



Florida Department of Transportation

# **2018 Annual Fixed Guideway Transportation System Safety Status Report**

January 1, 2018 through December 31, 2018

Public Transit Office

July 30, 2019

## Executive Summary

This report meets the federal requirement of 49 United States Code (U.S.C.) Section 5329(e)(4)(A)(vii) for an annual status report on the safety of the rail fixed guideway transportation systems (FGTS) the state safety oversight agency (SSOA) oversees. The Florida Department of Transportation (FDOT) serves as the State of Florida's SSOA. The Florida State Safety Oversight (SSO) Program is housed within the FDOT Office of Freight, Logistics, and Passenger Operations in the FDOT Central Office. This report provides a retrospective summary of FDOT SSO Program activities in 2018.

This report addresses only those FGTSs that are subject to the requirements of 49 U.S.C. Section 5329, 49 Code of Federal Regulations (CFR) Part 659 (Part 659) and 49 CFR Part 674 (Part 674):

- The Hillsborough Area Regional Transit Authority (HART) Tampa Electric Company (TECO) Line Streetcar;
- The Jacksonville Transportation Authority (JTA) Automated Skyway Express (Skyway); and
- The Miami-Dade Department of Transportation and Public Works (DTPW) Metromover and Metrorail.

There are additional FGTSs in the state that are subject to SSO, but these systems are not covered by this report because they do not receive funding from the Federal Transit Administration (FTA).

Part I of this report describes the regulations authorizing the FDOT SSO Program and its activities, and it identifies FDOT SSO Program personnel and contact information. It also includes a brief description of each FGTS and the FDOT SSO Program's contacts at each system.

Part II of this report describes specific activities that the FDOT SSO Program undertook in 2018 to meet its regulatory responsibilities, including conducting regular site visits and teleconferences with the FGTSs; providing technical assistance; monitoring hazard management, event investigations, and corrective action plans (CAPs); and reviewing and submitting subsequent reports. This section also includes data on reportable events, injuries and fatalities, and hazards at each FGTS over a five-year period.

For questions and/or comments on this report, please contact Ashley Porter, Transit Safety Programs Manager, FDOT at 850-414-4070 or [Ashley.L.Porter@dot.state.fl.us](mailto:Ashley.L.Porter@dot.state.fl.us).

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## Acronyms

CAP: Corrective Action Plan

CFR: Code of Federal Regulations

DTPW: Miami-Dade Department of Transportation and Public Works

FDOT: Florida Department of Transportation

FGTS: Fixed Guideway Transportation System, or rail fixed guideway public transportation system

FRA: Federal Railroad Administration

F.S.: Florida Statutes

FTA: Federal Transit Administration

FY: Fiscal Year

HART: Hillsborough Area Regional Transit

JTA: Jacksonville Transportation Authority

MAP-21: Moving Ahead for Progress in the 21<sup>st</sup> Century Act

PTASP: Public Transportation Agency Safety Plan

SME: Subject Matter Expert

SMS: Safety Management Systems

SPP: Security Program Plan

SSO: State Safety Oversight

SSOA: State Safety Oversight Agency

SSPP: System Safety Program Plan

TECO: Tampa Electric Company

TRA: Transportation Resource Associates, Inc.

TTP: Technical Training Plan

U.S.C.: United States Code

## Part I. Regulations and Program Structure

### Federal Fixed Guideway Safety Requirements

In 1991, federal statute required the FTA to create a state-managed oversight program to improve FGTS safety and security. In 1995, the FTA published “Rail Fixed Guideway Systems; State Safety Oversight; Final Rule” (codified in *Part 659*). This rule applied to light rail, heavy rail, and other rapid transit rail systems, including monorails, inclined planes, funiculars, trolleys, and automated guideway systems that received specific federal funding and were not subject to Federal Railroad Administration (FRA) oversight. Part 659 required agencies operating these systems to adopt system safety program plans (SSPPs) and security program plans (SPPs), and described SSO responsibilities.

Starting in 2012, with the adoption of the *Moving Ahead for Progress in the 21st Century Act (MAP-21)*, states, with federal guidance, began transitioning towards a new safety paradigm with regards to rail FGTS, or rail transit agencies. MAP-21, under *49 U.S.C. Section 5329(e)*, required that each state with an eligible transit agency implement an enhanced SSO program with greater responsibilities, and required agencies to adopt new safety plans and implement a new approach to safety.

Since 2016, FTA adopted several rules to implement the new comprehensive safety requirements required by MAP-21. Each rule is described below.

### New SSO Rule and Certification

In 2016, the FTA adopted its SSO Rule for FGTSs, Part 674. It requires states to assume greater responsibility for overseeing the safety of rail FGTSs, including new responsibilities associated with event investigations and training and staffing levels, and provided a three-year implementation timeframe. States had until April 15, 2019 to adopt the new requirements.

As part of implementing the rule, FDOT rewrote its State Program Standards Manual, originally adopted in 2007. This Manual is formally adopted by reference into Rule 14-15.017, Florida Administrative Code, and provides minimum standards for the safe operations of rail transit. FDOT began the rule amendment process in May 2018. The amended rule became effective in November 2018.

In order to determine a state’s readiness and ability to oversee the safety of rail fixed guideway systems, the FTA developed a certification process. Throughout 2018, the FDOT SSO Program engaged a comprehensive effort to prepare Florida’s certification application package, and submitted it to the FTA in September 2018. The application included the updated SSO Manual/State Standard, correspondence between the FTA and FDOT establishing FDOT’s financial and legal independence, the state statute and rule establishing FDOT as the SSOA, a technical training plan (TTP) for FDOT and consultant support, the FDOT organizational chart,

workload assessments for FDOT personnel and contractors, the contract between FDOT and TRA for SSO program services, contractor resumes, and job descriptions. The FTA certified Florida in February 2019.

### **FTA's Public Transportation Agency Safety Plan (PTASP) Rule**

The Federal Register published the PTASP rule on July 19, 2018. This rule requires public transportation systems that receive funding under the FTA's Urbanized Area Formula Grants to develop a new safety plan by July 20, 2020.

PTASPs will replace the existing SSPPs implemented by the FGTSs. While there are similarities among these safety plans, agencies must enact significant changes to fully comply with PTASP requirements. An agency's PTASP must implement the safety management systems (SMS) approach described in the FTA's 2017 National Public Transportation Safety Plan. SMS requires agencies to proactively analyze how organizational factors could lead to incidents and accidents. This requires new safety data gathering and tracking systems. Agencies must implement a process so that employees can report safety conditions to senior management, and management must act and follow up with the employees on these reports.

PTASPs must include safety performance targets based on the safety performance measures in the National Public Transportation Safety Plan adopted by the FTA in January 2017. The National Public Transportation Safety Plan identifies the following as safety performance measures:

- Fatalities
- Injuries
- Safety events
- System reliability

The agencies must develop their own performance indicators and measurable targets in coordination with their metropolitan planning organization, and evaluate their performance at least annually. Agencies must formally designate an accountable executive who is ultimately responsible for the transit agency's safety performance, and designate the agency management who are accountable for day-to-day implementation of SMS.

Ultimately, in order to effectively implement SMS and PTASPs, agencies must create and utilize systems to collect, analyze, and share safety data; accurately measure safety performance; establish clear lines of accountability; and identify and address hazards before incidents or accidents occur. In 2018, the FDOT SSO Program began working closely with each FGTS in Florida to develop a compliant PTASP in advance of the July 2020 deadline.

## FTA Public Transportation Safety Certification Training Program

On July 19, 2018, the Federal Register published the final Public Transportation Certification Training Rule, which replaced the FTA's interim provisions that had been in effect since 2016. The training requirements apply to federal and SSOA personnel and contractors who conduct safety audits and examinations of public transportation systems not otherwise regulated by another federal agency, and FGTS staff who are directly responsible for safety oversight ("covered personnel"). Each FGTS must designate its covered personnel who are directly responsible for safety oversight of its rail transit system, and at a minimum, covered personnel should include the chief safety officer and the primary staff "directly responsible" for safety oversight of the FGTS. The rule defines "directly responsible" as "safety staff who participate in the development, implementation, or maintenance of the requirements of the oversight agency's program standard."

The rule requires SSOAs to submit a TTP to the FTA. The FDOT SSO Program submitted its first TTP in 2015, and submitted an updated version in December 2018 as part of the certification application. The updated TTP describes the training completed by the FDOT Transit Safety Programs Manager and the SSO support team, and describes the required training and refresher training for SSO personnel to complete on site at each FGTS.

The FDOT SSO Program continues to monitor and attend available training courses. All FDOT SSO Program personnel subject to the requirements will achieve the required training by the established deadlines (within three years of the effective date of the interim training requirements, or within three years of the employee's hiring date).

## FTA Public Transportation Safety Program and National Public Transportation Safety Plan

In 2016, the Federal Register published the final Public Transportation Safety Program Rule, *49 CFR Part 670* (Part 670). This rule provides the framework for the FTA to monitor, oversee, and enforce transit system safety; establishes the SMS framework; and describes the content of the National Public Transportation Safety Plan. The FTA published the National Public Transportation Safety Plan Version 1.0 in January 2017. The purpose of the plan is to guide the national effort to manage safety risks and safety hazards within public transportation systems.

## State Authority

*Section 341.061(1), Florida Statutes (F.S.)*, requires that FDOT establish minimum safety standards for all governmentally owned FGTSs and privately owned or operated FGTSs operating in the State of Florida that are financed wholly or partly by state funds. The statute provides the authority for the *Safety and Security Oversight Program Standards Manual for Fixed Guideway Transportation Systems* (SSO Manual).

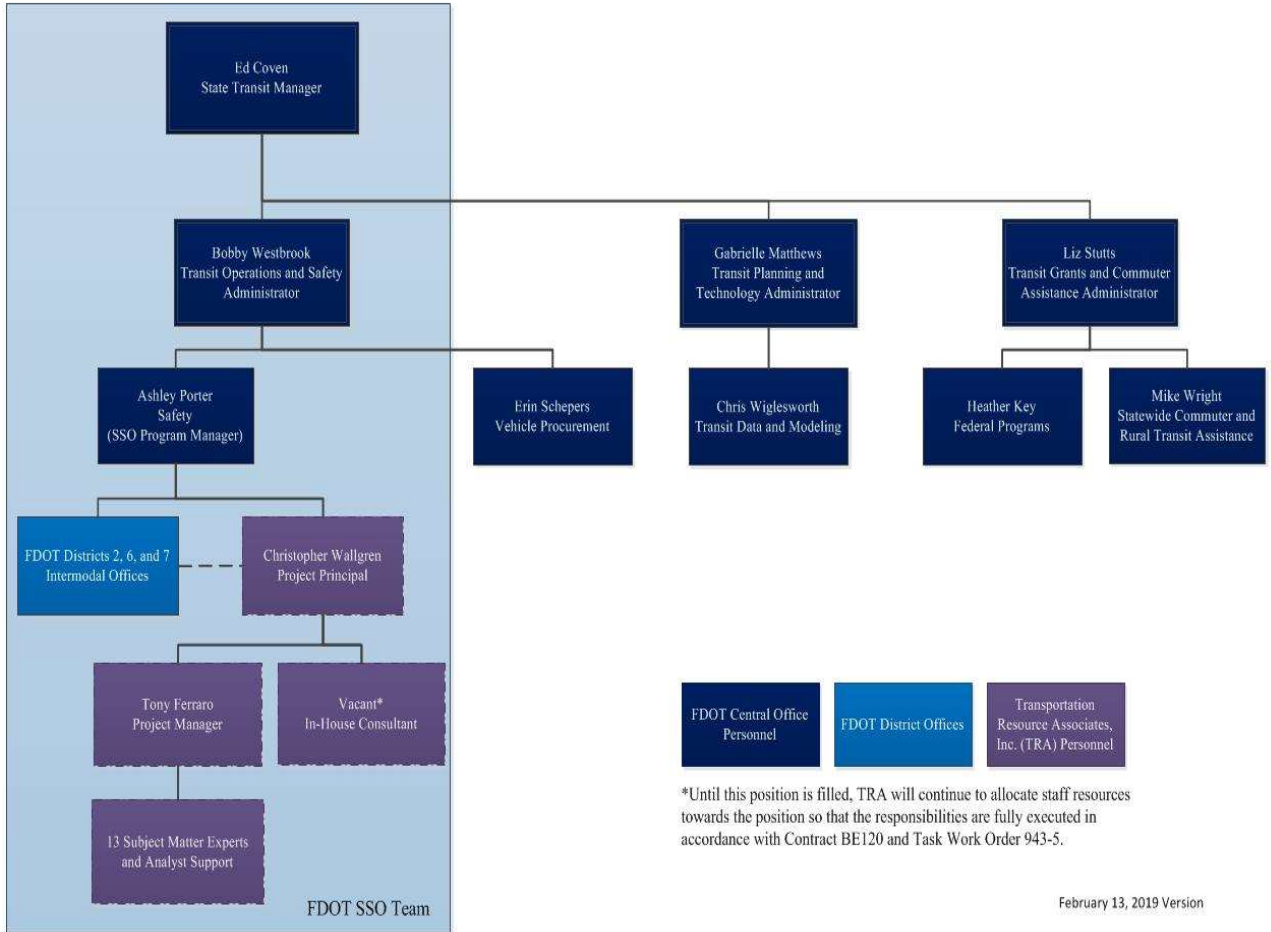
## FDOT SSO Program Contacts and Organization

The FDOT SSO Program is housed within FDOT's Central Office in the Office of Freight, Logistics and Passenger Operations in Tallahassee. Table 1 lists the FDOT SSO Program contacts.

**Table 1. FDOT SSO Program Contacts**

Contact: Name, Title, and Phone
<b>Elizabeth Stutts</b> , State Transit Manager/FDOT SSO Program Alternate  850-414-4530
<b>Robert Westbrook</b> , Transit Operations and Safety Administrator/FDOT SSO Program Alternate  850-414-4533
<b>Ashley Porter</b> , State Transit Safety Manager/FDOT SSO Program Manager  850-414-4070

Florida Department of Transportation (FDOT) Transit Office  
 Fixed Guideway Transportation Systems State Safety Oversight (SSO) Team



## FDOT SSO Program Support Team

FDOT contracts with Transportation Resource Associates, Inc. (TRA) to provide support services related to safety and security oversight for Florida FGTSs that are subject to both Part 659 and Section 341.061(1), F.S. Additionally, from 2015 through 2018, TRA employed an in-house consultant at the FDOT Central Office to provide close technical support and to directly assist the State Transit Safety Manager with the implementation of the new federal requirements, reports, training, and various other SSO activities.

TRA is a professional consulting firm established in 1990 to serve clients in the public and private passenger transportation sectors. TRA’s personnel provide technical and management consulting services in the areas of system safety; security and emergency preparedness; accident and incident investigation; transit and railway operations; maintenance and operations analysis; transportation legislation and standards; transportation planning; labor relations/human resources; and alternative transit services. TRA offers professional services to SSO programs, transportation agencies, industry advocacy groups, engineering and planning consultants, regulatory bodies, law enforcement organizations, and others. For more information, please visit TRA’s website at [www.traonline.com](http://www.traonline.com).

Table 2 lists TRA personnel who worked with the FDOT SSO Program in 2018. The contract authorizes a range of specialists to participate in oversight activities, including former law enforcement officers, and subject matter experts (SMEs) in track, transit agency operations, vehicle maintenance, and fire and life safety practices.

**Table 2. Contractor Support Team**

Consultant and Phone Number	Summary of Responsibilities
<p><b>Christopher Wallgren</b>, Vice President, Project Principal - TRA Project Lead</p> <p>212-300-4287</p>	<p>Provide SSO program and policy development technical assistance to FDOT; provide technical assistance to the FGTSs; provide analysis of accidents and incidents at the FGTSs; review and track corrective actions taken by FGTSs; ensure that the FGTSs comply with reporting requirements; review updates to the FGTSs’ system safety program and security plans; review internal safety review assessments; perform on-site audits of the FGTSs; and hold reoccurring teleconferences and on-site visits with the FGTSs and FDOT.</p>
<p><b>Anthony Ferraro</b>, Project Manager</p> <p>813-679-3937</p>	

Consultant and Phone Number	Summary of Responsibilities
<p>In-House Consultant <i>(vacant as of February 2019)</i></p>	<p>Assists with the collection, review, and analysis of relevant data, issues, and state and federal regulations to develop policy recommendations as the FDOT SSO Program implements new provisions consistent with federal requirements; communicates the new requirements; and develops training related to new requirements.</p>
<p><b>TRA SMEs</b></p> <p>David Barber Michael Crowther Daniel Hauber James Hill William Matthews John Weisgerber James Young Steven Zike</p>	<p>Assist in the performance of on-site audits and reviews; lead evaluations of policies, plans, and procedures; evaluate compliance with FDOT requirements, American Public Transportation Association Standards, and other relevant guidance; provide technical assistance; and assist in developing findings and evaluating corrective actions taken by the FGTSS.</p> <p>Have expertise in all technical areas including: system safety, vehicles, signals, train control systems, power, communications systems, track, structures, substance abuse programs, operations, maintenance, hazardous materials, training, and other requirements of the FDOT SSO program.</p>
<p><b>TRA Project Analysts</b></p> <p>Stephanie Malin, Lead Analyst Zach Billet Angel Jacome Samuel Korach</p>	<p>Assist in conducting on-site audits and reviews; provide compliance audits of agency documentation; support SME audits and reviews; conduct detailed data gathering and analysis; support and develop investigations and evaluations; and provide technical guidance to agency personnel.</p>



## Florida's FGTSs

The FDOT SSO Manual distinguishes between the FGTSs that are subject to both federal safety oversight and SSO and FGTSs that are subject only to SSO (only Section 341.061(1), F.S. requirements).

FGTSs subject to regulation under Part 659 and Part 674 include systems that:

- Are light, heavy, or rapid rail, monorail, inclined plane, funicular, trolley, or automated guideway that are not regulated by the FRA, and
- Are included in the FTA's calculation of fixed guideway route miles; or
- Receive funding under the FTA's formula program for urbanized areas, or
- Have submitted documentation to the FTA indicating the intent to be included in the FTA's calculation of fixed guideway route miles to receive funding under the FTA's formula program for urbanized areas.

Additionally, pursuant to Section 341.061(1), F.S., FGTSs that are governmentally or privately owned and operated and are financed wholly or partly by state funds are subject to state safety standards established within the statute and the SSO Manual.

The State of Florida is home to the following FGTSs subject to both Part 659, Section 341.061(1), F.S., and the FDOT SSO Manual.

**The HART TECO Line Streetcar System:** The TECO Line Streetcar consists of a 2.7-mile single-track route with eleven stations throughout Ybor City, Channelside, Water Street, and downtown Tampa.

**The JTA Skyway:** The JTA Skyway operates on 2.5 miles of elevated track through downtown Jacksonville. It currently serves eight stations through two routes: the Northbank and Southbank Lines.

**The Miami-Dade DTPW Metromover and Metrorail:** In February 2016, Miami-Dade County reorganized its departments to join Miami-Dade Transit and Miami-Dade Public Works into the new DTPW. DTPW operates two separate FGTS modes: the Metromover and the Metrorail. The Metromover operates throughout downtown Miami on 4.4 miles of elevated guideway through the Omni, Inner, and Brickell Loops. Metrorail operates across central Miami-Dade County along 25 miles of dual, elevated and at-grade track from Miami International Airport through Kendall, South Miami, Coral Gables, Brickell, downtown Miami, the Civic Center/Jackson Memorial Hospital area, Brownsville, Liberty City, Hialeah, and Medley. Metromover currently serves 21 stations and Metrorail serves 23 stations.

**The Wave Streetcar in Ft. Lauderdale:** In 2018, Broward County and Ft. Lauderdale declined to continue supporting this project, which was in the final stages of engineering and design. Since

FDOT provided oversight in early 2018 prior to the local government actions, this system is included in this report.

Additional Florida FGTSs subject only to state requirements outlined in Section 341.061(1), F.S. and the FDOT SSO Manual, but not FTA requirements, include the South Florida Regional Transportation Authority Tri-Rail and Central Florida SunRail commuter trains; the Hillsborough County Aviation Authority automated guideway systems at Tampa International Airport; the Miami-Dade Aviation Department automated people mover systems at Miami International Airport; and the Greater Orlando Aviation Authority automated guideway systems at Orlando International Airport.

For more information on FDOT’s responsibilities associated with SSO of systems not subject to federal requirements, please contact the Transit Safety Programs Manager at FDOT.

### Program Funding

The FTA funding formula for the FDOT SSO Program requires a 20 percent state match and is divided into three factors: Base Tier, Service Tier, and Modal Factors. The formula grants an equal base amount to each state, and then accounts for Service Tier factors, which include fixed guideway vehicle revenue miles, fixed guideway route miles, and fixed guideway vehicle passenger miles attributable to all FGTSs not regulated by the FRA within each eligible state. The Modal Tier considers the number of separate FGTS modes subject to SSO. Based on this formula, Florida received \$764,477 for fiscal year (FY) 2018 (Table 3).

**Table 3. State of Florida FTA Section 5329(e) SSO Allocation FYs 2013-2018**

Year	Base Tier (20%)	Modal Tier (20%)	Passenger Miles Traveled (15%)	Vehicle Revenue Miles (15%)	Directional Route Miles (30%)	Total FTA Allocation
<b>FY 2013</b>	\$151,350	\$304,802	\$56,844	\$70,557	\$154,970	<b>\$738,523</b>
<b>FY 2014</b>	\$153,746	\$309,628	\$56,926	\$74,366	\$165,616	<b>\$760,282</b>
<b>FY 2015</b>	\$153,746	\$309,628	\$61,715	\$81,771	\$159,957	<b>\$766,817</b>
<b>FY 2016</b>	\$156,514	\$315,202	\$64,238	\$82,985	\$160,355	<b>\$779,294</b>
<b>FY 2017</b>	\$154,323	\$317,102	\$66,911	\$82,188	\$159,424	<b>\$779,948</b>
<b>FY 2018</b>	\$157,563	\$303,007	\$63,977	\$80,205	\$159,725	<b>\$764,477</b>

Source: FTA: <https://www.transit.dot.gov/funding/apportionments/archived-apportionments>

The funding must be used to strengthen the FDOT SSO Program so that Florida will meet MAP-21 requirements. The FTA provides examples of how the funding may be used at the website [http://www.fta.dot.gov/tso\\_15862.html#how-can-states-use](http://www.fta.dot.gov/tso_15862.html#how-can-states-use). The examples include: additional audits and inspections, the tracking and verification of CAPs, supplemental training and peer exchanges, wages for FDOT SSO Program personnel, travel costs, equipment, office supplies, and web-based information management. FDOT uses this funding for technical

assistance including monthly teleconferences with all the FGTs, on-site compliance monitoring activities, audits, training, and other consultant services, including hazard management programs, safety certification, safety inspections, and incident investigation support.

## Part II. Program Implementation 2018

Over the past several years, FDOT, consistent with FTA guidance, began enhancing the SSO program through increased resources devoted to technical assistance, event investigation support and oversight, hazard tracking, staffing and training plans, and CAP monitoring and verification. In November 2018, FDOT adopted its new Standards Manual, which formally codified the enhanced program.

The following are key performance areas of the FDOT SSO Program's safety and security oversight functions. Overall, FDOT SSO Program efforts increased across all areas in 2018. The FDOT SSO Program balanced effort among nine vital areas reported to FTA for 2018. Field reviews at FGTSs, which included on-site rules compliance observations, workplace safety condition reviews, and operations and maintenance work order analysis comprised the highest percentage of effort. The FDOT SSO Program activities conducted in response to FGTS requests for technical support consisted of approximately 13 percent of the overall program effort, followed by direct incident support activities. The diverse set of fixed guideway transit modes across the FDOT SSO Program require unique response activities to each incident, including onsite condition observations, data review, report analysis, precise feedback, information requests, and approval of FGTS actions. FDOT SSO Program review and support efforts across internal safety reviews, CAPs monitoring, bimonthly teleconferences, security reviews, and annual reporting were fairly even as a percentage of the total program effort, ranging from two to seven percent.

### **Reportable Events Oversight**

The FDOT SSO Program provides ongoing reviews of investigations associated with accidents and incidents. In 2018, the accident and incident notification thresholds changed when the revised SSO Program Manual became effective. The new standard changes the reporting threshold for injuries, removes the monetary damage threshold for damage, and includes clarifications regarding reporting suicides, evacuations, derailments, and split switches. Agencies must notify FDOT within two hours when any of the following accidents occur:

- Fatality, including all loss of life that occurs on a transit property or are related to transit operations or maintenance, that occurs within 30 days following the accident. This includes suicides;
- One or more persons suffering serious injury (Serious injury means any injury that: (1) requires hospitalization for more than 48 hours, commencing within seven days from the date of the injury was received; (2) results in a fracture of any bone [except simple fractures of fingers, toes, or nose]; (3) causes severe hemorrhages, nerve, muscle, or tendon damage; (4) involves any internal organ; or (5) involves second- or third-degree burns, or any burns affecting more than five percent of the body surface.);
- Property damage resulting from a collision involving a rail transit vehicle;
- A collision between a rail transit vehicle and any other vehicle or person;

- A collision with an object that results in a serious injury or fatality;
- A grade crossing collision;
- A runaway train;
- Evacuation due to life safety reasons at any location, but also including, the offloading of passengers off any train into any non-station location, such as on the guideway, at grade, or along a street;
- Any derailment at any location, at any time, whatever the cause; and
- Any splitting or trailing of a switch regardless of the location or outcome, and including situations when the train remains fully railed.

Additionally, agencies must notify FDOT within two hours when the following incidents occur:

- Non-collision related damage resulting to equipment, rolling stock, or infrastructure that disrupts the operations of a FGTS;
- Low-speed collisions involving a rail transit vehicle that result in a non-serious injury or property damage;
- Damage to catenary, third-rail, or other power distribution equipment that disrupts operations;
- Fires that result in a non-serious injury or property damage;
- A personal injury that is not a serious injury; and
- Hazardous material spills.

The FDOT SSO Program maintains an online document management system, which allows the FGTS to complete formal event notification reports. When a reportable event occurs, the FGTS must complete an online Reportable Event Initial Notification Form. The FDOT SSO Program reviews and provides comments on all initial notifications of events. Following the initial notification, the FDOT SSO Program contacts the FGTS to request additional information and to provide a follow-up on any immediate corrective actions.

### Historic Perspective of Reportable Events

**Table 4. Number of Reportable Events: 2014-2018**

Agency	2014	2015	2016	2017	2018 <sup>b</sup>
HART	12	14	13	9	7
JTA	4	1	1	1	2
DTPW	3	6	9	20 <sup>a</sup>	16
<b>TOTAL</b>	<b>19</b>	<b>21</b>	<b>23</b>	<b>30</b>	<b>25</b>

a. See 2017 report for details about these DTPW events.

b. 2018 event notes as follows:

- No event exceeded the \$25,000 damage threshold for reporting.

- All but one of the HART events were grade crossing collisions caused by imprudent actions of the motorist.
- Only three derailments occurred at DTPW, two of which involved work equipment; the third occurred at low speed while moving a train into the maintenance facility.
- Seven events at DTPW involved fatalities. However, none were caused by rules violations or imprudent actions of the agency. Six of these events involved a person found to have died (or found near death) from natural, self-inflicted, or criminal acts; the seventh was the result of imprudent actions of a trespasser.

**Table 5. Fatalities: 2014-2018**

Agency	2014	2015	2016	2017	2018 <sup>c</sup>
HART	0	0	0	0	0
JTA	0	0	0	0	0
DTPW	1	3	1	5	7
<b>TOTAL</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>5</b>	<b>7</b>

- c. Five of the seven fatalities reported by DTPW in 2018 were deceased patrons discovered on transit property who had died from natural or self-inflicted causes. The sixth was a critically wounded person found in a station parking lot who later died while being transported to the hospital. The seventh fatality was a patron who trespassed onto the Metromover guideway, jumped from a bridge into the Miami River, and died several days later as a result of the injuries from the fall.

**Table 6. Injuries 2014-2018**

Agency	2014	2015	2016	2017	2018
HART	1	0	2	1	2
JTA	0	0	0	0	0
DTPW	0	1	2	2	2
<b>TOTAL</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>4</b>

### Hazards Tracking Oversight

The SSO Manual requires the FGTS to identify and resolve hazards. Hazards are defined in the SSO Manual as any real or potential condition (as defined in the FGTS’s hazard management process) that can cause injury, illness, or death; damage to or loss of a system; equipment or property; or damage to the environment. Each hazard that the FGTS identifies must be documented, and agencies must notify FDOT within 24 hours when “high” and “serious” hazardous conditions are identified. Within seven days of the hazard being reported, the FGTS must submit an initial investigation report to the FDOT SSO Program. Until the investigation is completed, the FGTS must submit monthly updates. Once the agency completes the hazard investigation, the FDOT SSO Program must review and approve the final investigation report within 30 days of submittal.

In 2018, each FGTS submitted its hazard log to FDOT on a monthly basis, and FDOT evaluated all open hazard investigations through closure. FDOT personnel analyzed hazards via on-site review activities and off-site phone calls and document submittals.

### **CAPs**

The FGTSs are required to prepare a CAP when an investigation identifies causal factors that require corrective action, or when hazards or deficiencies are identified in safety or security audits and reviews. CAPs must identify the hazard or deficiency, planned activities or actions to resolve the hazard or deficiency, the FGTS department(s) responsible for implementing the actions, and a schedule for implementing the plan.

Once an FGTS prepares a CAP, the FDOT SSO Program engages a three-step process to fulfill its responsibilities:

1. The FDOT SSO Program reviews proposed CAPs and determines if they are acceptable within 15 days of receipt;
2. Once a proposed CAP is approved, the FDOT SSO Program tracks the progress of implementation and provides technical assistance to the FGTS, as necessary; and
3. The FDOT SSO Program reviews documentation for completed CAPs, verifies that this information demonstrates appropriate actions to correct deficiencies, and closes the CAP.

The FGTS must maintain a Corrective Action Monitoring Log and provide the FDOT SSO Program with monthly updates until the CAP is complete and verified as closed.

Each FGTS submitted its Corrective Action Monitoring Log to FDOT on a monthly basis. Each FGTS also provided appropriate documentation necessary to demonstrate closure of CAPs. FDOT monitored the status of all open CAPs and met regularly with FGTS personnel via phone and in person to review and accept all final CAP materials required for CAP closure. In many cases, FDOT personnel performed on-site verification of mitigations described in the CAPs.

### **Internal Safety Review Assessments**

Each FGTS is required to maintain an SSPP and a SPP. The SSO Manual requires the SSPP to contain 21 elements to provide the basis for the FGTS safety programs, and the SPP to contain 20 elements. Each FGTS is required to conduct an internal, unbiased review of these plans over a three-year period. Where applicable, the FGTS should identify findings and develop CAPs to address deficiencies and areas of concern. Typically, each FGTS reviews one-third of the elements of each plan annually. FDOT provides technical support and SSO review of all stages of the FGTS internal safety review process. The FGTSs must develop appropriate internal audit checklists and provide them to the FDOT SSO Program for review and approval at least 30 days prior to conducting the reviews. Upon their conclusion, the FGTS must submit the results of the review to the FDOT SSO Program. The FDOT SSO Program monitors CAP implementation progress

according to the same CAP process engaged for hazard, accident, and external audit CAPs. Each FGTS must describe its findings, recommendations, and status of corrective actions. FDOT reviews and approves internal safety review materials, reports, and CAPs and provides an annual summary report to the FTA.

### **Regularly Scheduled Meetings and On-Site Assistance**

The FDOT SSO Program is on call for all safety and security issues involving the FGTSs. The agencies may contact the Transit Safety Program Manager or the support team at any time with information requests, requests for best practices analyses, assistance with reporting requirements, or to address any other concerns. In addition to this on-call availability, the SSO support team establishes and carries out a schedule of teleconferences and site visits to provide technical assistance, conduct SSPP compliance reviews, monitor FGTS safety activities, perform audits, and compile applicable data.

During each on-site review, the FDOT SSO Program meets with FGTS safety, operations, and maintenance personnel. Each on-site review includes a regular progress meeting with safety managers, targeted field review activities, and verification of CAP implementation to ensure that intended and required actions were administered according to the accepted plan. Additionally, during each on-site review, the FDOT SSO Program team conducts independent audits of rules and procedures compliance, inspects equipment and infrastructure, and ensures that the agencies are complying with the provisions of the FDOT SSO Program Manual and the FGTS' own SSPP, SPP, and formal plans, policies, procedures, and guidelines. The FDOT SSO Program develops an agenda for each on-site review and issues a summary memo to the FGTS, which includes findings and areas for the FGTS to address.

In months with no on-site review, the FDOT SSO Program support team holds a comprehensive teleconference with the transit agency. Each teleconference is scheduled to afford essential managers and staff from the FGTS the opportunity to discuss and provide updates regarding current and emerging safety and security concerns and hazards, open safety and security investigations and CAPs, safety and security submittals, and other safety- and/or security-related operations and maintenance issues, as necessary. FDOT develops an agenda for each teleconference, which is organized in a standardized format to address all of the aforementioned issues and to ensure that all relevant subjects are appropriately monitored and addressed.

**Table 7. 2018 FDOT SSO Program Activities**

Month	DTPW	JTA	HART
<b>January</b>	Teleconference	On-site review	On-site review
<b>February</b>	Triennial audit	Teleconference	Teleconference
<b>March</b>	Teleconference	On-site review	On-site review
<b>April</b>	On-site review	Teleconference	Teleconference
<b>May</b>	Teleconference	Unannounced on-site review and teleconference	On-site review
<b>June</b>	On-site review	Teleconference	Teleconference
<b>July</b>	Unannounced on-site review and teleconference	On-site review	Teleconference
<b>August</b>	On-site review	Teleconference	On-site review
<b>September</b>	Teleconference	On-site review	Unannounced on-site review and teleconference
<b>October</b>	On-site review	Teleconference	Teleconference
<b>November</b>	Teleconference	On-site review	Unannounced on-site review and teleconference
<b>December</b>	On-site review	Teleconference	Teleconference

**Agency-Specific SSO Program Support Activities 2018**

**HART**

- Local development increased significantly along the entire vicinity of the Streetcar alignment in 2018. Nearly a dozen projects were in progress along the 2.7 miles of trackway, and FDOT provided technical support to HART to ensure the adjacent construction monitoring program maintained its effectiveness. Aspects of HART’s adjacent construction monitoring program include power infrastructure adjustments, construction plan reviews, right-of-way awareness among all employees, enhanced communications among staff, participation in regularly-recurring City project meetings, and an expanded contractor training program, which began issuing worker helmet stickers to demonstrate current compliance with the HART safety program.
- FDOT continued to provide technical support to HART regarding problematic grade crossing locations. Upon request, FDOT accompanied HART to City project meetings and offered input about trends and hazard analysis related to the areas of concern. HART provided regular updates to FDOT, and both worked together to ensure developers include appropriate treatments for intersections in their project plans. HART reported strong participation across all relevant stakeholder groups in 2019, including the Tampa Police Department and the Public Works Department. All flashing yellow warning lights

were changed to flashing red lights to ensure motorists stop when streetcars are approaching intersections.

- FDOT worked with HART to verify closure of accident investigations outstanding from previous years. Since 2016, HART significantly enhanced its investigation methods and reporting practices to ensure full compliance with FDOT SSO program requirements; many investigation reports submitted prior to 2016 had been previously rejected by FDOT. HART continued to demonstrate strong adherence to its revised and compliant program practices throughout 2018. As such, the FDOT SSO program accepted HART's request to verify closure of all open items prior to 2016.
- The FDOT SSO program provided necessary support to HART as it updated its CAPs and internal audits programs to be fully compliant with FDOT requirements. HART expanded the CAPs development and implementation process to ensure all required participants were involved to the extent necessary to achieve state goals, and HART updated its internal audit process, bringing it into compliance with the FDOT SSO Manual.
- FDOT SSO program staff continued to support HART in its efforts to revise maintenance plans, policies, and procedures in 2018. HART expects to publish revised maintenance standards for vehicles, facilities, and infrastructure in 2019.

#### JTA

- As JTA moved forward with its Ultimate Urban Connector (U<sup>2</sup>C) project in 2018, the FDOT SSO Program continued to monitor developments and provide relevant technical support regarding staffing plans, system upgrades, prototype vehicle testing, and training programs. FDOT remained available to JTA Skyway managers for technical inquiries and to provide analysis for various program development options under consideration.
- FDOT continued to monitor JTA Skyway station rehabilitation efforts, including elevator and escalator repairs and replacements, fire alarm system upgrades, security monitoring equipment, and staff deployment. FDOT also reviewed JTA Skyway vehicle evacuation practices and provided technical analysis and feedback, as appropriate.
- FDOT SSO program staff continued to closely monitor Skyway maintenance records and practices. FDOT observed field maintenance efforts along the Skyway guideway and reviewed documentation to ensure full compliance with JTA policies and procedures.
- As JTA Skyway transitioned new staff into vacant safety and operations positions in 2018, FDOT SSO staff provided technical review and support to ensure Skyway's seamless compliance with program requirements.

## DTPW

- FDOT continued to monitor safety certification, validation, and acceptance of the new Metrorail trains throughout 2018. FDOT SSO staff reviewed documentation submitted by DTPW for each new trainset, including each safety and security certification verification report. FDOT monitored the efforts of the manufacturer and the DTPW project manager, and FDOT tracked outstanding items, including development of the new train maintenance plans and retrofits for elements identified as in need of adjustment. FDOT provided appropriate technical feedback to DTPW based on these reviews.
- FDOT SSO program leaders met with DTPW executive staff and the Miami-Dade County Mayor in April 2018 to discuss the preliminary findings of the 2018 triennial audit of Metrorail and Metromover and to review the root causes of high-profile challenges facing DTPW. This process initiated an effort for DTPW to establish minimum hiring qualifications and to address the challenges associated with hiring qualified individuals for technical positions. FDOT also emphasized the safety implications of maintaining ineffective hiring practices and the challenges facing the aging DTPW FGTS infrastructure.
- Throughout 2018, FDOT SSO staff reviewed Metrorail and Metromover traction power substations and train control rooms. FDOT provided technical analysis and written feedback to DTPW regarding storage and maintenance practices and the condition of these rooms and the equipment contained within. FDOT will continue to monitor these conditions and DTPW responses to improve and enhance situations in need of attention.
- FDOT monitored Rail Services training program accomplishments throughout 2018. DTPW provided a monthly training report, and FDOT reviewed these materials to ensure compliance with policies and procedures. FDOT also monitored available resources for Rail Services training and provided feedback to DTPW, as appropriate, regarding areas of concern and other opportunities for enhancement.

## Triennial Audits of FGTSs

Every three years, the FDOT SSO Program performs a triennial audit of each FGTS' compliance with its SSPP, SPP, and the requirements established in the SSO Manual and Part 659. The triennial audit is an intensive multi-day audit of safety in all applicable FGTS operations, maintenance, training, and administration.

In February 2018, the FDOT SSO program conducted on-site audit activities at DTPW, and worked with DTPW as it developed CAPs in response to audit findings throughout the rest of the year. It is notable that the FDOT SSO program worked with DTPW Rail Services Training and the Office of Safety and Security to develop a CAPs workshop in response to one of the triennial audit findings. FDOT SSO program representatives hosted the initial workshop for DTPW managers and

staff in October 2018. DTPW retained the workshop materials and incorporated the agenda into refresher training for all staff responsible for developing and implementing CAPs.

### **FTA Triennial Audit of FDOT SSO Program**

In July 2017, the FTA performed its triennial audit of the SSO program. FTA auditors visited Tallahassee and DTPW. On December 19, 2018, the FTA provided their draft audit report to FDOT. The FTA stated that all findings identified in the audit were resolved through FDOT's efforts towards achieving certification with Part 674.

### **Annual Reporting Requirements**

By March 15 of every year, the FTA requires the FDOT SSO Program to submit a report that certifies annual compliance with federal regulations, and summarizes the oversight activities for the preceding year. The FDOT SSO Program requires that each FGTS formally report all evacuations of vehicles, grade crossing collisions, deaths that occur on transit property, and derailments, whereas the National Transit Database maintains narrower thresholds.

### **For More Information**

**Visit our Transit Fixed Guideway Safety and Security website:**

<http://www.dot.state.fl.us/transit/Pages/NewTransitFixedGuidewaySafetySecurity.shtm>

**Visit our Florida Transportation Safety and Operations Network website:**

<http://www.floridatsn.org/fixed-guideway-transportation-systems-fgtss-safety-oversight/>

**Call or email:**

**Ashley Porter, FDOT SSO Program**

850-414-4070 or [ashley.l.porter@dot.state.fl.us](mailto:ashley.l.porter@dot.state.fl.us)

**Christopher Wallgren, Vice President, TRA, Inc.**

212-300-4287 or [christopher.wallgren@traonline.com](mailto:christopher.wallgren@traonline.com)

**Anthony Ferraro, Project Manager, TRA, Inc.**

813-513-4335 or [anthony.ferraro@traonline.com](mailto:anthony.ferraro@traonline.com)