Austin Regional ITS Architecture and Deployment Plan Update

Training Workshop

March 30, 2015



Kimley»Horn

Today's Agenda

- **Intro to Turbo Architecture**
- **Making minor updates in Turbo**
- **Advanced modifications**
- **Generating useful reports and diagrams**

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- Advanced modifications
- Generating useful reports and diagrams

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Intro to Turbo Architecture

What is Turbo Architecture?

- **A tool for documenting your regional ITS architecture in a manner consistent with the National ITS Architecture**

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A Little More About Turbo

- **Built on a Microsoft Access database structure**
- **Files have a .tbo extension**
- **Current version 7.0 supports version 7.0 of the National ITS Architecture**

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When you open a Turbo Architecture File…

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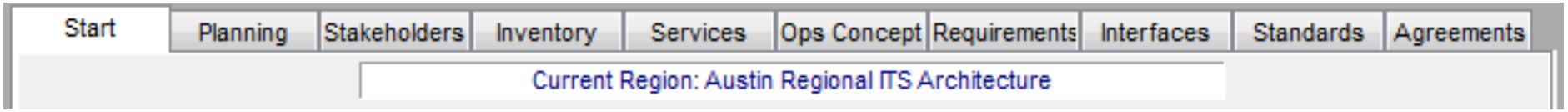
The Menu



- **Start**
- **Planning**
- **Stakeholders**
- **Inventory**
- **Services**
- **Ops Concept**
- **Requirements**
- **Interfaces**
- **Standards**
- **Agreements**

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Start Tab

Start | Planning | Stakeholders | Inventory | Services | Ops Concept | Requirements | Interfaces | Standards | Agreements

Current Region: Austin Regional ITS Architecture

Architectures

Regional

Austin Regional ITS Architecture

Region to Project | New | Delete

Project

Project to Region | New | Delete

Related

New | Delete

Regional Architecture Attributes

Name: Austin Regional ITS Architecture

Description: 2015 Austin Regional ITS Architecture Update

Timeframe: 2015-2040

Geographic Scope: The Austin Regional ITS Architecture covers the geographic scope of the eleven county TxDOT Austin District. The eleven counties consist of Bastrop, Blanco, Burnet, Caldwell, Gillespie, Hays, Lee, Llano, Mason, Travis, and Williamson.

Service Scope: The Austin Regional ITS Architecture identifies the planning, stakeholders, inventory, ITS service packages, operational concepts, functional requirements, interfaces, standards, and agreements that are related to ITS in the Austin Region. A separate ITS Deployment Plan has been

Developer: Kimley-Horn

Maintainer: TxDOT Austin District

Version: March 2015

Date/Time: 03/30/2015 07:00 AM

Change Log | Apply | Cancel

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Navigation of Regional and Project Architectures

Start | Planning | Stakeholders | Inventory | Services | Ops Concept | Requirements | Interfaces | Standards | Agreements

Current Region: Austin Regional ITS Architecture

Architectures

Regional

Austin Regional ITS Architecture

Region to Project | New | Delete

Project

Project to Region | New | Delete

Related

New | Delete

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Planning Tab

Start | Planning | Stakeholders | Inventory | Services | Ops Concept | Requirements | Interfaces | Standards | Agreements

Current Region: Austin Regional ITS Architecture

Objectives and Strategies

Regional Objectives | All Objectives | Customize

- 01. Regional Coordination
- 02. Real-Time Traffic Information
- 03. Active Traffic Management
- 04. Non-recurring Congestion Strategies
- 05. Transportation Technology
- 06. Support Non-motorized Travelers
- 07. Parking Facility Management
- 08. Toll Administration and Coordination
- 09. Regional Connection to CTECC
- 10. Positive Train Control
- 11. Traffic Incident Management
- 12. Ongoing Training
- 13. Integrated Corridor Management
- 14. Street Lighting Control
- 15. Traveler Information Dissemination
- 16. Emergency Routing
- 17. Roadway Service Patrols
- 18. Mitigate Adverse Weather Conditions
- 19. Work Zone Safety
- 20. Work Zone Coordination
- 21. Transit Fare Management
- 22. Transit Travel Time Optimization
- 23. Transit Signal Priority
- 24. Transit Traveler Information
- 25. Connected and Automated Vehicles
- 26. Regional Data Collection and Sharing

New | Delete

Objective/Strategy Attributes

Type: Objective | Supports:

Number: 23 | Name: Transit Signal Priority

Description: Need to expand traffic signal priority for transit vehicles

Source:

Selected Performance Measures | All Performance Measures | Add

Selected Service Packages | All Service Packages | Search

- [x] APTS09: Transit Signal Priority
- [x] ATMS03: Traffic Signal Control

Selected Projects | All Projects

Apply | Cancel

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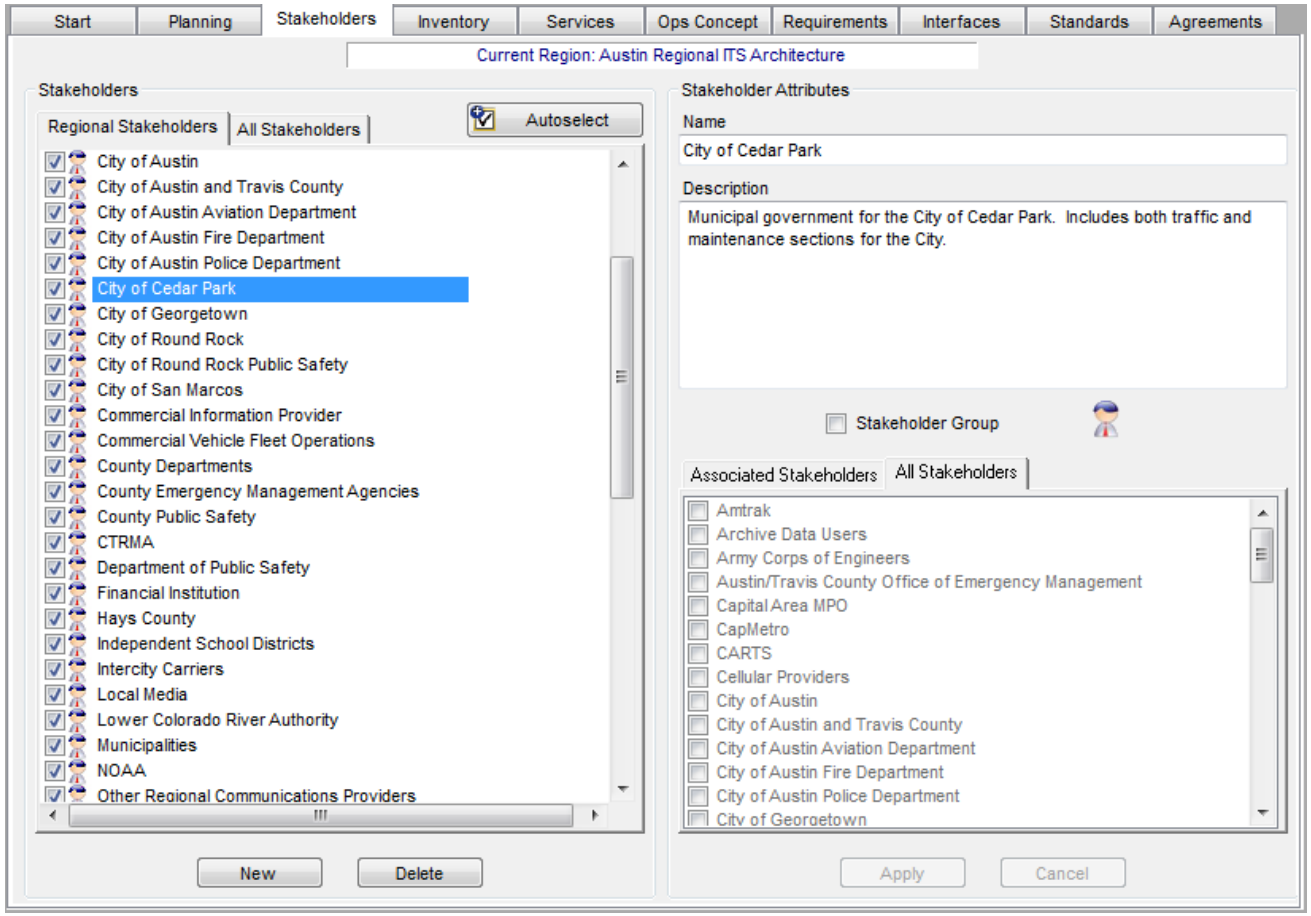
Stakeholders Tab



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Inventory Tab

Start | Planning | Stakeholders | Inventory | Services | Ops Concept | Requirements | Interfaces | Standards | Agreements

Current Region: Austin Regional ITS Architecture

Elements

Regional Elements | All Elements

- County ITS Field Equipment
- County Maintenance and Construction Operations Dispatch
- County Maintenance and Construction Vehicles
- County Public Safety Dispatch and PSAP
- County Public Safety Vehicles
- CTRMA CCTV Cameras
- CTRMA DMS
- CTRMA Field Sensors
- CTRMA HERO Vehicles
- CTRMA Operations Center
- CTRMA Toll Collection SmartHUB
- CTRMA Toll Plazas
- CTRMA Toll Reconciliation Office
- CTRMA Website
- DPS and Other Public Safety Spectrum Systems
- DPS Communications
- DPS Emergency Vehicles
- Financial Institution
- Hays County Flood Closure Gates
- Hays County Flood Detectors
- Hays County Flood Warning Beacons
- Hays County Office of Emergency Management
- Hays County Radio Systems
- Independent School District Buses
- Independent School District Dispatch
- Independent School District Police
- Intercity Buses

Sort By: Element | Stakeholder | Subsystem/Terminator

New | Delete

Element Attributes

Name: CTRMA Operations Center

Type: Normal

Stakeholder: CTRMA

Status (Region): Existing

Description: The customer service center for the CTRMA. This represents the backend systems of the Toll Authority.

Selected Subsystems/Terminators | All Subsystems/Terminators

- Emergency Management (Subsystem)
- Payment Administration (Subsystem)
- Traffic Management (Subsystem)

Selected Projects | All Projects

Apply | Cancel

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Services Tab

Start | Planning | Stakeholders | Inventory | Services | Ops Concept | Requirements | Interfaces | Standards | Agreements

Current Region: Austin Regional ITS Architecture

Service Packages

Regional Service Packages | All Service Packa | Autoselect | Search

- APTS04: Transit Fare Collection Management
- APTS05: Transit Security
- APTS06: Transit Fleet Management
- APTS07: Multi-modal Coordination
- APTS08: Transit Traveler Information
- APTS09: Transit Signal Priority
- APTS10: Transit Passenger Counting
- APTS11: Multimodal Connection Protection
- ATIS01: Broadcast Traveler Information
- ATIS02: Interactive Traveler Information
- ATIS05: ISP Based Trip Planning and Route Guidance
- ATMS01: Network Surveillance
  - SP ATMS01-1 TxDOT
  - SP ATMS01-2 City of Austin
  - SP ATMS01-3 City of Cedar Park
  - SP ATMS01-4 City of Georgetown
  - SP ATMS01-5 City of Round Rock
  - SP ATMS01-6 City of San Marcos
  - SP ATMS01-7 CTRMA
  - SP ATMS01-8 Municipal
- ATMS02: Traffic Probe Surveillance
- ATMS03: Traffic Signal Control
- ATMS04: Traffic Metering
- ATMS05: HOV Lane Management
- ATMS06: Traffic Information Dissemination
- ATMS07: Regional Traffic Management
- ATMS08: Traffic Incident Management System
- ATMS10: Electronic Toll Collection
- ATMS11: Emissions Monitoring and Management
- ATMS13: Standard Railroad Grade Crossing

New | Delete

Service Package Attributes

ID: ATMS01

Status (Region): Planned

SP Instance

Name: ATMS01-1 TxDOT

Description

Selected Elements | Regional Elements | All Elements

- Private Sector Traveler Information Services
- TxDOT Austin District CCTV Cameras
- TxDOT Austin District Field Sensors
- TxDOT Austin District TMC (CTECC)
- TxDOT Austin District Website
- TxDOT Highway Conditions Reporting System

Selected Projects | All Projects

Comment

Apply | Cancel

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Ops Concept Tab

Start | Planning | Stakeholders | Inventory | Services | **Ops Concept** | Requirements | Interfaces | Standards | Agreements

Current Region: Austin Regional ITS Architecture

Role and Responsibility Areas

Regional Areas | All Areas

Autoselect

- Archived Data Systems for Austin Regional ITS Architecture
- Commercial Vehicle Operations for Austin Regional ITS Architecture
- Emergency Management Operations for Austin Regional ITS Architecture
- Freeway Management for Austin Regional ITS Architetcure
- Incident Management for Austin Regional ITS Architecture
- Maintenance and Construction Management for Austin Regional ITS Architetcture
- Parking Management for Austin Regional ITS Architecture
- Traffic Signal Control for Austin Regional ITS Architecture
- Transit Management for Austin Regional Architecture
  - CapMetro
  - CARTS
  - Independent School Districts
  - Private Transportation Providers
  - TxDOT
- Traveler Information for Austin Regional ITS Architecture

New | Delete

Role and Responsibility Area Attributes

Name: Transit Management for Austin Regional Architecture

Description:

Selected Service Packages | All Service Packages

- APTS01: Transit Vehicle Tracking
- APTS01: APTS1-1 CapMetro
- APTS01: APTS1-2 CARTS
- APTS01: APTS1-3 Private Transportation
- APTS01: APTS1-4 Independent School District
- APTS02: Transit Fixed-Route Operations
- APTS02: APTS2-1 CapMetro Fixed-Route

Selected Stakeholders | Related Stakeholders | All Stakeholders

- CapMetro
- CARTS
- Independent School Districts
- Private Transportation Providers
- TxDOT

Selected Projects | All Projects

Apply | Cancel

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Ops Concept Tab

Start | Planning | Stakeholders | Inventory | Services | **Ops Concept** | Requirements | Interfaces | Standards | Agreements

Current Region: Austin Regional ITS Architecture

Role and Responsibility Areas

Regional Areas | All Areas

Autoselect

- Archived Data Systems for Austin Regional ITS Architecture
- Commercial Vehicle Operations for Austin Regional ITS Architecture
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- Freeway Management for Austin Regional ITS Architetcure
- Incident Management for Austin Regional ITS Architecture
- Maintenance and Construction Management for Austin Regional ITS Architetcture
- Parking Management for Austin Regional ITS Architecture
- Traffic Signal Control for Austin Regional ITS Architecture
- Transit Management for Austin Regional Architecture
  - CapMetro
  - CARTS
  - Independent School Districts
  - Private Transportation Providers
  - TxDOT
- Traveler Information for Austin Regional ITS Architecture

New | Delete

Stakeholder Roles and Responsibilities

Area: Transit Management for Austin Regional Architecture

Stakeholder: CapMetro

Selected R&Rs | All R&Rs | Editable

Role and Responsibility	In Project	Status	Include
Coordinate emergency plans with Municipal, County, and Statewide EOCs and provide emergency transit services for evacuations, fires, and disasters (including re-entry).	☐	Planned	☑
Coordinate transit service with all other agency transit vehicles.	☐	Planned	☑
Coordinate transit service with other regional transit providers, as well as regional intermodal terminals, AMTRAK stations, and regional airports.	☐	Planned	☑
Obtain traffic signal priority from the municipalities in the agency's service area through the municipality's field equipment for all MetroRapid BRT transit vehicles.	☐	Existing	☑
Operate on-board systems to provide next stop annunciation.	☐	Existing	☑
Provide automated transit maintenance scheduling through automated vehicle condition reports on all agency fixed-route, MetroRapid BRT, MetroAccess Paratransit, and MetroRail Passenger Rail transit vehicles.	☐	Existing	☑
Provide demand response bus service (MetroAccess paratransit) for the agency's defined service area, with the ability to provide a demand response transit plan on the agency's website.	☐	Existing	☑
Provide fixed-route bus service for the			

Apply | Cancel

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Requirements Tab

Start | Planning | Stakeholders | Inventory | Services | Ops Concept | **Requirements** | Interfaces | Standards | Agreements

Current Region: Austin Regional ITS Architecture

Elements

Elements | Functional Areas

- City of Austin TMC
- City of Austin Traffic Database
- City of Austin Traffic Signals
- City of Austin Watershed Protection
- City of Austin Website
- City of Austin/Travis County 911 Dispatch Center (CTECC)
- City of Austin/Travis County Radio Systems
- City of Cedar Park CCTV Cameras
- City of Cedar Park DMS
- City of Cedar Park Field Sensors
- City of Cedar Park Flood Closure Gates
- City of Cedar Park Flood Detectors
- City of Cedar Park Flood Warning Beacons
- City of Cedar Park Public Information Office
- City of Cedar Park Rail Notification System
- City of Cedar Park School Programmable Flasher Systems
- City of Cedar Park TMC
- City of Cedar Park Traffic Signals
- City of Georgetown CCTV Cameras
- City of Georgetown DMS
- City of Georgetown Field Sensors
- City of Georgetown Flood Closure Gates
- City of Georgetown Flood Detectors
- City of Georgetown Flood Warning Beacons
- City of Georgetown Public Information Office
- City of Georgetown Rail Notification System
- City of Georgetown School Programmable Flasher Systems
- City of Georgetown TOC
- City of Georgetown Traffic Signals
- City of Round Rock CCTV
- City of Round Rock Communications Center
- City of Round Rock Communications Division
- City of Round Rock Convention and Visitors Bureau
- City of Round Rock Crash Records Database
- City of Round Rock DMS

Functionality

☑ Specify Functionality

Selected Functional Areas | Related Functional Areas

☑ Autoselect | Requirements

- ☑ Collect Traffic Surveillance
- ☑ HRI Traffic Management
- ☑ Rail Operations Coordination
- ☑ TMC Evacuation Support
- ☑ TMC Incident Detection
- ☑ TMC Incident Dispatch Coordination/Communication
- ☑ TMC Multimodal Coordination
- ☑ TMC Multimodal Crossing Management
- ☑ TMC Probe Information Collection
- ☑ TMC Regional Traffic Management
- ☑ TMC Signal Control
- ☑ TMC Speed Monitoring and Warning
- ☑ TMC Traffic Information Dissemination
- ☑ TMC Work Zone Traffic Management
- ☑ Traffic Data Collection
- ☑ Traffic Equipment Maintenance

Entity | Type

Apply | Cancel

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Requirements Tab

Functional Requirements

City of Georgetown TOC | All | Limit | Sort | Present

City of Georgetown TOC - All Requirements (97 Entries)

Functional Area	Number	Requirement	Status	Include	Tailored
Collect Traffic Surveillance	1	The center shall monitor, analyze, and store traffic sensor data (speed, volume, occupancy) collected from field elements under remote control of the center.	Not Planned	☐	☐
	2	The center shall monitor, analyze, and distribute traffic images from CCTV systems under remote control of the center.	Not Planned	☐	☐
	3	The center shall monitor, analyze, and store multimodal crossing and high occupancy vehicle (HOV) lane sensor data under remote control of the center.	Not Planned	☐	☐
	4	The center shall distribute road network conditions data (raw or processed) based on collected and analyzed traffic sensor and surveillance data to other centers.	Not Planned	☐	☐
	5	The center shall respond to control data from center personnel regarding sensor and surveillance data collection, analysis, storage, and distribution.	Not Planned	☐	☐
	6	The center shall maintain a database of surveillance equipment and sensors and associated data (including the roadway on which they are located, the type of data collected, and the ownership of each)	Not Planned	☐	☐
	7	The center shall support an interface with a map update provider, or other appropriate data sources, through which updates of digitized map data can be obtained and used as a background for traffic data.	Not Planned	☐	☐
HRI Traffic Management	1	The center shall remotely control highway-rail intersection (HRI) equipment located in the field.	Not Planned	☐	☐
	2	The center shall accept collect highway-rail intersection (HRI) advisory or alert data from rail operations centers.	Not Planned	☐	☐
	3	The center shall collect highway-rail intersection (HRI) equipment operational status and compare against the control information sent by the center.	Not Planned	☐	☐
	4	The center shall provide the highway-rail intersection (HRI) equipment operational status to rail operations centers.	Not Planned	☐	☐
	5	The center shall collect incident information related to a highway-rail intersection (HRI), such as intersection blockages or crashes or equipment malfunctions.	Not Planned	☐	☐
	6	The center shall implement control plans to coordinate signalized	Not Planned		

New | Tailor | Delete | Apply | Close

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Interfaces Tab

- **Selection of applicable interconnects**

Start | Planning | Stakeholders | Inventory | Services | Ops Concept | Requirements | Interfaces | Standards | Agreements

All | Build | Connect | Flows | Group | Sort | Filter | Elements | Limit | New | Info | Present

Austin Regional ITS Architecture: All Interconnects (27486 Entries)

Element	Element	Communications	Include
ABIA Police Dispatch	ABIA Police Vehicles	Not Identified	☑
ABIA Police Dispatch	Austin Region Incident, Mutual Aid and Communicati...	Not Identified	☑
ABIA Police Dispatch	Austin/Travis County EOC (CTECC)	Not Identified	☑
ABIA Police Dispatch	City of Austin Public Information Office	Not Identified	☑
ABIA Police Dispatch	City of Austin Public Works Dispatch	Not Identified	☑
ABIA Police Dispatch	City of Austin TMC	Not Identified	☑
ABIA Police Dispatch	City of Austin/Travis County 911 Dispatch Center (C...	Not Identified	☑
ABIA Police Dispatch	DPS Communications	Not Identified	☑
ABIA Police Dispatch	Local Print and Broadcast Media	Not Identified	☑
ABIA Police Dispatch	TxDOT Austin District Maintenance Office	Not Identified	☑
ABIA Police Dispatch	TxDOT Austin District Maintenance Sections Dispatch	Not Identified	☑
ABIA Police Dispatch	TxDOT Austin District TMC (CTECC)	Not Identified	☑
Amtrak Dispatch	CapMetro Fixed-Route Operations Center	Not Identified	☑
Amtrak Dispatch	CARTS Transit Operations Center	Not Identified	☑
Amtrak Dispatch	Private Transportation Provider Operations	Not Identified	☑
Archive Data Users	Capital Area MPO Archive	Not Identified	☑
Archive Data Users	City of Austin Pavement Management System	Not Identified	☑
Archive Data Users	City of Austin Traffic Database	Not Identified	☑
Archive Data Users	City of Round Rock Pavement Management System	Not Identified	☑
Archive Data Users	Municipal Pavement Management System	Not Identified	☑
Archive Data Users	Statewide Crash Records Information System	Not Identified	☑
Archive Data Users	TxDOT Austin District Historical Traffic Database	Not Identified	☑
Archive Data Users	TxDOT Austin District Pavement Management System	Not Identified	☑
Archive Data Users	TxDOT Austin District Public Transportation Manage...	Not Identified	☑
Archive Data Users	TxDOT Austin District Roadway Data Collection Sys...	Not Identified	☑
Army Corps of Engineers Flood Detectors	Army Corps of Engineers Flood Monitoring Center	Not Identified	☑

Include All | Clear All | Apply | Cancel

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Interfaces Tab

- **Selection of applicable architecture flows**

Start | Planning | Stakeholders | Inventory | Services | Ops Concept | Requirements | Interfaces | Standards | Agreements

All | Build | Connect | Flows | Group | Sort | Filter | Elements | Limit | New | Info | Present

Austin Regional ITS Architecture: All Architecture Flows (5871 Entries)

Source Element	Flow Name	Destination Element	Status	Include
City of Round Rock TMC	hri control data	City of Round Rock Traffic Signals	Planned	☑
City of Round Rock TMC	hri request	City of Round Rock Traffic Signals	Planned	☑
City of Round Rock TMC	signal control commands	City of Round Rock Traffic Signals	Existing	☑
City of Round Rock TMC	signal control device configuration	City of Round Rock Traffic Signals	Existing	☑
City of Round Rock TMC	signal control plans	City of Round Rock Traffic Signals	Existing	☑
City of Round Rock TMC	signal system configuration	City of Round Rock Traffic Signals	Existing	☑
City of Round Rock TMC	traffic sensor control	City of Round Rock Traffic Signals	Existing	☑
City of Round Rock TMC	road network conditions	City of Round Rock Website	Planned	☑
City of Round Rock TMC	emergency traffic coordination	CTRMA Operations Center	Planned	☑
City of Round Rock TMC	incident information	CTRMA Operations Center	Planned	☑
City of Round Rock TMC	road network conditions	CTRMA Operations Center	Planned	☑
City of Round Rock TMC	traffic images	CTRMA Operations Center	Planned	☑
City of Round Rock TMC	flood warning_ud	DPS Communications	Planned	☑
City of Round Rock TMC	incident information	DPS Communications	Planned	☑
City of Round Rock TMC	resource deployment status	DPS Communications	Planned	☑
City of Round Rock TMC	road network conditions	DPS Communications	Planned	☑
City of Round Rock TMC	traffic images	DPS Communications	Planned	☑
City of Round Rock TMC	road network conditions	Independent School District Dispatch	Planned	☑
City of Round Rock TMC	road network conditions	Municipal Public Safety Dispatch and PSAP	Planned	☑
City of Round Rock TMC	emergency traffic coordination	Municipal/County Traffic Operations Center	Planned	☑
City of Round Rock TMC	incident information	Municipal/County Traffic Operations Center	Planned	☑
City of Round Rock TMC	road network conditions	Municipal/County Traffic Operations Center	Planned	☑
City of Round Rock TMC	traffic images	Municipal/County Traffic Operations Center	Planned	☑
City of Round Rock TMC	emergency plan coordination	Municipal/County Transit Operations Center	Planned	☑
City of Round Rock TMC	emergency transit service request	Municipal/County Transit Operations Center	Planned	☑
City of Round Rock TMC	incident response status	Municipal/County Transit Operations Center	Planned	☑

Include All | Clear All | Apply | Cancel

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Standards Tab

- **Automatic selection of associated standards for the flows that were selected**

Start | Planning | Stakeholders | Inventory | Services | Ops Concept | Requirements | Interfaces | Standards | Agreements

Current Architecture Standards | View | Group | Sort | Filter | Limit | Info | Present

Austin Regional ITS Architecture Standards (28 Entries)

Group	Group/Doc ID	Title	SDO	User Defined	Include
☑	ATIS General Use	Advanced Traveler Information Systems (ATIS) General Use Standards Group	SAE	☐	☑
☑	ATIS Low Bandwidth	Advanced Traveler Information Systems (ATIS) Bandwidth Limited Standards Group	SAE	☐	☑
☑	DSRC 5GHz	Dedicated Short Range Communication at 5.9 GHz Standards Group	ASTM/IEEE/SAE	☐	☑
☑	DSRC 915MHz	Dedicated Short Range Communication at 915 MHz Standards Group	ASTM	☐	☑
☑	IEEE IM	Incident Management Standards Group	IEEE	☐	☑
☑	Mayday	On-board Vehicle Mayday Standards Group	SAE	☐	☑
☑	NTCIP C2C	NTCIP Center-to-Center Standards Group	AASHTO/ITE/NEMA	☐	☑
☑	NTCIP C2F	NTCIP Center-to-Field Standards Group	AASHTO/ITE/NEMA	☐	☑
☐	APTA TCIP-S-001 3.0.4	Standard for Transit Communications Interface Profiles	APTA	☐	☑
☐	ASTM E2468-05	Standard Practice for Metadata to Support Archived Data Management Systems	ASTM	☐	☑
☐	ASTM E2665-08	Standard Specifications for Archiving ITS-Generated Traffic Monitoring Data	ASTM	☐	☑
☐	IEEE 1455-1999	Standard for Message Sets for Vehicle/Roadside Communications	IEEE	☐	☑
☐	IEEE 1570-2002	Standard for the Interface Between the Rail Subsystem and the Highway Subsystem at...	IEEE	☐	☑
☐	IEEE P1609.11	Standard for Wireless Access in Vehicular Environments (WAVE) - Over- the-Air Data E...	IEEE	☐	☑
☐	ITE TMDD	Traffic Management Data Dictionary (TMDD) and Message Sets for External Traffic Man...	AASHTO/ITE	☐	☑
☐	NTCIP 1201	Global Object Definitions	AASHTO/ITE/NEMA	☐	☑
☐	NTCIP 1202	Object Definitions for Actuated Traffic Signal Controller (ASC) Units	AASHTO/ITE/NEMA	☐	☑
☐	NTCIP 1203	Object Definitions for Dynamic Message Signs (DMS)	AASHTO/ITE/NEMA	☐	☑
☐	NTCIP 1204	Object Definitions for Environmental Sensor Stations (ESS)	AASHTO/ITE/NEMA	☐	☑
☐	NTCIP 1205	Object Definitions for Closed Circuit Television (CCTV) Camera Control	AASHTO/ITE/NEMA	☐	☑
☐	NTCIP 1206	Object Definitions for Data Collection and Monitoring (DCM) Devices	AASHTO/ITE/NEMA	☐	☑
☐	NTCIP 1207	Object Definitions for Ramp Meter Control (RMC) Units	AASHTO/ITE/NEMA	☐	☑
☐	NTCIP 1208	Object Definitions for Closed Circuit Television (CCTV) Switching	AASHTO/ITE/NEMA	☐	☑
☐	NTCIP 1209	Data Element Definitions for Transportation Sensor Systems (TSS)	AASHTO/ITE/NEMA	☐	☑
☐	NTCIP 1210	Field Management Stations (FMS) - Part 1: Object Definitions for Signal System Masters	AASHTO/ITE/NEMA	☐	☑

New | Copy | Modify | Delete | Apply | Cancel

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Agreements Tab

Start | Planning | Stakeholders | Inventory | Services | Ops Concept | Requirements | Interfaces | Standards | Agreements

Current Region: Austin Regional ITS Architecture

Agreements

Number	Title
01	Joint Operations/Shared Control Agreement Public-Public)(911 R...
02	Data Sharing and Usage (Public-Private) – TxDOT Austin Distric...
03	Standard Operating Procedures (Public-Public) – CTECC Partners
04	Electronic Toll Interoperability (Public-Public) – TxDOT TOD, CTR...
05	Railroad Right-of-Way (Public-Private) – TxDOT and Public or Pr...
06	Transit Signal Priority (Public-Public) – City of Austin and CapMe...
07	Toll Waivers During Traffic Incidents (Public-Public) – TxDOT, A...
08	Traffic Signal Operation and Maintenance (Public-Public) – City ...
09	Traffic Signal Operation and Maintenance (Public-Public) – TxD...
10	Fatal Crash Agency Coordination (Public-Public) – TxDOT, DPS, ...
11	ITS and Traffic Signal Timing Data Sharing and Usage (Public-P...
12	Incident Data Sharing and Usage (Public-Public) – TxDOT Austin...
13	Data Sharing and Usage (Public-Public) – TxDOT Austin District ...
14	Data Sharing and Usage (Public-Private) – TxDOT Austin Distric...
15	Operations and Maintenance Agreement (Public-Public) – TxDO...
16	Frequent Training of Key Personnel (Public-Public) – TxDOT Au...

Visible Columns: ○ Number ○ Title ◉ Both

New | Delete

Agreement Attributes

Title: Joint Operations/Shared Control Agreement Public-Public)(911 RDMT Project) – TxD

Number: 01

Status: Existing

Type:

Description: Provides for the development of a unified public safety communication system that could include 911 operations, CAD, mobile data information transfer, public safety and public service radio communications, and ITS management, all of which might be operated from a fully integrated combined center.

Lead Stakeholder:

Selected Stakeholders | All Stakeholders

- ☑ CapMetro
- ☑ City of Austin
- ☑ City of Austin and Travis County
- ☑ City of Austin Aviation Department
- ☑ Independent School Districts
- ☑ TxDOT Austin District

Selected Projects | All Projects

Apply | Cancel

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Today's Agenda

- Intro to Turbo Architecture
- **Making minor updates in Turbo**
- Advanced modifications
- Generating useful reports and diagrams

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Making Minor Updates in Turbo

- **Stakeholder and element names and definitions**
- **Element status**
- **Flow status**

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Editing a Stakeholder Name or Definition

- **Stakeholders Tab**
  - **Select the stakeholder you wish to modify**
  - **Make the modifications**
  - **Apply the changes**

Editing an Element

- **Inventory Tab**
  - **Select the element you wish to modify**
  - **Make the modifications**
  - **Apply the changes**

- **Potential characteristics to edit**
  - **Name**
  - **Description**
  - **Stakeholder**
  - **Subsystems/Terminators**
  - **Status**

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Editing Flow Status

- **Interfaces Tab**
  - **Locate the flow**
  - **Change the status**
  - **Apply the change**

Note: Each time you open Turbo Architecture the Interfaces Tab defaults to connections. To view the flows, click the flows button.

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Options for Locating a Flow

- **Scroll and scroll and scroll**
- **Use available filters to isolate the flow in question**
  - **Filter by Single Element**
  - **Filter by Multiple Elements**
  - **Filter by Service Package**
  - **Limit Filter**
- **Filters can be used in combination with one another**

Filter by Single Element

- **Good for elements with very few connections (i.e. TxDOT Austin District CCTV Cameras)**
- **Not very useful for elements with connections to many other elements (i.e., TxDOT Austin District TMC (CTECC) – Filtering by Multiple elements is more appropriate**

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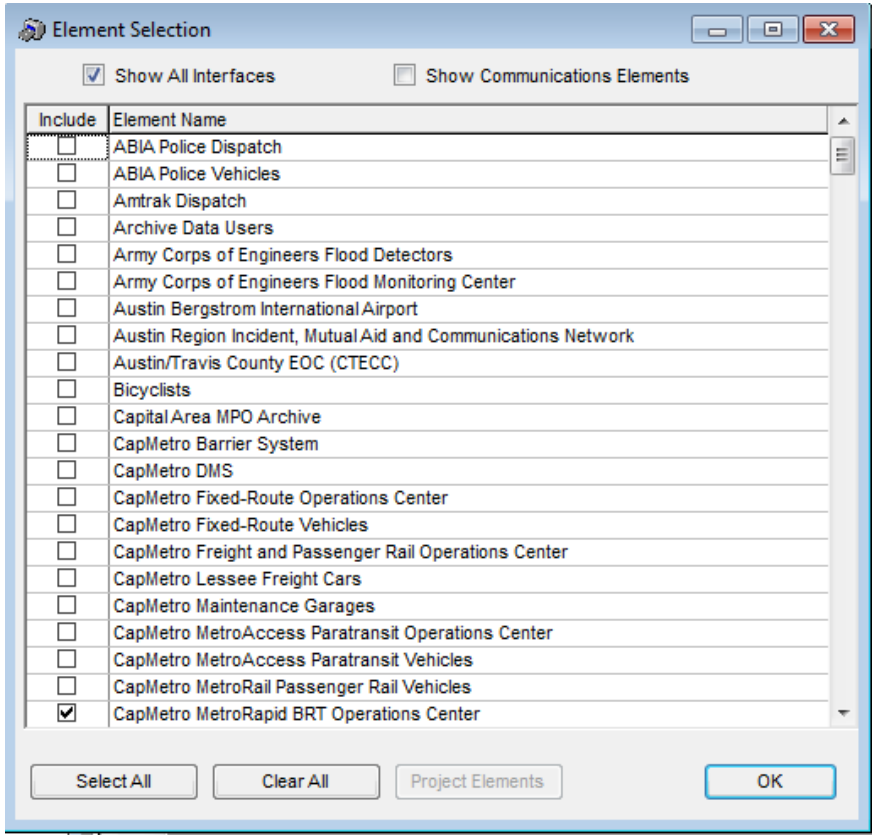
Filter by Single Element

- **Right click on the elements button and select the element you want to locate**
- **Select show all to capture all flows involving the element**



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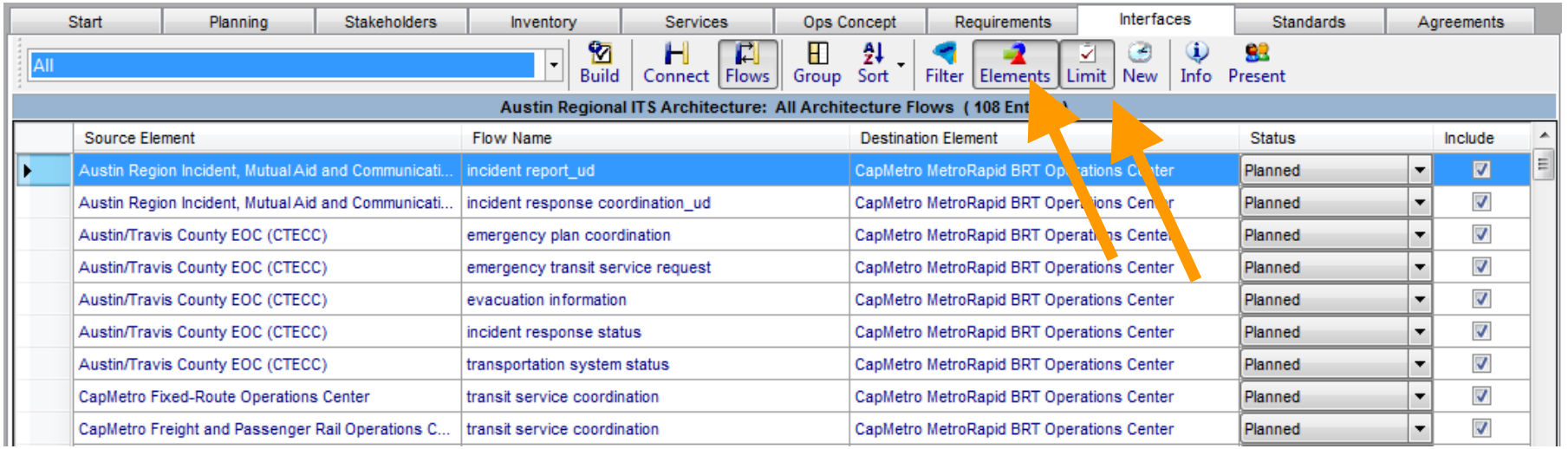
Filter by Single Element

- **Click the filter button to turn on the filter**
- **Click the limit button to limit the flows displayed to those that are part of the regional ITS architecture**



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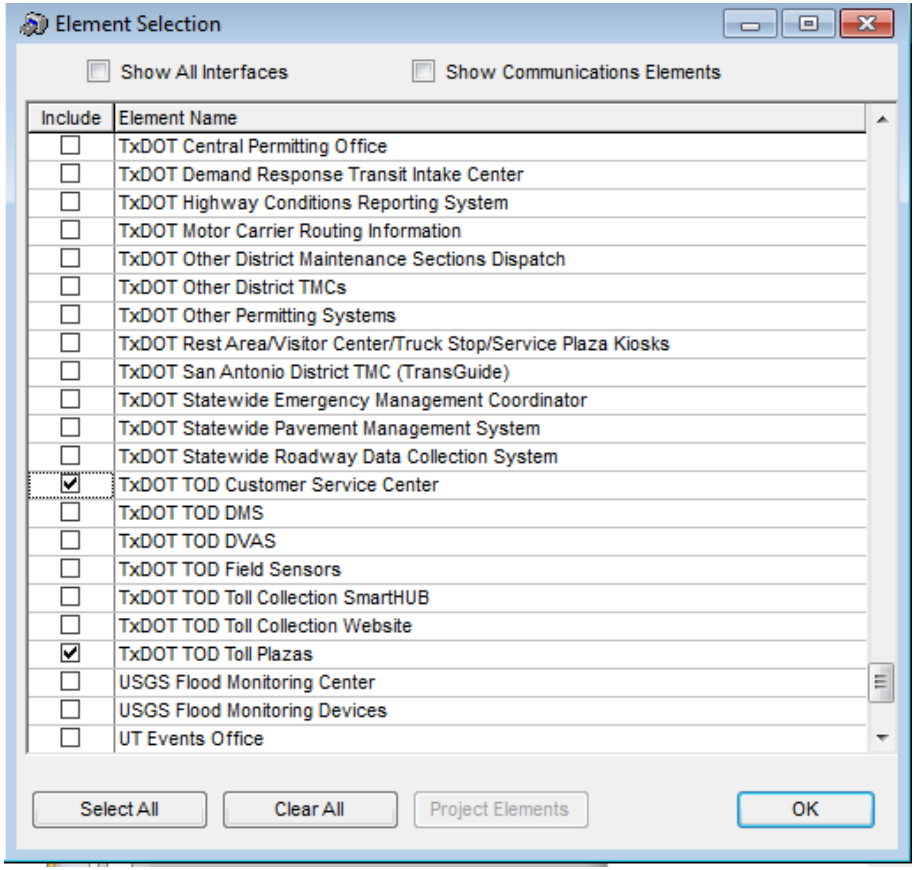
Filter by Multiple Elements

- **Right click on the elements button and select the source and destination elements of the flow you want to locate**



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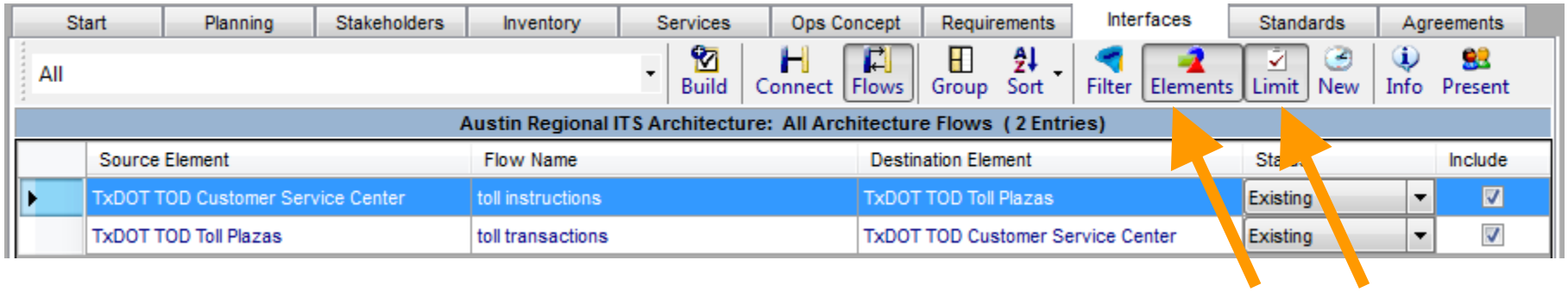
Filter by Multiple Elements

- **Click the filter button to turn on the filter**
- **Click the limit button to limit the flows displayed to those that are part of the regional ITS architecture**



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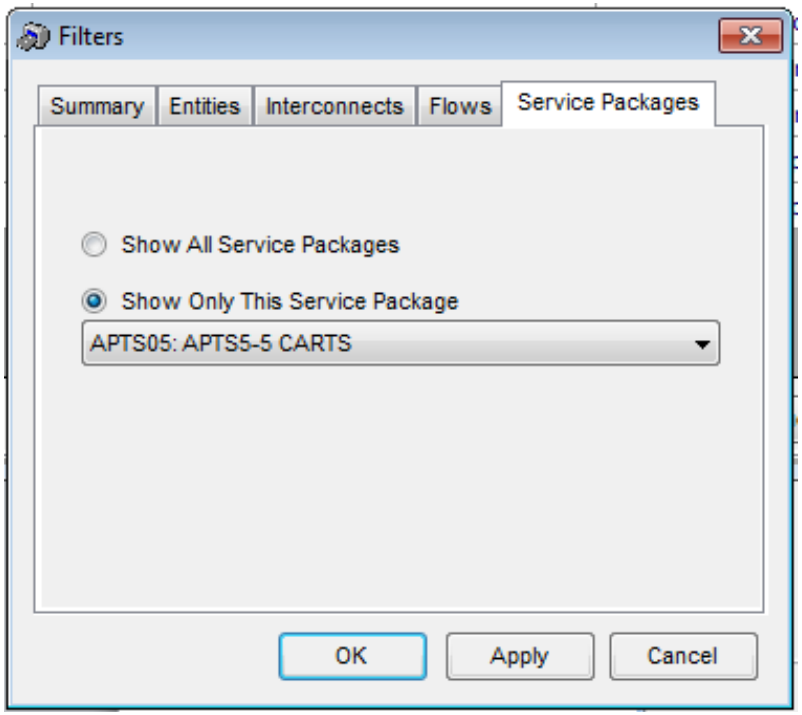
Filter by Service Package

- **Right click on the filter button and select the service package instance that you want**
- **Click the filter button to turn on the filter**



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A Word of Caution on Filters

- **Before saving and exiting Turbo Architecture, make sure that in the elements filter, all elements are selected again and that the service package filter is also set back to all**
- **Failure to do this can save that filter setting and cause confusion later**

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Today's Agenda

- Intro to Turbo Architecture
- Making minor updates in Turbo
- **Advanced modifications**
- Generating useful reports and diagrams

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Advanced Modifications

- **Background Information**
  - **How flows are created**
  - **Large regions and excess flows**
  - **User defined (custom) flows**
  - **Performing a build**

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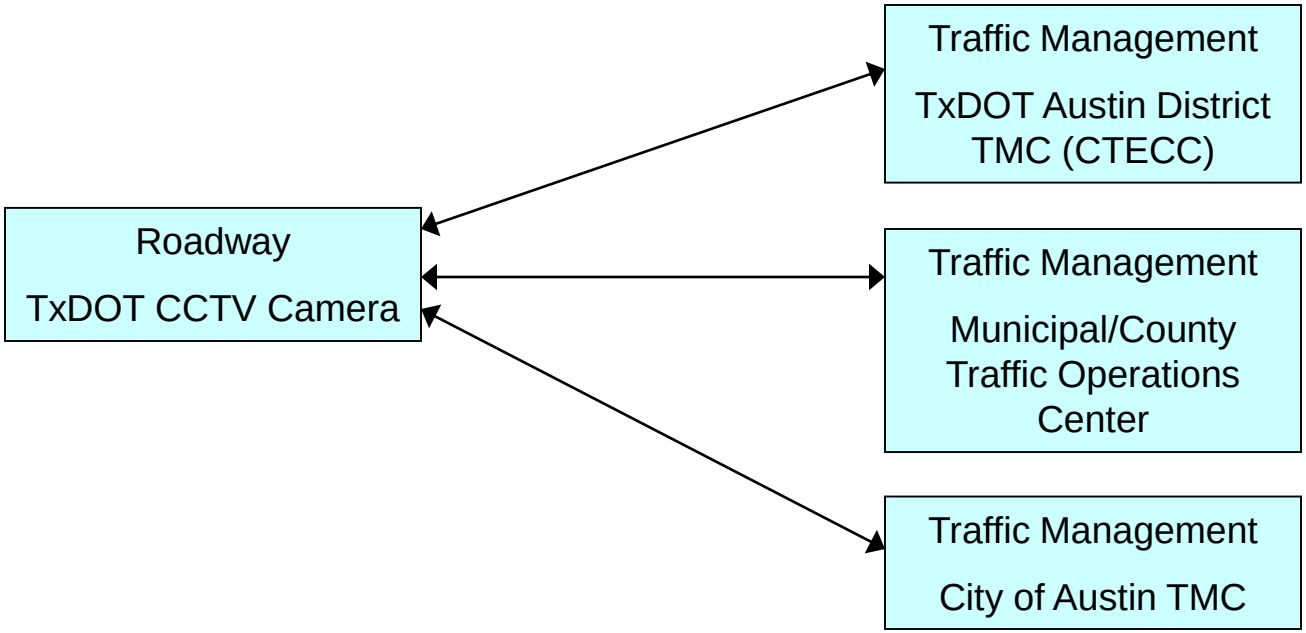
How Flows Are Created

- **Flows available for selection in Turbo Architecture are based on element subsystems and service package selected**



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Large Regions and Excess Flows

- **In a large region, an extraordinary amount of potential flows are generated due to the many possible connection combinations**
- **Unnecessary flows should be deleted after the desired flows have been selected to make the database easier to work with**
- **The result of the flow “clean up” is that if you need to add a flow later in a maintenance phase, it might not be there and you’ll need to perform a build to generate all of the potential flows again**

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User Defined Flows

- **Reasons to use a User Defined (custom) flow**
  - **Unique application not outlined in the National ITS Architecture**
  - **More commonly user defined flows are used for stakeholder clarity**
- **Turbo Architecture allows you to associate a user defined flow with a standard flow**
  - **Useful in certain situations where a user defined flow is being utilized for stakeholder clarity**
  - **A word of caution: When associating a user defined flow with a standard flow, the standard flow will no longer be available to you, you have effectively renamed the flow**
- **User defined flows will not appear in Turbo generated service package diagrams because they have no association with a service package (exception is "renamed" flows)**

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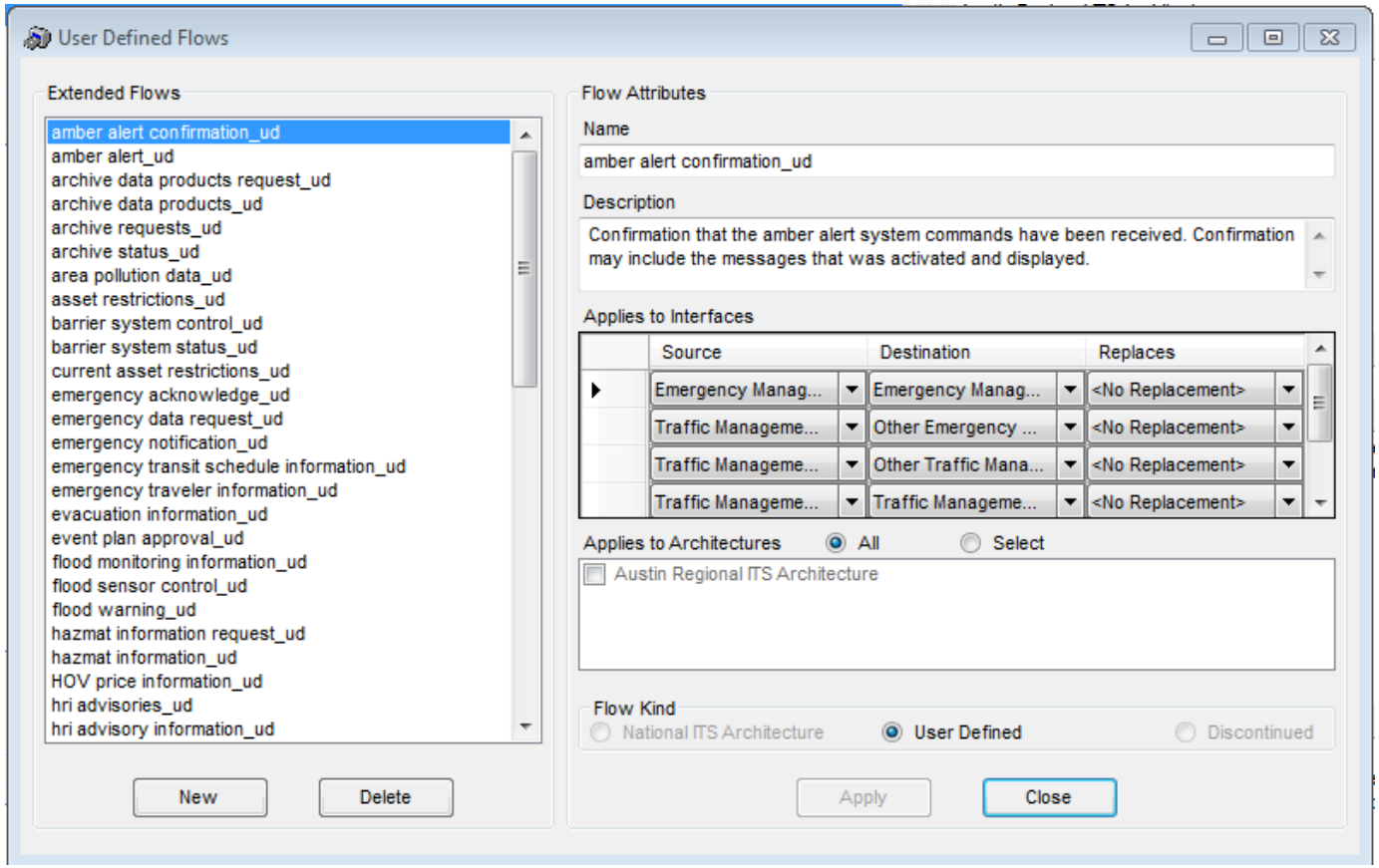
Creating a User Defined Flow

- **Tools menu, select add flow**



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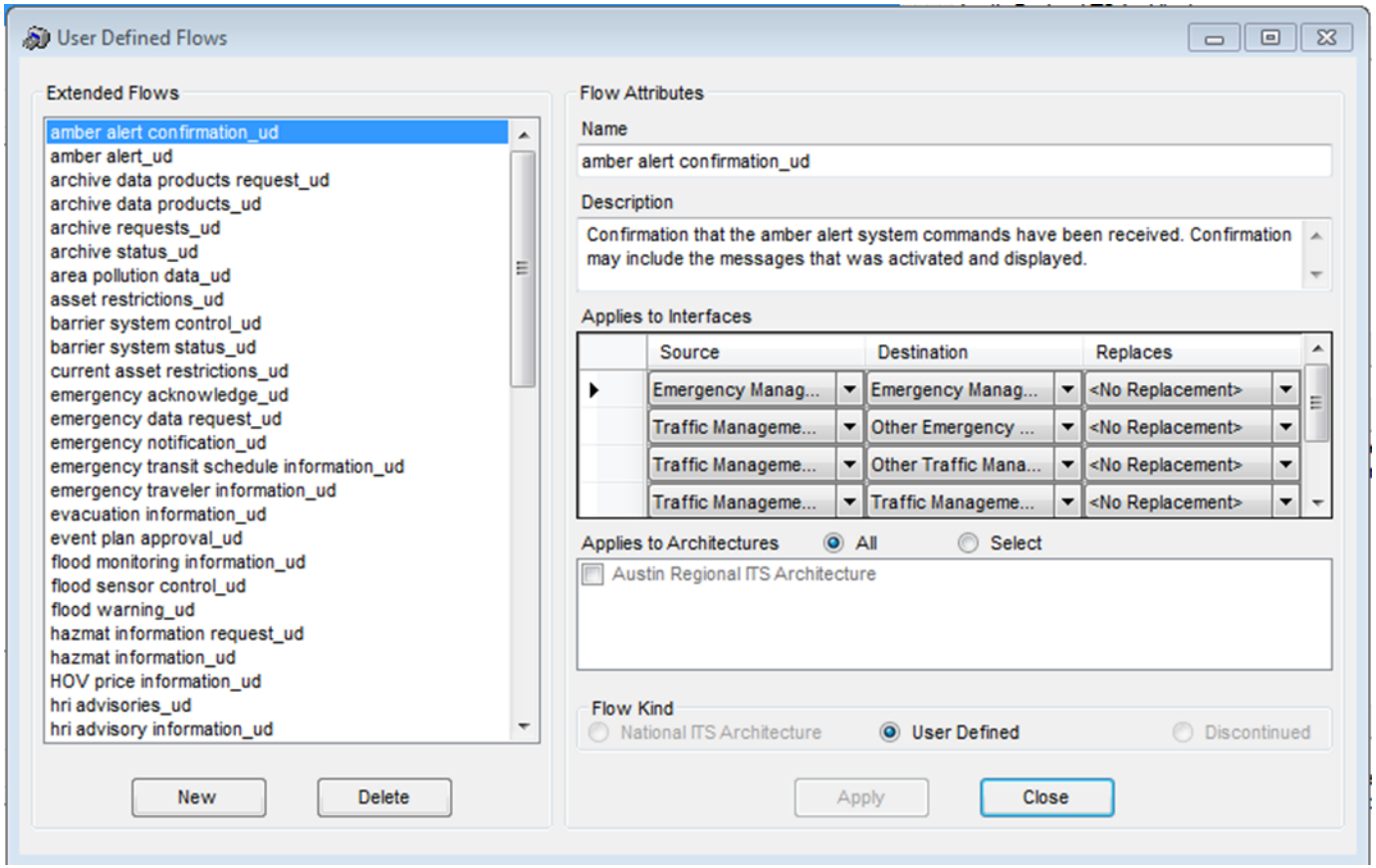
Creating a User Defined Flow

- **Enter flow name, description, source and destination subsystems**



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Using a User Defined Flow

- **You must perform a build for your user defined flow to appear in the Interfaces Tab as a potential flow for selection**

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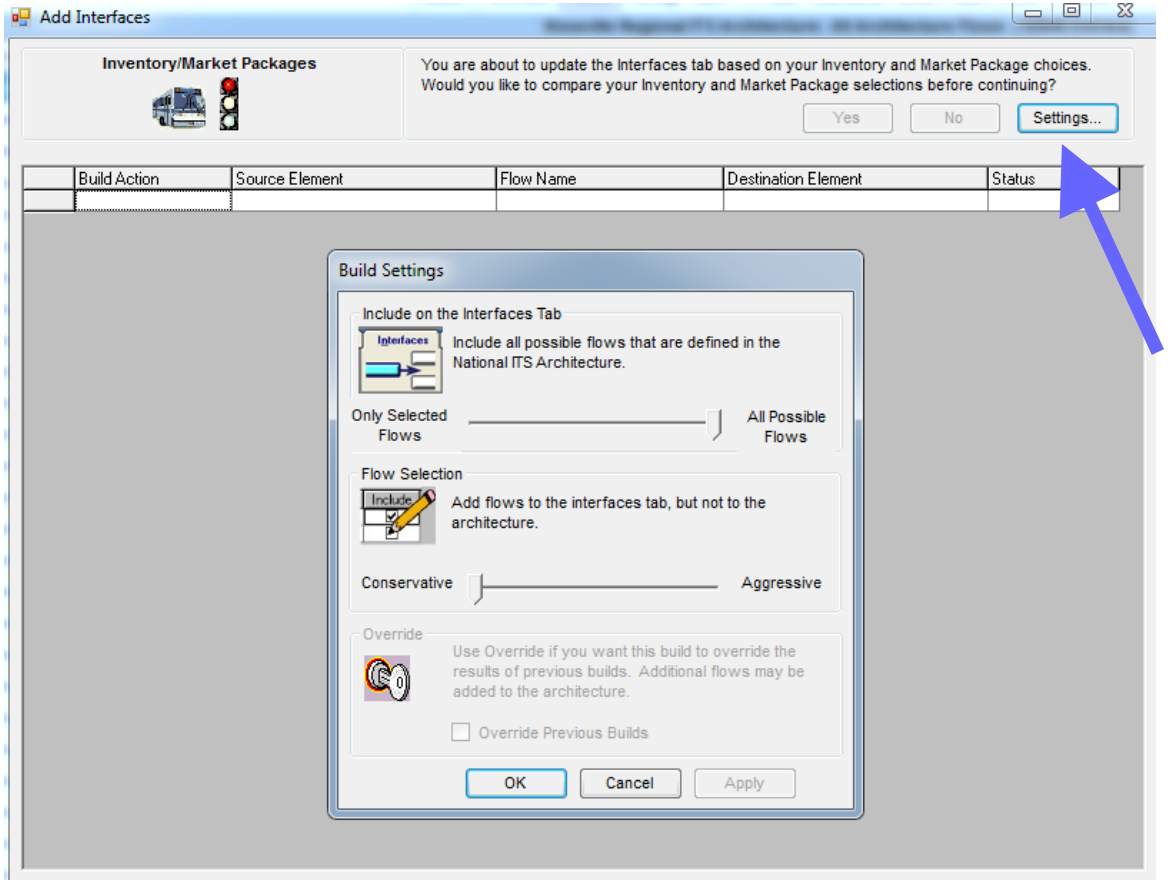
Performing a Build

- **In the Interfaces Tab, click the Build Button**
  - **It's always a good idea to save the Turbo database before performing a build**



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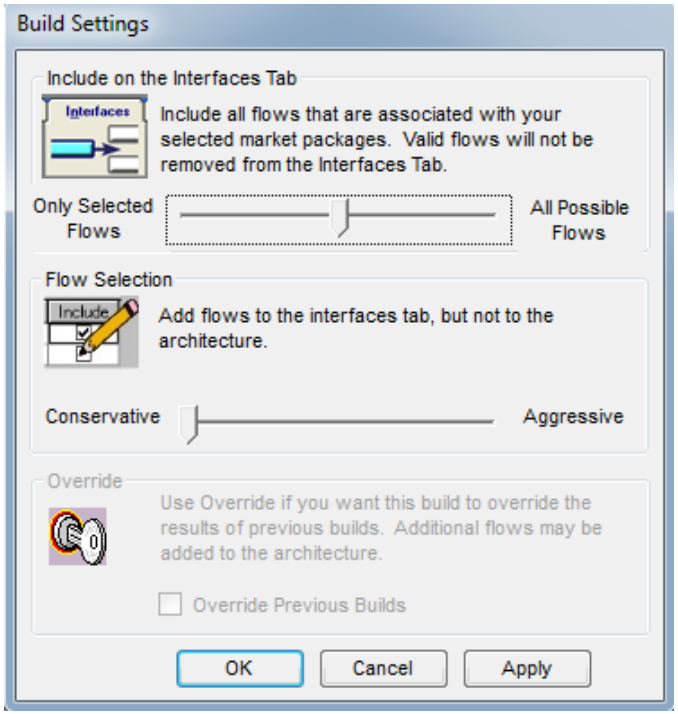
Build Settings

- **Include on Interfaces Tab**
  - **“All possible flows” will ensure that you get what you need**
  - **Middle setting is OK for standard applications**
  - **“Only selected flows” is the automated way to perform the clean up of excess flows**



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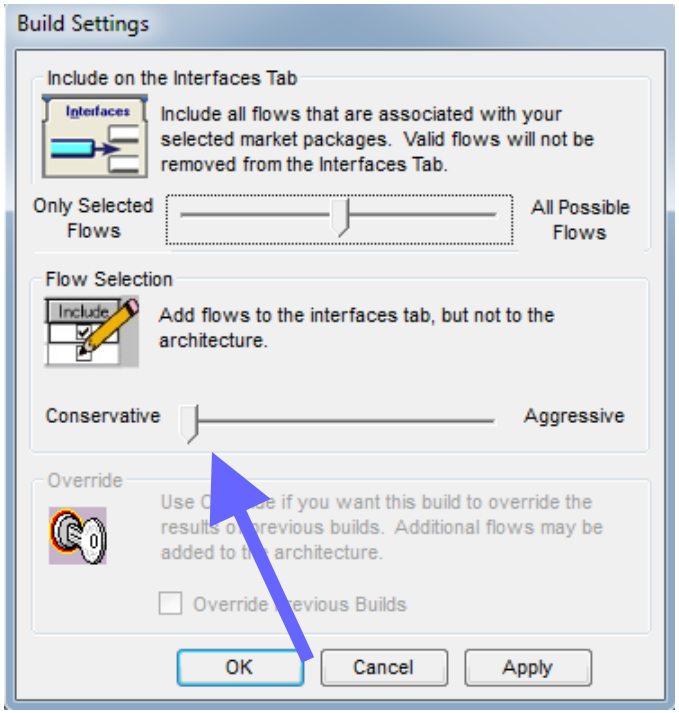
Build Settings

- **Flow selection**
  - **Always use the conservative setting, otherwise Turbo will try to guess what flows you want to use**



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Today's Agenda

- Intro to Turbo Architecture
- Making minor updates in Turbo
- Advanced modifications
- **Generating useful reports and diagrams**

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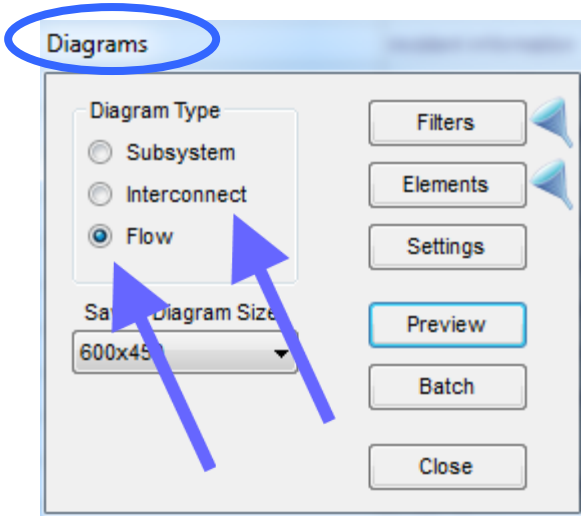
Generating Diagrams

- **Follow these steps**
  - **Output menu option**
  - **Select diagrams**
  - **Select flow or interconnect under diagram type**



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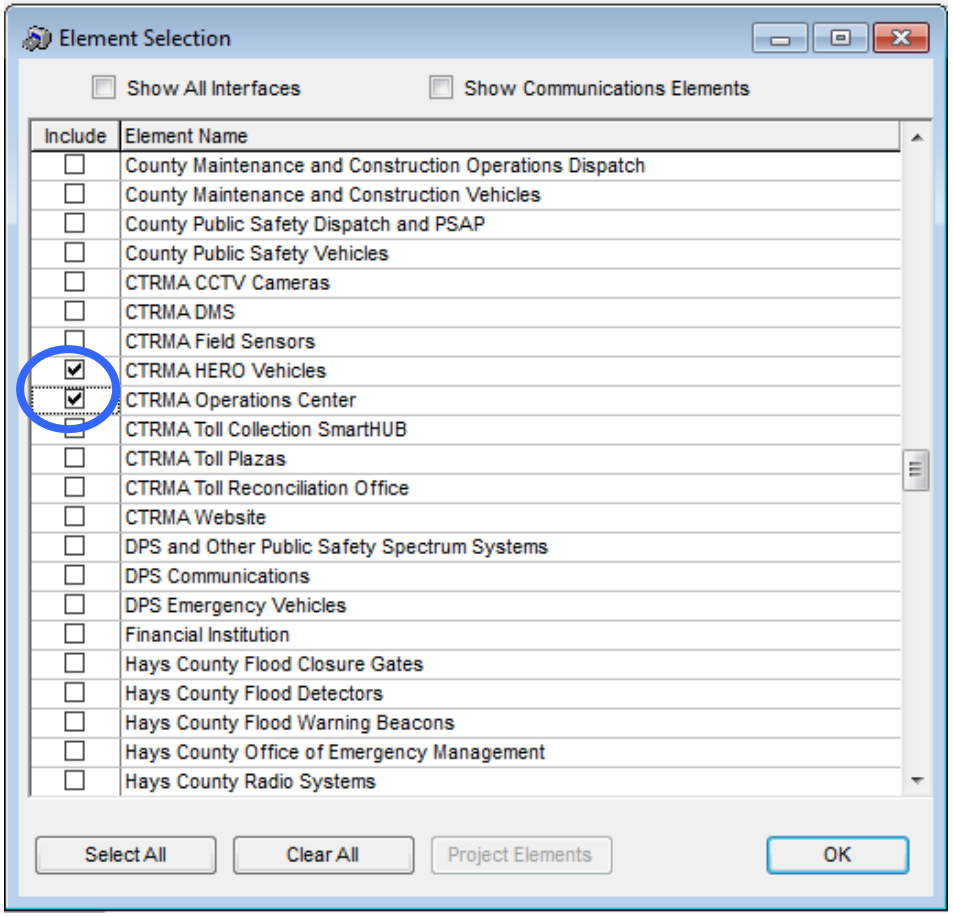
Generating a Flow Diagram (continued)

- **Select elements filter (the filter options here works the same as in the Interfaces Tab)**
- **Select the elements you wish to view**



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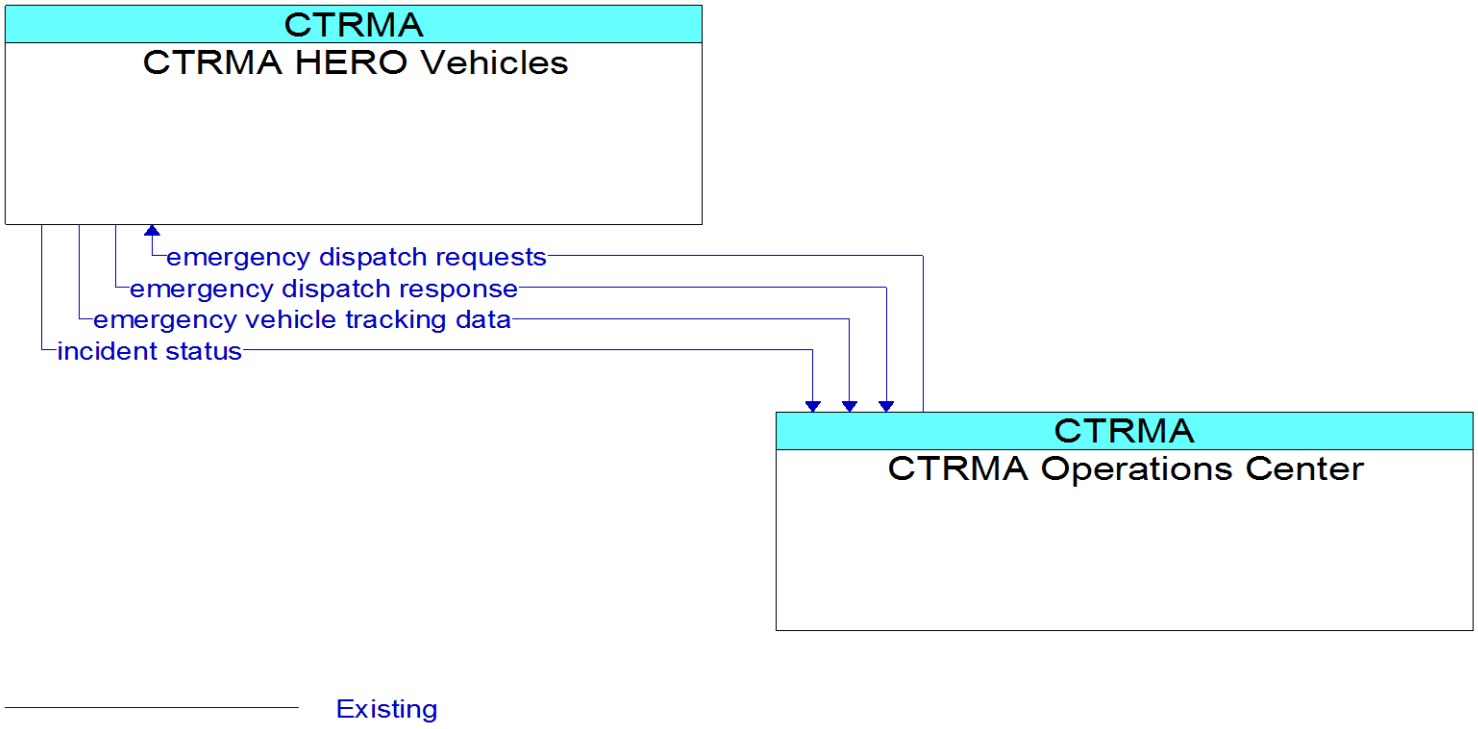
Generating a Flow Diagram

- **Select preview and the diagram will be generated**
- **If you want to export the diagram, you can also save it from within the preview**



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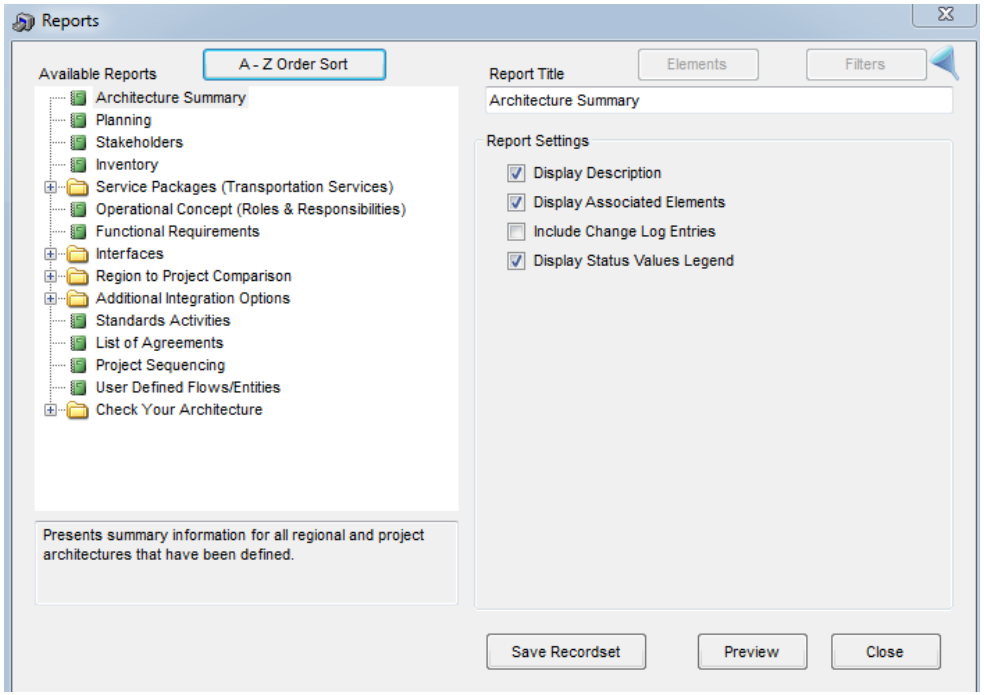
Generating Reports

- **Follow these steps**
  - **Output menu option**
  - **Select reports**
  - **Choose a report**



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Generating Reports (continued)

- **Useful reports include**
  - **Stakeholders – stakeholder names, descriptions, and associated elements**
  - **Inventory – element names, descriptions, subsystem(s), and status**
  - **Functional Requirements – identifies and defines functional areas (equipment packages) by element**
  - **Standards Activities – identifies relevant standards**
  - **Check Reports - identifies potential errors related to information inputs and selections**
- **Select “preview” to view and print a preformatted report or select “save recordset” to produce a file (.pdf) or (.txt)**

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Questions?

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