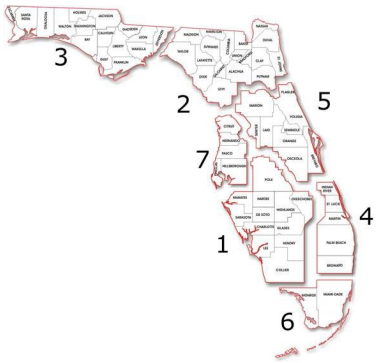
Florida Statewide and Regional ITS Architectures



Florida's District 7 ITS Architecture

The Florida District 7 Regional ITS Architecture (RITSA) is a roadmap for transportation systems integration for Florida District 7 services over a 10-year time horizon. The District 7 RITSA has been developed and maintained through a cooperative effort by the state's transportation agencies. The District 7 RITSA complies with the FHWA Rule 940 requirements, as well as the FTA policy directives, for ITS Architectures. The District 7 RITSA was converted to be compatible with the latest version of the Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT) Version 9.2 which makes available all of the ARC-IT content for use in updates to the District 7 RITSA.

No change requests were submitted for the District 7 RITSA during the latest Architecture Maintenance cycle. TheDistrict 7 RITSA Update Report showing the results of the conversion to v9.2 and the converted District 7 RITSA database are available under the Resource tab.

The Florida Statewide and Regional ITS Architectures represent a shared vision of how each agencies' 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 State of Florida.

The District 7 RITSA functionally defines the interactions and information exchanges between the intelligent transportation systems operated and maintained by the various public and private sector organizations in the region. The RITSA includes existing systems as well as planned systems and services that are needed to deliver the transportation services to improve safety, mobility and efficiency across the region.

The geographic scope of the District 7 RITSA includes the jurisdictions of public agencies at the FDOT District, Metropolitan Planning Area, County, City, and Town levels. The primary public sector jurisdictional boundaries making up the District 7 RITSA geographic scope include:

- Florida Department of Transportation (FDOT) District 7 has a land area of nearly 3,332 square miles.
- Metropolitan Planning Areas: Hernando/Citrus MPO, Hillsborough County MPO, Pasco County MPO, Pinellas County MPO
- Counties: Citrus County, Hernando County, Hillsborough County, Pasco County, Pinellas County
- Major Cities: City of Brooksville, City of Clearwater, City of Dunedin, City of Largo, City of New Port Richey, City of St. Petersburg, City of Tampa

The entire District 7 RITSA geographic area is covered by four Metropolitan Planning Organizations (MPO). Covering the four MPOs in the District 7 RITSA makes project integration opportunities more evident and supports coordination among the MPOs as well as state and local agencies for ITS planning and project development.

The District 7 RITSA is adjacent to the District 2 RITSA to the north, the District 5 RITSA to the east, and the District 1 RITSA to the south and southeast. There are transportation corridors that cross these adjacent RITSAs. District 7 stakeholders, elements, and services that also apply or are used in adjacent RITSAs are consistently defined and referenced. District 7 Projects whose applications cross adjacent RITSA borders are defined with services and systems that are consistent in all RITSA to which they apply.

The Florida Statewide ITS Architecture (SITSA) and Florida's Turnpike Enterprise (FTE) RITSA have systems and services that apply across several RITSAs. Like adjacent RITSAs the common systems and services from the SITSA and FTE RITSA are consistently defined in the District 7 RITSA.

The needs, studies and plans of stakeholders in District 7 RITSA and the adjacent and overlapping architectures were considered when developing the content for the District 7 RITSA and stakeholders' project definition and input.

The District 7 RITSA is used by transportation agencies to define and transportation planners to plan ITS projects that address transportation needs. The RITSA provides a functional framework into which an ITS project is integrated. This framework is used as a reference from which a project is defined. Using the Regional Architecture Development for Intelligent Transportation (RAD-IT) software tool, an agency will choose the transportation services, identify the systems to be included, and then select the information exchanges to tailor the project to address the stakeholders' transportation needs.

The District 7 RITSA, including the defined ITS projects, is used as a reference in transportation planning activities at all levels to coordinate and integrate ITS across the region. Integration opportunities are considered by stakeholders as their projects are defined using the RITSA content as a guide. The RITSA offers a broader picture that the stakeholders take into consideration when thinking of the project definition. The project definitions take into account other systems and services that may be germane to the project scope and future expansion. The projects are defined within the RITSA domain and it is the projects where the integration opportunities are codified. The project definitions in the RITSA are the first opportunity for integration considerations. Project development in further detail in systems engineering is another opportunity. The RITSA is a primary source for those integration opportunities in both cases.

Time Horizon and Services

The Statewide and Regional ITS Architectures have a time horizon of ten years with particular focus on those transportation elements likely to be implemented in the next three years. The RITSA covers the broad spectrum of Intelligent Transportation Systems, including Traffic Management, Transit Management, Traveler Information, Maintenance and Construction, Emergency Management, and Archived Data Management over this time horizon. The architecture content supports the quickly emerging and evolving Connected and Automated Vehicle (CAV) environment. CAV presents greater integration and interoperability challenges and the need for institutional cooperation makes the ITS Architecture a valuable tool to discuss and plan these complex implementations.

About this Web Site

The purpose of the ITS Architecture web site is to encourage use of the Florida Statewide and Regional ITS architectures, and to gather feedback so that it is used and continues to reflect the intelligent transportation system vision for the state and each district. The menu bar above provides access to the stakeholders, the transportation systems in the region (the "Inventory"), the transportation services that will be provided, transportation-related functions that are envisioned, the existing and planned interfaces in the region, and the "Projects" that are planned for ITS from Stakeholders.

The majority of this web site was generated directly from a Regional Architecture Development for Intelligent Transportation (RAD-IT) software database which defines the architecture for the Florida Statewide ITS Architecture. The source database is also available for download under "Resources" on top, and then "Project Documents".

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Florida Statewide and Regional ITS Architectures

Inventory Elements

Each stakeholder owns, operates, maintains or plans ITS systems in Florida. The District 7 Regional ITS Architecture (RITSA) inventory is a list of "Elements" that represent the existing and planned ITS systems in a region, as well as non-ITS systems, such as vehicles and people, that exchange information with the ITS systems.

When using the RITSA website, stakeholders can identify the inventory elements that are of interest to their project or of interest for exploration of the RITSA. Selecting an element from the list on the website provides a description and a list of the other elements in the RITSA to which that element is related or interconnected. A diagram also provides this interconnection information. Further information is provided about the specific information exchanges between the element and related elements under the Architecture Flow Diagrams listing on the element web page. These diagrams provide the specific information flows that are exchanged between the elements. Selecting an architecture flow provides a description for the flow selected.

Inventory elements are the building blocks that are used to define ITS services. A list of services along with service diagrams in which the inventory element is included are provided at the end of each element web page. Selecting a service provides context to how the element interacts with other elements in the delivery of ITS services.

The RITSA Elements are organized in two ways:

Alphabetical. All ongoing, planned and future ITS Elements are listed below in alphabetical order.
By Stakeholder. All ongoing, planned and future ITS Elements are listed on this page by the stakeholders to which they belong.

- City of St. Petersburg Traffic Control Center
- City of Tampa CAV Field Equipment
- City of Tampa Field Equipment
- City of Tampa Police Dispatch
- City of Tampa TMC
- Clearwater PWD Systems
- Commercial Vehicle
- Commuter Services Info. Systems (Ride Matching)
- County and City Public Information System
- County and City PWD Vehicles
- County and City Roadway Maintenance and Construction Systems
- County and Local Asset Management Systems
- County and Local Equipment Repair Facility
- County and Local Field Equipment
- County and Local Traffic Control Systems
- County Emergency Broadcast Systems
- County EOCs/Warning Points
- County Fire EMS/Rescue Dispatch
- County Fire EMS/Rescue Vehicles
- County Fire Vehicles
- County Planning Transportation Archive System
- County Sheriff Dispatch
- County Sheriff Vehicles
- Electronic Payment Card
- EPC of Hillsborough County Emissions Monitoring Equipment
- EPC of Hillsborough County Environmental Management Systems
- Express Lane Open Road Tolling Equipment
- FDLE Headquarters Wide Area Alert System
- FDOT Asset Management Systems
- FDOT District 1 Field Equipment
- FDOT District 1 I-4 and I-275 Road Ranger Service Patrol Vehicles
- FDOT District 1 Traffic Management Centers
- FDOT District 5 RTMC
- FDOT District 7 CAV Field Equipment
- FDOT District 7 Emergency Operations Center
- FDOT District 7 Equipment Repair Facility
- FDOT District 7 Field Equipment
- FDOT District 7 Infrastructure Monitoring Equipment
- FDOT District 7 Maintenance
- FDOT District 7 Maintenance Vehicles
- FDOT District 7 Public Information Office Systems
- FDOT District 7 Road Ranger Service Patrol Vehicles
- FDOT District 7 Tampa Bay SunGuide Center
- FDOT District 7 Wrong Way Detection System
- FDOT Scales and Inspection Facilities (Incl. ASPEN)
- FDOT SCMS
- FDOT Statewide ITS WAN/C2C Infrastructure
- FDOT Statewide OIS Enterprise Databases
- FDOT Statewide Transportation EOC (TEOC)
- FDOT TPAS
- FDOT TPAS Equipment
- FHP Regional Dispatch
- FHP Vehicles
- Financial Institutions
- Florida 511
- Florida DEP Air Quality Management System

- Florida DMV Licensing and Registration System
- Florida Highway Patrol Vehicles
- Florida Statewide EOC/Warning Point (SEOC)
- Florida Statewide Tolling CCSS
- FTE EOC
- FTE Maintenance and Construction Dispatch
- FTE Operations Center (Pompano)
- FTE Operations Center (Turkey Lake)
- FTE Regional Toll Office
- FTE TEAMS
- HART Data Archive
- HART GIS System
- HART Transit Operations
- HART Transit Vehicles
- HART Website
- Hernando County Field Equipment
- Hernando County Traffic Control Center
- Hillsborough County CAV Field Equipment
- Hillsborough County Field Equipment
- Hillsborough County Maintenance and Construction Management System
- Hillsborough County MPO Reporting System
- Hillsborough County MPO Transportation Data and Analytics System
- Hillsborough County Traffic Management Center
- Local Agency Traveler Information Systems
- Local EOCs
- Local Fire Vehicles
- Local Fire/EMS Dispatch
- Local Fire/EMS Vehicles
- Local Police Dispatch
- Local Police Vehicles
- Local Transit Operator Systems
- Local Venue Event Scheduling System
- Municipality Event Permit Systems
- National Hurricane Center Info. System
- National Weather Service
- Newspapers, Radio, Television Stations
- OneBusAway App
- Other County and City Maintenance
- Other FDOT District Maintenance and Construction
- Other FDOT District TMCs
- Other Public Safety Communications and Dispatch Centers
- Other West Central Florida Traffic Management Centers
- Parking Facility Operators Parking Equipment
- Pasco County Field Equipment
- Pasco County Traffic Operations Center
- PCPT Dispatch Center
- PCPT Transit Vehicles
- PDEM Emissions Monitoring Equipment
- PDEM Environmental Management Systems
- Pedestrians
- Personnel Device
- Pinellas County CAV Field Equipment
- Pinellas County Connected Mobility Platform(CMP)
- Pinellas County Field Equipment
- Pinellas County Maintenance Vehicles
- Pinellas County Smart City Data Platform(SCDP)

- Pinellas County Traffic Management Center
- Pinellas County Traveler Information Website
- Port of Tampa
- Private Field Equipment
- Private Fleet Vehicle Dispatch Systems
- Private Maintenance and Construction Dispatch
- Private Traffic Data Systems
- Private Traveler Information Services
- Private Travelers Personal Computing Devices
- Private Weather Information Providers
- Private/ Public Utility Dispatch/Systems
- Private/Public Ambulance Dispatch
- Private/Public Ambulance Vehicles
- Private/Public Parking Facility Operators
- PSTA DART Operations
- PSTA Field Equipment
- PSTA Integrated Fare Payment Application
- PSTA Intermodal Center
- PSTA Intermodal Center Equipment
- PSTA Transit App
- PSTA Transit Management Center
- PSTA Transit Vehicles
- Rail Operations Centers
- Railroad Operators Wayside Equipment
- Regional Airports
- Regional Incident and Mutual Aid Network
- Regional Medical Centers
- Regional Smart Card
- Rest Stop Kiosks
- School District Transportation Buses
- School District Transportation Dispatch
- St. Petersburg/Clearwater Airport
- SunGuide Data Archiving
- SunPass Customer Service Center
- SunPass Tag
- Tampa Bay Regional Archive Data Management System
- Tampa International Airport
- Tampa International Airport Field Equipment
- Tampa International Airport Parking Area Equipment
- Tampa International Airport Parking Management System
- TBARTA Rideshare Network
- TD Service Provider Systems
- TECO Street Car Line Dispatch
- TECO Street Car Line Vehicles
- The Hernando Express Transit Dispatch Center
- The Hernando Express Transit Vehicles
- THEA CAV Field Equipment
- THEA Reversible Lane Control
- THEA Toll Collection Systems
- TransHernando Transit Management Center
- TransHernando Transit Vehicles
- Transit Agency IVR System
- Transit Facility Security Monitoring System
- Transit Kiosks
- Transit Stops/Stations Equipment
- Traveler Info. Radio Network Stations

- US Coast Guard Security System
- Vehicles

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FLORIDA ITS ARCHITECTURE SUPPORT AND MAINTENANCE PROJECT

FINAL DISTRICT 7 UPDATE REPORT

Version 1.0

May 2024

DOCUMENT VERSION CONTROL

Author / Action	Submittal Date	Version No.
Natalia Marin / Draft Document	March 20, 2024	1.0
David Binkley / QA-QC	May 3, 2024	1.0
David Binkley / QA-QC	May 23, 2024	2.0 (final)

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1.0 INTRODUCTION

This Architecture Update Report records the District 7 Regional Intelligent Transportation System (ITS) Architecture (RITSA) update from its reference in the Architecture Reference for Cooperative and Intelligent Transportation (ARC-IT) Version 9.1 to ARC-IT Version 9.2. There were no updates to the District 7 architecture, so this report addresses notable results from the conversion process.

2.0 DESCRIPTION OF CHANGES

The architecture conversion process uses the Regional Architecture Development for Intelligent Transportation (RAD-IT) software Version 9.0 to convert the architecture to be compatible with ARC-IT Version 9.2. The process includes the following steps to accomplish the conversion.

- Architecture conversion: Conversion features in RAD-IT Version 9.2 convert the architecture database schema to be compatible with RAD-IT Version 9.2 and aligned to reference ARC-IT Version 9.2 content.
- Conversion analysis: Conversion information is produced by RAD-IT for the architecture conversion noting the changes made. The conversion information notes the schema and content changes, such as service splits or consolidations, element divisions, and information flow adjustments. Analysis is required for each converted item to assess the appropriateness of each change for the architecture.
- Architecture content update: The intent of the conversion process was to maintain the alignment of the converted Architecture content to the greatest extent possible with the pre-conversion Architecture content. Element physical object mapping changes, service package changes, information flow additions and adjustments, and the evolution of the standards mappings in ARC-IT Version 9.2 required changes to be made to the Architecture content. Unless it was necessary, no additional changes beyond those required to align the pre-conversion and converted architecture content were made. During the course of the Annual Architecture Maintenance Update, ARC-IT Version 9.2 features that could be considered as additional information to the Architecture will be assessed.
- Architecture website posting: The converted architecture will be posted to the Florida ITS Architecture website.

3.0 ARCHITECTURE CONVERSION RESULTS

The District 7 RITSA was converted to be compatible with ARC-IT Version 9.2. The following sections highlight the changes made to the architecture as a result of the conversion process.

3.1 ARCHITECTURE INVENTORY ELEMENTS

Given that there were no updates to the District 7 architecture content, Table 1 provides conversion results for architecture inventory elements impacted by the conversion process. The table information shows the element impacted, the results of the element conversion, the analysis disposition which may indicate a revision to the conversion results depending on the architecture content, and the notes of the conversion implementation.

TABLE 1. CONVERSION ANALYSIS OF INVENTORY ELEMENTS

Element Name	Change	Old Mapping	New Mapping	Old Kind	New Kind
Autonomous Shuttle Vehicle	Added		Light Vehicle OBE		Subsystem
Autonomous Shuttle Vehicle	Replaced	Vehicle OBE	Vehicle	Subsystem	Subsystem
Citrus County Paratransit Vehicles	Added		Vehicle		Subsystem
Commercial Vehicle	Replaced	Vehicle OBE	Vehicle	Subsystem	Subsystem
County and City PWD Vehicles	Added		Vehicle		Subsystem
FDOT District 1 I-4 and I-275 Road Ranger Service Patrol Vehicles	Added		Vehicle		Subsystem
FDOT District 7 Maintenance Vehicles	Added		Vehicle		Subsystem
FDOT District 7 Road Ranger Service Patrol Vehicles	Added		Vehicle		Subsystem
FHP Vehicles	Replaced	Vehicle OBE	Vehicle	Subsystem	Subsystem
Florida Highway Patrol Vehicles	Added		Vehicle		Subsystem
HART Transit Vehicles	Added		Vehicle		Subsystem
Local Fire Vehicles	Added		Vehicle		Subsystem
Local Fire/EMS Vehicles	Added		Vehicle		Subsystem
Local Police Vehicles	Added		Vehicle		Subsystem
OneBusAway App	Added		Personal		Subsystem
PCPT Transit Vehicles	Added		Vehicle		Subsystem
Pedestrians	Replaced	Cyclist	MMV User	Terminator	Terminator
Personnel Device	Added		Personal		Subsystem

Element Name	Change	Old Mapping	New Mapping	Old Kind	New Kind
Pinellas County Maintenance Vehicles	Replaced	Vehicle OBE	Vehicle	Subsystem	Subsystem
Private Fleet Vehicle Dispatch Systems	Added		Shared Use Transportation Center		Subsystem
Private Travelers Personal Computing Devices	Added		Personal		Subsystem
Private/Public Ambulance Vehicles	Added		Vehicle		Subsystem
PSTA Transit Vehicles	Added		Light Vehicle OBE		Subsystem
PSTA Transit Vehicles	Replaced	Vehicle OBE	Vehicle	Subsystem	Subsystem
School District Transportation Buses	Added		Vehicle		Subsystem
SunPass Tag	Added		Light Vehicle OBE		Subsystem
SunPass Tag	Added		Personal		Subsystem
SunPass Tag	Replaced	Vehicle OBE	Vehicle	Subsystem	Subsystem
TECO Street Car Line Vehicles	Added		Vehicle		Subsystem
The Hernando Express Transit Vehicles	Added		Vehicle		Subsystem
TransHernando Transit Vehicles	Added		Vehicle		Subsystem
Vehicles	Added		Light Vehicle OBE		Subsystem
Vehicles	Replaced	Vehicle OBE	Vehicle	Subsystem	Subsystem

3.2 Architecture Information Flow Conversion

TABLE 2. INFORMATION FLOW CONVERSION DETAILS

Regional	Architecture	Change	Source Element	Destination Element	Old Flow	New Flow
In Region	Tampa Bay Regional ITS Architecture - FDOT District 7	Replaced	City of Plant City TMC	City of Plant City Field Equipment	environmental sensors control	environmental sensor control
In Region	Tampa Bay Regional ITS Architecture - FDOT District 7	Replaced	City of Tampa TMC	City of Tampa Field Equipment	environmental sensors control	environmental sensor control
In Region	Tampa Bay Regional ITS Architecture - FDOT District 7	Replaced	County and City Roadway Maintenance and Construction Systems	County and Local Field Equipment	environmental sensors control	environmental sensor control
In Region	Tampa Bay Regional ITS Architecture - FDOT District 7	Replaced	FDOT District 7 Tampa Bay SunGuide Center	FDOT District 1 Field Equipment	environmental sensors control	environmental sensor control
In Region	Tampa Bay Regional ITS Architecture - FDOT District 7	Replaced	FDOT District 7 Tampa Bay SunGuide Center	FDOT District 7 Field Equipment	environmental sensors control	environmental sensor control
In Region	Tampa Bay Regional ITS Architecture - FDOT District 7	Replaced	Hillsborough County Traffic Management Center	Hillsborough County Field Equipment	environmental sensors control	environmental sensor control
Project	City of Tampa ATMS Expansion	Replaced	City of Tampa TMC	City of Tampa Field Equipment	environmental sensors control	environmental sensor control
Project	FDOT District 7 I-4 FRAME	Replaced	City of Plant City TMC	City of Plant City Field Equipment	environmental sensors control	environmental sensor control
Project	FDOT District 7 I-4 FRAME	Replaced	City of Tampa TMC	City of Tampa Field Equipment	environmental sensors control	environmental sensor control
Project	FDOT District 7 I-4 FRAME	Replaced	FDOT District 7 Tampa Bay SunGuide Center	FDOT District 7 Field Equipment	environmental sensors control	environmental sensor control
Project	FDOT District 7 I-4 FRAME	Replaced	Hillsborough County Traffic Management Center	Hillsborough County Field Equipment	environmental sensors control	environmental sensor control

3.3 ARC-IT 9.2 CHANGES

This section provides a summary of changes made to the ARC-IT reference model that may or may not impact current or future changes for this regional architecture. Listed in the following tables are changes made at the national level for physical objects, service packages, and information flows. Refer to the www.arc-it.net website for details about these components.

TABLE 3. ARC-IT 9.2 PHYSICAL OBJECT CHANGES

Old Name	Change	Kind	Physical Object Name	Class	Type
Cyclist	Modified	Terminator	MMV User	Personal	Human
Other Vehicle OBEs	Modified	Terminator	Other Vehicles	Vehicle	Other System
Traffic Regulatory Authority Center	Modified	Subsystem	METR System	Support	System
Vehicle OBE	Modified	Subsystem	Vehicle	Vehicle	System
Vehicles	Modified	Terminator	Vehicle Characteristics	Vehicle	Environment

TABLE 4. ARC-IT 9.2 SERVICE PACKAGE CHANGES

Old Service Package	Change	Service Package
PT18: Integrated Multi-Modal Electronic Payment	Modified	TI05: Integrated Multi-Modal Electronic Payment
TI03: Dynamic Route Guidance	Modified	TI03: En-Route Guidance
TI04: Infrastructure-Provided Trip Planning and Route Guidance	Modified	TI04: Trip Planning and Payment
TI05: Travel Services Information and Reservation	Modified	TI09: Travel Services Information and Reservation
TI06: Dynamic Ridesharing and Shared Use Transportation	Modified	TI06: Shared Use Mobility and Dynamic Ridesharing
VS12: Pedestrian and Cyclist Safety	Modified	VS12: Vulnerable Road User Safety

Old Service Package	Change	Service Package
VS17: Traffic Code Dissemination	Modified	VS17: Management of Electronic Traffic Regulations (METR)
	New	MC12: One-Way Convoy Driving
	New	SU15: Vulnerable Road User Device Transition Support
	New	TI08: Personal Wayfinding
	New	VS18: Vulnerable Road User Clustering

TABLE 5. ARC-IT 9.2 INFORMATION FLOW CHANGES

Old Flow	Change	Source Physical Object	Destination Physical Object	Flow Name
environmental sensors control	Modified	Maint and Constr Management Center	ITS Roadway Equipment	environmental sensor control
environmental sensors control	Modified	Maint and Constr Management Center	Maint and Constr Vehicle OBE	environmental sensor control
environmental sensors control	Modified	Maint and Constr Vehicle OBE	ITS Roadway Equipment	environmental sensor control
environmental sensors control	Modified	Surface Transportation Weather Service	ITS Roadway Equipment	environmental sensor control
environmental sensors control	Modified	Traffic Management Center	ITS Roadway Equipment	environmental sensor control
traffic regulation information	Modified	METR Distribution Center	Personal Information Device	METR information for users
traffic regulation information	Modified	METR Distribution Center	Vehicle	METR information for users
traffic-related regulations	Modified	METR Distribution Center	METR Distribution Center	METR information
traffic-related regulations	Modified	METR Distribution Center	Other METR Distribution Centers	METR information
traffic-related regulations	Modified	METR System	Maint and Constr Management Center	METR information

Old Flow	Change	Source Physical Object	Destination Physical Object	Flow Name
traffic-related regulations	Modified	METR System	METR Distribution Center	METR information
traffic-related regulations	Modified	METR System	METR System	METR information
traffic-related regulations	Modified	METR System	Non-METR Distribution Center	METR information
traffic-related regulations	Modified	METR System	Other METR Systems	METR information
traffic-related regulations	Modified	Other METR Distribution Centers	METR Distribution Center	METR information
traffic-related regulations	Modified	Other METR Systems	METR System	METR information
	New	Connected Vehicle Roadside Equipment	METR System	METR application status
	New	Connected Vehicle Roadside Equipment	Personal Information Device	local METR information for users
	New	Connected Vehicle Roadside Equipment	Vehicle	local METR information for users
	New	Electric Charging Management Center	Electric Charging Station	electric charging station management information
	New	Electric Charging Management Center	Electric Utility	electric service requests info
	New	Electric Charging Management Center	Transportation Information Center	electric charging reservation confirmation
	New	Electric Charging Station	Electric Charging Management Center	electric charging station data
	New	Electric Utility	Electric Charging Management Center	electric charging utility info
	New	Eligibility Certification Management System	Payment Administration Center	traveler eligibility

Old Flow	Change	Source Physical Object	Destination Physical Object	Flow Name
	New	Emergency Vehicle OBE	Personal Information Device	local METR information for users
	New	Emergency Vehicle OBE	Vehicle	local METR information for users
	New	ITS Roadway Equipment	Connected Vehicle Roadside Equipment	field equipment status for METR
	New	ITS Roadway Equipment	MMV User	traveler safety information
	New	Light Vehicle Driver	Light Vehicle OBE	light vehicle driver input
	New	Light Vehicle OBE	Light Vehicle Driver	light vehicle driver updates
	New	Light Vehicle OBE	Transportation Information Center	trip status
	New	Maint and Constr Management Center	METR System	METR coordination
	New	Maint and Constr Management Center	METR System	METR TCD discrepancy status
	New	Maint and Constr Vehicle OBE	Personal Information Device	local METR information for users
	New	Maint and Constr Vehicle OBE	Vehicle	local METR information for users
	New	Map Update System	Personal	pathway map updates
	New	Map Update System	Traveler Support Equipment	pathway map updates
	New	METR Distribution Center	METR System	system-generated discrepancy report
	New	METR Distribution Center	Other METR Distribution Centers	system-generated discrepancy report
	New	METR Rule-Maker/Agent	METR System	METR information approval
	New	METR Rule-Maker/Agent	METR System	METR input
	New	METR System	Connected Vehicle Roadside Equipment	METR application information
	New	METR System	Emergency Vehicle OBE	METR management information
	New	METR System	Maint and Constr Management Center	METR coordination
	New	METR System	Maint and Constr Vehicle OBE	METR management information
	New	METR System	METR Distribution Center	METR device status

Old Flow	Change	Source Physical Object	Destination Physical Object	Flow Name
	New	METR System	METR Rule-Maker/Agent	METR feedback
	New	METR System	METR Rule-Maker/Agent	METR information approval request
	New	METR System	Other METR Systems	consolidated discrepancy report
	New	METR System	Other METR Systems	discrepancy report details
	New	METR System	Other METR Systems	discrepancy suppression information
	New	METR System	Other METR Systems	METR coordination
	New	METR System	Other METR Systems	system-generated discrepancy report
	New	Micromobility Vehicle OBE	MMV User	MMV user updates
	New	Micromobility Vehicle OBE	Other Micromobility Vehicle OBEs	MMV profile
	New	Micromobility Vehicle OBE	Other Micromobility Vehicle OBEs	VRU cluster information
	New	Micromobility Vehicle OBE	Other Micromobility Vehicle OBEs	VRU hazard event
	New	Micromobility Vehicle OBE	Other Micromobility Vehicle OBEs	VRU path prediction
	New	Micromobility Vehicle OBE	Personal Information Device	MMV identification
	New	Micromobility Vehicle OBE	Personal Information Device	MMV profile
	New	Micromobility Vehicle OBE	Shared Use Transportation Center	MMV location
	New	Micromobility Vehicle OBE	Transportation Information Center	trip status
	New	Micromobility Vehicle OBE	Transportation Information Center	wayfinding feedback
	New	Micromobility Vehicle OBE	Transportation Information Center	wayfinding request
	New	MMV User	Micromobility Vehicle OBE	MMV user input

Old Flow	Change	Source Physical Object	Destination Physical Object	Flow Name
	New	Non-METR Distribution Center	METR System	system-generated discrepancy report
	New	Other METR Distribution Centers	METR Distribution Center	system-generated discrepancy report
	New	Other METR Systems	METR System	consolidated discrepancy report
	New	Other METR Systems	METR System	discrepancy report details
	New	Other METR Systems	METR System	discrepancy suppression information
	New	Other METR Systems	METR System	METR coordination
	New	Other METR Systems	METR System	system-generated discrepancy report
	New	Other Micromobility Vehicle OBEs	Micromobility Vehicle OBE	MMV profile
	New	Other Micromobility Vehicle OBEs	Micromobility Vehicle OBE	VRU cluster information
	New	Other Micromobility Vehicle OBEs	Micromobility Vehicle OBE	VRU hazard event
	New	Other Micromobility Vehicle OBEs	Micromobility Vehicle OBE	VRU path prediction
	New	Other Payment Administration Centers	Payment Administration Center	user account coordination
	New	Other PIDs	Personal Information Device	VRU cluster information
	New	Other PIDs	Personal Information Device	VRU hazard event
	New	Other PIDs	Personal Information Device	VRU path prediction
	New	Other Transportation Information Centers	Transportation Information Center	electric charging information
	New	Pathway Equipment	Micromobility Vehicle OBE	pathway equipment state
	New	Pathway Equipment	Micromobility Vehicle OBE	pathway equipment status
	New	Pathway Equipment	Micromobility Vehicle OBE	pathway signage information
	New	Pathway Equipment	MMV User	traveler pathway updates

Old Flow	Change	Source Physical Object	Destination Physical Object	Flow Name
	New	Pathway Equipment	Personal Information Device	pathway equipment state
	New	Pathway Equipment	Personal Information Device	pathway equipment status
	New	Pathway Equipment	Personal Information Device	pathway signage information
	New	Pathway Equipment	Personal Safety Device	pathway equipment state
	New	Pathway Equipment	Transportation Information Center	pathway equipment state
	New	Pathway Equipment	Transportation Information Center	pathway equipment status
	New	Pathway Equipment	Traveler	traveler pathway updates
	New	Payment Administration Center	Eligibility Certification Management System	traveler eligibility request
	New	Payment Administration Center	Other Payment Administration Centers	user account coordination
	New	Payment Administration Center	Shared Use Transportation Center	trip access coordination
	New	Payment Administration Center	Transit Management Center	reconciliation response
	New	Payment Administration Center	Transit Management Center	trip access coordination
	New	Payment Administration Center	Transportation Information Center	reconciliation response
	New	Payment Administration Center	Transportation Information Center	trip access coordination
	New	Personal	Vehicle	device configuration coordination
	New	Personal Information Device	Light Vehicle OBE	shared vehicle access enable
	New	Personal Information Device	METR System	METR discrepancy report
	New	Personal Information Device	Other PIDs	VRU cluster information
	New	Personal Information Device	Other PIDs	VRU hazard event
	New	Personal Information Device	Other PIDs	VRU path prediction
	New	Personal Information Device	Payment Administration Center	payment device token information

Old Flow	Change	Source Physical Object	Destination Physical Object	Flow Name
	New	Personal Information Device	Personal Safety Device	safety device control
	New	Personal Information Device	Shared Use Transportation Center	shared vehicle access request
	New	Personal Information Device	Transportation Information Center	trip status
	New	Personal Information Device	Transportation Information Center	wayfinding feedback
	New	Personal Information Device	Transportation Information Center	wayfinding request
	New	Personal Safety Device	Personal Information Device	safety device inputs
	New	Shared Use Transportation Center	Light Vehicle OBE	shared vehicle access enable
	New	Shared Use Transportation Center	Micromobility Vehicle OBE	MMV access enable
	New	Shared Use Transportation Center	Payment Administration Center	trip access coordination
	New	Shared Use Transportation Center	Personal Information Device	shared vehicle information
	New	Shared Use Transportation Center	SUTC Operator	STUC operations information presentation
	New	SUTC Operator	Shared Use Transportation Center	STUC operator input
	New	Transit Management Center	Payment Administration Center	smart card reconciliation
	New	Transit Management Center	Payment Administration Center	trip access coordination
	New	Transportation Information Center	Electric Charging Management Center	electric charging reservation request
	New	Transportation Information Center	Light Vehicle OBE	guidance updates
	New	Transportation Information Center	Micromobility Vehicle OBE	guidance updates

Old Flow	Change	Source Physical Object	Destination Physical Object	Flow Name
	New	Transportation Information Center	Micromobility Vehicle OBE	wayfinding information
	New	Transportation Information Center	Micromobility Vehicle OBE	wayfinding plan
	New	Transportation Information Center	Other Transportation Information Centers	electric charging information
	New	Transportation Information Center	Pathway Equipment	pathway equipment application info
	New	Transportation Information Center	Payment Administration Center	smart card reconciliation
	New	Transportation Information Center	Payment Administration Center	trip access coordination
	New	Transportation Information Center	Personal Information Device	guidance updates
	New	Transportation Information Center	Personal Information Device	wayfinding information
	New	Transportation Information Center	Personal Information Device	wayfinding plan
	New	Transportation Information Center	Traveler Support Equipment	wayfinding information
	New	Transportation Information Center	Traveler Support Equipment	wayfinding plan
	New	Traveler Support Equipment	Transportation Information Center	wayfinding request
	New	Vehicle	METR System	METR discrepancy report
	New	Vehicle	Personal	device configuration coordination