ITS Facility Management (ITSFM)

Statewide ITSFM Functional Requirements

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1. Purpose

The Florida Department of Transportation (FDOT) uses the ITS Facility Management (ITSFM) to model Intelligent Transportation Systems (ITS) equipment assets and support infrastructure to document installed conditions, manage asset types, and the electrical and communication subsystem configuration and utilization across the statewide ITS system. The ITSFM system's performance requires data populated within the system to be correct, trustworthy, and adequate to meet statewide reporting needs.

This document provides a brief item description and guidance on how the ITSFM will be implemented statewide and the requirements for ITS feature and asset types, feature attribution, and data quality.

2. Introduction

The FDOT State Traffic Engineering and Operations Office designed the ITSFM system to satisfy the long-term ITS asset and configuration management needs of the multi-district, multi-agency transportation systems including ITS, traffic signal systems, toll equipment, and the Florida ITS Operations Network (FION). The ITSFM supports an extensive list of outside plant facilities and equipment used in modern ITS including the related fiber optic and wireless communication network and the supporting electrical components.

This system compiles ITS asset information in a single, web-accessible repository, allowing Districts and the Central Office to collectively manage the entire system in a coordinated manner. FDOT has implemented the ITSFM statewide to take advantage of this tool to gain efficiencies resulting in significant savings and increased system availability and reliability. This document guides implementing the ITSFM system across the state in a manner that is Consistent, Predictable, and Repeatable (CPR).

FDOT encourages its maintenance contractors, regional partners, and maintaining agencies to use the ITSFM to manage FDOT assets.

3. Statewide Database

The ITSFM supports many organizations at multiple levels, from FDOT Central Office managers to District field technicians, from design consultants to installation contractors, in every transportation agency statewide. The ITSFM presents a regional and statewide view by including information from multiple jurisdictions and facility owners. The ITSFM system supports a range of tasks, including planning and designing for system growth and upgrades, inter-agency coordination, resource sharing, emergency operations planning, training, long-term analyses, research on ITS costs and benefits, and lifecycle management.

The ITSFM system compiles asset information in a single database, allowing the Central Office, Districts, and regional partners to collectively manage the entire system in a coordinated manner thereby requiring all transportation agencies to share a single database instance. The ITSFM is hosted by the Central Office and provided to the Districts and other agencies as a service. Separate or disconnected ITSFM systems are not authorized.

4.   Serving Areas

The ITSFM uses Serving Areas to subdivide regional ITS, signal, and toll assets into separate regions. This allows each District and other agencies to manage their area of responsibility and user accounts. The District can authorize ITSFM users' distinct roles allowing them to view, create, edit, and delete features within each Serving Area. The following serving areas are currently active in ITSFM:

Statewide Serving Areas		
Owner	**Serving Area Name**	**Maintaining Agency**
District 1	Charlotte County	County
	City of Lakeland	City
	Collier County	County
	Desoto County	County
	Ft. Myers RTMC	FDOT
	Glades County	County
	Hardee County	County
	Hendry County	County
	Highlands County	County
	Lee County	County
	Manatee County	County
	Okeechobee County	County
	Sarasota County	County
District 2	Alachua County	County
	City of Gainesville	City
	City of Jacksonville	City
	City of Palatka	City
	Clay County	County
	Duval County	County
	Jacksonville RTMC	FDOT
	Nassau County	County
	St. Johns County	County
District 3	Chipley RTMC	FDOT
	City of Tallahassee	City
	Escambia County	County
	Okaloosa County	County
District 4	Broward RTMC	FDOT
	City of Boca Raton	City
	City of Ft. Lauderdale	City
	City of Fort Pierce	City
	City of Jupiter	City
	City of Stuart	City
	City of West Palm Beach	City
	Broward County	County
	Indian River County	County
	Martin County	County
	Palm Beach County	County
	St. Lucie County	County

Statewide Serving Areas		
Owner	**Serving Area Name**	**Maintaining Agency**
District 5	Brevard County	County
	CFX	FDOT
	City of Daytona Beach	City
	City of Maitland	City
	City of Melbourne	City
	City of Ocala	City
	City of Orlando	City
	City of Ormond Beach	City
	City of Palm Coast	City
	City of Port Orange	City
	Flagler County	County
	I-4 Mobility Partners	FDOT
	Lake County	County
	Marion County	County
	Orange County	County
	Orlando RTMC	FDOT
	Osceola County	County
	Reedy Creek Improvement Dist.	FDOT
	Seminole County	County
	Sumter County	County
	SunRail	FDOT
	Volusia County	County
District 6	Miami RTMC	FDOT
	GMX	FDOT
District 7	Citrus County	County
	City of Clearwater	City
	City of Plant City	City
	City of St. Petersburg	City
	City of Tampa	City
	HART	FDOT
	Hernando County	County
	Hillsborough County	County
	Pasco County	County
	Pinellas County	County
	Polk County	County
	THEA	FDOT
	Tampa RTMC	FDOT
FTE	Pompano RTMC	FDOT
	Turkey Lake RTMC	FDOT
CO	FL ITS Operations Network	FDOT
	Motor Carrier Size and Weight	FDOT

5.   Maintaining Agencies and Regional Partners

Maintaining agencies may use the ITSFM to manage both FDOT and agency-owned transportation assets. FDOT's enterprise license allows the District to authorize user accounts to agency staff supporting the transportation management system.

If a maintaining agency or regional partner wants to use the ITSFM system to manage non-transportation assets, the agency must buy a sub-license agreement from Byers Engineering Company. Maintaining agencies are responsible for the subscription cost for non-transportation users.

Each maintaining agency or regional partner must meet District's requirements for ITSFM user accounts and support the same positional and quality requirements as the District. The District transportation systems management and operations (TSM&O) engineer will serve as the coordinator with the local maintaining agencies and regional partners.

6.   User Authorization

The information contained within the ITSFM includes confidential material therefore the FDOT must ensure that all authorized users have passed the Florida Department of Law Enforcement (FDLE) or State Law Enforcement Radio System (SLERS) background check. The District is responsible for supplying written authorization for people to access the ITSFM including:

- District staff, consultants and contractors,
- Regional partners and maintaining agencies, and
- Defining user roles (viewer, maintainer, outside plant editor, fiber editor, and system manager).

The District staff will verify people have met the security requirements and then the District transportation systems management and operations (TSM&O) engineer or authorized representative to the Central Office will execute the ITSFM User Authorization.

Fully executed User Authorization will be sent to the Central Office before scheduling user training. The ITSFM instructor will coordinate with each trainee and ensure they have the needed hardware and software before attending all training classes.

It is the District's responsibility to notify the Central Office to deactivate users who no longer need access to the ITSFM system. The Central Office will issue a User Report upon request from the TSM&O engineer. At least once annually all users inactive for 180 days will be deactivated and can be reactivated upon request.

7.   Maintenance Management Software

The ITSFM serves as the statewide database to manage field assets, document system configuration, and as-built documentation. The District also uses maintenance management software (MMS) that is specifically designed to manage maintenance activities; documents installed and spare assets; log technician response times and repair activities; and monitor the fiber optic network's performance to automatically generate outage notifications. Together, this suite of software applications allows the Department to manage the entire ITS.

ITSFM and the other maintenance management software stores data redundant between each system; these data items include but are not limited to:

- Equipment Sites,
- Equipment site components including fiber, communication, and electrical equipment, and
- ITS Devices.

FDOT is committed to having a single central repository for all ITS-related assets within the ITSFM. However, no one system can provide all the business process functionality to all users that require interaction with the ITS facilities' data. The Districts are encouraged to deploy an application programming interface between the ITSFM and the MMS. Interfacing external systems (MIMMS/MOMS maintenance management systems) that provide automated synchronization with the ITSFM is necessary to minimize duplication of efforts, mismatched values in common data fields, and errant data conditions, thus supplying accurate reporting of ITS assets for the processes that are dependent on this data.

8.   Database Management

The Districts are responsible for managing and maintaining the ITSFM database. Asset changes to the system will be updated to the database as shown in the following table. The District will use the statewide ITSFM as the primary database for storing asset records for field equipment and cables. The goal is to supply a highly correct and reliable database for use by the operations and maintenance staff.

The following table defines the entity responsible for maintaining the database:

Work Type	Responsible	Timeframe
Routine maintenance and equipment changeouts	Maintenance technicians	Real-time
Fiber connectivity	Fiber editor	One-week or less per District requirement *
New Construction	Outside plant editor	One-month or less per District requirement *

*Special circumstances for backlogged data may provide extended timeframe

9.   Positional Accuracy

The ITSFM is a geographical information system (GIS) based Web application designed to manage Outside Plant facilities based on their Latitude / Longitude coordinates. All features mapped in the ITSFM shall not exceed 3.3 feet (one meter) positional accuracy for Global Positioning System (GPS) Latitude / Longitude coordinates. This requirement allows the FDOT to accurately find equipment and ensure the Department can:

- Easily find buried cables, conduit, and access points,
- Export accurate positional data to Google Earth, Shape Files, and CAD,
- Share positional data to mitigate conflicts with other projects and shift replacement or relocation costs from the maintenance budget to the new project budget.

FDOT recognizes that accurate positional information is not always available from existing legacy databases and maintenance management tools. The Districts will update and maintain existing features to include accurate coordinates to provide users with consistent and reliable positional information statewide.

10. Minimum Equipment Requirements

The ITSFM supports a wide range of ITS equipment currently in use by the Department. The following table defines the minimum requirements needed to manage the transportation management system:

Minimum Equipment Requirements	
Field Equipment Types	**Classification**
Cable and Conduit	
Fiber Optic Cables	Required for all new and any existing utilized
Fiber Optic Cable Slack Loop	Required for all new and any existing utilized
Fiber Optic Cable Splice Location	Required for all new and any existing utilized
Video Cable	Required for all new and any existing utilized
Data Cable	Required for all new and any existing utilized
Composite Cable	Required for all new and any existing utilized
Electric Cables	Required for all new and any existing utilized
Twisted Pair Copper Cable	Required for all new and any existing utilized
Conduit and Access Points	
Conduit Duct Bank	Required for all new and any existing utilized
Conduit Attributes	Required for all new and any existing utilized
Innerduct Attributes	Required for all new and any existing utilized
Access Points	Required for all new and any existing utilized
Support Structures	
Pole	Required for all new and any existing utilized
Utility Pole	Required for all new and any existing utilized
Cantilever	Required for all new and any existing utilized
Butterfly	Required for all new and any existing utilized
Overhead Span	Required for all new and any existing utilized
Mast Arm - Single	Required for all new and any existing utilized
Mast Arm - Double	Required for all new and any existing utilized
Pedestrian Pole	Required for all new and any existing utilized
2-post sign	Required for all new and any existing utilized
Equipment Sites	
Regional Transportation Management Center	Required for all new and any existing utilized
Transportation Management Center	Required for all new and any existing utilized
Communication Facility Sites	Required for all new and any existing utilized
Electric Sites	Required for all new and any existing utilized
Utility Demarcation Sites	Required for all new and any existing utilized
ITS Equipment Cabinet Sites	Required for all new and any existing utilized
Signal Equipment Sites	Required for all new and any existing utilized
Toll Equipment Sites	Required for all new and any existing utilized

ITS Devices	
All ITS Equipment Types	Required for all new and any existing utilized
All Signal Equipment Types	Required for all new and any existing utilized
Fiber Equipment	
All Fiber Equipment Types including but not limited to Ethernet Switch/Routers, Patch Panel, Modem, etc.	Required for all new and any existing utilized
Communication Equipment	
All Communication Equipment Types including but not limited to ITS Device Controller, Radios, Terminal Servers, Media Converters, etc.	Required for all new and any existing utilized
Electric Equipment	
All Electric Equipment Types including but not limited to Uninterruptible Power Supply, Batteries, Surge Protection Devices, Power Supplies, Power Management Units, etc.	Required for all new and any existing utilized

11.   Minimum Attribute Requirements

The ITSFM supports many types of ITS equipment with each type having different attributes to describe the unique characteristics of the equipment. FDOT needs ITS equipment to be attributed to the maximum extent practical. In some cases, it may not be feasible or practical to capture all attributes of existing equipment during the initial ITSFM data population. In these cases, missing attribution will be collected and encoded into the ITSFM database during the equipment's next maintenance or replacement cycle.

11.1   Communication Cables

Fiber Optic Cable Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area	User	Required
Facility Owner	User	Required
Year Installed (YYYY)	User	Required
Installation Type	User	Required
Comments	User	Optional
Manufacturer	User	Required
Strand Count	User	Required
Mode	User	Required
Sheath Type	User	Required
Cable Structure	User	Required
Strand Group	User	Required
Single-Mode Strand Count	User	Required
Multi-Mode Strand Count	User	Required
Single/Multi Strand Order	User	Required
Cable Length (Ft.)	User	Required
"A" Side Sequential	User	Required
"Z" Side Sequential	User	Required

Fiber Optic Cable "Splice Location" Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area	User	Required
Facility Owner	User	Required
Comments	User	Optional
Year Installed (YYYY)	User	Required
Splice Location Type	User	Required
Storage Location SIN	User	Required

Fiber Optic Cable "Slack Loop" Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area	User	Required
Facility Owner	User	Required
Storage Location SIN	User	Required
Slack Loop Length (Ft.)	User	Required
Offset from "A" Side Splice	User	Required

11.2   Communication Cables

Data Cable Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area	User	Required
Facility Owner	User	Required
Comments	User	Optional
Year Installed (YYYY)	User	Required
Installation Type	User	Required
Cable Type	User	Optional

Composite Cable Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area	User	Required
Facility Owner	User	Required
Comments	User	Optional
Year Installed (YYYY)	User	Required
Installation Type	User	Required
Copper Conductor Qty.	User	Optional
Optical Fiber Qty.	User	Optional
Coaxial Qty.	User	Optional

Video Cable Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area	User	Required
Facility Owner	User	Required
Comments	User	Optional
Year Installed (YYYY)	User	Required
Installation Type	User	Required
Cable Type	User	Required

11.3 Electric Cable

Electric Cable Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area	User	Required
Facility Owner	User	Required
Comments	User	Optional
Year Installed (YYYY)	User	Required
Installation Type	User	Required
Number of Conductors	User	Required
Conductor Gauge (AWG)	User	Required
Conductor Stranding	User	Required

11.4 Conduit Duct Bank & Access Points

Conduit Duct Bank Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Year Installed (YYYY)	User	Required
Conduit Usage	User	Required
Length (Ft.)	User	Required
Installation Type	User	Required
Comments	User	Optional
Conduit Encased	User	Required

Conduit Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Conduit Usage	User	Required
Conduit Quantity	User	Required
Conduit Diameter	User	Required
Conduit Type	User	Required
Unoccupied Conduit	User	Required

Innerduct Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Innerduct Usage	User	Required
Innerduct Type	User	Required
Innerduct Diameter	User	Required
Innerduct Quantity	User	Required
Unoccupied Innerduct	User	Required

Conduit Access Point Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name (SIN)	User	Required
Comments	User	Optional
Year Installed (YYYY)	User	Required
Type of Access Point	User	Required
Access Point Material	User	Required
Access Point Size (L x W x D)	User	Required
Access Point Lid Type	User	Required
Access Point Lid Material	User	Required
Access Point Bolt Type	User	Required
Access Point Lock Indicator	User	Required
Distance to Travel Lane (Ft.)	User	Required
Located in Clear Zone	User	Required
Longitude	User	Required
Latitude	User	Required

11.5   Support Structures

Support Structure Attributes (Pole, Cantilever, Overhead and Butterfly)		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name (SIN)	User	Required
Comments	User	Optional
Year Installed (YYYY)	User	Required
Structure Type	User	Required
Structure Material	User	Required
Pole Length (Ft.)	User	Required
Pole Above Ground Length	User	Required
Department Structure No.	User	Required
Distance to Travel Lane (Ft.)	User	Required
Located in Clear Zone	User	Optional
Lane Closure Req'd For Bucket Truck	User	Optional
Longitude	User	Required
Latitude	User	Required
Structure Type	User	Required

Gantry Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area:	User	Required
Facility Owner:	User	Required
County:	User	Required
Site Identification Name :	User	Required
Comments	User	Optional
Gantry Name:	User	Required
Gantry Type:	User	Required
Year Installed (YYYY):	User	Required
Electric Circuit Name:	User	Optional
Longitude:	User	Required
Latitude:	User	Required

11.7   Equipment Sites

Communications Facility Attributes (TMC, Hubs, etc.)		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Admin Type	User	Required
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Facility Name	User	Required
Site Identification Name (SIN)	User	Required
Comments	User	Optional
Year Installed	User	Required
Property Identification No.	User	Required
Cabinet Type	User	Required
Building Type	User	Required
Building Dimensions	User	Required
Building Material	User	Required
Key Type	User	Required
Number of Filters Installed	User	Required
Filter Type	User	Required
Filter Dimensions (L x W)	User	Required
Distance to Travel Lane (Ft.)	User	Required
Located in Clear Zone	User	Required
Lane Closure Req'd For Bucket Truck	User	Required
Longitude	User	Required
Latitude	User	Required

ITS Equipment Cabinet Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Admin Type	User	Required
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name (SIN)	User	Required
Comments	User	Optional
Year Installed	User	Required
Cabinet Type	User	Required
Cabinet Mount Type	User	Required
Exterior	User	Required
Sun Shield Installed	User	Required
Key Type	User	Required
Number of Filters Installed	User	Required
Filter Type	User	Required
Filter Dimensions (L x W)	User	Required
Distance to Travel Lane (Ft.)	User	Required
Located in Clear Zone	User	Required
Lane Closure Req'd For Bucket Truck	User	Required
Longitude	User	Required
Latitude	User	Required

Signal Equipment Cabinet Attributes		
Display Attribute Nam	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Admin Type	User	Required
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name (SIN)	User	Required
Comments	User	Optional
Year Installed	User	Required
Cabinet Type	User	Required
Cabinet Mount Type	User	Required
Exterior	User	Required
Sun Shield Installed	User	Required
Key Type	User	Required
Number of Filters Installed	User	Required
Filter Type	User	Required
Filter Dimensions (L x W)	User	Required
Distance to Travel Lane (Ft.)	User	Required
Located in Clear Zone	User	Required
Lane Closure Req'd For Bucket Truck	User	Required
Longitude	User	Required
Latitude	User	Required

Electric Site Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name	User	Required
Comments	User	Optional
Year Installed (YYYY)	User	Required
Associated UDS Name	User	Required
Panel/Enclosure Mount Type	User	Required
Electrical Admin Type 1	User	Required
Electrical Admin Type 2	User	Required
Electrical Admin Type 3	User	Required
Distance to Travel Lane (Ft.)	User	Required
Located in Clear Zone	User	Required
Lane Closure Required For Bucket Truck	User	Required
Longitude	User	Required
Latitude	User	Required

Utility Demarcation Site Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area	User	Required
County	User	Required
Site Identification Name	User	Required
Comments	User	Optional
Year Installed (YYYY)	User	Required
Structure Owner	User	Required
Distance to Travel Lane (Ft.)	User	Required
Located in Clear Zone	User	Required
Lane Closure Req'd For Bucket Truck	User	Required
Longitude	User	Required
Latitude	User	Required

Power Service Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Comments	User	Optional
Service Type	User	Required
Service Provider	User	Required
Power Bill Reference Number	User	Optional
Power Disconnect Installed	User	Required

Communication Service Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Comments	User	Optional
Service Type	User	Required
Service Provider	User	Required
Interface or Disconnect Installed	User	Required
Comm. Service Type	User	Required
Telephone Number	User	If Available
Circuit ID	User	If Available
Static IP Address	User	If Available

11.7   ITS Devices
11.7.1   Closed Circuit Television

Closed Circuit Television Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
ITS Device Type	User	Required
Device ID	User	Required
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name (SIN)	User	Required
Comments	User	Optional
Device Name	User	Required
CCTV Type	User	Required
CCTV Mount	User	Required
Point of Attachment (Ft.)	User	Required
Installation Date (YYYY-MM-DD)	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Controller Located at Same Site	User	Required
Remote Controller Location SIN	User	Required
Lowering Device Manufacturer	User	Required as Applicable
Lowering Device Model	User	Required as Applicable
Longitude	User	Required
Latitude	User	Required

11.7.2   Camera Lowering Device

Camera Lowering Device Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name (SIN)	User	Required
Comments	User	Optional
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Associated CCTV Device Name	User	Required

11.7.3   Dynamic Message Sign

Dynamic Message Sign Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Source	User	Optional
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name	User	Required
Comments	User	Optional
Device Name	User	Required
DMS Mount	User	Required
DMS Use	User	Required
Installation Date yyyy:mm:dd	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Contract Number	User	Optional
DMS Display Type	User	Required
DMS Display Matrix	User	Required
DMS Display Lines	User	Optional
DMS Display Characters	User	Optional
Housing Access	User	Required
Filter Type	User	Required
Number of Filters	User	Required
Filter Dimensions (L x W)	User	Required
Longitude	User	Required
Latitude	User	Required

11.7.3   Electronic Speed Feedback Sign

Electronic Speed Feedback Sign Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Source	User	Optional
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name	User	Required
Comments	User	Optional
Device Name	User	Required
Installation Date yyyy:mm:dd	User	Required
Manufacturer	User	Required
Model	User	Required
Speed Detector Type	User	Required
Speed Detector Serial Number	User	Required
Static Sign Dimensions	User	Required
Static Sign Character Height	User	Required
Feedback Display Matrix	User	Required
Feedback Display Type	User	Required
Posted Speed Limit	User	Required
Longitude	User	Required
Latitude	User	Required

11.7.4   Electronic Display Signs

Electronic Display Signs Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Source	User	Optional
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name	User	Required
Comments	User	Optional
Device Name	User	Required
Mount	User	Required
Installation Date yyyy:mm:dd	User	Required
Manufacturer	User	Required
Model	User	Required
Housing Access	User	Required
Filter Type	User	Required
Number of Filters	User	Required
Filter Dimensions (L x W)	User	Required
Display Type	User	Required
Display Matrix Type	User	Required
Display Lines	User	Optional
Display Characters	User	Optional
Longitude	User	Required
Latitude	User	Required

11.7.5   Signal

Signal Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name	User	Required
Comments	User	Optional
Device Name	User	Required
Signal Usage	User	Required
Installation Date yyyy:mm:dd	User	Required
Longitude	User	Required
Latitude	User	Required

11.7.6   Automated Vehicle Identification

Automated Vehicle Identification Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Source	User	Optional
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name	User	Required
Comments	User	Optional
Device Name	User	Required
Sensor Type	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Mount Type	User	Required
Pont of Attachment (Ft.)	User	Required
Built in Controller	User	Required
Installation Date yyyy:mm:dd	User	Required
Longitude	User	Required
Latitude	User	Required

11.7.7   Vehicle Detection System

Vehicle Detection System Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Source	User	Optional
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name	User	Required
Comments	User	Optional
Device Name	User	Required
VDS Type	User	Required
Installation Type	User	Required
Sensor Type	User	Required
Installation Date yyyy:mm:dd	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Controller Located at Same Site	User	Required
Remote Controller Location SIN	User	Required
Point of Attachment (Ft.)	User	Required
Longitude	User	Required
Latitude	User	Required

11.7.8 Warning Sign

Beacon Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Source	User	Optional
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name	User	Required
Comments	User	Optional
Device Name	User	Required
Installation Date yyyy:mm:dd	User	Required
Communication Type	User	Required
Beacon Controller Type	User	Required
Beacon Type	User	Required
Beacon Color	User	Required
Beacon Size	User	Required
Sign Display Dimensions (HxW) (Ft.)	User	Required
Electric Circuit Name	User	Required
Longitude	User	Required
Latitude	User	Required

11.7.9 Roadside Equipment

Roadside Unit (RSU) Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name (SIN)	User	Required
Comments	User	Optional
Device Name	User	Required
Installation Date (YYYY-MM-DD)	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
IP Address	User	Optional
MAC Address	User	Optional
Firmware Version	User	Optional
Controller Locaiton (SIN)	User	Required
Longitude	User	Required
Latitude	User	Required
Longitude (Antenna)	User	Required
Latitude (Antenna)	User	Required

11.7.10 Roadway Weather Information System (RWIS)

Roadway Weather Information System Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Source	User	Optional
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name	User	Required
Comments	User	Optional
Device Name	User	Required
Installation Date yyyy:mm:dd	User	Required
Longitude	User	Required
Latitude	User	Required

11.7.11 Gate

Gate Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name	User	Required
Comments	User	Required
Gate Name	User	Required
Gate Type	User	Required
Installation Date yyyy:mm:dd	User	Required
Manufacturer	User	Required
Model	User	Required
Longitude	User	Required
Latitude	User	Required

11.8   Wrong Way Vehicle Detection System (WWVDS)

Wrong Way Vehicle Detection System		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Source	User	Optional
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Site Identification Name (Primary CAB)	User	Required
Site Identification Name (WWVDS)	User	Required
Comments	User	Optional
Device Name	User	Required
Installation Date yyyy:mm:dd	User	Required
Model	User	Required
Manufacture	User	Required
Serial Number	User	Required
IP Address	User	Optional
MAC Address	User	Optional
Longitude	User	Required
Latitude	User	Required

11.8.1 WWVDS Child Features

External Sensors		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Source	User	Optional
WWVDS Name	User	Required
Installation Date yyyy:mm:dd	User	Required
Sensor Usage	User	Required
Comments	User	Optional
Sensor Type	User	Required
Model	User	Required
Manufacturer	User	Required
Serial Number	User	Required
IP Address	User	Optional
MAC Address	User	Optional
Firmware Revision	User	Optional

Beacon		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Source	User	Optional
WWVDS Name	User	Required
Installation Date yyyy:mm:dd	User	Required
Beacon Type	User	Required
Comments	User	Optional
Beacon Model	User	Required
Beacon Manufacture	User	Required
Beacon Color	User	Required
Beacon Size	User	Required

Sign		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Source	User	Optional
WWVDS Name	User	Required
Installation Date yyyy:mm:dd	User	Required
Sign Type	User	Required
Comments	User	Optional
Sign Text	User	Required
Sign Display Dimensions	User	Required

11.9   Automatic Vehicle Identification (AVI) Antenna

Automated Vehicle Identification Antenna Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Associated Controller/Reader	User	Required
Antenna Type	User	Required
Manufacture	User	Required
Model	User	Required
Comments	User	Optional
Travel Lane Number	User	Required
Travel Lane Direction	User	Required

11.10   Signal Control Devices & Sensors

Bus Interface Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Source	User	Optional
Manufacturer	User	Required
Model	User	Required
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required

Conflict Monitor Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Source	User	Optional
No. of Ports – Ethernet	User	Required
No. of Ports - Serial	User	Required
Manufacturer	User	Required
Model	User	Required
Channels	User	Required
Serial Number	User	Required
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required
IP Address	User	Optional
MAC Address	User	Optional
Firmware Version	User	Required

Flasher Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Number	User	Optional
Manufacturer	User	Required
Model	User	Required
Quantity	User	Required
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required

Load Resistor Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Number	User	Optional
Manufacturer	User	Required
Model	User	Required
Quantity	User	Required
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required

Load Switch Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Number	User	Optional
Manufacturer	User	Required
Model	User	Required
Quantity	User	Required
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required

Surge Arrestor Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Number	User	Optional
Surge Arrestor Type	User	Required
Manufacturer	User	Required
Model	User	Required
Current Rating	User	Optional
Voltage Rating	User	Optional
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required

Transfer Relay Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Number	User	Optional
Manufacturer	User	Required
Model	User	Required
Current Rating	User	Optional
Voltage Rating	User	Optional
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required

Signal Sensor/Detector Module Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Number	User	Optional
Type	User	Required
Channel	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Installed in Chassis No.	User	Required
Installed in Slot No.	User	Required
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required

Signal Sensor/Detector Chassis Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset ID Number	User	Optional
Asset ID Number	User	Optional
Chassis No.	User	Required
No. of Card Slots	User	Required
Manufacturer	User	Required
Model	User	Required
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required

11.11   Roadway Weather Information System Sensors

Air Temperature Sensor Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Single Sensor	User	Required
Single Sensor Type	User	Required
Installation Date yyyy:mm:dd	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Comments	User	Optional

Barometric Pressure Sensor Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Single Sensor	User	Required
Single Sensor Type	User	Required
Installation Date yyyy:mm:dd	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Comments	User	Optional

Dew Point Sensor Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Single Sensor	User	Required
Single Sensor Type	User	Required
Installation Date yyyy:mm:dd	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Comments	User	Optional

Pavement Sensor Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Single Sensor	User	Required
Single Sensor Type	User	Required
Installation Date yyyy:mm:dd	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Comments	User	Optional

Precipitation Sensor Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Single Sensor	User	Required
Single Sensor Type	User	Required
Installation Date yyyy:mm:dd	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Comments	User	Optional

Visibility Sensor Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Single Sensor	User	Required
Single Sensor Type	User	Required
Installation Date yyyy:mm:dd	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Comments	User	Optional

Relative Humidity Sensor Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Single Sensor	User	Required
Single Sensor Type	User	Required
Installation Date yyyy:mm:dd	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Comments	User	Optional

Wind Speed Sensor Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Single Sensor	User	Required
Single Sensor Type	User	Required
Installation Date yyyy:mm:dd	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Comments	User	Optional

Wind Direction Sensor Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Single Sensor	User	Required
Single Sensor Type	User	Required
Installation Date yyyy:mm:dd	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Comments	User	Optional

Combination Sensor Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Combination Sensor	User	Required
Installation Date yyyy:mm:dd	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Comments	User	Optional
Sensor Type 1	User	Required
Sensor Type 2	User	Required
Sensor Type 3	User	Required When Applicable
Sensor Type 3	User	Required When Applicable
Sensor Type 4	User	Required When Applicable
Sensor Type 5	User	Required When Applicable
Sensor Type 6	User	Required When Applicable
Sensor Type 7	User	Required When Applicable
Sensor Type 8	User	Required When Applicable
Sensor Type 9	User	Required When Applicable

11.12   Wireless Communications

Communication Devices (Radio) Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Radio Service	User	Required
Installation Date yyyy:mm:dd	User	Required
Transmit Frequency	User	Required When Applicable
Transmit Channel	User	Required When Applicable
Receive Frequency	User	Required When Applicable
Receive Channel	User	Required When Applicable
FCC License (Call Sign)	User	Required When Applicable
FCC Station Class	User	Required When Applicable
FCC License Expiration Date	User	Required When Applicable
Comments	User	Optional
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
IP Address	User	Optional
MAC Address	User	Optional
Firmware Version	User	Optional
Input Voltage	User	Optional
Load/Draw (Amp)	User	Optional
Copper Ports (Out)	User	Required When Applicable
Fiber Ports (Out)	User	Required When Applicable
Fiber Connector Type	User	Required When Applicable
Comm Device Type ('Radio')	User	Required

Wireless Path Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Comments	User	Optional
Span Length (Ft.)	User	Required
Frequency Band	User	Required
Polarization	User	Required
Origination SIN (A Side)	User	Required
Destination SIN (Z Side)	User	Required

Wireless Antenna Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Serving Area	User	Required
Facility Owner	User	Required
County	User	Required
Comments	User	Optional
Year Installed	User	Required
Antenna Mount	User	Required
Antenna Type	User	Required
Antenna Polarization	User	Required
Antenna Direction	User	Required
Manufacturer	User	Required
Model	User	Required
Antenna Point of Attachment (Ft.)	User	Required
Associated Radio	User	Required

11.13   *Equipment Site Components*

ITS Equipment Controllers Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Site Identification Name (SIN)	User	Required
Comments	User	Optional
Comm Device Type	User	Required
Communications Type	User	Required
Controller Type	User	Required
Year Installed yyyy:mm:dd	User	Required
Comments	User	Optional
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
IP Address	User	Optional
MAC Address	User	Optional
Firmware Version	User	Optional
Input Voltage	User	Optional
Load/Draw (Amp)	User	Optional
Copper Ports (In)	User	Required When Applicable
Copper Ports (Out)	User	Required When Applicable
Fiber Ports (In)	User	Required When Applicable
Fiber Ports (Out)	User	Required When Applicable
Fiber Connector Type	User	Required When Applicable

Fiber Ethernet Switch / Router Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Facility Owner	User	Required
Site Identification Name (SIN)	User	Required
Fiber Device Type	User	Required
Year Installed yyyy:mm:dd	User	Required
Comments	User	Optional
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
IP Address	User	Optional
MAC Address	User	Optional
Firmware Version	User	Optional
Input Voltage	User	Optional
Load/Draw (Amp)	User	Optional
Fiber Mode	User	Required
Copper Ports (Out)	User	Required
Trunk Ports	User	Required
Derived Ports	User	Required
Fiber Connector Type	User	Required

Optical Patch Panel Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Facility Owner	User	Required
Site Identification Name (SIN)	User	Required
Fiber Device Type	User	Required
Year Installed yyyy:mm:dd	User	Required
Comments	User	Optional
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Optional
IP Address	User	Not Applicable
MAC Address	User	Not Applicable
Firmware Version	User	Not Applicable
Input Voltage	User	Not Applicable
Load/Draw (Amp)	User	Not Applicable
Fiber Mode	User	Required
Copper Ports (Out)	User	Not Applicable
Trunk Ports	User	Required
Derived Ports	User	Required
Fiber Connector Type	User	Required

Fiber Modem Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Facility Owner	User	Required
Site Identification Name (SIN)	User	Required
Fiber Device Type	User	Required
Year Installed yyyy:mm:dd	User	Required
Comments	User	Optional
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
IP Address	User	Optional
MAC Address	User	Optional
Firmware Version	User	Optional
Input Voltage	User	Optional
Load/Draw (Amp)	User	Optional
Fiber Mode	User	Required
Copper Ports (Out)	User	Required
Trunk Ports	User	Required
Derived Ports	User	Required
Fiber Connector Type	User	Required

Fiber Transmission Equipment Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Facility Owner	User	Required
Site Identification Name (SIN)	User	Required
Fiber Device Type	User	Required
Year Installed yyyy:mm:dd	User	Required
Comments	User	Optional
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
IP Address	User	Optional
MAC Address	User	Optional
Firmware Version	User	Optional
Input Voltage	User	Optional
Load/Draw (Amp)	User	Optional
Fiber Mode	User	Required
Copper Ports (Out)	User	Required
Trunk Ports	User	Required
Derived Ports	User	Required
Fiber Connector Type	User	Required

Media Converter Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Facility Owner	User	Required
Site Identification Name (SIN)	User	Required
Comm Device Type	User	Required
Communications Type	User	Required
Controller Type	User	Required
Year Installed yyyy:mm:dd	User	Required
Comments	User	Optional
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
IP Address	User	Optional
MAC Address	User	Optional
Firmware Version	User	Optional
Input Voltage	User	Optional
Load/Draw (Amp)	User	Optional
Copper Ports (In)	User	Required
Copper Ports (Out)	User	Required
Fiber Ports (In)	User	Required
Fiber Connector Type	User	Required

Port Terminal Server Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Facility Owner	User	Required
Site Identification Name (SIN)	User	Required
Comm Device Type	User	Required
Communications Type	User	Required
Controller Type	User	Required
Year Installed yyyy:mm:dd	User	Required
Comments	User	Optional
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
IP Address	User	Optional
MAC Address	User	Optional
Firmware Version	User	Optional
Input Voltage	User	Optional
Load/Draw (Amp)	User	Optional
Copper Ports (In)	User	Required
Copper Ports (Out)	User	Required
Fiber Ports (In)	User	Required
Fiber Connector Type	User	Required

Wireless Radio Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Facility Owner	User	Required
Radio Service	User	Required
Installation Date yyyy:mm:dd	User	Required
Transmit Frequency	User	Required When Applicable
Transmit Channel	User	Required When Applicable
Receive Frequency	User	Required When Applicable
Receive Channel	User	Required When Applicable
FCC License (Call Sign)	User	Required When Applicable
FCC Station Class	User	Required When Applicable
FCC License Expiration Date	User	Required When Applicable
Comments	User	Optional
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Optional
IP Address	User	Optional
MAC Address	User	Optional
Firmware Version	User	Optional
Input Voltage	User	Optional
Load/Draw (Amp)	User	Optional
Copper Ports (Out)	User	Required When Applicable
Fiber Ports (Out)	User	Required When Applicable
Fiber Connector Type	User	Required When Applicable

Battery Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Battery Type	User	Required
Installation Date yyyy:mm:dd	User	Required
Battery Manufacturer	User	Required
Battery Model/Size	User	Required
Serial Number	User	Optional
Comments	User	Optional
Battery Quantity	User	Required

Cabinet Power Receptacle Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Receptacle Type (Std/GFCI)	User	Required
Receptacle Qty/Amp	User	Required
Surge Suppression Power Strip	User	Required
Serial Number	User	Optional
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required

Cabinet Surge Protection Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Optional
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required

Panel/Enclosure/Disconnect Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Enclosure Type	User	Required
Panel/Enclosure Voltage Rating	User	Required
Panel/Enclosure Amp Rating	User	Required
Main Breaker/Fuse Amp Rating	User	Required
Branch Breaker Qty/Amp #1	User	Required
Branch Breaker Qty/Amp #2	User	Required
Branch Breaker Qty/Amp #3	User	Required
Branch Breaker Qty/Amp #4	User	Required
Branch Breaker Qty/Amp #5	User	Required
Serial Number	User	Optional
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required

Power Management Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Optional
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required
No. of Receptacles	User	Required
NIC Card Installed	User	Required
IP Address	User	Optional
MAC Address	User	Optional

Power Supply – Electronics Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Manufacturer	User	Required
Model/Size	User	Required
Serial Number	User	Optional
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required

Solar Power Controller Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Optional
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required
Power Rating (Volt)	User	Required
Solar Input Rating (Amp)	User	Required
Load Rating (Amp)	User	Required

Solar Power Panel Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Solar Panel Dimensions	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Optional
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required

Stand-By Generator Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Facility Owner	User	Required
Indoor/Outdoor	User	Required
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required
Prime Kilowatt Rating	User	Required
Stand-by Kilowatt Rating	User	Required
Output Voltage Rating	User	Required
Number of Phases	User	Required
Fuel Tank Type	User	Required
Fuel Type	User	Required
Fuel Capacity (Gallons)	User	Required

Surge Protection Device Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
SPD Type	User	Required
Manufacturer	User	Required
Model/Voltage Rating	User	Required
Serial Number	User	Optional
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required

Transformer Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Input Voltage Rating	User	Required
Output Voltage Rating	User	Required
Kilovolt-Ampere (kVA) Rating	User	Required
Serial Number	User	Optional
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required

Transfer Switch Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Facility Owner	User	Required
Indoor/Outdoor	User	Required
Transfer Switch Type	User	Required
Manufacturer	User	Required
Serial Number	User	Optional
Model	User	Required
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required
Input Voltage Rating	User	Required
Output Voltage Rating	User	Required
Number of Phases	User	Required
Kilowatt Rating	User	Required

Uninterrupted Power Service Attributes		
Display Attribute Name	**Defined by:**	**Attribute to be Submitted**
Asset Id Number	User	Optional
Asset Id Source	User	Optional
Manufacturer	User	Required
Model	User	Required
Serial Number	User	Required
Comments	User	Optional
Installation Date yyyy:mm:dd	User	Required
NIC Card Installed	User	Required
IP Address	User	Optional
MAC Address	User	Optional
Battery Pack Installed	User	Required

12. Document Management

The ITSFM allows important system documentation (photos, as-built plans, cut sheets, etc.) to be attached or linked to all feature types in the database. This makes information remotely available to all ITSFM users thereby ending the need for users to know exactly which project or maintenance activity built, installed, or changed the equipment because the records are available based on geographic location. FDOT needs the following records documented in the system and available to the operation and maintenance field staff.

Document Library		
Storage Location	**Document Type**	**Classification**
Equipment Cabinet:	Communication wiring schematics	Optional
	Electrical wiring schematic	Optional
	Equipment cut sheets	Optional
	Photographs:	
	• General site view	Required
	• Equipment cabinet with the front door open	Required
	• Equipment cabinet with the rear door open	Required
	• Each Fiber Device (Ethernet Switch, Patch Panel, etc.) clearly shows terminations	Required
	• Each ITS Controller (Encoder, DMS controller, etc.)	Required
	• Each Communication Device (Media Converter, Terminal Server, etc.)	Required
	• Each Electric Device (UPS, Power Management, etc.)	Required
Electric site:	Electrical wiring schematic	Optional
	Photographs:	

Document Library		
Storage Location	**Document Type**	**Classification**
	• General site view	Required
	• Panel/Enclosure with a front lid or door open	Required
	• Surge Protector	Required when Applicable
	• Transformer	Required when Applicable
	• Power Meter	Required when Applicable
	• Transfer Switch	Required when Applicable
	• Generator	Required when Applicable
Communication facilities:	Communication wiring schematics	Optional
	Electrical wiring schematic	Optional
	Equipment cut sheets	Optional
	Photographs:	
	• General site view	Required
	• Outside view of the facility	Required
	• Inside View of the Facility	Required
	• Each Fiber Device (Ethernet Switch, Patch Panel, etc.) clearly shows terminations	Required
	• Individual components as needed to provide detail and clarity	Optional
Equipment racks:	Equipment rack details	Required
	Photographs:	
	• The rack name is clearly labeled on the front of the rack	Required
	• Rack with the front door open	Required
	• Rack with the rear door open	Required
	• Individual components as needed to provide detail and clarity.	Optional
ITS Field Device:	• Cut sheets	Required
	• Photographs:	
	• Individual ITS field device with the support structure	Required
	• Others as needed to provide detail and clarity	Optional
Fiber splice vaults:	As-built plan sheets with coverage between adjacent fiber splice vaults	Required
	Photographs:	
	• General site view	Optional
	• Inside view	Optional
Fiber Cables:	• Fiber usage agreement attached to the optical fiber path	Required when Applicable