Project Delivery Methodology (PDM)

Attachment A

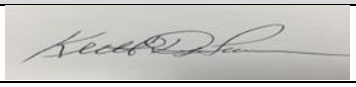
Software Requirement Specifications (SRS)

FDOT District 5

AAM Dashboard

VERISION: 1.0 REVISION DATE: 09/30/2016

Approval of the Software Requirement Specifications indicates an understanding of the purpose and content described in this deliverable. By signing this deliverable, each individual agrees with the content contained in this deliverable.

Version	Approver Name	Title	Signature	Date
0.1	Keith B. DeLuca	Senior Project Manager		6/1 -6/2 2016 Initial Draft
0.15	Steve Mikesell	AAM Project Manager		6/6/2016 QA/QC
0.2	Keith B. DeLuca	Senior Project Manager		06/23/2016 Draft
0.3	Keith B. DeLuca	Senior Project Manager		06/28/2016 Final Draft
1.0	Steve Mikesell	AAM Project Manager		09/30/16 Revised Final Draft

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Section 1 Purpose

The purpose of the Software Requirement Specification (SRS) is to describe the business technology requirements in detail. This document establishes best practices through application business requirements, business processes, functional and data requirements. Upon completion of this document, the processes demonstrated throughout this SRS will be used for designing the application. The outcome will result in the creation of a useful and actionable dashboard, simplifying complex data sets to provide users with a glance awareness of current performance.

Section 2 Business Requirements

2.1 Define Business Requirements

Specify the business requirements for the application. Business requirements are parts of the fully defined business process that will be automated by the application. Specify the priority of the business requirements; priority 1 must have; priority 2 – nice to have;

2.1.1 Business Area – 'AAM Common Core Components'

Priority 1:

BR 1.1: The system shall provide the system administrator with the ability to manage users. This shall include functionality to add, view, edit, and delete users from the system. In addition, the system shall provide the system administrator with the ability to manage users roles (add, view, edit, and delete). Once the user roles have been defined, the system administrator shall be able to assign users to a selected role(s). The user roles are defined by permissions and will dictate what level of dashboard the user will view and/or perform tasks on.

BR 1.2: The system shall follow and conform to FDOT D5 standards regarding access control and security.

BR 1.3: The system shall provide auditing, logging and exception handling capabilities

BR 1.4: System Configuration shall be managed from configuration file or database. This includes any of system environmental variables

BR 1.5: The system shall provide users with the ability to visualize data in a Dashboard.

BR 1.6: The system shall provide the system administrator with the ability to manage the level of Dashboard visibility for each user (Operator, Manager, System Admin, Public). The dashboard view for each user will be determined by which role each user is assigned.

BR 1.7: The system shall be designed to be relevant for the audience to which it's intended. Its content will be scalable for future expansion and growth.

BR 1.8: The system shall be designed with the intention of remaining functional 100% of the time with the exception of scheduled maintenance.

Priority 2:

BR 1.9: The system shall provide users with ability to send and receive alerts & notifications from the system on certain preconfigured data update events. The events details shall be derived from respective functional areas.

2.1.2 Business Area – 'Data Integration – Interface Management'

Priority 1:

BR 2.1: The system shall be able to interface with all available data resources that are required to retrieve, store and display the data according to the respective functional areas.

BR 2.2: The system shall provide the ability for users to manually enter required data for the Activity Log (citizen compliments/complaints), scheduled events, program summary and program benefits.

BR 2.3: The system shall ensure all data is displayed in logical groups. Within each group the audience to which that group is intended shall contain data that is relevant to that user.

BR 2.4: The AAMD is an operational dashboard with frequently changing data. The key performance indicators (KPI's), shall be refreshed at rates that can be supported by the host infrastructure (Hardware, Software, Network)

BR 2.5: The system shall be scalable for future technologies such as connected and autonomous vehicles, and other business requirements necessary to promote best business practices and enhanced customer service.

Priority 2:

BR 2.6: The system shall be able to interface with future systems and data sources once they are brought online and made available as determined by FDOT.

2.1.3 Business Area – 'Data Integration – Data Management 'Performance Metrics'

Priority 1:

BR 3.1: The system shall provide the ability to manage, if determined by user role, route, segment, activity log (complaint/compliment), safety, map, scheduled event, program summary and program benefits data.

2.1.4 Business Area – 'Dashboards Public Users'

Priority 1:

BR 4.1: The system shall provide the user the ability to select or search a route to view on a map.

BR 4.2: The system shall provide the user the ability to view Average Travel Time and Average Speed in a dial configuration for a selected time frame.

BR 4.3: The system shall provide the ability to manually input and display static AAM program information in a program summary and program benefits section. The content shall be approved by FDOT staff.

BR 4.4: The system shall provide users to view an AAM Program Newsletter with the content to be approved by FDOT staff.

Priority 2:

BR 4.5: The dashboard shall display CCTV camera views of FDOT District 5 managed cameras.

2.1.5 Business Area – 'Dashboards – Operator/Corridor Managers'

Priority 1:

BR 5.1: The dashboard shall display average travel time, average speed in multiple views (dials, map, chart, graph).

BR 5.2: The dashboard shall contain a directory of names and phone numbers of staff, emergency phone number contacts, local jurisdiction contacts, neighboring RTMCs, first responders, Road Ranger Safety Service Patrol and other relevant governmental and private industry stakeholders. This information will be provided by FDOT.

Priority 2:

BR 5.3: The dashboard will have the ability to display Travel Time Reliability

BR 5.4: The system shall provide the capability to view existing and future wrong way driving countermeasure sites including system health and alarm status.

BR 5.5: The dashboard will have the ability to display Traffic Volume.

BR 5.7: The dashboard shall display CCTV camera views of FDOT District 5 managed cameras.

2.1.6 Business Area – 'Map Module (GIS)'

Priority 1:

BR 6.1: The map module shall provide the ability, if determined by user role, to view Average Travel Time, Average Speed and Activity Log items (Complaints/Compliments) on a map for a selected date and time.

BR 6.2: The map module shall provide the ability to select routes which the user will have the capability to manage through layers.

Priority 2:

BR 6.3: The map module shall provide the ability to display Traffic Reliability on the map.

BR 6.4: The map module shall provide the capability to view existing and future wrong way driving countermeasure sites including system health and alarm status on the map.

BR 6.5: The map module shall provide the ability to display Traffic Volume on the map.

BR 6.6: The map module shall provide the ability to display Devices on the map

2.1.7 Business Area – 'Reports'

Priority 1:

BR 7.1: The Reports module shall provide users up to 6 pre-configured reports of the Travel Time and Speed data collected in the AAM database. The report formats and content will be developed in collaboration with FDOT staff during the AAMD implementation solution.

BR 7.2: Data filters shall be available on select fields including Date/Time ranges and Routes.

2.1.8 Business Area – 'Help'

Priority 1:

BR 8.1: Provides users access to help documentation on the use of the AAMD.

2.1.9 Business Area – 'Scheduled Events'

Priority 1:

BR 9.1: This module will provide the operators a way to track upcoming events in a calendar format.

2.1.10 Business Area – 'Safety'

Priority 1:

BR 10.1: This module shall display crash data derived from the Signal 4 Crash Report. The data will be updated once a month manually by an AAMD Administrator.

2.1.11 Business Area – 'Activity Log'

Priority 1:

BR 11.1: The Activity Log module will allow operators to track in a list format.

BR 11.2: The Activity Log module shall provide the ability for users to display activity log items (customer complaints/compliments) on a map.

2.1.12 Business Area – 'Admin'

Priority 1:

BR 12.1: The administration module shall provide the system administrator the capability to manage user access to the AAMD including the assignment of roles and permissions associated with assigned roles.

2.2 Business Process Model

2.2.1 Business Process Definitions

Identify and define the business processes by listing the business processes and providing the business process name and purpose of each business process.

Dashboards:	The user interface that displays user customized key performance metrics data through various mediums (dials, charts, graphs, maps) that will have different views based on level of user, determined by the system administrator.
Data Integration Module:	To interface with FDOT and/or 3rd party systems to retrieve the needed performance data
Data Management:	To manage, if determined by user role, route, segment, scheduled events, compliment/complaint, program summary, program benefits and safety data (create, view, edit, save, delete) for dashboard, list and map views.
Map Module:	Used to display key performance metrics on a map for a selected route. Used to display Log items (citizen compliments/complaints) on a map.
Safety:	Used to display crash data in a searchable table.
Scheduled Events:	Used to display and track upcoming events in a calendar format.
Activity Log:	This module will allow the operators to track customer complaints and compliments.
Common Core Components:	Administration: provides the system administrator the ability to manage users, set user roles and permissions. Provides the system administrator the ability to manage the capabilities/views users will have through roles and permissions.
Reports:	Used to provide up to 6 pre-configured reports of the Travel Time and Speed data collected in the AAM database. The report formats and content will be developed in collaboration with FDOT staff during the AAMD implementation solution.
Help:	Provides users access to support documentation such as a user manual.

2.2.2 Business Process Flow

Describe how the business processes defined flows from one process to the next. Project team may show this graphically.

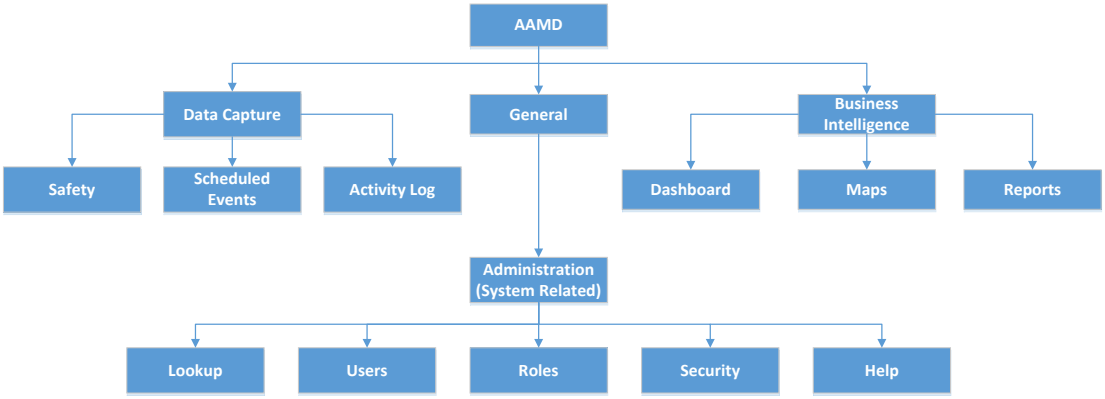


Figure 1 - Classification of AAMD Functions

Figure 1 above shows the classification of the AAMD functions. The system menu shall be based on this classification. In addition, user permissions shall be assigned based on this classification.

Figure 2 below shows the Business Areas and how the data supporting the Business areas enter the AAM system, how the data is transformed (if applicable), the resulting output of the data and reference information.

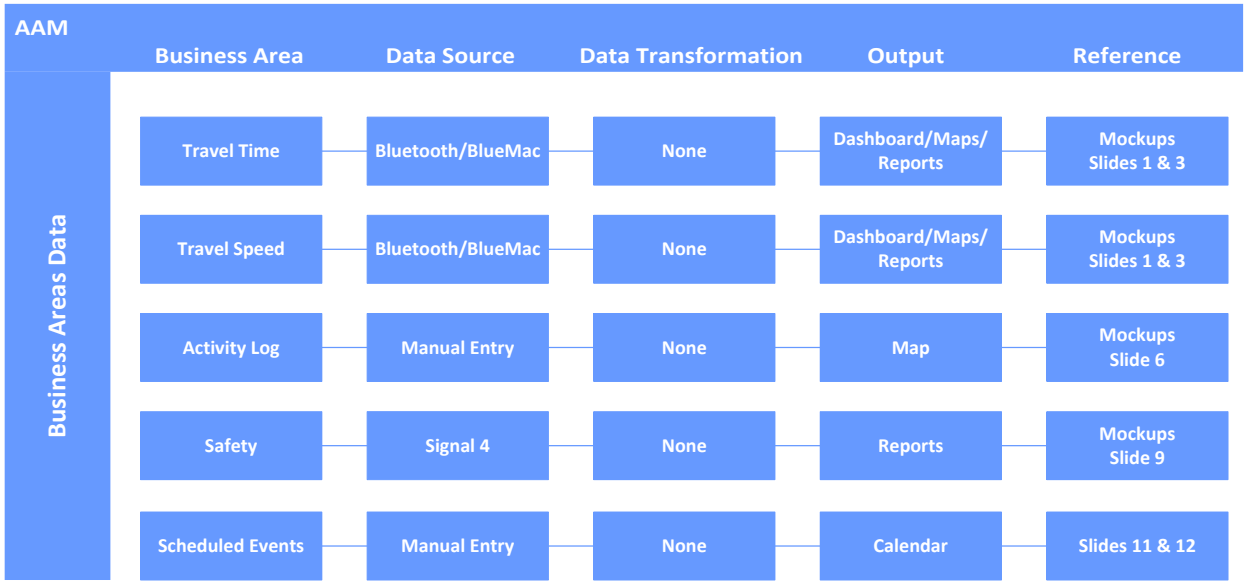


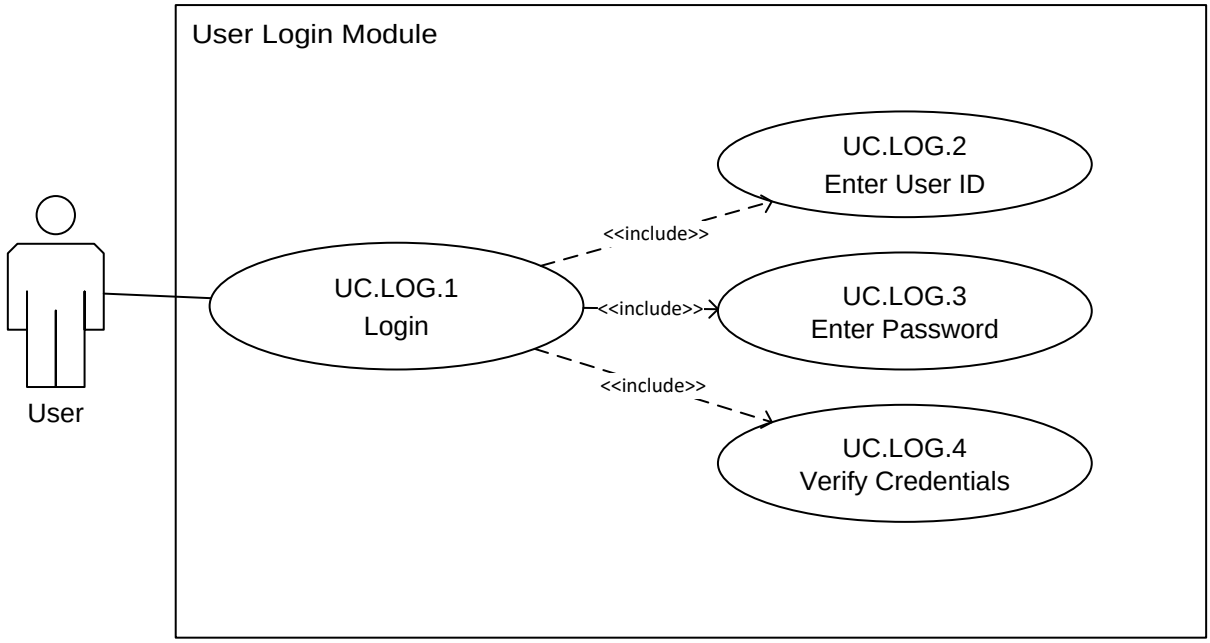
Figure 2 - Business Areas Data

2.3 Functional Requirements

Specify the functional requirements for each business process in terms of inputs, operations, and outputs for each business process.

Customize this section to contain the subsections necessary to comprehensively define the fundamental actions that must take place within the application to accept and process the inputs and, to process and generate the outputs.

2.3.1 Login Module Use Cases

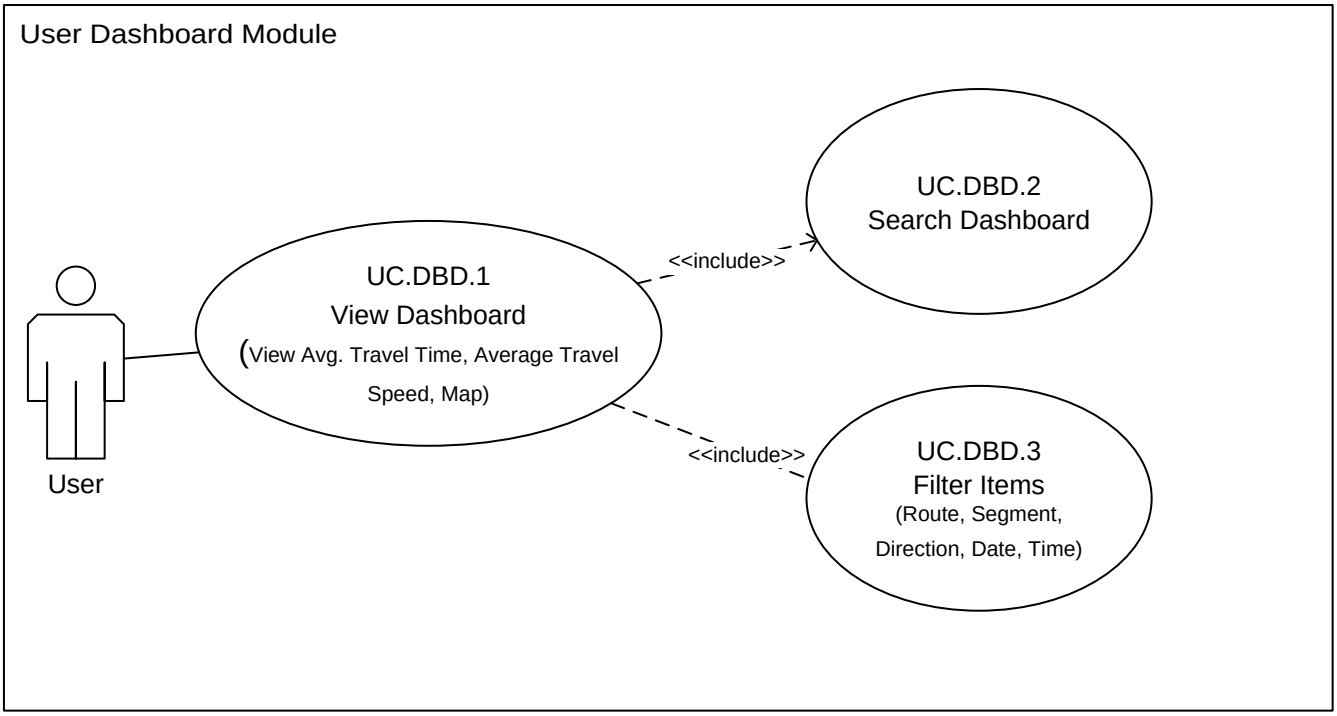


2.3.1.1 Use Case System Login

Use Case Information	
Use Case ID	UC.LOG.1
Use Case Name	System Login
Summary	The user enters the URL into a browser and supplies user id and password for authentication.
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator, Public
Pre-conditions	User must have valid credentials
Main Scenario	
Trigger	User Interaction
Typical Events	1. User opens a browser and enters the URL 2. Login screen is presented 3. User supplies user id and password 4. User is authenticated against the credentials 5. If the authentication is successful, the default dashboard screen is presented

	6. If the authentication fails, login screen is presented again with an error message
Includes	None
Input	User id and password
Output	Default dashboard view
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	The dashboard functions are available to the users
Frequency	User driven
Exceptions	Authentication failure due to invalid credentials
Related Use Cases	None

2.3.2 Dashboard Use Cases



2.3.2.1 Use Case View Dashboard

Use Case Information	
Use Case ID	UC.DBD.1
Use Case Name	View Dashboard
Summary	User is directed to the default dashboard view upon login
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator, Public
Pre-conditions	The user must be logged into the system and have privileges to view the dashboard. The AAM administrator shall have the capability to manage the users viewing ability through roles and permissions.
Main Scenario	
Trigger	User Interaction

Typical Events	1. User logs into the system 2. System displays the default User Dashboard a. View Avg. Travel Time b. View Avg. Speed c. View Map
Includes	None
Input	None
Output	User dashboard
Alternate Scenarios	
Variants	User navigates to the dashboard using the main menu from another module
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.2.2 Use Case Search Dashboard

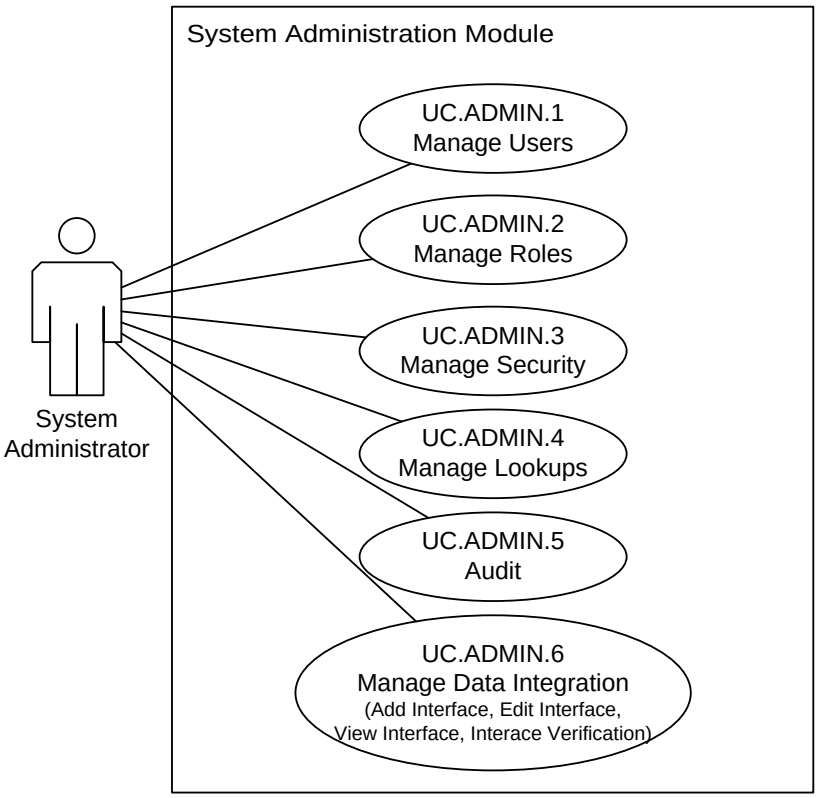
Use Case Information	
Use Case ID	UC.DBD.2
Use Case Name	Search Dashboard
Summary	User searches dashboard to display data for user selected routes
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator, Public
Pre-conditions	The user must be logged into the system and have privileges to view the dashboard
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Dashboard 2. User enters required search criteria in the search window 3. Search results are shown on the dashboard
Includes	None
Input	Search Criteria
Output	Search result show in dashboard view
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.2.3 Use Case Filter Items

Use Case Information	
Use Case ID	UC.DBD.3
Use Case Name	Filter Items
Summary	User filters items on the User Dashboards
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator, Public

Pre-conditions	The user must be logged into the system and have privileges to filter items on the dashboard
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to the User Dashboard 2. User applies filters to the dashboard a. By Route or Segment b. By Date c. By Time d. By Direction
Includes	None
Input	Items to be filtered on the dashboard
Output	Filtered items are displayed on the dashboard
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	Filtered items
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.3 System Administration Use Cases



2.3.3.1 Use Case Manage Users

Use Case Information	
Use Case ID	UC.ADMIN.1
Use Case Name	Manage Users
Summary	User manages user access to system by addition/editing/deletion
Actors	
Primary	System Administrator
Secondary	Administrator
Pre-conditions	The user must be logged into the system and have privileges to View, Edit, Add and Delete Users
Main Scenario	
Trigger	User Interaction
Typical Events	1. The user navigates to Users list 2. System displays the list of users. The user would be able filter the list of users by general search or by the filter conditions from the list. 3. The user would be able to edit an user by selecting a record from the list and click edit. 4. The user would be able to add a new user by clicking Add. 5. The user would be able to delete a user by selecting the user record from the list and clicking delete.
Includes	None
Input	None
Output	Addition of user, Editing of User, Deleting of User
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.3.2 Use Case Manage Roles

Use Case Information	
Use Case ID	UC.ADMIN.2
Use Case Name	Manage Roles
Summary	User applies roles to users determining their access/views
Actors	
Primary	System Administrator
Secondary	Administrator
Pre-conditions	The user must be logged into the system and have privileges to View, Edit, Add and Delete roles.
Main Scenario	
Trigger	User Interaction
Typical Events	1. The user navigates to Roles list 2. System displays the list of roles. The user would be able filter the list of roles by general search or by the filter conditions from the list. 3. The user would be able to edit a user by selecting a record from the list and clicking edit. 4. The user would be able to add a new role by clicking “Add”. 5. The user would be able to delete a role by selecting a role record from the list and clicking “Delete”.

Includes	None
Input	None
Output	Addition/Editing/Deletion of user roles completed
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.3.3 Use Case Manage Security

Use Case Information	
Use Case ID	UC.ADMIN.3
Use Case Name	Manage Security
Summary	User manages permissions for users
Actors	
Primary	System Administrator
Secondary	Administrator
Pre-conditions	The user must be logged into the system and have privileges to view and update security
Main Scenario	
Trigger	User Interaction
Typical Events	1. The user navigates to Security 2. System displays the list of roles, users and their preconfigured permissions 3. The user would be able to update the permissions by selecting a role/user and select/update appropriate feature(view, add, edit, delete, save) 4. The user would be able to view and update permissions assigned to the user 5. The user would be able to view and update users assigned permissions
Includes	None
Input	Request to view/add/edit/delete/save user permissions
Output	User permissions are edited
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.3.4 Use Case Manage Lookups

Use Case Information	
Use Case ID	UC.ADMIN.4
Use Case Name	Manage Lookups

Summary	The user manages audits by adding/editing/deleting Lookup Groups/information
Actors	
Primary	System Administrator
Secondary	Administrator
Pre-conditions	The user must be logged into the system and have privileges to view and update lookup values
Main Scenario	
Trigger	User Interaction
Typical Events	1. The user navigates to lookup list 2. System displays the list of lookup groups. The user would be able filter the list of lookup groups by general search or by the filter conditions from the list 3. The user would be able to edit a lookup group by selecting a record from the list and clicking “Edit” 4. The user would be able to add a new lookup group by clicking Add 5. The user would be able to delete a lookup group by selecting a lookup record from the list and clicking “Delete”.
Includes	None
Input	None
Output	Lookup List is edited by adding/updating/ deleting Lookups
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

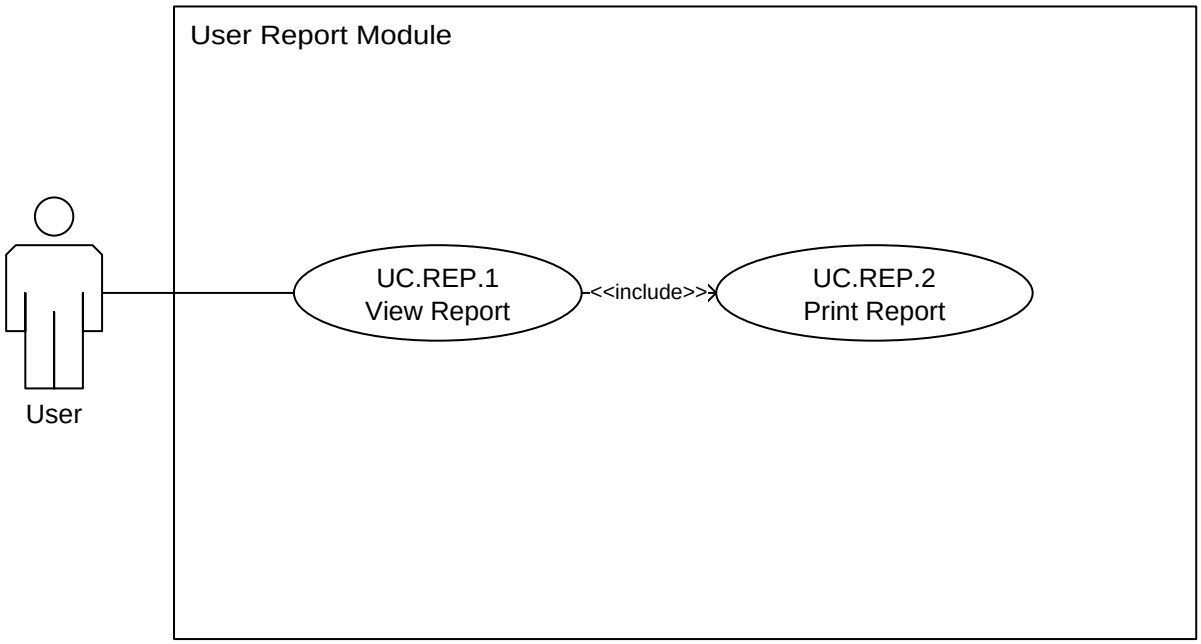
2.3.3.5 Use Case Manage Audits

Use Case Information	
Use Case ID	UC.ADMIN.5
Use Case Name	Manage Audits
Summary	The user can search through and view audits
Actors	
Primary	System Administrator
Secondary	Administrator
Pre-conditions	The user must be logged into the system and have privileges to run audits
Main Scenario	
Trigger	User Interaction
Typical Events	1. The user navigates to Audits 2. System displays audit list 3. User enters appropriate search criteria
Includes	None
Input	Search Criteria
Output	System displays records
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.3.6 Use Case Manage Data Integration

Use Case Information	
Use Case ID	UC.ADMIN.6
Use Case Name	Manage Data Integration
Summary	The Data Integration would be used to manage system Interface systems, attributes, versions, conditions and frequency information.
Actors	
Primary	System Administrator
Secondary	Administrator
Pre-conditions	The user must be logged into the system and have privileges to view and update Data Integration values
Main Scenario	
Trigger	User Interaction
Typical Events	1. The user navigates to Data Integration list 2. System displays the list of Data Interfaces. The user would be able filter one or more interfaces by general search or by filter conditions 3. The user would be able to edit a data interface by selecting a record from the list and clicking “Edit”. 4. The user would be able to add a new data interface by clicking “Add” 5. The user would be able to delete a data interface by selecting an interface record from the list and clicking “Delete”. 6. The interface details would include the system information, frequency of the interface to execute and a list of attributes for its data transformation conditions or calculated field formula
Includes	None
Input	User determined update information
Output	Display of data interfaces/updated interfaces
Alternate Scenarios	
Variants	
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.4 Reports Use Cases



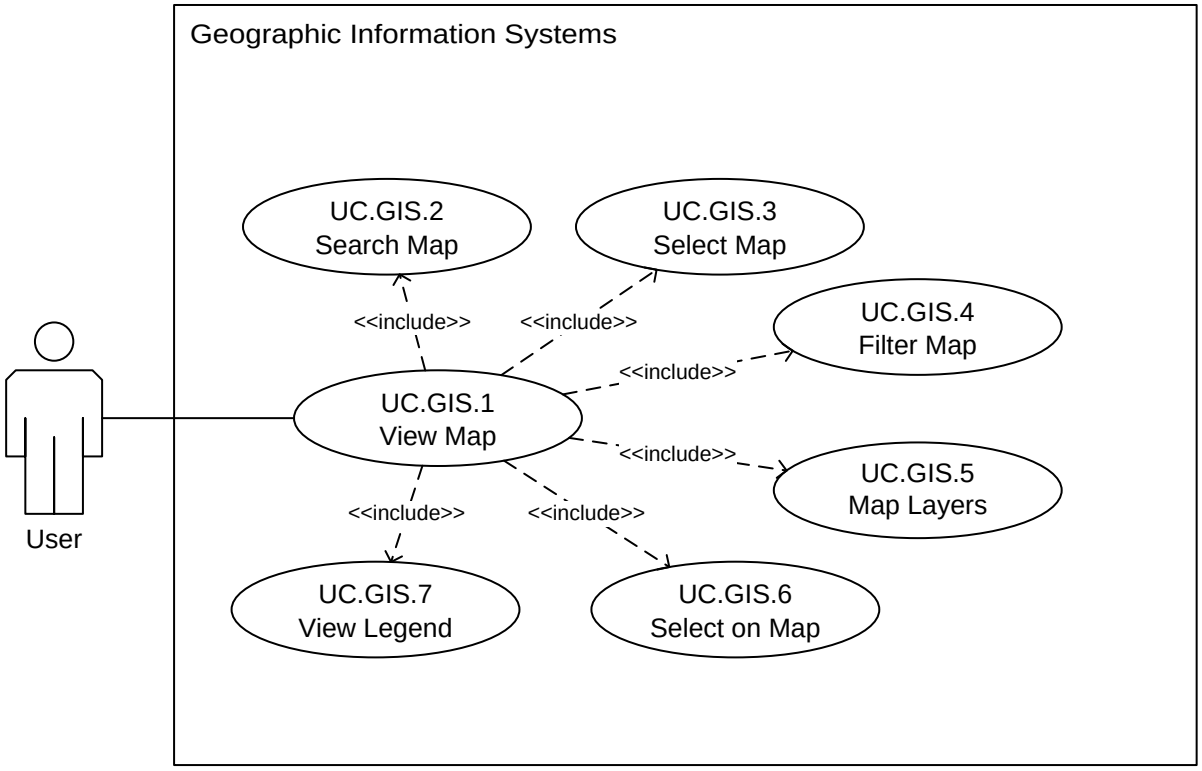
2.3.4.1 Use Case View Reports

Use Case Information	
Use Case ID	UC.REP.1
Use Case Name	View Reports
Summary	User views a Report
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to view reports
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Reports 2. System displays List of Reports 3. User selects a report to view 4. System displays report
Includes	None
Input	None
Output	View of selected report
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.4.2 Use Case Print Reports

Use Case Information	
Use Case ID	UC.REP.2
Use Case Name	Print Reports
Summary	User prints a report
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to print reports
Main Scenario	
Trigger	User Interaction
Typical Events	1. User Navigates to Reports 2. User Selects a report 3. User views a report 4. User prints the report
Includes	None
Input	Select report and select print report
Output	Printed report
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.5 Geographic Information System Use Cases



2.3.5.1 Use Case View Map

Use Case Information	
Use Case ID	UC.GIS.1
Use Case Name	View Map
Summary	User is able to view a map
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to access the map function
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to the Map 2. System displays the Map
Includes	None
Input	None
Output	Map View
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None

Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.5.2 Use Case Search Map

Use Case Information	
Use Case ID	UC.GIS.2
Use Case Name	Search Map
Summary	User searches map using search function
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to use the map function
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Maps 2. User enters required search criteria in the search window 3. Search result shown on map
Includes	None
Input	Search Criteria
Output	Search result shown on map
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.5.3 Use Case Select Map

Use Case Information	
Use Case ID	UC.GIS.3
Use Case Name	Select Map
Summary	User selects basemap of their choice
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to use the map function
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Maps 2. User selects preferred basemap 3. Map is displayed with user chosen basemap
Includes	None
Input	None
Output	Map is displayed with user chosen basemap

Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.5.4 Use Case Filter Map

Use Case Information	
Use Case ID	UC.GIS.4
Use Case Name	Filter Map
Summary	User filters map to change view of displayed data
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to use the map function
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Maps 2. User filters map selecting or unselecting items to be displayed on the map 3. Map displays data
Includes	None
Input	Selection or deselection of items to be or not be displayed
Output	Map displays data selected by user
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.5.5 Use Case Map Layers

Use Case Information	
Use Case ID	UC.GIS.5
Use Case Name	Map Layers
Summary	User selects/deselects items in the map layers to customize view
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to use the map function
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Maps 2. User selects/deselects layers of viewable items to customize map view 3. Map displays customized view

Includes	None
Input	Checkmark desired layers
Output	Map is displayed with customized view determined by the user
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.5.6 Use Case Select On Map

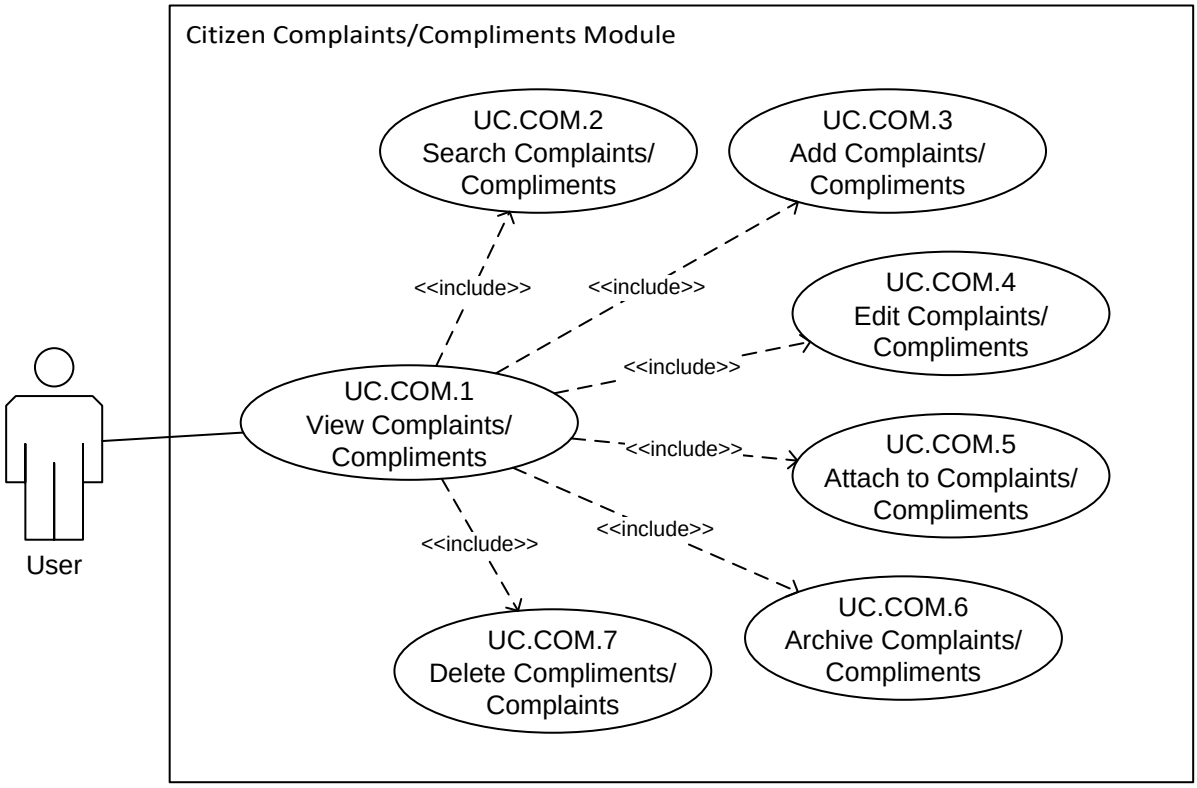
Use Case Information	
Use Case ID	UC.GIS.6
Use Case Name	Select On Map
Summary	User selects item on map to view/edit
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to view map function
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to the map function 2. User selects item on map 3. User adds or edits item information or comments 4. User saves additions/changes
Includes	None
Input	None
Output	Selected item
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.5.7 Use Case Map Legend

Use Case Information	
Use Case ID	UC.GIS.7
Use Case Name	Map Legend
Summary	Descriptive Legend is displayed on the map for user reference
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to use the map function
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Maps

	2. User selects Legend 3. Map displays Legend
Includes	None
Input	None
Output	Map is displayed with Legend
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.6 Citizen Complaints/Compliments Use Cases



2.3.6.1 Use Case View Citizen Complaints/Compliments

Use Case Information	
Use Case ID	UC.COM.1
Use Case Name	View Citizen Complaints/Compliments
Summary	View Citizen Complaint/Compliment Information
Actors	
Primary	All Users fulfilling the pre-conditions
Secondary	System Administrator
Pre-conditions	The user must be logged into the system and have privileges to view Complaints/Compliments
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Citizen Complaints/Compliments 2. User selects a Citizen Complaint/Compliment from the List 3. User selects view function
Includes	None
Input	Checkmark record to view
Output	System displays Citizen Complaint/Compliment for user to view
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.6.2 Use Case Search Citizen Complaints/Compliments

Use Case Information	
Use Case ID	UC.COM.2
Use Case Name	Search Citizen Complaints/Compliments
Summary	User searches Citizen Complaints/Compliments by using search function
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to search Citizen Complaints/Compliments
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Citizen Complaints/Compliments 2. System shows list of Citizen Complaints/Compliments 3. User enters search criteria into search window 4. System displays searched Citizen Complaint/Compliment
Includes	None
Input	Search criteria
Output	System displays searched Citizen Complaint/Compliment
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.6.3 Use Case Add Citizen Complaints/Compliments

Use Case Information	
Use Case ID	UC.COM.3
Use Case Name	Add Citizen Complaints/Compliments
Summary	User adds a Citizen Complaint/Compliment
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to add Citizen Complaints/Compliments
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Citizen Complaints/Compliments 2. User Selects the add function 3. User enters Citizen Complaint/Compliment details 4. User selects the save function
Includes	None
Input	User enters details of Citizen Complaint/Compliment
Output	System updates Citizen Complaints/Compliments list with the new record
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.6.4 Use Case Edit Citizen Complaints/Compliments

Use Case Information	
Use Case ID	UC.COM.4
Use Case Name	Edit Citizen Complaints/Compliments
Summary	User edits a Citizen Complaint/Compliment record
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to edit Citizen Complaints/Compliments
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Citizen Complaints/Compliments 2. User selects a Citizen Complaint/Compliment record to edit 3. User selects the edit function 4. User makes changes/additions to Citizen Complaint/Compliment record 5. User selects save function to update record
Includes	None
Input	Changes/additions
Output	System updates Citizen Complaint/Compliment record with user changes/additions
Alternate Scenarios	
Variants	None

Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.6.5 Use Case Attach To Citizen Complaints/Compliments

Use Case Information	
Use Case ID	UC.COM.5
Use Case Name	Attach to Citizen Complaints/Compliments
Summary	User attaches a document to a Citizen Complaint/Compliment
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to attach documents to a Citizen Complaint/Compliment record
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Citizen Complaints/Compliments 2. User selects a Citizen Complaint/Compliment to add an attachment 3. User selects the attachment function 4. User browses for document and attaches to record 5. User selects the save function to update the Citizen Complaint/Compliment record
Includes	None
Input	User attaches document to Citizen Complaint/Compliment record
Output	System updates record with attached document
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.6.6 Use Case Archive Citizen Complaints/Compliments

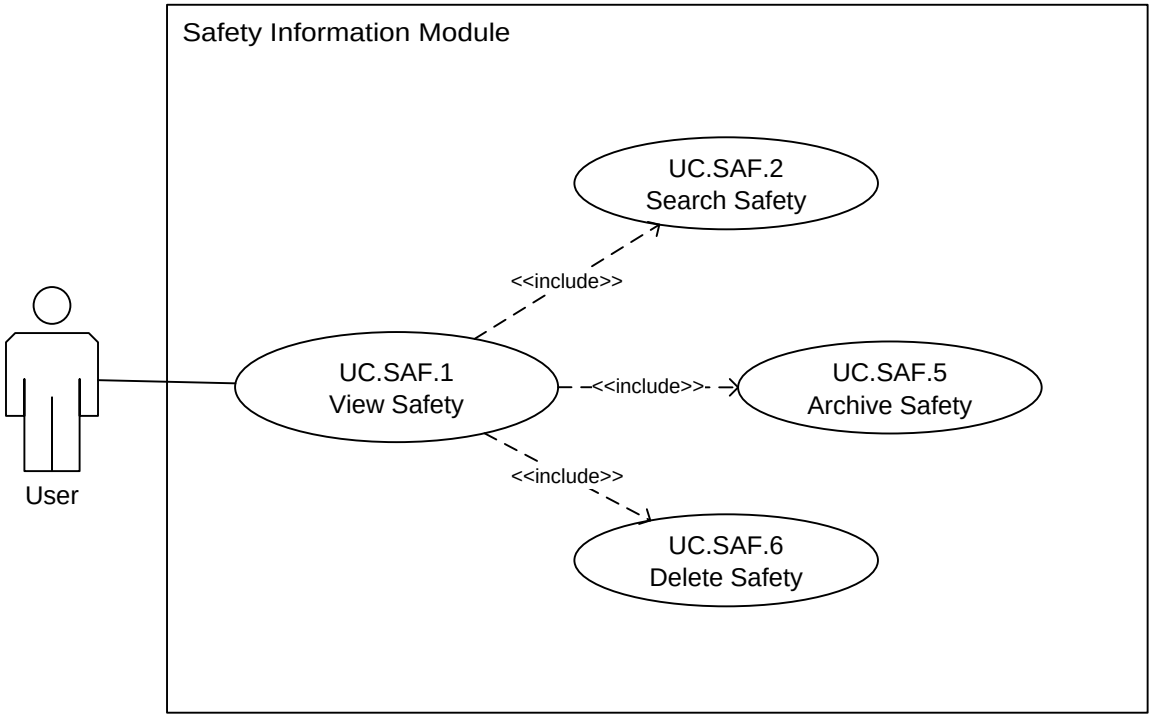
Use Case Information	
Use Case ID	UC.COM.6
Use Case Name	Archive Citizen Complaints/Compliments
Summary	Citizen Complaint/Compliment is moved from the Citizen Complaint/Compliment List to an Archive
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to archive a Citizen Complaint/Compliment record
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Citizen Complaints/Compliments 2. User selects a Citizen Complaint/Compliment record to archive 3. User selects the archive function 4. User archives Citizen Complaint/Compliment record

Includes	None
Input	None
Output	Citizen Complaint/Compliment record is moved to an archive
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.6.7 Use Case Delete Citizen Complaints/Compliments

Use Case Information	
Use Case ID	UC.COM.7
Use Case Name	Delete Citizen Complaints/Compliments
Summary	User deletes Citizen Complaint/Compliment
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to delete a Citizen Complaint/Compliment record
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Citizen Complaints/Compliments 2. User Selects the record to be deleted 3. User Deletes the Citizen Complaint/Compliment record
Includes	None
Input	None
Output	Citizen Complaint/Compliment record is removed from the system
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.7 Safety Use Cases



2.3.7.1 Use Case View Safety

Use Case Information	
Use Case ID	UC.SAF.1
Use Case Name	View Safety
Summary	User Views Safety Item
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to View Safety
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Safety 2. System shows list of Safety Items 3. User Selects Safety Item to View 4. User Selects the view function
Includes	None
Input	None
Output	System displays the selected Safety Item Details
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends

Related Use Cases	None

2.3.7.2 Use Case Search Safety

Use Case Information	
Use Case ID	UC.SAF.2
Use Case Name	Search Safety
Summary	User searches Safety List
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to search Safety
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Safety 2. System shows list of Safety Items 3. User enters search criteria into search window
Includes	None
Input	Search Criteria
Output	System displays searched Safety item
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.7.3 Use Case Archive Safety

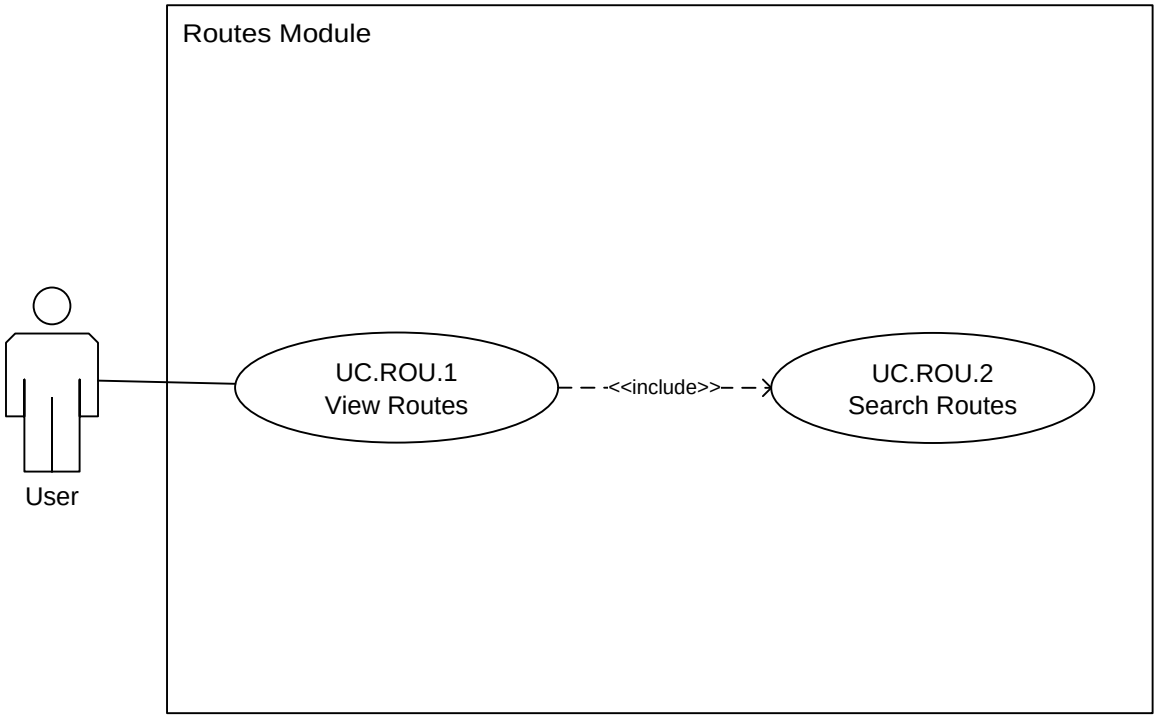
Use Case Information	
Use Case ID	UC.SAF.3
Use Case Name	Archive Safety
Summary	User Archives a safety item
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to archive a Safety item
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Safety 2. System shows list of Safety Items 3. User Selects Safety Item to archive 4. User Selects the Archive function
Includes	None
Input	None
Output	System moves the safety item to an archive
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven

Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.7.4 Use Case Delete Safety

Use Case Information	
Use Case ID	UC.SAF.4
Use Case Name	Delete Safety
Summary	User Deletes a safety item
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to delete a Safety item
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Safety 2. System shows list of Safety Items 3. User Selects Safety Item to delete 4. User Selects the delete function
Includes	None
Input	None
Output	Safety item is removed from the system
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.8 Routes Use Cases



2.3.8.1 Use Case View Routes

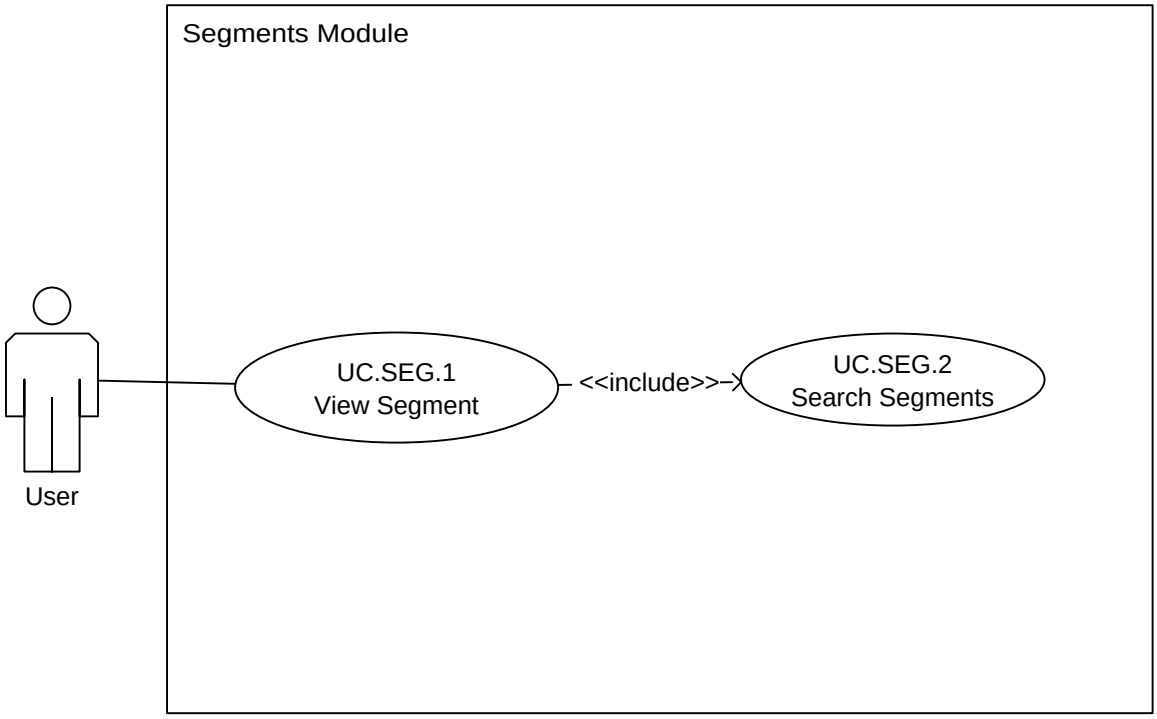
Use Case Information	
Use Case ID	UC.ROU.1
Use Case Name	View Routes
Summary	User views route details
Actors	
Primary	All Users fulfilling the pre-conditions
Secondary	System Administrator
Pre-conditions	The user must be logged into the system and have privileges to view routes
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Routes 2. System shows list of Routes 3. User selects route to view 4. User selects view function
Includes	None
Input	None
Output	System displays selected route details
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends

Related Use Cases	None

2.3.8.2 Use Case Search Routes

Use Case Information	
Use Case ID	UC.ROU.2
Use Case Name	Search Routes
Summary	User searches for a route
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to search routes
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Routes 2. System shows list of Routes 3. User enters route search criteria into search window 4. System displays searched route
Includes	None
Input	Route search criteria
Output	System displays searched route
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.9 Segments Use Cases



2.3.9.1 Use Case View Segments

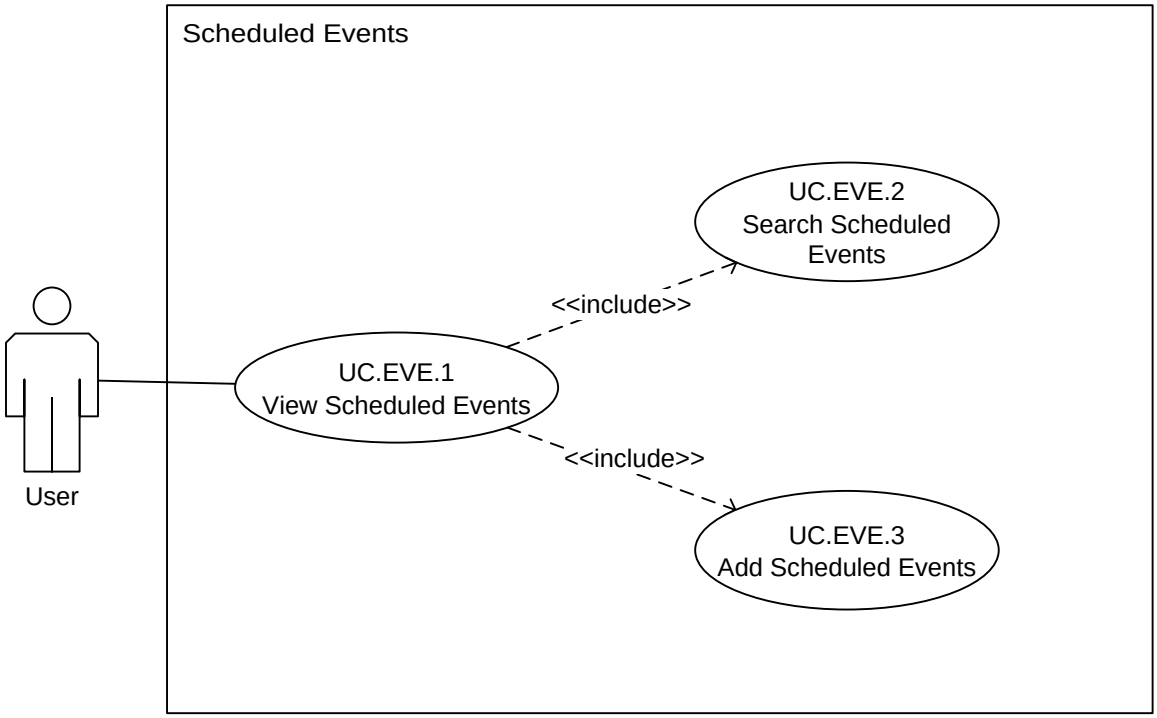
Use Case Information	
Use Case ID	UC.SEG.1
Use Case Name	View Segments
Summary	User views segment details
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to view a segment
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Segments 2. System shows list of Segments 3. User selects segment to view 4. User selects view function
Includes	None
Input	None
Output	System displays segment details
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven

Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.9.2 Use Case Search Segments

Use Case Information	
Use Case ID	UC.SEG.2
Use Case Name	Search Segments
Summary	User searches for a segment
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to search segments
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Segments 2. System shows list of Segments 3. User enters segment search criteria into search window
Includes	None
Input	Segment search criteria
Output	System displays searched segment
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.10 Scheduled Events Use Cases



2.3.10.1 Use Case View Scheduled Events

Use Case Information	
Use Case ID	UC.EVE.1
Use Case Name	View Scheduled Events
Summary	User views segment details
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to view a segment
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Scheduled Events 2. System shows Scheduled Events in a calendar format 3. User clicks event to view 4. System displays event details
Includes	None
Input	None
Output	System displays event details
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven

Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.10.2 Use Case Search Scheduled Events

Use Case Information	
Use Case ID	UC.EVE.2
Use Case Name	Search Scheduled Events
Summary	User searches for a Scheduled Event
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to search segments
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Scheduled Events 2. System shows Scheduled Events in a calendar format 3. User enters Scheduled Event search criteria into search window 4. System displays searched Scheduled Event
Includes	None
Input	Scheduled Event search criteria
Output	System displays searched Scheduled Event
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

2.3.10.3 Use Case Add Scheduled Events

Use Case Information	
Use Case ID	UC.EVE.3
Use Case Name	Add Scheduled Events
Summary	User adds a Scheduled Event
Actors	
Primary	Operators, Corridor Managers
Secondary	Administrator, System Administrator
Pre-conditions	The user must be logged into the system and have privileges to search segments
Main Scenario	
Trigger	User Interaction
Typical Events	1. User navigates to Scheduled Events 2. System shows Scheduled Events in a calendar format 3. User selects the add event function 4. User enters the details for the new Scheduled Event 5. User selects the save function 6. System saves added Scheduled Event to the calendar
Includes	None
Input	Scheduled Event details

Output	System displays added Scheduled Event in the calendar
Alternate Scenarios	
Variants	None
Extends / Uses	None
Post-conditions	None
Frequency	User driven
Exceptions	User cancels the use case. The use case ends
Related Use Cases	None

Section 3 Data Management Requirements

This section will describe the requirements for the business data to be stored by the application in terms of archiving, purging and auditing. The section will also provide a conceptual data model based on the business processes described in the previous section.

3.1 Archive/Purge Requirements

Describe how long the business data must be retained and if there are any special audit requirements for the application. Specify when the data can be archived for historical purposes and when the data can be completely removed (purged) from the application.

⇒7years of data retention

3.2 Audit Requirements

Specify the audit requirements for the system.

⇒The system shall maintain audit trail of all integration modules which includes

- Date time of data created/updated
- Number of records updated
- Status of records updated (Pass/fail)
- User account used for data update
- Details of failure

Section 4 Conceptual Data Model

Provide a conceptual data model which will include table names and the logical relationships between the conceptual tables. Provide diagrams/drawing to show the tables and relationships

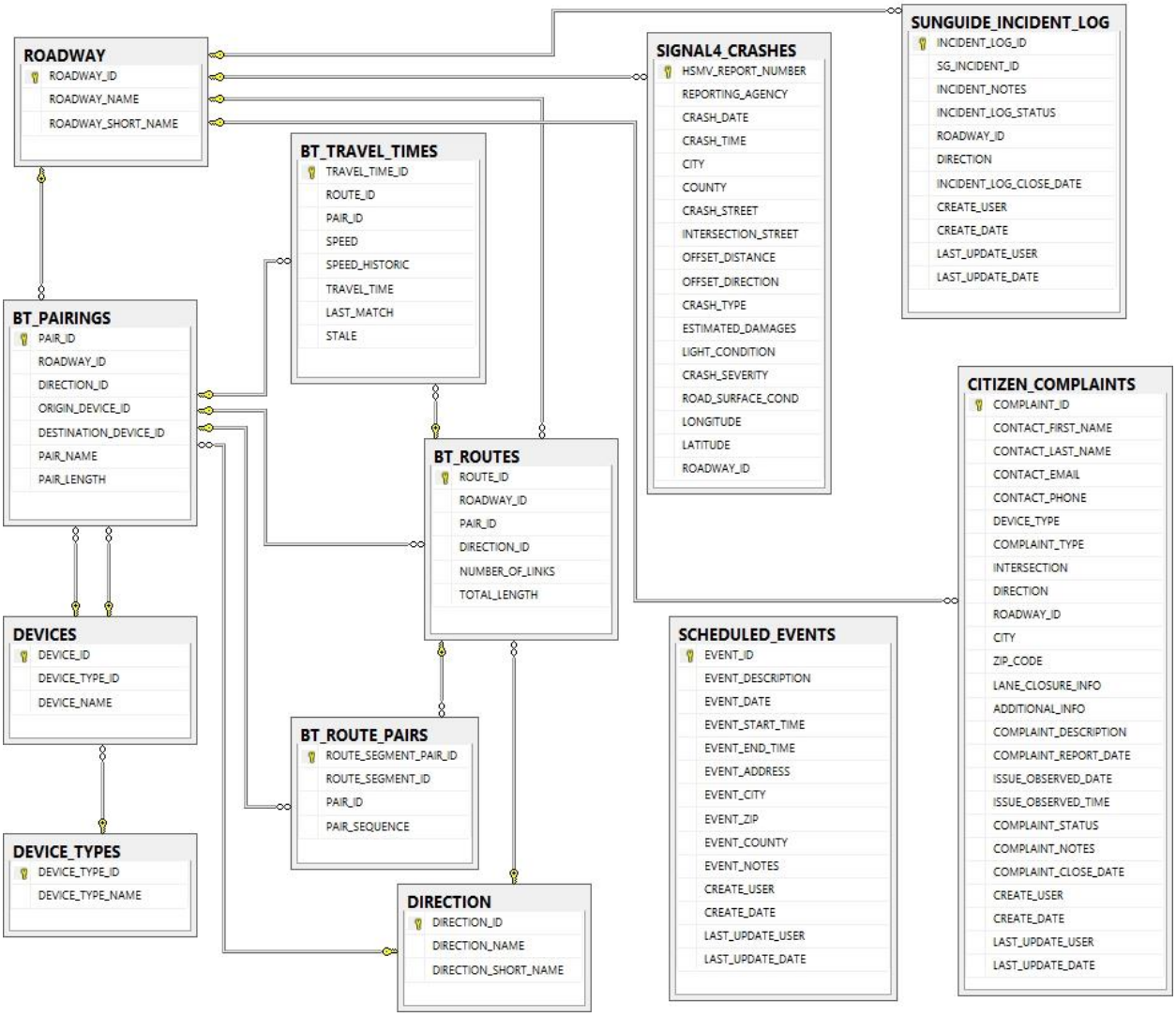


Figure 1 – Conceptual Data Model (Work in Progress)

Note that the Conceptual Data Model could be revised as more information and/or data sources become available.

4.1 Table Names and Descriptions

Specify the table names and descriptions identified in the graphical conceptual data model.

⇒ Would be defined during detailed design

4.2 Integrity Constraints

Specify the major integrity constraint requirements based on the conceptual data model.

⇒ Would be defined during detailed design

Section 5 Reporting Requirements

Describe the reporting requirements needed by the application. For each report identified, specify the purpose of the report, frequency, who shall receive the report, sorting requirements and/or notifications to be sent. Include end-user reporting needs in this section.

Users shall be provided up to 6 pre-configured reports of the Travel Time and Speed data collected in the AAM database. The report formats, frequency and content will be developed in collaboration with FDOT staff during the AAMD implementation solution.

Section 6 References

Provide a list of all documents and other sources of information referenced in this document and utilized in its development. Include for each the document number, title, date, and responsible office/author.

Document No.	Document Title	Date	Author

Section 7 Glossary

Define of all terms and acronyms required to properly interpret the requirements contained within this document.

List of Acronyms	
AAM	Active Arterial Management
ACTS	Adaptive Traffic Control System
ADMS	Arterial Dynamic Message Sign
ATE	Active Traffic Event
ATMS	Advanced Traffic Management System
AVDS	AVI Readers / SunPass
AVI	Automatic Vehicle Identification
AVL	Automatic Vehicle Location
BVDS	Bluetooth vehicle detection system (BlueToad etc.)
C2C	Center-to-Center
CARS	Crash Records/Accident Reports
CCTV	Closed Circuit Television
CFX	Central Florida Expressway Authority
CVS	Connected Vehicle Subsystem
DA	Data Archiving
DD	Data Distribution
DFS	Data Fusion System
DMS	Dynamic Message Sign
DOT	Department of Transportation
EG	Evacuation Guidance
EH	Executive Handler

EM	Event Management
EM/PM	Event Management / Performance Measures
ESS	Environmental Sensor Stations
EV	Event Viewer
FDLE	Florida Department of Law Enforcement
FDOT	Florida Department of Transportation
FEAT	Feature Requirement
FHP	Florida Highway Patrol
FLATIS	Florida Advanced Traffic Information System
FMP	Freeway Management Program
FTE	Florida's Turnpike Enterprise
HAR	Highway Advisory Radio
IDS	Incident Detection System
ILVDS	Induction Loops
IM	Incident Management
IMS	Inventory Maintenance System
ITMS	Interim Traffic Management System
ITN	Invitation to Negotiate
ITS	Intelligent Transportation System
IVEDDS	Interagency Video and Event Data Distribution System
KPI	Key Performance Indicators
LLC	Limited Liability Company
LPR	License Plate Reader
MAS	Message Arbitration System
MIMS	Maintenance and Inventory Management System
MIMS	Maintenance Information Management System
MOU	Memorandum of Understanding
MUTCD	Manual on Uniform Traffic Control Devices
MVDS	Microwave Vehicle Detection System
NMS	Network Management System
OCSO	Orange County Sheriff's Office
ODS	Operational Data Store
PDF	Portable Document Format
PS	Pricing System
PSEE	Project Suite Enterprise Edition
RISC	Rapid Incident Scene Clearance
RMF	Ramp Metering Firmware
RMS	Ramp Metering System
RMTC	Regional Traffic Management Center
RPG	Response Plan Generator
RR	Road Ranger
RS	Reporting System
RSE	Roadside Equipment
RTMC	Regional Traffic Management Center
RWIS	Road Weather Information System
SB	Safety Barrier
SIRV	Severe Incident Response Vehicle
SOG	Standard Operating Guidelines

SPARR	Smart Phone Application for Road Rangers
SPAT	Signal Phasing and Timing – Purdue Software
SRS	Software Requirements Specification
SUB	Subsystem Requirement
SwRI	Southwest Research Institute
TDPA	Traffic Data Processing and Aggregation
TIM	Traffic Incident Management
TMC	Traffic Management Center
TSM&O	Transportation Systems Management and Operations
TSS	Transportation Sensor System
TTS	Travel Time System
TV	Toll Viewer
TVT	Travel Times
VSL	Variable Speed Limit
XML	Extensible Markup Language

Section 8 Document Revision History

Identify revisions to the document starting with initial creation. This section shall be updated when a signature from the principals is required (i.e. initial creation, change request, new mandated change, etc.)

Version	Date	Name	Description
0.1	6/1 -6/2 2016 **QA/QC**	AAM Team	Initial Draft
0.15	6/6/2016	AAM Team	QA/QC
0.2	06/23/2016	AAM Team	Draft
0.3	06/28/2016	AAM Team	Final Draft
0.4	09/30/16	AAM Team	Revised Final Draft

Section 9 Appendices

Include any relevant appendices.

⇒**NONE**

Project Delivery Methodology (PDM)

Attachment B

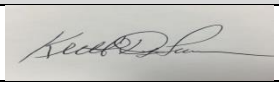
System Requirements

FDOT District 5

AAM Dashboard

VERSION: 1.0 REVISION DATE: 09/30/2016

Approval of the System Requirements indicates an understanding of the purpose and content described in this deliverable. By signing this deliverable, each individual agrees with the content contained in this deliverable.

Version	Approver Name	Title	Signature	Date
0.1	Keith B. DeLuca	Senior Project Manager		6/2-6/3/2016 Initial Draft
0.1	Steve Mikesell	AAM Project Manager		6/6/2016 QA/QC
0.2	Jess Baker	AAM Senior Technical Advisor		6/23/2016 Final Draft
0.3	Keith B. DeLuca	Senior Project Manager		06/28/2016 Final Draft Revision
1.0	Steve Mikesell	AAM Project Manager		09/30/16 Final Draft Revision

Contents

Section 1 Purpose

The purpose of the System Requirements document is to specify the overall system requirements that will govern the development and implementation of the Active Arterial Management Dashboard (AAMD) for phase 1 of this project. The document will also establish security, training, capacity and system architecture requirements for phase 1, as well as, system acceptance criteria agreed upon by the project sponsor and key stakeholders.

This document lists the information compiled from the AAM stakeholders meetings. It is important to note that there are two sets of priorities utilized in designating the information presented in this document.

- Priority 1: These items represent the “must have” components/data elements as identified by the stakeholders. These items will be targeted for implementation in the first version of the dashboard.
- Priority 2: These items represent the components/data elements identified as “lower priority” by the stakeholders. Most of the data elements in this category are not readily available, and will be incorporated into the AAMD solution in later versions.

The goal is to bridge multiple technologies and software applications into one self-service usable platform to effectively and efficiently manage the AAM program and provide the ability for future expansion.

Section 2 General System Requirements

The Active Arterial Management Dashboard (AAMD) is to be designed as a web-based application, to support the AAM project activities and serve as an information delivery portal to the designated stakeholders. The Active Arterial Management Dashboard shall consist of the following modules. Each module is briefly described below.

**See Figure 1 on the following page*

Figure 1 – AAMD Modules (Phase 1)

AAMD Common Core Components: These components support the overall functions of the application and are part of the core application. The modules included in common core are:

- Priority 1
  - Application Administration
  - Access Control and Security
  - Audit, Logging and Exception Handling

        - Configuration
        - Dashboards Administration
    - Priority 2
        - Alerts & Notifications

AAMD Phase 1 Modules:

- **Interface Management:** This module supports the integration needs with the designated data sources for the AAM Dashboard. The following components are included in this module.
    - Data Mapping: This component facilitates mapping of various source data into the AAM Dashboard data model. The following are some of the data sources identified by the stakeholders during the requirements meetings.
    - Priority 1:
        - BlueToad
        - BlueMac
        - Signal 4
        - SunGuide
    - Priority 2:
        - WAZE
        - HERE
        - ATMS
        - MVDS
        - INRIX
        - BlinkLink
        - MOMS
        - NMS
        - Vanguard
        - CCTV
        - Other FDOT databases as determined by FDOT staff
        - Traffic Counts
        - MIMS

- **Data Management:** The following data elements are targeted for tracking and reporting in the AAM Dashboard.
    - Priority 1:
        - Travel Time
        - Travel Speed
        - Safety
        - Citizen Complaints/Compliments
        - AAM Program Summary
        - AAM Program Benefits
        - Scheduled Events
        - Emergency Contact Information
    - Priority 2:
        - Traffic Volumes
        - Traffic Congestion
        - Travel Time Reliability
        - Signal Assets
        - Incidents

- Device Uptime
- Asset Growth Trends
- Preemption Logs
- Signal Timing Changes
- Wrong Way Driving Alerts
- Dynamic Message Sign Message Verification
- Emergency Contact Information
- Lane Occupancy
- Vehicle Classification
- CV/AV Lane Usage
- Scheduled Events
- CV/AV V2I Reporting
- CCTV Feeds

- **Dashboards:** Dashboards shall be utilized to deliver user group-specific information along with the applicable security protocols for the user groups. The following groups are targeted for the AAM Dashboard:

    - Operators – These users are responsible for monitoring the AAM system and capturing/logging the information into the AAMD.

    - Corridor Managers - Responsible for the management of the AAM traffic operations activities within the designated corridors

    - Public users – General public

    - AAMD System Admin – Responsible for the maintenance and upkeep of the IT infrastructure for the AAM dashboard

    - AAMD Administrator – Responsible for the management of the AAMD system, performing updates to lists and granting/revoking user privileges.

Note: *The content for AAM Operators and Corridor Managers Dashboards will be the same in Phase 1. These dashboards will evolve in their content as more connections to data sources are established and included in the AAMD system.*

- **(GIS) Map Module**
    - The map module shall provide the ability, if determined by user role, to view Average Travel Time, Average Speed and Activity Log items (Complaints/Compliments) on a map for a selected date and time. The system shall provide the ability to select routes which the user will have the capability to manage through layers.
- **Reports**
    - This module shall provide up to 6 pre-configured reports of the Travel Time and Travel Speed data collected in the AAM database. The report formats and content will be developed in collaboration with FDOT staff during the AAMD implementation solution.
    - Data filters shall be available on select fields including Date/Time ranges and Routes

- **Safety**
    - This module shall display searchable crash data derived from the Signal 4 Crash Report in a table. The data will be updated once a month by an AAMD Administrator.

- **Scheduled Events**

  - This module shall provide operators the ability to track upcoming events in a calendar format that could have an impact on traffic flow.

- **Activity Log**
  - This module will allow the operators to track customer complaints and compliments.

- **Help**
  - Provides users access to help documentation on the use of the AAMD

- **Administration**
  - The administration module shall provide the system administrator the capability to manage user access to the AAMD including the assignment of roles and permissions associated with assigned roles.

The general system requirements are listed below:

- AAMD shall be accessed from the FDOT District 5 Intranet
- The Executive and Public dashboards will be accessible to the public
- The other components of the AAMD will only be accessible to authorized D5 users
- AAMD shall use the user's Active Directory login information to achieve Single Sign-on (SSO) and provide users with a login web form when SSO is not available
- The AAMD administrator or AAMD system administrator shall manage user accounts
- AAMD shall provide various levels of access based on operational roles and permissions granted to each role
- AAMD shall be available to users 24/7 except during scheduled system maintenance
- AAMD system maintenance shall be performed during the hours of 6PM to 6AM and users shall be notified prior to maintenance event
- The target load time for a page is 3 seconds, but might vary depending on the page's elements and their load size, where loading large amounts of data can take up to 10 seconds
- AAMD shall be compatible with Internet Explorer 11 or above/Edge and Chrome 49
- The Public/Elected Officials Dashboard shall be accessible using Internet Explorer 11 or above/Edge, Chrome 49 and Firefox 47
- AAMD shall be designed and built with fault tolerance, high availability, and disaster recovery features to maintain maximum uptime. Hardware utilization and uptime shall also be monitored to ensure continual service.
- AAMD servers, databases, and related artifacts shall have adequate backup
- AAMD shall be designed to be relevant for the audience to which it's intended. Its content will be scalable for future expansion and growth
- The AAMD is an operational dashboard with frequently changing data. The key performance indicators (KPI's), shall be refreshed at rates that can be supported by the host infrastructure (Hardware, Software, Network)

2.1 Major System Capabilities

Specify the major system capabilities in terms of availability, target deployment environment(s), device accessibility, and/or technical capability.
For example:

- The system must be available on the Internet using the browsers listed in previous section

- The system will be developed as a web application that is viewable on mobile devices
- This system **will not** be developed as a mobile application in the first phase of development
- The system must be available 24 hours per day, except during scheduled system maintenance downtime

The major system capabilities are listed below:

- The system must be web based
- The system must be available within D5 environment
- AAMD Common Core Components
    - Dashboard
        - The system must have the capability to provide data snapshots within the dashboards
        - The dashboards shall list the latest data with status for its last updated time
        - The dashboards shall be filterable by the user, using the criteria finalized during design stage
        - The dashboards shall have filterable criteria such as route, date range and time.
    - Administration
        - The system must have capability to manage users, roles, lookup values
        - The system must have capability to manage application access by user roles
    - Map Module
        - The system shall have the capability to search
        - The system shall have the capability to change basemaps (i.e. Earth or Street View)
        - The system shall have the capability to filter data based on different timeframe
        - The system shall have the capability to filter view based on selectable criteria

2.2 Major System Conditions

- The system shall use FDOT GIS Enterprise View (GEV) Framework for GIS if approved by FDOT
- The system shall use a local repository stored on the D5 IT infrastructure for storing dashboard data

2.3 System Interfaces

Describe the dependency and relationship requirements of the system to other enterprise/external systems. Include any interface to a future system or one under development. For clarity, a graphical representation of the interfaces should be used when appropriate.

The system shall have the capability to interface with the data sources identified as Priority 1. The system should have the capability to interface with the other Priority 2 systems in future versions of the AAM dashboard.

Priority 1:

- BlueToad
- BlueMac
- Signal 4
- SunGuide

Priority 2:

- WAZE
- HERE
- ATMS
- MVDS
- INRIX
- BlinkLink
- MOMS
- NMS
- Vanguard
- CCTV
- Other FDOT databases as determined by FDOT staff
- MIMS
- Traffic Counts

2.4 System User Characteristics

Identify each type of user of the system by function, location, and type of device. Specify the number of users in each group and the nature of their use of the system.

User	Module	Access	Location	# Users
AAM System Administrator	All Modules	Full		
AAM Operators	All Modules except Administration	Full		
AAM Corridor Managers	All Modules except Lookup in Administration	Full		
AAMD Administrator	All Modules	Full		
Public	TBD by Administration	Read		

Section 3 Policy and Regulation Requirements

Specify relevant applicable laws, regulations, policies, and standards that will affect the operation and performance of the system, as well as any relevant external regulatory requirements, or constraints imposed by normal business practices.

3.1 Policy Requirements

- All end users of the system other than Public and Elected Officials shall comply with all applicable FDOT security requirements and policies prior to being granted access to the AAMD solution

3.2 Regulation Requirements

- Applicable requirements shall be identified by FDOT prior to development

Section 4 Security Requirements.

- AAMD shall use Active Directory for SSO authentication to Intranet
- AAMD shall use system based security roles for authorization to system modules and core components
- Application shall be configured with a Secure Socket Layer (SSL) protocol
- Modules published to external users, such as Executive dashboards, shall be integrated and made available through FDOT District 5's public-facing Internet website without password requirements

Section 5 Training Requirements

- Online Help Manual would be provided
- One time training would be given to the FDOT users during production rollout
- There shall be separate training sessions for system administrators, operators and corridor managers in a classroom setting and/or using web meeting capabilities

Section 6 Initial Capacity Requirements

Specify the initial capacity requirements for the system. An initial estimation can be established using current data amounts, planned number of users, and estimated number of transactions.

a. *Identifies the highest and lowest estimated number of transactions and processing frequency expected usage (including any seasonal peaks) for capacity planning for storage and memory requirements for the application or project. Identifies the highest and lowest estimated number of transactions and processing frequency expected usage (including any seasonal peaks) for capacity planning for storage and memory requirements for the application or project.*

    - The system would be designed in a scalable manner. Initial design recommendations for the infrastructure would be to support a load of 50 concurrent users.

Section 7 Initial System Architecture

a. *Specify the data platform, hardware, software, programming languages, tools and operating system requirements for the application or project.*
b. *Identify any specialized hardware requirements that must be purchased or upgraded prior to development, or in support of the implementation, of the application or project.*
c. *Identify any specialized software requirements that must be purchased or upgraded prior to development, or in support of the implementation, of the application or project.*

d. *Identify any programming languages and tools selected for the development of the application or project.*
e. *Identify any network/operating system or combination of network/operating systems that will be used for the development of the application of project.*

Hardware Details:

- FDOT is currently working on updating its IT Infrastructure including servers, network and power. It is our assumption that these infrastructure enhancements will be sufficient to support the AAMD system.
- If any infrastructure deficiencies are identified during the production deployment of the planned AAMD solution, the FDOT project manager will be notified proactively.

Hardware specifications will be refined as the application development process progresses and additional information becomes available.

Environments:

- Production environment: FDOT D5 IT Infrastructure
- Test environment: FDOT D5 IT Infrastructure
- Development environment: Consultant's IT Infrastructure
- The specific hardware configurations for webserver, database server and AAM operator desktops will be determined in collaboration with D5 IT Staff to be in compliance with applicable FDOT IT Standards.

Software Planned System Specifications:

- Production environment
  - Application - Server - Windows 2012 / IIS 8.0
  - Database - Server – SQL Server 2012/2014
- Testing environment
  - Application - Server - Windows 2012 / IIS 8.0
  - Database - Server – SQL Server 2012/2014
- Application development platform: .NET 4.5, ArcGIS API for .NET
- Security Model: IIS/Windows web security model
- ArcGIS Server 10.3 Advanced
- ArcSDE 10.3

The system build progression will be from Consultant Development Environment to D5 Development Environment to D5 Production Environment.

Section 8 System Acceptance Criteria

Specify the general system acceptance criteria specified and agreed upon by the project sponsor and key stakeholders that will be used to accept the final end product. For example:

- New system must successfully interface with existing applications for transferring of applicable data.
- Data storage capacity must be designed to accommodate 7 years of data.
- Requirements documentation must be signed-off by FDOT.
- Application mockups/wireframes must be signed-off by FDOT.
- Test Cases and User acceptance testing must be signed-off by FDOT.
- Successful initial data migration and setup

Section 9 Current System Analysis

If a current system exists, perform analysis on the system and describe how the current system is used by the business. Specify data conversion requirements, relevant data flows, system interfaces to existing systems, reporting capability, etc.

- SunGuide is an advanced traffic management system (ATMS) software that allows FDOT to control and monitor roadside equipment and vehicle resources to facilitate traffic and incident management, disseminate traveler information to the motoring public, exchange critical information among agencies and collect and report data regarding the operation of Florida's transportation system. Allows TMC operators to monitor roadside sensors and closed-circuit television cameras to quickly and effectively detect, verify, respond to, and clear incidents
- Provides real-time traffic information to the FL511 phone system and website at www.fl511.com
- Standardizes data exchange between TMCs
- Automates interface with the Florida Highway Patrol's computer-aided dispatch system to receive incident information
- Communicates with Road Ranger Safety Service Patrol field computers
- Supports law enforcement with dissemination of AMBER (America's Missing: Broadcast Emergency Response), SILVER, and Florida's LEO (Law Enforcement Officer) alerts via dynamic message signs and FL511
- Communicates with connected vehicle roadside infrastructure (V2I) to receive traffic information and disseminate traffic advisory messages

Section 10 References

Provide a list of all documents and other sources of information referenced in this document and utilized in its development. Include for each the document number, title, date, and responsible office/author.

Document No.	Document Title	Date	Author

Section 11 Glossary

Define of all terms and acronyms required to properly interpret the requirements contained within this document.

List of Acronyms	
AAM	Active Arterial Management
ACTS	Adaptive Traffic Control System
ADMS	Arterial Dynamic Message Sign
ATE	Active Traffic Event
ATMS	Advanced Traffic Management System
AVDS	AVI Readers / SunPass

AVI	Automatic Vehicle Identification
AVL	Automatic Vehicle Location
BVDS	Bluetooth vehicle detection system (BlueToad etc.)
C2C	Center-to-Center
CARS	Crash Records/Accident Reports
CCTV	Closed Circuit Television
CFX	Central Florida Expressway Authority
CVS	Connected Vehicle Subsystem
DA	Data Archiving
DD	Data Distribution
DFS	Data Fusion System
DMS	Dynamic Message Sign
DOT	Department of Transportation
EG	Evacuation Guidance
EH	Executive Handler
EM	Event Management
EM/PM	Event Management / Performance Measures
ESS	Environmental Sensor Stations
EV	Event Viewer
FDLE	Florida Department of Law Enforcement
FDOT	Florida Department of Transportation
FEAT	Feature Requirement
FHP	Florida Highway Patrol
FLATIS	Florida Advanced Traffic Information System
FMP	Freeway Management Program
FTE	Florida's Turnpike Enterprise
GEV	GIS Enterprise View
HAR	Highway Advisory Radio
IDS	Incident Detection System
ILVDS	Induction Loops
IM	Incident Management
IMS	Inventory Maintenance System
ITMS	Interim Traffic Management System
ITN	Invitation to Negotiate
ITS	Intelligent Transportation System
IVEDDS	Interagency Video and Event Data Distribution System
KPI	Key Performance Indicators
LLC	Limited Liability Company
LPR	License Plate Reader
MAS	Message Arbitration System
MIMS	Maintenance and Inventory Management System
MIMS	Maintenance Information Management System
MOU	Memorandum of Understanding
MUTCD	Manual on Uniform Traffic Control Devices
MVDS	Microwave Vehicle Detection System
NMS	Network Management System
OCSO	Orange County Sheriff's Office
ODS	Operational Data Store

PDF	Portable Document Format
PS	Pricing System
PSEE	Project Suite Enterprise Edition
RISC	Rapid Incident Scene Clearance
RMF	Ramp Metering Firmware
RMS	Ramp Metering System
RMTC	Regional Traffic Management Center
RPG	Response Plan Generator
RR	Road Ranger
RS	Reporting System
RSE	Roadside Equipment
RTMC	Regional Traffic Management Center
RWIS	Road Weather Information System
SB	Safety Barrier
SIRV	Severe Incident Response Vehicle
SOG	Standard Operating Guidelines
SPARR	Smart Phone Application for Road Rangers
SPAT	Signal Phasing and Timing – Purdue Software
SRS	Software Requirements Specification
SUB	Subsystem Requirement
SwRI	Southwest Research Institute
TDPA	Traffic Data Processing and Aggregation
TIM	Traffic Incident Management
TMC	Traffic Management Center
TSM&O	Transportation Systems Management and Operations
TSS	Transportation Sensor System
TTS	Travel Time System
TV	Toll Viewer
TVT	Travel Times
V2I	Vehicle To Infrastructure
VSL	Variable Speed Limit
XML	Extensible Markup Language

Section 12 Document Revision History

Identify revisions to the document starting with initial creation. This section should be updated when an approval is required (i.e. initial creation, change request, new mandated change, etc.)

Version	Date	Name	Description
0.1	6/02/16	AAM Project Team	Initial draft
0.1	06/06/16	AAM Project Team	QA/QC
0.2	06/23/16	AAM Project Team	Final draft
0.3	06/28/16	AAM Project Team	Final draft revision
0.4	09/30/16	AAM Project Team	Final draft revision

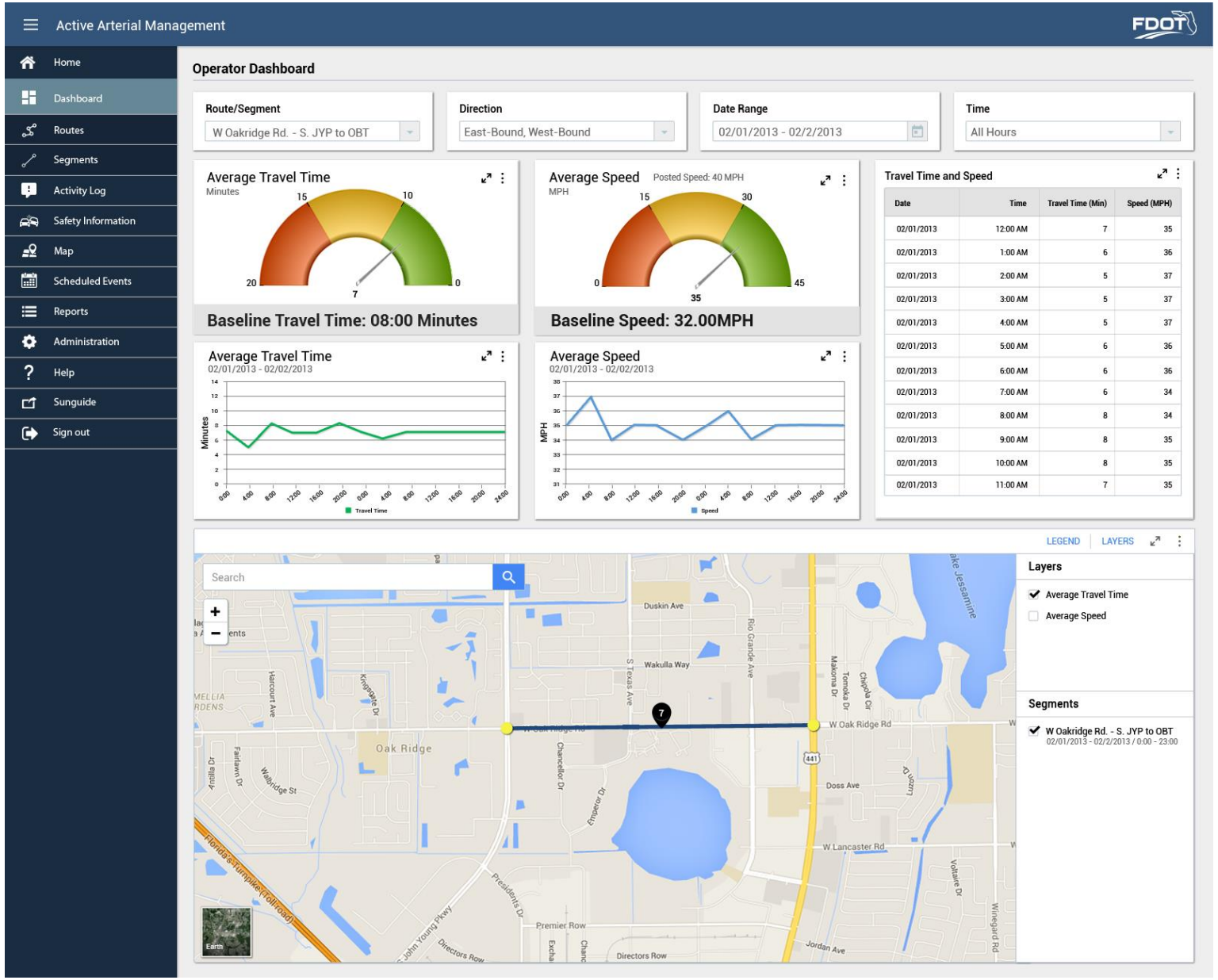
Section 13 Appendices

None.

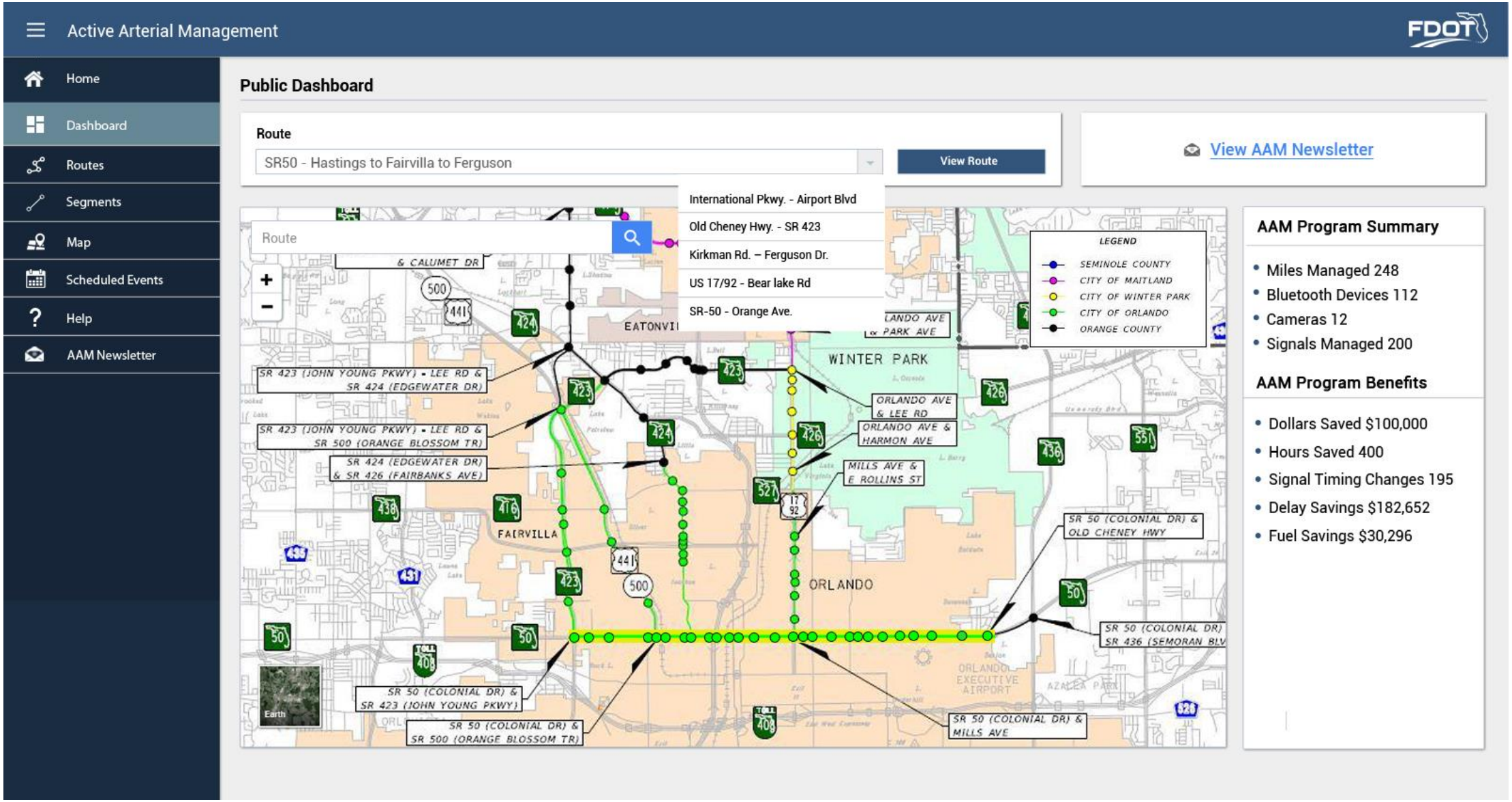
Attachment C

FDOT District 5
AAM Dashboard Mockups

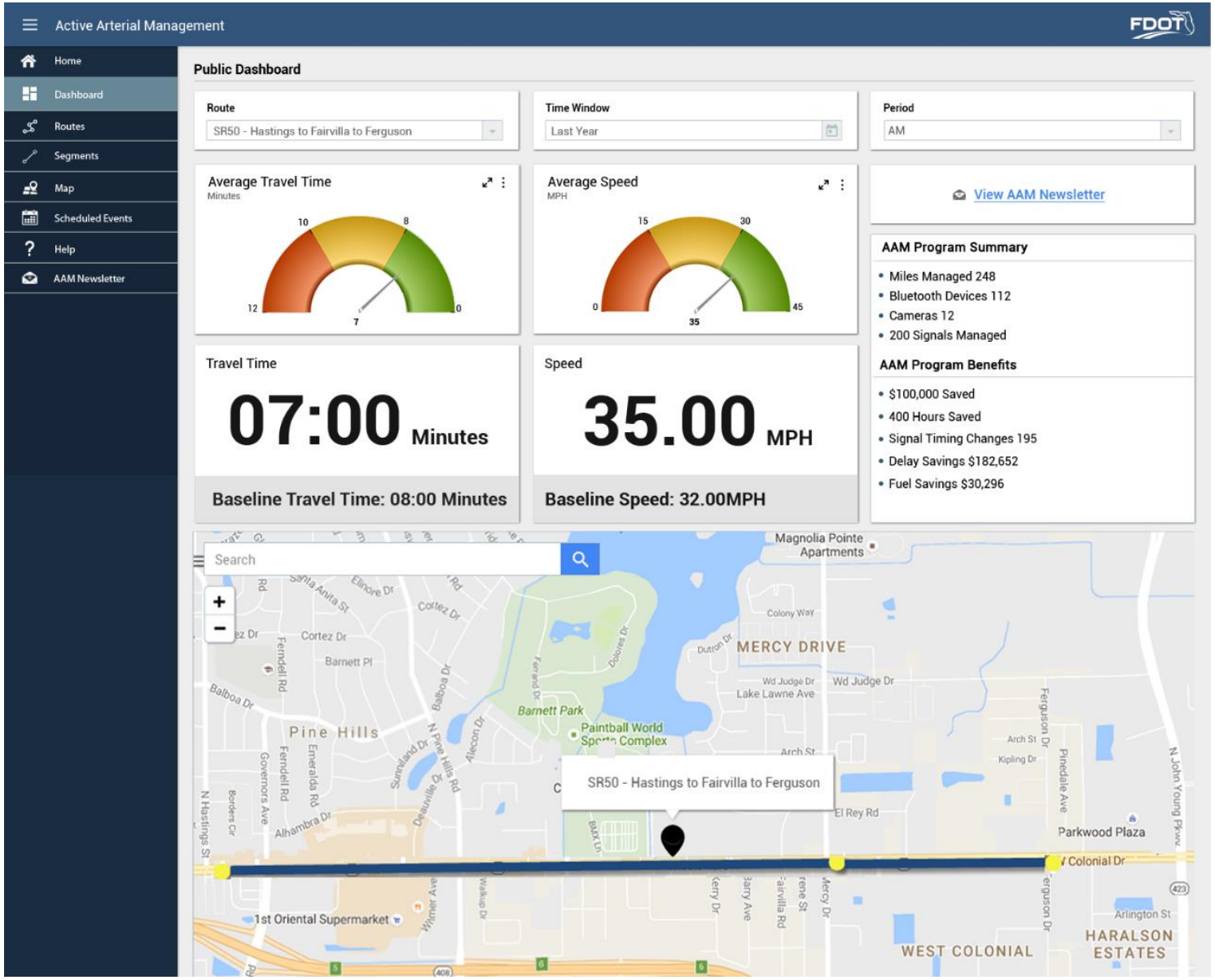
Operator/Manager Dashboard



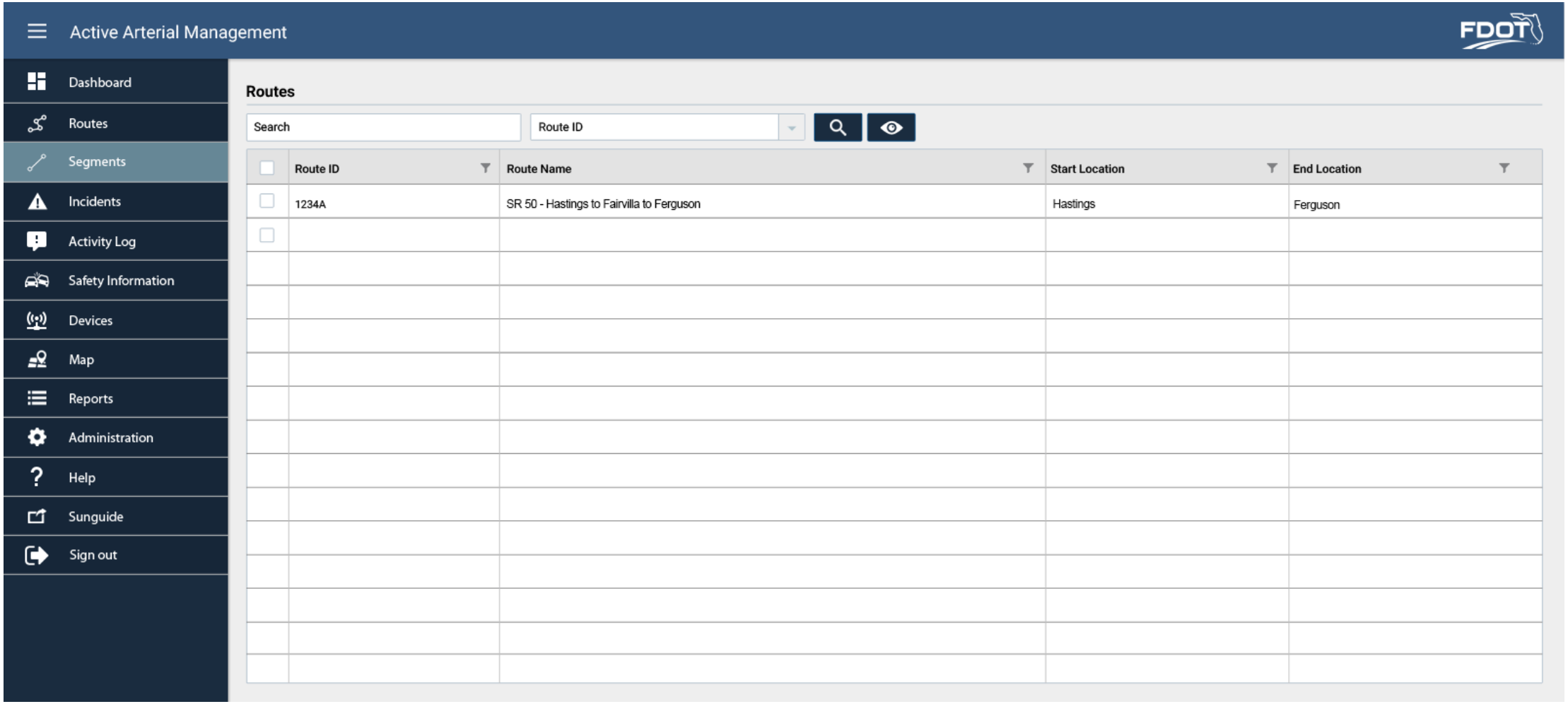
Public Dashboard #1



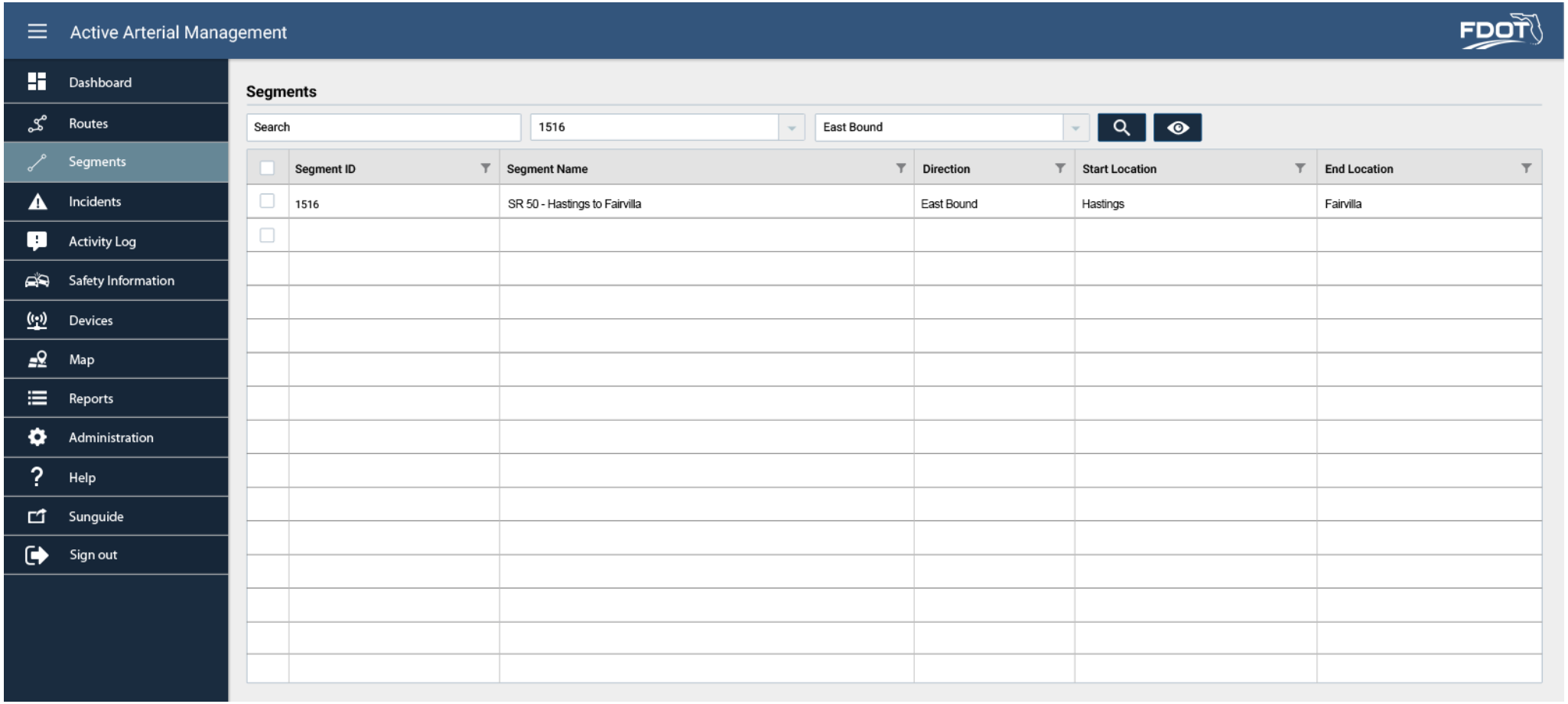
Public Dashboard #2



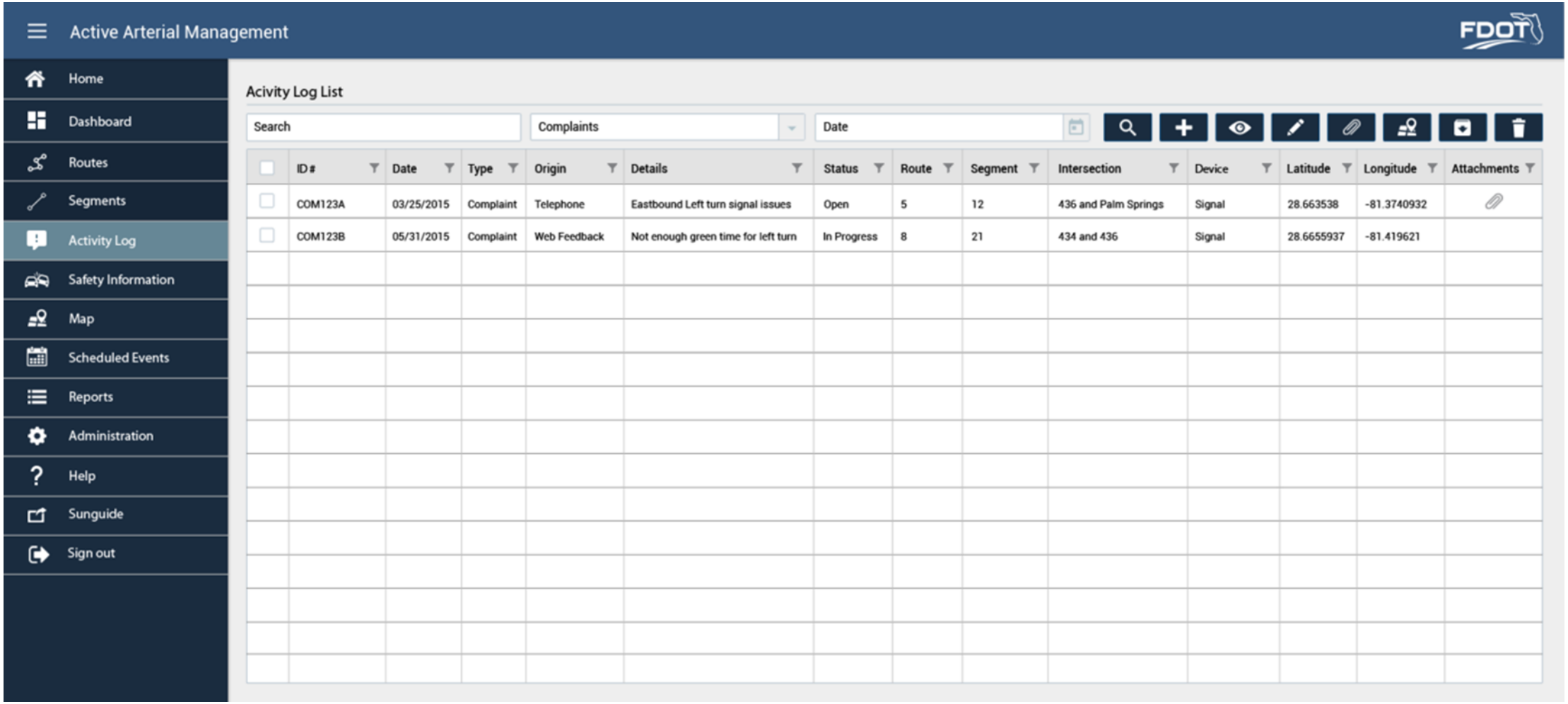
Route List


Active Arterial Management
FDOT
Dashboard
Routes
Segments
Incidents
Activity Log
Safety Information
Devices
Map
Reports
Administration
Help
Sunguide
Sign out
Routes
Search
Route ID
Route ID
Route Name
Start Location
End Location
1234A
SR 50 - Hastings to Fairvilla to Ferguson
Hastings
Ferguson

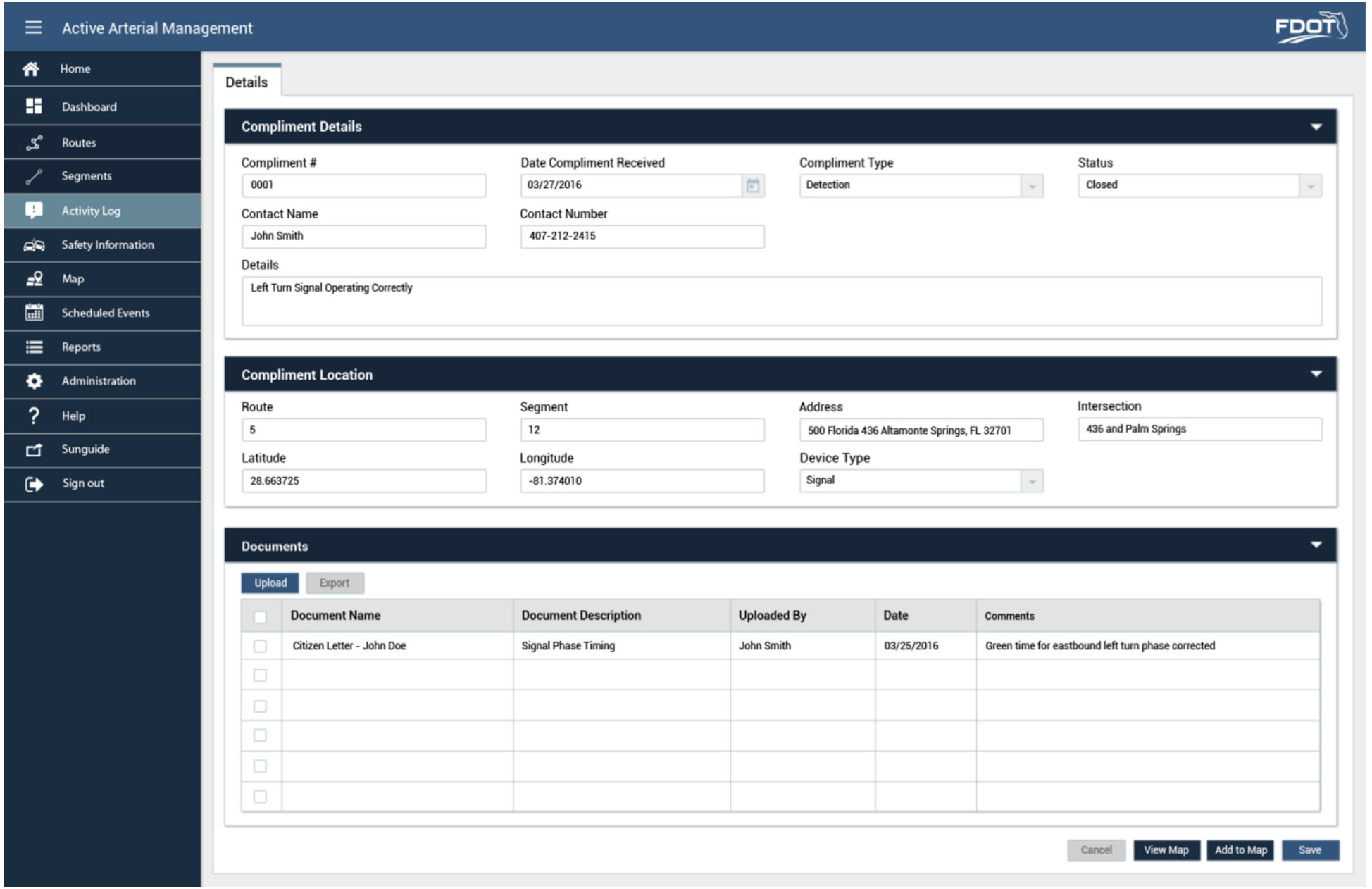
Segment List



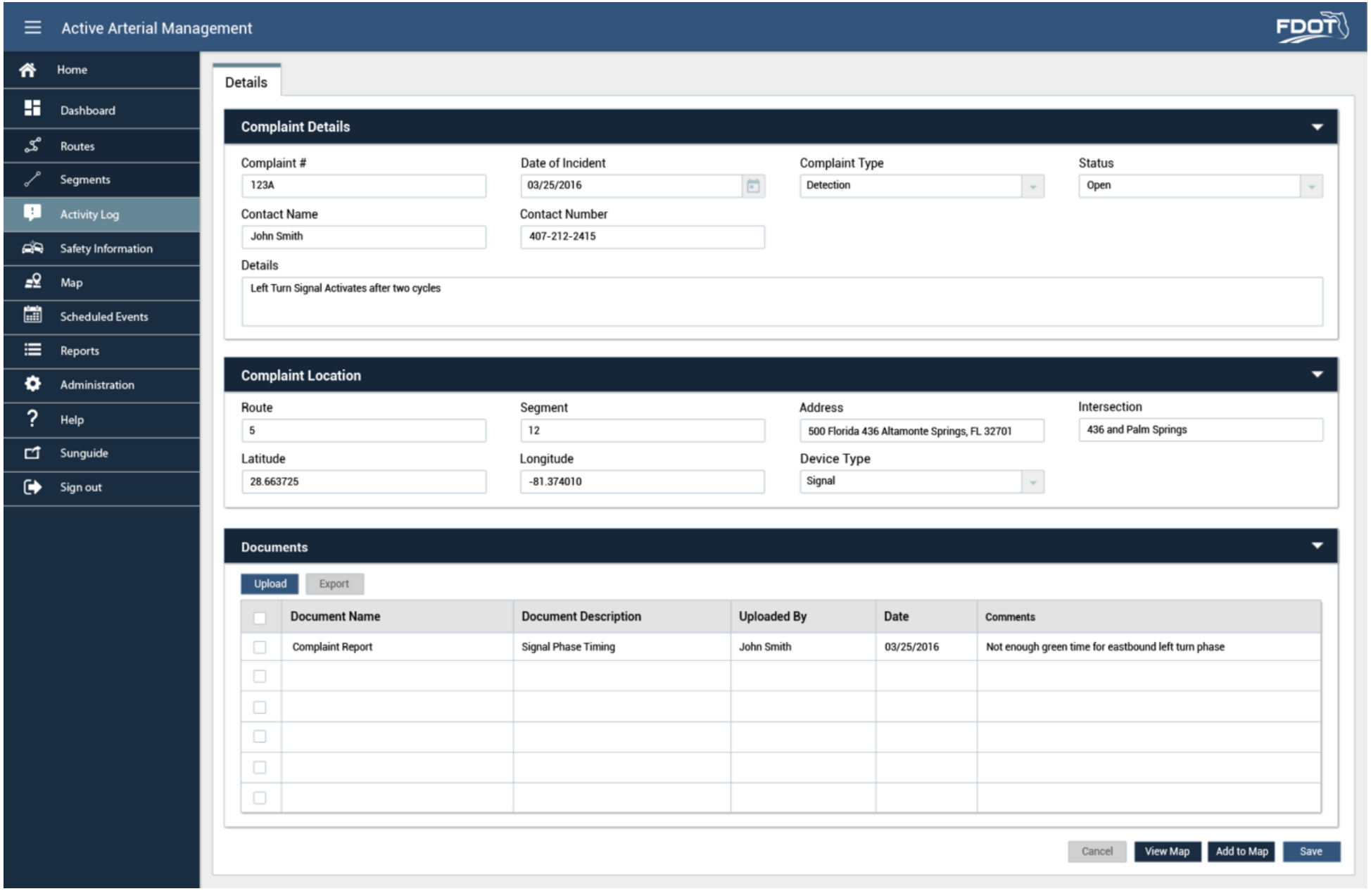
Activity Log List



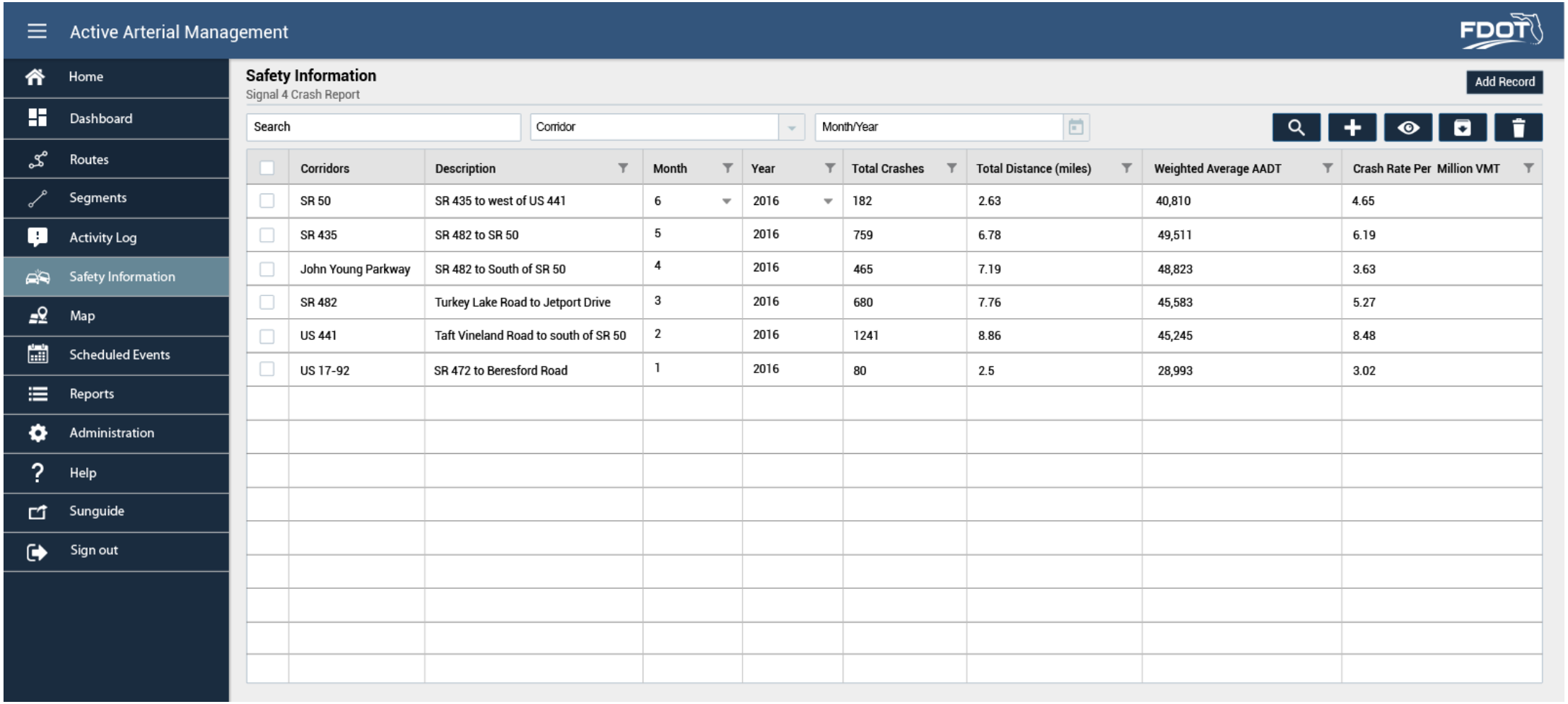
Compliment Details



Complaint Details

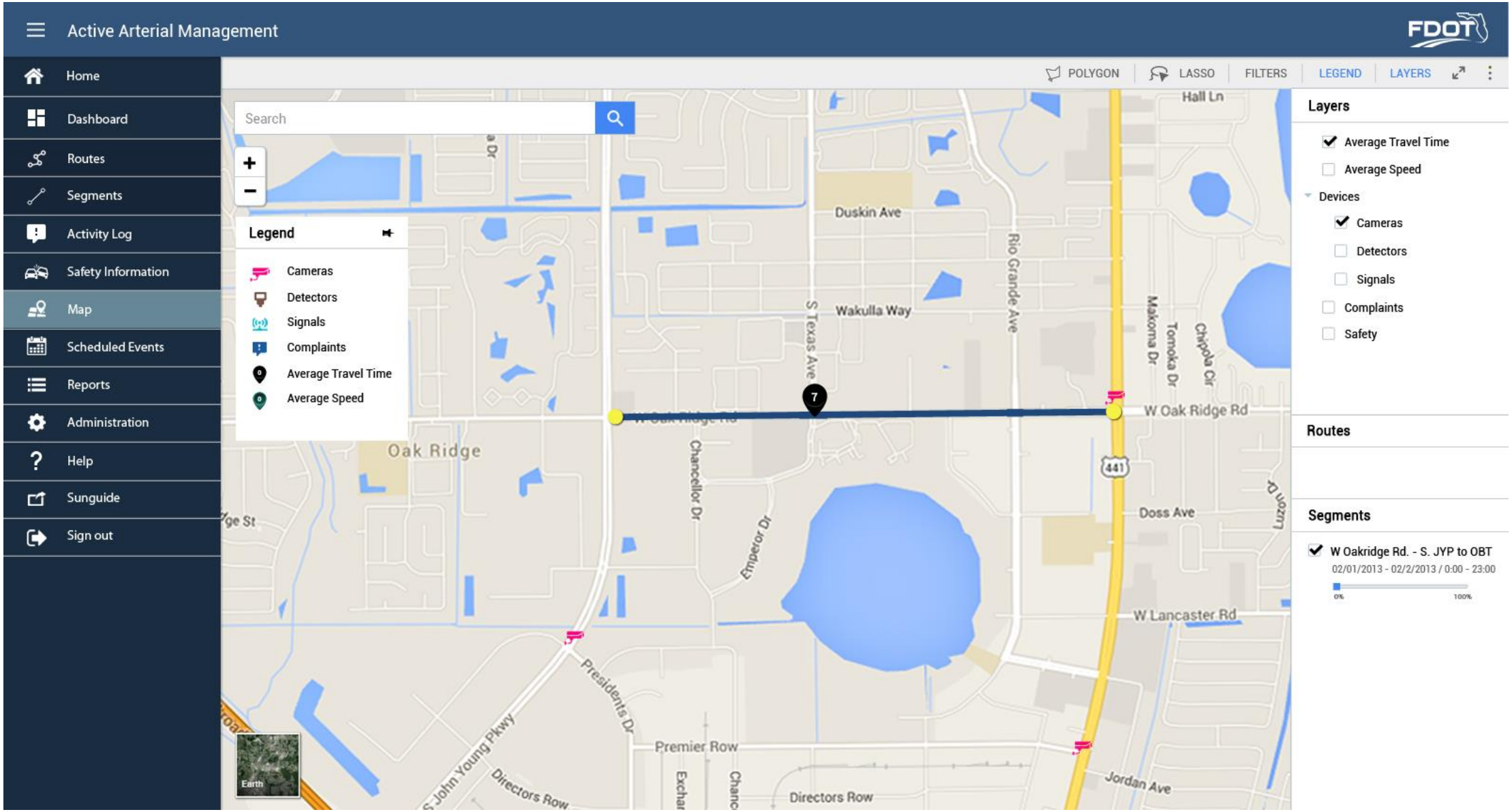


Safety

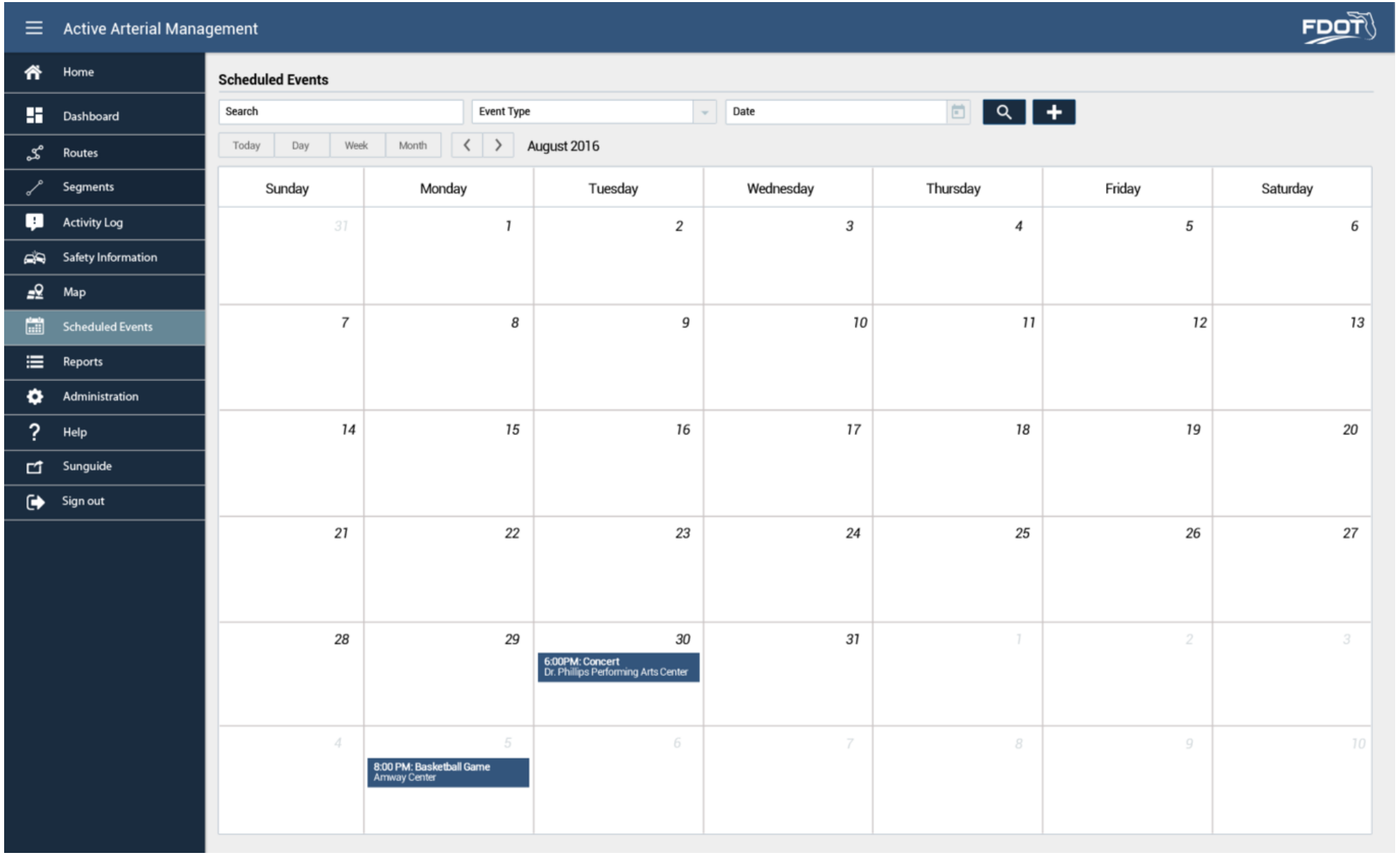


Corridors	Description	Month	Year	Total Crashes	Total Distance (miles)	Weighted Average AADT	Crash Rate Per Million VMT
SR 50	SR 435 to west of US 441	6	2016	182	2.63	40,810	4.65
SR 435	SR 482 to SR 50	5	2016	759	6.78	49,511	6.19
John Young Parkway	SR 482 to South of SR 50	4	2016	465	7.19	48,823	3.63
SR 482	Turkey Lake Road to Jetport Drive	3	2016	680	7.76	45,583	5.27
US 441	Taft Vineland Road to south of SR 50	2	2016	1241	8.86	45,245	8.48
US 17-92	SR 472 to Beresford Road	1	2016	80	2.5	28,993	3.02

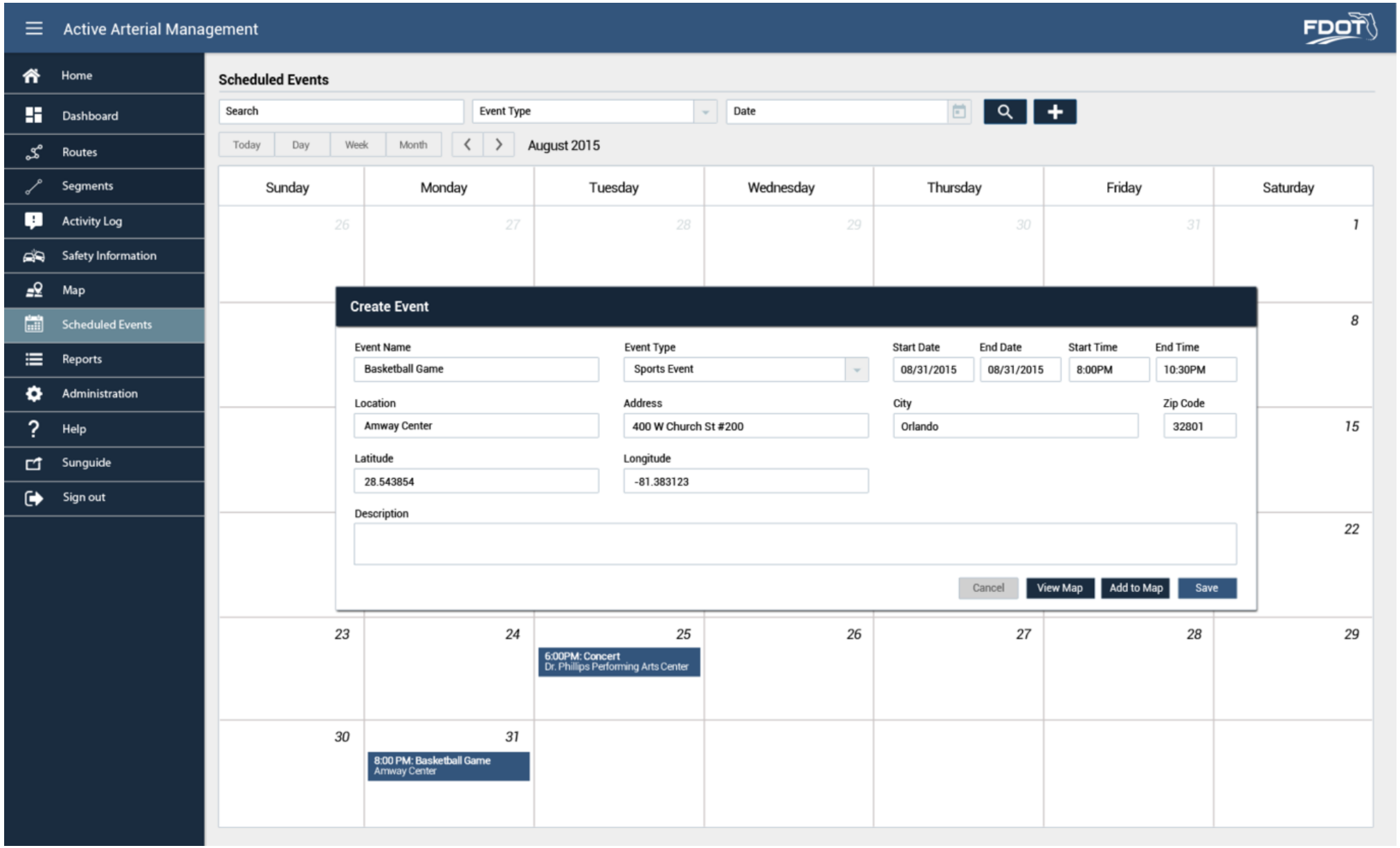
Map


Active Arterial Management
FDOT
Home
Dashboard
Routes
Segments
Activity Log
Safety Information
Map
Scheduled Events
Reports
Administration
Help
Sunguide
Sign out
POLYGON
LASSO
FILTERS
LEGEND
LAYERS
Search
Legend
Cameras
Detectors
Signals
Complaints
Average Travel Time
Average Speed
Duskin Ave
Wakulla Way
S Texas Ave
Rio Grande Ave
Hall Ln
Makoma Dr
Tomoka Dr
Chipola Cir
W Oak Ridge Rd
Oak Ridge
Chancellor Dr
Emperor Dr
441
Doss Ave
W Lancaster Rd
Presidents Dr
Premier Row
Directors Row
Jordan Ave
Earth
Layers
Average Travel Time
Average Speed
Devices
Cameras
Detectors
Signals
Complaints
Safety
Routes
Segments
W Oakridge Rd. - S. JYP to OBT
02/01/2013 - 02/2/2013 / 0:00 - 23:00
0%
100%

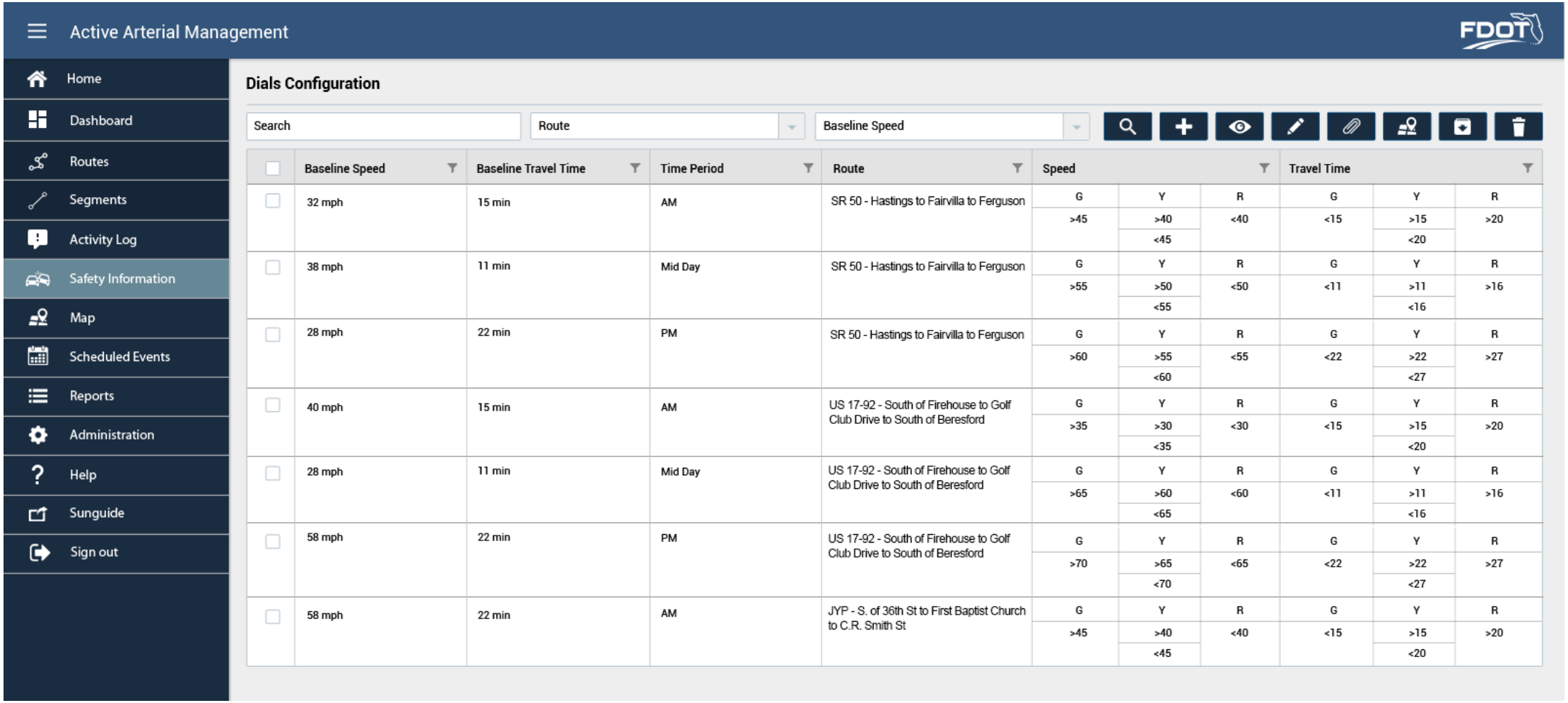
Scheduled Events



Create Scheduled Events

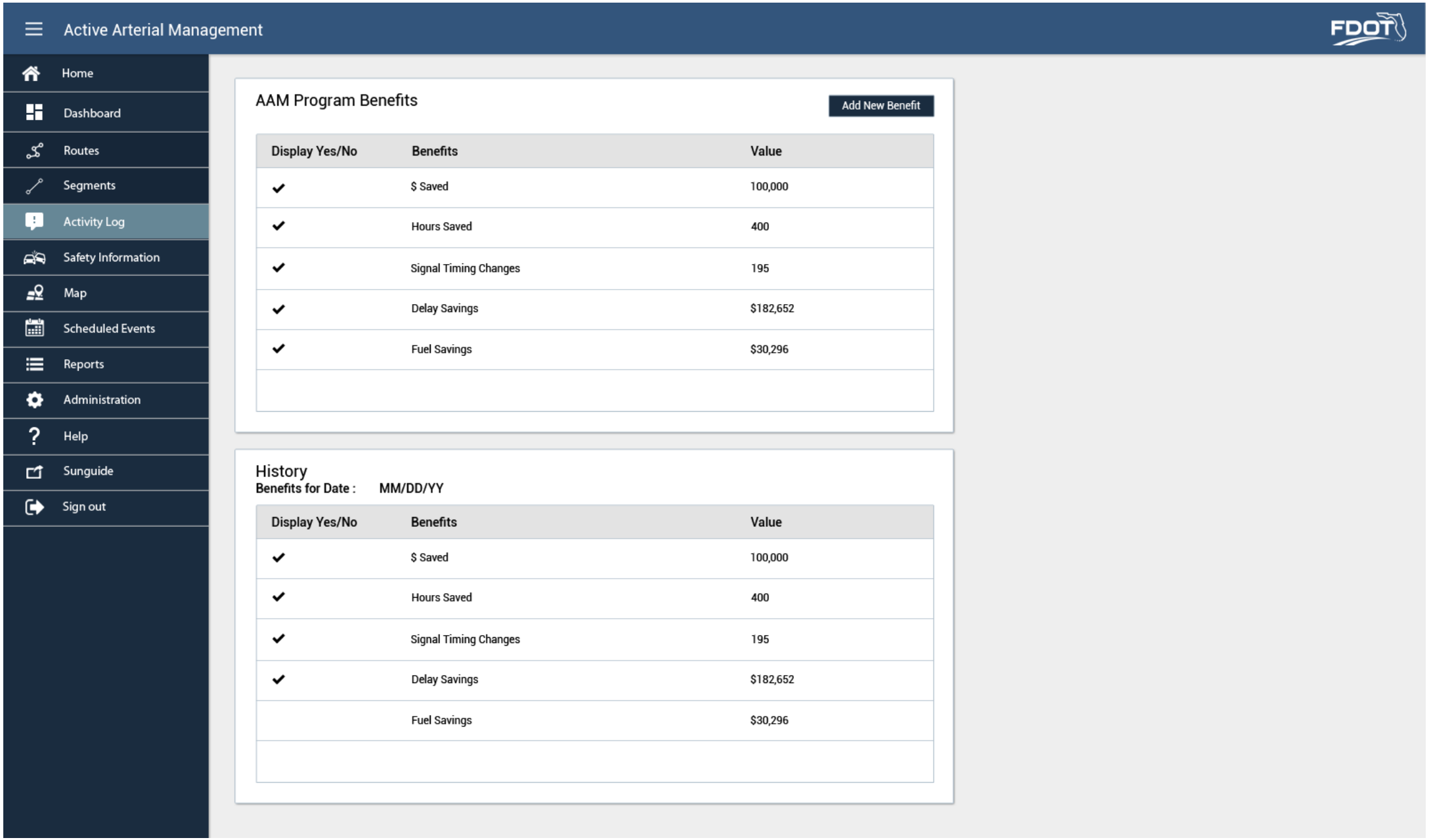


Dials Configuration

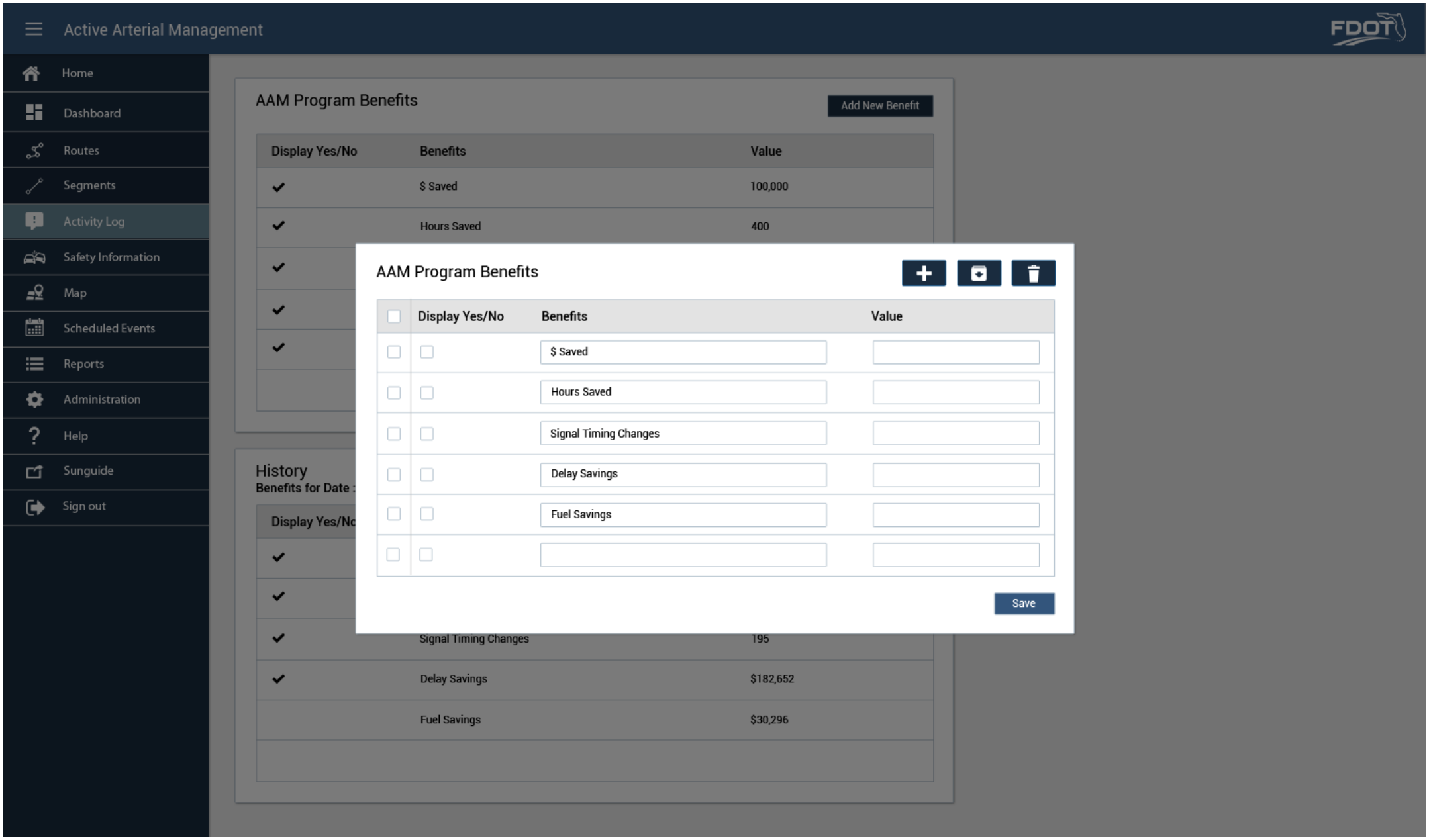


Baseline Speed	Baseline Travel Time	Time Period	Route	Speed			Travel Time		
				G	Y	R	G	Y	R
32 mph	15 min	AM	SR 50 - Hastings to Fairvilla to Ferguson	>45	>40 <45	<40	<15	>15 <20	>20
38 mph	11 min	Mid Day	SR 50 - Hastings to Fairvilla to Ferguson	>55	>50 <55	<50	<11	>11 <16	>16
28 mph	22 min	PM	SR 50 - Hastings to Fairvilla to Ferguson	>60	>55 <60	<55	<22	>22 <27	>27
40 mph	15 min	AM	US 17-92 - South of Firehouse to Golf Club Drive to South of Beresford	>35	>30 <35	<30	<15	>15 <20	>20
28 mph	11 min	Mid Day	US 17-92 - South of Firehouse to Golf Club Drive to South of Beresford	>65	>60 <65	<60	<11	>11 <16	>16
58 mph	22 min	PM	US 17-92 - South of Firehouse to Golf Club Drive to South of Beresford	>70	>65 <70	<65	<22	>22 <27	>27
58 mph	22 min	AM	JYP - S. of 36th St to First Baptist Church to C.R. Smith St	>45	>40 <45	<40	<15	>15 <20	>20

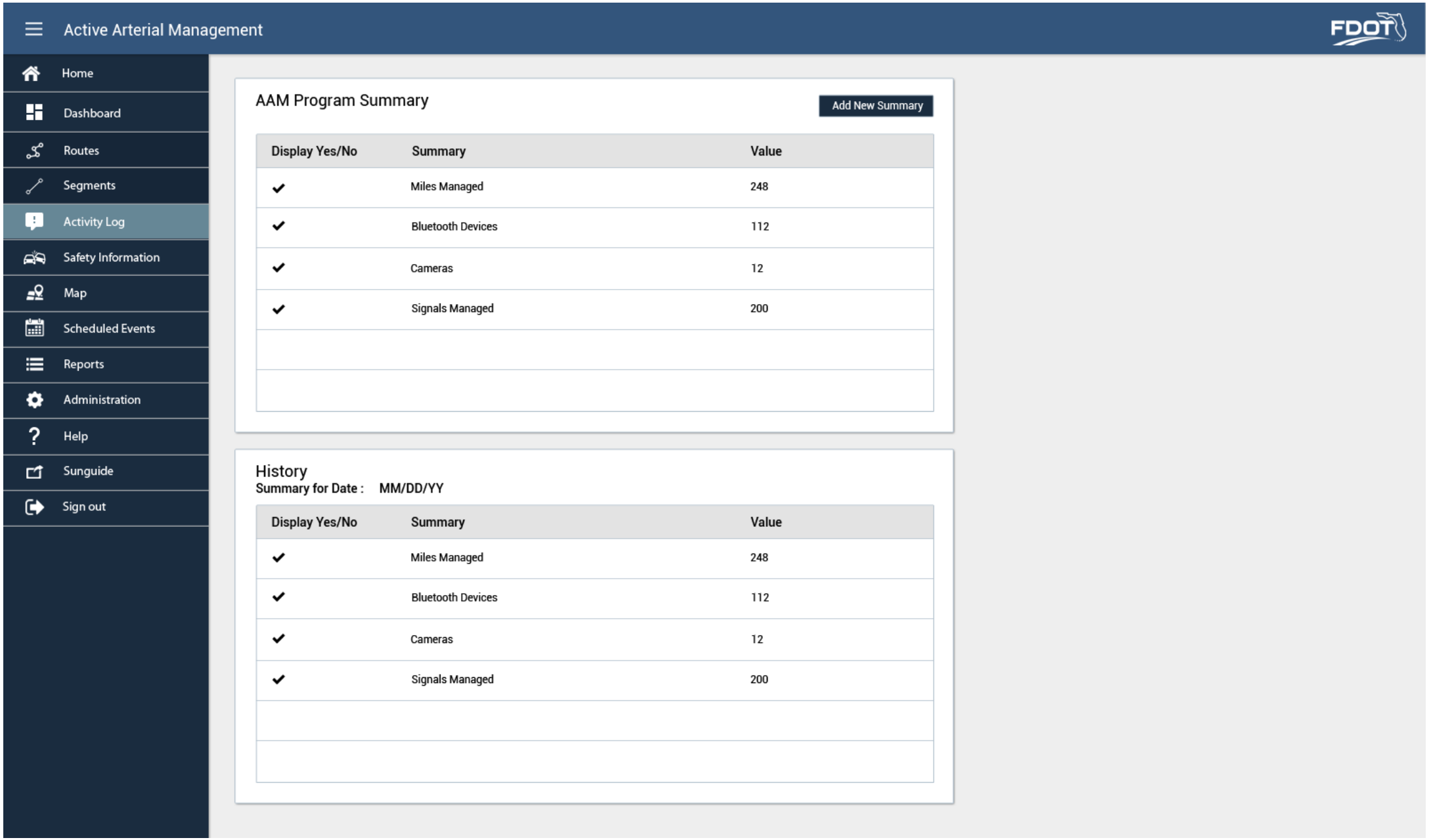
AAM Program Benefits



AAM Program Benefits Configuration



AAM Program Summary



AAM Program Summary Configuration