	Providing road network conditions.
City of Cuyahoga Falls Technical Services	Summit County Sheriff	Providing road network conditions.
City of Cuyahoga Falls Technical Services	TV and Radio Stations	Providing road network conditions.
County Government	ODOT	Providing work plans and work zone information. Coordination of maintenance resources.
County Government	Portage County Engineer	Providing work plans and work zone information. Coordination of maintenance resources.
County Government	Stark County Engineer	Providing work plans and work zone information. Coordination of maintenance resources.
County Government	Summit County Engineer	Providing work plans and work zone information. Coordination of maintenance resources.
County Sheriff	ODOT	Sharing incident information. Providing incident response status. Making resource requests.
County Sheriff	Ohio State Highway Patrol (OSHP)	Sharing incident reports or performing incident response coordination
County Sheriff	Portage County Sheriff	Sharing incident reports or performing incident response coordination
County Sheriff	Stark County Sheriff	Sharing incident reports or performing incident response coordination
County Sheriff	Summit County Sheriff	Sharing incident reports or performing incident response coordination
Metro Regional Transit Authority (METRO)	Akron Canton Airport	Sharing of transit information.
Metro Regional Transit Authority (METRO)	City of Akron Department of Public Safety	Coordination of transit emergency data.
Metro Regional Transit Authority (METRO)	City of Akron Traffic Engineering	Provide transit system data including probe data. Coordinate transit signal priority.
Metro Regional Transit Authority (METRO)	City of Cuyahoga Falls	Coordination of transit emergency data.
Metro Regional Transit Authority (METRO)	City of Cuyahoga Falls Technical Services	Provide transit probe data.

Stakeholder A	Stakeholder B	Reason for Agreement
Metro Regional Transit Authority (METRO)	Financial Institutions	Electronic fare payment.
Metro Regional Transit Authority (METRO)	Greater Cleveland Regional Transit Authority (RTA)	Coordination of transit service, traveler, and fare information.
Metro Regional Transit Authority (METRO)	Metro-Networks	Providing transit fare and schedule data.
Metro Regional Transit Authority (METRO)	Municipalities and Townships	Coordination of transit emergency data.
Metro Regional Transit Authority (METRO)	ODOT	Providing work plans and work zone information. Coordination of maintenance resources.
Metro Regional Transit Authority (METRO)	Private Paratransit Service Providers	Coordination of transit service and traveler information.
Metro Regional Transit Authority (METRO)	Stark Area Regional Transit Authority (SARTA)	Coordination of transit service, traveler, and fare information.
Metro Regional Transit Authority (METRO)	Summit County Sheriff	Coordination of transit emergency data.
Municipal DPW and Services	City of Akron Public Works Bureau	Coordination of maintenance resources.
Municipal DPW and Services	City of Canton	Coordination of maintenance resources.
Municipal DPW and Services	City of Canton Street Department	Coordination of maintenance resources.
Municipal DPW and Services	City of Cuyahoga Falls Public Works	Coordination of maintenance resources.
Municipal DPW and Services	Metro Regional Transit Authority (METRO)	Providing roadway maintenance status.
Municipal DPW and Services	Metro-Networks	Providing work plans.
Municipal DPW and Services	Municipal Engineering and Service Depts	Provide roadway maintenance status, work zone information, and maintenance resource response status.
Municipal DPW and Services	Municipalities and Townships	Providing work plans, work zone information, current asset restrictions, and roadway maintenance status. Coordination of maintenance resources.
Municipal DPW and Services	ODOT	Providing work plans, work zone information, current asset restrictions, and roadway maintenance status. Coordination of maintenance resources.
Municipal DPW and Services	Ohio State Highway Patrol (OSHP)	Provide roadway maintenance status, work zone information, and maintenance resource response status.
Municipal DPW and Services	Portage Area Regional Transportation Authority (PARTA)	Providing work zone information, current asset restrictions, and roadway maintenance status.
Municipal DPW and Services	Portage County Engineer	Providing work plans, work zone information, and roadway maintenance status. Coordination of maintenance resources.

Stakeholder A	Stakeholder B	Reason for Agreement
Municipal DPW and Services	Portage County Sheriff	Provide roadway maintenance status, work zone information, and maintenance resource response status.
Municipal DPW and Services	Railroad Operator	Provide work plans.
Municipal DPW and Services	School Districts	Providing work zone information, current asset restrictions, and roadway maintenance status.
Municipal DPW and Services	Stark Area Regional Transit Authority (SARTA)	Provide roadway maintenance status, work zone information, and maintenance resource response status.
Municipal DPW and Services	Stark County Engineer	Providing work plans, work zone information, and roadway maintenance status. Coordination of maintenance resources.
Municipal DPW and Services	Stark County Sheriff	Provide roadway maintenance status, work zone information, and maintenance resource response status.
Municipal DPW and Services	Summit County Engineer	Providing work plans, work zone information, and roadway maintenance status. Coordination of maintenance resources.
Municipal DPW and Services	Summit County Sheriff	Provide roadway maintenance status, work zone information, and maintenance resource response status.
Municipal Engineering and Service Depts	Akron Metropolitan Area Transportation Study (AMATS)	Provide traffic information for archiving
Municipal Engineering and Service Depts	City of Akron Traffic Engineering	Sharing traffic information or sharing of control of traffic devices
Municipal Engineering and Service Depts	City of Canton Traffic Engineering	Sharing traffic information or sharing of control of traffic devices
Municipal Engineering and Service Depts	City of Cuyahoga Falls Technical Services	Sharing traffic information or sharing of control of traffic devices
Municipal Engineering and Service Depts	ODOT	Sharing of traffic information and sharing of device control.
Municipal Engineering and Service Depts	Ohio State Highway Patrol (OSHP)	Share incident information. Provide road network conditions and resource deployment status.
Municipal Engineering and Service Depts	Portage Area Regional Transportation Authority (PARTA)	Provide road network conditions.
Municipal Engineering and Service Depts	Portage County Sheriff	Share incident information. Provide road network conditions and resource deployment status.
Municipal Engineering and Service Depts	Railroad Operator	Providing highway rail intersection status
Municipal Engineering and Service Depts	Stark County Area Transportation Study	Provide traffic information for archiving

Stakeholder A	Stakeholder B	Reason for Agreement
	(SCATS)	
Municipal Engineering and Service Depts	Stark County Sheriff	Share incident information. Provide road network conditions and resource deployment status.
Municipal Engineering and Service Depts	Summit County Sheriff	Share incident information. Provide road network conditions and resource deployment status.
Municipalities and Townships	City of Akron Department of Public Safety	Sharing incident reports or performing incident response coordination
Municipalities and Townships	City of Akron Public Works Bureau	Make resource requests.
Municipalities and Townships	City of Canton	Sharing incident reports or performing incident response coordination
Municipalities and Townships	City of Canton Street Department	Make resource requests.
Municipalities and Townships	City of Cuyahoga Falls	Sharing incident reports or performing incident response coordination
Municipalities and Townships	Commercial Fleet Management	Requesting hazmat information when a crash involving a hazmat vehicle has occurred.
Municipalities and Townships	Metro Regional Transit Authority (METRO)	Coordinate transit emergency data.
Municipalities and Townships	ODOT	Sharing incident information. Providing incident response status. Making resource requests.
Municipalities and Townships	Ohio EPA	Providing reports of hazmat spills.
Municipalities and Townships	Ohio State Highway Patrol (OSHP)	Sharing incident reports or performing incident response coordination
Municipalities and Townships	Portage Area Regional Transportation Authority (PARTA)	Coordinate transit emergency data.
Municipalities and Townships	Portage County Emergency Management Agency	Sharing incident reports or performing incident response coordination
Municipalities and Townships	Portage County Engineer	Sharing incident information. Providing incident response status. Making resource requests.
Municipalities and Townships	Portage County Sheriff	Sharing incident reports or performing incident response coordination
Municipalities and Townships	Private Tow/ Wrecker Companies	Sharing incident reports or performing incident response coordination
Municipalities and Townships	Regional Public Safety	Sharing incident reports or performing incident response coordination
Municipalities and Townships	Stark Area Regional Transit Authority (SARTA)	Coordinate transit emergency data.
Municipalities and Townships	Stark County EMA	Sharing incident reports or performing incident response coordination

Stakeholder A	Stakeholder B	Reason for Agreement
Municipalities and Townships	Stark County Engineer	Sharing incident information. Providing incident response status. Making resource requests.
Municipalities and Townships	Stark County Sheriff	Sharing incident reports or performing incident response coordination
Municipalities and Townships	Summit County EMA	Sharing incident reports or performing incident response coordination
Municipalities and Townships	Summit County Engineer	Sharing incident information. Providing incident response status. Making resource requests.
Municipalities and Townships	Summit County Sheriff	Sharing incident reports or performing incident response coordination
ODOT	Akron Metropolitan Area Transportation Study (AMATS)	Provide read network conditions.
ODOT	City of Akron	Provide read network conditions.
ODOT	City of Akron Department of Public Safety	Provide incident information, road network conditions, road weather information, and resource deployment status.
ODOT	City of Akron Engineering Bureau	Coordinate work plans.
ODOT	City of Akron Public Works Bureau	Coordinate work plans and maintenance resources. Share incident information.
ODOT	City of Akron Traffic Engineering	Sharing of traffic information and sharing of device control.
ODOT	City of Canton	Provide incident information, road network conditions, road weather information, and resource deployment status. Coordinate work plans and maintenance resources.
ODOT	City of Canton Director of Public Safety	Sharing incident information. Providing incident response status and road network conditions.
ODOT	City of Canton Street Department	Sharing incident information. Providing roadway maintenance status. Coordinating maintenance resources.
ODOT	City of Canton Traffic Engineering	Sharing of traffic information and sharing of device control.
ODOT	City of Cuyahoga Falls	Provide incident information, road network conditions, road weather information, and resource deployment status.
ODOT	City of Cuyahoga Falls Public Works	Coordinate work plans and maintenance resources. Provide work zone information and roadway maintenance status.



Stakeholder A	Stakeholder B	Reason for Agreement
ODOT	City of Cuyahoga Falls Technical Services	Sharing of traffic information and sharing of device control and sharing of road weather information.
ODOT	County Government	Coordinate work plans and maintenance resources. Provide work zone information.
ODOT	County Sheriff	Sharing incident information. Providing resource deployment status and road network conditions.
ODOT	Metro Regional Transit Authority (METRO)	Provide current asset restrictions, road network conditions, road weather information, work zone information and roadway maintenance status.
ODOT	Metro-Networks	Provide current asset restrictions, road network conditions, road weather information, work zone information and roadway maintenance status.
ODOT	Municipal DPW and Services	Coordinate work plans and maintenance resources. Provide work zone information and roadway maintenance status.
ODOT	Municipal Engineering and Service	Sharing of traffic information and sharing of device control.
ODOT	Municipalities and Townships	Sharing incident information. Providing resource deployment status and road network conditions.
ODOT	National Weather Service	Providing environmental sensor data.
ODOT	Ohio State Highway Patrol (OSHP)	Sharing incident information. Providing resource deployment status, work zone information, road weather information, and road network conditions.
ODOT	Ohio Turnpike Commission (OTC)	Sharing incident information and traffic information. Providing roadway maintenance status.
ODOT	Portage Area Regional Transportation Authority (PARTA)	Providing current asset restrictions, roadway maintenance status, work zone information, road weather information, and road network conditions.
ODOT	Portage County Engineer	Coordinate work plans and maintenance resources. Provide work zone information and roadway maintenance status.
ODOT	Portage County Sheriff	Sharing incident information. Providing response to maintenance requests, resource deployment status, work zone information, and road network conditions.
ODOT	Railroad Operator	Provide work plans and highway rail intersection status.



Stakeholder A	Stakeholder B	Reason for Agreement
ODOT	School Districts	Providing current asset restrictions, roadway maintenance status, work zone information, road weather information, and road network conditions.
ODOT	Stark Area Regional Transit Authority (SARTA)	Providing current asset restrictions, roadway maintenance status, work zone information, road weather information, and road network conditions.
ODOT	Stark County Area Transportation Study (SCATS)	Providing information for websites.
ODOT	Stark County EMA	Sharing incident information. Providing resource deployment status and road network conditions.
ODOT	Stark County Engineer	Sharing of traffic information and sharing of device control. Coordinate work plans and maintenance resources. Provide work zone information and roadway maintenance status.
ODOT	Stark County Sheriff	Sharing incident information. Providing resource deployment status, work zone information, road weather information, and road network conditions.
ODOT	Summit County EMA	Sharing incident information. Providing resource deployment status and road network conditions.
ODOT	Summit County Engineer	Sharing of traffic information and sharing of device control.
ODOT	Summit County Sheriff	Sharing incident information. Providing resource deployment status, work zone information, road weather information, and road network conditions.
ODOT	TV and Radio Stations	Providing traveler information for media.
Ohio Department of Public Safety	City of Akron Department of Public Safety	Sharing incident reports or performing incident response coordination
Ohio Department of Public Safety	City of Canton Director of Public Safety	Sharing incident reports or performing incident response coordination
Ohio Department of Public Safety	Ohio State Highway Patrol (OSHP)	Sharing incident reports or performing incident response coordination
Ohio Department of Public Safety	Portage County Emergency Management Agency	Sharing incident reports or performing incident response coordination
Ohio Department of Public Safety	Portage County Sheriff	Sharing incident reports or performing incident response coordination
Ohio Department of Public Safety	Stark County EMA	Sharing incident reports or performing incident response coordination
Ohio Department of Public Safety	Stark County Sheriff	Sharing incident reports or performing incident response coordination

Stakeholder A	Stakeholder B	Reason for Agreement
Ohio Department of Public Safety	Summit County EMA	Sharing incident reports or performing incident response coordination
Ohio Department of Public Safety	Summit County Sheriff	Sharing incident reports or performing incident response coordination
Ohio State Highway Patrol (OSHP)	City of Akron Department of Public Safety	Sharing incident reports or performing incident response coordination
Ohio State Highway Patrol (OSHP)	City of Akron Public Works Bureau	Sharing incident information. Providing incident response status. Requesting maintenance resources.
Ohio State Highway Patrol (OSHP)	City of Canton	Sharing incident reports or performing incident response coordination
Ohio State Highway Patrol (OSHP)	City of Canton Director of Public Safety	Sharing incident reports or performing incident response coordination
Ohio State Highway Patrol (OSHP)	City of Canton Street Department	Sharing incident information. Providing incident response status. Requesting maintenance resources.
Ohio State Highway Patrol (OSHP)	City of Cuyahoga Falls	Sharing incident reports or performing incident response coordination
Ohio State Highway Patrol (OSHP)	City of Cuyahoga Falls Public Works	Sharing incident information. Providing incident response status. Requesting maintenance resources.
Ohio State Highway Patrol (OSHP)	Commercial Fleet Management	Requesting hazmat information when a crash involving a hazmat vehicle has occurred.
Ohio State Highway Patrol (OSHP)	County Sheriff	Sharing incident reports or performing incident response coordination
Ohio State Highway Patrol (OSHP)	Municipal Engineering and Service	Sharing incident information. Providing incident response status. Requesting maintenance resources.
Ohio State Highway Patrol (OSHP)	Municipalities and Townships	Sharing incident reports or performing incident response coordination
Ohio State Highway Patrol (OSHP)	ODOT	Sharing incident information. Providing incident response status. Making resource requests.
Ohio State Highway Patrol (OSHP)	Ohio Department of Public Safety	Sharing incident reports or performing incident response coordination
Ohio State Highway Patrol (OSHP)	Ohio EPA	Providing reports of hazmat spills.
Ohio State Highway Patrol (OSHP)	Portage County Emergency Management Agency	Sharing incident reports or performing incident response coordination
Ohio State Highway Patrol (OSHP)	Portage County Engineer	Sharing incident information. Providing incident response status. Requesting maintenance resources.
Ohio State Highway Patrol (OSHP)	Portage County Sheriff	Sharing incident reports or performing incident response coordination
Ohio State Highway Patrol (OSHP)	Regional Hospital Organizations	Requesting care facility status or providing patient status

Stakeholder A	Stakeholder B	Reason for Agreement
Ohio State Highway Patrol (OSHP)	Regional Public Safety	Sharing incident reports or performing incident response coordination
Ohio State Highway Patrol (OSHP)	Special Police Departments	Sharing incident reports or performing incident response coordination
Ohio State Highway Patrol (OSHP)	Stark County EMA	Sharing incident reports or performing incident response coordination
Ohio State Highway Patrol (OSHP)	Stark County Engineer	Sharing incident information. Providing incident response status. Requesting maintenance resources.
Ohio State Highway Patrol (OSHP)	Stark County Sheriff	Sharing incident reports or performing incident response coordination
Ohio State Highway Patrol (OSHP)	Summit County EMA	Sharing incident reports or performing incident response coordination
Ohio State Highway Patrol (OSHP)	Summit County Engineer	Sharing incident information. Providing incident response status. Making resource requests.
Ohio State Highway Patrol (OSHP)	Summit County Sheriff	Sharing incident reports or performing incident response coordination
Ohio Turnpike Commission (OTC)	Metro-Networks	Providing current asset restrictions and maintenance work plans.
Ohio Turnpike Commission (OTC)	ODOT	Providing roadway maintenance status. Coordination of traffic information, work plans and maintenance resources.
Ohio Turnpike Commission (OTC)	Ohio State Highway Patrol (OSHP)	Providing roadway maintenance status.
Ohio Turnpike Commission (OTC)	Portage County Engineer	Coordinating work plans
Ohio Turnpike Commission (OTC)	Summit County Engineer	Coordinating work plans. Providing roadway maintenance status.
Portage Area Regional Transportation Authority (PARTA)	Kent State University	Coordination of transit service and traveler information.
Portage Area Regional Transportation Authority (PARTA)	Metro-Networks	Providing transit fare and schedule data.
Portage Area Regional Transportation Authority (PARTA)	Municipalities and Townships	Coordination of transit emergency data.
Portage Area Regional Transportation Authority (PARTA)	ODOT	Providing road network probe information
Portage Area Regional Transportation Authority (PARTA)	Portage County Sheriff	Coordination of transit emergency data.
Portage County Emergency Management Agency	Commercial Fleet Management	Requesting hazmat information when a crash involving a hazmat vehicle has occurred.

Stakeholder A	Stakeholder B	Reason for Agreement
Portage County Emergency Management Agency	Municipalities and Townships	Sharing incident reports or performing incident response coordination
Portage County Emergency Management Agency	Ohio Department of Public Safety	Sharing incident reports or performing incident response coordination
Portage County Emergency Management Agency	Ohio EPA	Providing reports of hazmat spills.
Portage County Emergency Management Agency	Ohio State Highway Patrol (OSHP)	Sharing incident reports or performing incident response coordination
Portage County Emergency Management Agency	Portage County Sheriff	Sharing incident reports or performing incident response coordination
Portage County Emergency Management Agency	Stark County EMA	Sharing incident reports or performing incident response coordination
Portage County Emergency Management Agency	Summit County EMA	Sharing incident reports or performing incident response coordination
Portage County Engineer	Akron Metropolitan Area Transportation Study (AMATS)	Providing traffic information for archiving.
Portage County Engineer	County Government	Coordination of maintenance resources and work plans.
Portage County Engineer	Metro-Networks	Providing current asset restrictions, work zone information, and maintenance work plans.
Portage County Engineer	Municipal DPW and Services	Coordination of maintenance resources and work plans. Providing roadway maintenance status and work zone information
Portage County Engineer	Municipalities and Townships	Share incident information. Provide work zone information and response to resource requests.
Portage County Engineer	National Weather Service	Providing environmental sensor data.
Portage County Engineer	ODOT	Providing roadway maintenance status. Coordination of traffic information, work plans and maintenance resources.
Portage County Engineer	Ohio State Highway Patrol (OSHP)	Sharing incident information. Provide roadway maintenance status, work zone information, and maintenance resource response status.
Portage County Engineer	Ohio Turnpike Commission (OTC)	Coordination of work plans.
Portage County Engineer	Portage Area Regional Transportation Authority (PARTA)	Provide current asset restrictions, road network conditions, work zone information and roadway maintenance status.
Portage County Engineer	Railroad Operator	Provide work plans and highway rail intersection status.
Portage County Engineer	School Districts	Providing current asset restrictions, roadway maintenance status, work zone information, and road network conditions.

Stakeholder A	Stakeholder B	Reason for Agreement
Portage County Engineer	Summit County Engineer	Coordinate work plans and maintenance resources. Provide work zone information
Portage County Sheriff	City of Akron Department of Public Safety	Sharing incident reports or performing incident response coordination
Portage County Sheriff	Commercial Fleet Management	Requesting hazmat information when a crash involving a hazmat vehicle has occurred.
Portage County Sheriff	County Sheriff	Sharing incident reports or performing incident response coordination
Portage County Sheriff	Municipal DPW and Services	Requesting maintenance resources.
Portage County Sheriff	Municipal Engineering and Service	Sharing incident information. Providing incident response status.
Portage County Sheriff	Municipalities and Townships	Sharing incident reports or performing incident response coordination
Portage County Sheriff	ODOT	Sharing incident information. Providing incident response status. Making resource requests.
Portage County Sheriff	Ohio Department of Public Safety	Sharing incident reports or performing incident response coordination
Portage County Sheriff	Ohio EPA	Providing reports of hazmat spills.
Portage County Sheriff	Ohio State Highway Patrol (OSHP)	Sharing incident reports or performing incident response coordination
Portage County Sheriff	Portage Area Regional Transportation Authority (PARTA)	Coordinating transit emergency data.
Portage County Sheriff	Portage County Emergency Management Agency	Sharing incident reports or performing incident response coordination
Portage County Sheriff	Private Ambulance Companies	Sharing incident reports or performing incident response coordination
Portage County Sheriff	Private Tow/ Wrecker Companies	Sharing incident reports or performing incident response coordination
Portage County Sheriff	Regional Public Safety	Sharing incident reports or performing incident response coordination
Regional Public Safety	City of Akron Department of Public Safety	Sharing incident reports or performing incident response coordination
Regional Public Safety	City of Canton Director of Public Safety	Sharing incident reports or performing incident response coordination
Regional Public Safety	City of Cuyahoga Falls	Sharing incident reports or performing incident response coordination
Regional Public Safety	Municipalities and Townships	Sharing incident reports or performing incident response coordination
Regional Public Safety	Ohio State Highway Patrol (OSHP)	Sharing incident reports or performing incident response coordination
Regional Public Safety	Portage County Sheriff	Sharing incident reports or performing incident response coordination
Regional Public Safety	Special Police Departments	Sharing incident reports or performing incident response coordination

Stakeholder A	Stakeholder B	Reason for Agreement
Regional Public Safety	Stark County EMA	Sharing incident reports or performing incident response coordination
Regional Public Safety	Stark County Sheriff	Sharing incident reports or performing incident response coordination
Regional Public Safety	Summit County EMA	Sharing incident reports or performing incident response coordination
Regional Public Safety	Summit County Sheriff	Sharing incident reports or performing incident response coordination
Special Police Departments	Ohio State Highway Patrol (OSHP)	Sharing incident reports or performing incident response coordination
Special Police Departments	Regional Public Safety	Sharing incident reports or performing incident response coordination
Summit County EMA	City of Akron Department of Public Safety	Sharing incident reports or performing incident response coordination
Summit County EMA	City of Canton Director of Public Safety	Sharing incident reports or performing incident response coordination
Summit County EMA	City of Cuyahoga Falls	Sharing incident reports or performing incident response coordination
Summit County EMA	Commercial Fleet Management	Requesting hazmat information when a crash involving a hazmat vehicle has occurred.
Summit County EMA	Municipalities and Townships	Sharing incident reports or performing incident response coordination
Summit County EMA	ODOT	Sharing incident information. Providing incident response status. Making resource requests.
Summit County EMA	Ohio Department of Public Safety	Sharing incident reports or performing incident response coordination
Summit County EMA	Ohio EPA	Providing reports of hazmat spills.
Summit County EMA	Ohio State Highway Patrol (OSHP)	Sharing incident reports or performing incident response coordination
Summit County EMA	Portage County Emergency Management Agency	Sharing incident reports or performing incident response coordination
Summit County EMA	Regional Public Safety	Sharing incident reports or performing incident response coordination
Summit County EMA	Stark County EMA	Sharing incident reports or performing incident response coordination
Summit County EMA	Summit County Sheriff	Sharing incident reports or performing incident response coordination
Summit County Engineer	Akron Metropolitan Area Transportation Study (AMATS)	Providing traffic information for archiving. Providing maintenance work plans.
Summit County Engineer	City of Akron	Providing maintenance work plans.
Summit County Engineer	City of Akron Department of Public Safety	Provide work zone information.
Summit County Engineer	City of Akron Engineering Bureau	Coordination of work plans. Provide work zone information



Stakeholder A	Stakeholder B	Reason for Agreement
Summit County Engineer	City of Akron Public Works Bureau	Coordination of work plans and resources. Provide roadway maintenance status and work zone information.
Summit County Engineer	City of Akron Traffic Engineering	Coordinate traffic information.
Summit County Engineer	City of Cuyahoga Falls	Provide road network conditions and work zone information.
Summit County Engineer	City of Cuyahoga Falls Public Works	Coordination of work plans and resources. Provide roadway maintenance status and work zone information.
Summit County Engineer	City of Cuyahoga Falls Technical Services	Coordinate traffic information.
Summit County Engineer	County Government	Coordination of work plans and resources. Provide work zone information.
Summit County Engineer	Metro Regional Transit Authority (METRO)	Providing current asset restrictions, roadway maintenance status, work zone information, and road network conditions.
Summit County Engineer	Metro-Networks	Providing current asset restrictions, work zone information, and maintenance work plans.
Summit County Engineer	Municipal DPW and Services	Coordination of work plans and resources. Provide work zone information and roadway maintenance status.
Summit County Engineer	Municipalities and Townships	Sharing incident information. Provide response to maintenance requests and work zone information.
Summit County Engineer	National Weather Service	Providing environmental sensor data.
Summit County Engineer	ODOT	Sharing of traffic information and sharing of device control. Coordination of work plans and maintenance resources.
Summit County Engineer	Ohio State Highway Patrol (OSHP)	Sharing incident information. Provide roadway maintenance status, work zone information, and maintenance resource response status.
Summit County Engineer	Ohio Turnpike Commission (OTC)	Coordination of work plans.
Summit County Engineer	Portage County Engineer	Coordination of work plans and resources. Provide work zone information.
Summit County Engineer	Railroad Operator	Provide work plans and highway rail intersection status.
Summit County Engineer	School Districts	Providing current asset restrictions, roadway maintenance status, work zone information, and road network conditions.



Stakeholder A	Stakeholder B	Reason for Agreement
Summit County Engineer	Stark County Engineer	Sharing incident information. Providing incident response status. Making resource requests.
Summit County Engineer	Summit County Sheriff	Sharing incident reports or performing incident response coordination
Summit County Sheriff	City of Akron	Sharing incident reports or performing incident response coordination
Summit County Sheriff	City of Akron Department of Public Safety	Sharing incident reports or performing incident response coordination
Summit County Sheriff	City of Akron Traffic Engineering	Sharing incident information. Providing incident response status. Making resource requests.
Summit County Sheriff	City of Cuyahoga Falls	Sharing incident reports or performing incident response coordination
Summit County Sheriff	Commercial Fleet Management	Requesting hazmat information when a crash involving a hazmat vehicle has occurred.
Summit County Sheriff	County Sheriff	Sharing incident reports or performing incident response coordination.
Summit County Sheriff	Metro Regional Transit Authority (METRO)	Coordination of transit emergency data.
Summit County Sheriff	Municipal Engineering and Service	Share incident information. Request resources. Provide incident response status.
Summit County Sheriff	Municipalities and Townships	Sharing incident reports or performing incident response coordination
Summit County Sheriff	ODOT	Sharing incident information. Providing incident response status. Making resource requests.
Summit County Sheriff	Ohio Department of Public Safety	Sharing incident reports or performing incident response coordination
Summit County Sheriff	Ohio EPA	Providing reports of hazmat spills.
Summit County Sheriff	Ohio State Highway Patrol (OSHP)	Sharing incident reports or performing incident response coordination
Summit County Sheriff	Private Ambulance Companies	Sharing incident reports or performing incident response coordination
Summit County Sheriff	Private Tow/ Wrecker Companies	Sharing incident reports or performing incident response coordination
Summit County Sheriff	Regional Public Safety	Sharing incident reports or performing incident response coordination
Summit County Sheriff	Stark County Sheriff	Sharing incident reports or performing incident response coordination
Summit County Sheriff	Summit County EMA	Sharing incident reports or performing incident response coordination
Summit County Sheriff	Summit County Engineer	Sharing incident reports or performing incident response coordination

## 11. Using the Regional ITS Architecture

Once a regional ITS architecture has been created, it's important that it be used as a key reference in the transportation planning process. This will ensure all proposed ITS projects are consistent with the regional ITS architecture and additional integration opportunities are considered, leading to more efficient implementations.

For the AMATS area the primary planning document from an ITS standpoint is the ITS Strategic Deployment Plan for the Akron Metropolitan Area Transportation Study (AMATS) region, which was created in 1999. The original SDP provided a blueprint for the integrated deployment of Intelligent Transportation Systems (ITS) in the AMATS region. The SDP has been used to support the integration of the numerous ITS actions underway and to insure that future projects contribute to the effective use of transportation technologies. The SDP included a list of recommended projects as a Deployment Action Plan and identified the funding needed to implement this plan. As a part of this original plan, an initial Akron Regional ITS Architecture was created. This effort was completed prior to the issuing of the final rule on Architecture and Standards, with its specific set of requirements on a regional ITS architecture.

With the completion of the initial version of the Akron-Canton Regional ITS Architecture, the SDP should be reviewed and considered for update, and the information gathered and described in the regional ITS architecture be used to update the document.

The update of the SDP can then serve as a key input to the primary planning documents of the region that are the Regional Transportation Plan (RTP) and the Transportation Improvement Program (TIP). The current version of the RTP for AMATS is the AMATS Long Range Transportation Needs and 2025 Regional Transportation Plan (dated May 2002). It is the long-range guide for major investments in Akron's multimodal ground transportation system. The RTP recommends major projects, systems, policies and strategies designed to maintain the existing transportation system and serve the region's future travel needs.

The regional ITS architecture should also be considered for support in ITS project development cycle. This begins with project definition, followed by procurement, leading to implementation. Information in the regional ITS architecture can assist in all three of these areas of project development.

Project Definition may occur at several levels of detail. Early in the planning process a project may be defined only in terms of the transportation services it will provide, or by the major system pieces it contains. At some point prior to the beginning of implementation the details of the project must be developed. This could include further system definition and interface definition including exactly what systems or parts of systems will make up the project, what interconnections the project entails, and what information needs to flow across the system interconnections. Requirements definition may go through similar levels of detail, starting with very high-level description of project functions and moving toward system specifications. By identifying the portions of the regional ITS architecture that define the project, the regional ITS architecture outputs can be used to create key aspects of the project definition.

The areas that a regional ITS architecture can assist in project definition are:

- The identification of agency roles and responsibilities (including any inter-agency cooperation) can come from the operational concept developed as part of the regional ITS architecture. This operational concept can either serve as a starting point for a more detailed definition, or possibly provide all the needed information.
- Requirements definition can be completely or partly defined by using the regional ITS architecture functional requirements applicable to the project.
- The regional ITS architecture includes a map to ITS standards and the project mapping to the regional ITS architecture can extract the applicable ITS standards for the project.

Once a project is defined, and funding for it is committed, the implementation process can commence with the generation of a Request For Proposal (RFP), which is the common governmental practice for initiating a contract with the private sector to implement the project. Once a contract is in place, project implementation begins and moves through design, development, integration, and testing.

The regional ITS architecture, and the products produced during its development, can support this RFP generation. First the project definition described above forms the basis for what is being procured. Mapping the project to the regional ITS architecture allows bidders to have a clear understanding of the scope of the project and of the interfaces that need to be developed. The functional requirements created as part of the regional ITS architecture can be used to describe the functional requirements for the project. In addition a subset of the ITS Standards identified as part of the regional ITS architecture development can be specified in the RFP. Because ITS projects involve systems and their interconnections, it is very important to follow a system engineering approach to designing and implementing the project. While the exact process followed is at the discretion of the local agency, the ITS Architecture and Standards Rule/Policy lay out a set of required system engineering analyses for ITS projects funded through the highway trust fund.

The required system engineering analysis steps are:

- Identification of portions of the regional ITS architecture being implemented (or if a regional ITS architecture does not exist, the applicable portions of the *National ITS Architecture*);
- Identification of participating agencies' roles and responsibilities;
- Requirements definitions;
- Analysis of alternative system configurations and technology options to meet requirements;
- Procurement options;
- Identification of applicable ITS standards and testing procedures; and
- Procedures and resources necessary for operations and management of the system.

The regional ITS architecture can provide inputs to a number of these steps as shown in Table 10:

**Table 10: System Engineering Requirements supported by Regional ITS Architecture**

<b>System Engineering Requirements</b>	<b>Regional ITS Architecture output</b>
Identification of portions of the regional ITS architecture being implemented	Mapping project to the elements and interfaces of the regional ITS architecture
Identification of participating agencies' roles and responsibilities	Use Operational Concept as a starting point
Requirements definitions	Use Functional Requirements as a starting point.
Identification of applicable ITS standards and testing procedures	Use regional architecture standards outputs as a starting point for the standards definition.

In summary, the regional ITS architecture represents a detailed plan for the evolution of the ITS systems in the region and can be used to support regional transportation planning efforts and project development efforts.

## **12. Maintaining the Regional ITS Architecture**

The Akron-Canton Regional ITS architecture is not a static set of outputs. It must change as plans change, ITS projects are implemented, and the ITS needs and services evolve in the region. This section describes a proposed plan for the maintenance of the architecture. The plan covers the following four key areas:

- Who will be involved in the maintenance of the architecture?
- When will the architecture be updated?
- What will be maintained?
- How it will be maintained (i.e. what configuration control process will be used)?

The regional ITS architecture is created as a consensus view of what ITS systems the stakeholders in the region have currently implemented and what systems they plan to implement in the future. The regional ITS architecture will need to be updated to reflect changes resulting from project implementation or resulting from the planning process itself.

- **Changes for Project Definition.** When actually defined, a project may add, subtract or modify elements, interfaces, or information flows from the regional ITS architecture. Because the regional ITS architecture is meant to describe the current (as well as future) regional implementation of ITS, it must be updated to correctly reflect how the developed projects integrate into the region.
- **Changes for Project Addition/Deletion.** Occasionally a project will be added or deleted through the planning process and some aspects of the regional ITS architecture that are associated with the project may be expanded, changed or removed.
- **Changes in Project Priority.** Due to funding constraints, or other considerations, the planned project sequencing may change. Delaying a project may have a ripple effect on other projects that depend on it. Raising the priority for a project's implementation may impact the priority of other projects that are dependent upon it.

- Changes in Regional Needs. Transportation planning is done to address regional needs. Over time these needs can change and the corresponding aspects of the regional ITS architecture that addresses these needs may need to be updated.

In addition, new stakeholders may come to the table and the regional ITS architecture should be updated to reflect their place in the regional view of ITS elements, interfaces, and information flows.

Finally, the National ITS Architecture may be expanded and updated from time to time to include new user services or better define how existing elements satisfy the user services. National ITS Architecture version 5.0 has recently been released (after the completion of this architecture) and contains a new user service- Disaster Response and Evacuation, that should be given full consideration at a future update. These changes should also be considered as the regional ITS architecture is updated. The National ITS Architecture may have expanded to include a user service that has been discussed in a region, but not been included in the regional ITS architecture, or been included in only a very cursory manner.

### ***12.1. Roles and Responsibilities for Maintenance***

Responsibility for maintenance of the Akron-Canton Regional ITS Architecture will lie jointly with AMATS and SCATS, since they are the primary planning organization for the region, and will be one of the primary users of the architecture. While they will assume responsibility for maintenance, the region will also need a group of core stakeholders to act as an “institutional framework” to review proposed changes to the architecture. The regional ITS architecture is a consensus framework for integrating ITS systems in the region. As it was a consensus driven product in its initial creation, so it should remain a consensus driven product as it is maintained. The logical institutional framework for Akron-Canton regions is the Akron-Canton Freeway Management System Detailed Project Plan Advisory Committee (since they are advising the development of the largest ITS project in the region).

This section defines the stakeholders and their roles and responsibilities for the maintenance of the Akron-Canton Regional ITS Architecture.

#### **Definitions**

The following stakeholder groups will have a role in the maintenance of the architecture:

- Stakeholders – Any government agency or private organization that has a role in providing transportation services in the region.
- Maintenance Working Group – A group of stakeholder representatives who are responsible for the technical review of updates/changes to the Akron-Canton ITS Architecture, and for approving changes to go into the architecture.
- Responsible Agency – The stakeholder agency with primary responsibility for maintenance of the architecture.
- Maintenance Manager – A person responsible for overseeing and guiding the maintenance efforts.

## **Stakeholders**

Stakeholders are any government agency or private organization that is involved with or has an interest in providing transportation services in the state. Each stakeholder owns, operates, and/or maintains one or more ITS elements in the architecture.

The success of the change management process outlined in this Maintenance Plan is highly dependent on the participation of the stakeholders identified in the architecture. Without stakeholders participation in tracking the development of they're ITS systems, and properly updating the architecture, the change management process will not succeed and the usefulness of the architecture will diminish over time.

The primary responsibilities of the stakeholder agencies are submitting the changes in major plans or projects to the Maintenance Working Group.

If stakeholders desire more involvement, they can get involved through voluntary representation on the Maintenance Working Group.

## **Maintenance Working Group**

The Akron-Canton ITS Architecture Maintenance Working Group, or the Maintenance Working Group has the following responsibilities:

- Collecting and compiling proposed changes and updates to the architecture from stakeholder agencies.
- Evaluating each proposed change from a technical standpoint, and reaching a consensus on the proposed change.
- Approving changes to the architecture.
- Making any institutional or policy related decisions that arise in the maintenance of the architecture

The logical composition of the maintenance working group for the region is the Akron-Canton Freeway Management System Detailed Project Plan Advisory Committee (since they are advising the development of the largest ITS project in the region). The maintenance working group shall have one "voting member" from each major stakeholder in the region.

The Maintenance Working Group should elect a Chairperson to conduct the meetings. The Chairperson will be responsible for calling meetings and leading the meetings. The Chairperson will be elected for a two-year term by a majority vote of the eligible representatives present.

## **Responsible Agency**

The Responsible Agency is the government agency that will formally maintain the architecture. The Responsible Agency will assign resources for making the physical changes to the architecture baseline, and for coordinating the maintenance of the architecture. For the maintenance of the Akron-Canton Regional ITS Architecture, the Responsible Agency will be AMATS and SCATS, since they are the primary planning organizations for the region, and will be two of the primary users of the architecture.



## Maintenance Manager

The Responsible Agency should appoint a person to the role of Maintenance Manager to coordinate the maintenance activities of the Akron-Canton Regional ITS Architecture. The Maintenance Manager will be the coordinator and main point of contact for all maintenance activities, including receiving Change Requests forms, tracking Change Requests, and distributing documentation. The Maintenance Manager is ideally an employee of the Responsible Agency who is formally tasked with the described efforts, but it is not a requirement. .

The Maintenance Manager has the following responsibilities:

- Coordinate the activities of the Maintenance Working Group
- Receive Change Request forms and requests for documentation from Stakeholders
- Distributes the baseline documents and outputs of the architectures to stakeholders.
- Maintains the “official” records of the Akron-Canton ITS Architecture, including the baseline documents, meeting minutes, the Change Request Database, and the list of Points of Contacts for the Stakeholder
- Ensures the status of each Change Request are properly updated in the Change Request Database

Some of these responsibilities will likely be delegated to staff or consultants.

## 12.2. Timetable for Maintenance

How often will the regional ITS architecture be modified or updated? What events or timetable will be used for making updates or changes to the architecture?

The timetable will depend on the basic approach chosen for maintaining the architecture. There are several options that could be considered:

- **Periodic Maintenance.** This approach ties the maintenance of the architecture to one of the recurring activities of the transportation planning process. For example, it’s natural that the ITS architecture would be updated at the same frequency as the statewide transportation plan is updated (every three to five years) or the Statewide Transportation Improvement Program is updated (at least every two years). The update of the architecture should occur several months prior to the transportation planning document update, so that the revised architecture could serve as an input to the planning update. Publication and versioning costs are minimized for the periodic maintenance approach since there is a new version only once in the maintenance cycle.
- **Exception Maintenance.** This approach considers and makes changes to the regional ITS architecture in a process that is initiated as needed. Publication and versioning costs are dependent on the frequency of changes made to the regional ITS architecture.

### Timetable Approach

*A comprehensive architecture update should occur every three years*, concurrent with the formal update of the TIP. This is a natural result of the Akron-Canton ITS Architecture being a component of the statewide transportation planning process. The update is necessary to ensure that the architecture continues to accurately represent the regional view of ITS Systems. The comprehensive update may include adding new stakeholders, reviewing transportation needs and services for the region, updating the status of projects, and reflecting new goals and strategies, as



appropriate. Operational concepts, system functional requirements, project sequencing, ITS standards, and list of agency agreements may also be updated at this time.

***Between major updates of the architecture, the following interim update actions will be performed:***

- Accept comments as they come in and make ***minor updates every 6 months if needed***. Defer any major changes to the yearly update.
- ***Actively solicit changes on an annual basis*** from each key stakeholder a set of needed updates. ***Perform minor or major updates as needed*** based upon the inputs and any other change requests received.

The Maintenance Plan should also be reviewed at the previously discussed times for required changes. Use of the Akron-Canton Regional ITS Architecture and modifications to it may differ from what was anticipated during the initial development of the Maintenance Plan. Revising the Maintenance Plan may ensure that the change management process defined is effective.

### **12.3. Architecture Baseline**

Establishing an architecture baseline requires clear identification of the architecture products that will be maintained, including specific format and version information. For the Akron-Canton Regional ITS Architecture the following outputs represent the architecture baseline:

- Architecture Document (this document)
- Turbo Architecture Database
- Regional ITS Architecture Web pages
- Change Request Database

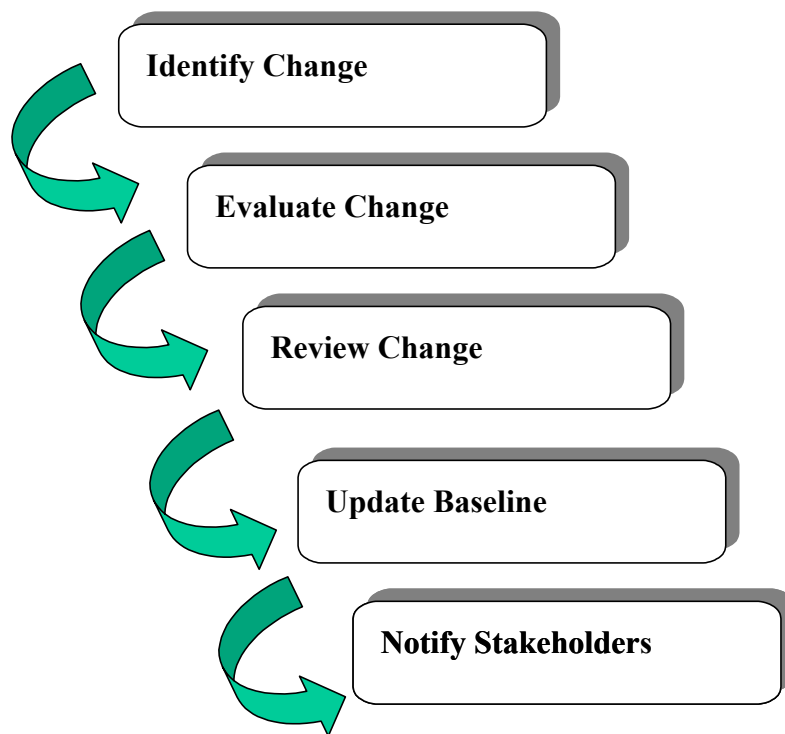
Regarding the Architecture document, the source document (in Microsoft Word format) will be held by AMATS/SCATS, while a PDF version of the document can be created for general distribution. In addition, a version number and date is included inside the cover page.

Regarding the Turbo Architecture Database, AMATS/SCATS maintains a zipped version of the final delivered Akron-Canton Regional ITS Architecture database. The name, date, and size of the database file inside the zipped file should be entered into an architecture log as version 1.0 of the architecture.

Regarding the web site, a CD-ROM version of the final web site should be maintained by AMATS/ SCATS. The version number of the architecture should be entered somewhere on the home page of the web site so that the version being viewed is immediately identifiable.

### **12.4. Change Management Process**

Once the baseline is defined, the process for making changes to this baseline must be established. The change management process specifies how changes are identified, how often they will be made, and how the changes will be reviewed, implemented, and released. The basic process for change management is shown in Figure 7.



**Figure 7: Change Management Process**

### **Identify Change**

This involves two issues-

- who can identify a change to the architecture and
- how will the change request be documented.

For a region as large as Akron-Canton, the question of who can make change requests is an important one. If literally anyone can input requests the region runs the risk of being overrun by requests that will tax scarce resources to review and decide upon. On the other end of the spectrum, if too much formality or paperwork is added to the process then many valid or needed changes may go unexpressed. The plan is that all changes should come through a voting member of the Maintenance Working Group. This effectively means that any change suggested has the approval of a member of the working group. This has the added benefit of spreading the resources needed to generate or evaluate changes among the group.

As to how the change request should be documented—a simple change request form should be created that contains at least the following information

- Name of change
- Description of change
- Part of baseline affected (could be check boxes for document, database, web site, and not known)
- Rationale for change
- Originator name or agency
- Date of origination

This information will ultimately be added to a change database (maintained by AMATS/SCATS personnel) that will add the following additional fields of information

- Change number (some unique identifier)
- Change disposition (accepted, rejected, deferred)
- Change type (minor or significant)
- Disposition comment
- Disposition date

### **Evaluate Change**

Upon receiving a Change Request by the Maintenance Manager, an initial evaluation of the Change Request is to be made for the impact to the overall architecture or the affected document. The purpose of the evaluation is two-fold:

- Verify that the Change Request form and supporting materials is complete and correct
- Compare with other Change Request forms and determine if there are any conflicts

If the proposal for architecture modification has an impact on other stakeholders, the evaluator(s) should contact the Stakeholders to confirm their agreement with the modification. All Stakeholders directly affected by the proposed change(s) must approve and sign-off the Change Request before the Maintenance Working Group considers the Change Request.

There are several options as to who performs the initial assessment, including:

- The Maintenance Manager
- Maintenance Working Group
- The person submitting the change
- A consultant, hired to support the maintenance activities of the architecture

Each of the above options has positive and negative implications, but the evaluator must have working knowledge of the architecture to evaluate the proposed changes.

### **Reviewing the Change Request**

Upon completing the initial assessment, the Change Request form should be reviewed by the Maintenance Working Group (either at a Maintenance Working Group meeting or via some electronic means). Maintenance Working Group meetings are usually called by the Maintenance Manager.

Maintenance Working Group meetings called by the Maintenance Manager will occur, if necessary, on an annual basis. On an annual basis, the Maintenance Manager will send a reminder to all Stakeholders to update their ITS Elements and Interfaces in the architecture, if necessary. If sufficient Change Request Forms are submitted, the Maintenance Manager will call a Maintenance Working Group meeting to review the Change Request forms and will act as Chairperson for that meeting. The Maintenance Manager will distribute the Change Request forms and all supporting materials to all Stakeholders prior to the meeting for their review and assemble an agenda.

Maintenance Working Group meetings can also be called by one of the stakeholders if there is an urgent need to update the architecture quickly. In this event, the stakeholder will send a request to hold a Maintenance Working Group, host the meeting, and appoint a Chairperson for that

meeting. The Chairperson will distribute the Change Request forms and all supporting materials to all Stakeholders prior to the meeting for their review, and assemble an agenda.

The Maintenance Working Group should have sufficient time to review the Change Requests before the meeting. During the meeting, the Maintenance Working Group shall review the proposed changes and offer any comments.

After each Change Request is reviewed, if no further comments are offered by the Maintenance Working Group, the Change Request will be considered approved, and the Chairperson shall sign off on the Change Request.

If additional comments are made that require action, those comments should be noted on the Change Request form. These comments are to be addressed by the person submitting the Change Request form, and then submitted for review again at the next meeting of the Maintenance Working Group.

If a Change Request is to be withdrawn from consideration, the Chairperson or the Maintenance Manager must sign-off on the Change Request Form to close out the Change Request.

At the end of the meeting, the Maintenance Working Group shall agree if all the approved changes to the architecture necessitates a minor revision of the appropriate baseline documents or a major revision. The decision will be based on the number of Change Requests approved and the nature of the approved changes.

Minutes should be kept for all Maintenance Working Group meetings. Minutes should include, at a minimum, an attendance list, comments made on each Change Request, and the disposition of each Change Request Form (Approved/Withdrawn/Request More Information). Minutes are to be distributed to all members of the Maintenance Working Group meeting no less than 5 working days after the meeting. Comments are due within 10 working days to the Maintenance Manager. Approved minutes shall be signed by the Chairperson and will be distributed to all Stakeholders and posted on the website. The minutes provide a recording process for the change management process and provides traceability.

One additional procedure the region will use to streamline the review and approval process for minor Change Requests, handling via email rather than through face to face meetings.

**Update Baseline:** The decision is implemented.

If the decision is to accept the change, then the appropriate portions of the architecture baseline are updated and an updated architecture baseline is defined. In addition to updating the baseline documents, databases, or other outputs, the configuration status should be updated. In the discipline of Configuration Management this is known as Configuration Status Accounting. This accounting is performed by having a document that defines the following information for each separate output of the architecture baseline:

- Output name;
- Output revision number;
- Date of latest revision;
- File Name; and

- Location/Point of Contact.

Periodically, the information in the various outputs of the architecture baseline should be audited to assure that the different representations of the architecture information (e.g. the database and document) are in sync. This configuration auditing should be performed by someone independent of the staff or resources used to actually enter the changes.

**Notify Stakeholders:** Point of Contacts for each stakeholder will be notified by e-mail from the Maintenance Manager when baseline documents have been updated. All baseline documents shall also be available to stakeholders from a website or other electronic location, such as an ftp site. It is the responsibility of the Maintenance Manager to ensure the most recent document is available from the website.

Request for copies or access to the baseline documents should be made to the Maintenance Manager. Only Policy Committee members or the identified representatives from each stakeholder may request the baseline documents. It is the responsibility of that stakeholder representative to distribute the revised documents to all other members from his/her agency who requests a copy.

After major revisions to the architecture or the baseline documents, the Maintenance Working Group may elect to also provide all baseline documents to members on CD-ROMs

## **Appendix A: Comments and Disposition**

Number	Comment	Source		Completed	Disposition
1	The three page hand out that was distributed Wednesday afternoon, headed by Transportation service, Stakeholder, Roles/Responsibilities, needs to include the City of Akron Public Safety under incident management with the same entries as Cuyahoga Falls.	Strum, Charles	8/6/2003	8/17/2003	Added to Operational Concept Table
2	Anywhere it says "OHSP" it should be "OSHP" for Ohio State Highway Patrol - this is in the inventory and on the market packages diagrams.	Katie Ott	08/14/03	10/24/2003	Updated database
3	On the stakeholders table under "CRIS Data Users" Cuyahoga is spelled wrong	Katie Ott	08/14/03	10/24/2003	Updated database
4	Akron-Canton - MP MC03-1- On planned and existing - shouldn't the boxes also be solid and dashed lines? In this example the Field Equipment already exists but the TMC doesn't.	Bill Barlow	09/10/03	10/20/2003	The tools available do not provide for solid and dotted lines on the boxes.
5	Under the "maintenance and construction management" transportation service there is a bullet for "maintains City of Akron Signalized intersection equipment" under City of Akron PWB. Dave said this bullet should be under "City of Akron Traffic Engineering".	David Gasper	09/18/03	10/25/2003	Operational Concept Table updated.
6	ODOT Central Office Traffic Data Archive System- in Cleveland Arch same element but without the words Central Office. Also element has no connections in Akron Canton Arch.	Bruce Eisenhart	10/22/03	10/24/03	Updated Akron Arch to match Cleveland Arch. Creating a connection to ODOT Akron Canton FMC to mirror the one in Cleveland Arch
7	City of Cuyahoga Falls Roadway Element has ITS in the title- the rest don't	Bruce Eisenhart	10/22/2003	10/24/2003	Removed ITS from the title for City of Cuyahoga County Field Equipment.



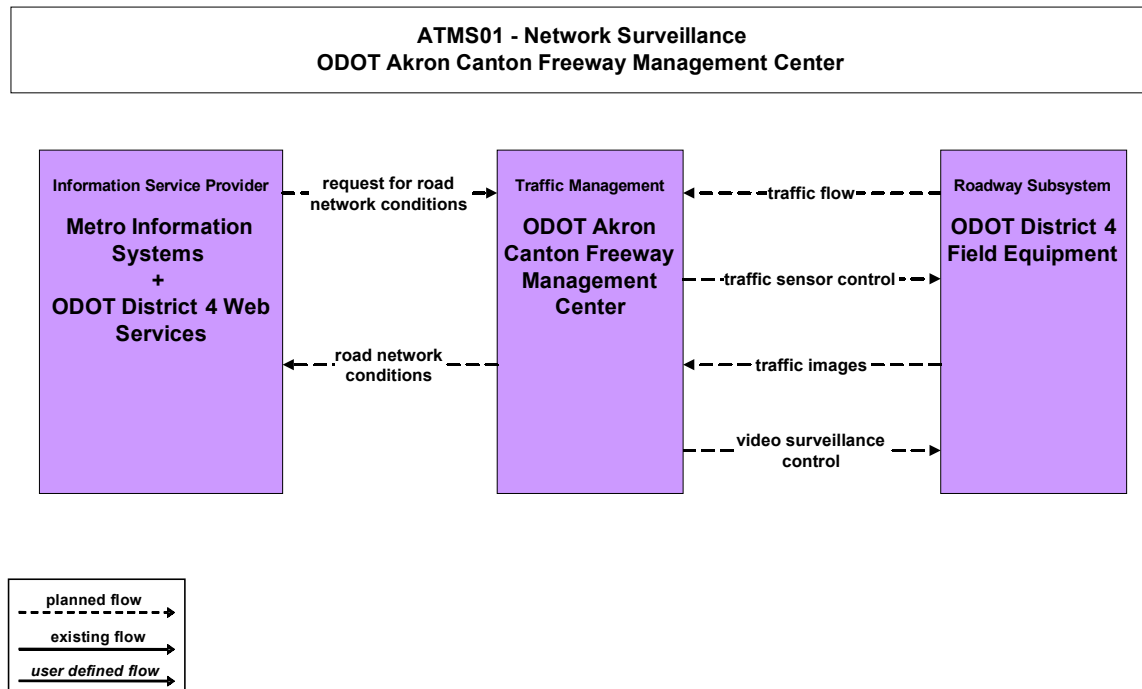
Number	Comment	Source	Date	Completed	Disposition
8	Fare reconciliation for regional fare cards will not occur between transit dispatch functions but between transit administration functions	Bruce Eisenhart	10/22/2003	10/24/2003	Add new element Metro Administration and create new Market Package Diagram for fare reconciliation with this element.
9	Road network conditions are not passed from the ODOT FMC to the ODOT 511 system. Nor is road work info.	Bruce Eisenhart	10/22/2003	10/24/2003	Added road network conditions connection as part of ATMS06-1. Also added as part of ATIS1-1 along with road work info connection.
10	Metro-Traffic Information Systems- this element has slightly different name and stakeholder in the two arch. Since the Metro Networks person was at Cleveland- use this version of element.	Bruce Eisenhart	10/22/2003	10/24/2003	Element and stakeholder name changed for consistency between arch.
11	OSHP Vehicles do not have interfaces to Hospitals, nor any AVL (although OSHP has both in the Cleveland Arch)	Bruce Eisenhart	10/22/2003	10/24/2003	Add EM2-3 to provide both.
12	There are no interfaces to maintenance or public safety elements outside the region at a county level	Bruce Eisenhart	10/22/2003	10/27/2003	Added two elements- Other County Public Safety Dispatch and Other County Maintenance Garages to represent counties bordering the region. Added connections in MC10, MC08, EM1, and ATMS08.
13	No EM to EVS interface for City of Cuyahoga Falls Publics Safety and County Public Safety in EM2.	Bruce Eisenhart	11/24/2003	11/24/2003	Added EM2-4 with vchile tracking and dispatch interface
14	No maint and road construction or winter maintenance market package diagrams for the the county maintenance systems	Bruce Eisenhart	11/24/2003	11/24/2003	Added MC07-6,7, and 8. Also Added MCO06 pages.

## **Appendix B: Customized Market Packages**

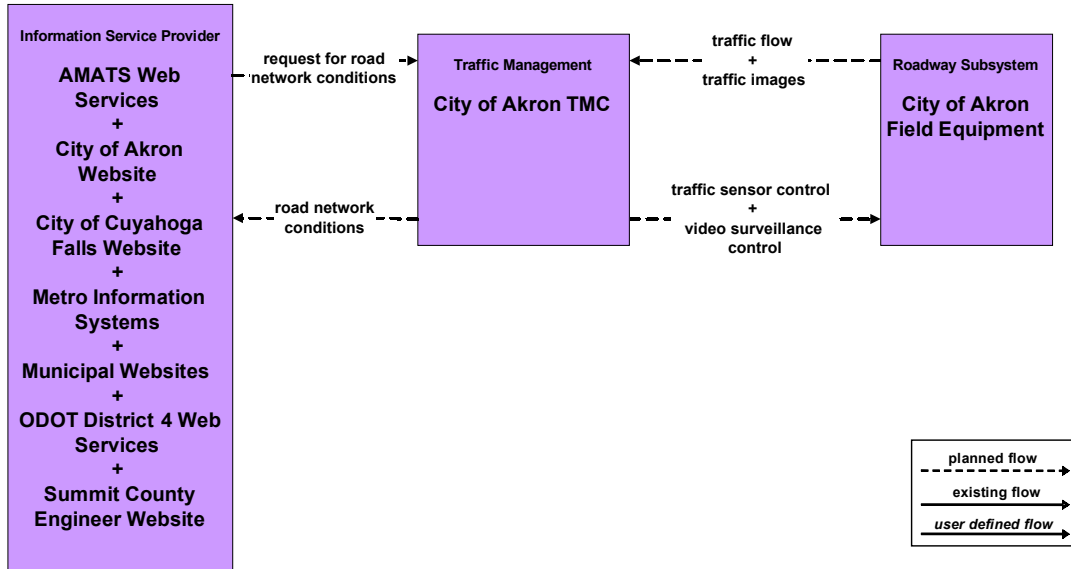
# Akron-Canton, Ohio Regional ITS Architecture

## Customized Market Package Diagrams

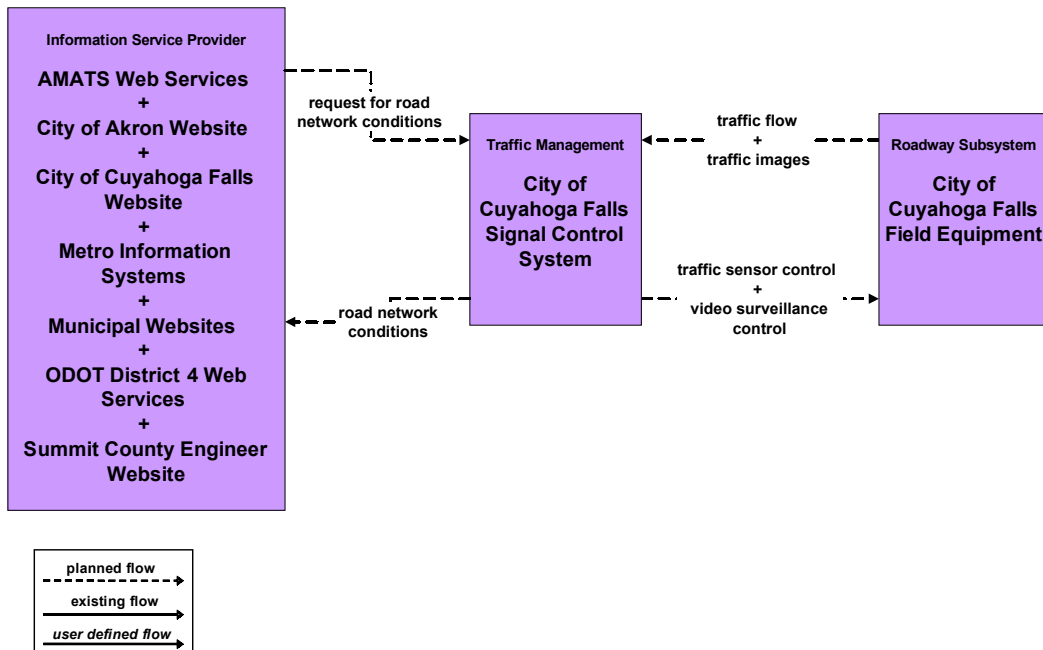
### Advanced Traffic Management Systems (ATMS)



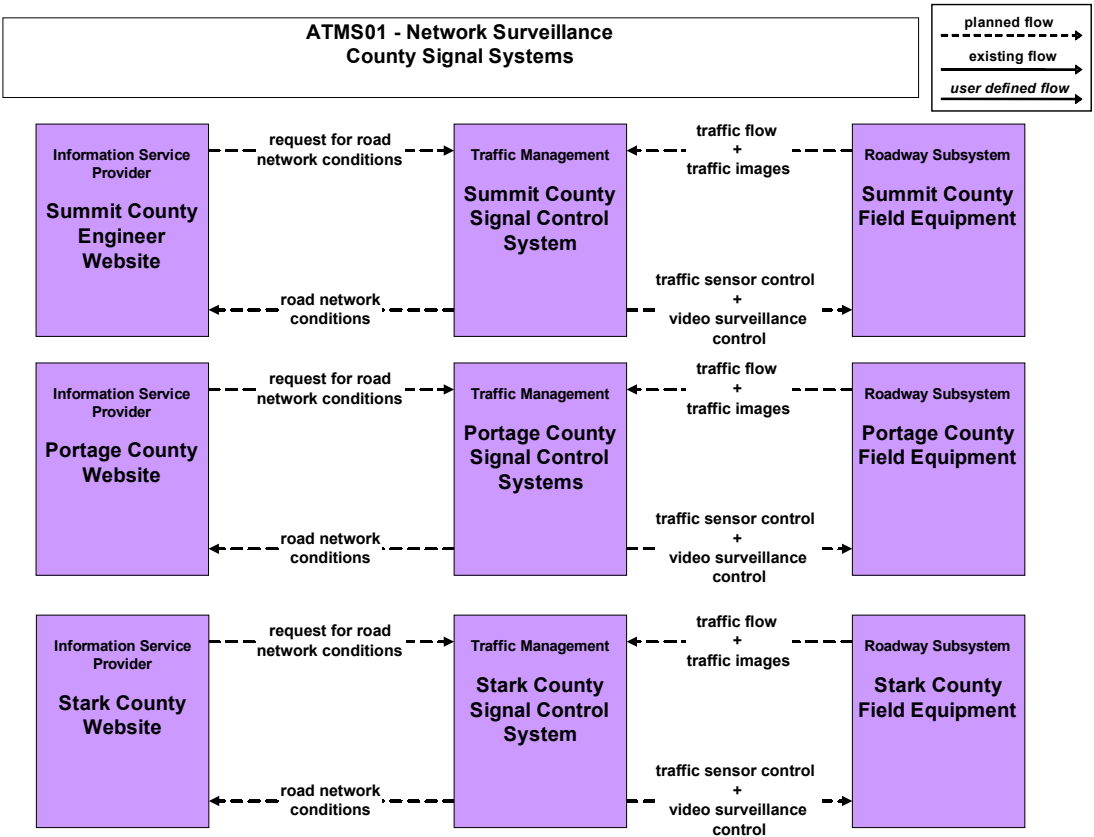
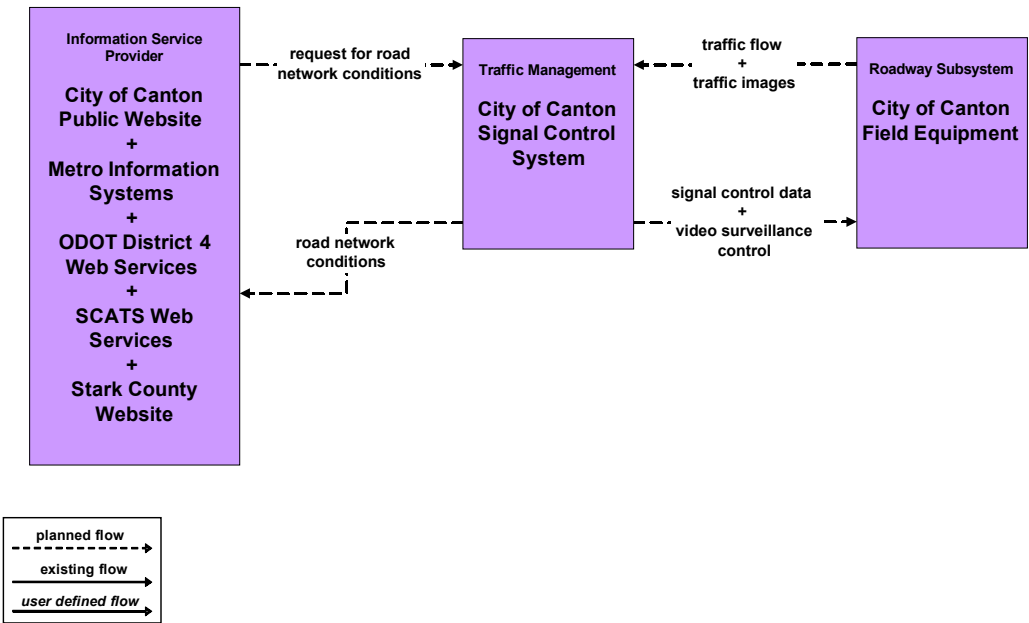
**ATMS01 - Network Surveillance  
City of Akron TMC**



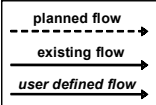
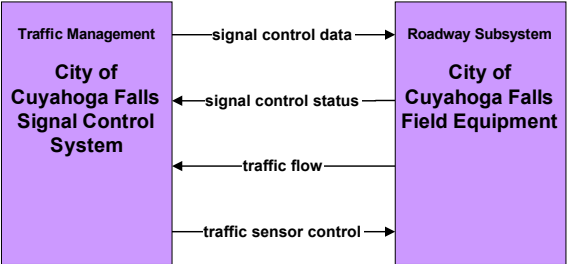
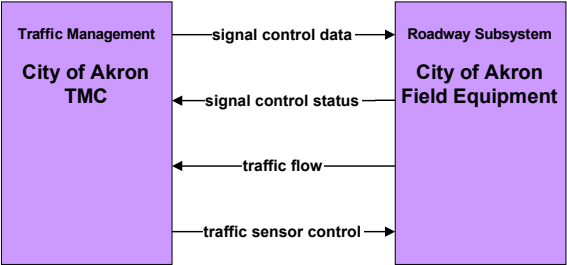
**ATMS01 - Network Surveillance  
City of Cuyahoga Falls Signal Control System**



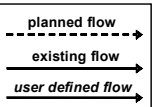
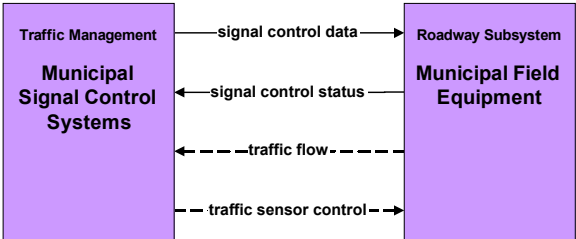
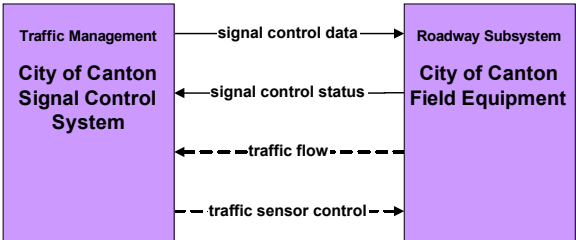
**ATMS01 - Network Surveillance**  
**City of Canton Signal Control System**



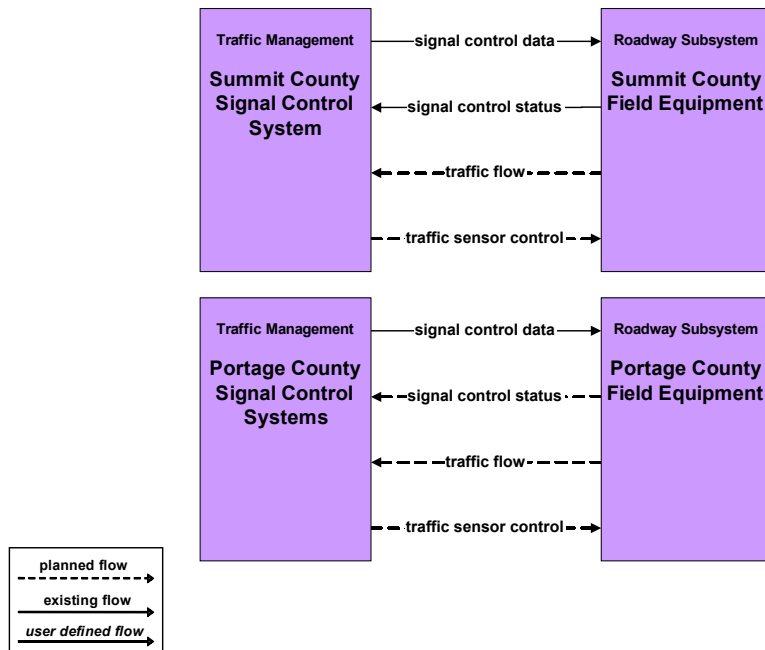
**ATMS03 - Surface Street Control**  
**City of Akron / City of Cuyahoga Falls**



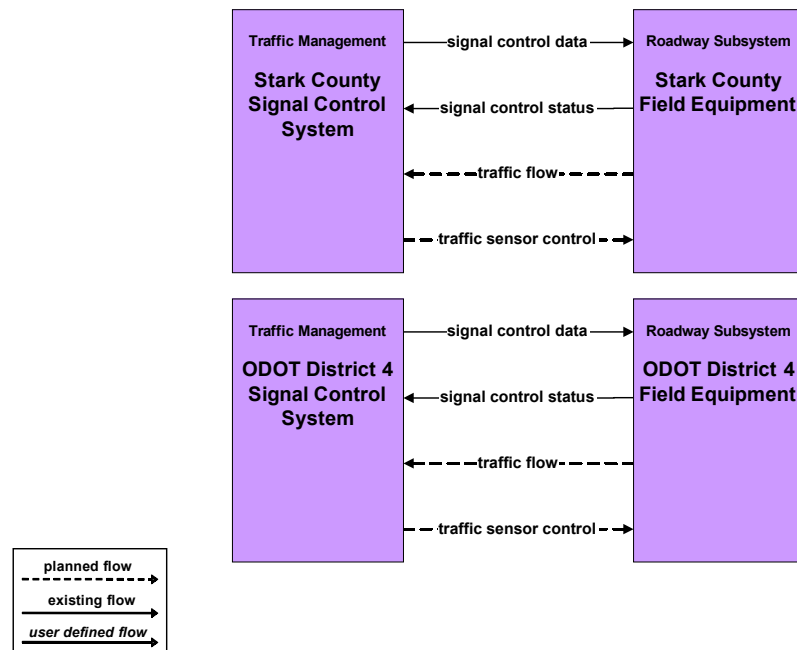
**ATMS03 - Surface Street Control**  
**City of Canton Signal Control System / Municipal Signal Control Systems**



**ATMS03 - Surface Street Control  
Summit/ Portage Counties Signal Control Systems**

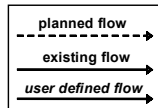
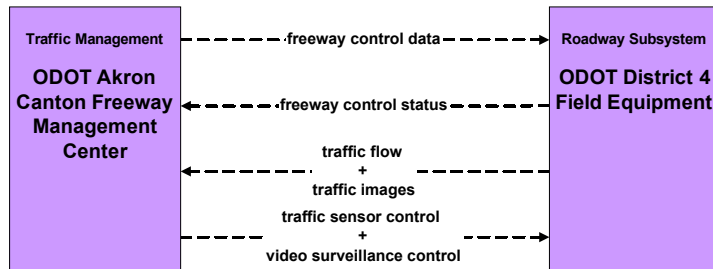


**ATMS03 - Surface Street Control  
Stark County Signal Control System / ODOT District 4 Signal Control System**

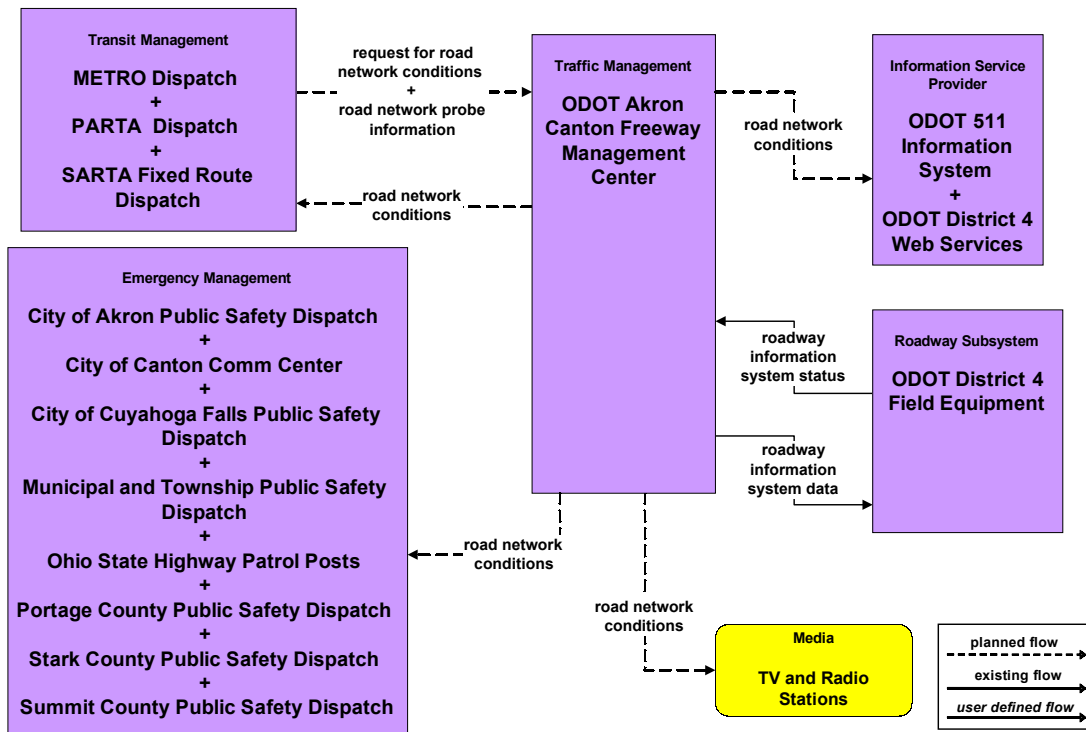




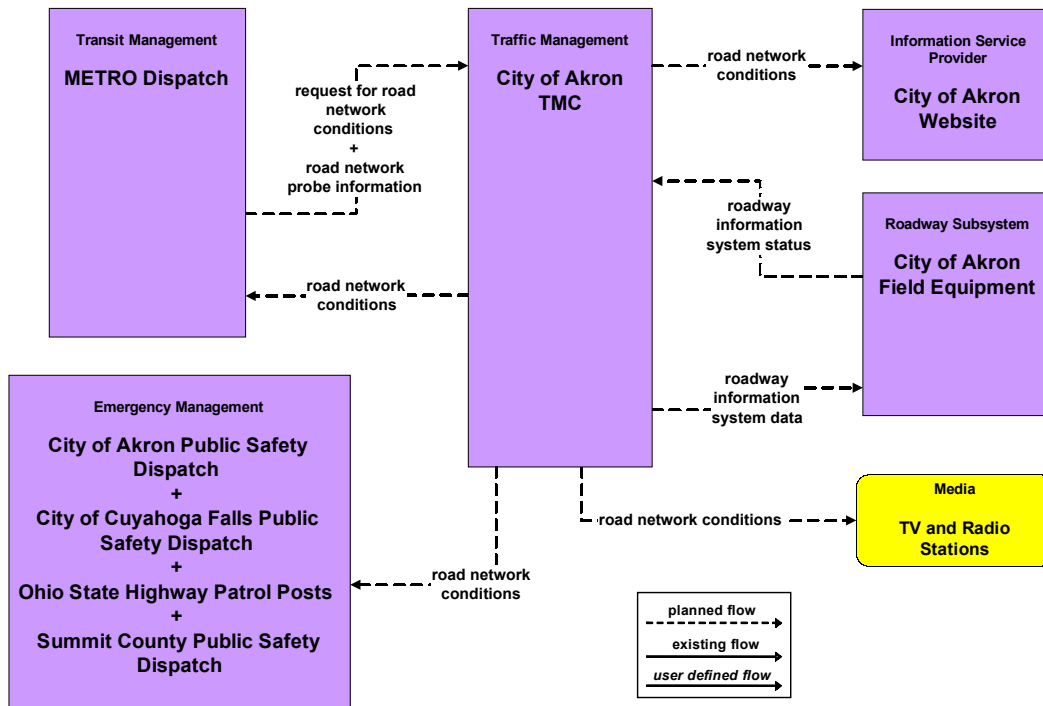
**ATMS04 - Freeway Control**  
**ODOT Akron Canton Freeway Management Center**



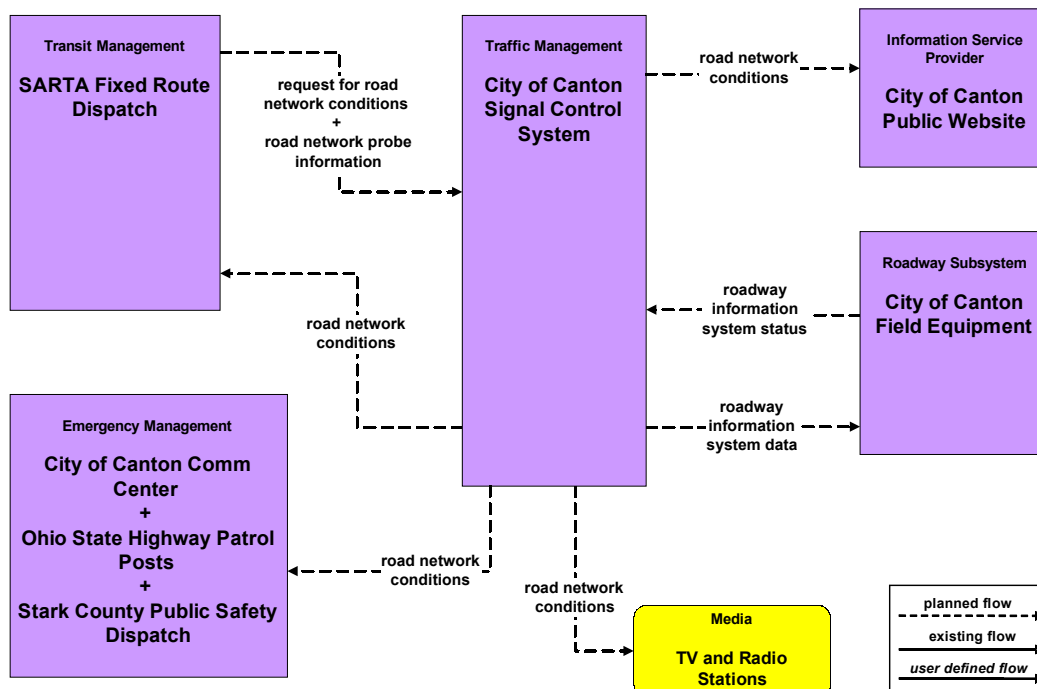
**ATMS06 - Traffic Information Dissemination**  
**ODOT District 4**



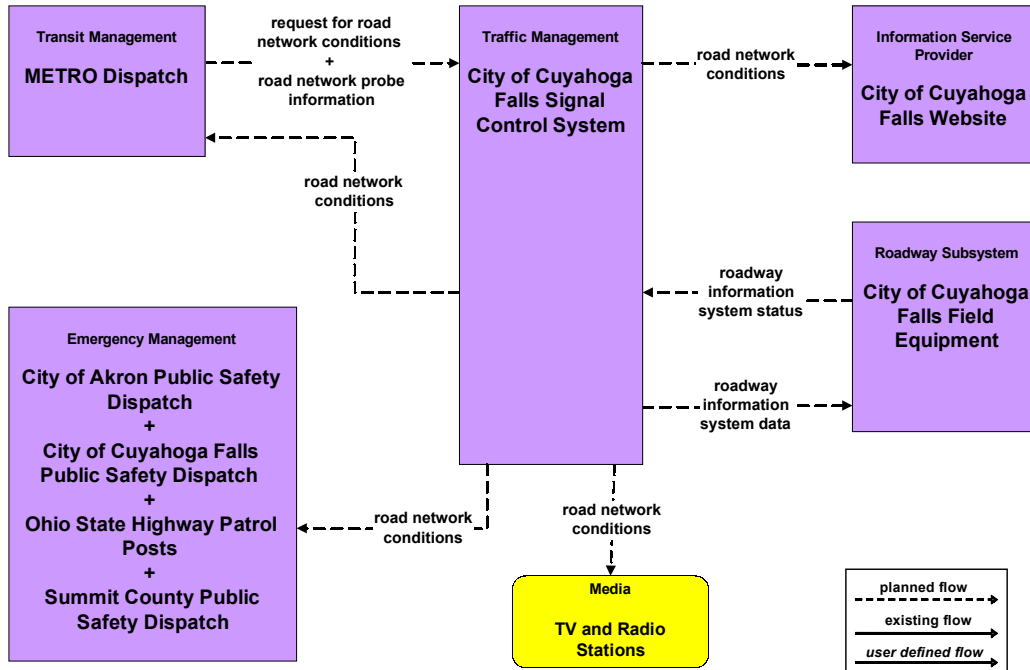
**ATMS06 - Traffic Information Dissemination  
City of Akron**



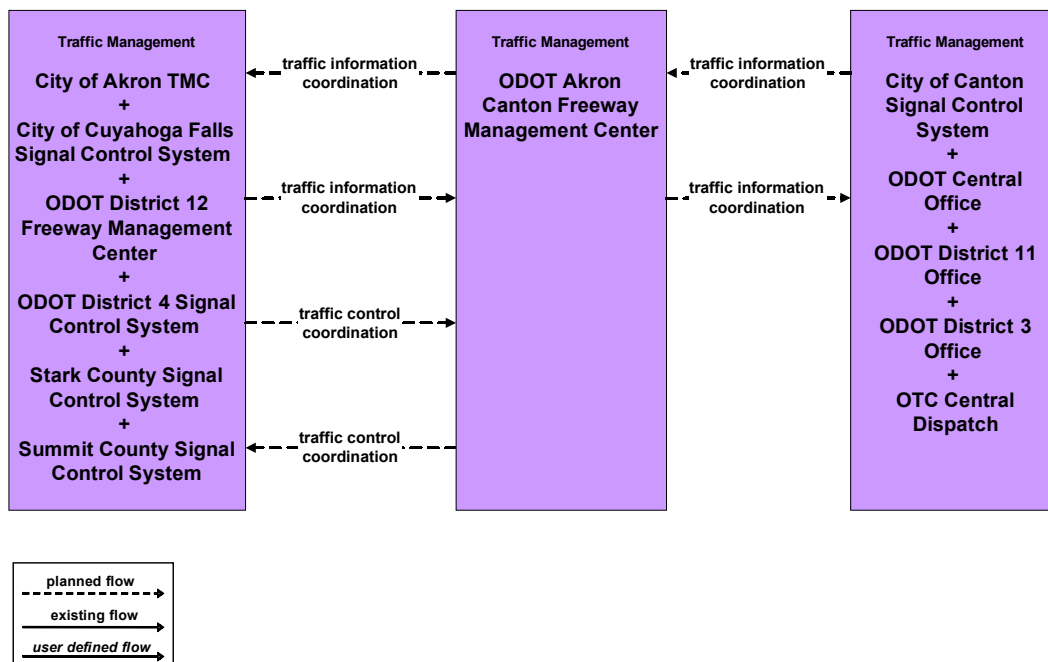
**ATMS06 - Traffic Information Dissemination  
City of Canton**



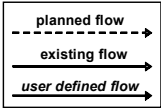
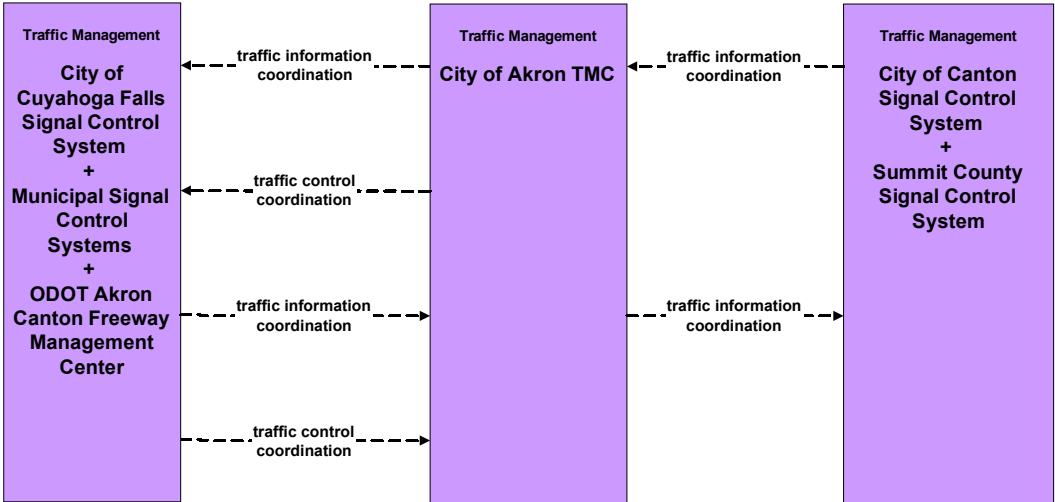
### ATMS06 - Traffic Information Dissemination City of Cuyahoga Falls



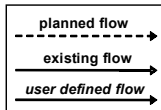
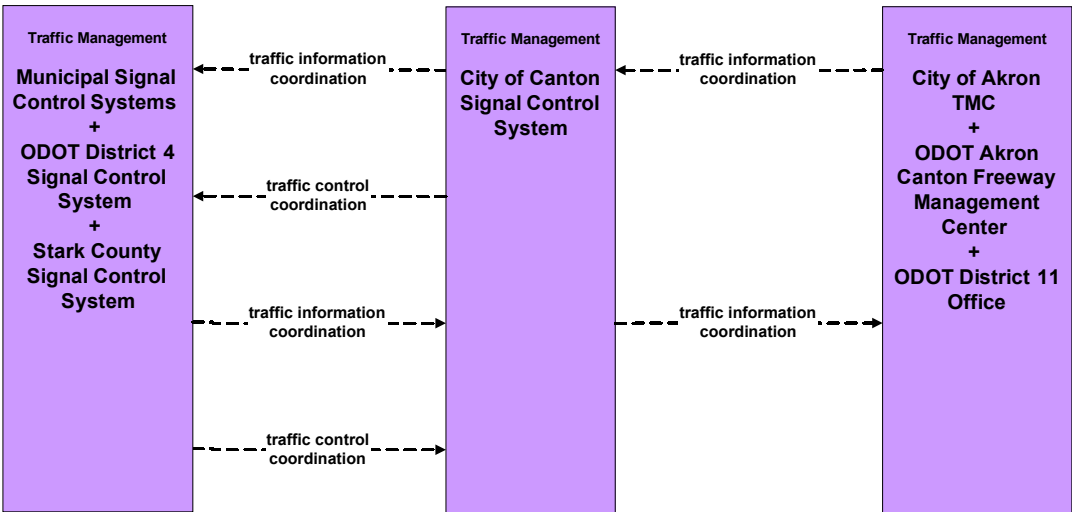
### ATMS07 - Regional Traffic Control ODOT District 4



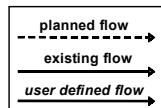
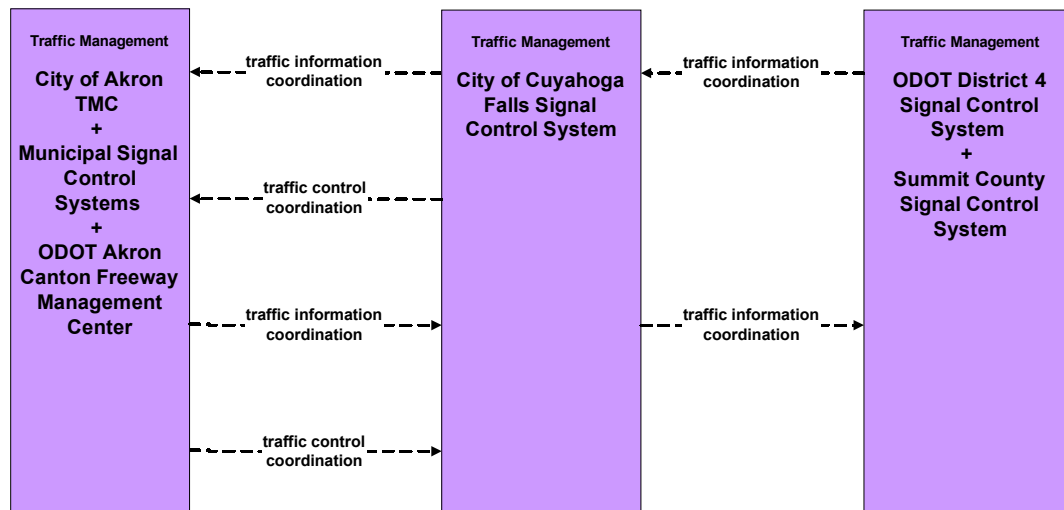
ATMS07 - Regional Traffic Control  
City of Akron



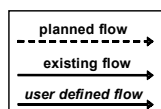
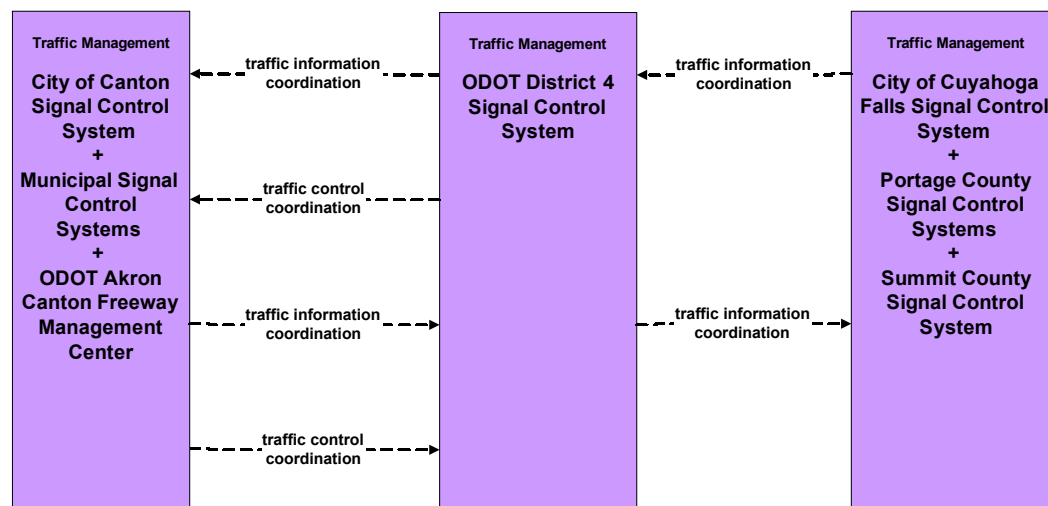
ATMS07 - Regional Traffic Control  
City of Canton



**ATMS07 - Regional Traffic Control  
City of Cuyahoga Falls**



**ATMS07 - Regional Traffic Control  
District 4 Signal Control System**



### **Incident Management Overview**

#### **ATMS08 Covered**

Emergency Management ↔ Traffic Management  
Emergency Management ↔ Maintenance and Construction  
Traffic Management ↔ Maintenance and Construction  
Maintenance and Construction ↔ Maintenance and Construction  
Event Plans and Weather ↔ Traffic Management & Emergency  
Management (see MCs for M&C)

#### **ATMS06, 03, 04, etc. Covered**

Traffic Management ↔ Roadway

#### **ATMS07 Covered**

Traffic Management ↔ Traffic Management

#### **EM1 Covered**

Emergency Management ↔ Emergency Management

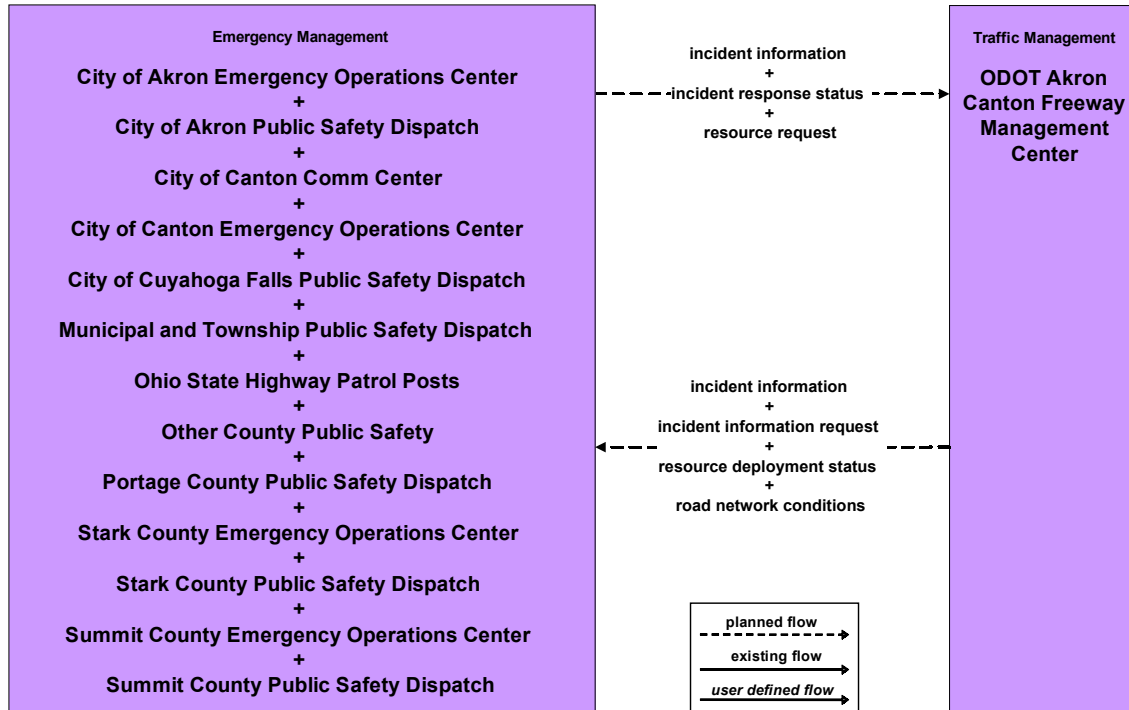
#### **EM2 Covered**

Emergency Vehicle Preemption

### **ATMS08 - Incident Management**

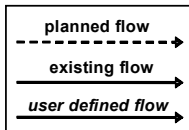
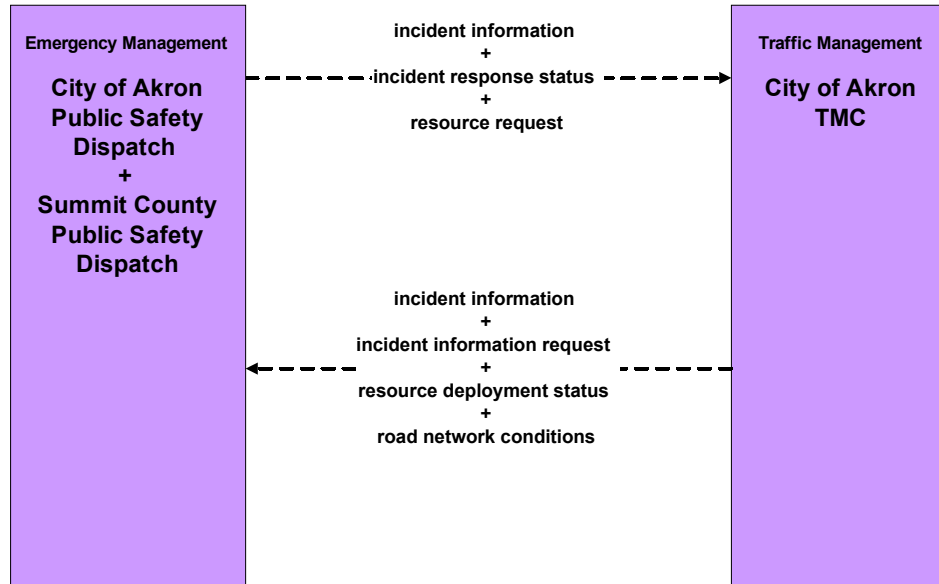
Emergency Management ↔ Traffic Management

**ATMS08 - Incident Management  
EM to ODOT District 4**

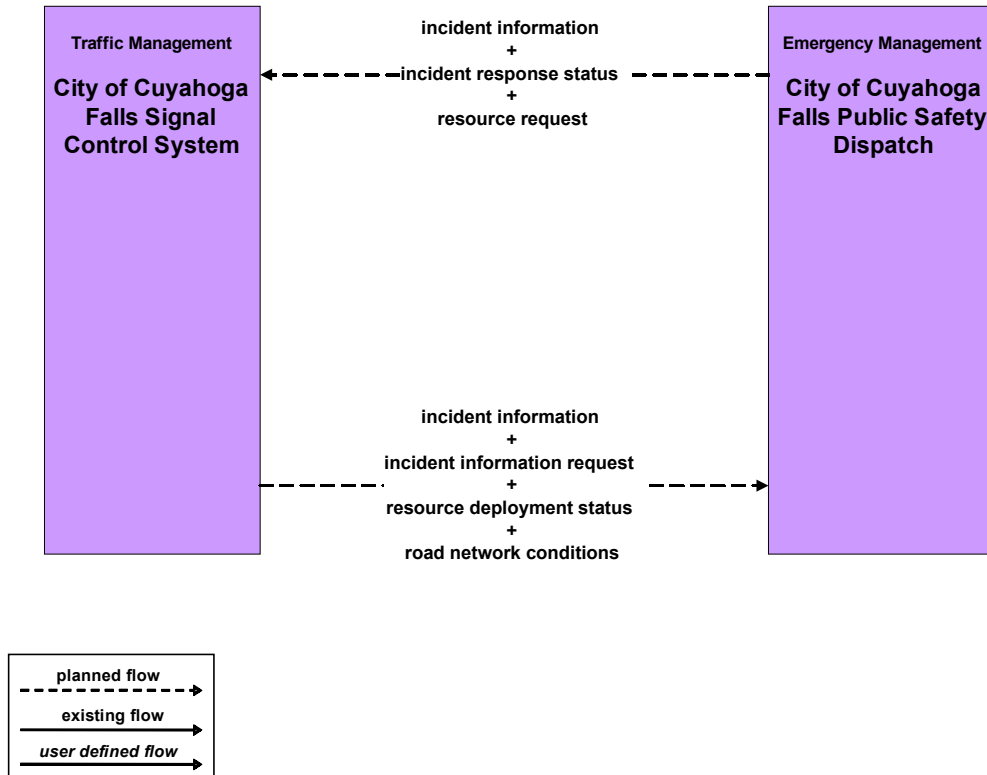




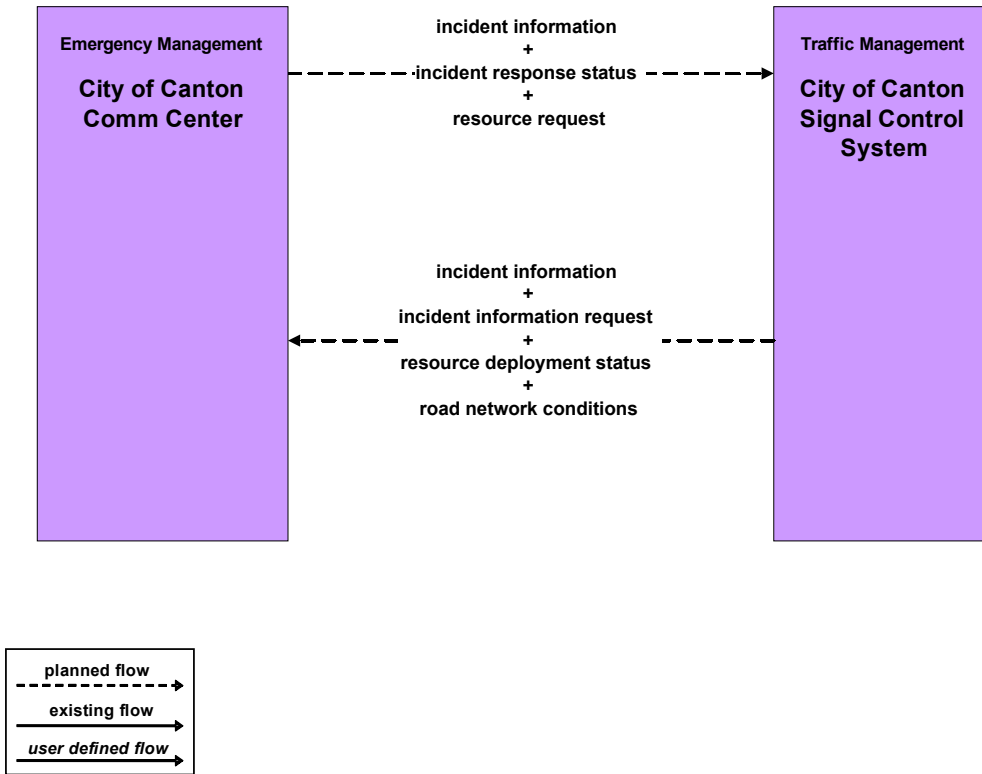
**ATMS08 - Incident Management  
EM to City of Akron TMC**



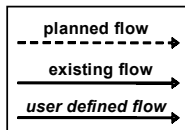
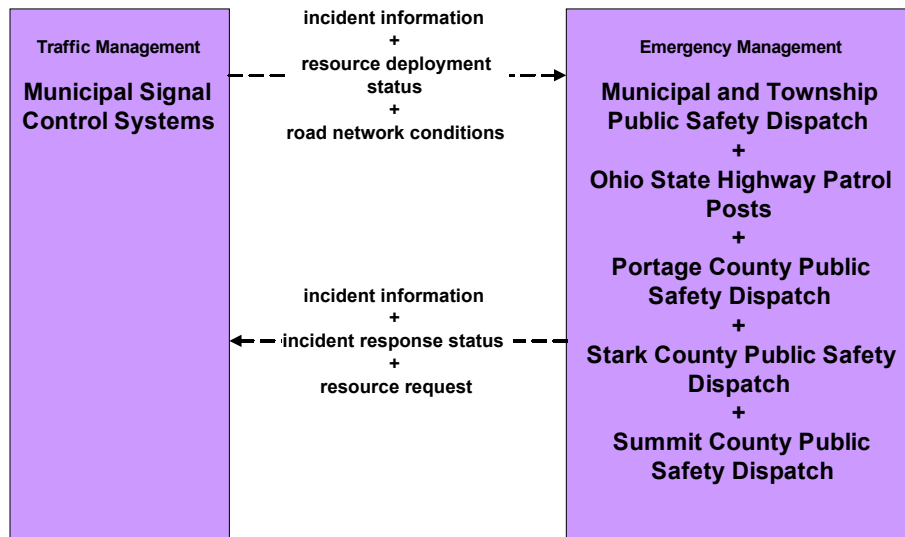
**ATMS08 - Incident Management  
EM to Cuyahoga Falls Signal Control System**



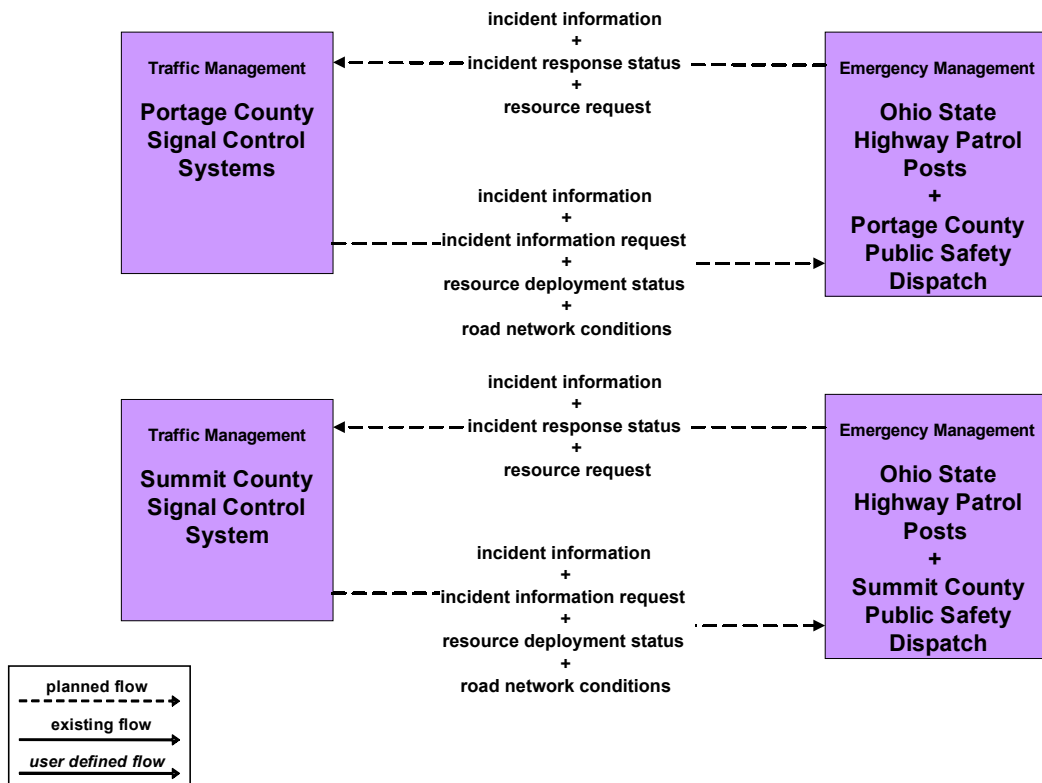
**ATMS08 - Incident Management  
EM to City of Canton**



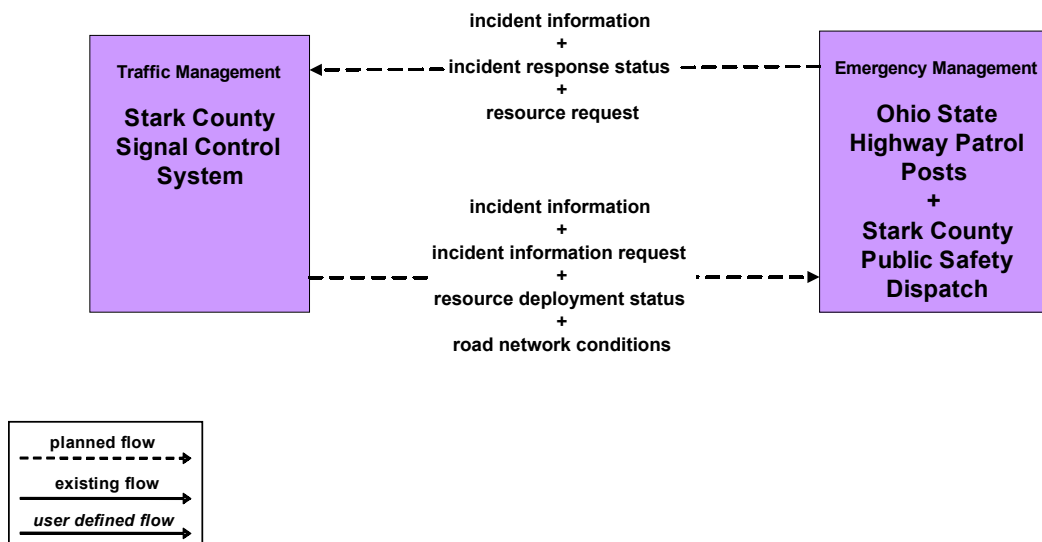
## ATMS08 - Incident Management EM to Municipalities



**ATMS08 - Incident Management  
EM to Portage/ Summit County Signal Control Systems**



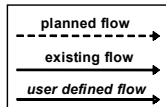
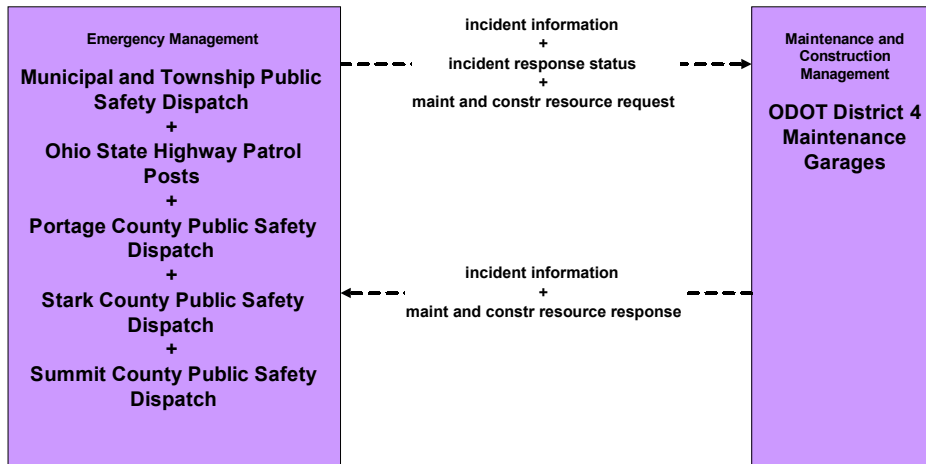
**ATMS08 - Incident Management  
EM to Stark County Signal Control Systems**



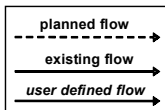
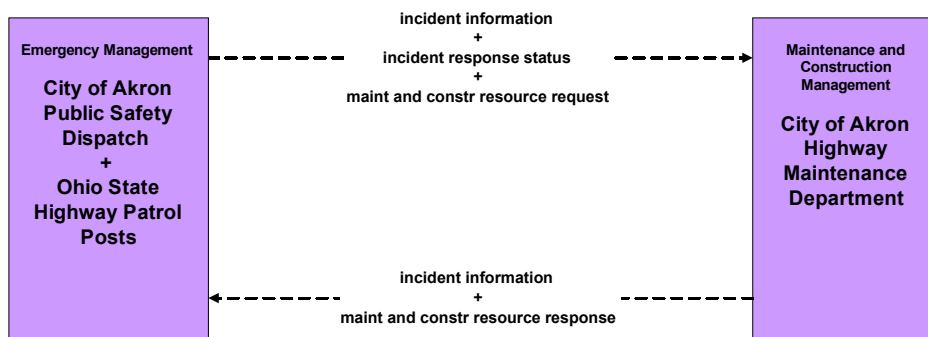
## **ATMS08 - Incident Management**

*Emergency Management ↔ Maintenance and Construction Management*

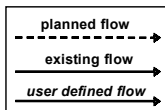
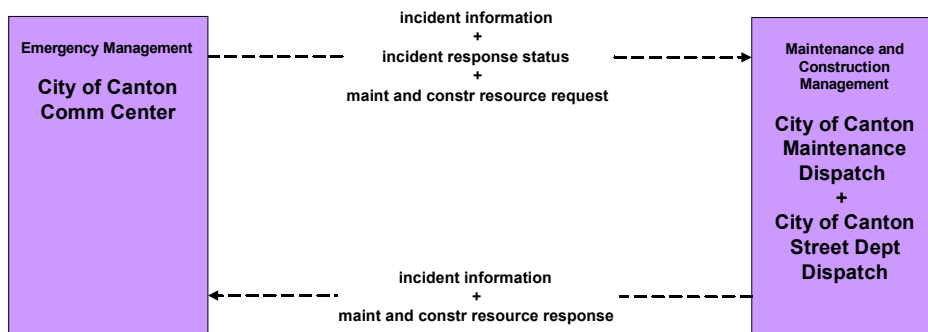
### **ATMS08 - Incident Management EM to ODOT District 4 Maintenance Garages**



**ATMS08 - Incident Management  
EM to City of Akron Maintenance Dispatch**

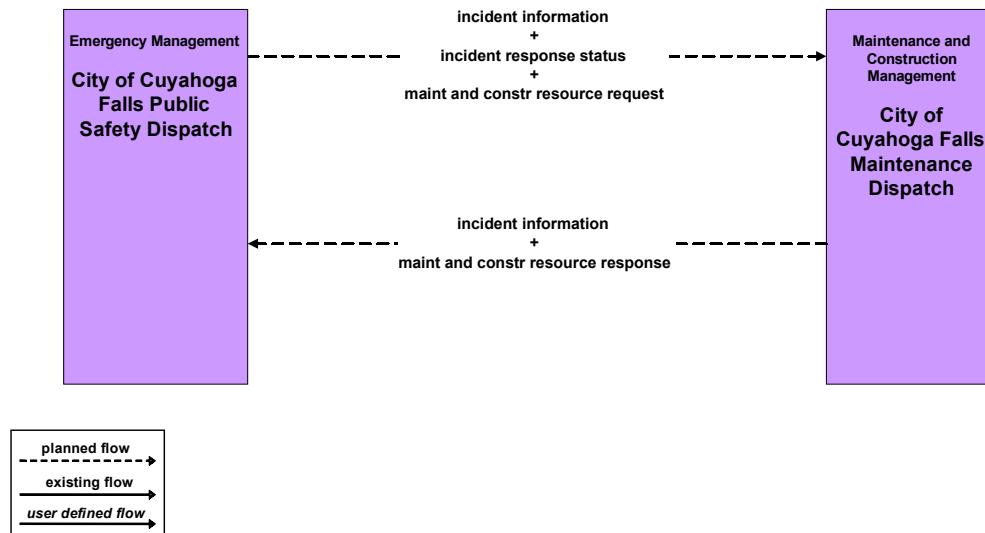


**ATMS08 - Incident Management  
EM to City of Canton Street Dept / Maintenance Dispatch**

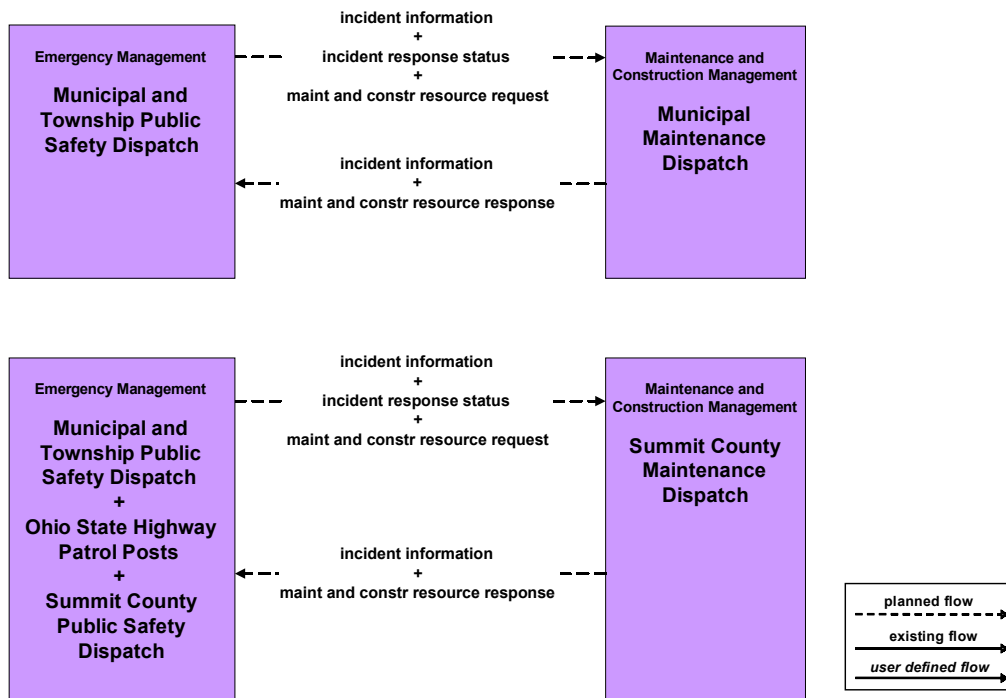


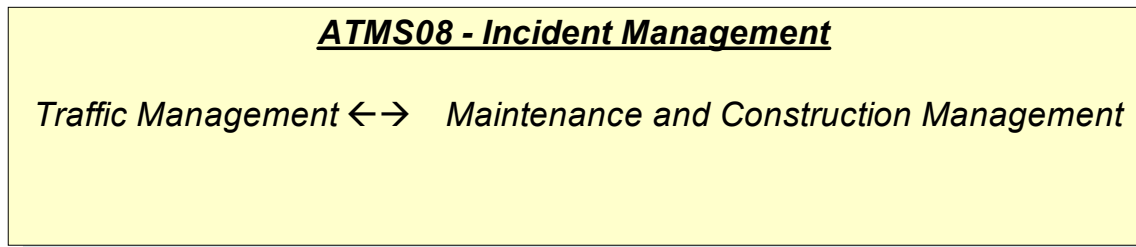
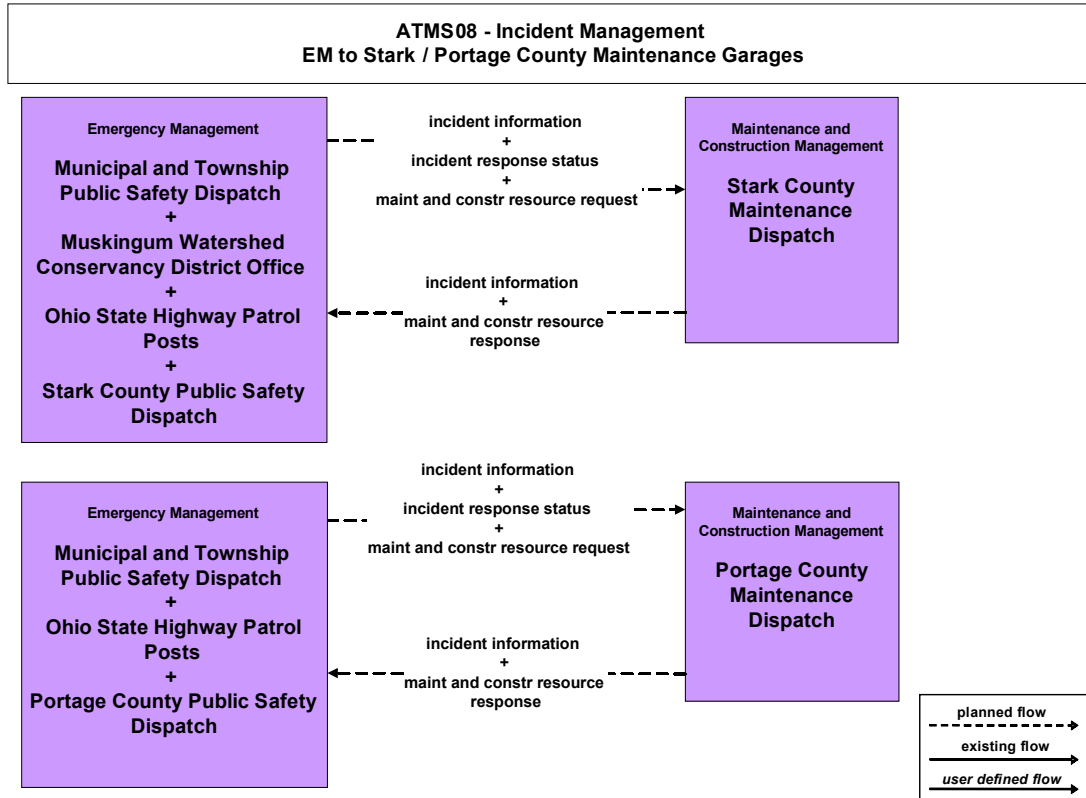


**ATMS08 - Incident Management  
EM to Cuyahoga Falls Maintenance Dispatch**

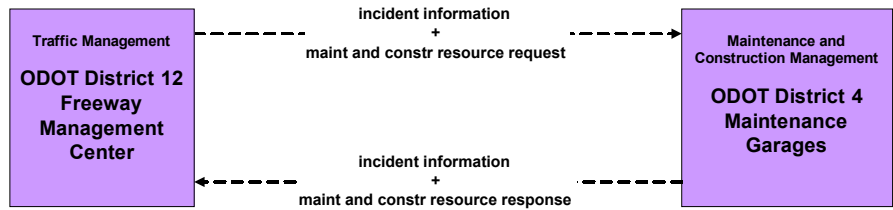
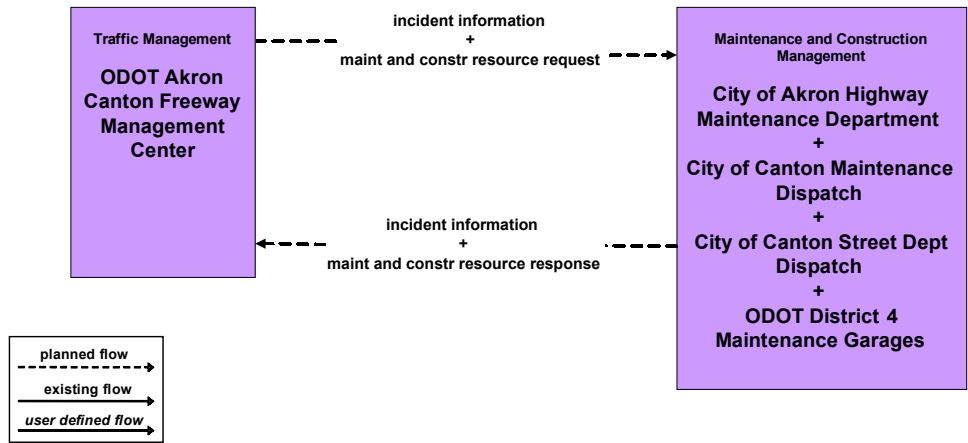


**ATMS08 - Incident Management  
EM to Municipal/County Maintenance Garages**

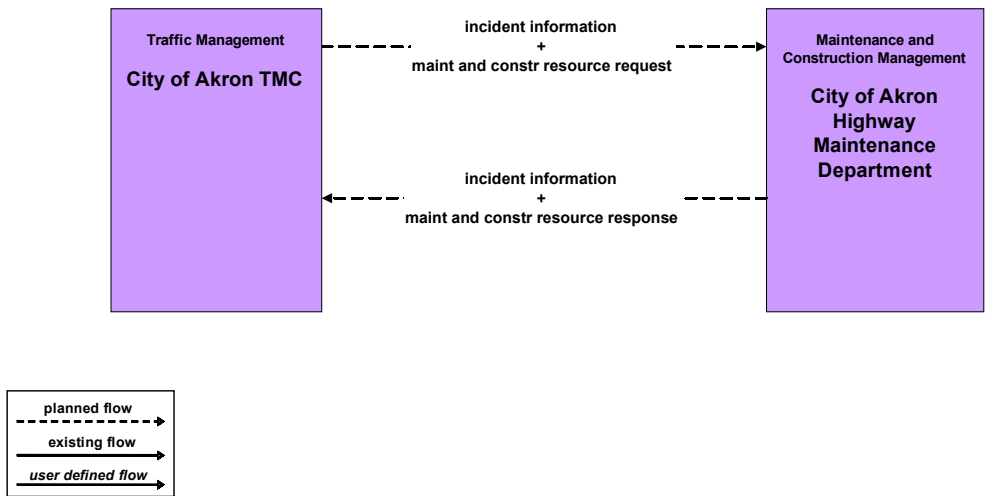




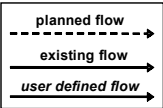
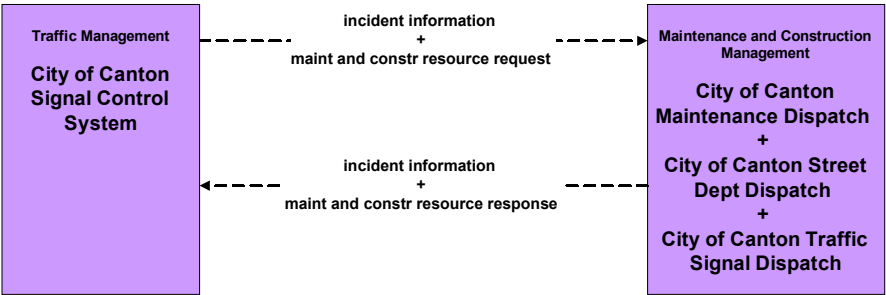
**ATMS08 - Incident Management  
TM to MCM - ODOT District 4**



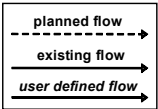
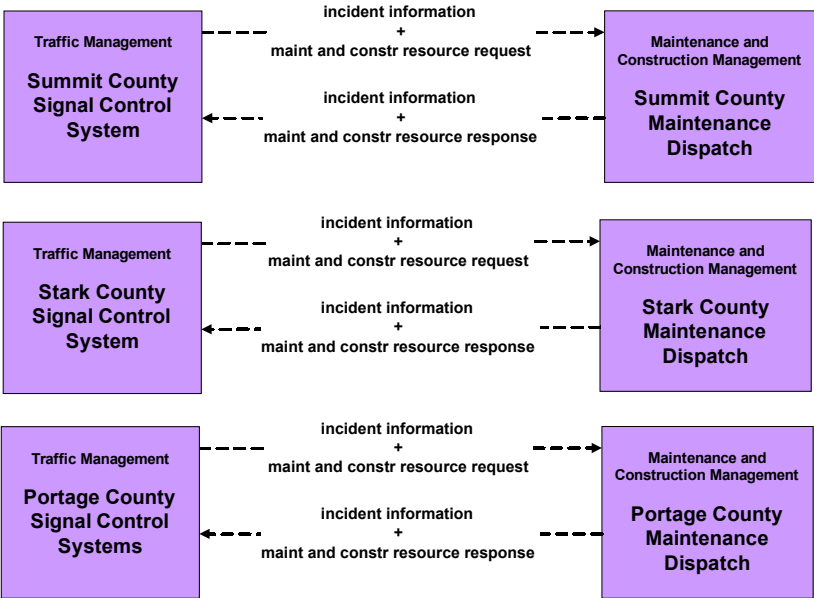
**ATMS08 - Incident Management  
TM to MCM - City of Akron**



**ATMS08 - Incident Management  
TM to MCM - City of Canton**



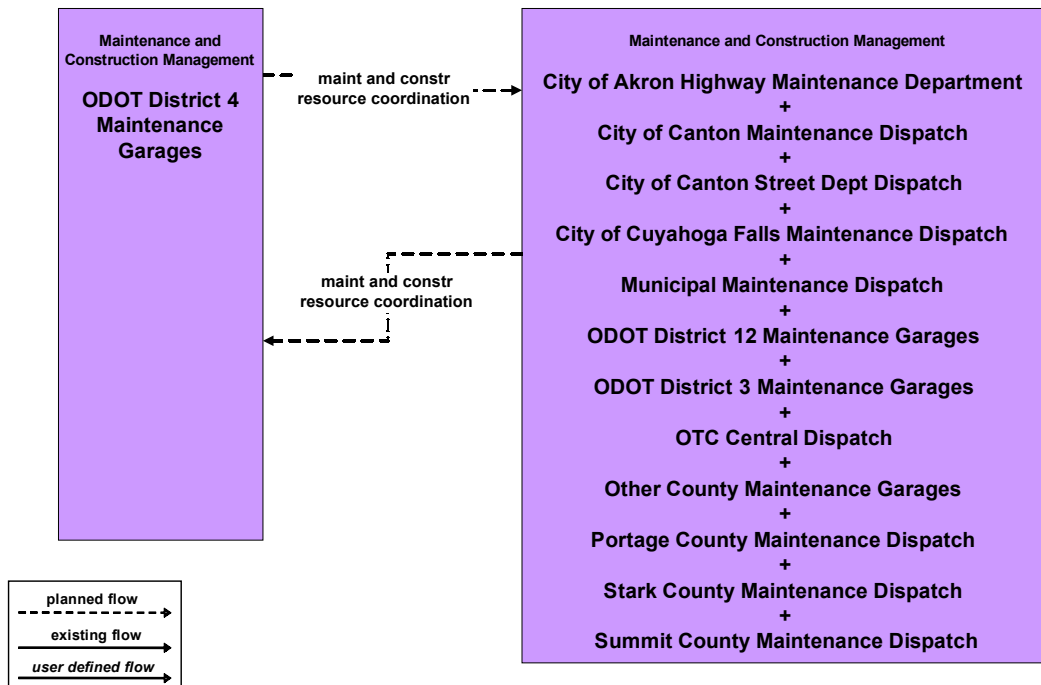
**ATMS08 - Incident Management  
TM to MCM - Counties**



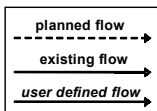
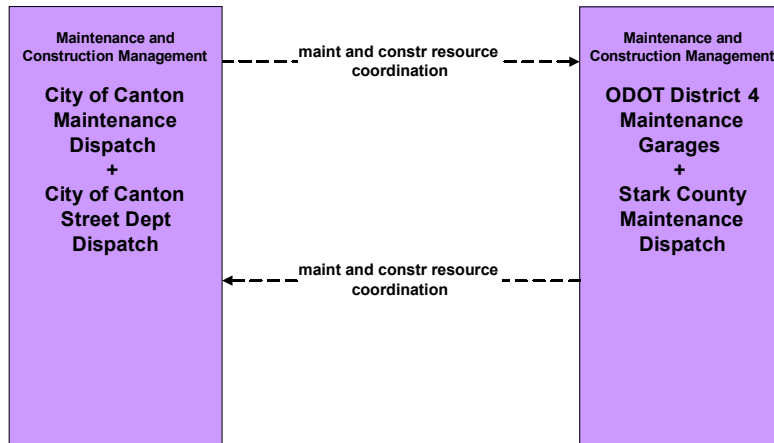
## **ATMS08 - Incident Management**

*Maintenance and Construction Management* ↔ *Maintenance and Construction Management*

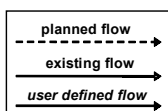
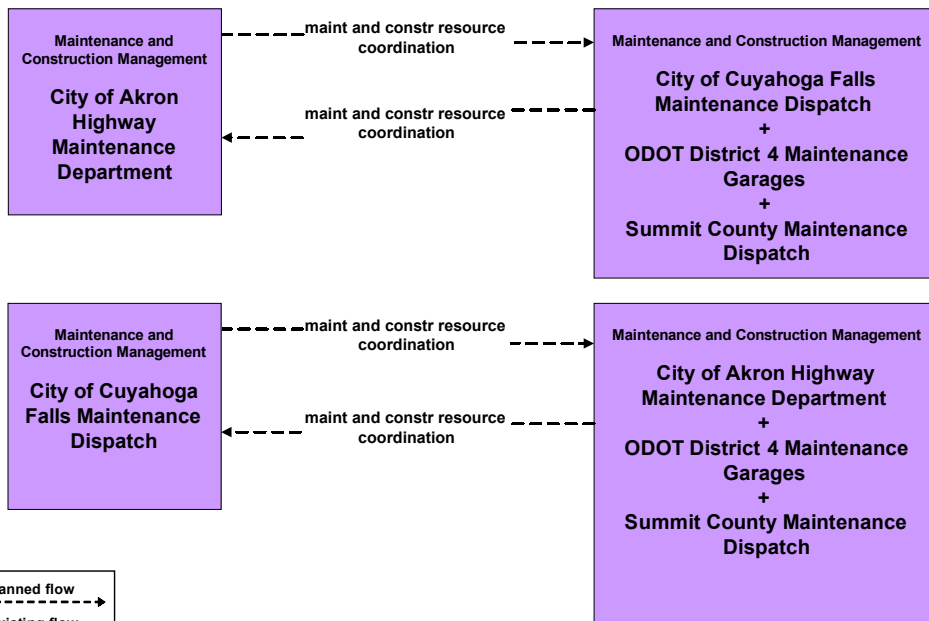
**ATMS08 - Incident Management  
MCM to MCM - ODOT District 4**



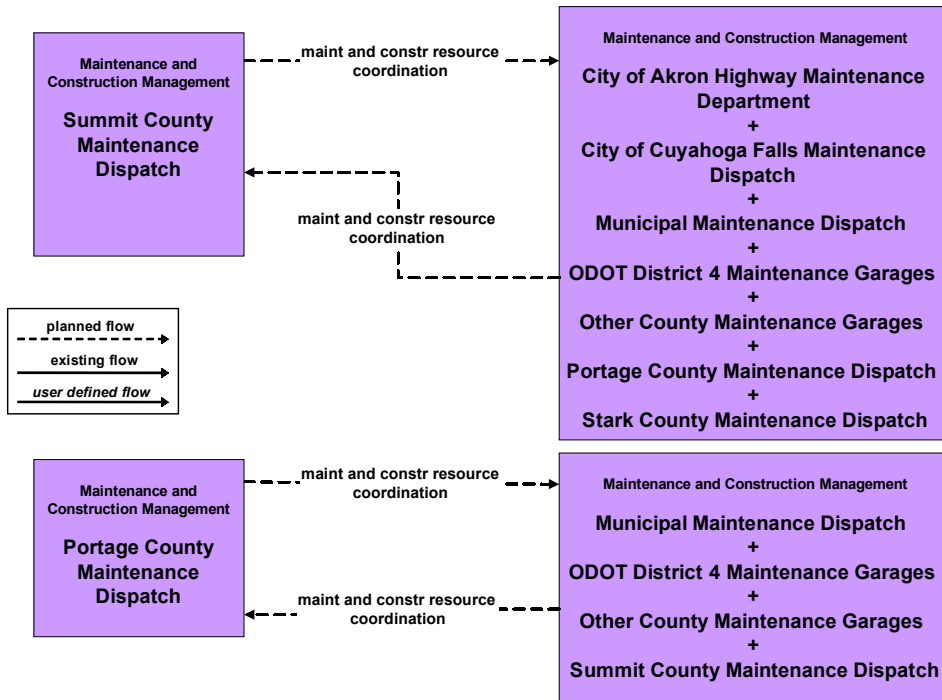
**ATMS08 - Incident Management  
MCM to MCM - City of Canton**



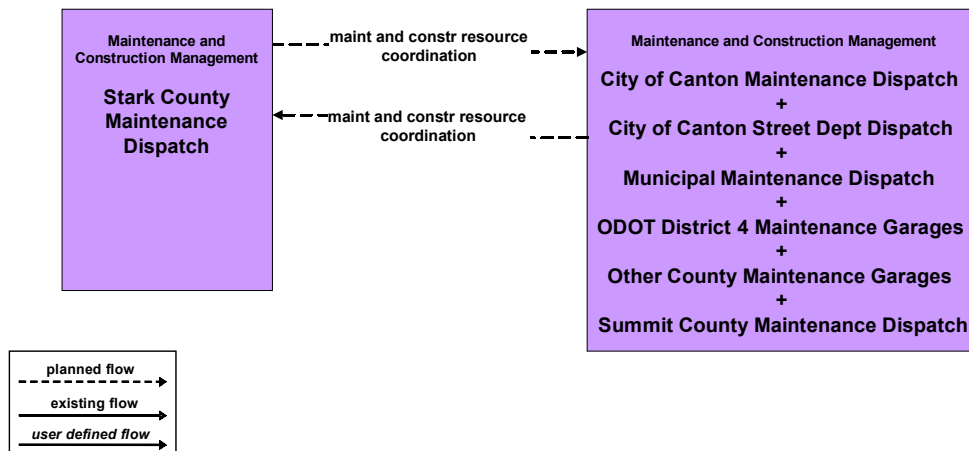
**ATMS08 - Incident Management  
MCM to MCM - City of Akron and Cuyahoga Falls**



**ATMS08 - Incident Management  
MCM to MCM - Summit/ Portage County Maintenance**

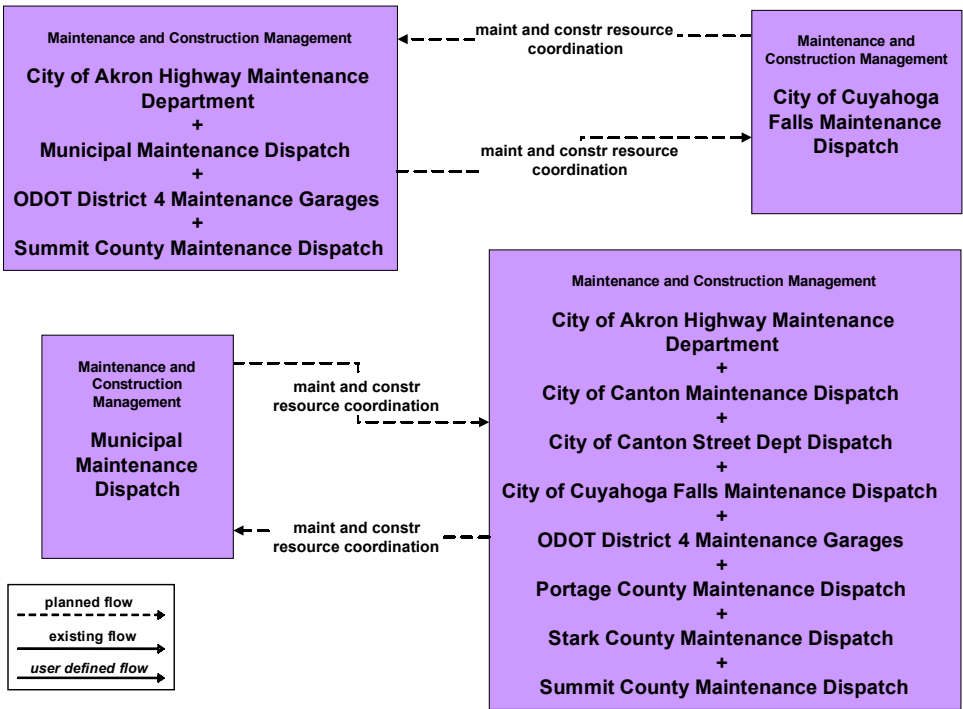


**ATMS08 - Incident Management  
MCM to MCM - Stark County Maintenance**





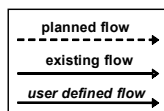
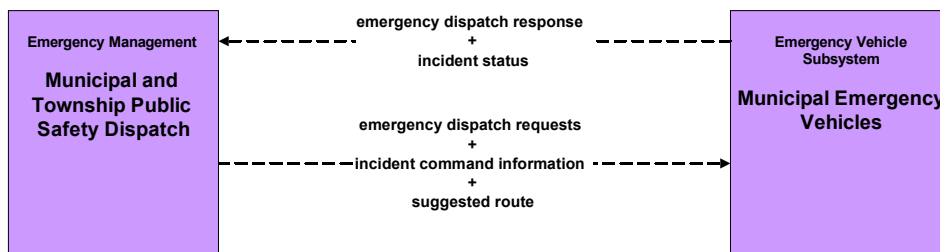
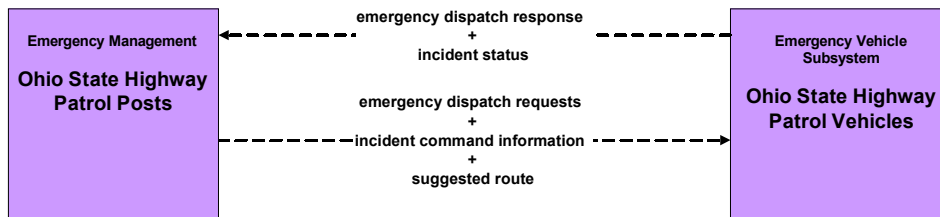
**ATMS08 - Incident Management**  
**MCM to MCM - City of Cuyahoga Falls / Municipal Maintenance**



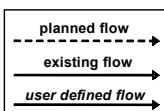
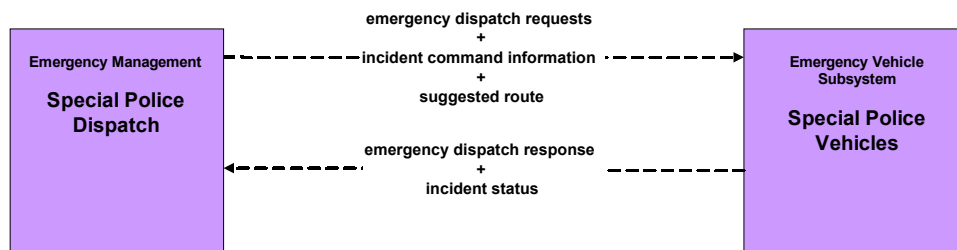
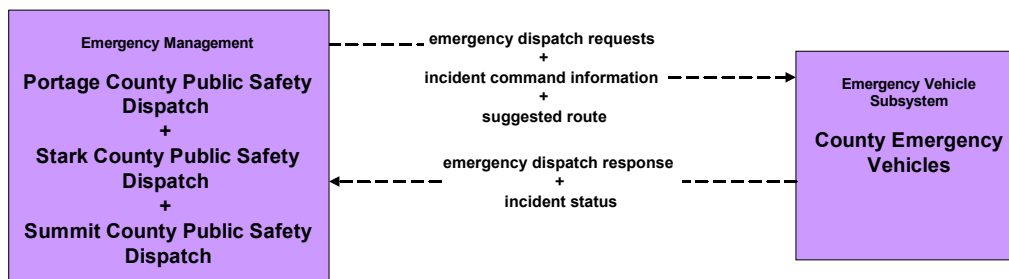
**ATMS08 - Incident Management**

*Emergency Management ↔ Emergency Vehicles*

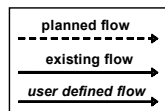
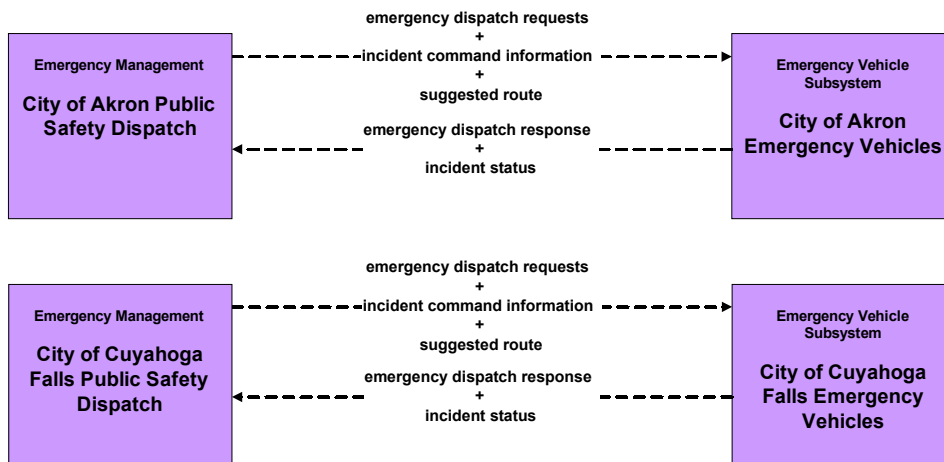
**ATMS08 - Incident Management**  
**EM to EVS- Ohio State Highway Patrol / Municipal and Township Public Safety**



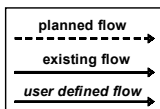
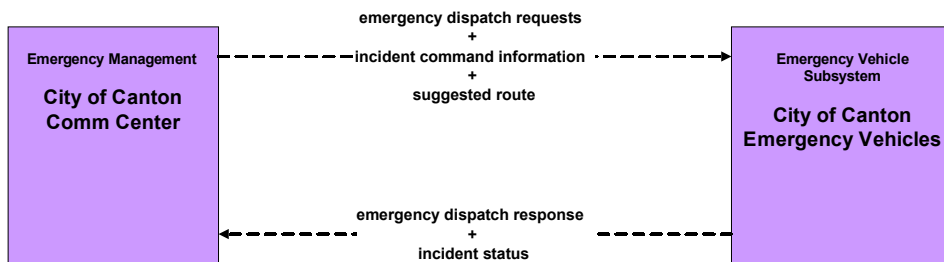
**ATMS08 - Incident Management**  
**EM to EVS - County Public Safety / Special Police**



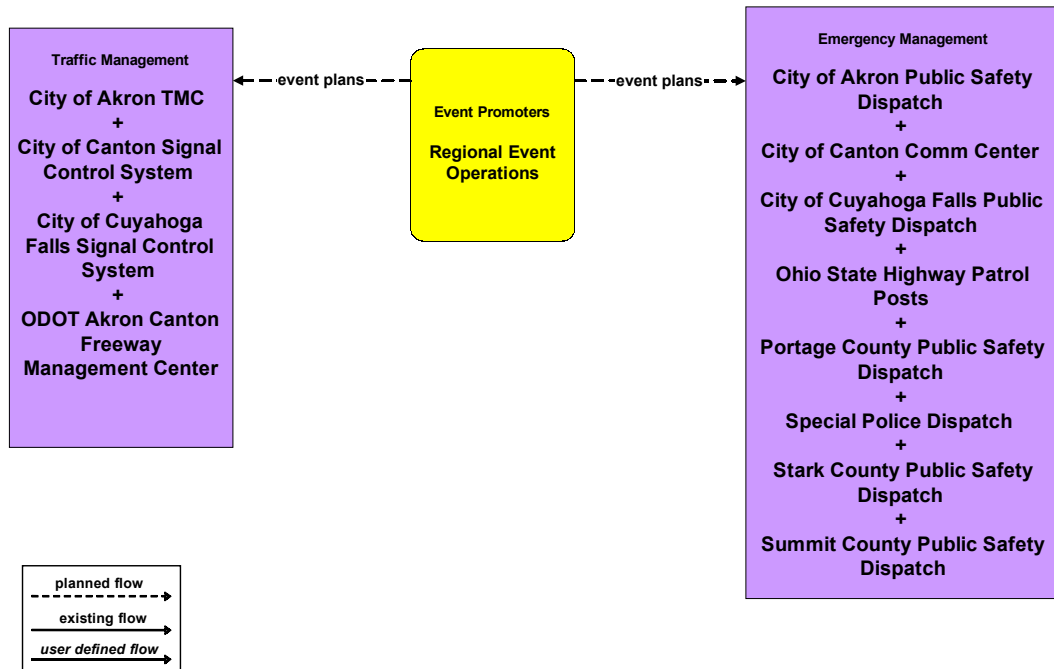
**ATMS08 - Incident Management  
EM to EVS - Akron and Cuyahoga Falls Public Safety**



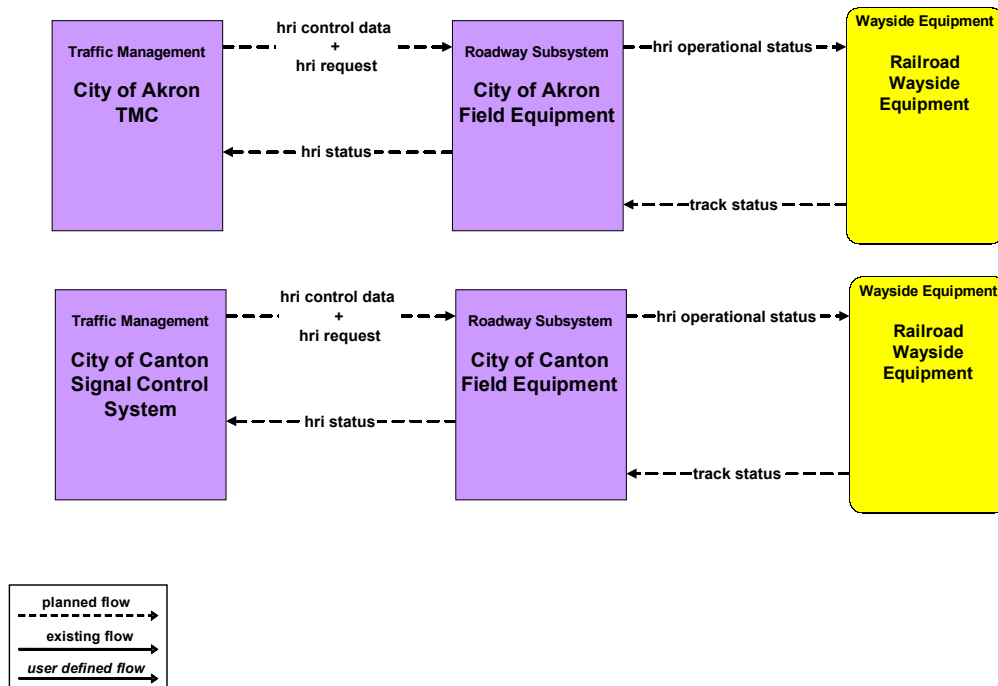
**ATMS08 - Incident Management  
EM to EVS- Canton Public Safety**



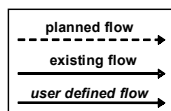
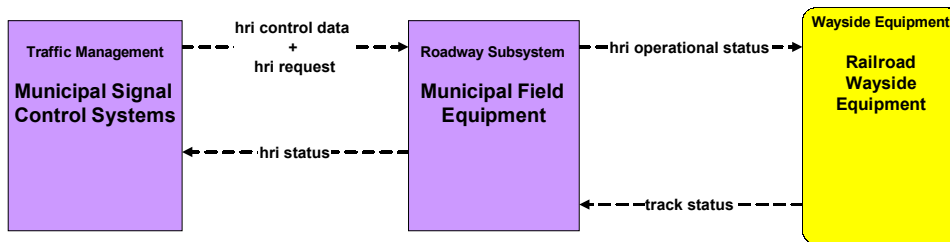
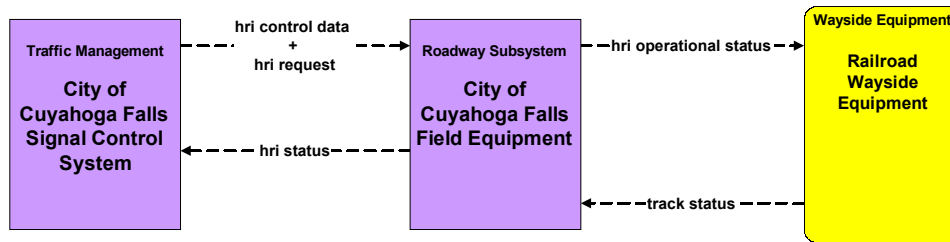
# **ATMS08 - Incident Management Event Promoter Interfaces**



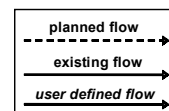
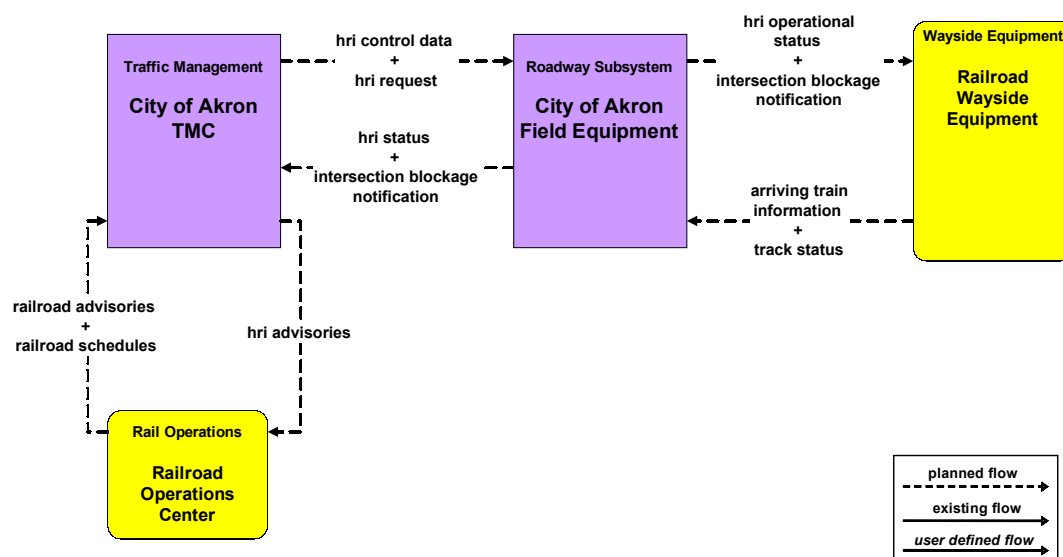
# **ATMS13 - Standard Railroad Crossing City of Akron, City of Canton**



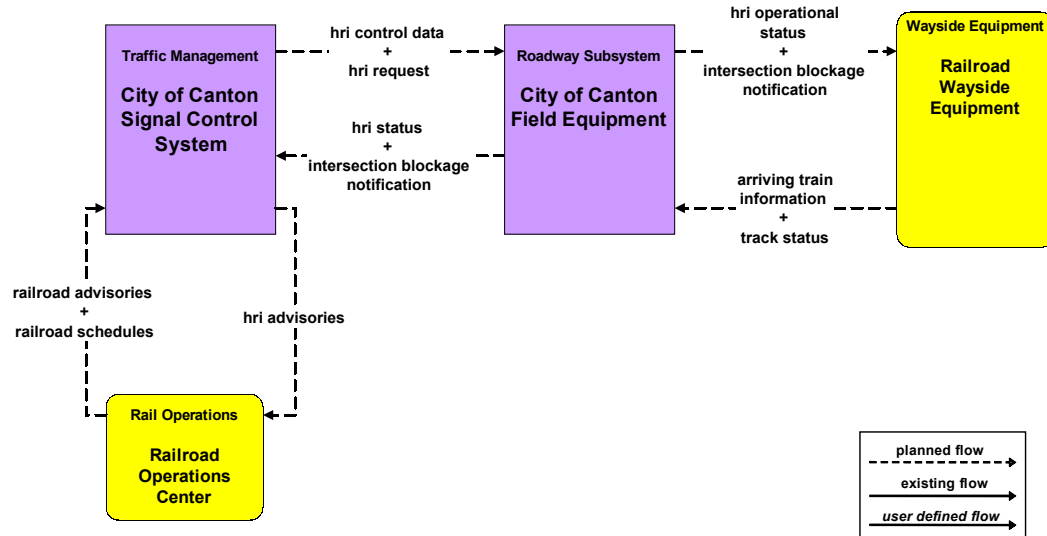
# **ATMS13 - Standard Railroad Crossing** City of Cuyahoga Falls, Municipalities



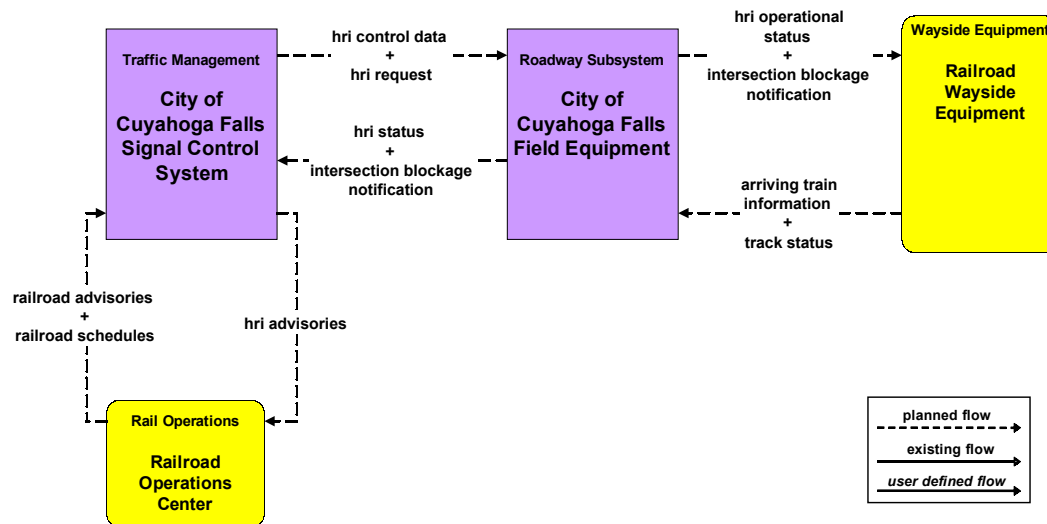
# **ATMS14 - Advanced Railroad Grade Crossing** City of Akron



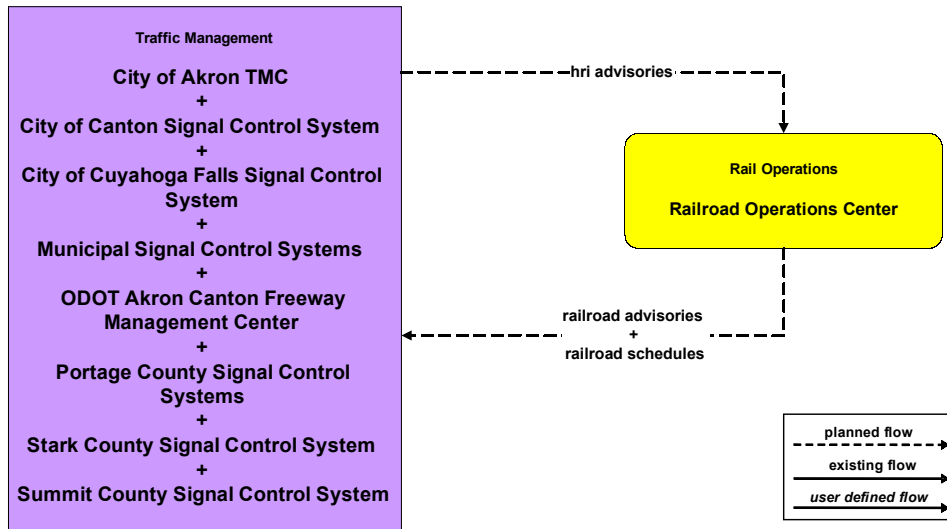
**ATMS14 - Advanced Railroad Grade Crossing  
City of Canton**



**ATMS14 - Advanced Railroad Grade Crossing  
City of Cuyahoga Falls**



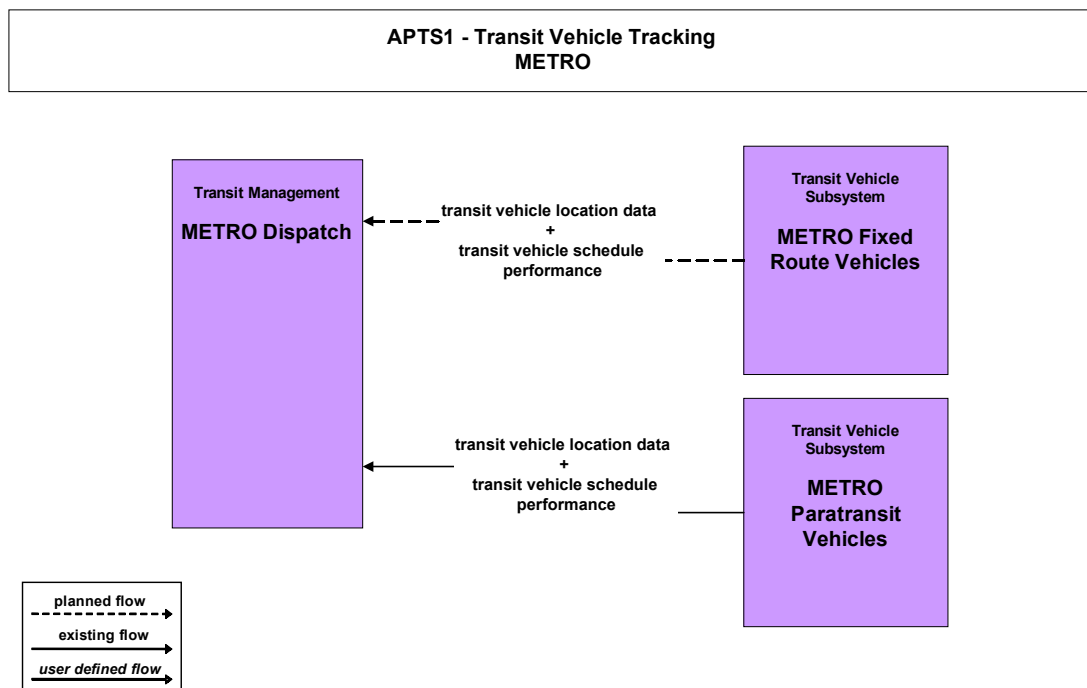
**ATMS15 - Railroad Operations Coordination  
TMCs to Rail Operators**



# Akron-Canton, Ohio Regional ITS Architecture

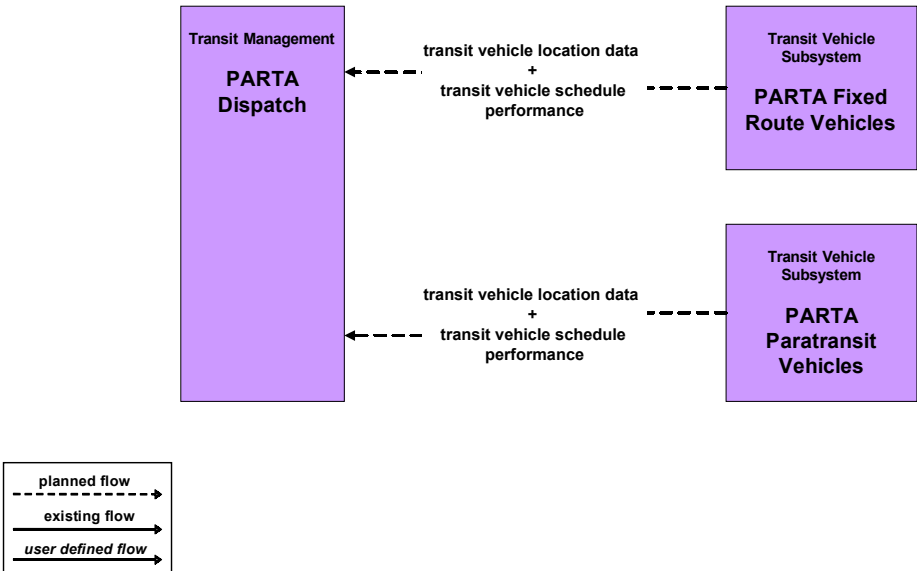
## Customized Market Package Diagrams

### Advanced Public Transportation Systems (APTS)

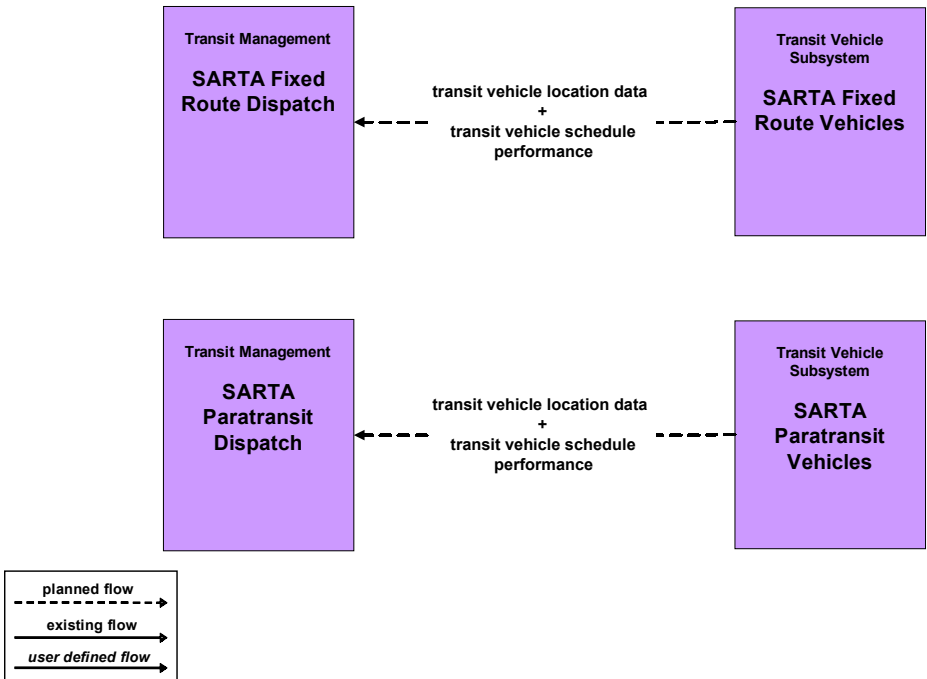




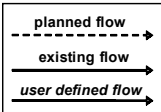
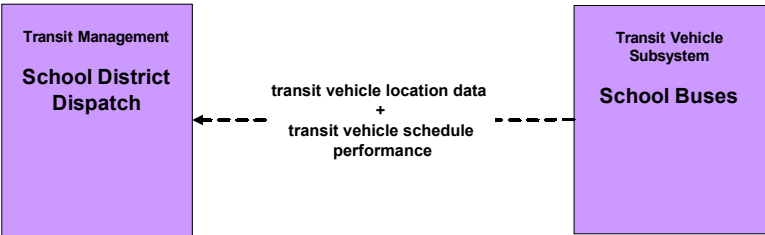
**APTS1 - Transit Vehicle Tracking  
PARTA**



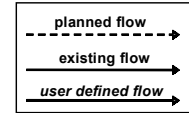
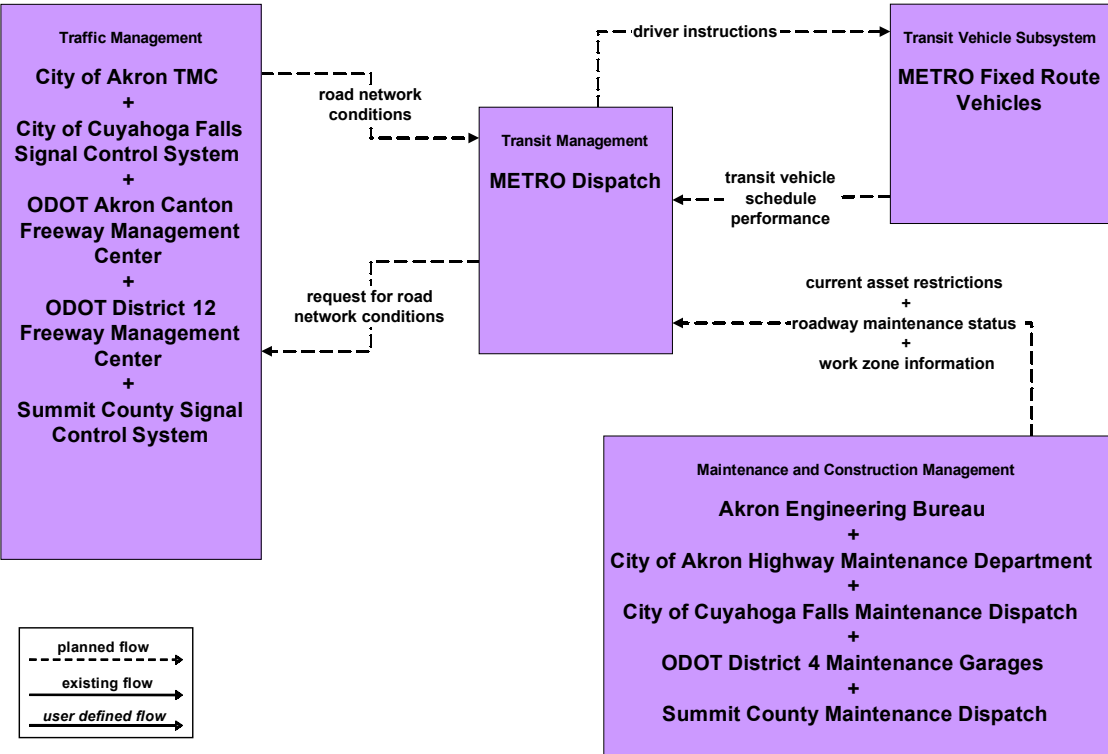
**APTS1 - Transit Vehicle Tracking  
SARTA**



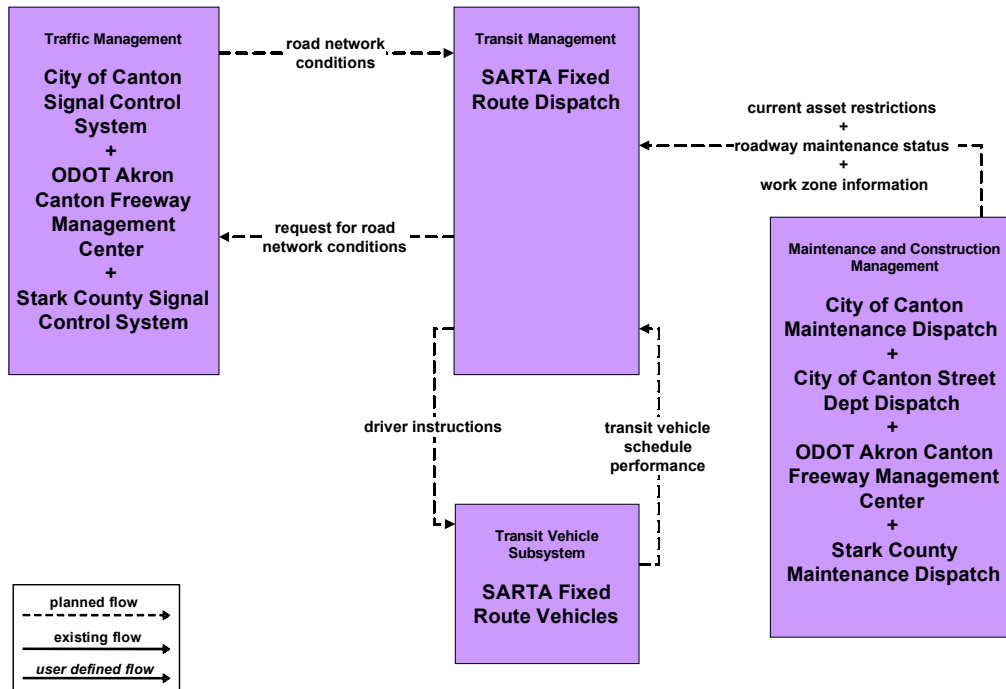
**APTS1 - Transit Vehicle Tracking  
School Districts**



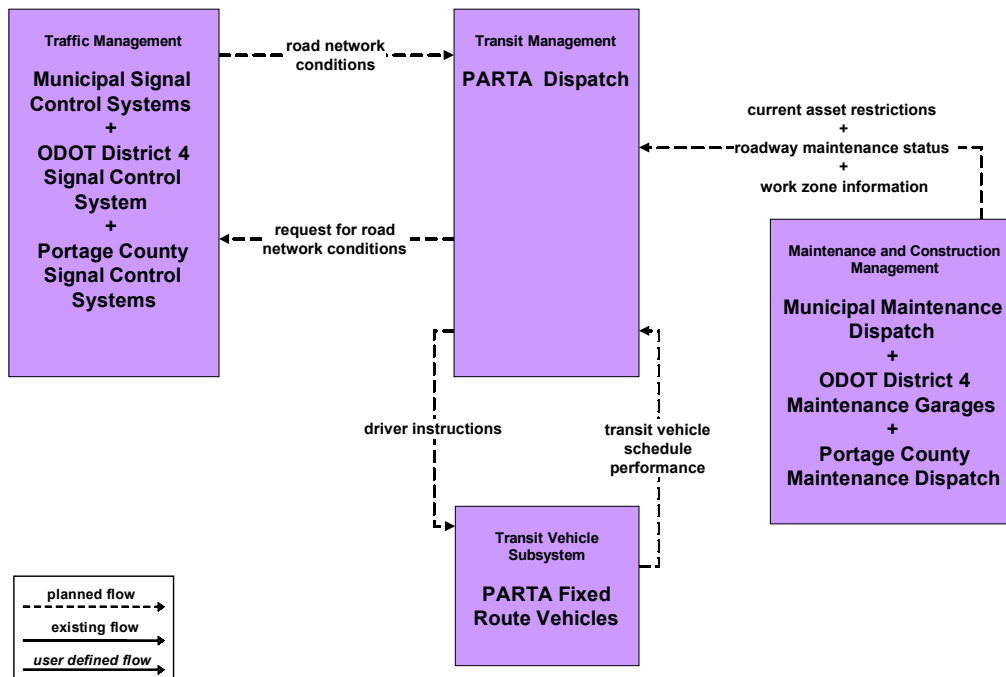
**APTS2 - Transit Fixed-Route Operations  
METRO**

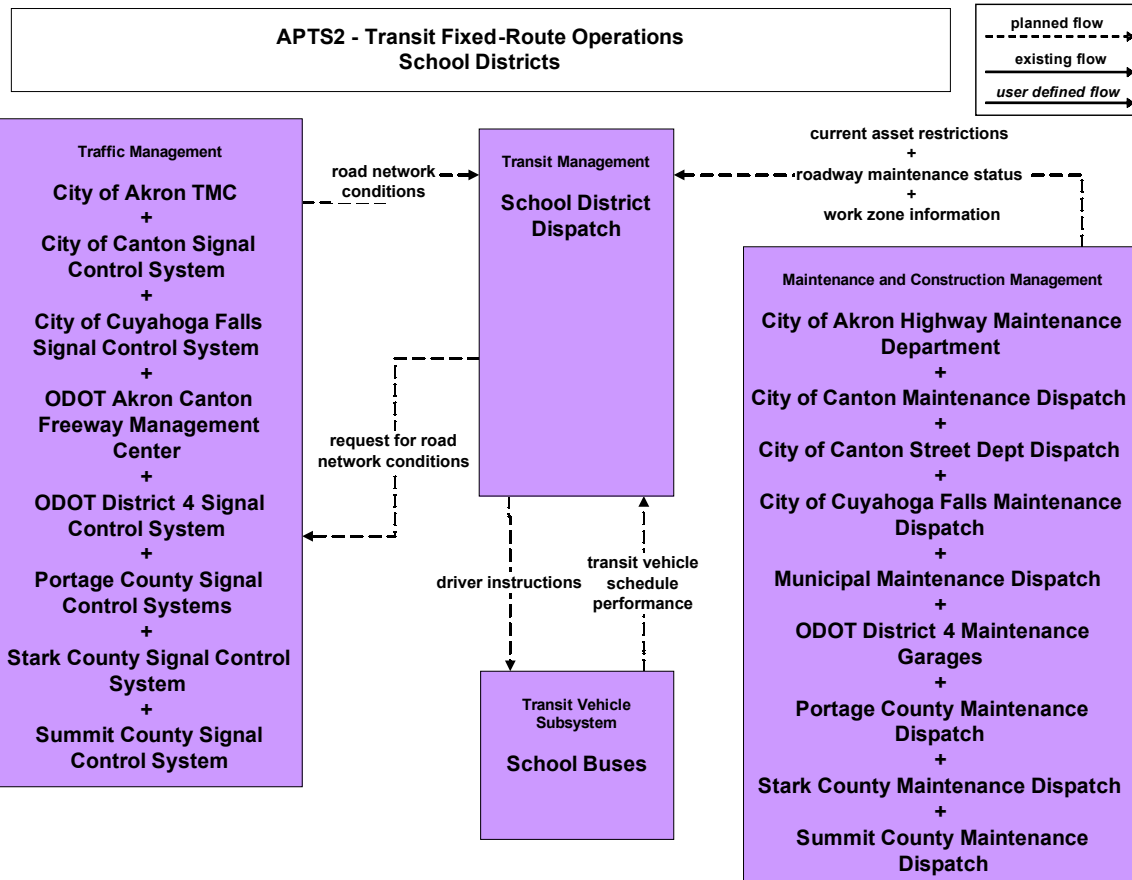


## APTS2 - Transit Fixed-Route Operations SARTA

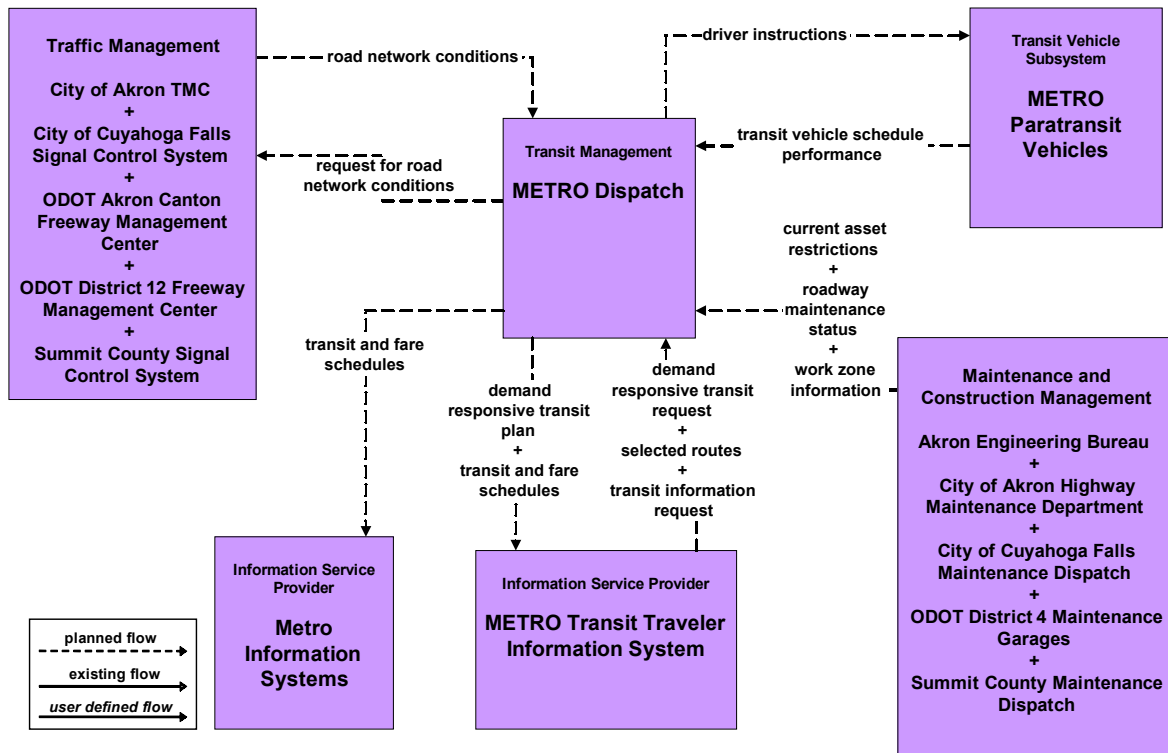


## APTS2 - Transit Fixed-Route Operations PARTA

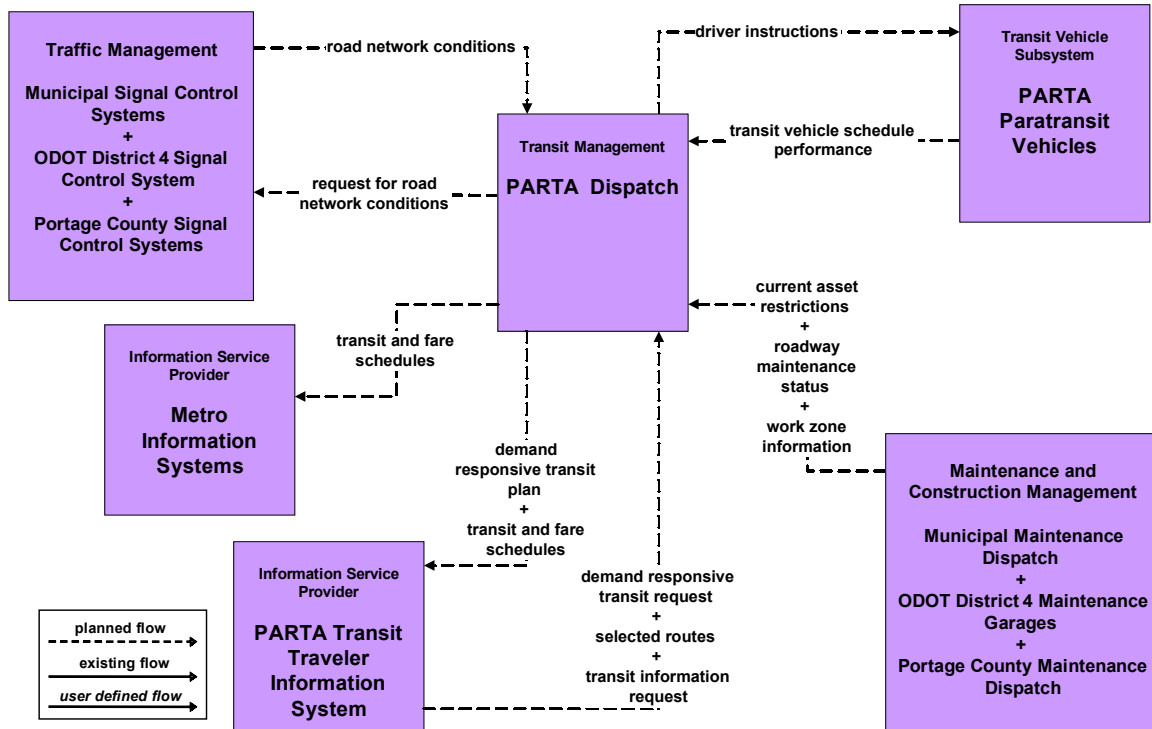




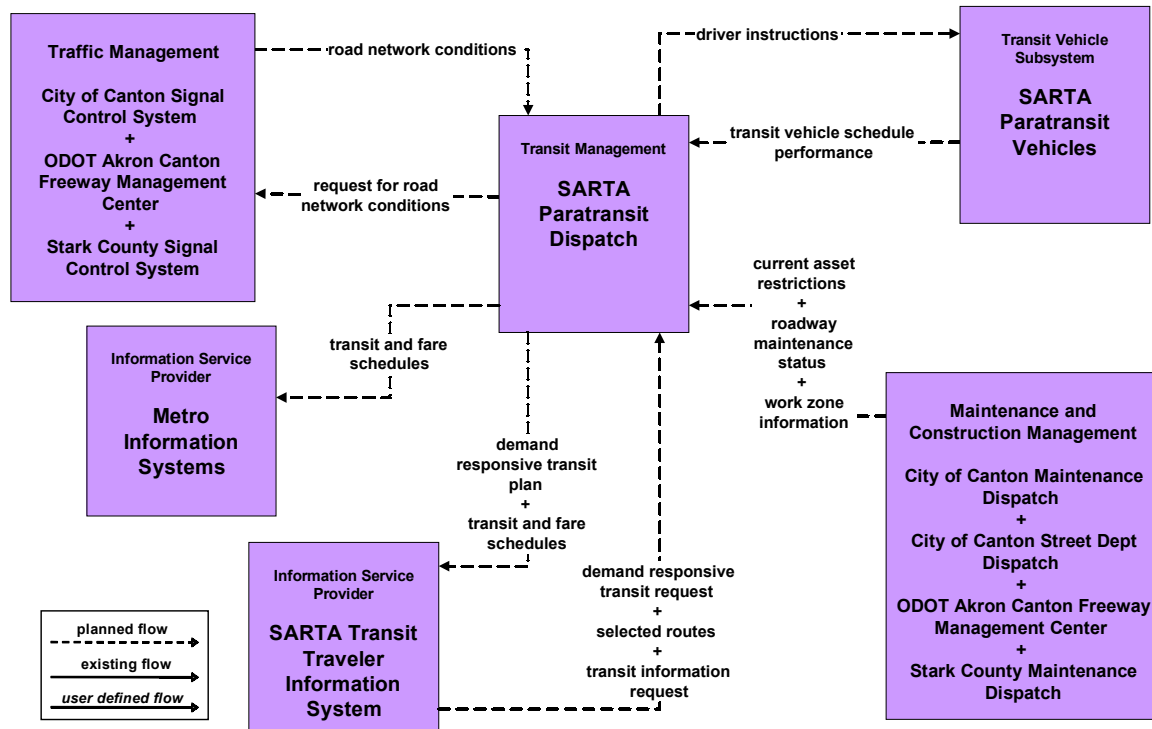
**APTS3 - Demand Response Transit Operations  
METRO**



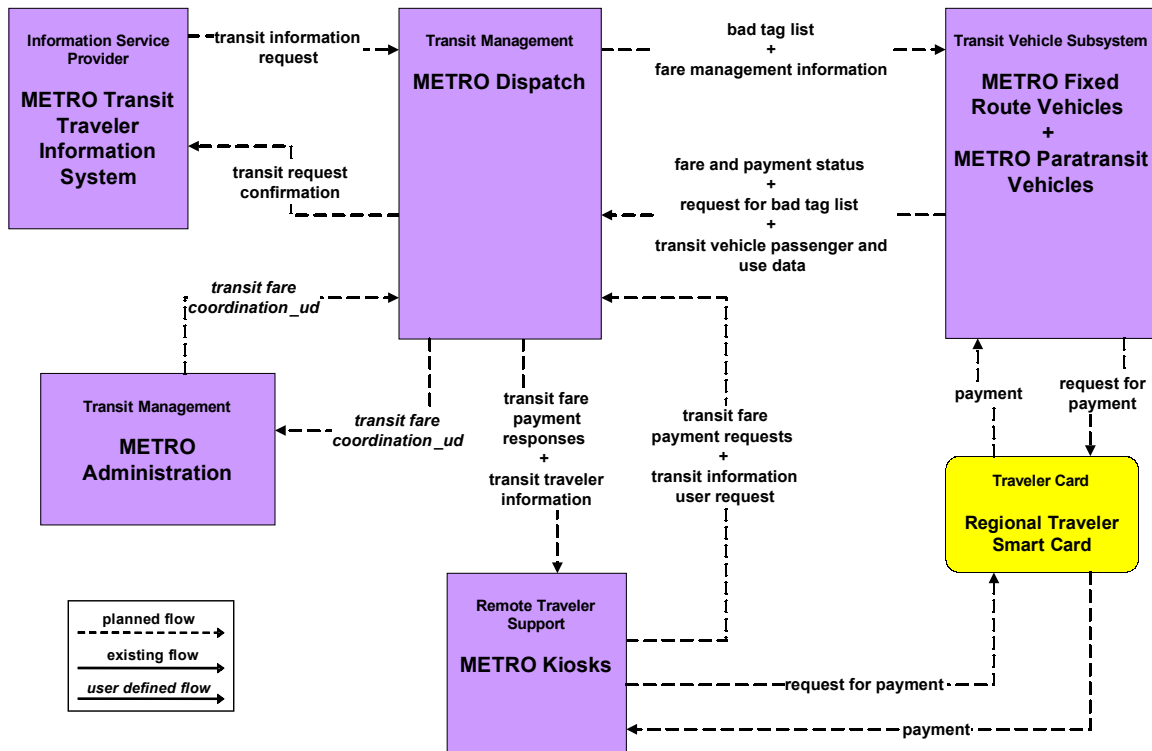
**APTS3 - Demand Response Transit Operations  
PARTA**



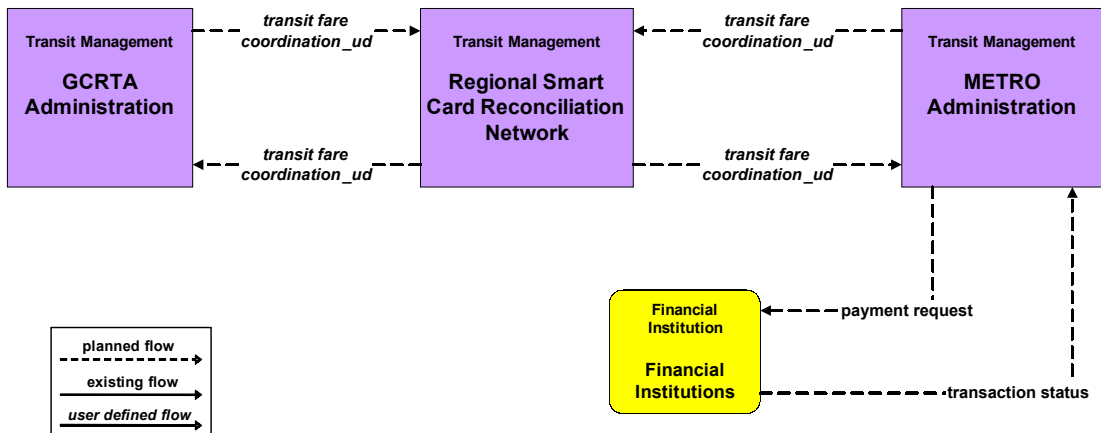
**APTS3 - Demand Response Transit Operations  
SARTA**



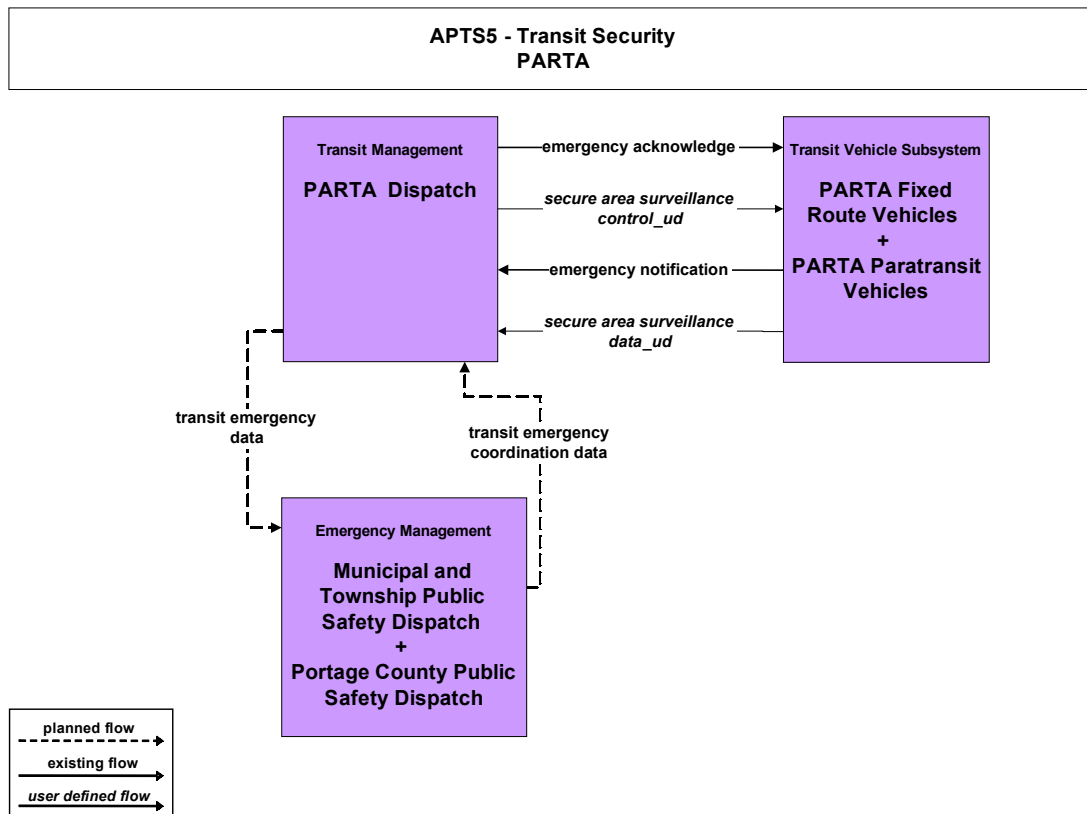
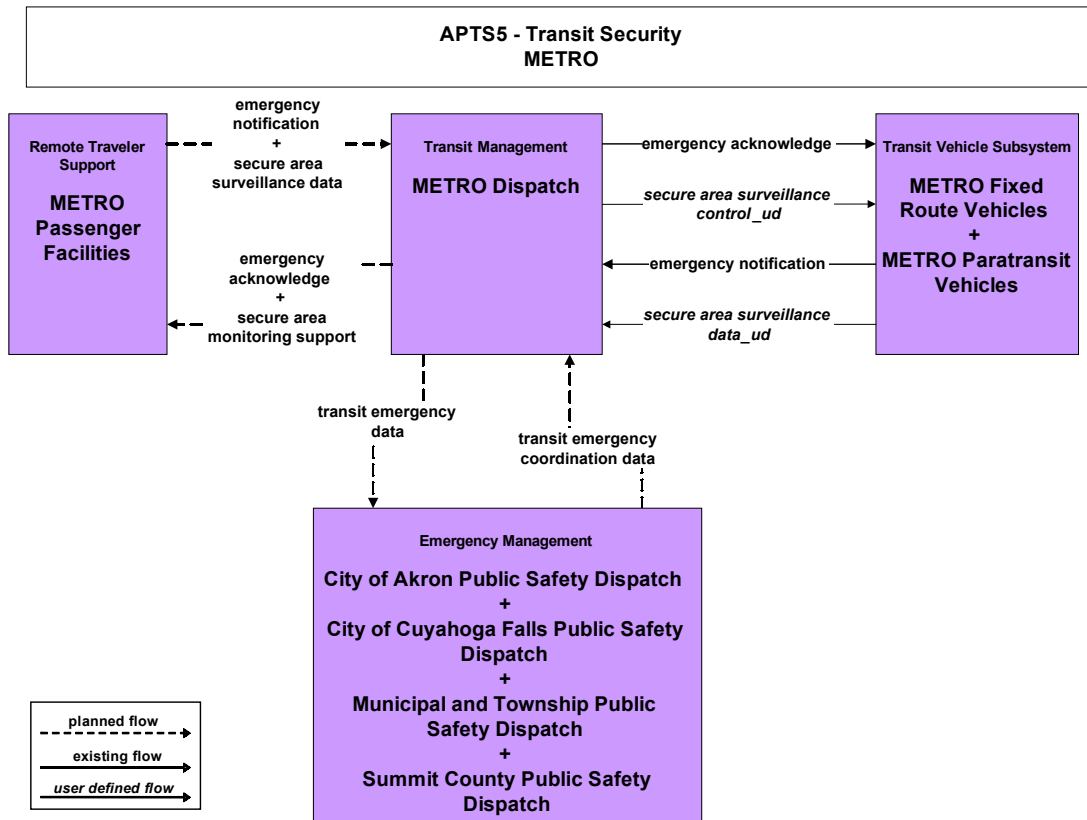
**APTS4 - Transit Passenger and Fare Payment  
METRO Fixed and Paratransit**

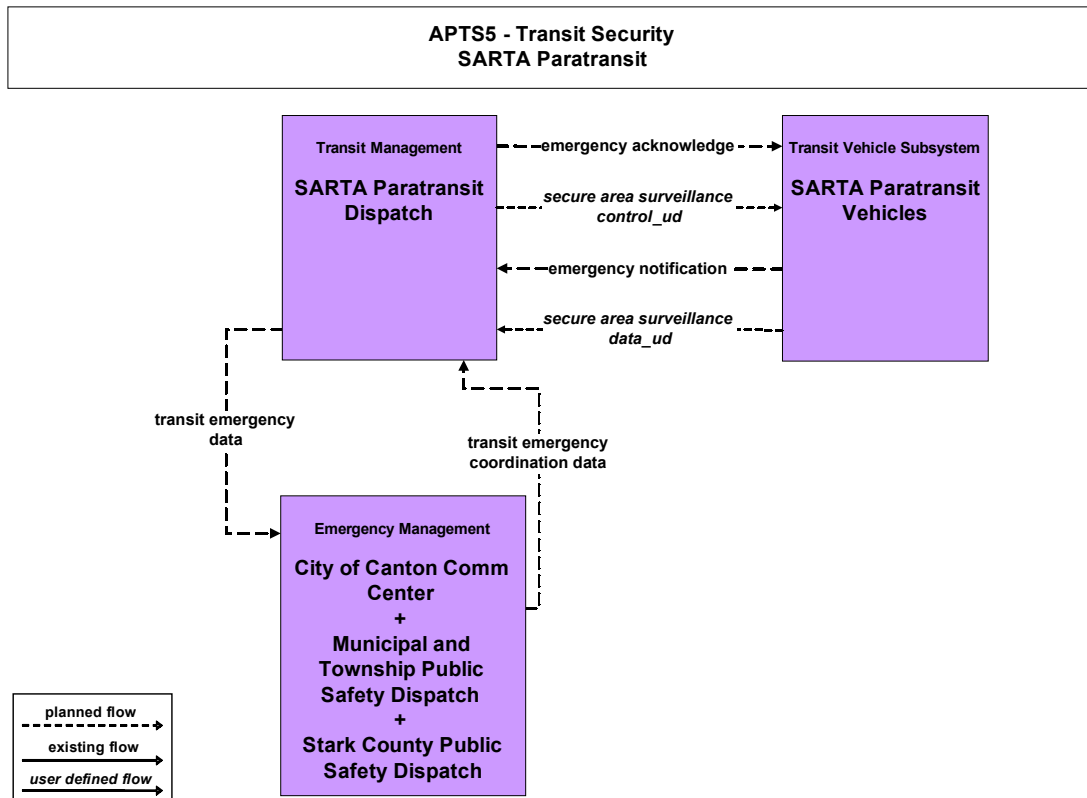
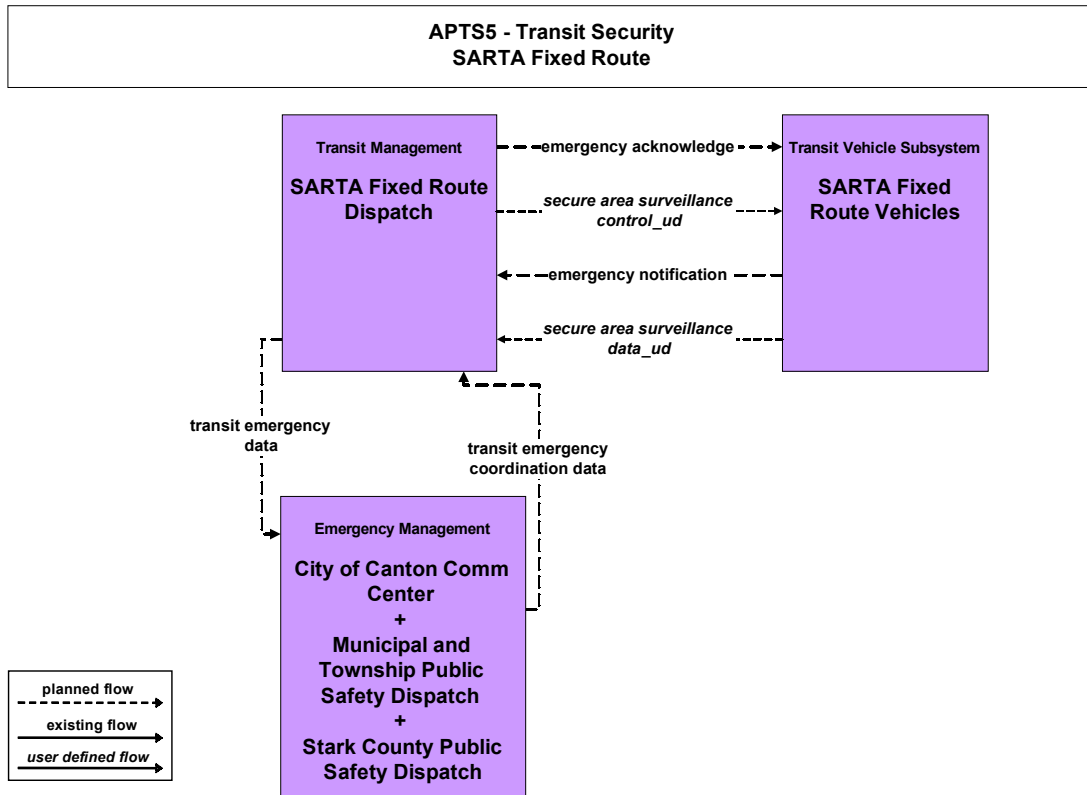


**APTS4 - Transit Passenger and Fare Payment  
Regional Fare Reconciliation**

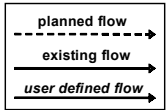
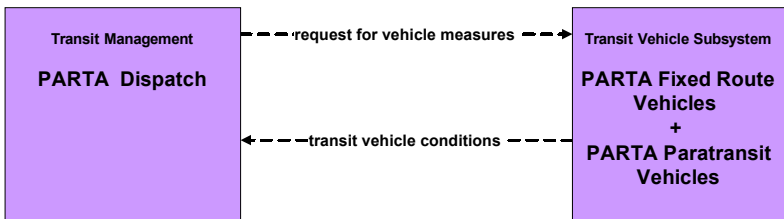
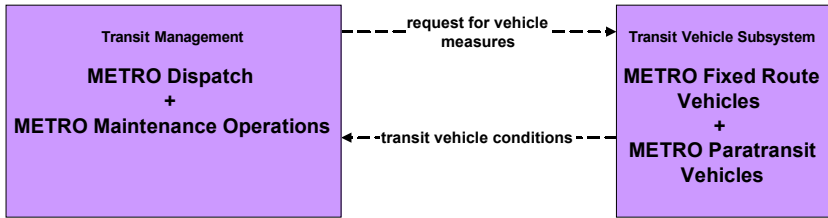




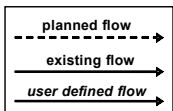
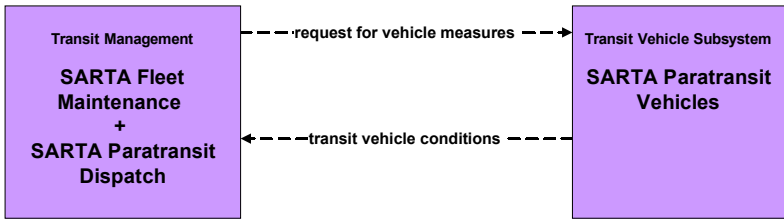
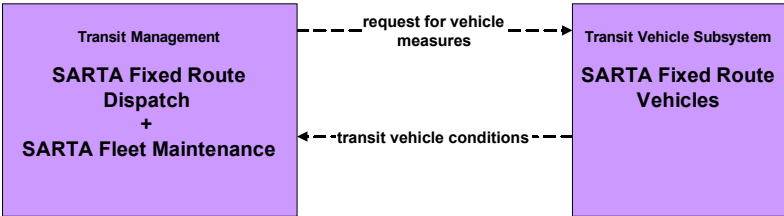




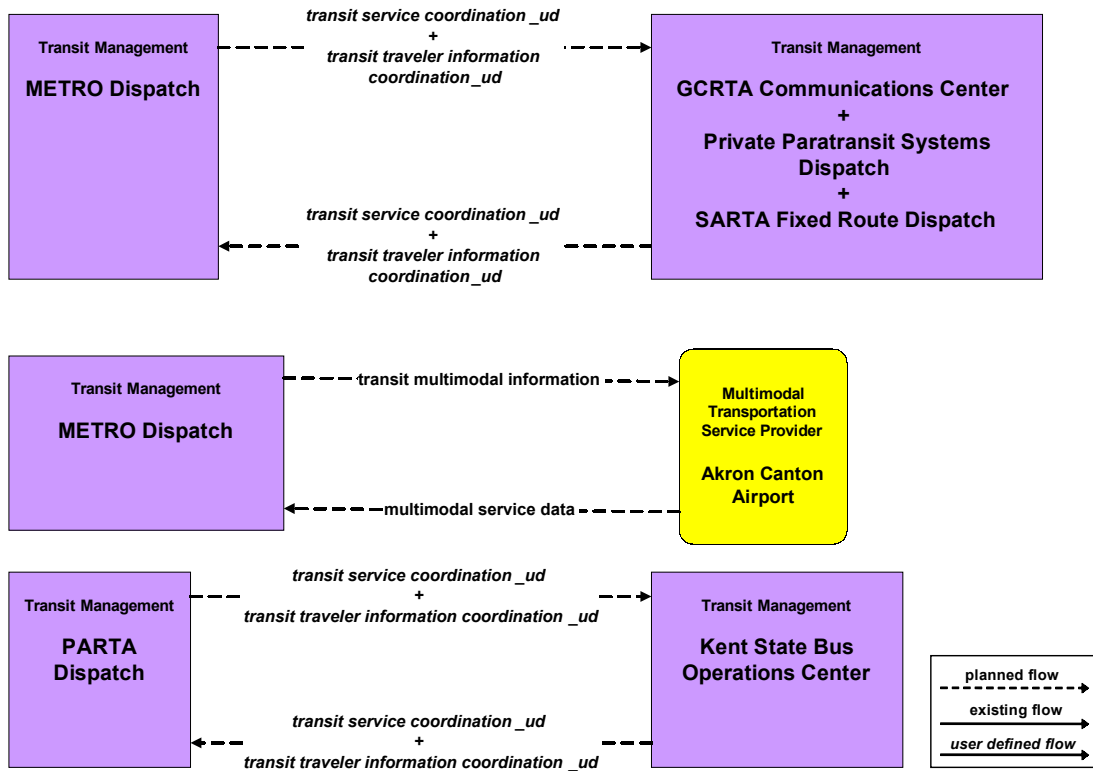
**APTS6 - Transit Vehicle Maintenance  
METRO/ PARTA**



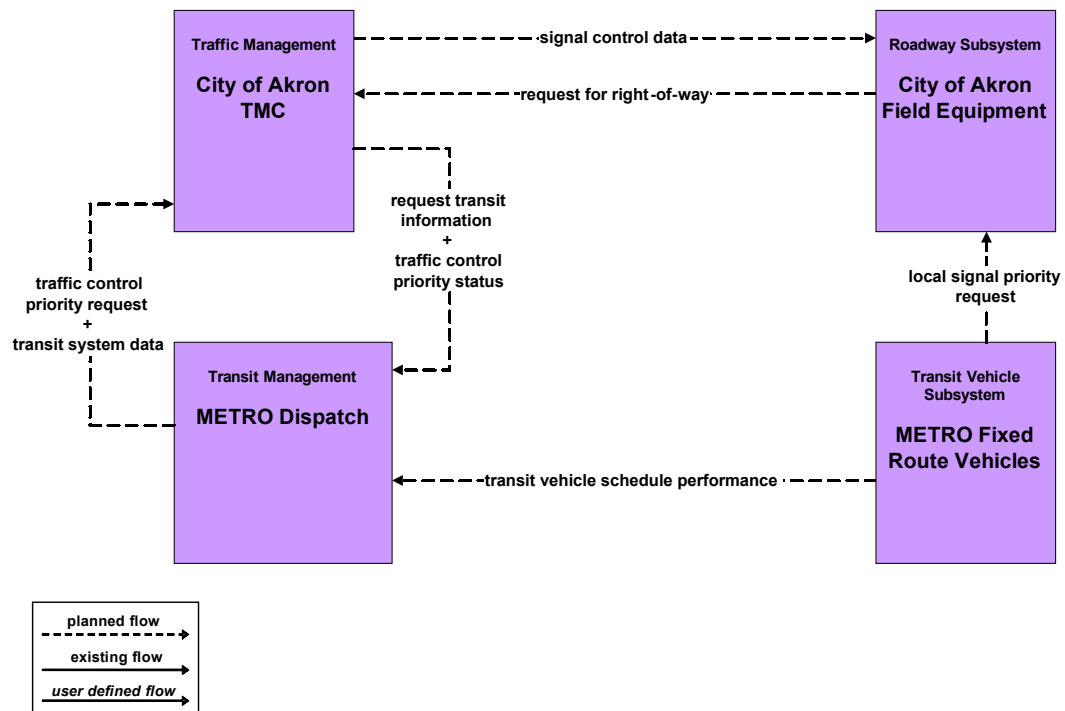
**APTS6 - Transit Vehicle Maintenance  
SARTA**



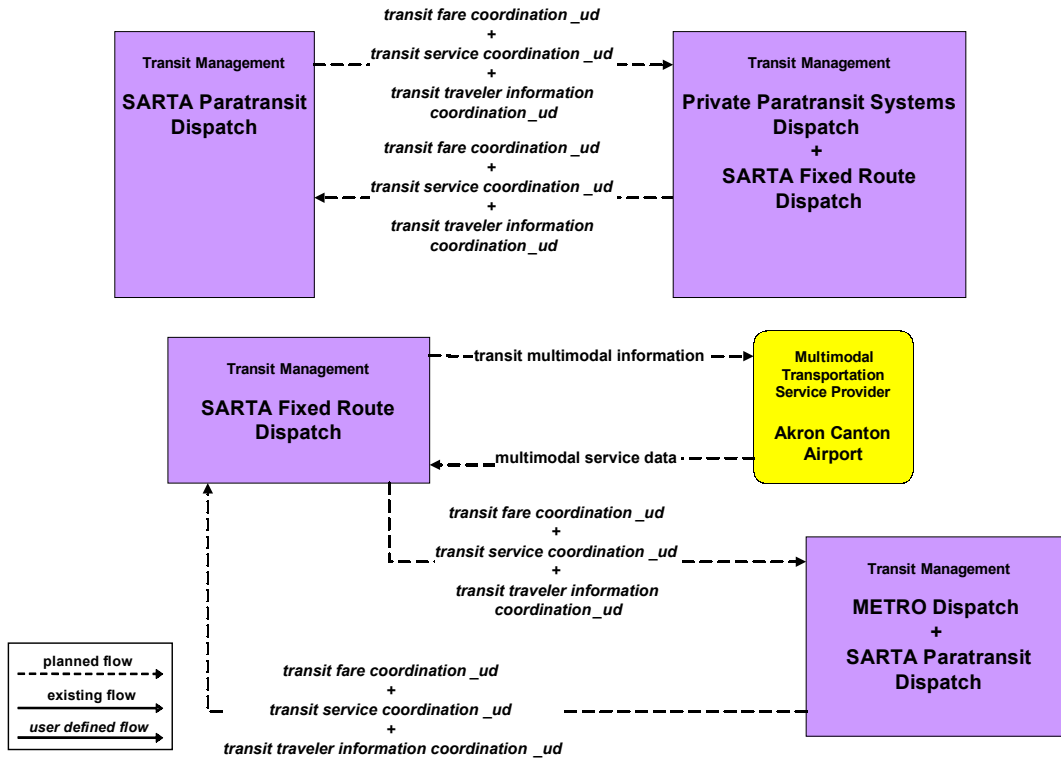
**APTS7 - Multimodal Coordination**  
**Connections to METRO / Connections to PARTA**



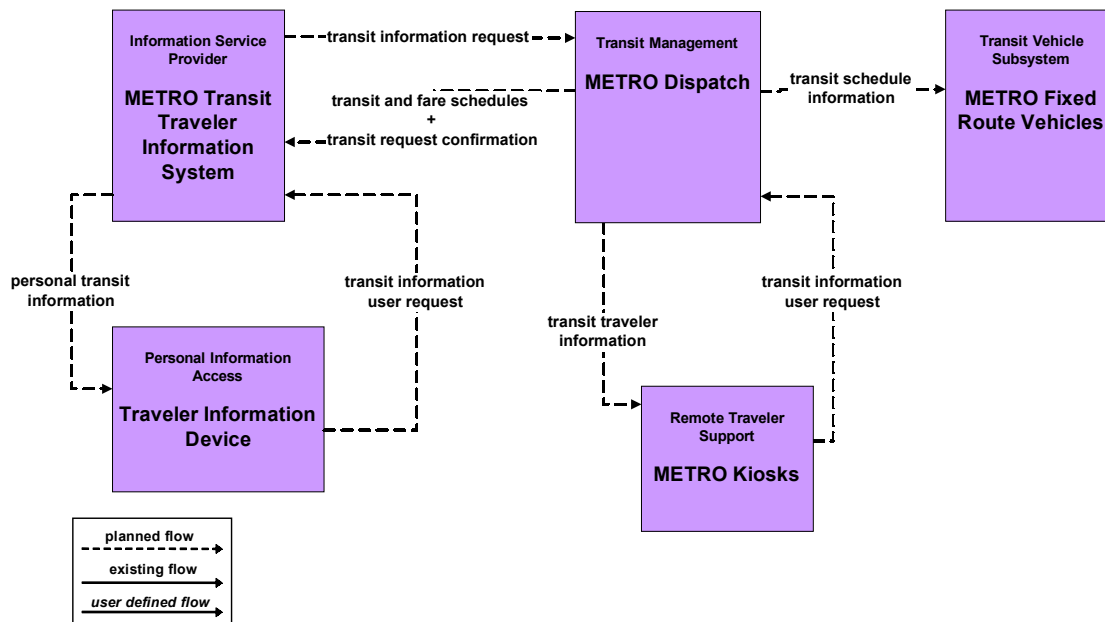
## APTS7 - Multimodal Coordination



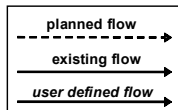
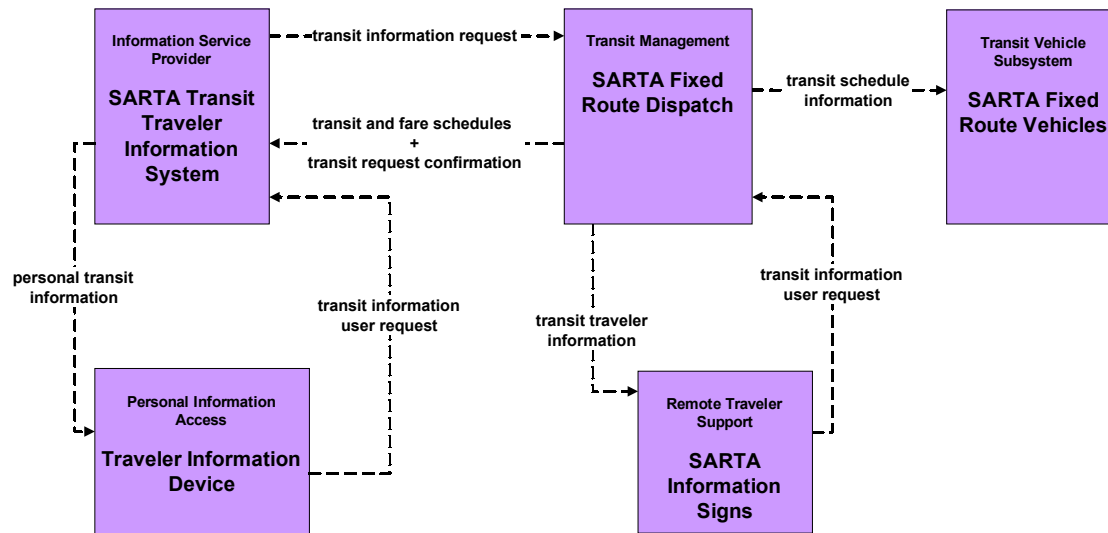
## APTS7 - Multimodal Coordination Connection to SARTA



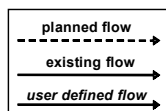
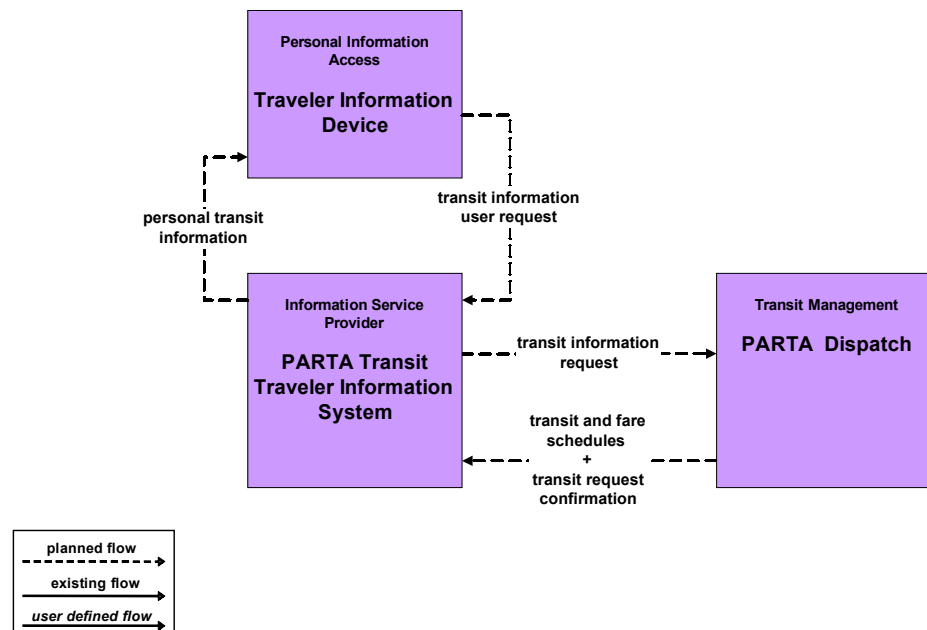
## APTS8 - Transit Traveler Information METRO



# **APTS8 - Transit Traveler Information SARTA**



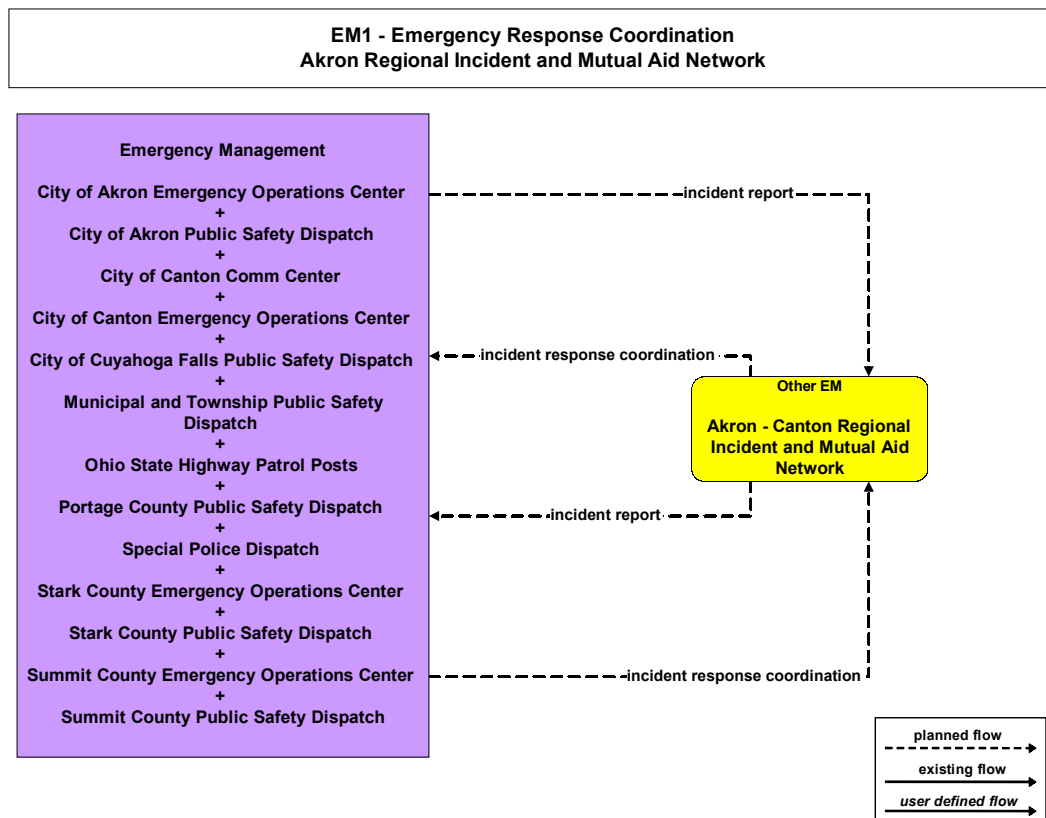
# **APTS8 - Transit Traveler Information PARTA**



# Akron-Canton, Ohio Regional ITS Architecture

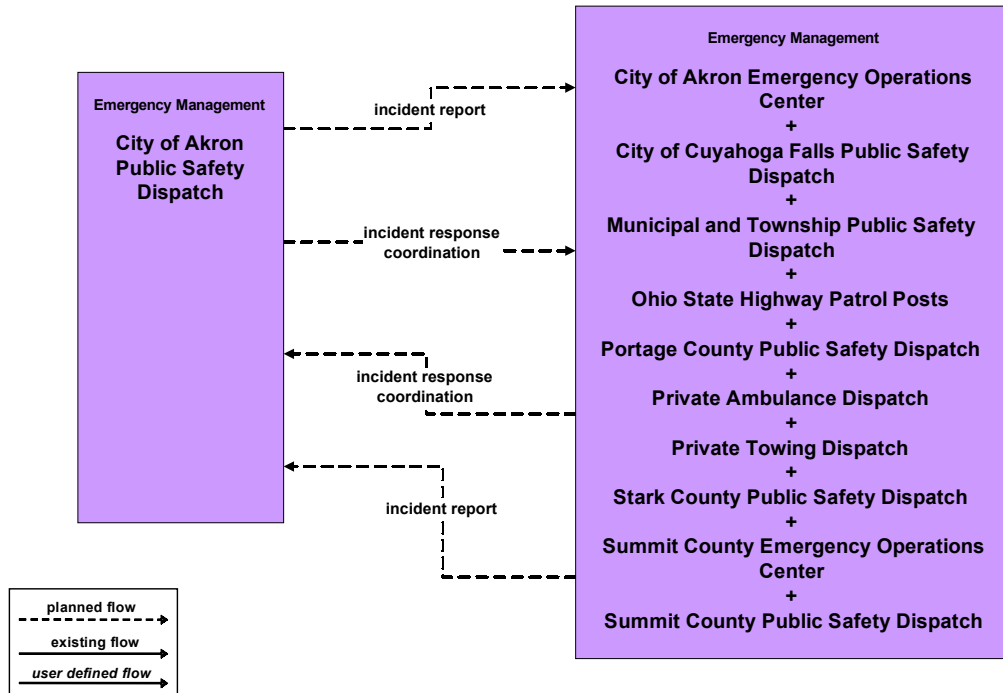
## Customized Market Package Diagrams

### Emergency Management (EM)

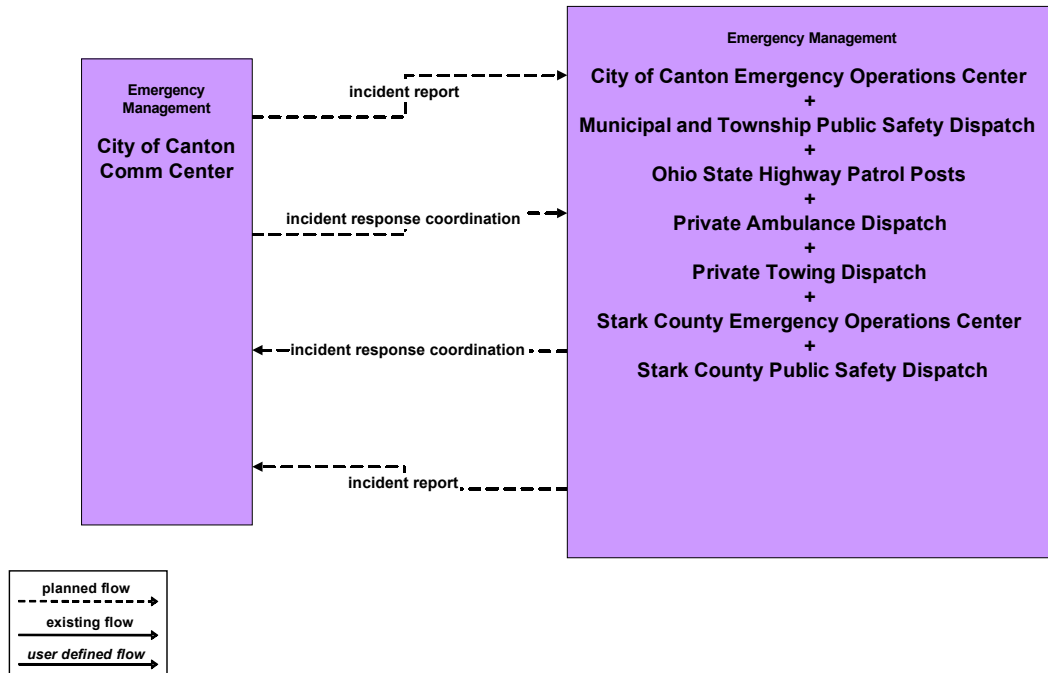




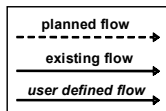
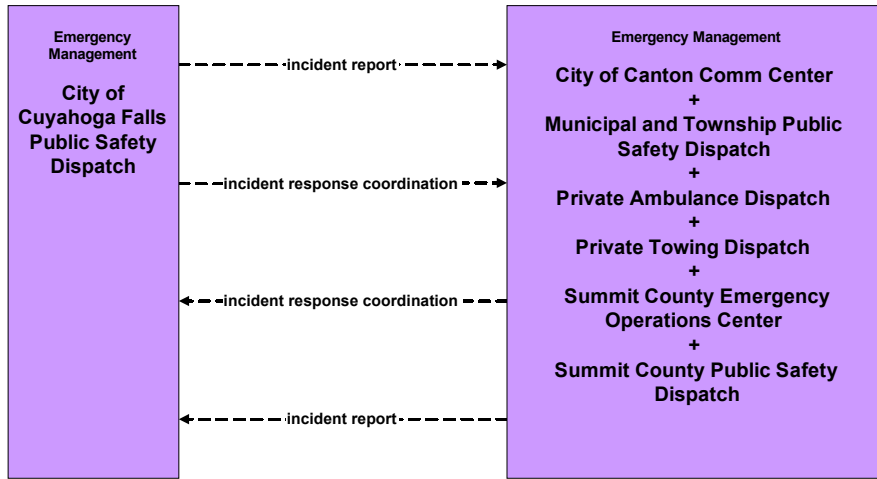
**EM1 - Emergency Response Coordination  
City of Akron Public Safety**



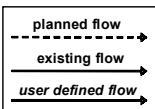
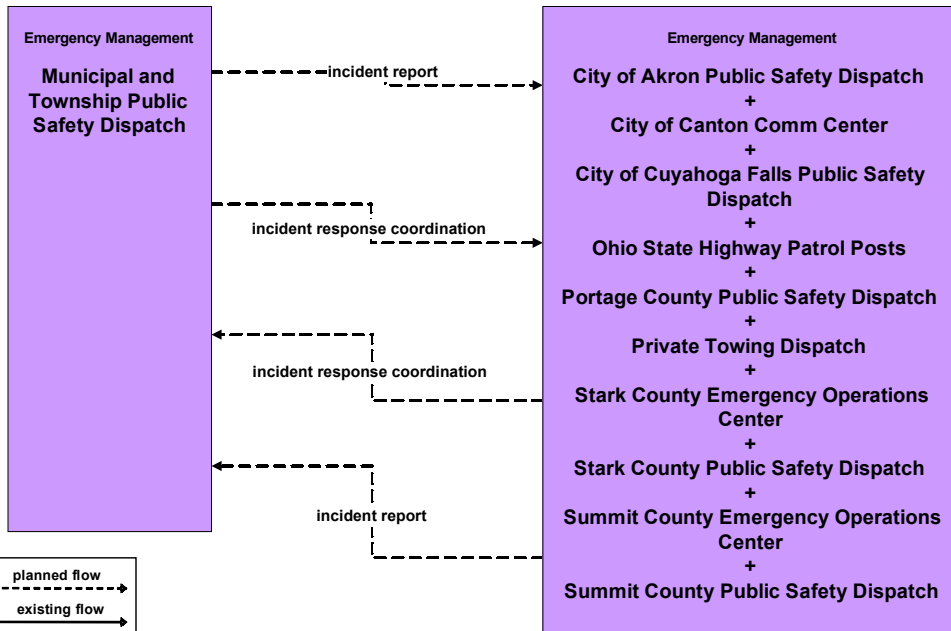
**EM1 - Emergency Response Coordination  
City of Canton Comm Center**



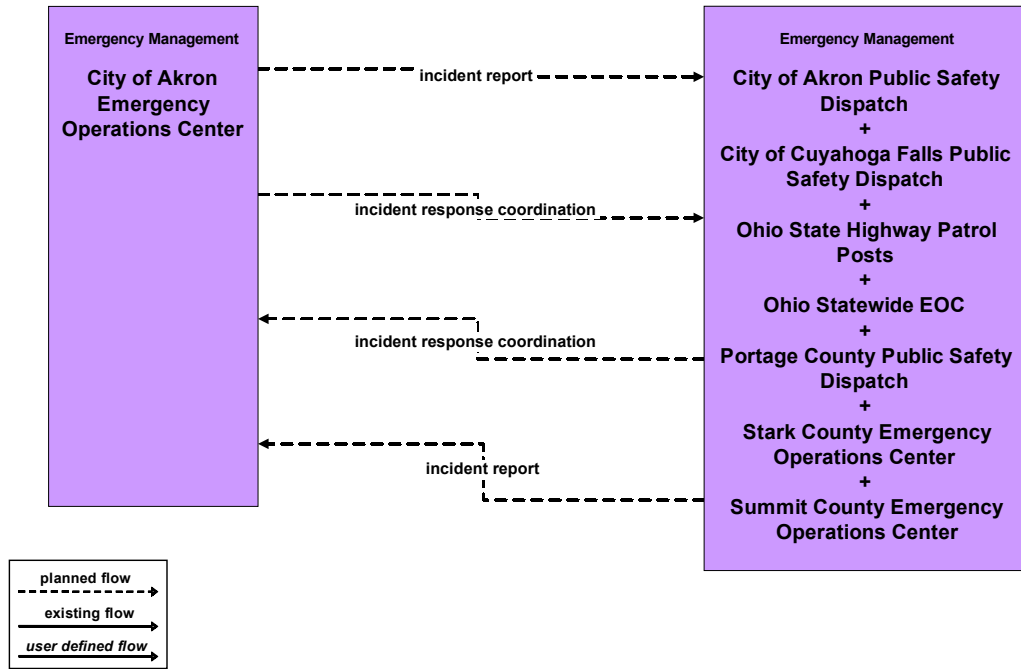
**EM1 - Emergency Response Coordination  
City of Cuyahoga Falls Public Safety**



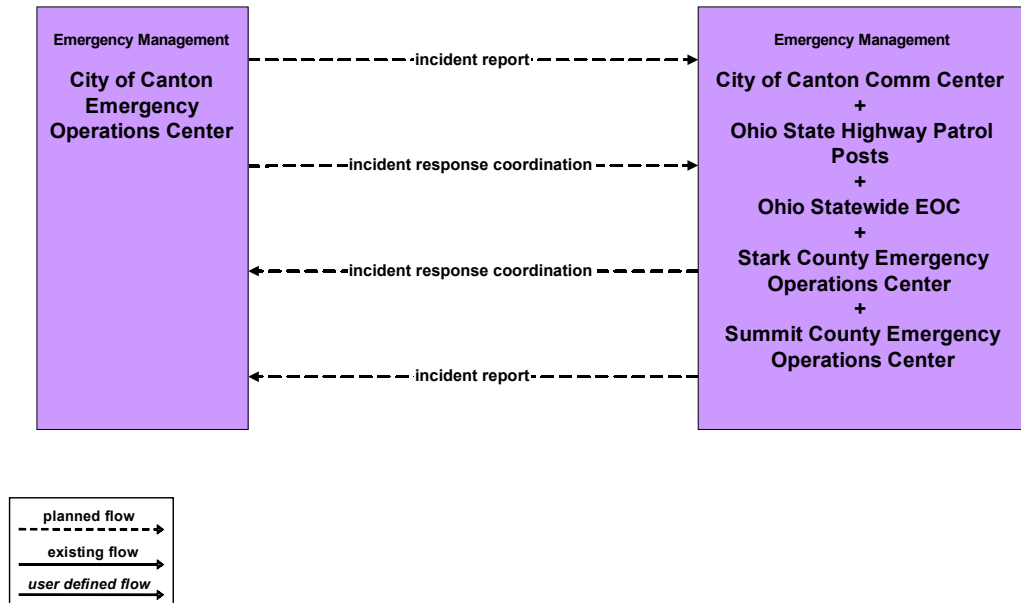
**EM1 - Emergency Response Coordination  
Municipal Public Safety Dispatch**

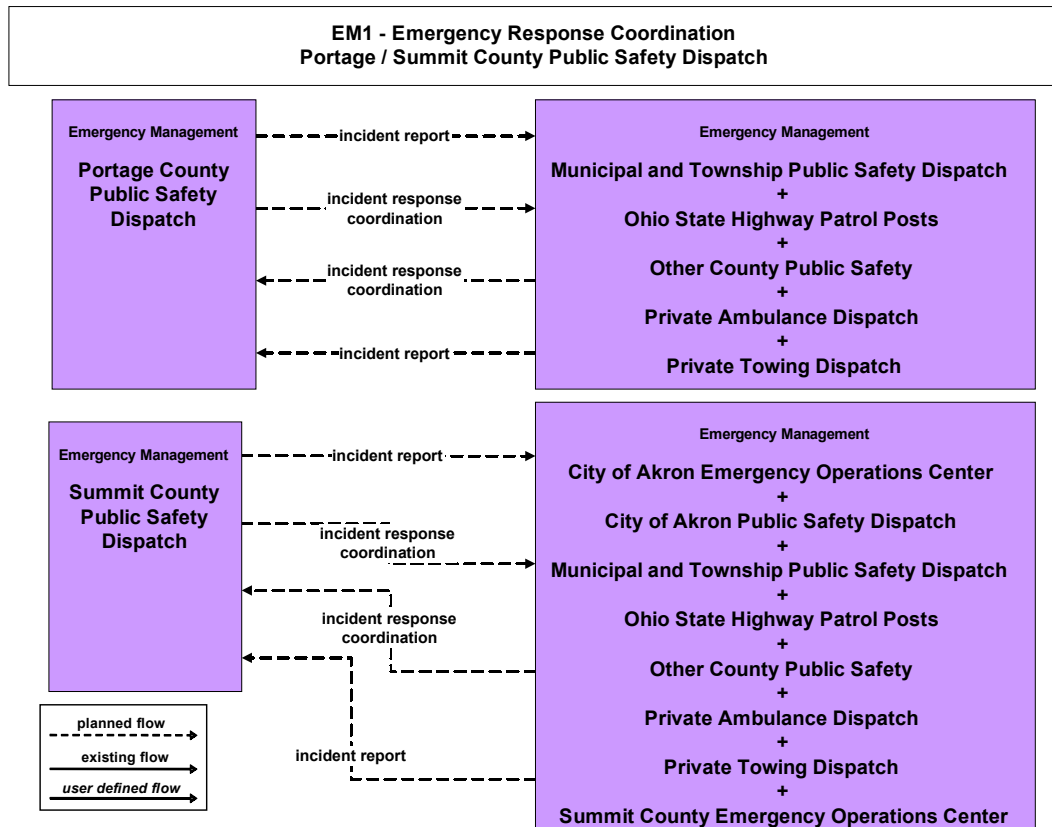
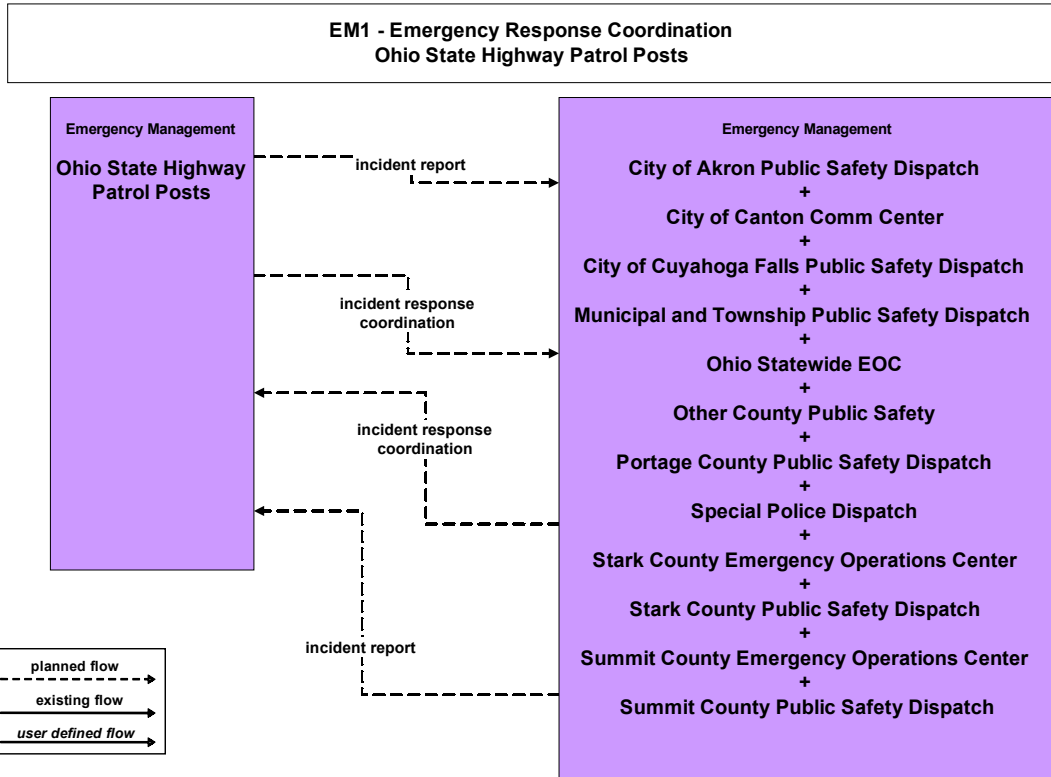


**EM1 - Emergency Response Coordination  
City of Akron EOC**

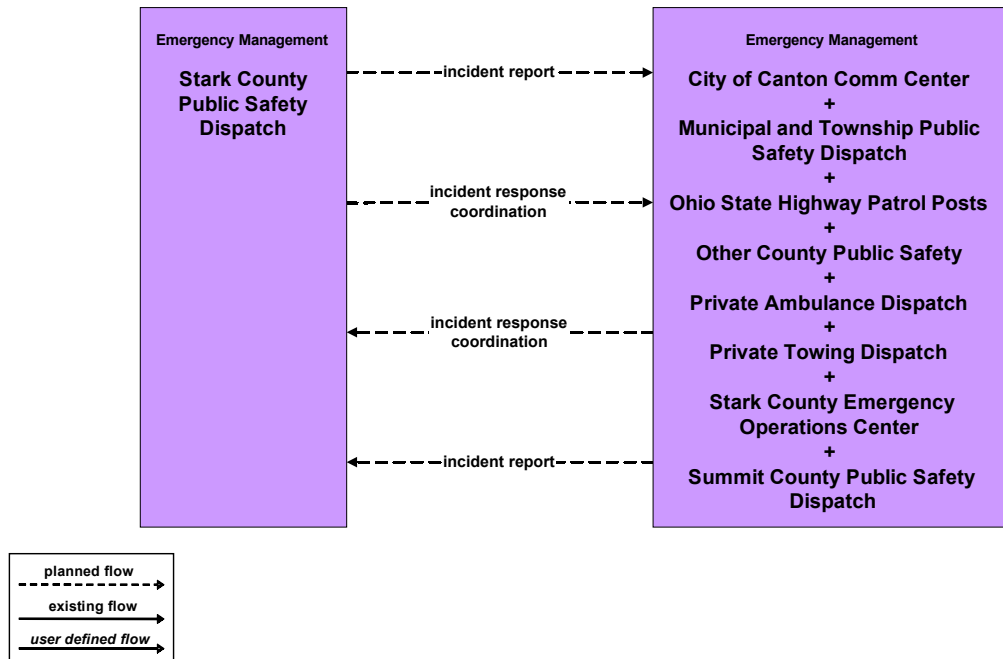


**EM1 - Emergency Response Coordination  
City of Canton EOC**

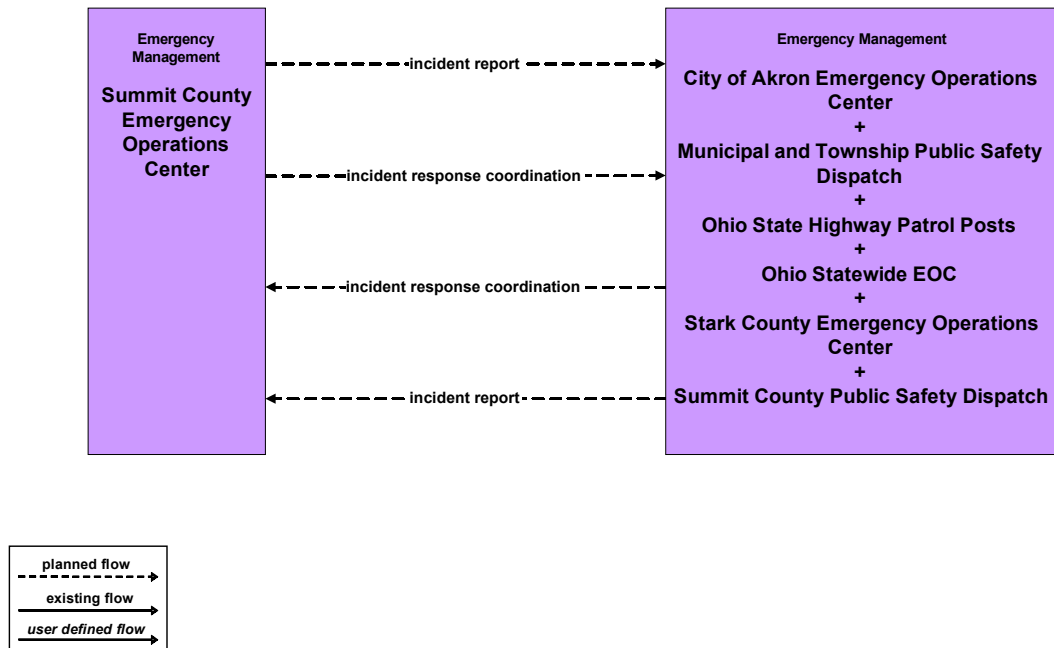




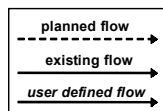
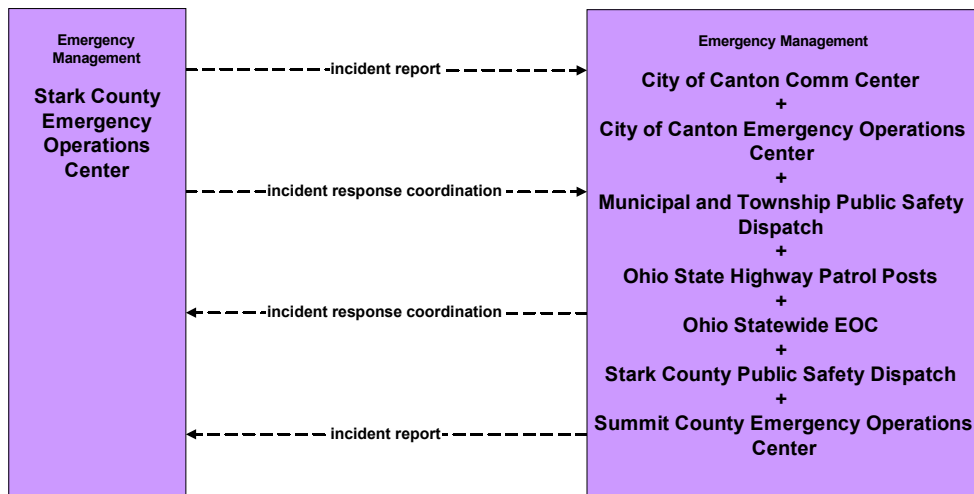
**EM1 - Emergency Response Coordination  
Stark County Public Safety**



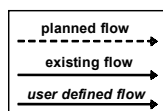
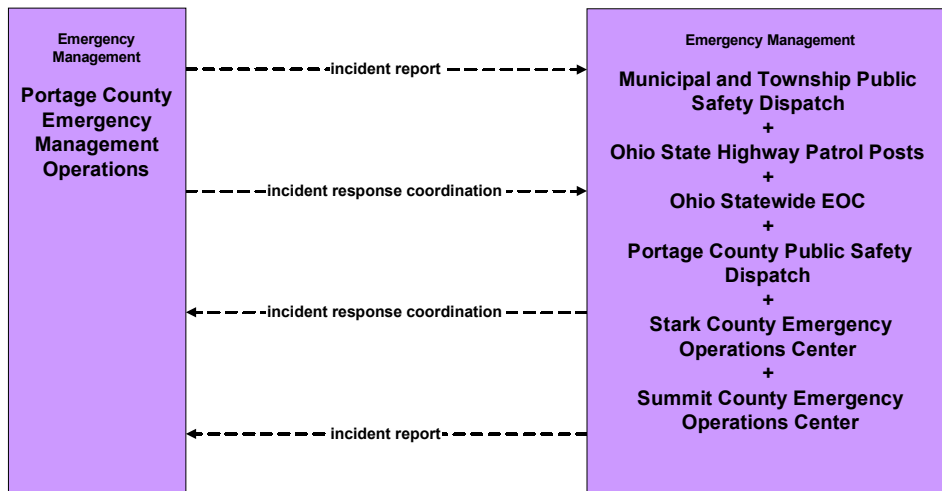
**EM1 - Emergency Response Coordination  
Summit County EOC**



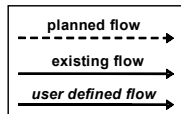
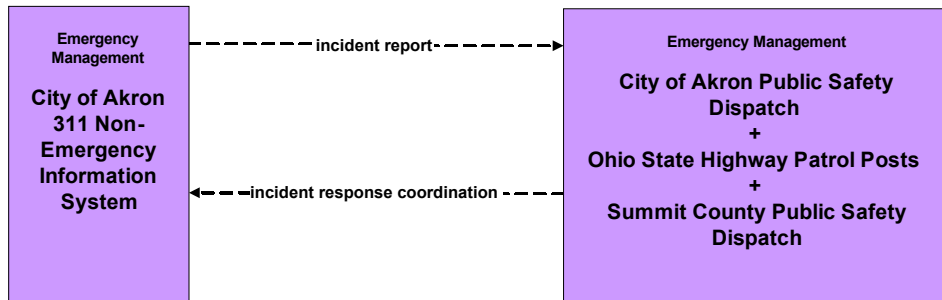
**EM1 - Emergency Response Coordination  
Stark County EOC**



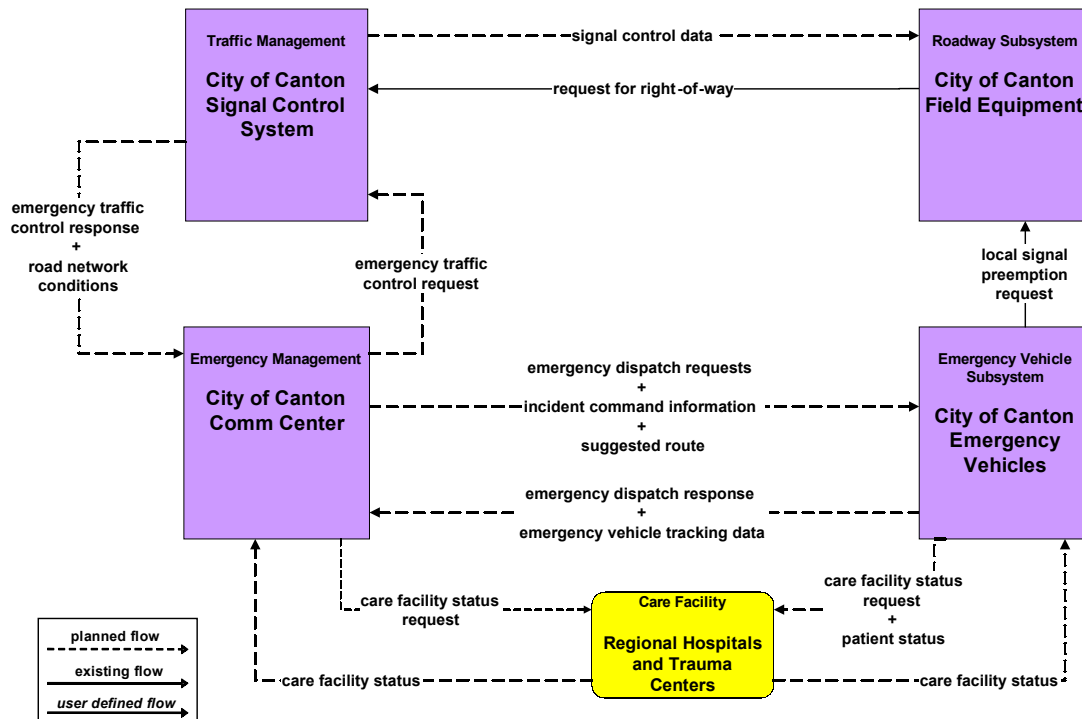
**EM1 - Emergency Response Coordination  
Portage County Emergency Management Operations**

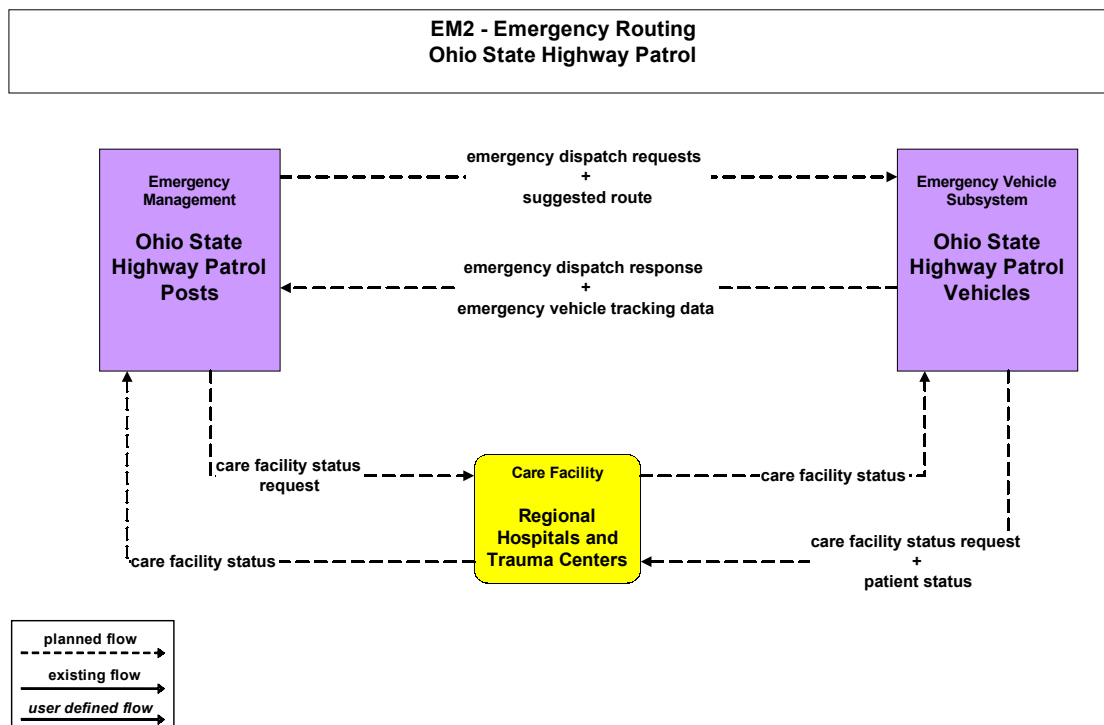
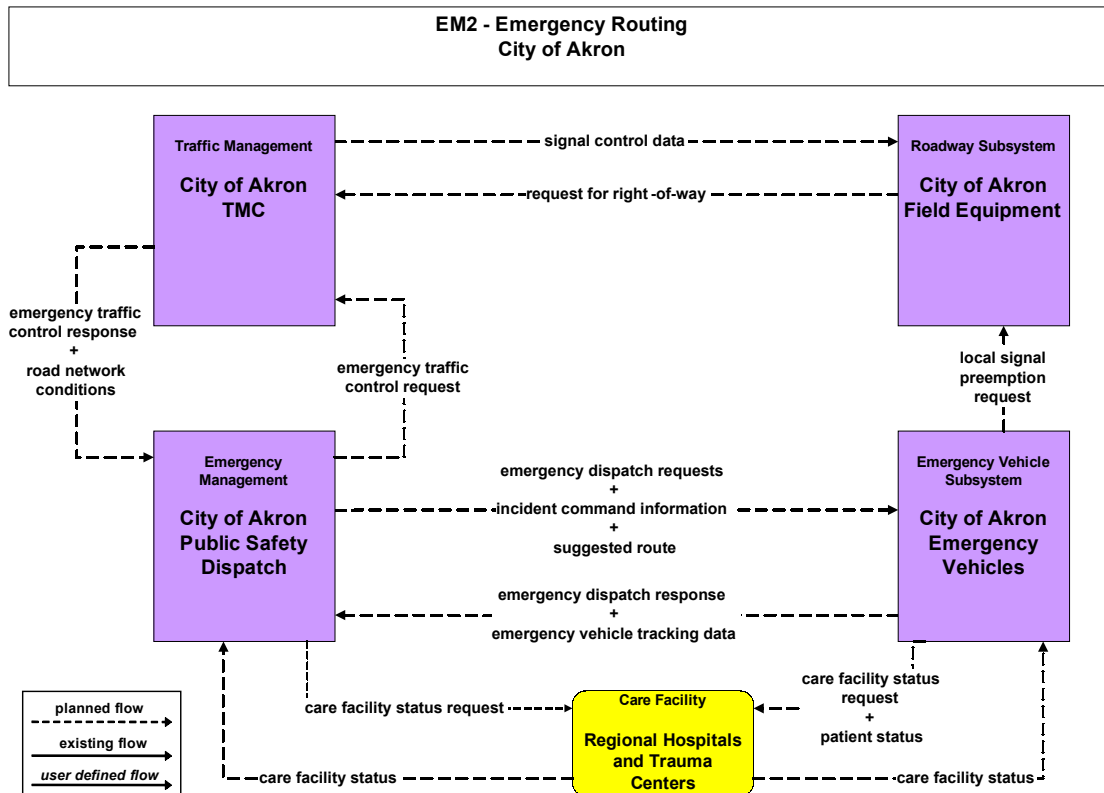


**EM1 - Emergency Response Coordination  
311 Non-Emergency Information System**



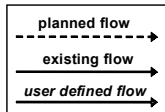
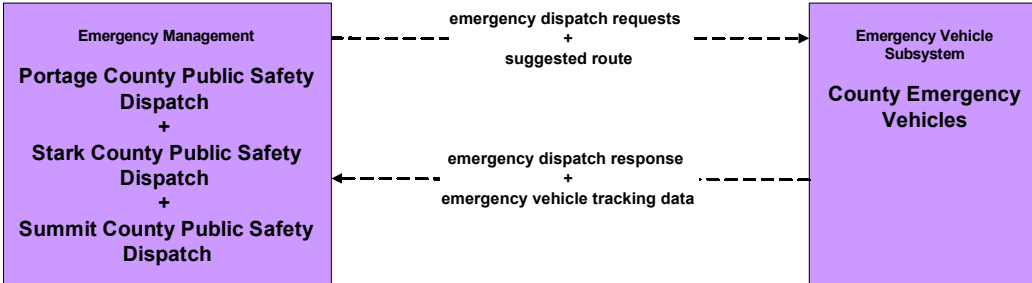
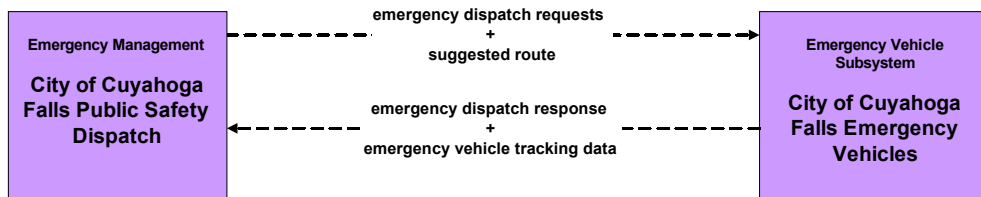
**EM2 - Emergency Routing  
City of Canton**



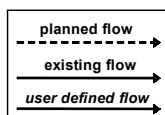
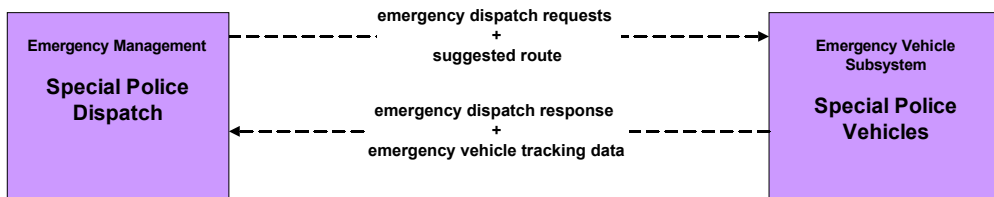
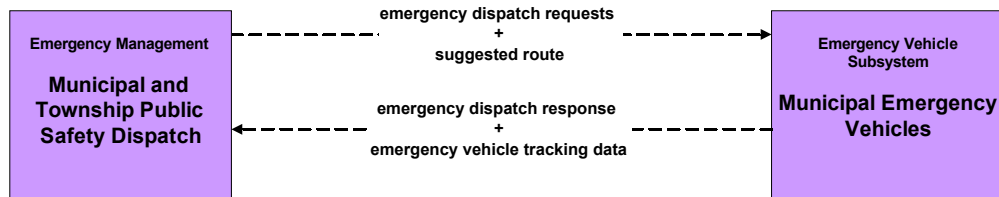




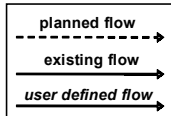
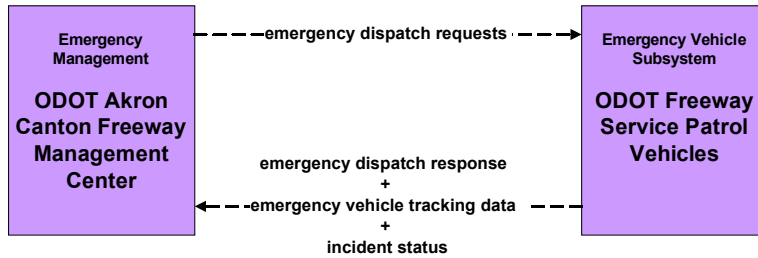
**EM2 - Emergency Routing**  
**Counties and City of Cuyahoga Falls Public Safety**



**EM2 - Emergency Routing**  
**Municipal Public Safety Dispatch and Special Police Dispatch**



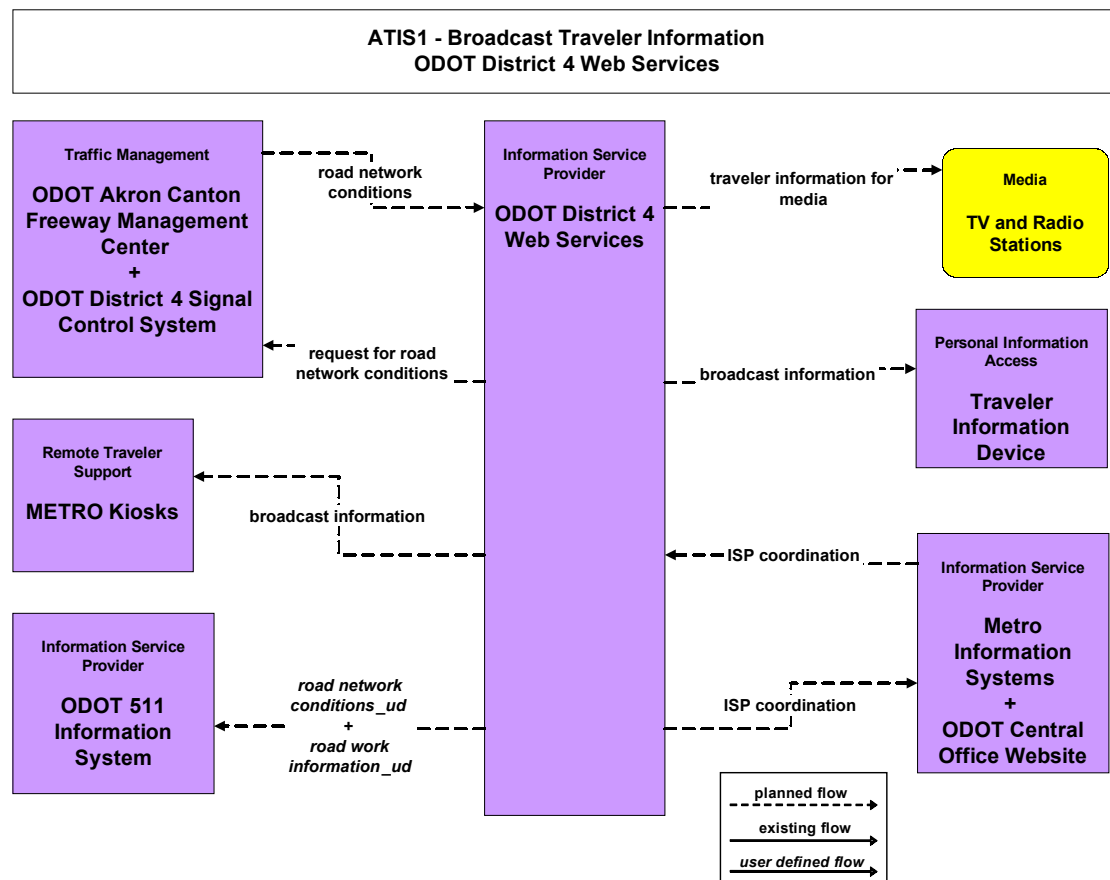
**EM4 - Roadway Service Patrols  
ODOT Road Crewzers**



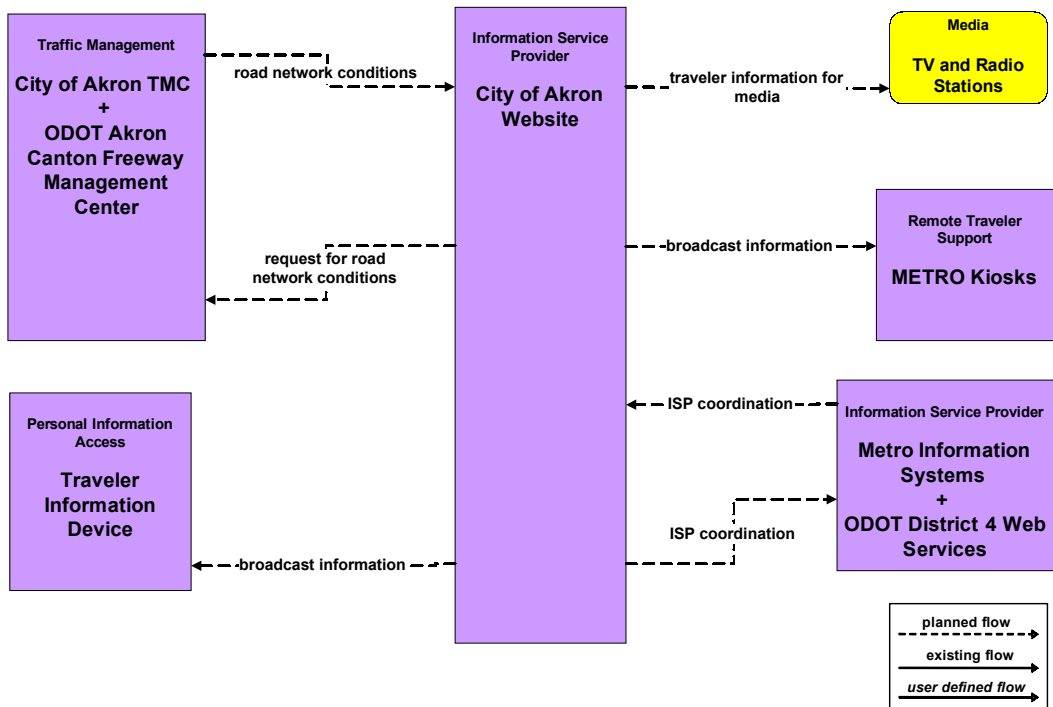
# Akron-Canton, Ohio Regional ITS Architecture

## Customized Market Package Diagrams

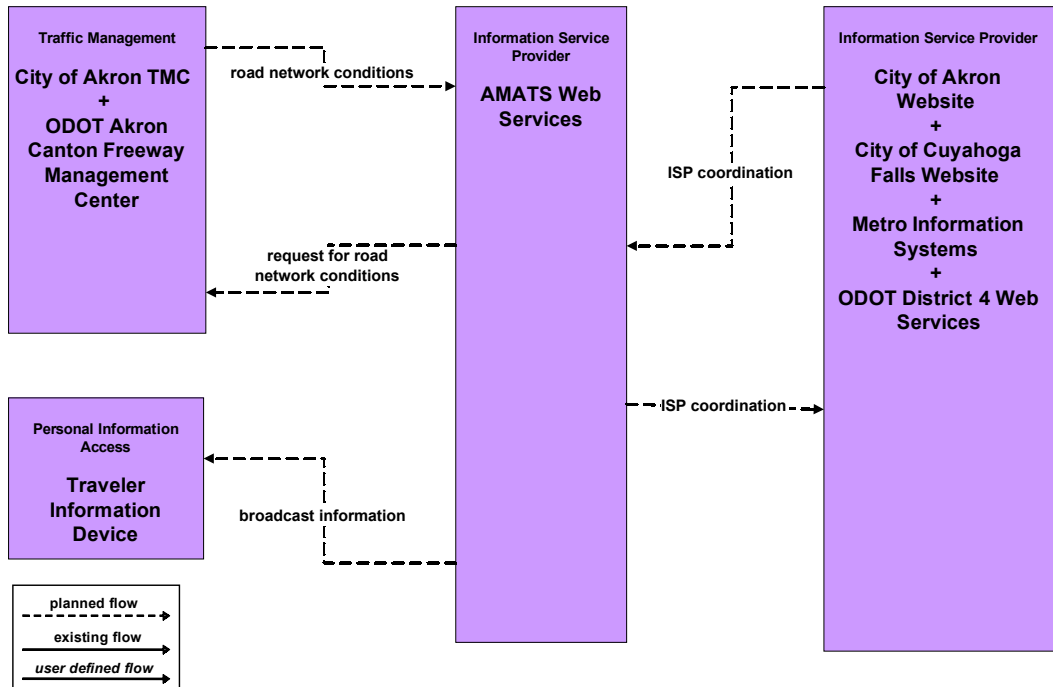
### Advanced Traveler Information Systems (ATIS)



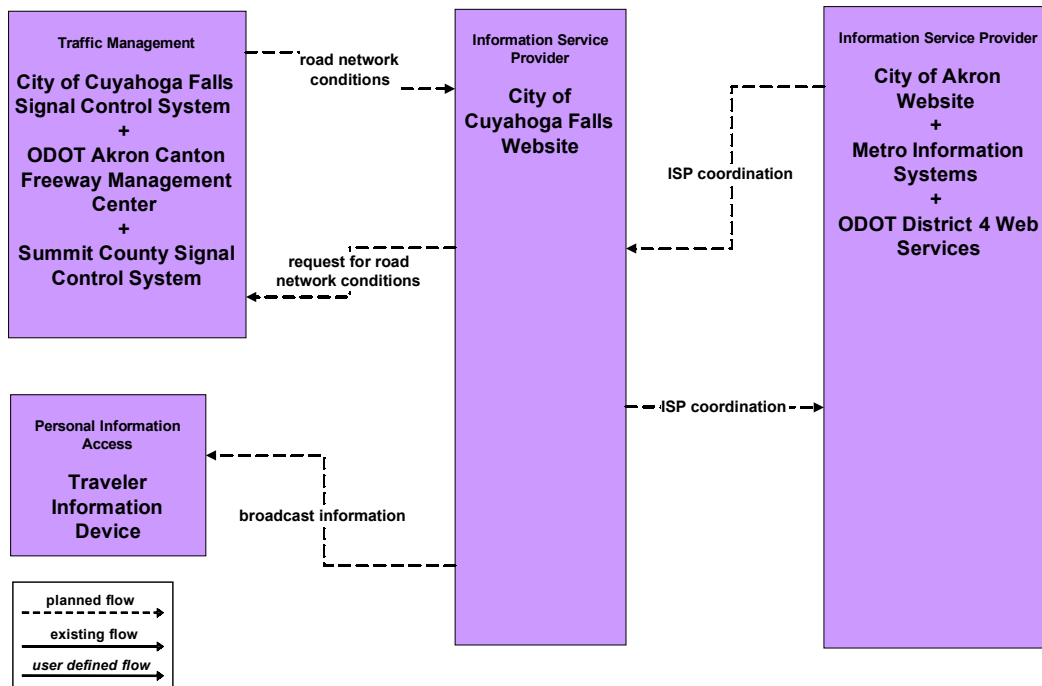
# **ATIS1 - Broadcast Traveler Information City of Akron Website**



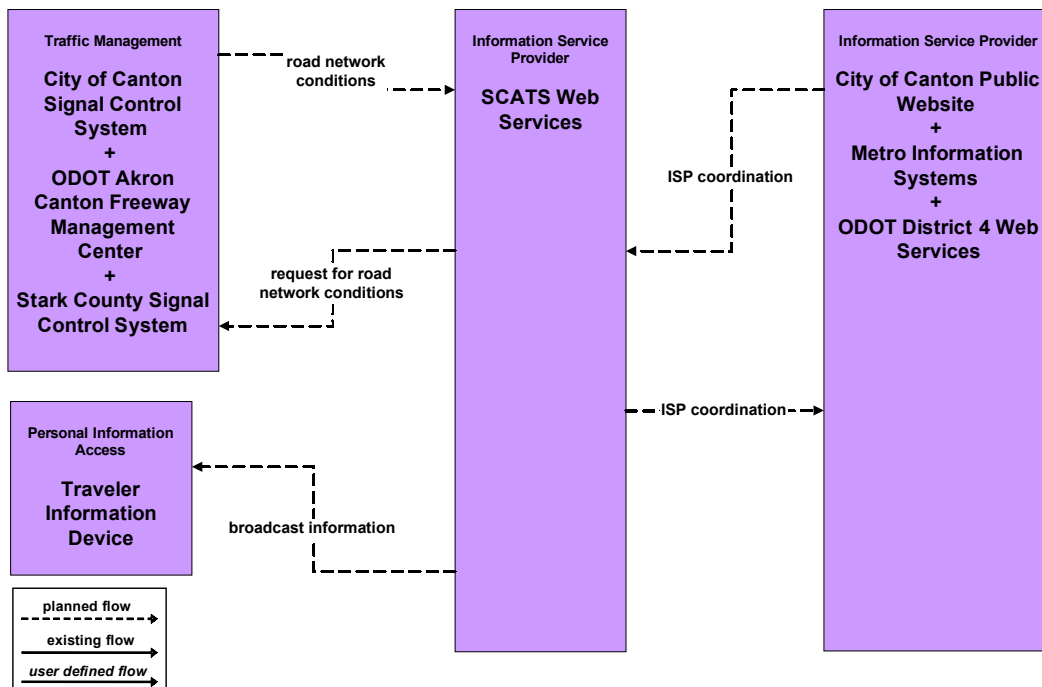
# **ATIS1 - Broadcast Traveler Information AMATS Web Services**



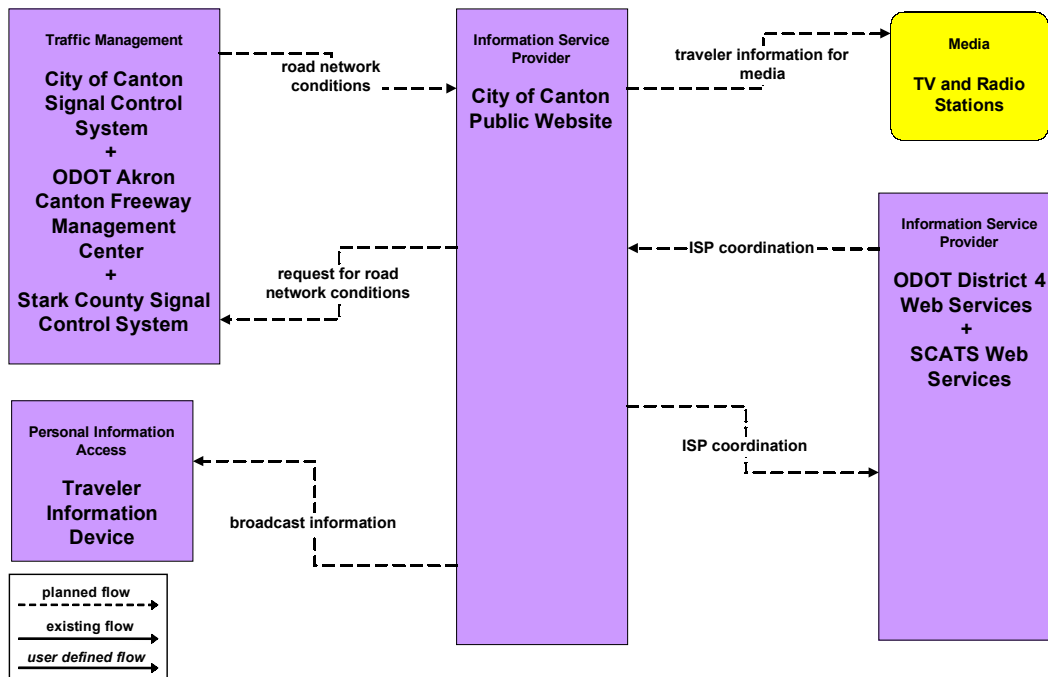
**ATIS1 - Broadcast Traveler Information  
City of Cuyahoga Falls Website**



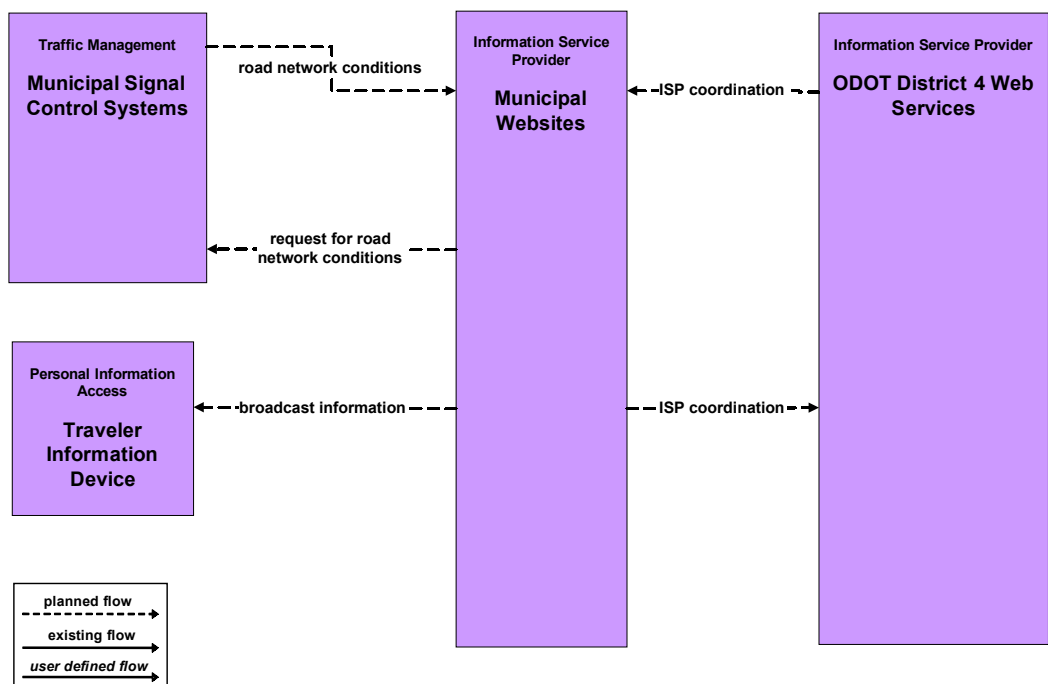
**ATIS1 - Broadcast Traveler Information  
SCATS Web Services**



# **ATIS1 - Broadcast Traveler Information City of Canton Public Website**



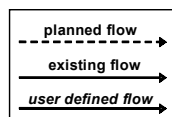
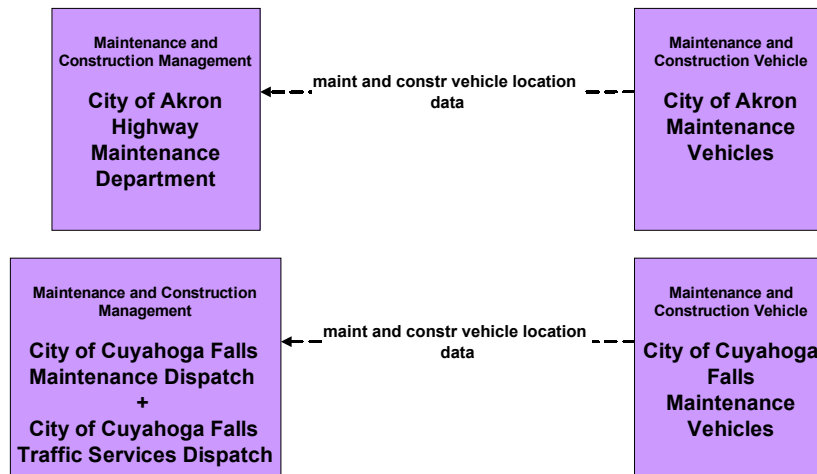
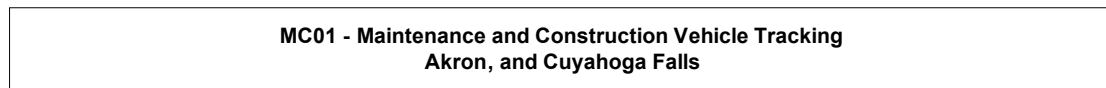
# **ATIS1 - Broadcast Traveler Information Municipal Websites**



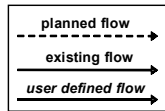
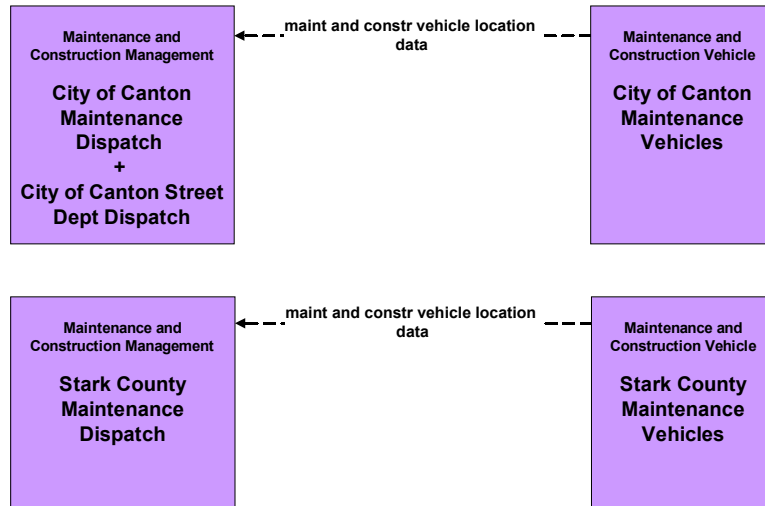
# Akron-Canton, Ohio Regional ITS Architecture

## Customized Market Package Diagrams

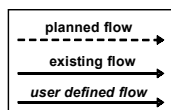
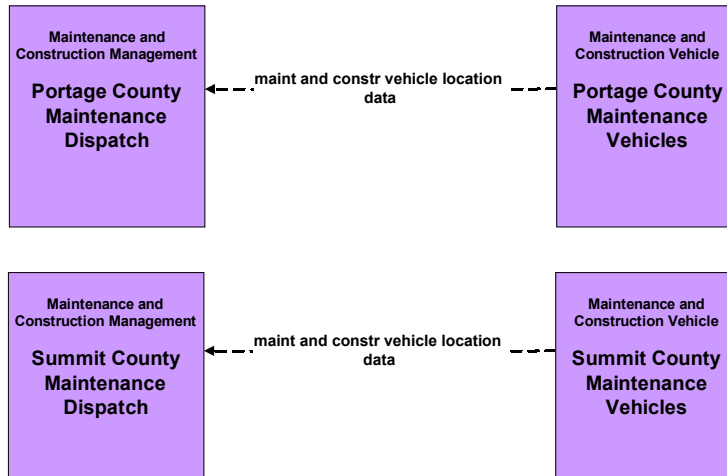
### Maintenance and Construction (MC)



**MC01 - Maintenance and Construction Vehicle Tracking  
City of Canton, Stark County**

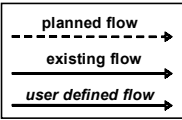
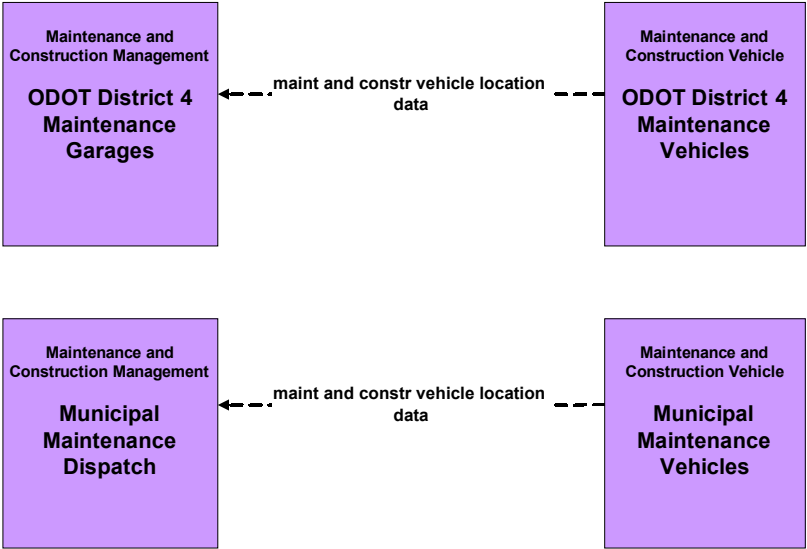


**MC01 - Maintenance and Construction Vehicle Tracking  
Portage and Summit Counties**

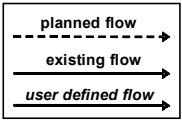
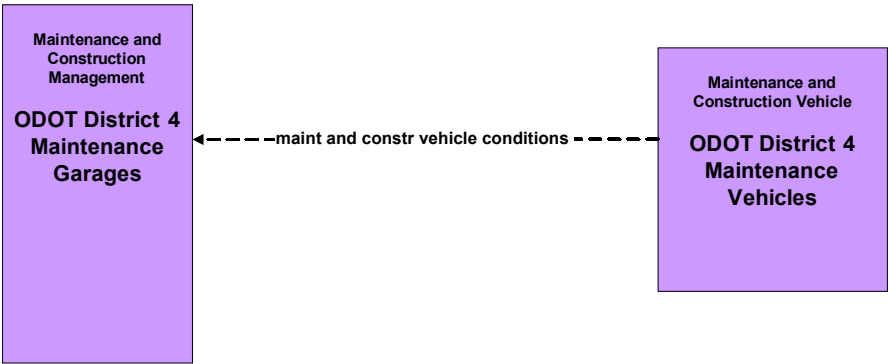




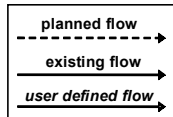
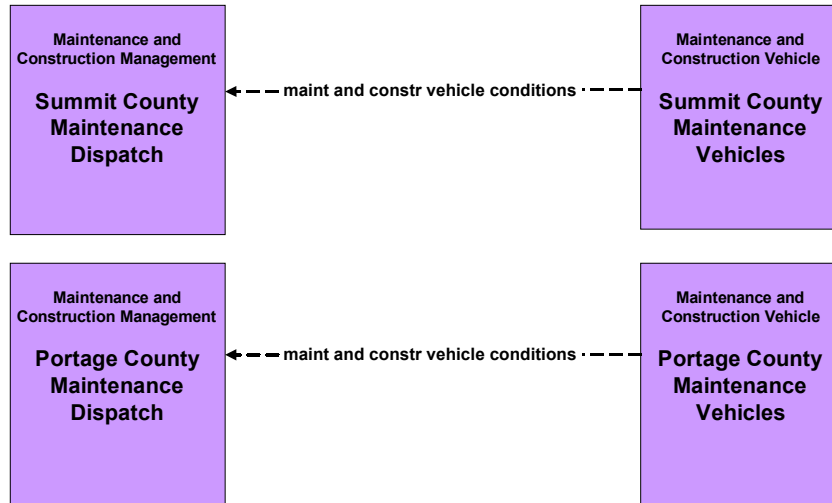
**MC01 - Maintenance and Construction Vehicle Tracking**  
**ODOT, Municipal**



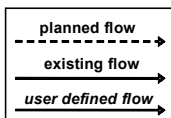
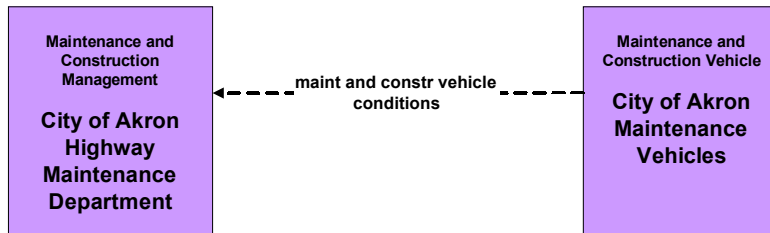
**MC02 - Maintenance and Construction Vehicle Maintenance**  
**ODOT District 4**



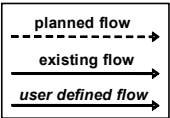
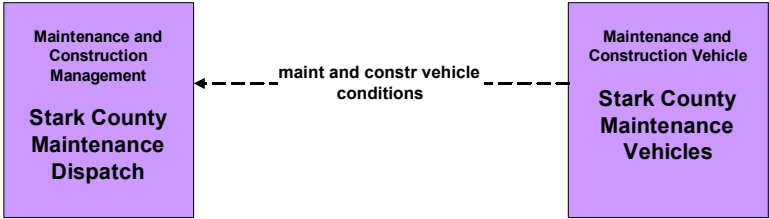
**MC02 - Maintenance and Construction Vehicle Maintenance  
Summit/ Portage County Maintenance**



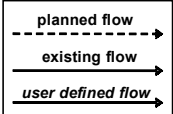
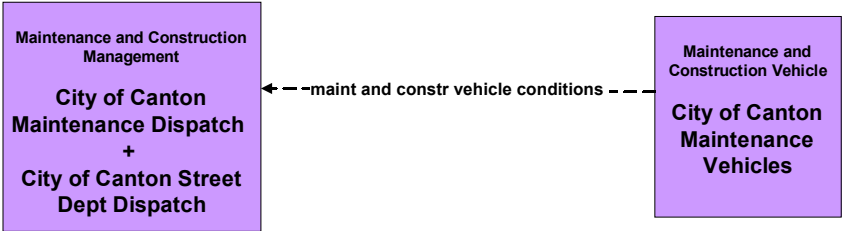
**MC02 - Maintenance and Construction Vehicle Maintenance  
City of Akron**



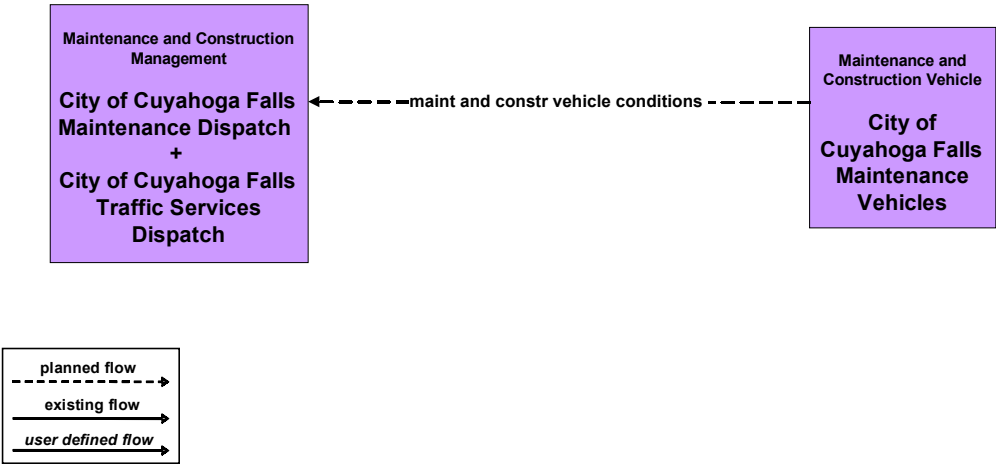
**MC02 - Maintenance and Construction Vehicle Maintenance  
Stark County**



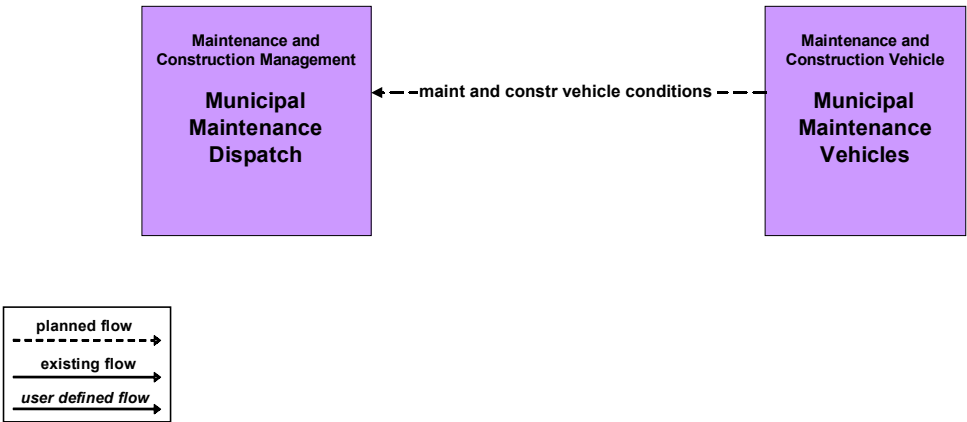
**MC02 - Maintenance and Construction Vehicle Maintenance  
City of Canton**



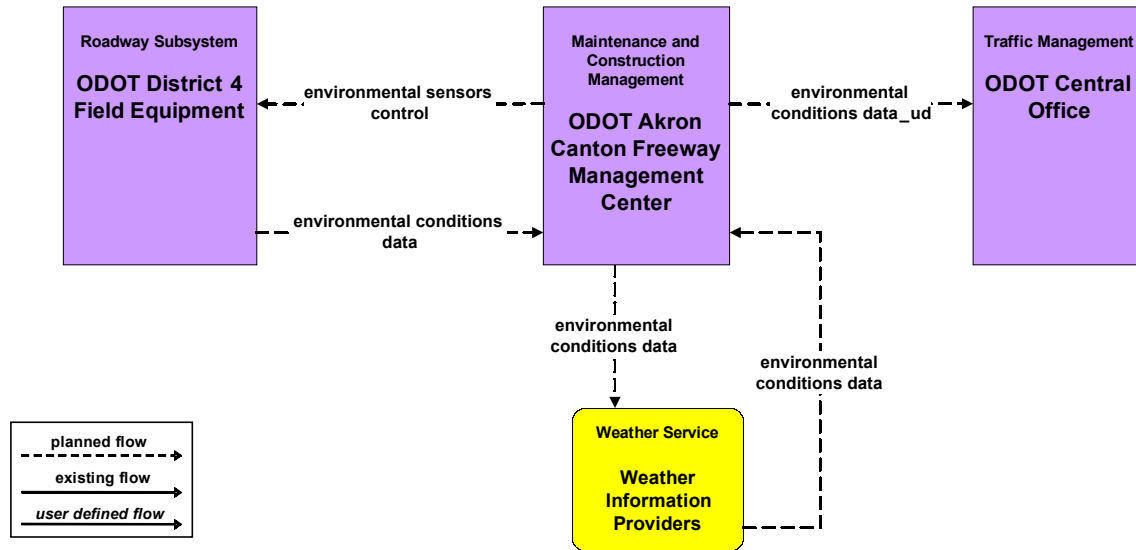
**MC02 - Maintenance and Construction Vehicle Maintenance**  
**City of Cuyahoga Falls**



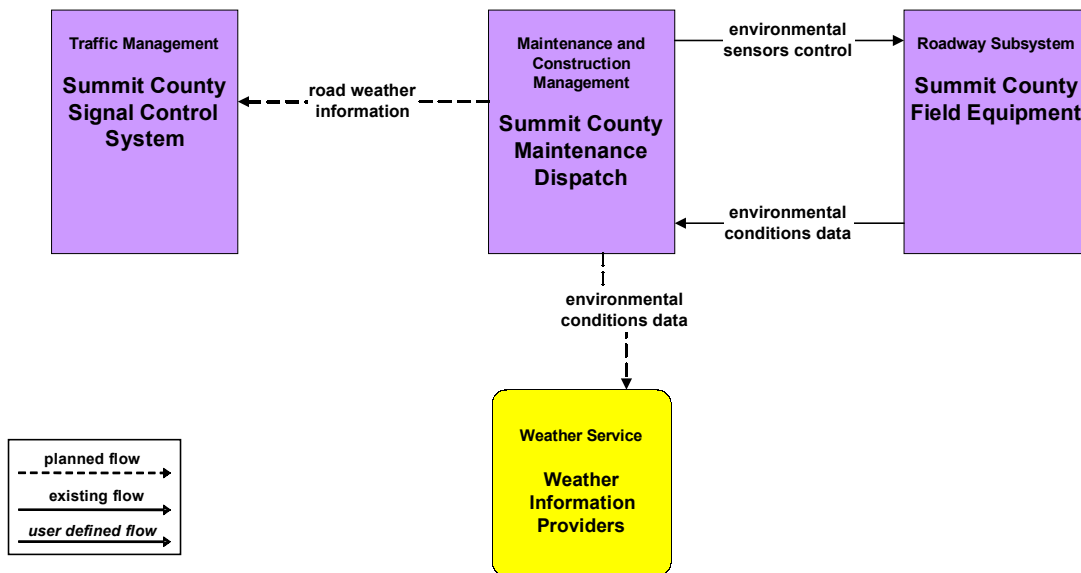
**MC02 - Maintenance and Construction Vehicle Maintenance**  
**Municipal Maintenance**



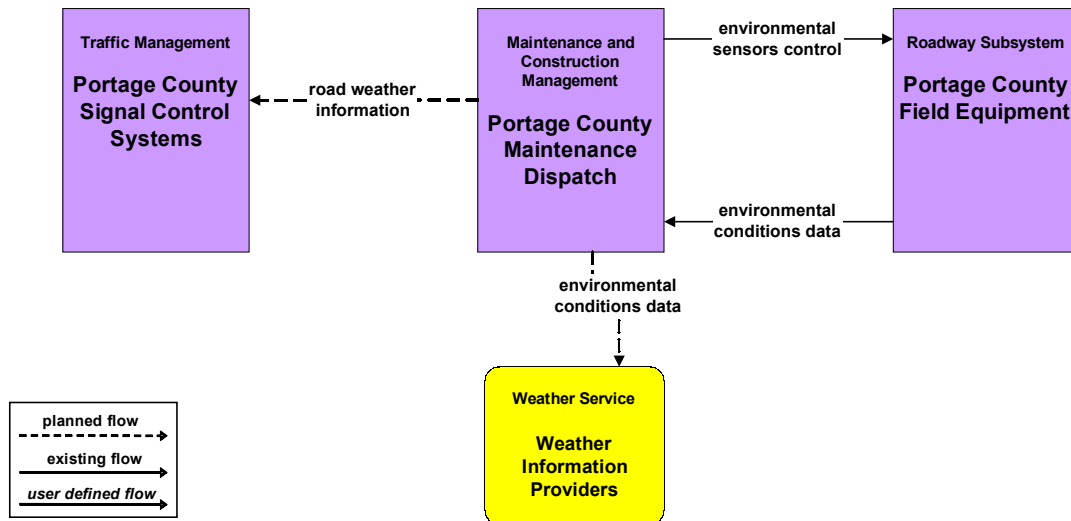
**MC03 - Road Weather Data Collection  
ODOT District 4**



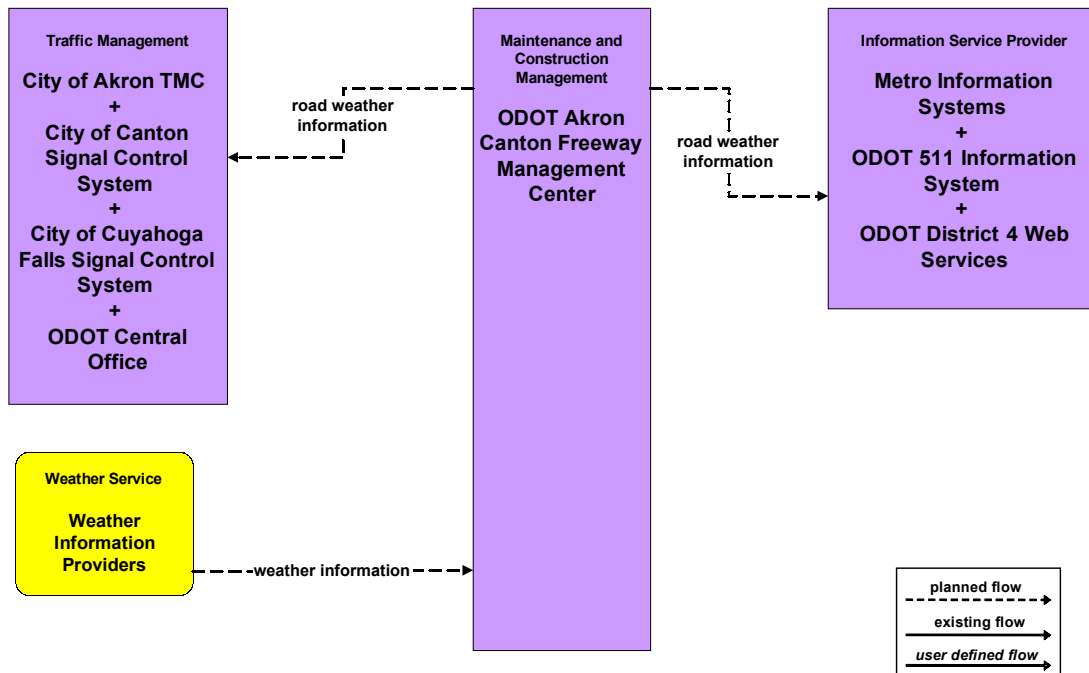
**MC03 - Road Weather Data Collection  
Summit County**



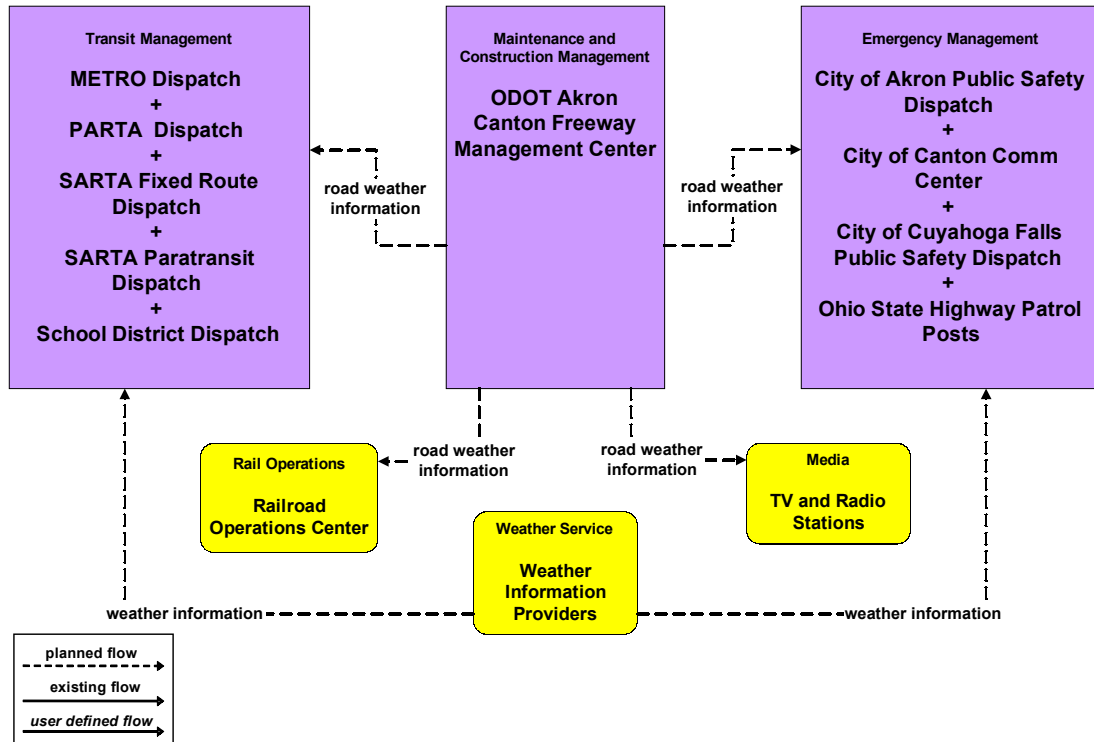
### MC03 - Road Weather Data Collection Portage County



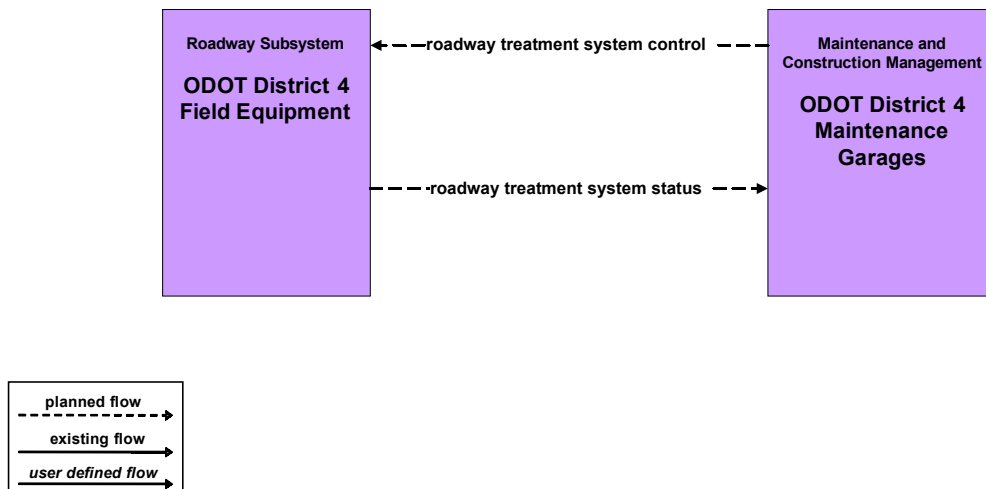
### MC04 - Weather Information Processing and Distribution ODOT District 4

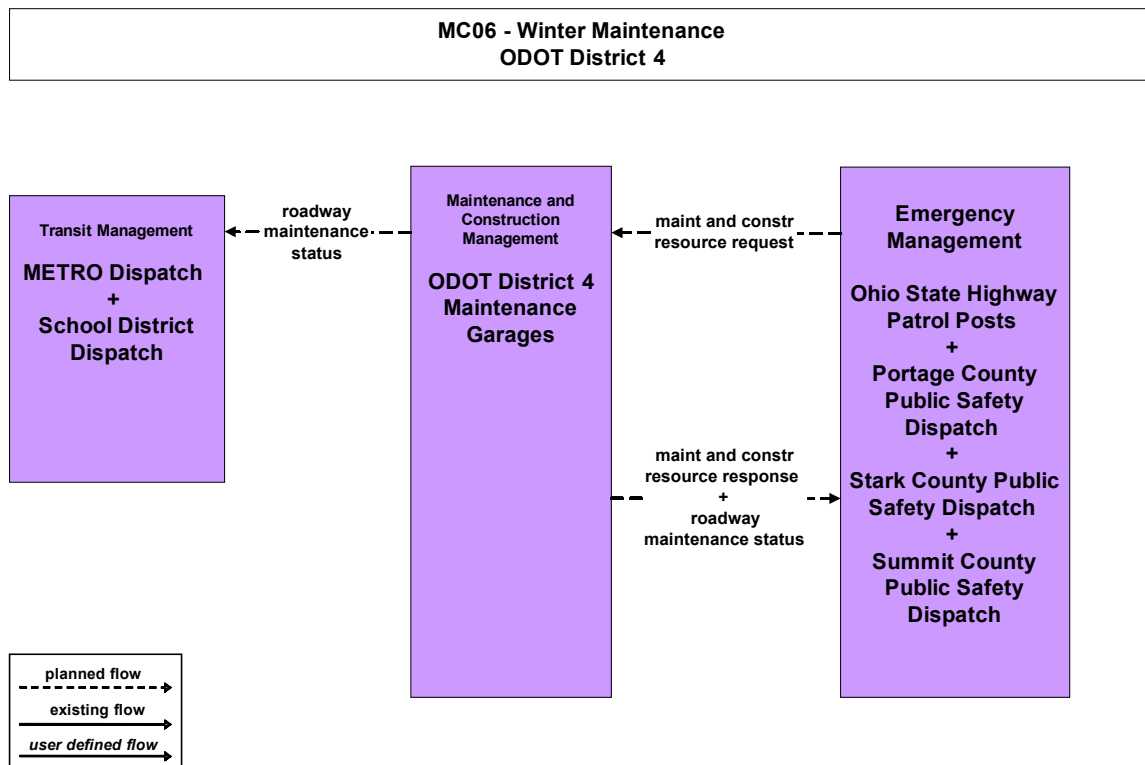
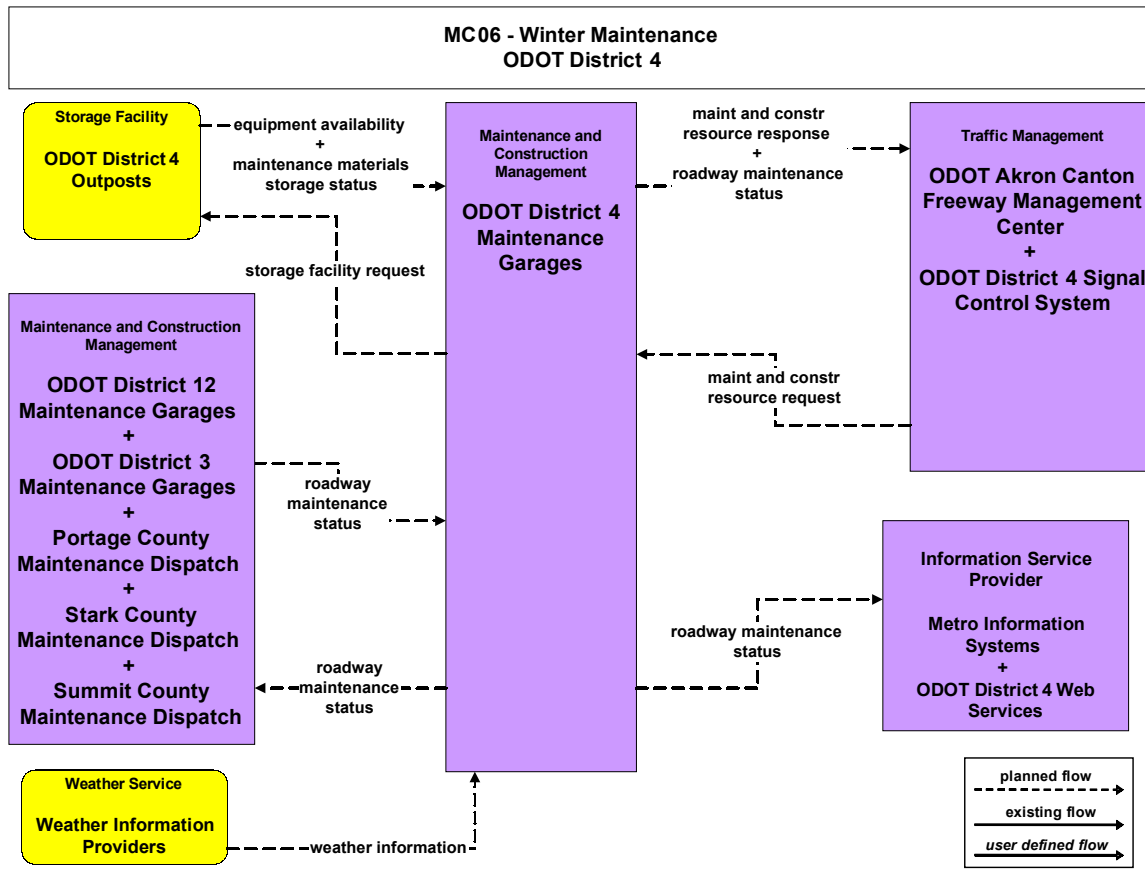


**MC04 - Weather Information Processing and Distribution  
ODOT District 4**



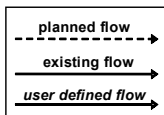
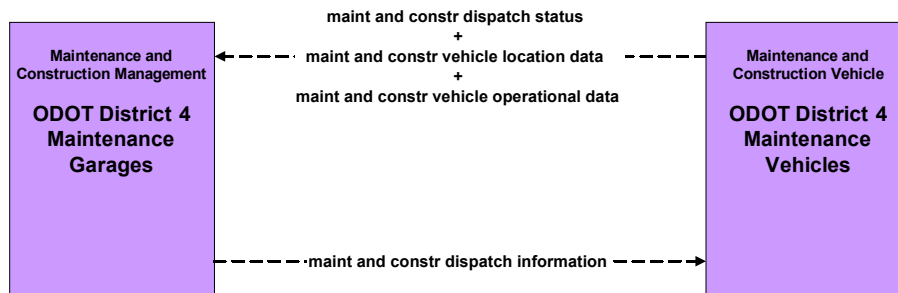
**MC05 - Roadway Automated Treatment  
ODOT District 4**



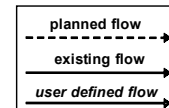
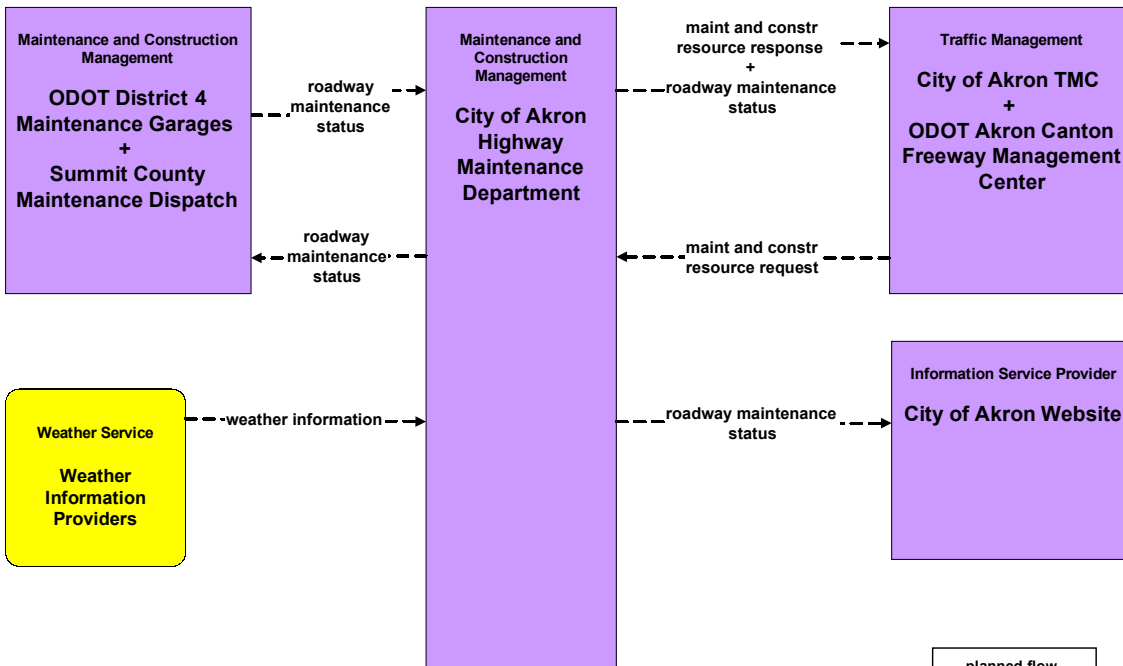




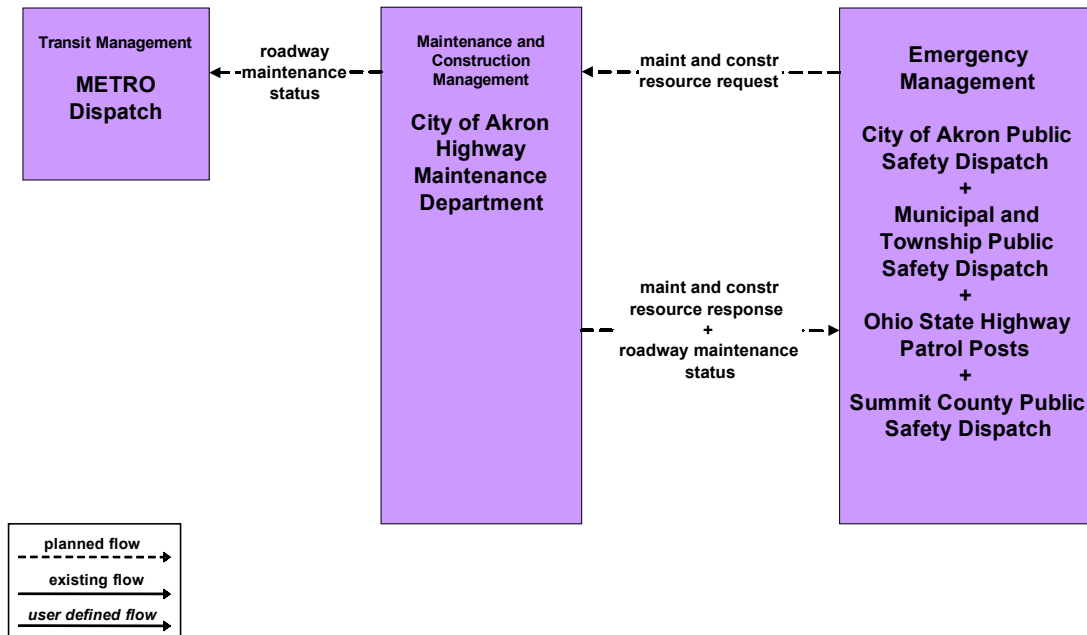
# **MC06 - Winter Maintenance ODOT District 4**



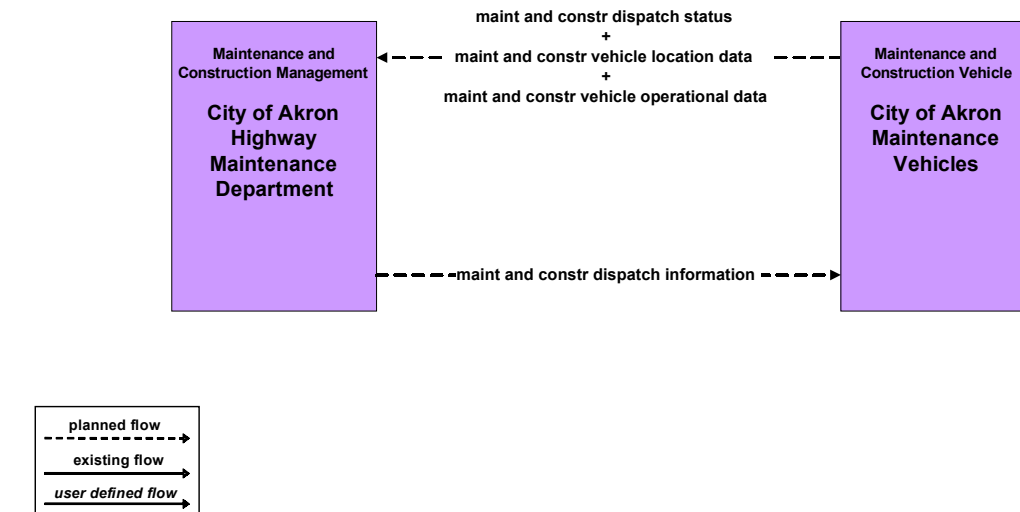
# **MC06 - Winter Maintenance City of Akron**

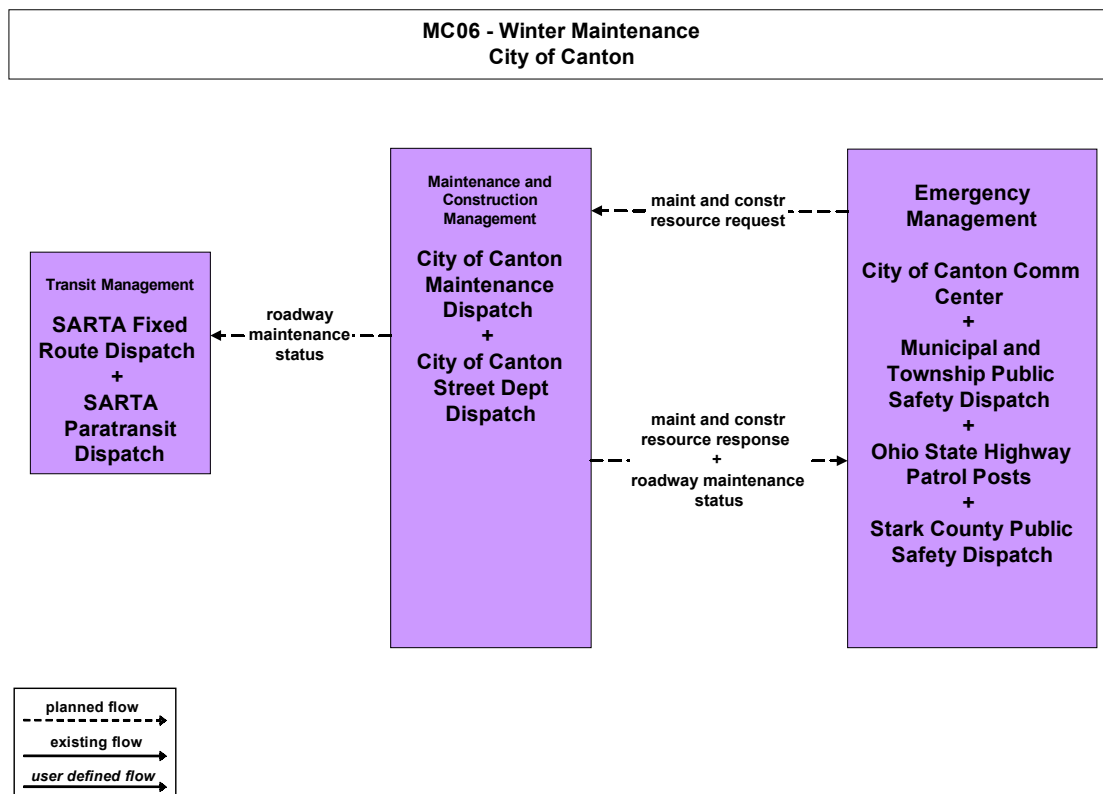
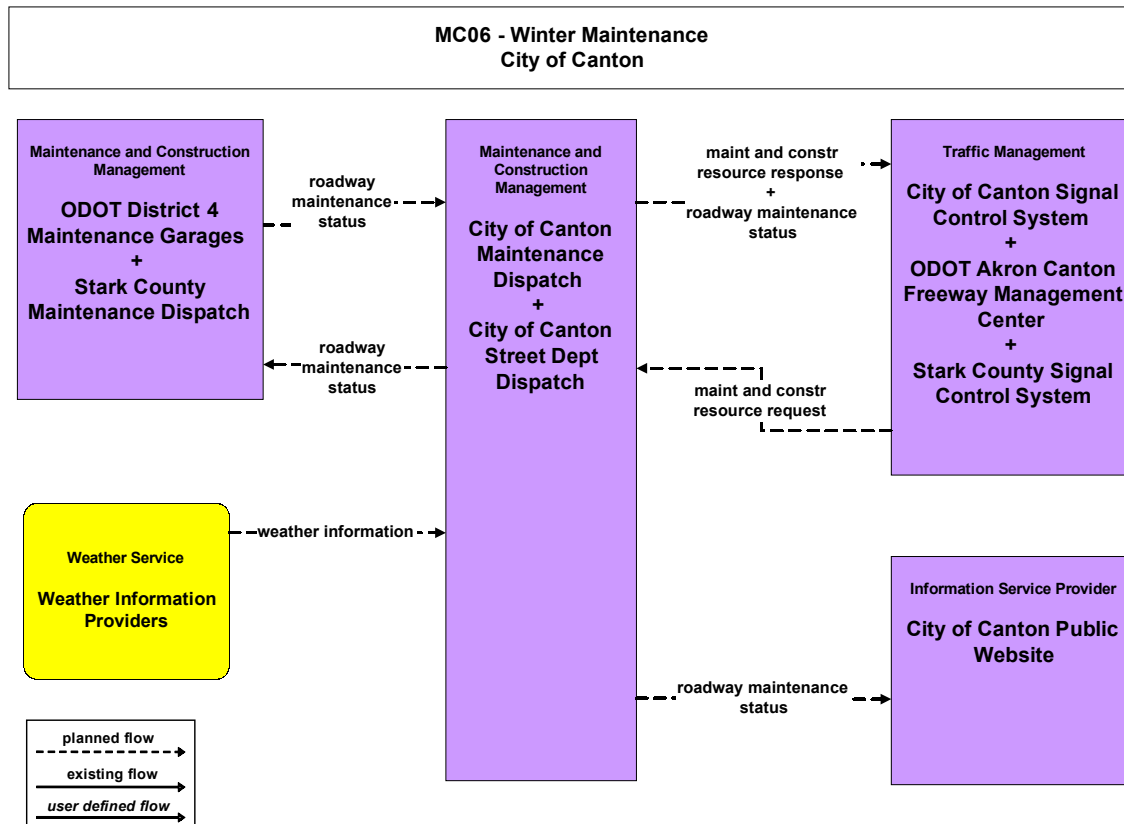


# MC06 - Winter Maintenance City of Akron

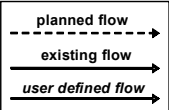
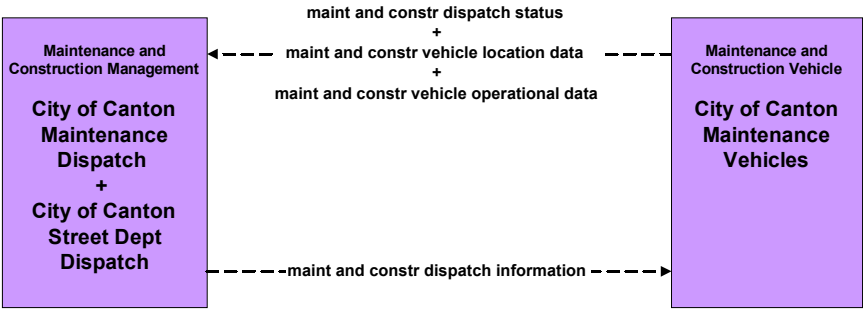


# MC06 - Winter Maintenance City of Akron

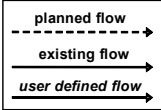
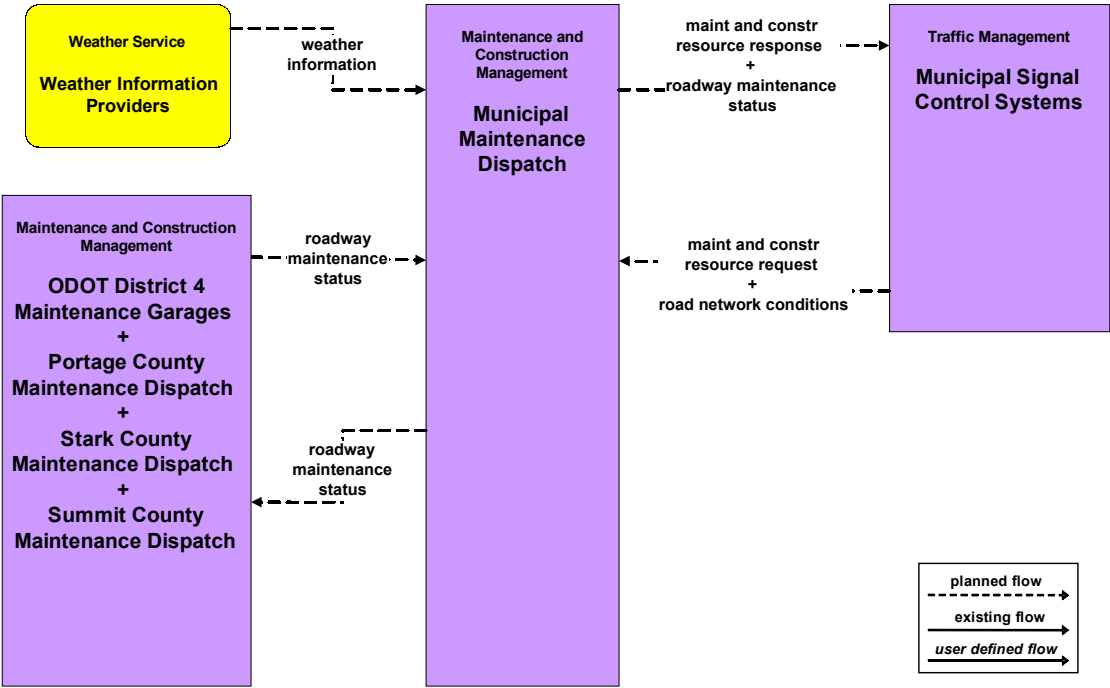


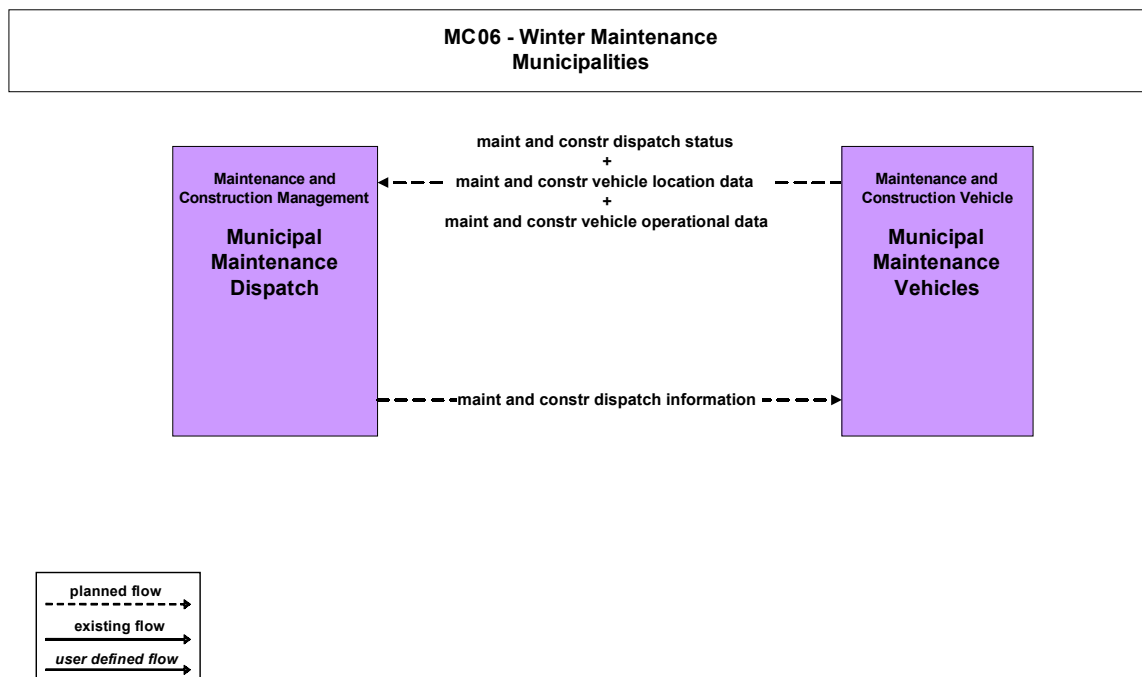
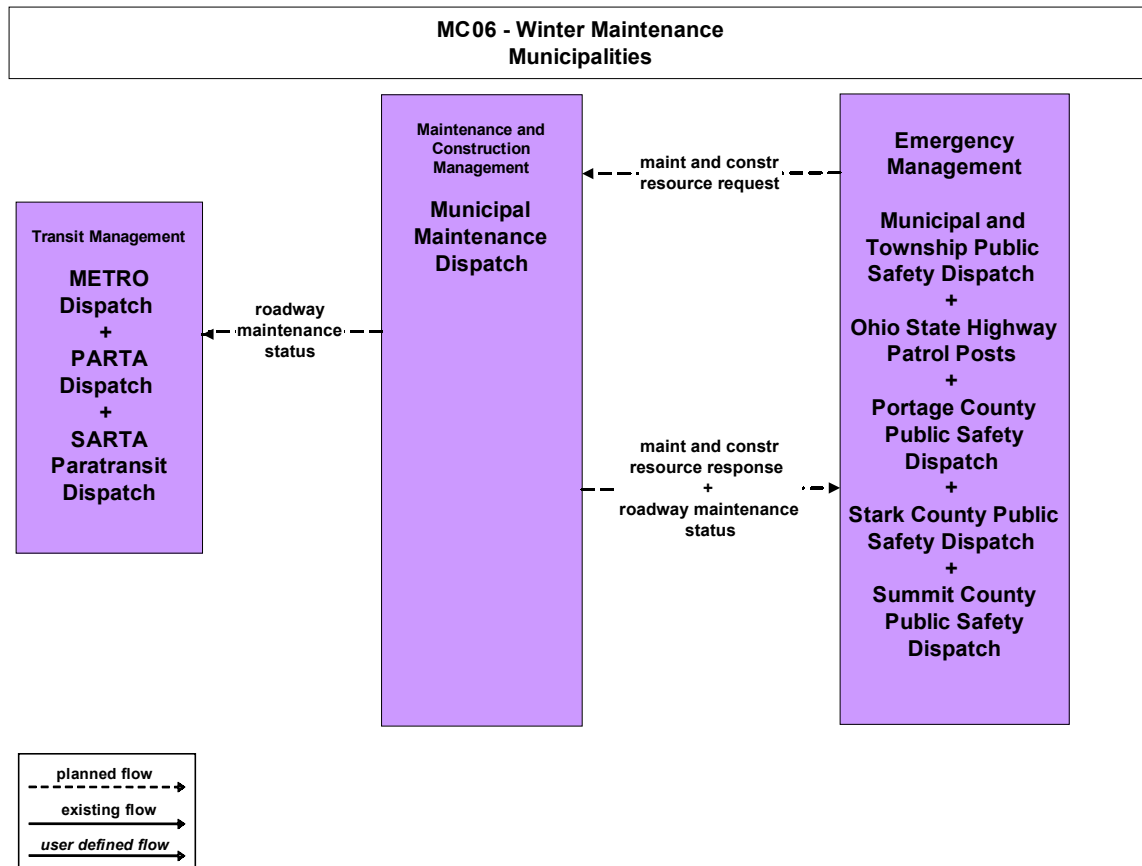


**MC06 - Winter Maintenance  
City of Canton**

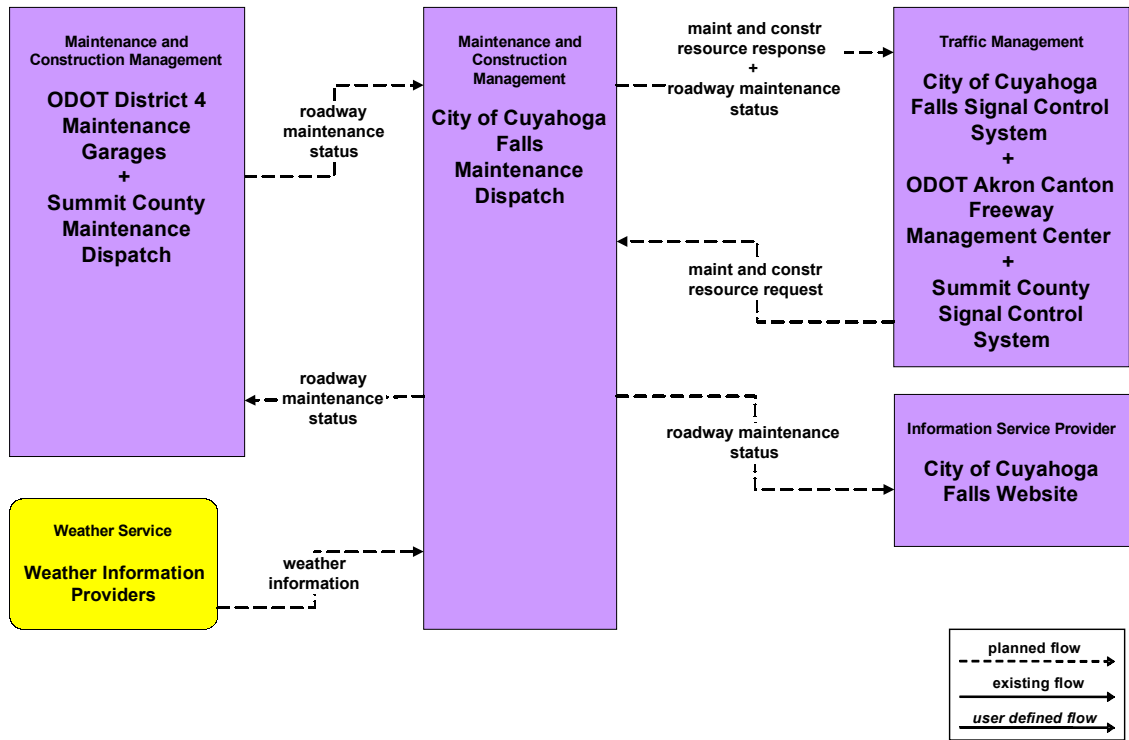


**MC06 - Winter Maintenance  
Municipalities**

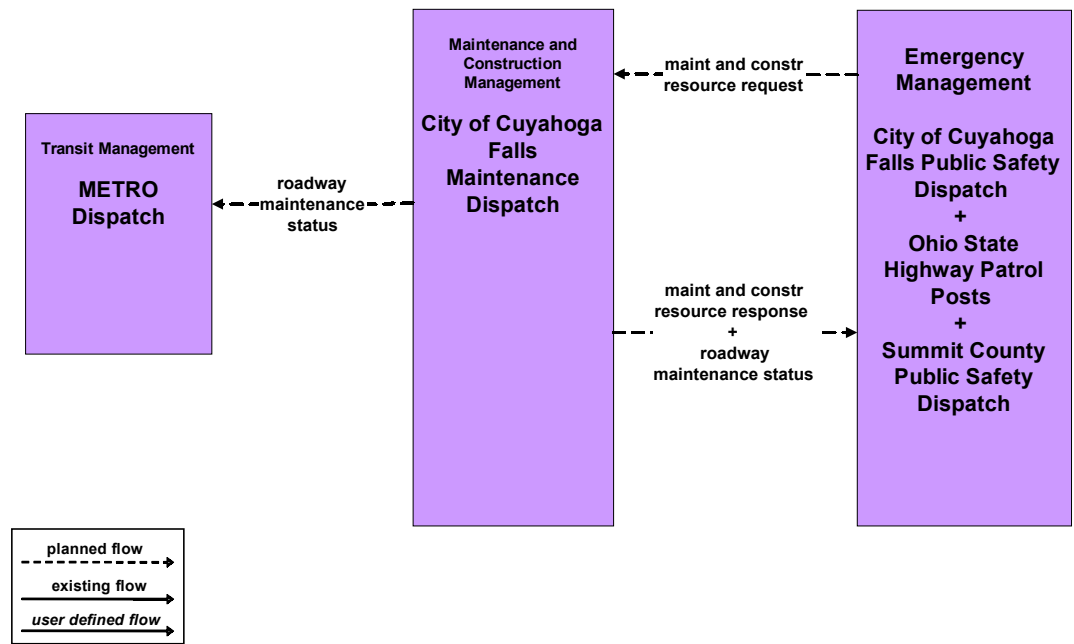




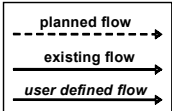
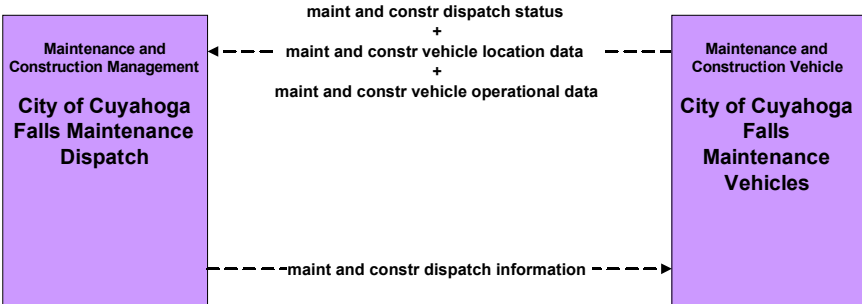
**MC06 - Winter Maintenance  
City of Cuyahoga Falls**



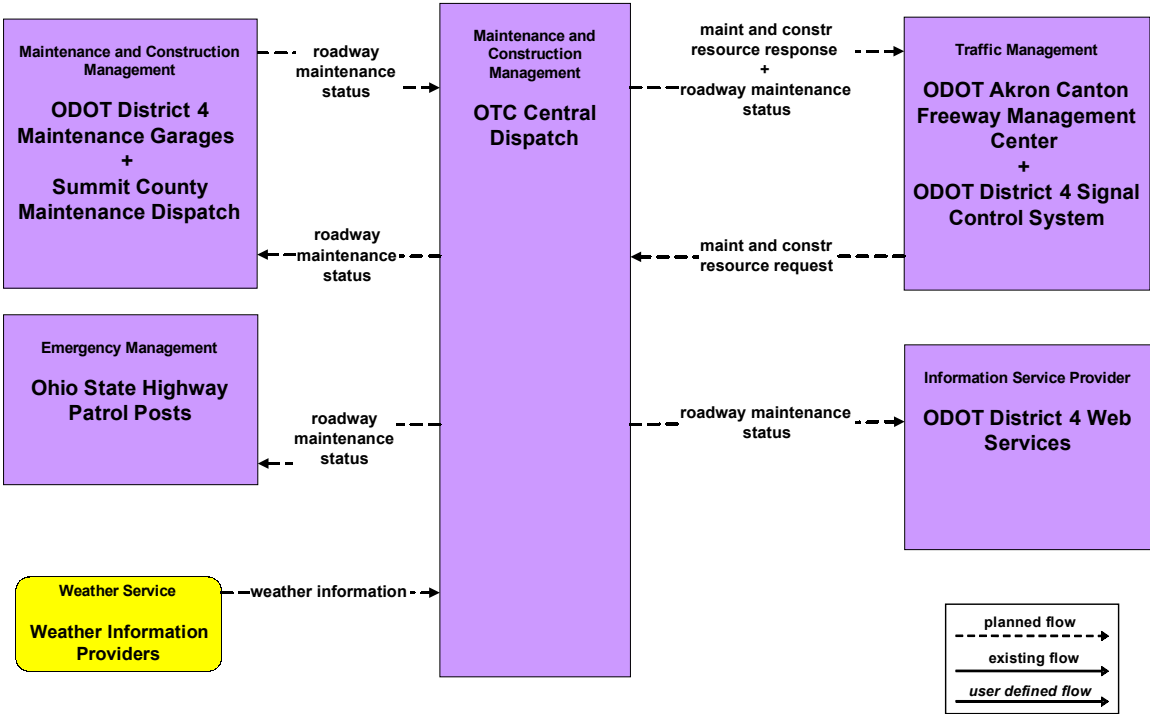
**MC06 - Winter Maintenance  
City of Cuyahoga Falls**



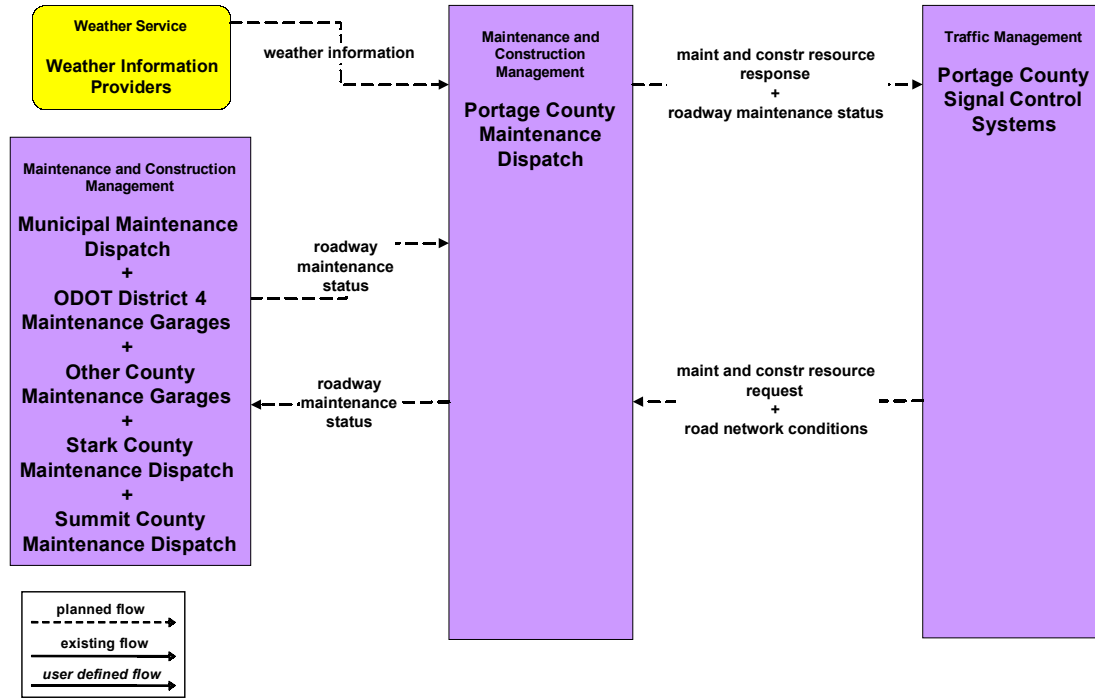
**MC06 - Winter Maintenance  
City of Cuyahoga Falls**



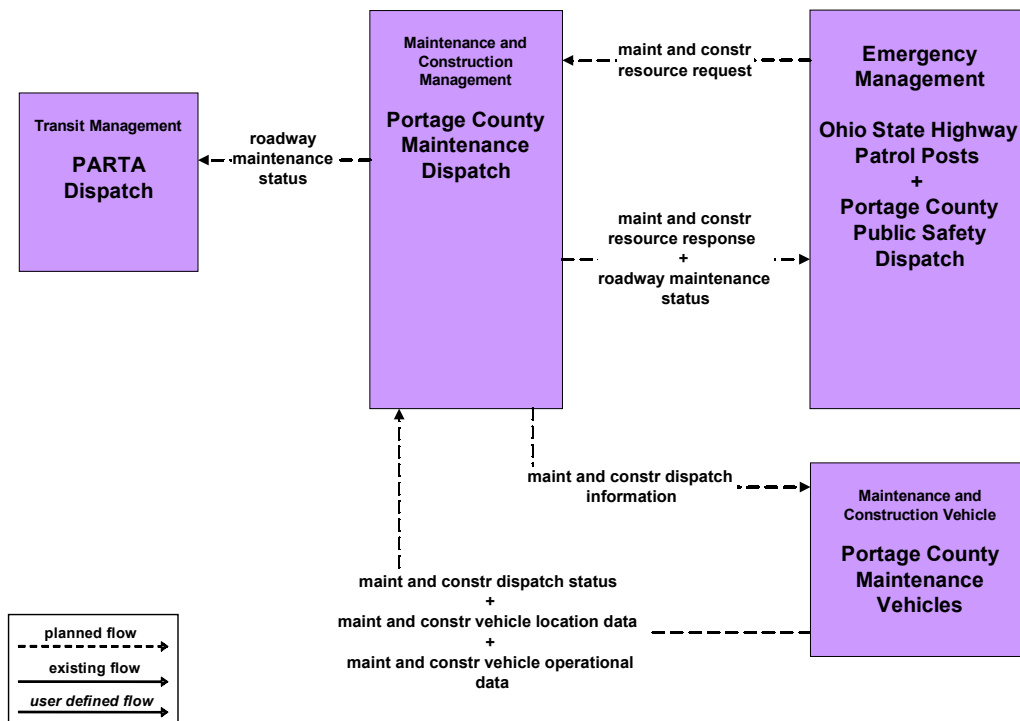
**MC06 - Winter Maintenance  
Ohio Turnpike**



**MC06 - Winter Maintenance  
Portage County Maintenance Dispatch**

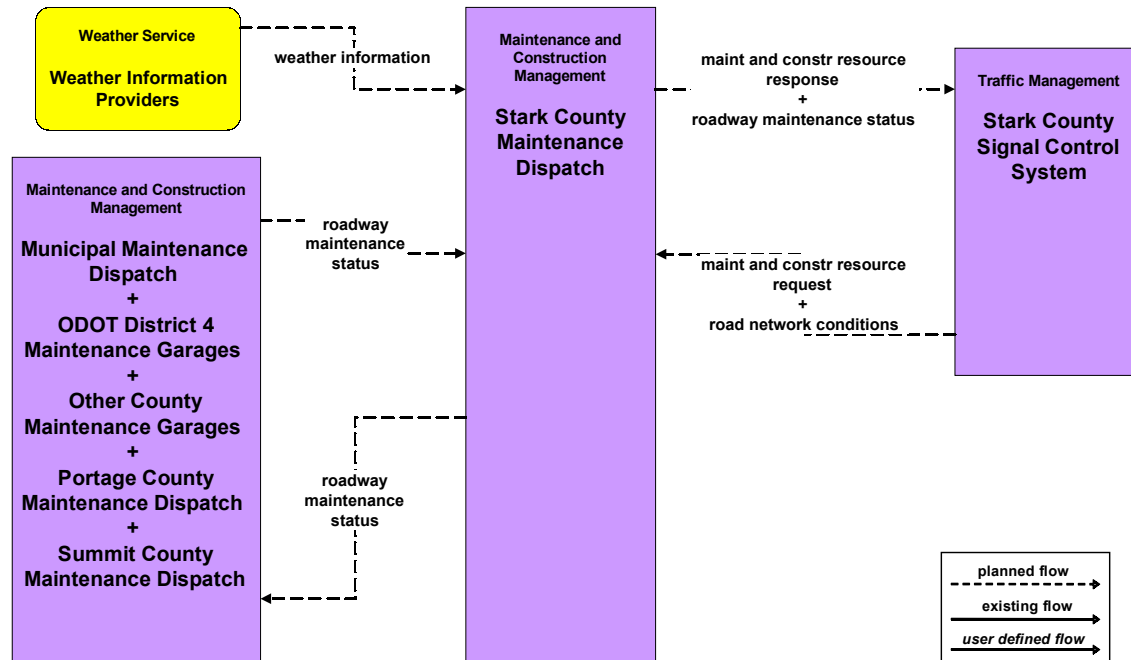


**MC06 - Winter Maintenance  
Portage County Maintenance**

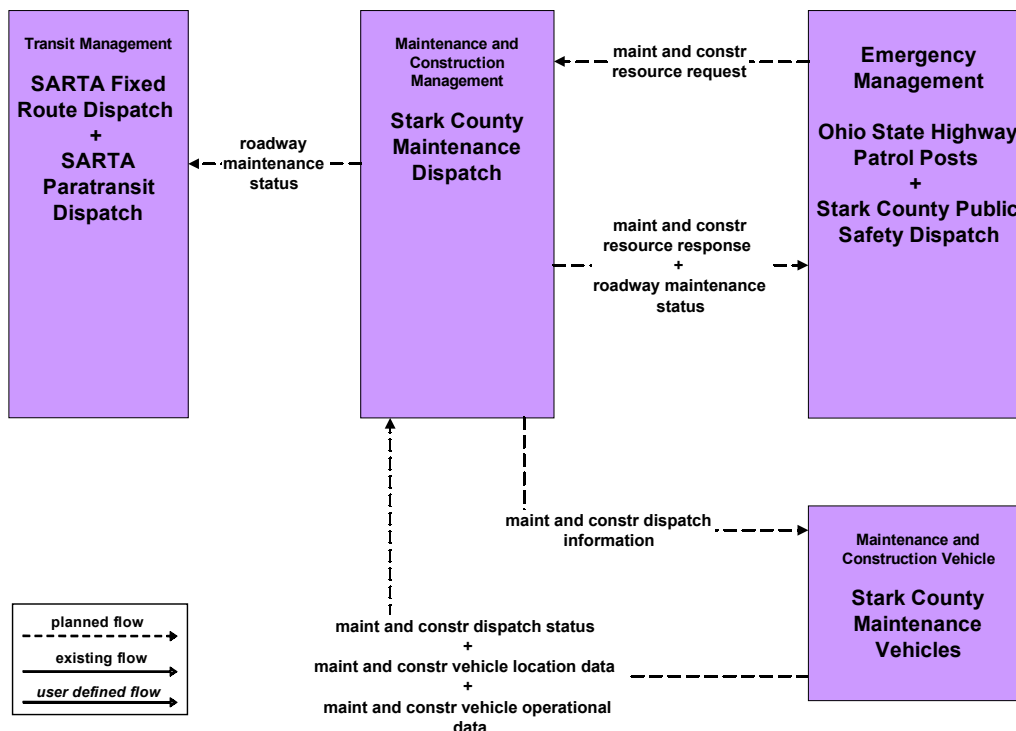




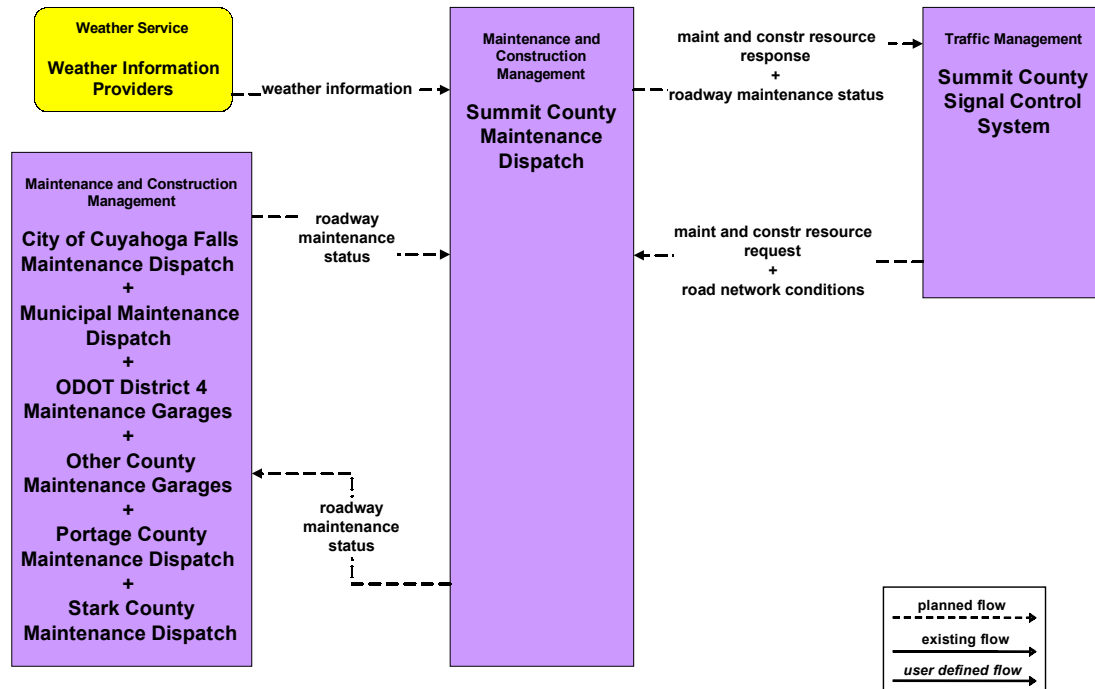
**MC06 - Winter Maintenance  
Stark County Maintenance Dispatch**



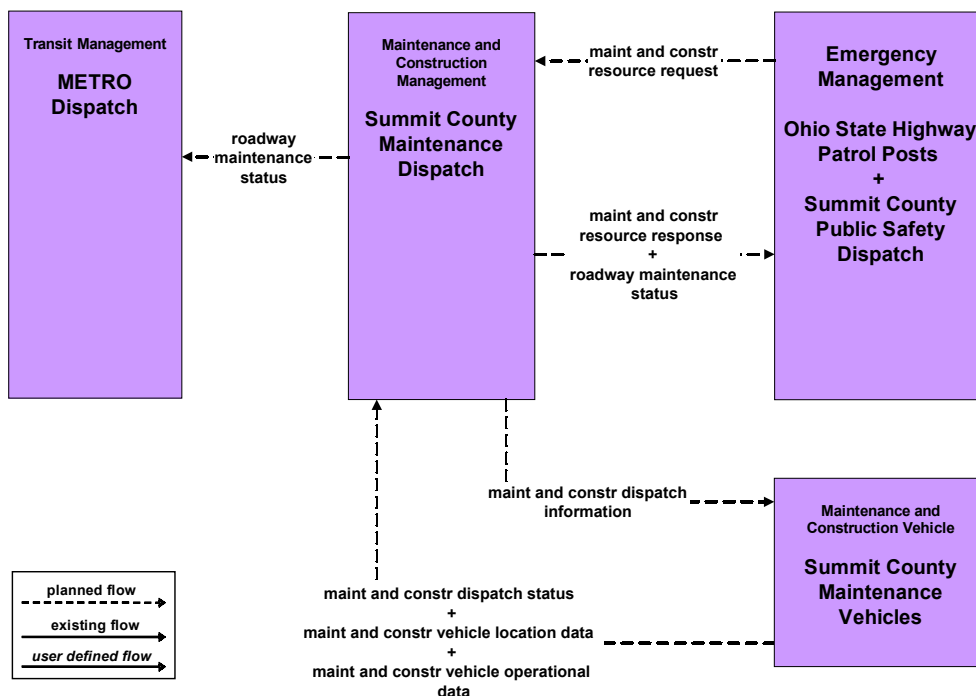
**MC06 - Winter Maintenance  
Stark County Maintenance**



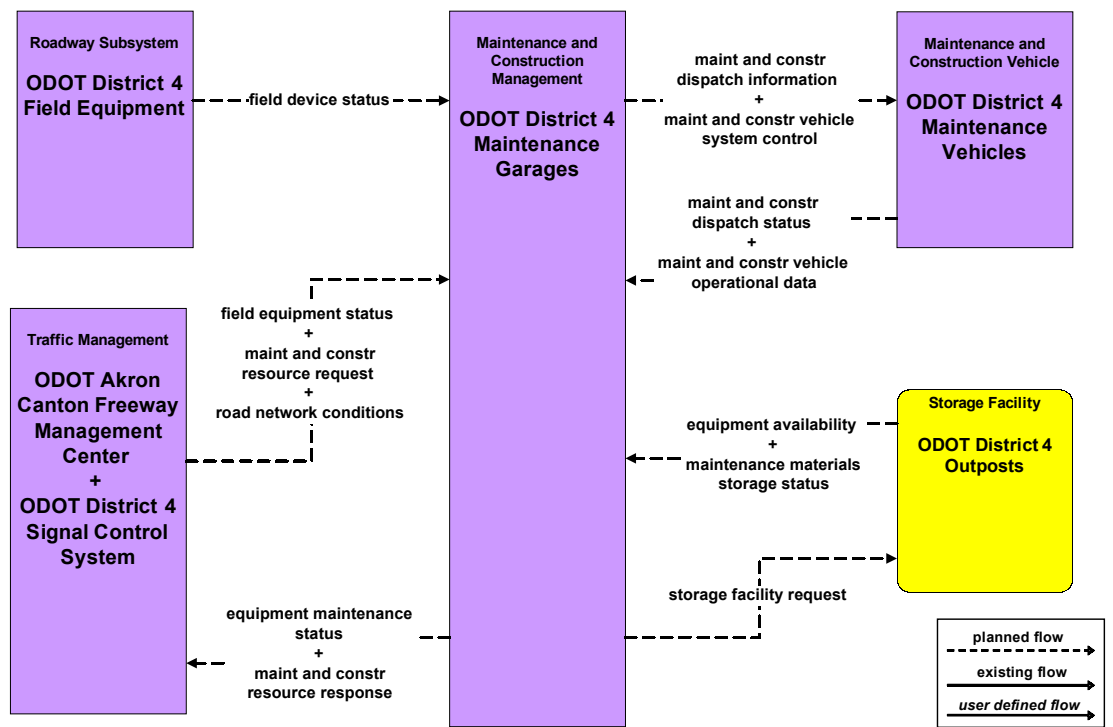
**MC06 - Winter Maintenance  
Summit County Maintenance Dispatch**



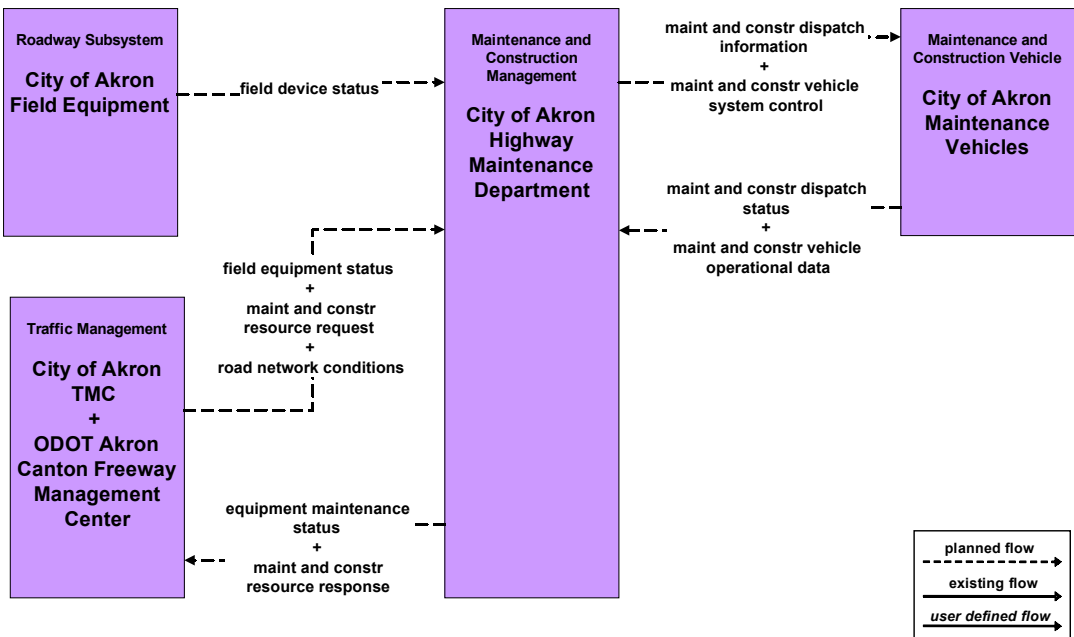
**MC06 - Winter Maintenance  
Summit County Maintenance**



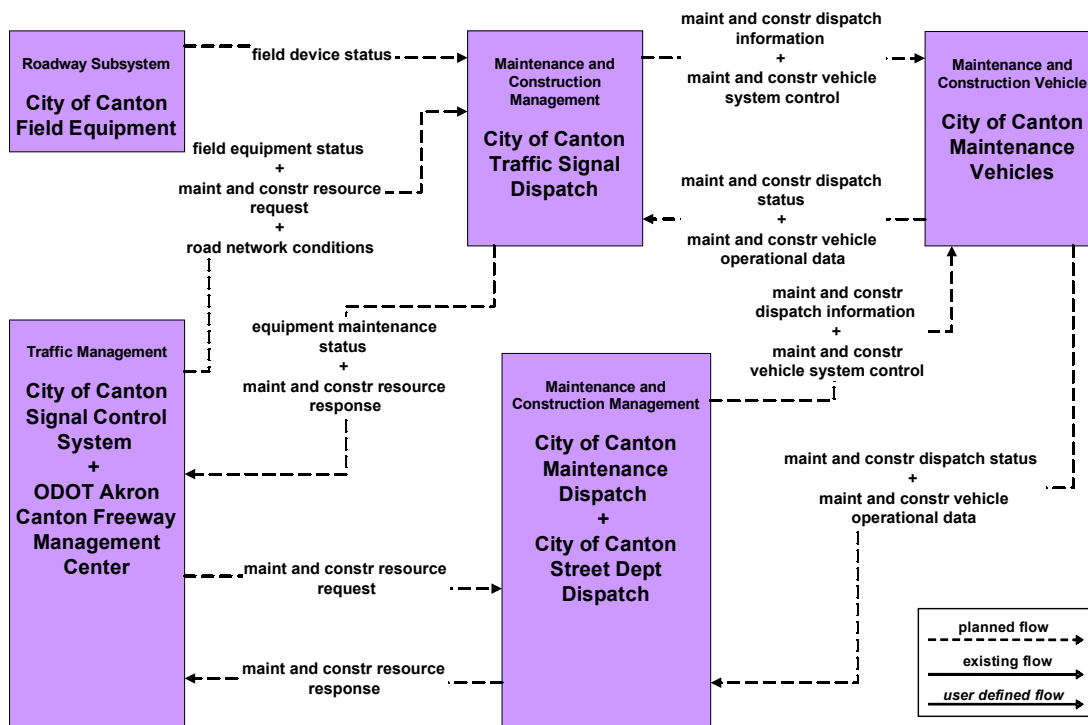
**MC07 - Roadway Maintenance and Construction**  
**ODOT District 4**



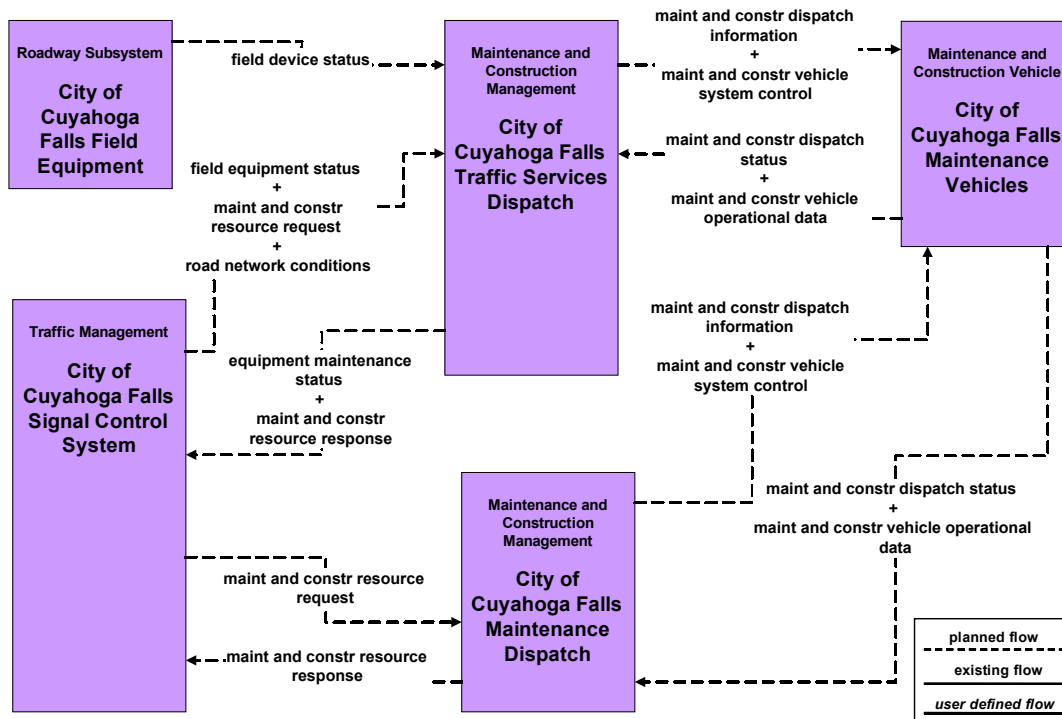
**MC07 - Roadway Maintenance and Construction**  
**City of Akron**



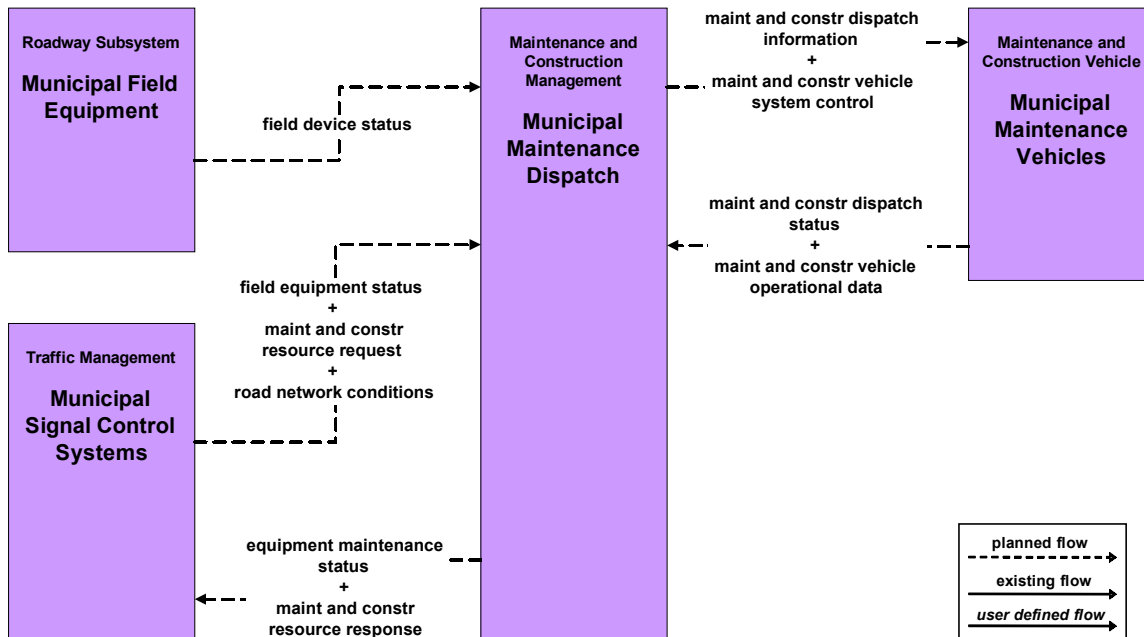
**MC07 - Roadway Maintenance and Construction  
City of Canton**



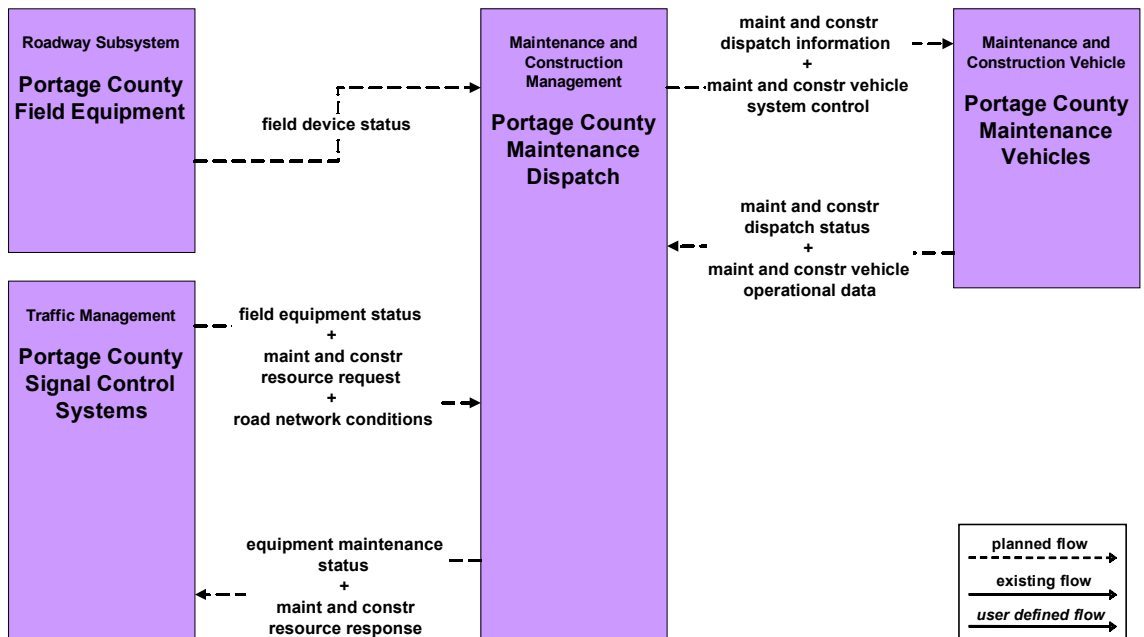
**MC07 - Roadway Maintenance and Construction  
City of Cuyahoga Falls**



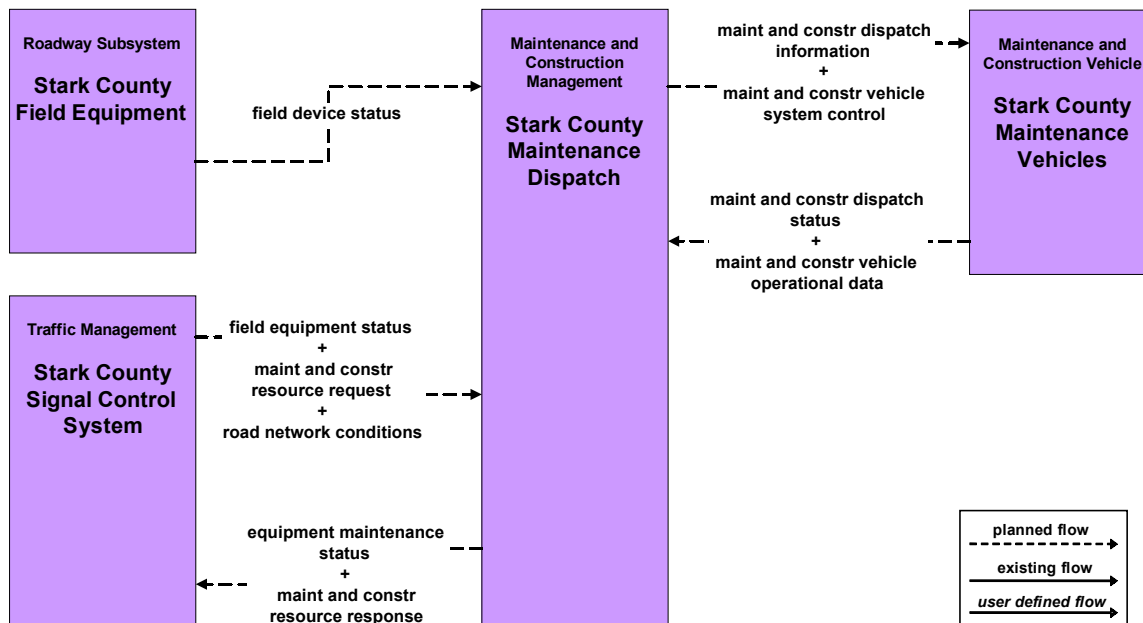
# **MC07 - Roadway Maintenance and Construction Municipal Maintenance Dispatch**



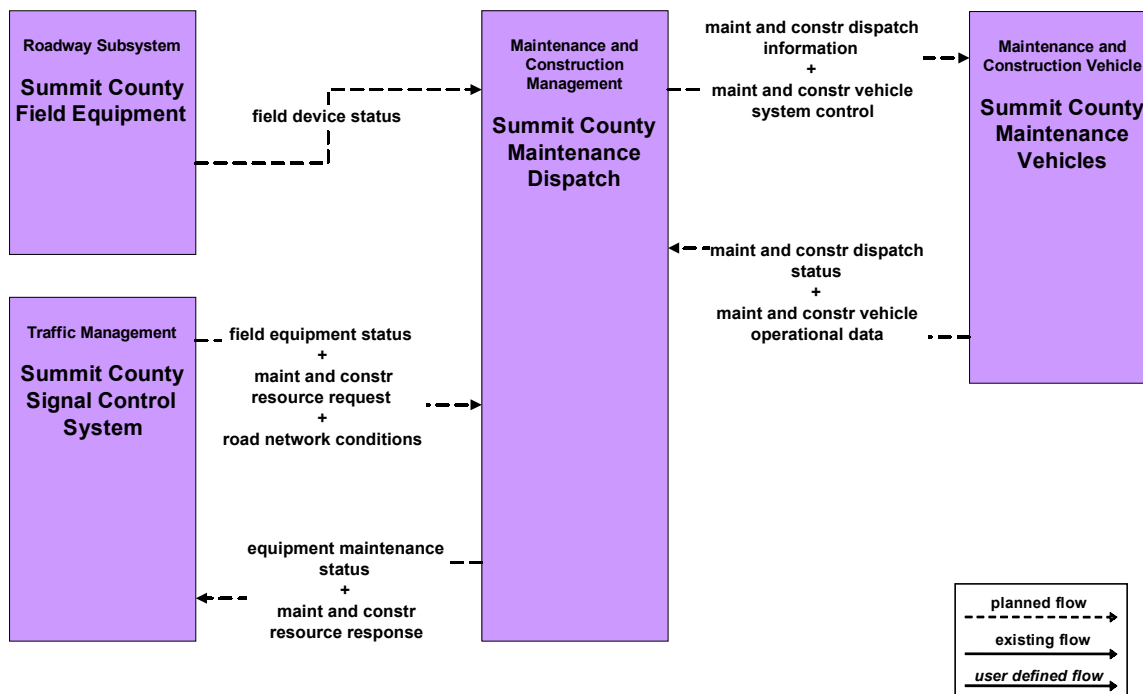
# **MC07 - Roadway Maintenance and Construction Portage County Maintenance Dispatch**

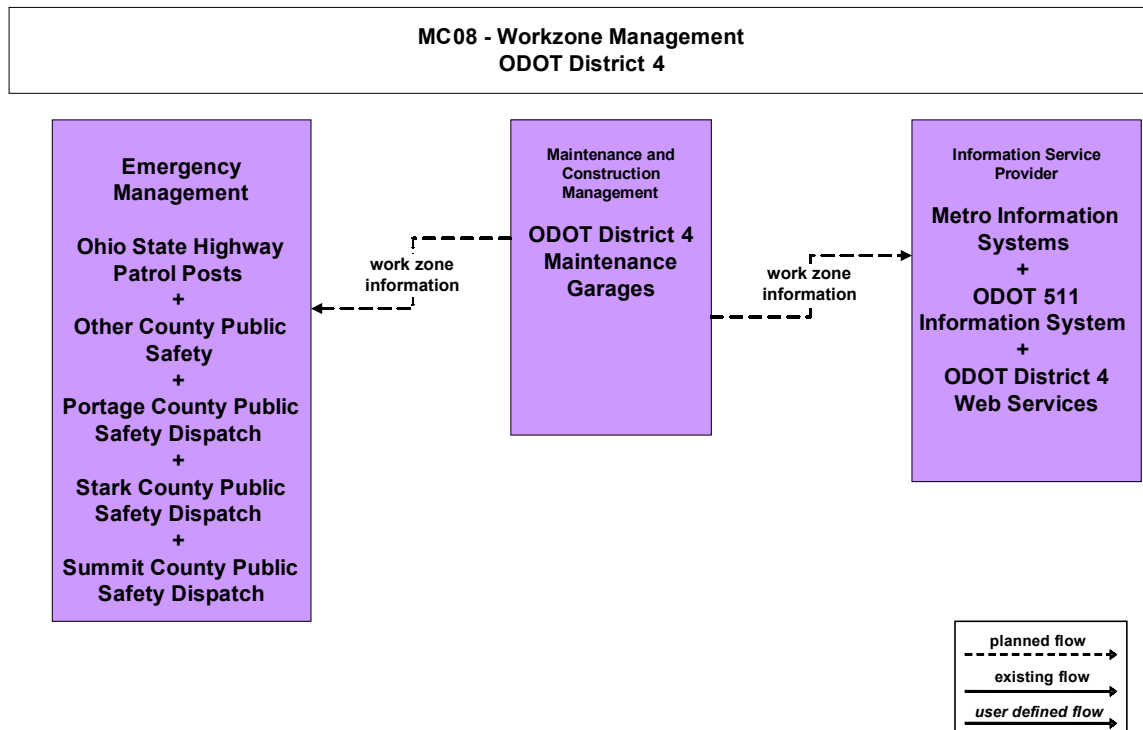
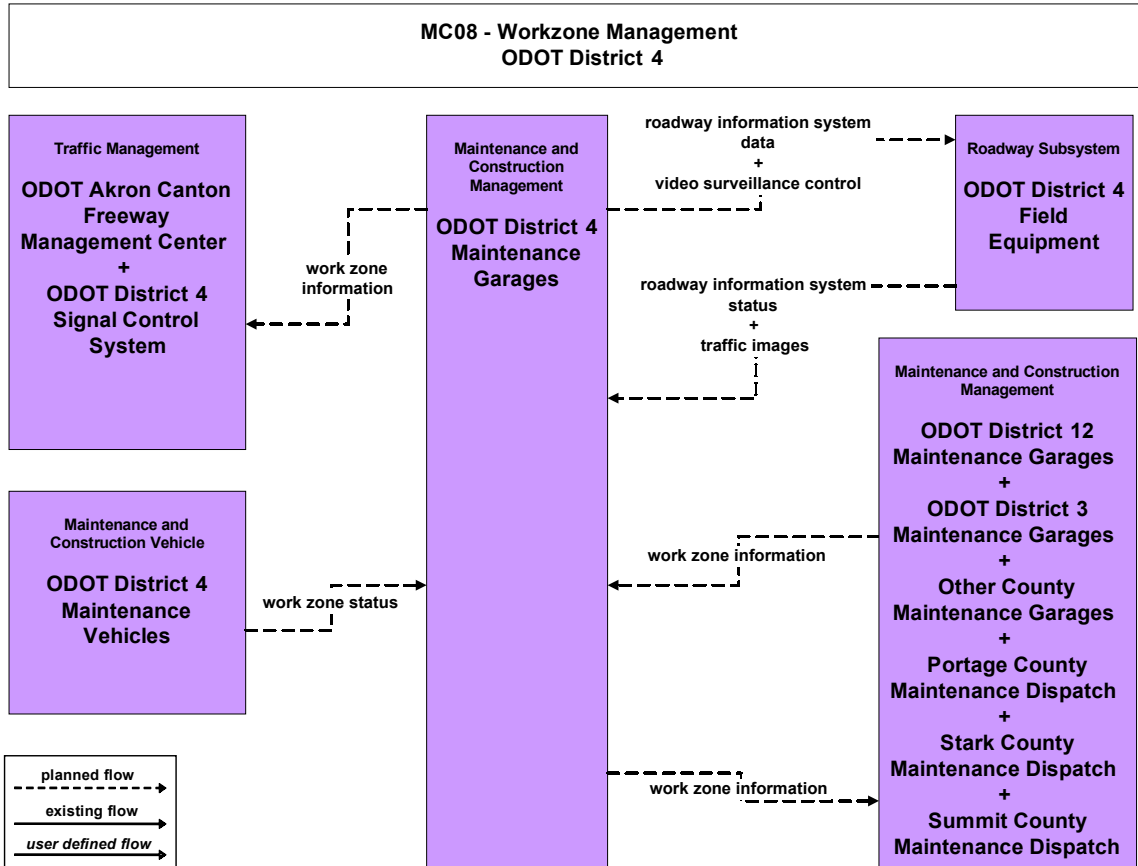


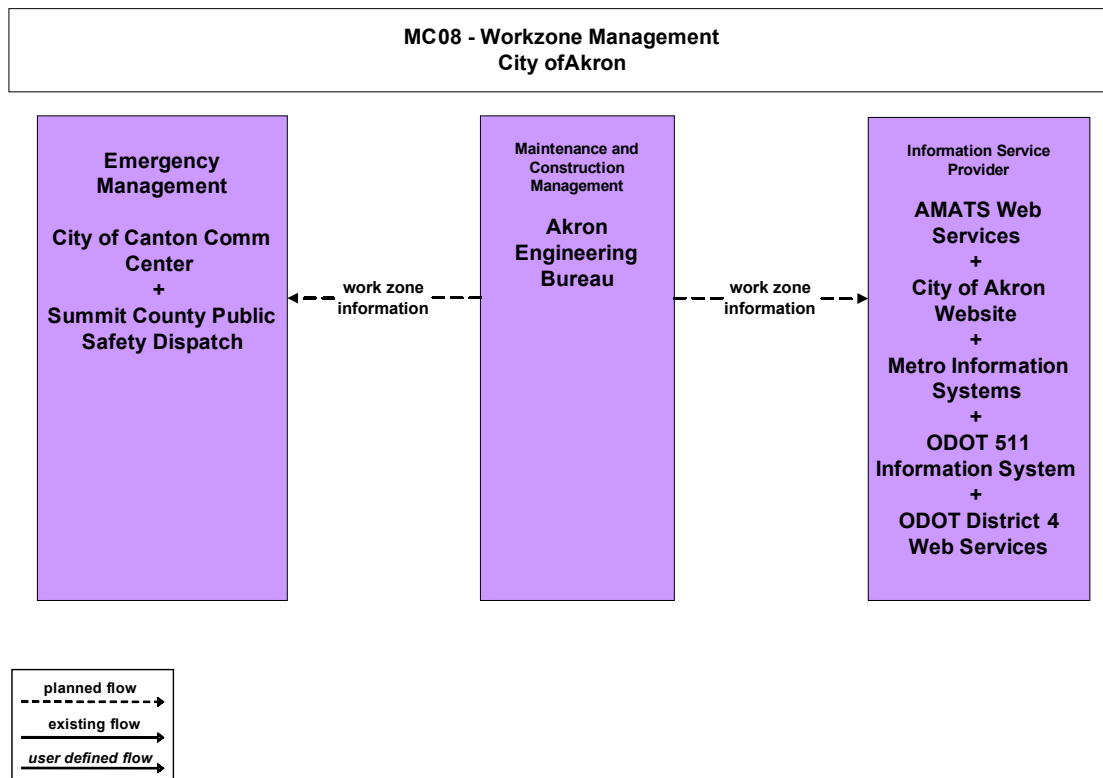
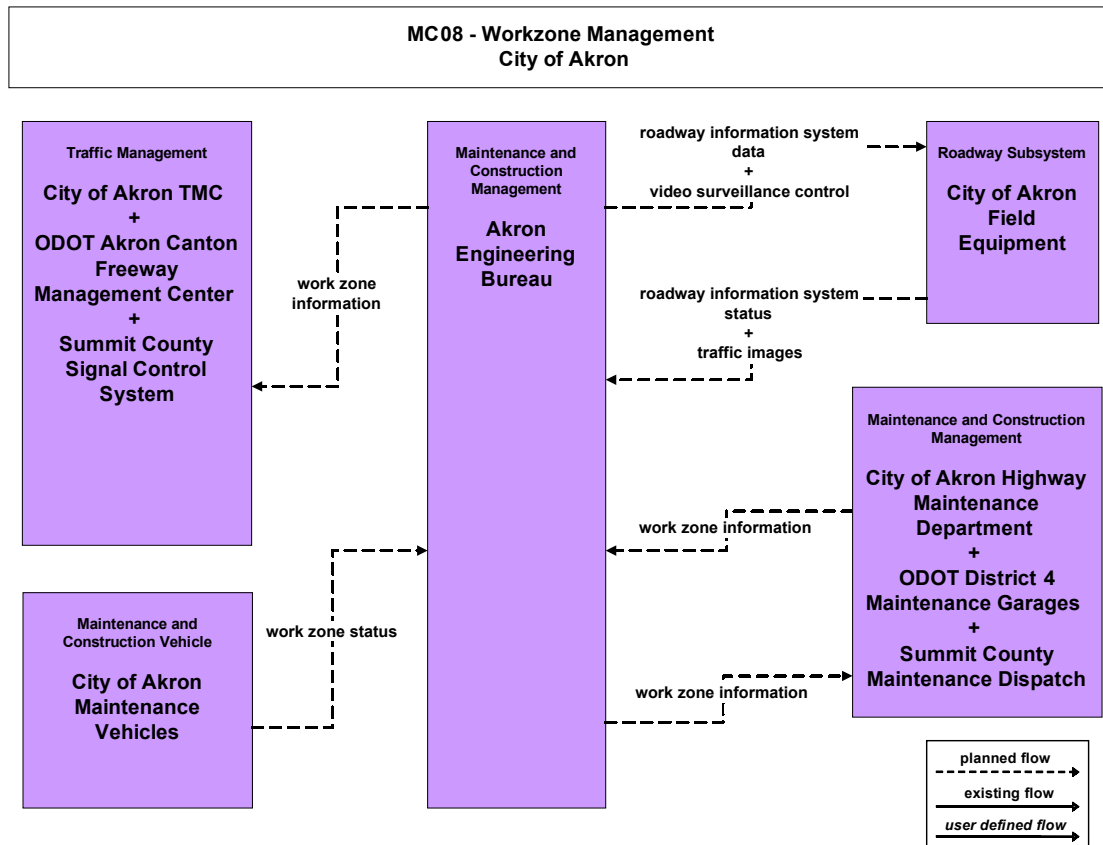
**MC07 - Roadway Maintenance and Construction  
Stark County Maintenance Dispatch**



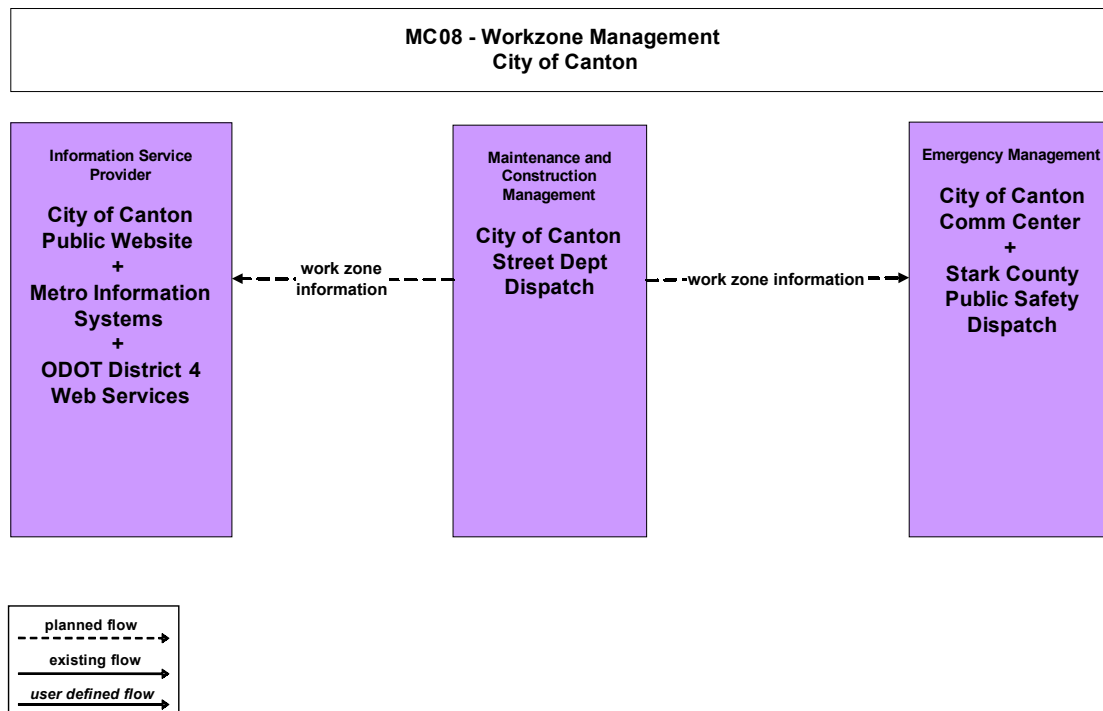
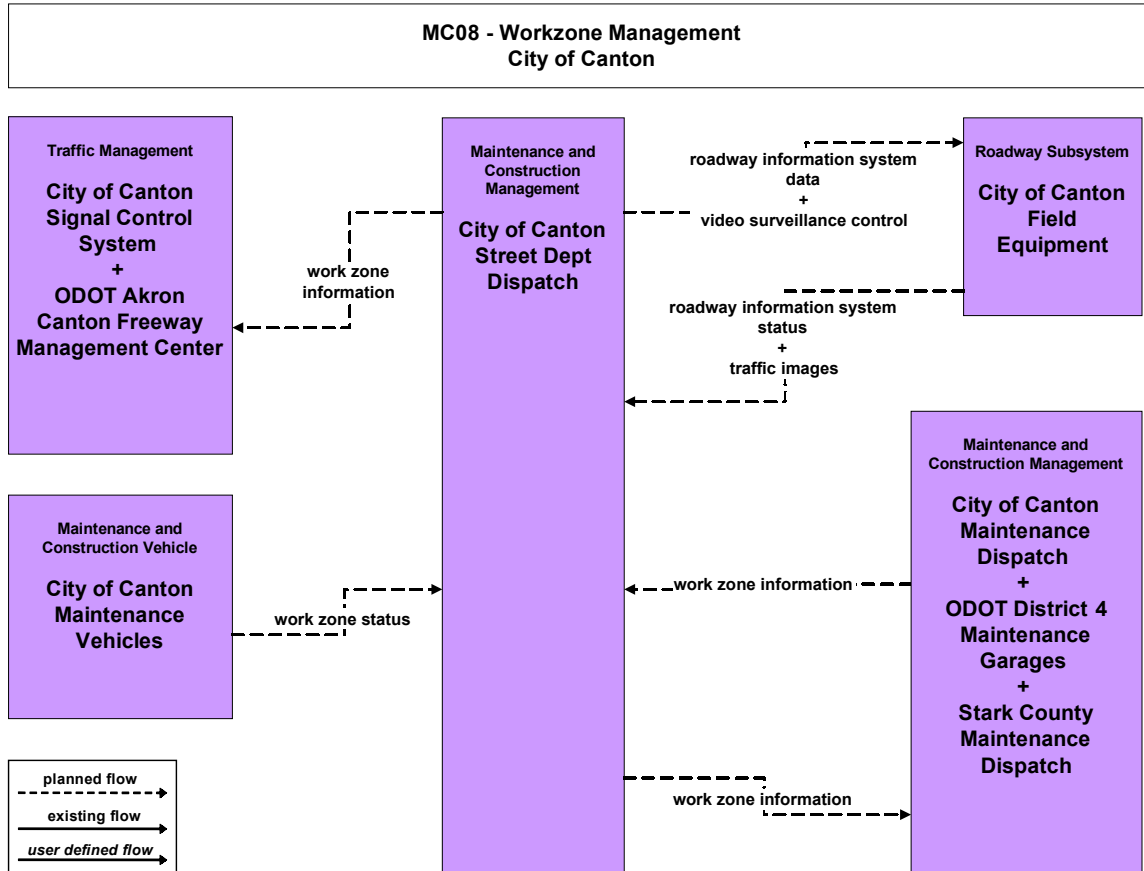
**MC07 - Roadway Maintenance and Construction  
Summit County Maintenance Dispatch**



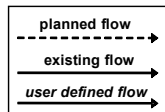
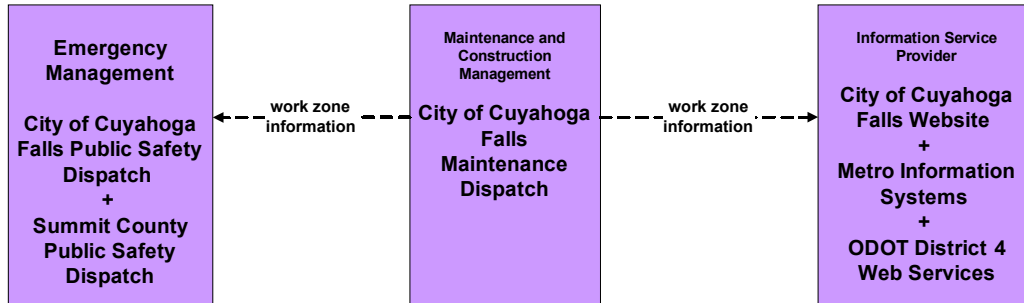




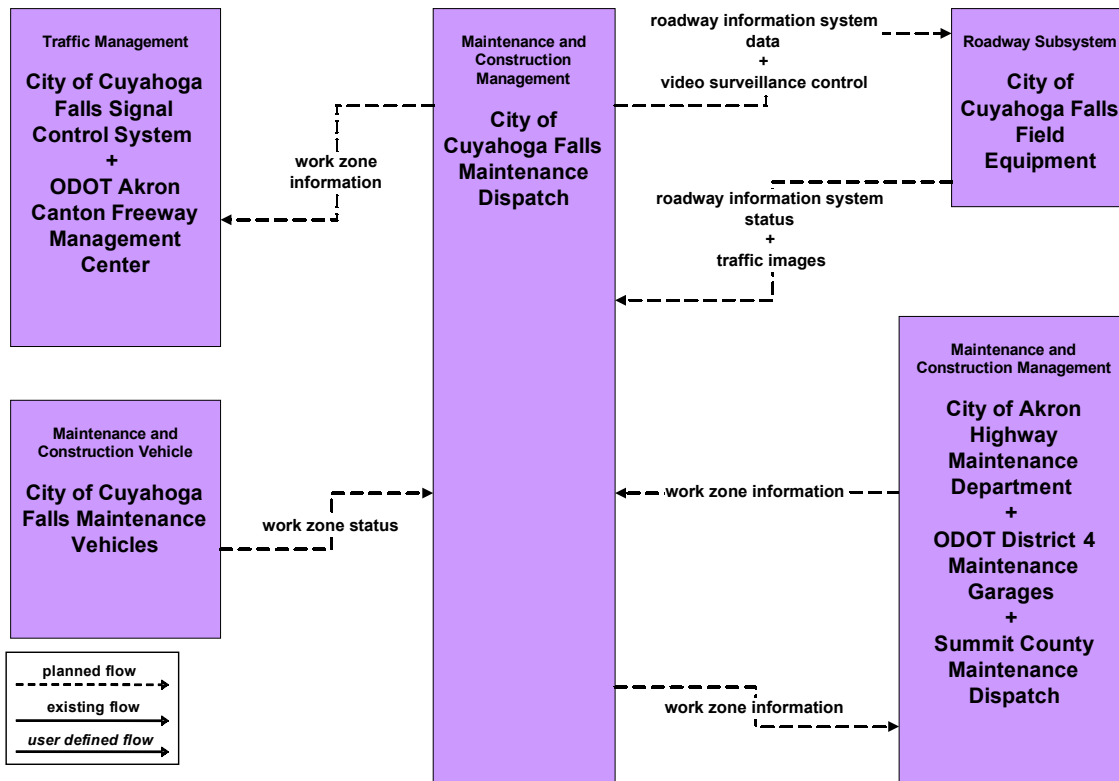




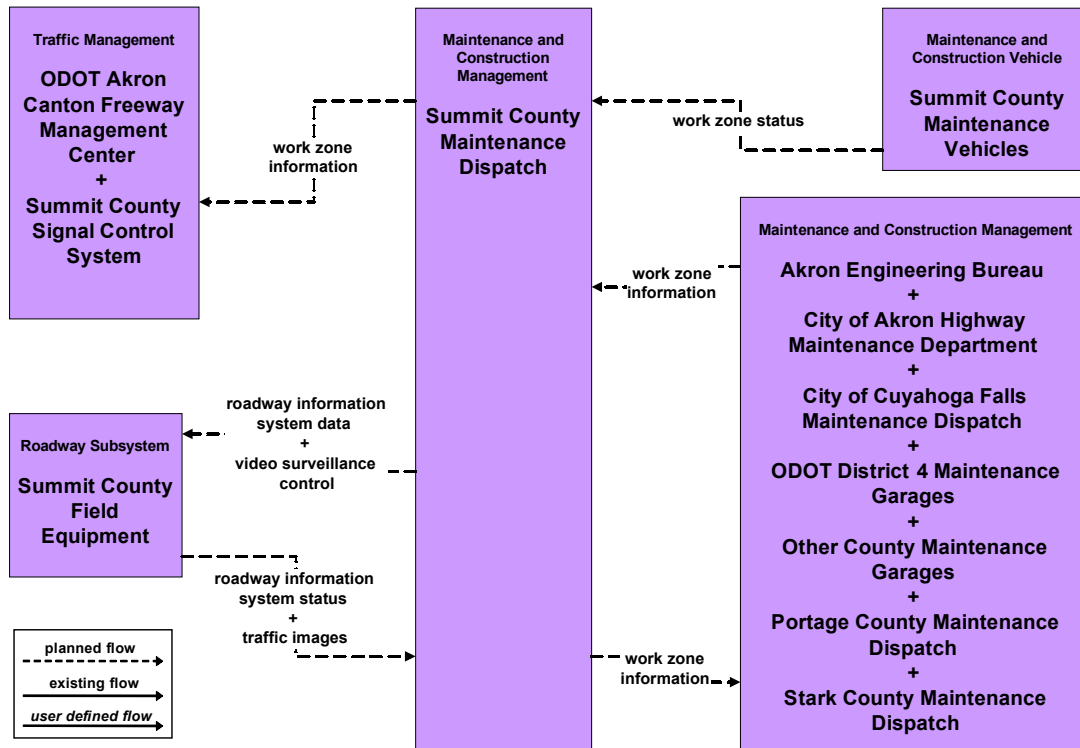
**MC08 - Workzone Management**  
City of Cuyahoga Falls



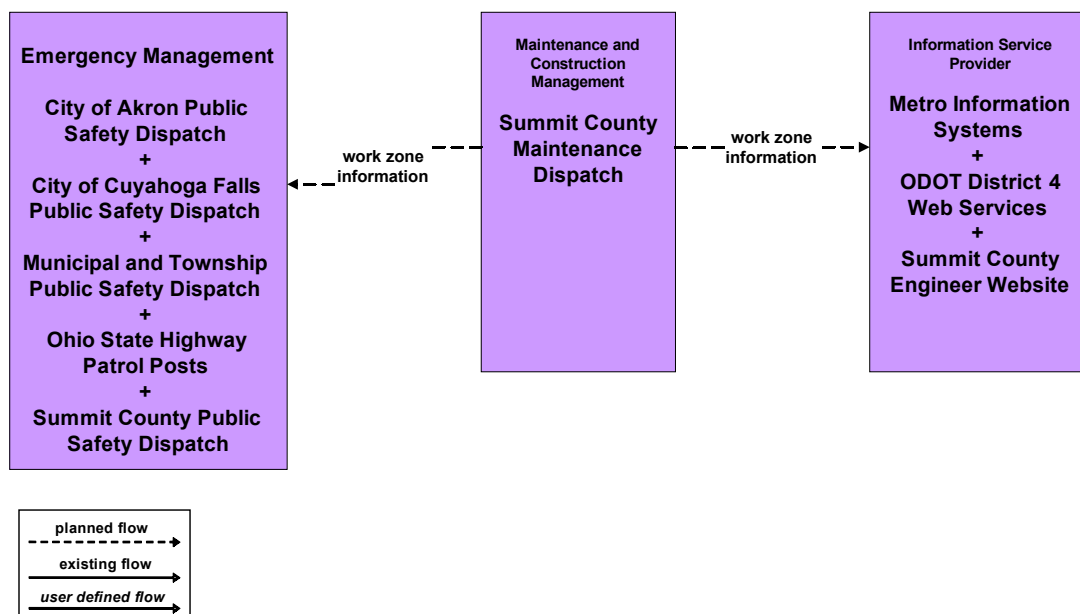
**MC08 - Workzone Management**  
City of Cuyahoga Falls



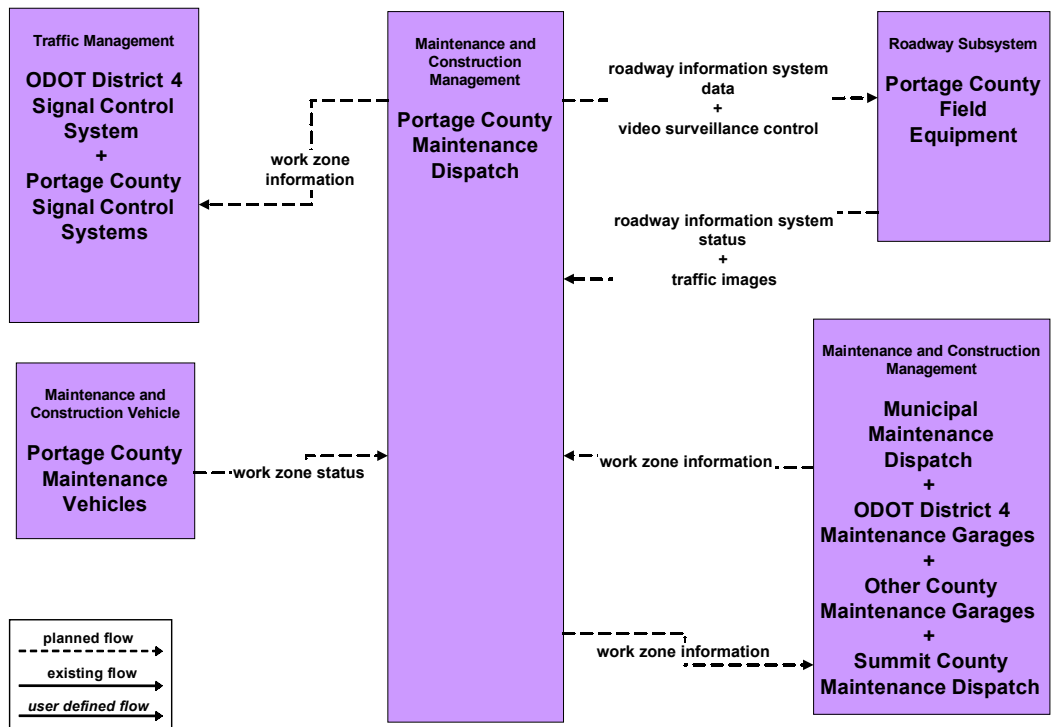
# MC08 - Workzone Management Summit County



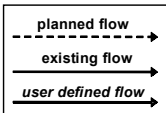
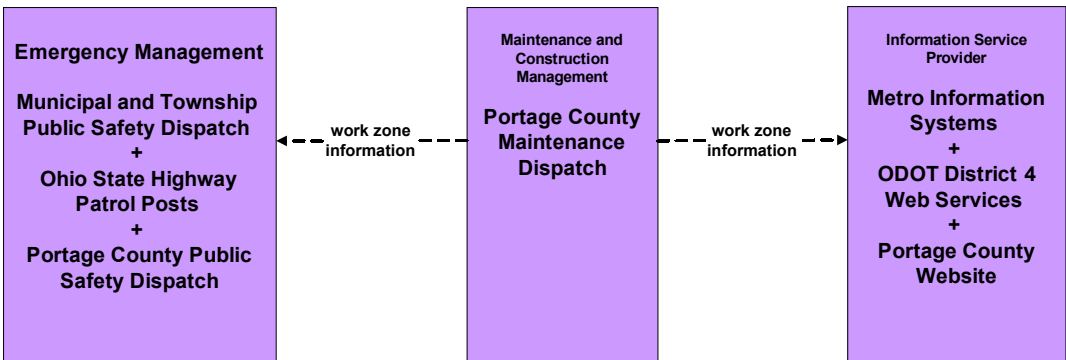
# MC08 - Workzone Management Summit County

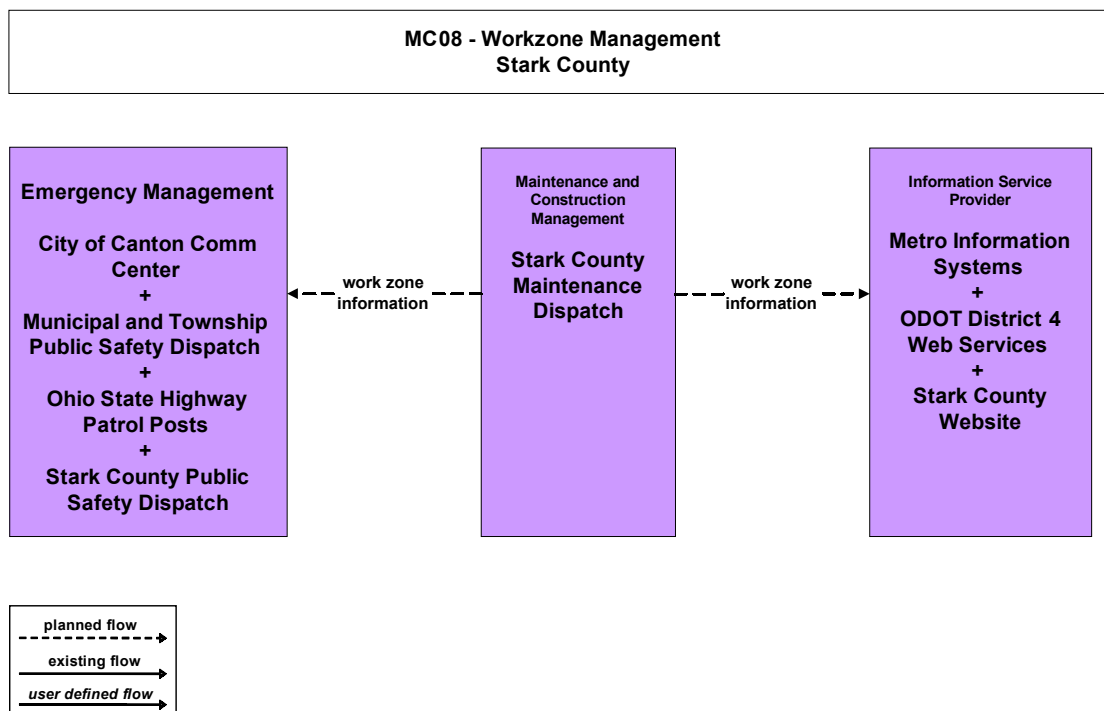
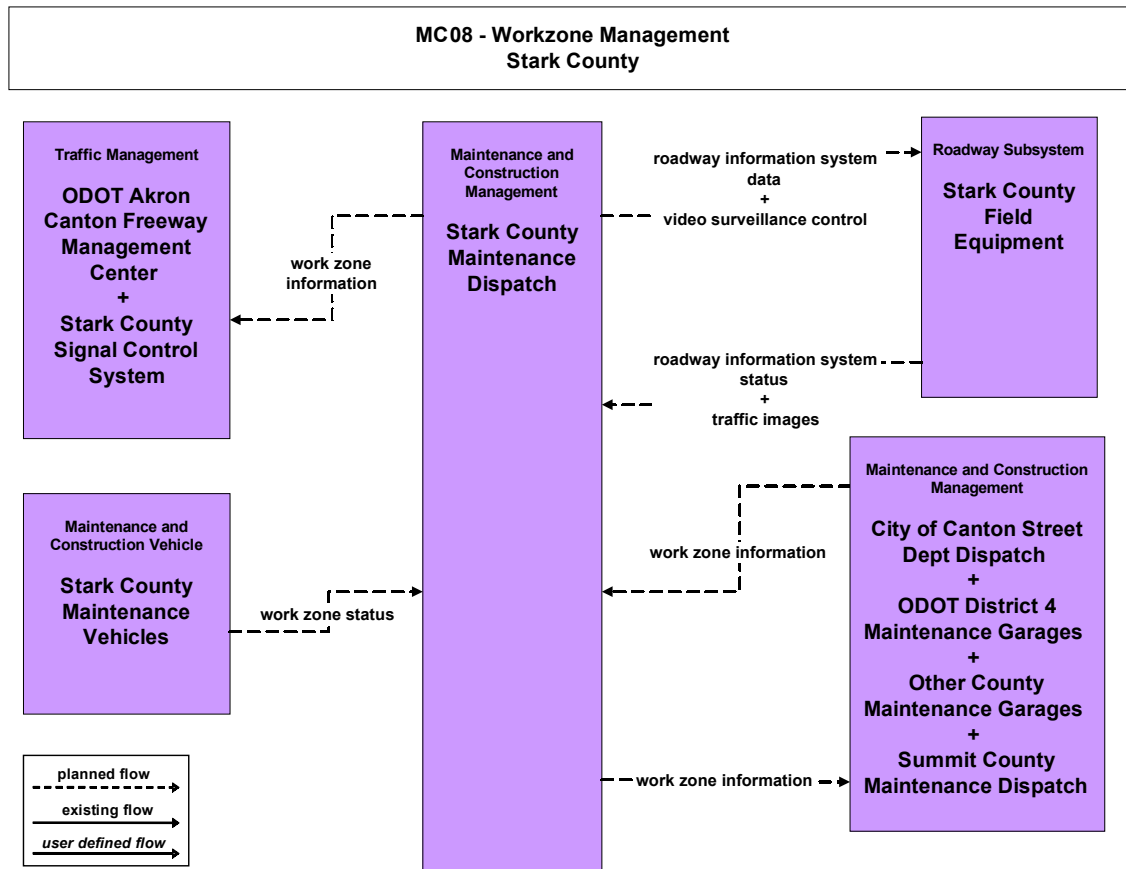


MC08 - Workzone Management  
Portage County

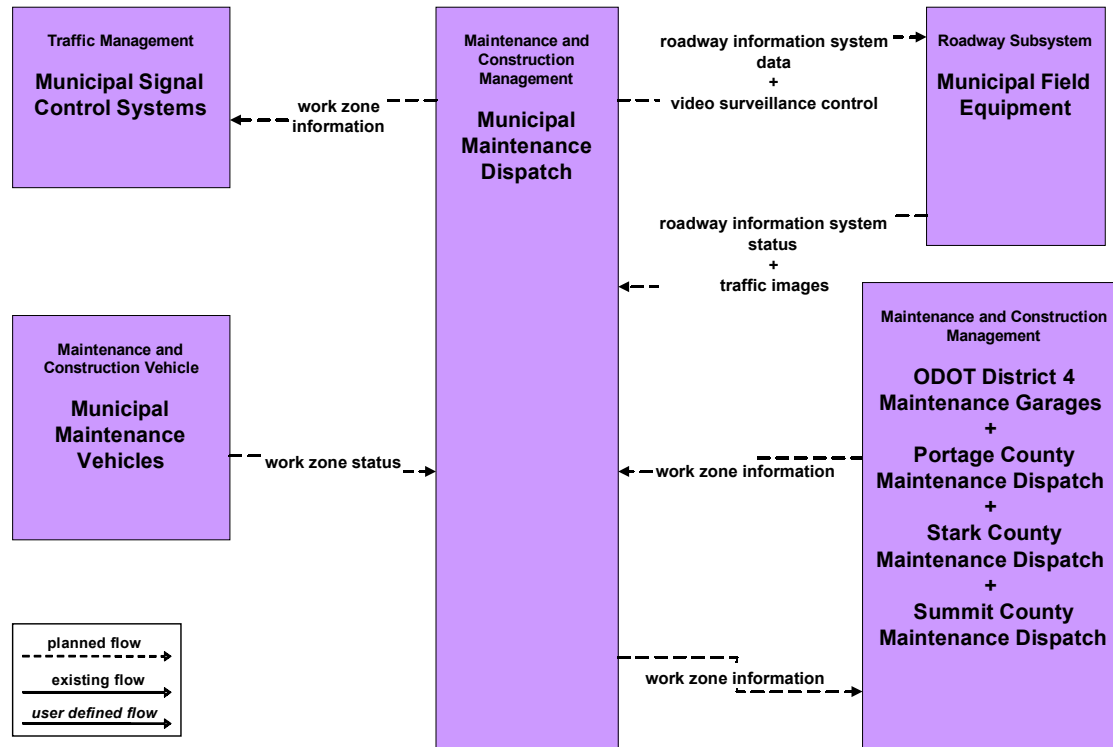


MC08 - Workzone Management  
Portage County

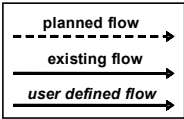
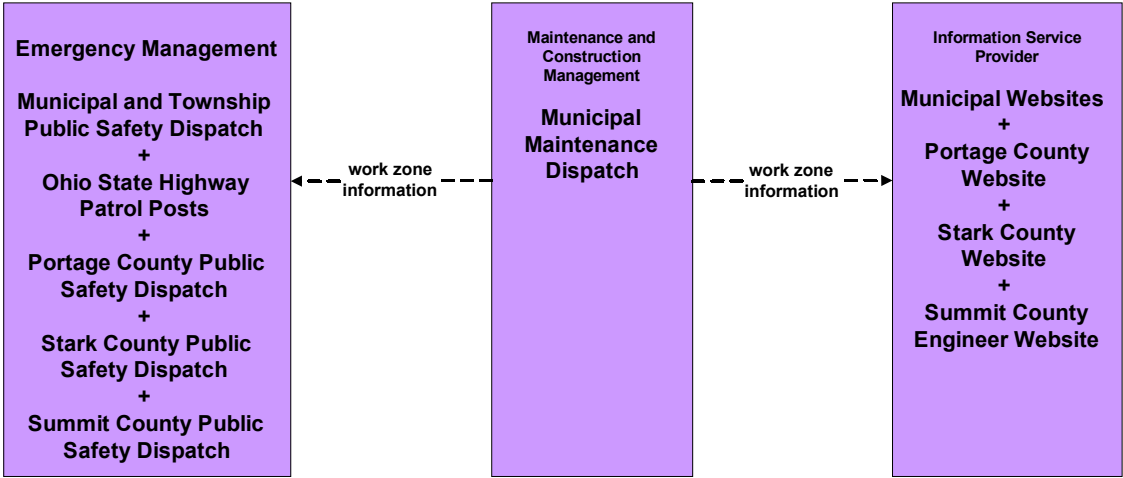




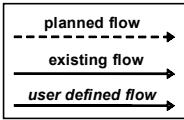
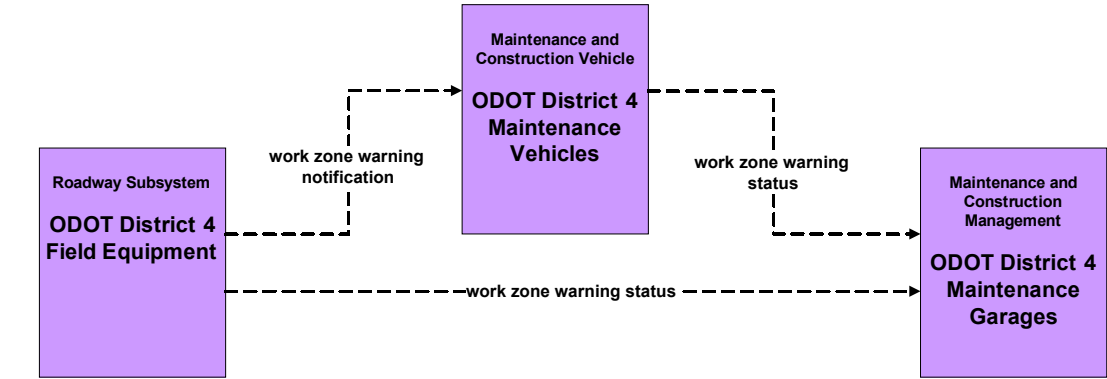
**MC08 - Workzone Management  
Municipal Maintenance**

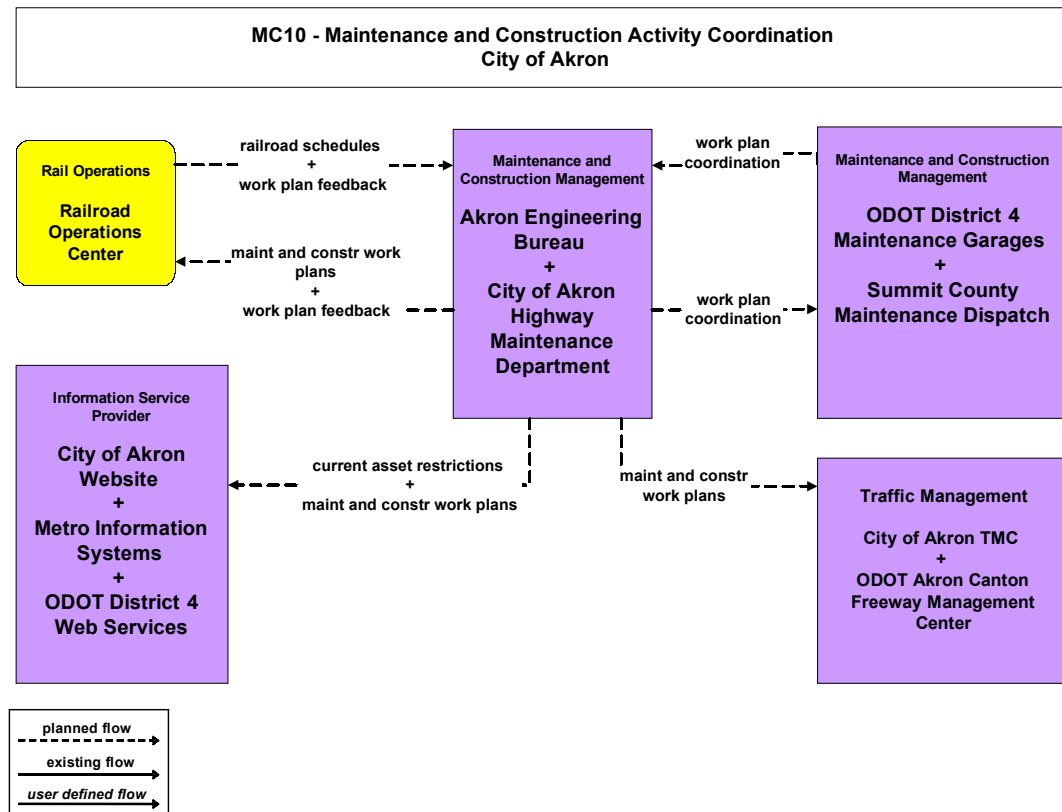
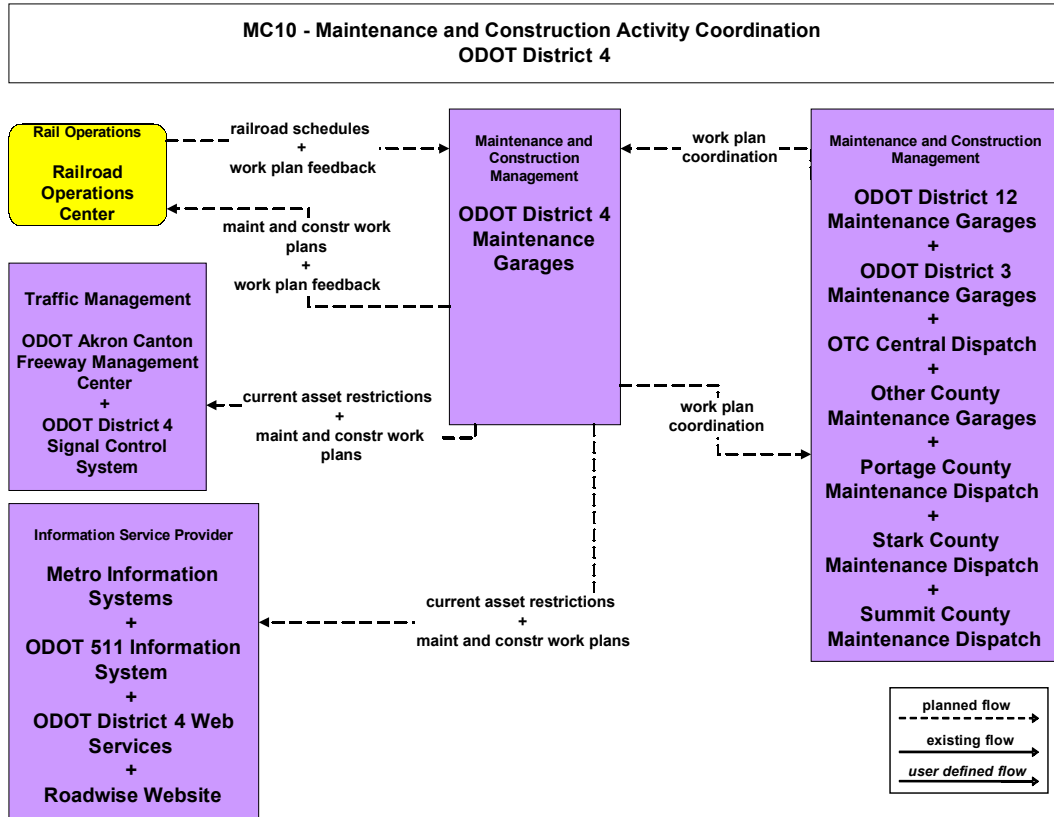


MC08 - Workzone Management  
Municipal Maintenance



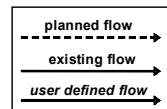
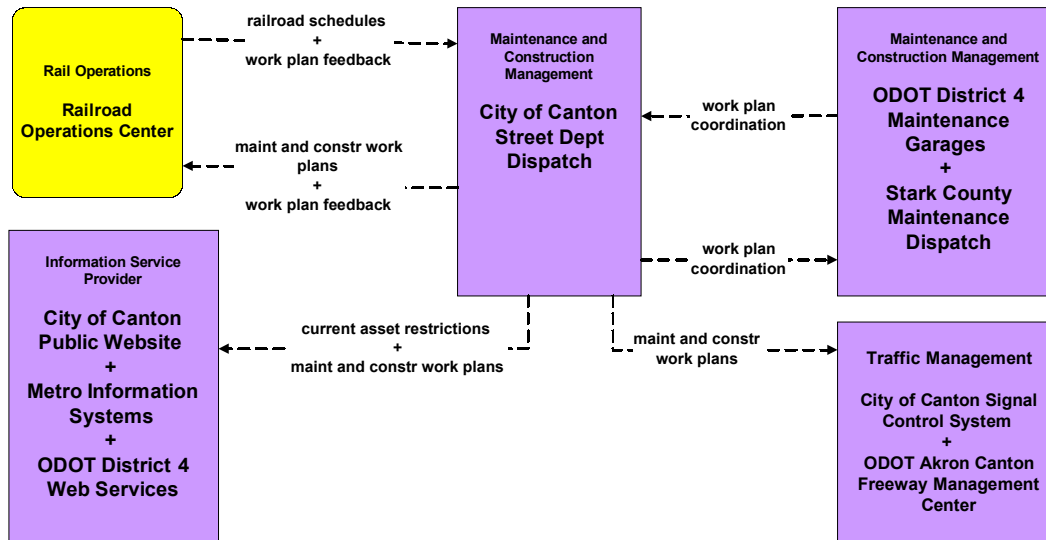
MC09 - Workzone Safety Monitoring  
ODOT District 4



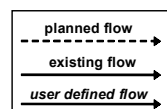
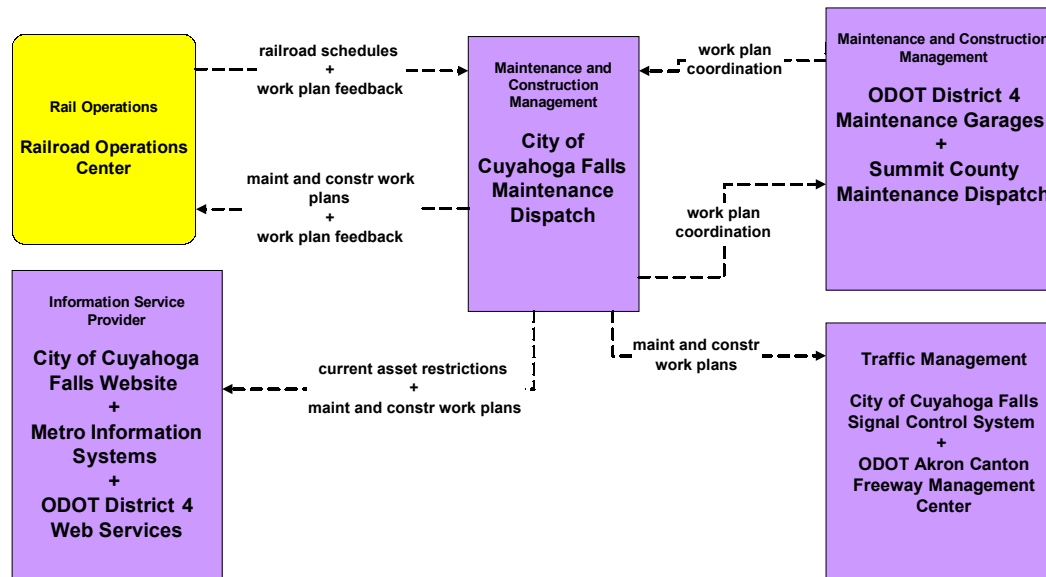




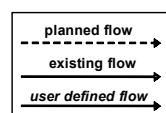
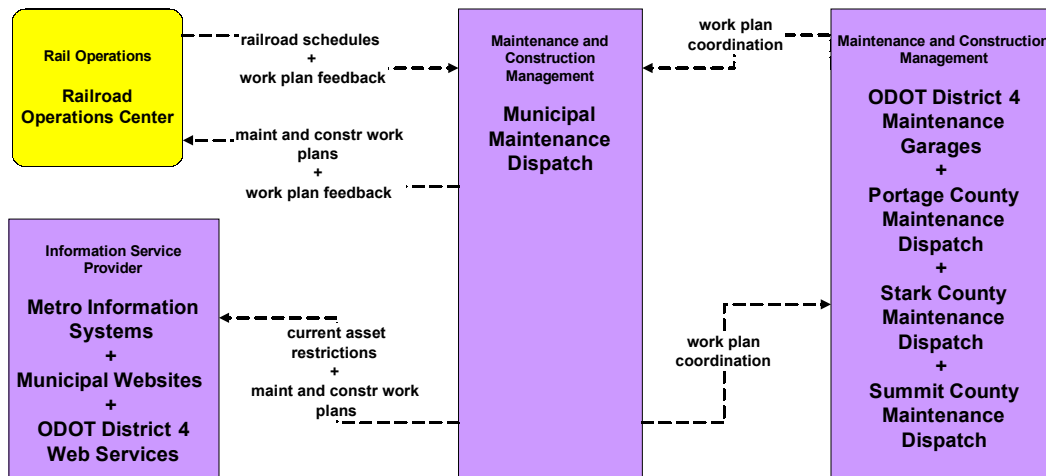
# **MC10 - Maintenance and Construction Activity Coordination** City of Canton



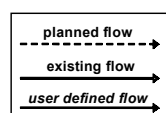
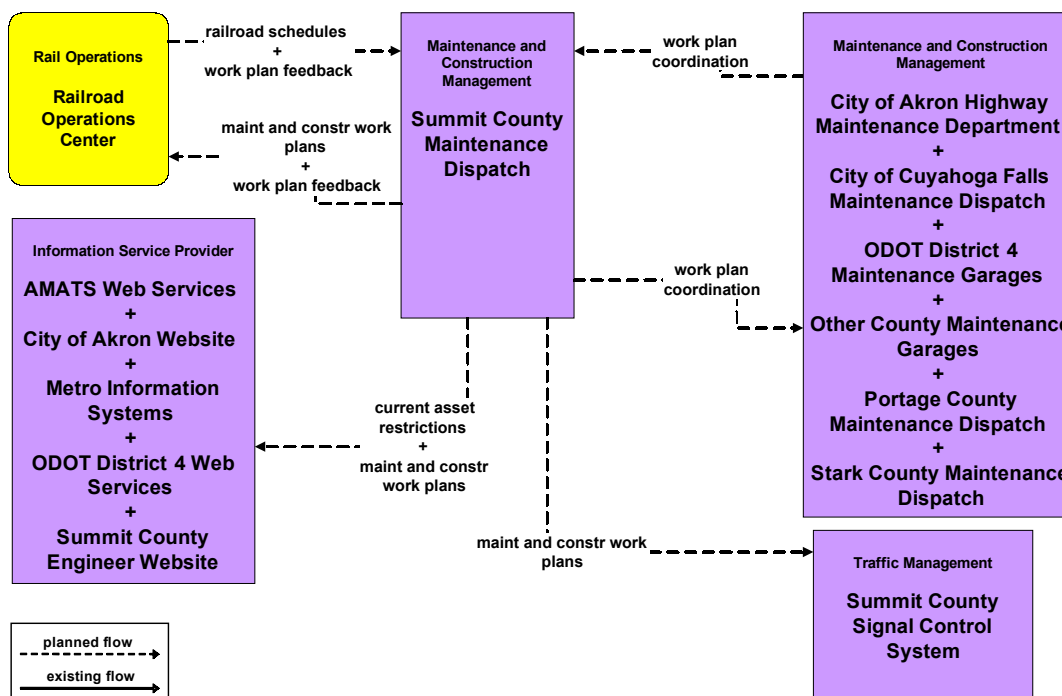
# **MC10 - Maintenance and Construction Activity Coordination** City of Cuyahoga Falls



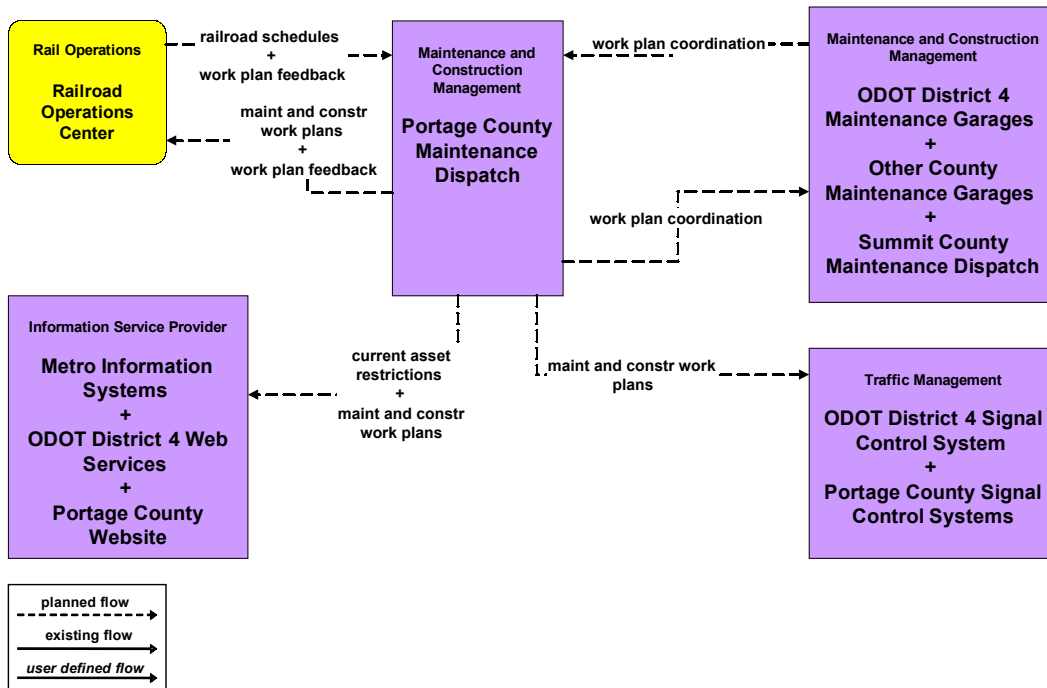
# MC10 - Maintenance and Construction Activity Coordination Municipal Maintenance



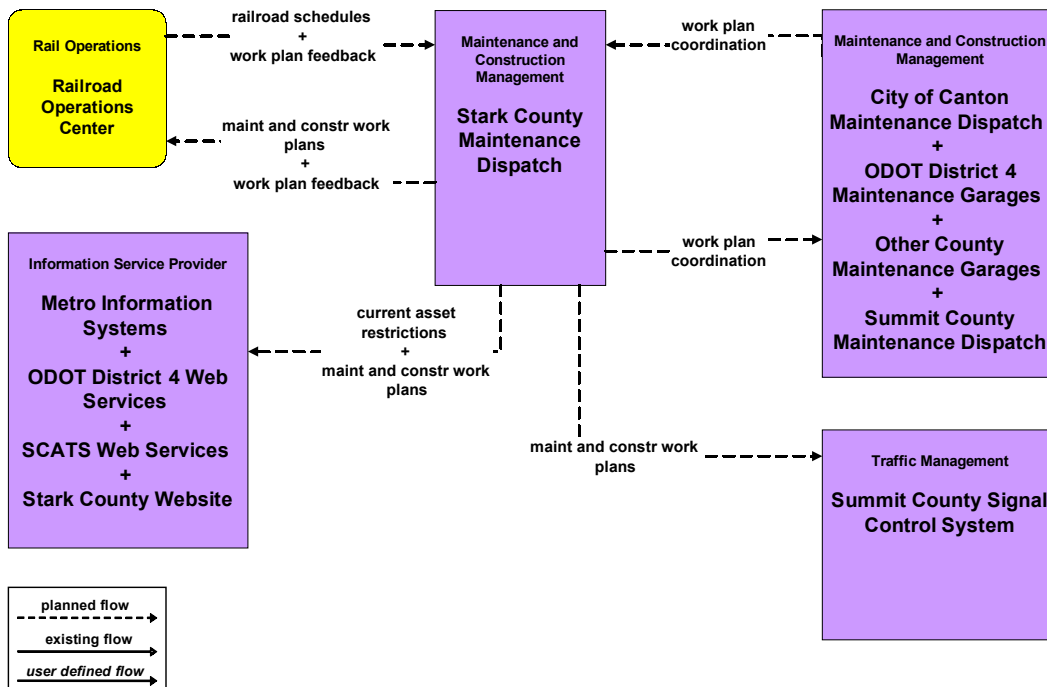
# MC10 - Maintenance and Construction Activity Coordination Summit County



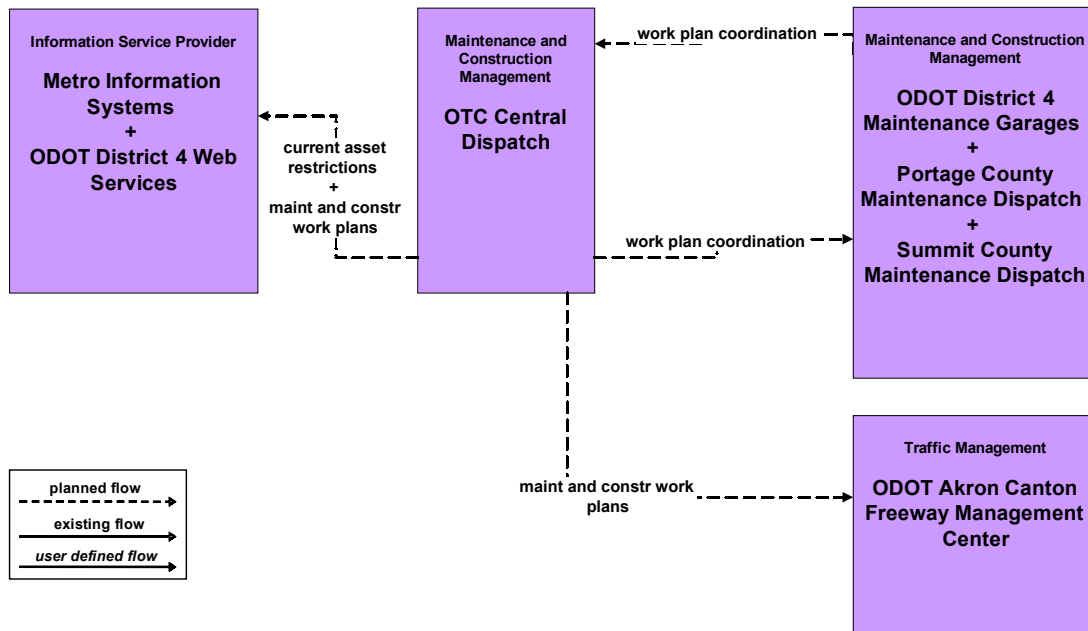
# **MC10 - Maintenance and Construction Activity Coordination Portage County**



# **MC10 - Maintenance and Construction Activity Coordination Stark County**



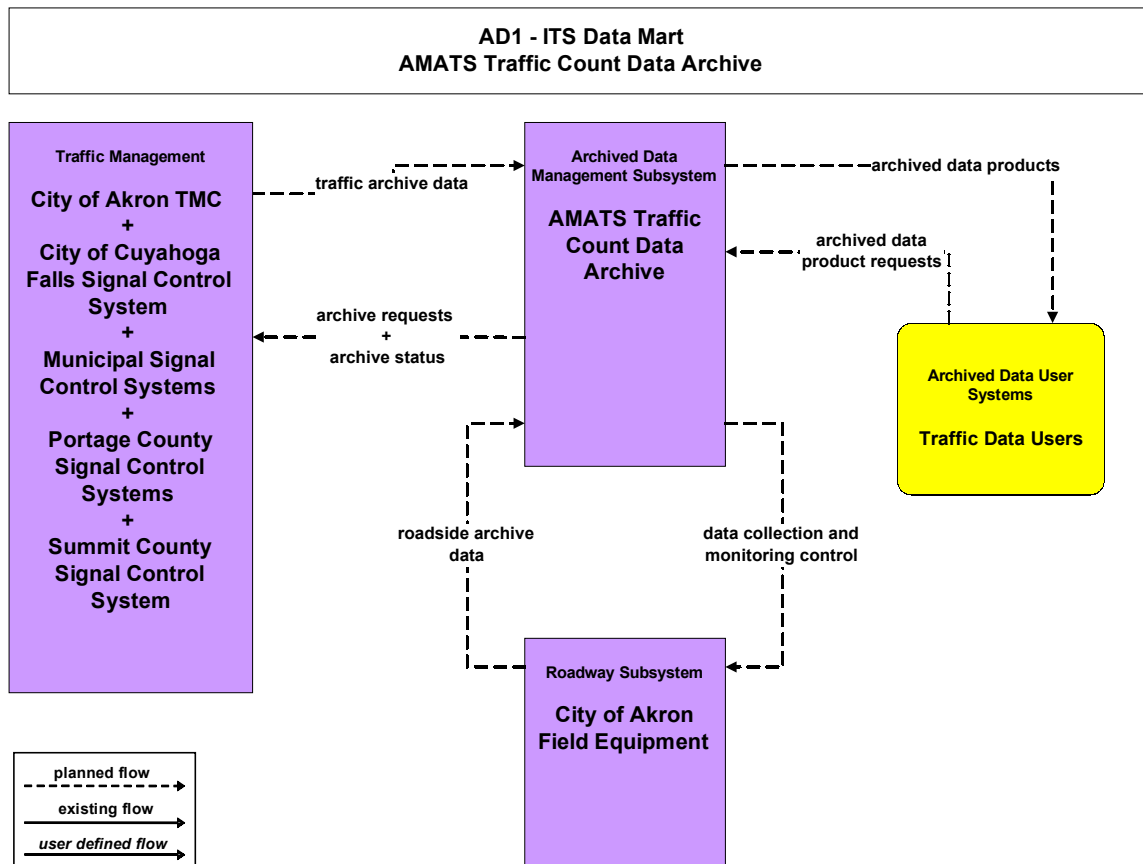
**MC10 - Maintenance and Construction Activity Coordination  
Ohio Turnpike**



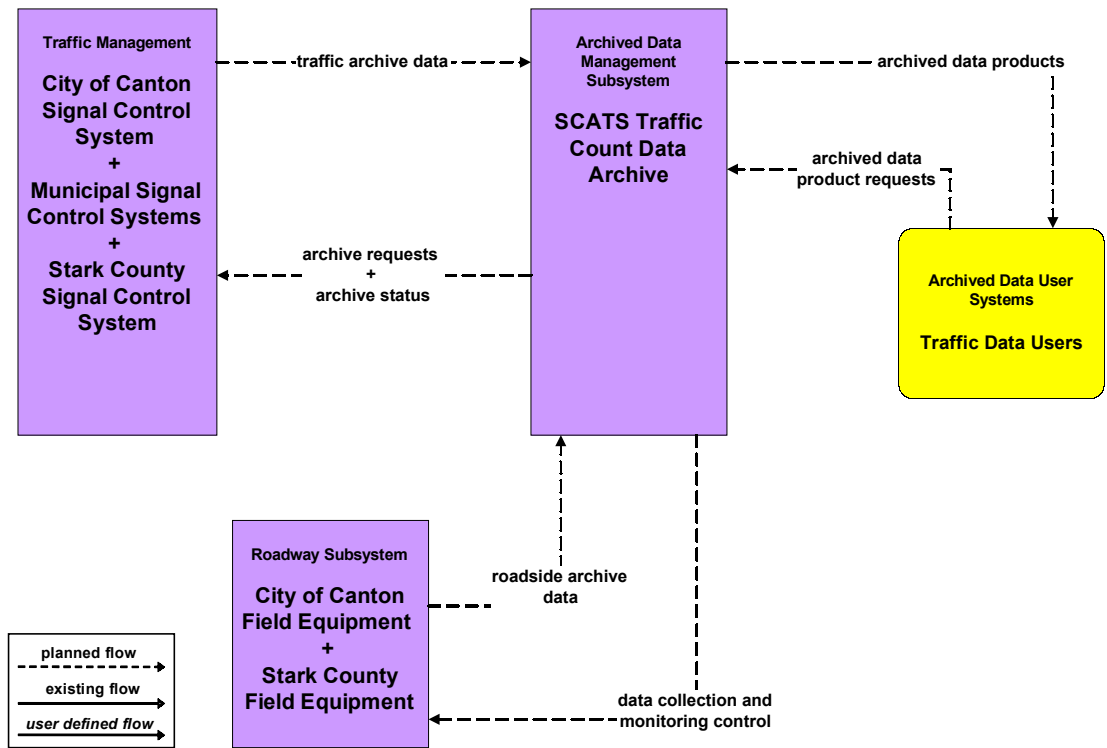
# Akron-Canton, Ohio Regional ITS Architecture

## Customized Market Package Diagrams

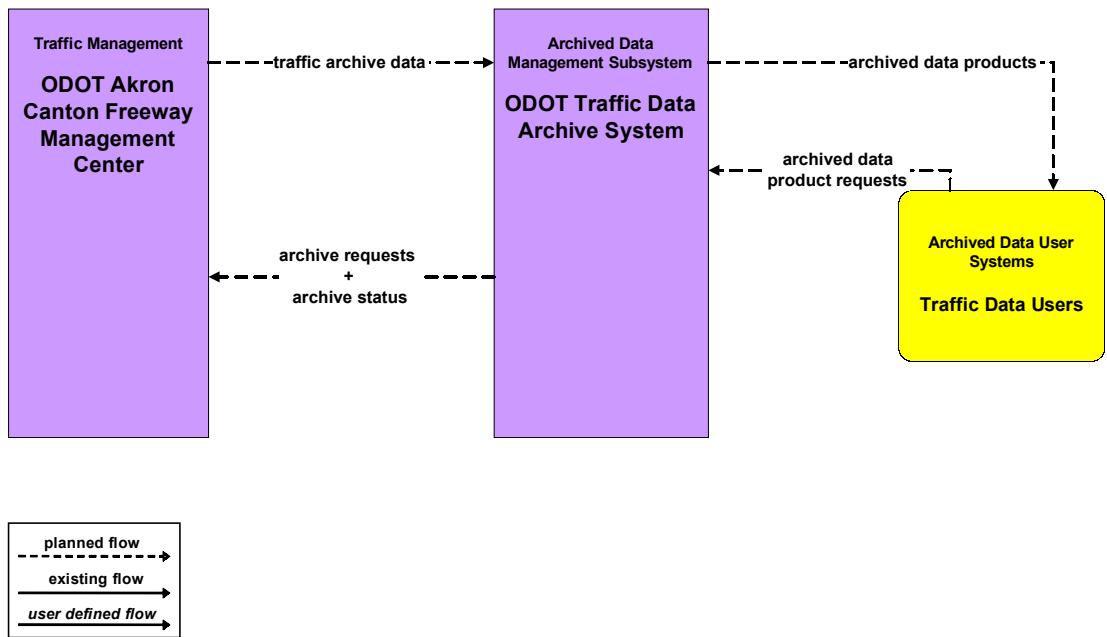
### Archived Data (AD)



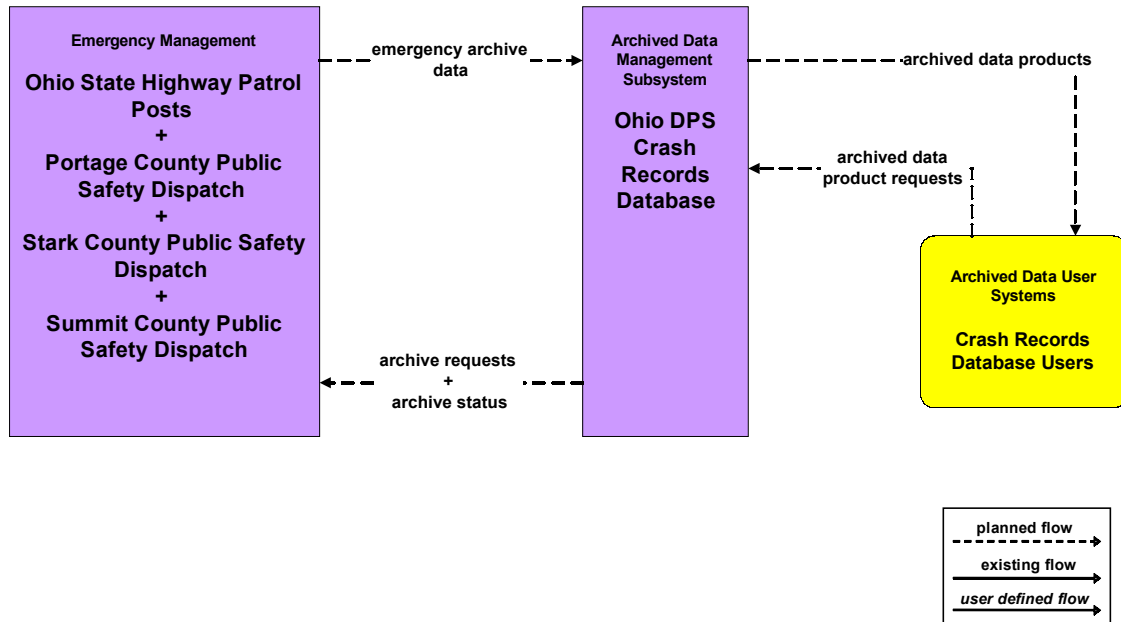
**AD1 - ITS Data Mart**  
**SCATS Traffic Count Data Archive**



**AD1 - ITS Data Mart**  
**ODOT Traffic Data Archive System**



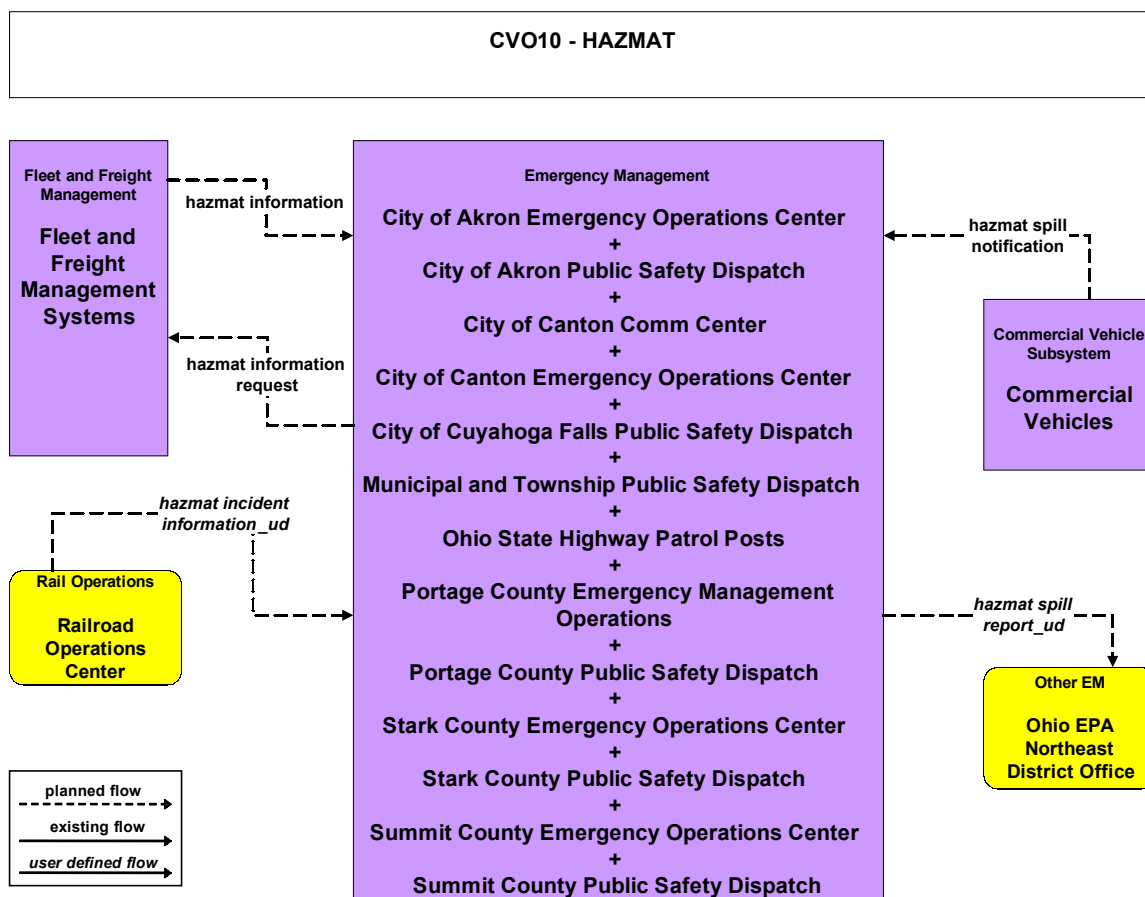
**AD1 - ITS Data Mart  
Ohio DPS Crash Records Database**



# Akron-Canton, Ohio Regional ITS Architecture

## Customized Market Package Diagrams

### Commercial Vehicle Operations (CVO)





## **Appendix C: Functional Requirements**

## Functional Assigned to Elements of the Architecture

Element	Equipment Package
Akron Engineering Bureau	MCM Work Activity Coordination
Akron Engineering Bureau	MCM Work Zone Management
AMATS Traffic Count Data Archive	Government Reporting Systems Support
AMATS Traffic Count Data Archive	ITS Data Repository
AMATS Traffic Count Data Archive	Traffic and Roadside Data Archival
AMATS Web Services	Basic Information Broadcast
City of Akron 311 Non-Emergency Information System	Emergency Call-Taking
City of Akron 311 Non-Emergency Information System	Emergency Environmental Monitoring
City of Akron 311 Non-Emergency Information System	Emergency Response Management
City of Akron Emergency Operations Center	Emergency Call-Taking
City of Akron Emergency Operations Center	Emergency Environmental Monitoring
City of Akron Emergency Operations Center	Emergency Response Management
City of Akron Emergency Operations Center	Mayday Support
City of Akron Emergency Vehicles	On-board EV En Route Support
City of Akron Field Equipment	Advanced Rail Crossing
City of Akron Field Equipment	Roadside Data Collection
City of Akron Field Equipment	Roadside Signal Priority
City of Akron Field Equipment	Roadway Basic Surveillance
City of Akron Field Equipment	Roadway Equipment Coordination
City of Akron Field Equipment	Roadway Infrastructure Monitoring
City of Akron Field Equipment	Roadway Signal Controls
City of Akron Field Equipment	Roadway Traffic Information Dissemination
City of Akron Field Equipment	Roadway Work Zone Traffic Control
City of Akron Field Equipment	Standard Rail Crossing
City of Akron Highway Maintenance Department	MCM Incident Management
City of Akron Highway Maintenance Department	MCM Maintenance Decision Support
City of Akron Highway Maintenance Department	MCM Roadway Maintenance and Construction
City of Akron Highway Maintenance Department	MCM Vehicle and Equipment Maintenance Management
City of Akron Highway Maintenance Department	MCM Vehicle Tracking
City of Akron Highway Maintenance Department	MCM Winter Maintenance Management
City of Akron Highway Maintenance Department	MCM Work Activity Coordination
City of Akron Highway Maintenance Department	MCM Work Zone Management
City of Akron Maintenance Vehicles	MCV Infrastructure Monitoring
City of Akron Maintenance Vehicles	MCV Roadway Maintenance and Construction
City of Akron Maintenance Vehicles	MCV Vehicle Location Tracking
City of Akron Maintenance Vehicles	MCV Vehicle System Monitoring and Diagnostics
City of Akron Maintenance Vehicles	MCV Winter Maintenance
City of Akron Maintenance Vehicles	MCV Work Zone Support

Element	Equipment Package
City of Akron Public Safety Dispatch	Emergency Call-Taking
City of Akron Public Safety Dispatch	Emergency Dispatch
City of Akron Public Safety Dispatch	Emergency Environmental Monitoring
City of Akron Public Safety Dispatch	Emergency Response Management
City of Akron Public Safety Dispatch	Mayday Support
City of Akron TMC	Collect Traffic Surveillance
City of Akron TMC	HRI Traffic Management
City of Akron TMC	MCM Data Collection
City of Akron TMC	MCM Environmental Information Processing
City of Akron TMC	MCM Incident Management
City of Akron TMC	MCM Maintenance Decision Support
City of Akron TMC	MCM Roadway Maintenance and Construction
City of Akron TMC	MCM Winter Maintenance Management
City of Akron TMC	MCM Work Activity Coordination
City of Akron TMC	MCM Work Zone Management
City of Akron TMC	Rail Operations Coordination
City of Akron TMC	TMC Environmental Monitoring
City of Akron TMC	TMC Incident Detection
City of Akron TMC	TMC Incident Dispatch Coordination/Communication
City of Akron TMC	TMC Multimodal Coordination
City of Akron TMC	TMC Regional Traffic Control
City of Akron TMC	TMC Signal Control
City of Akron TMC	TMC Traffic Information Dissemination
City of Akron TMC	TMC Work Zone Traffic Management
City of Akron TMC	Traffic Data Collection
City of Akron TMC	Traffic Maintenance
City of Akron Website	Basic Information Broadcast
City of Canton Comm Center	Emergency Call-Taking
City of Canton Comm Center	Emergency Dispatch
City of Canton Comm Center	Emergency Environmental Monitoring
City of Canton Comm Center	Emergency Response Management
City of Canton Comm Center	Mayday Support
City of Canton Emergency Operations Center	Emergency Call-Taking
City of Canton Emergency Operations Center	Emergency Environmental Monitoring
City of Canton Emergency Operations Center	Emergency Response Management
City of Canton Emergency Operations Center	Mayday Support
City of Canton Emergency Vehicles	On-board EV En Route Support
City of Canton Field Equipment	Advanced Rail Crossing
City of Canton Field Equipment	Roadside Data Collection
City of Canton Field Equipment	Roadside Signal Priority
City of Canton Field Equipment	Roadway Basic Surveillance
City of Canton Field Equipment	Roadway Equipment Coordination
City of Canton Field Equipment	Roadway Infrastructure Monitoring

Element	Equipment Package
City of Canton Field Equipment	Roadway Signal Controls
City of Canton Field Equipment	Roadway Traffic Information Dissemination
City of Canton Field Equipment	Roadway Work Zone Traffic Control
City of Canton Field Equipment	Standard Rail Crossing
City of Canton Maintenance Dispatch	MCM Incident Management
City of Canton Maintenance Dispatch	MCM Maintenance Decision Support
City of Canton Maintenance Dispatch	MCM Roadway Maintenance and Construction
City of Canton Maintenance Dispatch	MCM Vehicle and Equipment Maintenance Management
City of Canton Maintenance Dispatch	MCM Vehicle Tracking
City of Canton Maintenance Dispatch	MCM Winter Maintenance Management
City of Canton Maintenance Dispatch	MCM Work Activity Coordination
City of Canton Maintenance Dispatch	MCM Work Zone Management
City of Canton Maintenance Vehicles	MCV Infrastructure Monitoring
City of Canton Maintenance Vehicles	MCV Roadway Maintenance and Construction
City of Canton Maintenance Vehicles	MCV Vehicle Location Tracking
City of Canton Maintenance Vehicles	MCV Vehicle System Monitoring and Diagnostics
City of Canton Maintenance Vehicles	MCV Winter Maintenance
City of Canton Maintenance Vehicles	MCV Work Zone Support
City of Canton Public Website	Basic Information Broadcast
City of Canton Signal Control System	Collect Traffic Surveillance
City of Canton Signal Control System	HRI Traffic Management
City of Canton Signal Control System	Rail Operations Coordination
City of Canton Signal Control System	TMC Environmental Monitoring
City of Canton Signal Control System	TMC Incident Detection
City of Canton Signal Control System	TMC Incident Dispatch Coordination/Communication
City of Canton Signal Control System	TMC Regional Traffic Control
City of Canton Signal Control System	TMC Signal Control
City of Canton Signal Control System	TMC Traffic Information Dissemination
City of Canton Signal Control System	TMC Work Zone Traffic Management
City of Canton Signal Control System	Traffic Data Collection
City of Canton Signal Control System	Traffic Maintenance
City of Canton Street Dept Dispatch	MCM Incident Management
City of Canton Street Dept Dispatch	MCM Maintenance Decision Support
City of Canton Street Dept Dispatch	MCM Roadway Maintenance and Construction
City of Canton Street Dept Dispatch	MCM Vehicle and Equipment Maintenance Management
City of Canton Street Dept Dispatch	MCM Vehicle Tracking
City of Canton Street Dept Dispatch	MCM Winter Maintenance Management
City of Canton Street Dept Dispatch	MCM Work Activity Coordination
City of Canton Street Dept Dispatch	MCM Work Zone Management
City of Canton Traffic Signal Dispatch	MCM Incident Management
City of Canton Traffic Signal Dispatch	MCM Maintenance Decision Support

Element	Equipment Package
City of Canton Traffic Signal Dispatch	MCM Roadway Maintenance and Construction
City of Cuyahoga Falls Field Equipment	Advanced Rail Crossing
City of Cuyahoga Falls Field Equipment	Roadway Basic Surveillance
City of Cuyahoga Falls Field Equipment	Roadway Equipment Coordination
City of Cuyahoga Falls Field Equipment	Roadway Infrastructure Monitoring
City of Cuyahoga Falls Field Equipment	Roadway Signal Controls
City of Cuyahoga Falls Field Equipment	Roadway Traffic Information Dissemination
City of Cuyahoga Falls Field Equipment	Roadway Work Zone Traffic Control
City of Cuyahoga Falls Field Equipment	Standard Rail Crossing
City of Cuyahoga Falls Maintenance Dispatch	MCM Incident Management
City of Cuyahoga Falls Maintenance Dispatch	MCM Maintenance Decision Support
City of Cuyahoga Falls Maintenance Dispatch	MCM Roadway Maintenance and Construction
City of Cuyahoga Falls Maintenance Dispatch	MCM Vehicle and Equipment Maintenance Management
City of Cuyahoga Falls Maintenance Dispatch	MCM Vehicle Tracking
City of Cuyahoga Falls Maintenance Dispatch	MCM Winter Maintenance Management
City of Cuyahoga Falls Maintenance Dispatch	MCM Work Activity Coordination
City of Cuyahoga Falls Maintenance Dispatch	MCM Work Zone Management
City of Cuyahoga Falls Maintenance Vehicles	MCV Infrastructure Monitoring
City of Cuyahoga Falls Maintenance Vehicles	MCV Roadway Maintenance and Construction
City of Cuyahoga Falls Maintenance Vehicles	MCV Vehicle Location Tracking
City of Cuyahoga Falls Maintenance Vehicles	MCV Vehicle System Monitoring and Diagnostics
City of Cuyahoga Falls Maintenance Vehicles	MCV Winter Maintenance
City of Cuyahoga Falls Maintenance Vehicles	MCV Work Zone Support
City of Cuyahoga Falls Public Safety Dispatch	Emergency Call-Taking
City of Cuyahoga Falls Public Safety Dispatch	Emergency Environmental Monitoring
City of Cuyahoga Falls Public Safety Dispatch	Emergency Response Management
City of Cuyahoga Falls Public Safety Dispatch	Mayday Support
City of Cuyahoga Falls Signal Control System	Collect Traffic Surveillance
City of Cuyahoga Falls Signal Control System	HRI Traffic Management
City of Cuyahoga Falls Signal Control System	Rail Operations Coordination
City of Cuyahoga Falls Signal Control System	TMC Environmental Monitoring
City of Cuyahoga Falls Signal Control System	TMC Incident Detection
City of Cuyahoga Falls Signal Control System	TMC Incident Dispatch Coordination/Communication
City of Cuyahoga Falls Signal Control System	TMC Regional Traffic Control
City of Cuyahoga Falls Signal Control System	TMC Signal Control
City of Cuyahoga Falls Signal Control System	TMC Traffic Information Dissemination
City of Cuyahoga Falls Signal Control System	TMC Work Zone Traffic Management
City of Cuyahoga Falls Signal Control System	Traffic Data Collection
City of Cuyahoga Falls Signal Control System	Traffic Maintenance
City of Cuyahoga Falls Traffic Services Dispatch	MCM Maintenance Decision Support
City of Cuyahoga Falls Traffic Services Dispatch	MCM Roadway Maintenance and Construction

Element	Equipment Package
City of Cuyahoga Falls Traffic Services Dispatch	MCM Vehicle and Equipment Maintenance Management
City of Cuyahoga Falls Traffic Services Dispatch	MCM Vehicle Tracking
City of Cuyahoga Falls Website	Basic Information Broadcast
Commercial Vehicles	On-board Cargo Monitoring
Fleet and Freight Management Systems	Fleet HAZMAT Management
GCRTA Administration	Transit Center Fare and Load Management
GCRTA Communications Center	Transit Center Multi-Modal Coordination
Kent State Bus Operations Center	Transit Center Multi-Modal Coordination
METRO Administration	Transit Center Fare and Load Management
METRO Dispatch	Transit Center Fare and Load Management
METRO Dispatch	Transit Center Fixed-Route Operations
METRO Dispatch	Transit Center Information Services
METRO Dispatch	Transit Center Multi-Modal Coordination
METRO Dispatch	Transit Center Paratransit Operations
METRO Dispatch	Transit Center Security
METRO Dispatch	Transit Center Tracking and Dispatch
METRO Dispatch	Transit Environmental Monitoring
METRO Dispatch	Transit Garage Maintenance
METRO Dispatch	Transit Garage Operations
METRO Fixed Route Vehicles	On-board Fixed Route Schedule Management
METRO Fixed Route Vehicles	On-board Maintenance
METRO Fixed Route Vehicles	On-board Transit Fare and Load Management
METRO Fixed Route Vehicles	On-board Transit Information Services
METRO Fixed Route Vehicles	On-board Transit Security
METRO Fixed Route Vehicles	On-board Transit Signal Priority
METRO Fixed Route Vehicles	On-board Transit Trip Monitoring
Metro Information Systems	Basic Information Broadcast
Metro Information Systems	Interactive Infrastructure Information
METRO Kiosks	Remote Basic Information Reception
METRO Kiosks	Remote Transit Fare Management
METRO Kiosks	Remote Transit Information Services
METRO Maintenance Operations	Transit Garage Maintenance
METRO Paratransit Vehicles	On-board Maintenance
METRO Paratransit Vehicles	On-board Paratransit Operations
METRO Paratransit Vehicles	On-board Transit Fare and Load Management
METRO Paratransit Vehicles	On-board Transit Security
METRO Paratransit Vehicles	On-board Transit Trip Monitoring
METRO Passenger Facilities	Remote Mayday I/F
METRO Passenger Facilities	Secure Area Monitoring
METRO Transit Traveler Information System	Interactive Infrastructure Information
Municipal and Township Public Safety Dispatch	Emergency Call-Taking
Municipal and Township Public Safety Dispatch	Emergency Environmental Monitoring



Element	Equipment Package
Municipal and Township Public Safety Dispatch	Emergency Response Management
Municipal and Township Public Safety Dispatch	Mayday Support
Municipal Field Equipment	Roadway Equipment Coordination
Municipal Field Equipment	Roadway Signal Controls
Municipal Field Equipment	Roadway Work Zone Traffic Control
Municipal Field Equipment	Standard Rail Crossing
Municipal Maintenance Dispatch	MCM Incident Management
Municipal Maintenance Dispatch	MCM Maintenance Decision Support
Municipal Maintenance Dispatch	MCM Vehicle and Equipment Maintenance Management
Municipal Maintenance Dispatch	MCM Vehicle Tracking
Municipal Maintenance Dispatch	MCM Winter Maintenance Management
Municipal Maintenance Dispatch	MCM Work Activity Coordination
Municipal Maintenance Dispatch	MCM Work Zone Management
Municipal Maintenance Vehicles	MCV Vehicle Location Tracking
Municipal Maintenance Vehicles	MCV Vehicle System Monitoring and Diagnostics
Municipal Maintenance Vehicles	MCV Winter Maintenance
Municipal Maintenance Vehicles	MCV Work Zone Support
Municipal Signal Control Systems	HRI Traffic Management
Municipal Signal Control Systems	Rail Operations Coordination
Municipal Signal Control Systems	TMC Incident Detection
Municipal Signal Control Systems	TMC Incident Dispatch Coordination/Communication
Municipal Signal Control Systems	TMC Regional Traffic Control
Municipal Signal Control Systems	TMC Signal Control
Municipal Signal Control Systems	TMC Work Zone Traffic Management
Municipal Signal Control Systems	Traffic Data Collection
Municipal Signal Control Systems	Traffic Maintenance
Muskingum Watershed Conservancy District Office	Emergency Response Management
ODOT 511 Information System	Basic Information Broadcast
ODOT 511 Information System	Interactive Infrastructure Information
ODOT Akron Canton Freeway Management Center	Collect Traffic Surveillance
ODOT Akron Canton Freeway Management Center	Emergency Data Collection
ODOT Akron Canton Freeway Management Center	Emergency Environmental Monitoring
ODOT Akron Canton Freeway Management Center	Emergency Response Management
ODOT Akron Canton Freeway Management Center	MCM Data Collection
ODOT Akron Canton Freeway Management Center	MCM Environmental Information Collection
ODOT Akron Canton Freeway Management Center	MCM Environmental Information Processing
ODOT Akron Canton Freeway Management Center	MCM Incident Management
ODOT Akron Canton Freeway Management Center	MCM Maintenance Decision Support
ODOT Akron Canton Freeway Management Center	MCM Roadway Maintenance and Construction
ODOT Akron Canton Freeway Management Center	MCM Winter Maintenance Management
ODOT Akron Canton Freeway Management Center	MCM Work Activity Coordination

Element	Equipment Package
ODOT Akron Canton Freeway Management Center	MCM Work Zone Management
ODOT Akron Canton Freeway Management Center	Rail Operations Coordination
ODOT Akron Canton Freeway Management Center	Service Patrol Management
ODOT Akron Canton Freeway Management Center	TMC Environmental Monitoring
ODOT Akron Canton Freeway Management Center	TMC Freeway Management
ODOT Akron Canton Freeway Management Center	TMC Incident Detection
ODOT Akron Canton Freeway Management Center	TMC Incident Dispatch Coordination/Communication
ODOT Akron Canton Freeway Management Center	TMC Probe Information Collection
ODOT Akron Canton Freeway Management Center	TMC Regional Traffic Control
ODOT Akron Canton Freeway Management Center	TMC Traffic Information Dissemination
ODOT Akron Canton Freeway Management Center	TMC Work Zone Traffic Management
ODOT Akron Canton Freeway Management Center	Traffic Data Collection
ODOT Akron Canton Freeway Management Center	Traffic Maintenance
ODOT Central Office	TMC Environmental Monitoring
ODOT Central Office	TMC Probe Information Collection
ODOT Central Office	TMC Regional Traffic Control
ODOT Central Office Website	Basic Information Broadcast
ODOT District 11 Office	TMC Regional Traffic Control
ODOT District 12 Freeway Management Center	TMC Incident Detection
ODOT District 12 Freeway Management Center	TMC Incident Dispatch Coordination/Communication
ODOT District 12 Freeway Management Center	TMC Regional Traffic Control
ODOT District 12 Maintenance Garages	MCM Incident Management
ODOT District 12 Maintenance Garages	MCM Maintenance Decision Support
ODOT District 12 Maintenance Garages	MCM Winter Maintenance Management
ODOT District 12 Maintenance Garages	MCM Work Activity Coordination
ODOT District 12 Maintenance Garages	MCM Work Zone Management
ODOT District 3 Maintenance Garages	MCM Incident Management
ODOT District 3 Maintenance Garages	MCM Maintenance Decision Support
ODOT District 3 Maintenance Garages	MCM Winter Maintenance Management
ODOT District 3 Maintenance Garages	MCM Work Activity Coordination
ODOT District 3 Maintenance Garages	MCM Work Zone Management
ODOT District 3 Office	TMC Regional Traffic Control
ODOT District 4 Field Equipment	Roadway Automated Treatment
ODOT District 4 Field Equipment	Roadway Basic Surveillance
ODOT District 4 Field Equipment	Roadway Environmental Monitoring
ODOT District 4 Field Equipment	Roadway Equipment Coordination
ODOT District 4 Field Equipment	Roadway Freeway Control
ODOT District 4 Field Equipment	Roadway Infrastructure Monitoring
ODOT District 4 Field Equipment	Roadway Probe Beacons
ODOT District 4 Field Equipment	Roadway Signal Controls
ODOT District 4 Field Equipment	Roadway Traffic Information Dissemination
ODOT District 4 Field Equipment	Roadway Work Zone Safety



Element	Equipment Package
ODOT District 4 Field Equipment	Roadway Work Zone Traffic Control
ODOT District 4 Maintenance Garages	MCM Automated Treatment System Control
ODOT District 4 Maintenance Garages	MCM Incident Management
ODOT District 4 Maintenance Garages	MCM Maintenance Decision Support
ODOT District 4 Maintenance Garages	MCM Roadway Maintenance and Construction
ODOT District 4 Maintenance Garages	MCM Vehicle and Equipment Maintenance Management
ODOT District 4 Maintenance Garages	MCM Vehicle Tracking
ODOT District 4 Maintenance Garages	MCM Winter Maintenance Management
ODOT District 4 Maintenance Garages	MCM Work Activity Coordination
ODOT District 4 Maintenance Garages	MCM Work Zone Management
ODOT District 4 Maintenance Garages	MCM Work Zone Safety Management
ODOT District 4 Maintenance Vehicles	MCV Infrastructure Monitoring
ODOT District 4 Maintenance Vehicles	MCV Roadway Maintenance and Construction
ODOT District 4 Maintenance Vehicles	MCV Vehicle Location Tracking
ODOT District 4 Maintenance Vehicles	MCV Vehicle Safety Monitoring
ODOT District 4 Maintenance Vehicles	MCV Vehicle System Monitoring and Diagnostics
ODOT District 4 Maintenance Vehicles	MCV Winter Maintenance
ODOT District 4 Maintenance Vehicles	MCV Work Zone Support
ODOT District 4 Signal Control System	TMC Incident Dispatch Coordination/Communication
ODOT District 4 Signal Control System	TMC Regional Traffic Control
ODOT District 4 Signal Control System	TMC Signal Control
ODOT District 4 Signal Control System	TMC Work Zone Traffic Management
ODOT District 4 Signal Control System	Traffic Maintenance
ODOT District 4 Web Services	Basic Information Broadcast
ODOT District 4 Web Services	Interactive Infrastructure Information
ODOT Freeway Service Patrol Vehicles	On-board EV En Route Support
ODOT Freeway Service Patrol Vehicles	On-board EV Incident Management Communication
ODOT Traffic Data Archive System	Government Reporting Systems Support
ODOT Traffic Data Archive System	ITS Data Repository
ODOT Traffic Data Archive System	Traffic and Roadside Data Archival
Ohio DPS Crash Records Database	Government Reporting Systems Support
Ohio DPS Crash Records Database	ITS Data Repository
Ohio DPS Crash Records Database	Traffic and Roadside Data Archival
Ohio State Highway Patrol Posts	Emergency Call-Taking
Ohio State Highway Patrol Posts	Emergency Data Collection
Ohio State Highway Patrol Posts	Emergency Dispatch
Ohio State Highway Patrol Posts	Emergency Environmental Monitoring
Ohio State Highway Patrol Posts	Emergency Response Management
Ohio State Highway Patrol Posts	Mayday Support
Ohio State Highway Patrol Vehicles	On-board EV En Route Support
Ohio Statewide EOC	Emergency Call-Taking
Ohio Statewide EOC	Emergency Environmental Monitoring

Element	Equipment Package
Ohio Statewide EOC	Emergency Response Management
OTC Central Dispatch	MCM Incident Management
OTC Central Dispatch	MCM Maintenance Decision Support
OTC Central Dispatch	MCM Winter Maintenance Management
OTC Central Dispatch	MCM Work Activity Coordination
OTC Central Dispatch	TMC Incident Detection
OTC Central Dispatch	TMC Incident Dispatch Coordination/Communication
OTC Central Dispatch	TMC Regional Traffic Control
OTC Central Dispatch	TMC Work Zone Traffic Management
Other County Maintenance Garages	MCM Incident Management
Other County Maintenance Garages	MCM Work Activity Coordination
Other County Maintenance Garages	MCM Work Zone Management
Other County Public Safety	Emergency Call-Taking
Other County Public Safety	Emergency Environmental Monitoring
Other County Public Safety	Emergency Response Management
PARTA Dispatch	Transit Center Fixed-Route Operations
PARTA Dispatch	Transit Center Information Services
PARTA Dispatch	Transit Center Multi-Modal Coordination
PARTA Dispatch	Transit Center Paratransit Operations
PARTA Dispatch	Transit Center Security
PARTA Dispatch	Transit Center Tracking and Dispatch
PARTA Dispatch	Transit Environmental Monitoring
PARTA Dispatch	Transit Garage Maintenance
PARTA Dispatch	Transit Garage Operations
PARTA Fixed Route Vehicles	On-board Fixed Route Schedule Management
PARTA Fixed Route Vehicles	On-board Maintenance
PARTA Fixed Route Vehicles	On-board Transit Security
PARTA Fixed Route Vehicles	On-board Transit Trip Monitoring
PARTA Paratransit Vehicles	On-board Maintenance
PARTA Paratransit Vehicles	On-board Paratransit Operations
PARTA Paratransit Vehicles	On-board Transit Security
PARTA Paratransit Vehicles	On-board Transit Trip Monitoring
PARTA Transit Traveler Information System	Interactive Infrastructure Information
Portage County Emergency Management Operations	Emergency Call-Taking
Portage County Emergency Management Operations	Emergency Environmental Monitoring
Portage County Emergency Management Operations	Emergency Response Management
Portage County Emergency Management Operations	Mayday Support
Portage County Field Equipment	Roadway Basic Surveillance
Portage County Field Equipment	Roadway Environmental Monitoring

Element	Equipment Package
Portage County Field Equipment	Roadway Equipment Coordination
Portage County Field Equipment	Roadway Probe Beacons
Portage County Field Equipment	Roadway Signal Controls
Portage County Field Equipment	Roadway Work Zone Traffic Control
Portage County Maintenance Dispatch	MCM Environmental Information Collection
Portage County Maintenance Dispatch	MCM Incident Management
Portage County Maintenance Dispatch	MCM Maintenance Decision Support
Portage County Maintenance Dispatch	MCM Vehicle and Equipment Maintenance Management
Portage County Maintenance Dispatch	MCM Vehicle Tracking
Portage County Maintenance Dispatch	MCM Winter Maintenance Management
Portage County Maintenance Dispatch	MCM Work Activity Coordination
Portage County Maintenance Dispatch	MCM Work Zone Management
Portage County Maintenance Vehicles	MCV Vehicle Location Tracking
Portage County Maintenance Vehicles	MCV Vehicle System Monitoring and Diagnostics
Portage County Maintenance Vehicles	MCV Work Zone Support
Portage County Public Safety Dispatch	Emergency Call-Taking
Portage County Public Safety Dispatch	Emergency Data Collection
Portage County Public Safety Dispatch	Emergency Environmental Monitoring
Portage County Public Safety Dispatch	Emergency Response Management
Portage County Public Safety Dispatch	Mayday Support
Portage County Signal Control Systems	Collect Traffic Surveillance
Portage County Signal Control Systems	Rail Operations Coordination
Portage County Signal Control Systems	TMC Environmental Monitoring
Portage County Signal Control Systems	TMC Incident Detection
Portage County Signal Control Systems	TMC Incident Dispatch Coordination/Communication
Portage County Signal Control Systems	TMC Probe Information Collection
Portage County Signal Control Systems	TMC Regional Traffic Control
Portage County Signal Control Systems	TMC Signal Control
Portage County Signal Control Systems	TMC Work Zone Traffic Management
Portage County Signal Control Systems	Traffic Data Collection
Portage County Signal Control Systems	Traffic Maintenance
Private Ambulance Dispatch	Emergency Call-Taking
Private Ambulance Dispatch	Emergency Environmental Monitoring
Private Ambulance Dispatch	Emergency Response Management
Private Paratransit Systems Dispatch	Transit Center Multi-Modal Coordination
Private Towing Dispatch	Emergency Call-Taking
Private Towing Dispatch	Emergency Environmental Monitoring
Private Towing Dispatch	Emergency Response Management
Regional Smart Card Reconciliation Network	Transit Center Fare and Load Management
SARTA Fixed Route Dispatch	Transit Center Fixed-Route Operations
SARTA Fixed Route Dispatch	Transit Center Information Services
SARTA Fixed Route Dispatch	Transit Center Multi-Modal Coordination

Element	Equipment Package
SARTA Fixed Route Dispatch	Transit Center Security
SARTA Fixed Route Dispatch	Transit Center Tracking and Dispatch
SARTA Fixed Route Dispatch	Transit Environmental Monitoring
SARTA Fixed Route Dispatch	Transit Garage Maintenance
SARTA Fixed Route Dispatch	Transit Garage Operations
SARTA Fixed Route Vehicles	On-board Fixed Route Schedule Management
SARTA Fixed Route Vehicles	On-board Maintenance
SARTA Fixed Route Vehicles	On-board Transit Information Services
SARTA Fixed Route Vehicles	On-board Transit Security
SARTA Fixed Route Vehicles	On-board Transit Trip Monitoring
SARTA Fleet Maintenance	Transit Garage Maintenance
SARTA Information Signs	Remote Transit Information Services
SARTA Paratransit Dispatch	Transit Center Multi-Modal Coordination
SARTA Paratransit Dispatch	Transit Center Paratransit Operations
SARTA Paratransit Dispatch	Transit Center Security
SARTA Paratransit Dispatch	Transit Center Tracking and Dispatch
SARTA Paratransit Dispatch	Transit Environmental Monitoring
SARTA Paratransit Dispatch	Transit Garage Maintenance
SARTA Paratransit Dispatch	Transit Garage Operations
SARTA Paratransit Vehicles	On-board Maintenance
SARTA Paratransit Vehicles	On-board Paratransit Operations
SARTA Paratransit Vehicles	On-board Transit Security
SARTA Paratransit Vehicles	On-board Transit Trip Monitoring
SARTA Transit Traveler Information System	Interactive Infrastructure Information
SCATS Traffic Count Data Archive	Government Reporting Systems Support
SCATS Traffic Count Data Archive	ITS Data Repository
SCATS Traffic Count Data Archive	Traffic and Roadside Data Archival
SCATS Web Services	Basic Information Broadcast
School Buses	On-board Fixed Route Schedule Management
School District Dispatch	Transit Center Fixed-Route Operations
School District Dispatch	Transit Environmental Monitoring
School District Dispatch	Transit Garage Operations
Special Police Dispatch	Emergency Call-Taking
Special Police Dispatch	Emergency Environmental Monitoring
Special Police Dispatch	Emergency Response Management
Stark County Emergency Operations Center	Emergency Call-Taking
Stark County Emergency Operations Center	Emergency Environmental Monitoring
Stark County Emergency Operations Center	Emergency Response Management
Stark County Emergency Operations Center	Mayday Support
Stark County Field Equipment	Roadside Data Collection
Stark County Field Equipment	Roadway Basic Surveillance
Stark County Field Equipment	Roadway Equipment Coordination
Stark County Field Equipment	Roadway Signal Controls

Element	Equipment Package
Stark County Field Equipment	Roadway Work Zone Traffic Control
Stark County Maintenance Dispatch	MCM Incident Management
Stark County Maintenance Dispatch	MCM Maintenance Decision Support
Stark County Maintenance Dispatch	MCM Vehicle and Equipment Maintenance Management
Stark County Maintenance Dispatch	MCM Vehicle Tracking
Stark County Maintenance Dispatch	MCM Winter Maintenance Management
Stark County Maintenance Dispatch	MCM Work Activity Coordination
Stark County Maintenance Dispatch	MCM Work Zone Management
Stark County Maintenance Vehicles	MCV Vehicle Location Tracking
Stark County Maintenance Vehicles	MCV Vehicle System Monitoring and Diagnostics
Stark County Maintenance Vehicles	MCV Work Zone Support
Stark County Public Safety Dispatch	Emergency Call-Taking
Stark County Public Safety Dispatch	Emergency Data Collection
Stark County Public Safety Dispatch	Emergency Environmental Monitoring
Stark County Public Safety Dispatch	Emergency Response Management
Stark County Public Safety Dispatch	Mayday Support
Stark County Signal Control System	Collect Traffic Surveillance
Stark County Signal Control System	Rail Operations Coordination
Stark County Signal Control System	TMC Incident Detection
Stark County Signal Control System	TMC Incident Dispatch Coordination/Communication
Stark County Signal Control System	TMC Regional Traffic Control
Stark County Signal Control System	TMC Signal Control
Stark County Signal Control System	TMC Work Zone Traffic Management
Stark County Signal Control System	Traffic Data Collection
Stark County Signal Control System	Traffic Maintenance
Summit County Emergency Operations Center	Emergency Call-Taking
Summit County Emergency Operations Center	Emergency Environmental Monitoring
Summit County Emergency Operations Center	Emergency Response Management
Summit County Emergency Operations Center	Mayday Support
Summit County Field Equipment	Roadway Basic Surveillance
Summit County Field Equipment	Roadway Environmental Monitoring
Summit County Field Equipment	Roadway Equipment Coordination
Summit County Field Equipment	Roadway Probe Beacons
Summit County Field Equipment	Roadway Signal Controls
Summit County Field Equipment	Roadway Work Zone Traffic Control
Summit County Maintenance Dispatch	MCM Environmental Information Collection
Summit County Maintenance Dispatch	MCM Incident Management
Summit County Maintenance Dispatch	MCM Maintenance Decision Support
Summit County Maintenance Dispatch	MCM Vehicle and Equipment Maintenance Management
Summit County Maintenance Dispatch	MCM Vehicle Tracking
Summit County Maintenance Dispatch	MCM Winter Maintenance Management

Element	Equipment Package
Summit County Maintenance Dispatch	MCM Work Activity Coordination
Summit County Maintenance Dispatch	MCM Work Zone Management
Summit County Maintenance Vehicles	MCV Vehicle Location Tracking
Summit County Maintenance Vehicles	MCV Vehicle System Monitoring and Diagnostics
Summit County Maintenance Vehicles	MCV Work Zone Support
Summit County Public Safety Dispatch	Emergency Call-Taking
Summit County Public Safety Dispatch	Emergency Data Collection
Summit County Public Safety Dispatch	Emergency Environmental Monitoring
Summit County Public Safety Dispatch	Emergency Response Management
Summit County Public Safety Dispatch	Mayday Support
Summit County Signal Control System	Collect Traffic Surveillance
Summit County Signal Control System	Rail Operations Coordination
Summit County Signal Control System	TMC Environmental Monitoring
Summit County Signal Control System	TMC Incident Detection
Summit County Signal Control System	TMC Incident Dispatch Coordination/Communication
Summit County Signal Control System	TMC Probe Information Collection
Summit County Signal Control System	TMC Regional Traffic Control
Summit County Signal Control System	TMC Signal Control
Summit County Signal Control System	TMC Work Zone Traffic Management
Summit County Signal Control System	Traffic Data Collection
Summit County Signal Control System	Traffic Maintenance
Traveler Information Device	Personal Basic Information Reception
Traveler Information Device	Personal Interactive Information Reception