

# BUILT FOR RESILIENCE

## Annual Report

FY2019–2020

FLORIDA DEPARTMENT OF  
TRANSPORTATION, DISTRICT SIX  
Transportation Systems Management  
and Operations



# A MESSAGE FROM THE DIRECTOR OF OPERATIONS



**Rudy Garcia, P.E.**  
District Six Director  
of Operations  
Florida Department  
of Transportation

As fiscal years (FYs) go, July 2019 through June 2020 was one for the history books. July 2019 started off like any other FY; promising new traffic management strategies, interesting projects, and continuing the Florida Department of Transportation's mission to provide a safe transportation system that ensures the mobility of people and goods, enhances economic prosperity, and preserves the quality of our environment and communities. The first half of FY 2019–2020 for the District Six Transportation Systems Management and Operations (TSM&O) office had many milestones, from opening two new managed lanes corridors to coordinating traffic management for Superbowl LIV in Miami.

Then the COVID-19 pandemic hit us, and it affected our lives and the way we conducted business. In late February and early March 2020, signs of the coming pandemic became more prevalent. Stay at home orders were issued. Safety precautions were put in place. We entered a new world of how we got the work done. Safety is always a priority for our office and field staff, but this year our priorities shifted to making sure our staff was safe and healthy in a pandemic. Finding protective face masks, gloves, hand sanitizer, and disinfectant became a daily task.

One interesting aspect of the pandemic from a transportation perspective was putting in place a travel demand management (TDM) strategy that has been discussed for years. TDM tries to achieve more efficient use of the transportation system and reduce motor vehicle travel. Working from home, or teleworking, has been proposed as a TDM strategy for years. This year, we were forced to implement teleworking and utilize virtual meetings. We shifted from on-site employees to maximizing remote working as stay-at-home orders were issued and curfews were established. This was a necessity throughout the business, commercial, and educational community.

As a result, traffic volumes reduced dramatically across our roadway network. Along I-95, we saw a 38% reduction during the morning peak period and 20% reduction during the evening peak period. These are traffic volume levels that have not been seen for many years.

The one recurring theme through this life-changing event was the resilience of not only the District Six staff, but specifically the TSM&O office. Many of the services provided by the TSM&O office are available 24 hours per day, 7 days per week. The SunGuide Transportation Management Center (STMC) and the Road Rangers operate around the clock. Staff was tasked to ensure these services continued without fail.

The TSM&O office has exhibited resilience in the face of multiple hurricanes in the past. This threat led to the development of the Hurricane Response Action Plan (HRAP),

which details the steps taken during a severe storm event. Looking at the pandemic pragmatically, the TSM&O office was quick to develop a Pandemic Response Action Plan (PRAP). The PRAP outlined procedures for different phases of the pandemic, including the possibility of evacuation. We share the STMC with other agencies such as the Florida Highway Patrol and the Miami-Dade Expressway Authority. It was important to have our co-located agencies on the same page with safety precautions. The District Six TSM&O PRAP served as a guide for other districts trying to develop similar protocols.

Along with traffic information, the STMC began disseminating information to the community about testing sites and alerts from the Florida Department of Health. The STMC monitored virus testing sites and food distribution operations, as they had an impact on traffic congestion.

Despite these challenges, the TSM&O office continued its primary goal of providing transportation services to the southeast Florida region. The TSM&O office assisted with the opening of the Palmetto Express and 75 Express corridors, featuring the first system-to-system managed lane connection. This brings the total managed lane system to 22 miles in District Six. The 75 Express corridor extends north into Broward County, creating a 30-mile managed lane corridor.

The Incident Management Program started a Rapid Scene Incident Clearance (RISC) program in Monroe County. RISC is an incentive-based program for participating vendors to clear large-scale events (such as an overturned tractor trailer) as soon as possible. The Monroe County RISC program spans 105 miles, covering most of US 1 / Overseas Highway throughout the Florida Keys.

Our traditional services, such as Road Rangers and incident management, found new ways during the onset of the pandemic to keep our freeway system healthy. Our roadway incident clearance time this fiscal year averaged 27.9 minutes, representing a 44% reduction over the 2005 baseline of 50 minutes. Road Rangers responded to over 60,000 activations.

In the coming year, we are expecting to move forward with new initiatives such as the Keys COAST project in Monroe County (District Six's first connected vehicle project), expansion of the Monroe County Traffic Signal System, and new improvements for our Incident Management Program.

I invite everyone to discover the resilience of the TSM&O program.

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# INTRODUCTION

THE THEME FOR THIS YEAR'S ANNUAL REPORT IS ***BUILT FOR RESILIENCE***. THE DISTRICT SIX TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS (TSM&O) AND ITS SUNGUIDE TRANSPORTATION MANAGEMENT CENTER (STMC) HAS HAD A CHALLENGING FY 2019–2020 TO SAY THE LEAST.

The STMC has had its resilience tested in the past with many traffic and storm events. However, this fiscal year really showed how the staff at the TSM&O office and the STMC can adapt to a significant change of protocol and operation.

The COVID-19 pandemic raised multiple questions about our operation. How do we keep control room operators safe while adhering to new safety protocols? How should we plan for multiple teleworkers while maintaining a viable remote connection to the computer network? How would our incident management field staff interact with the public and other workers while responding to traffic events and staying safe? The TSM&O office met the goal of adjusting to all of these new constraints. In addition, societal issues and an active hurricane season added to the challenge.

Staff schedules were adjusted to allow for safety and new social distancing measures. Teleworking was offered for those who could effectively work from home, which created space that allowed the STMC



LOOKING  
NORTH: I-95  
AND SR 836  
INTERCHANGE

staff to spread out in vacated offices, maximizing the number of staff and keeping everyone safe. In addition, the STMC had plans in place for full remote operations if the building had to be evacuated due to pandemic outbreak, and the Information Technology (IT) department improved and expanded VPN access to maximize teleworker capacity.

In 2009, the TSM&O office produced a Hurricane Response Action Plan (HRAP). The HRAP is updated annually and provides the guideline for what to do before, during, and after a storm. Since the pandemic affected all aspects of normal business, the District Six TSM&O office wrote a Pandemic Response Action Plan (PRAP) documenting how the STMC and its staff would conduct themselves depending on the effect of the pandemic. The PRAP was shared with other districts at FDOT and became a guidance document. A companion document (Workplace Readiness Plan) was also produced detailing how the TSM&O office and STMC would continue normal operation during the pandemic.

During the fiscal year, the STMC reaffirmed a primary function as being the regional disseminator of traffic information. During the height of lockdown and stay-at-home orders, the STMC checked impacts on regional traffic. A checkpoint was established by Monroe County along US 1 / Overseas Highway allowing only residential access to the Florida Keys. The STMC monitored the checkpoint for congestion and extensive queues.

The STMC took advantage of the vast amount of traffic detector data and created dynamic volume trend graphs to evaluate the pandemic's effect on traffic. Managed traffic events and Road Ranger activities were compared weekly with pre-pandemic conditions.

The fiscal year was not only about the pandemic. Several significant initiatives were accomplished:

- Opened the Palmetto Express and 75 Express corridors.
- Brought the Rapid Incident Scene Clearance (RISC) program to Monroe County along US 1 / Overseas Highway.
- Upgraded all Intelligent Transportation Systems (ITS) closed-circuit television (CCTV) cameras to high definition.
- Successfully supported traffic efforts for Superbowl LIV in Miami.
- Prepared for the successful expansion of the Monroe County Traffic Signal System (MCTSS), incorporating 17 traffic signals and other traffic control devices in the City of Key West.

Coordination with regional partners became very important during this fiscal year. It was beneficial to have multiple agencies and municipalities communicating with each other to share initiatives and updates. Partner agencies include:

- Intra and inter FDOT Districts
- Florida's Turnpike Enterprise
- Miami-Dade County
- City of Miami Beach
- Monroe County
- Miami-Dade Expressway Authority
- Florida Highway Patrol
- Port Miami Tunnel

This FDOT District Six TSM&O Annual Report covers the fiscal year from July 1, 2019, to June 30, 2020 (FY 2019–2020) and aligns with the program's five primary functional areas listed below.

- **Intelligent Transportation Systems (ITS) Deployments.** ITS field devices provide the necessary data for STMC operations. The TSM&O office manages planning, design, and procurement of ITS equipment, including cameras, dynamic message signs (DMS), vehicle detectors, arterial systems, and communications.
- **SunGuide Transportation Management Center (STMC) Operations.** The STMC provides the central location and clearinghouse for data collection and dissemination. It is the command center for managing traffic incidents and provides proactive operations through express lanes, ramp signaling, arterial operations, and other active traffic management strategies.
- **Incident Management.** This functional area dispatches Road Rangers and other incident management resources to safely and quickly clear lane-blocking events and also assists motorists. An important part of the program is coordination with first responders to identify, develop, and implement solutions to improve incident management.
- **Information Technology (IT)/ITS Maintenance.** This functional area handles the critical tasks of maintaining the indoor STMC IT system and outdoor ITS devices, as well as providing software support to ensure system availability and stability.
- **Traveler Information.** This functional area provides real-time traveler information services through various sources, such as the telephone, internet, smartphone applications, and social media.

This is the fifteenth edition of District Six's TSM&O Annual Report. The report contains informative details about the TSM&O program. We welcome you to join District Six as we continue to discover our resilience and strive to improve the reliability of the southeast Florida multimodal transportation systems.

## FLORIDA DEPARTMENT OF TRANSPORTATION TSM&O

### Our Mission:

Identify, prioritize, develop, implement, operate, maintain, and update TSM&O strategies and measure their effectiveness for improved safety and mobility.

### Our Vision:

TSM&O will increase the delivery rate of fatality-free and congestion-free transportation systems supporting the FDOT vision and Florida Transportation Plan goals.

# ITS DEPLOYMENTS

The TSM&O office exhibited its resilience throughout its functional areas. Continuing to add new ITS equipment and upgrade older devices keeps the overall system resilient. Opening two new managed lane corridors showed the adaptability of the TSM&O and STMC staff. FDOT District Six continued improving the ITS infrastructure to achieve its transportation goals of improving traffic safety, incident management, mobility, and reliability. These improvements included expanding the ITS infrastructure to fill the gaps in terms of providing additional CCTV cameras, DMS, and vehicle detectors, as well as accommodating new projects. A summary of FDOT District Six TSM&O projects being built or completed during FY 2019–2020 follows.

## **Palmetto Express and 75 Express Miami-Dade Deployments.**

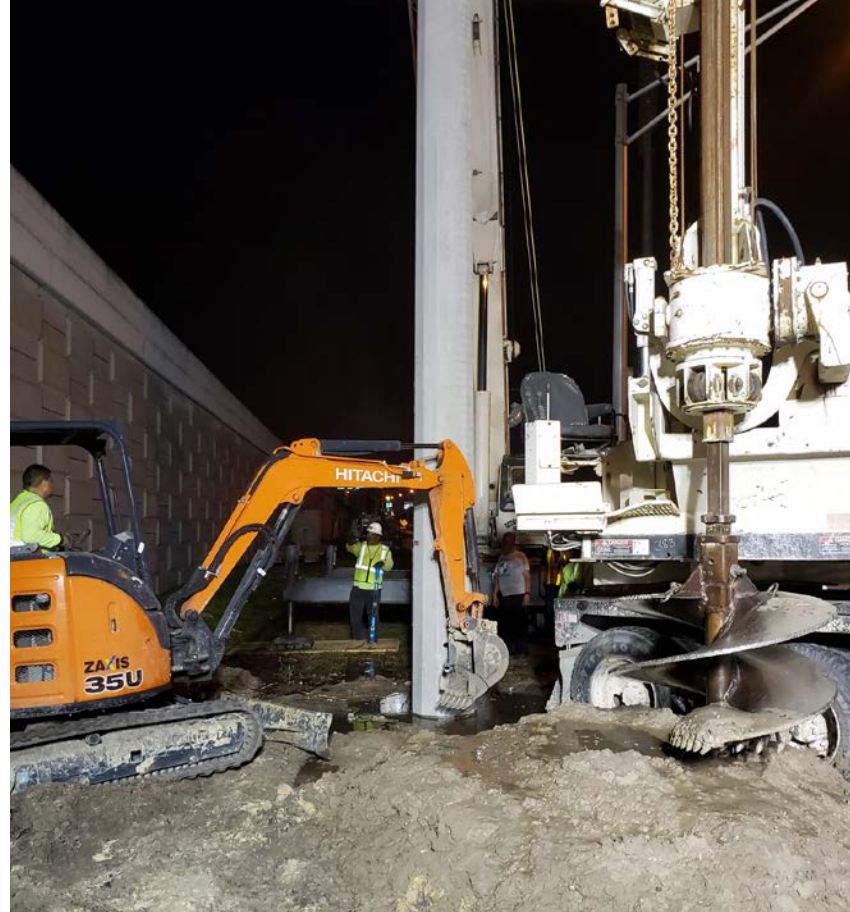
In August 2019, two new managed lane corridors were opened. The Palmetto Express and 75 Express project began in 2014 and is a major expansion of the regional express lane network. It features the first system-to-system connection at the I-75 and SR 826 interchange, providing continuous express lanes from Coral Way along SR 826 to I-595 in Broward County—an addition of 13 miles. The District Four component in Broward County opened in 2018. Additional ITS devices, such as CCTV cameras, DMS, lane status DMS, toll amount DMS, vehicle detectors, ramp signaling, and other infrastructure equipment, were installed to support these managed lane corridors.

**I-395/SR 836/I-95 Design-Build Project.** This project began in January 2019 and continued during this fiscal year. The reduced traffic volumes due to the pandemic allowed lane closures during the day and construction activities to continue. This significantly helped the project stay on schedule. This project will completely



NORTHBOUND  
PALMETTO EXPRESS





left: I-395/SR 836/I-95 CONSTRUCTION  
right: CAMERA POLE INSTALLATION

reconstruct the existing interchange and create a signature bridge that will span 1,025 feet over NE 2<sup>nd</sup> Avenue and SR 5 / Biscayne Boulevard. This project will provide additional roadway capacity and improved mobility while incorporating extensive pedestrian improvements, community access, and ITS solutions. The signature bridge will transform the area beneath I-395 into 55 acres of open communal spaces for nearby communities and visitors. The project will add capacity to I-395 with three through lanes in each direction and provide separate connector ramps for traffic to and from I-95. The limits on I-395 are from the SR 836/I-95/I-395 Interchange to the MacArthur Causeway, approximately 1.4 miles long. The project also includes work on SR 836 from NW 17<sup>th</sup> Avenue to the SR 836 / I-95 / I-395 Interchange. The improvements on SR 836 include

the construction of an elevated bridge that begins just east of the toll gantry at NW 17<sup>th</sup> Avenue, rising over the center of SR 836 and allowing drivers to bypass the I 95 Interchange, touching down at I-395 east of I-95. This project is expected to be complete in the fall of 2024.

**Districtwide ITS Replacement Project (Miami-Dade and Monroe Counties).** The ITS replacement projects were active this year. A project that began in February 2017 to replace 170 cameras with HD cameras was completed. This brings almost all cameras to high definition quality and allows them to be utilized by FDOT's Data Integration and Video Aggregation System (DIVAS). DIVAS is the next generation of video sharing on the FL511 website and application. This project also replaced all ramp signal traffic lights along I-95, replaced



four arterial DMS and one freeway DMS, added microwave vehicle detectors in the Golden Glades Interchange area, and added video hardware for the video components.

Another replacement project began in July 2019. This project is replacing 11 arterial DMS along US 1 in south Miami-Dade County and in Monroe County. This project will also improve network communications along I-95 from SR 112 to the Golden Glades Interchange by integrating newly installed, 144-count fiber optic cable, replacing 12-count fiber optic cable laterals, as well as ITS cabinet equipment such as field ethernet switches, fiber optic patch panels, fiber optic connectors and jumpers, and uninterruptible power supplies and batteries. This project is expected to be complete in April 2021.

The following table illustrates the increase in deployed ITS devices from 2005 to 2020.

ITS DEVICE	2005	2020
CCTV Cameras	69	412
DMS	22	207
Detectors	205	502
Ramp Signals	0	22
ASCT Cameras	0	106
ASCT Intersections	0	30

# STMC OPERATIONS

STMC Operations had its resilience tested like no other year in its history. The COVID-19 pandemic changed the way operations were handled with alterations in staff schedules, safety protocols, and teleworking. The STMC found itself as the hub of information, posting DMS messages for COVID-19 testing sites, providing information on the State of Florida Department of Health COVID site for traveler information, monitoring food distribution sites that popped up around Miami-Dade County, monitoring an entry checkpoint in the Florida Keys, and coordinating construction projects with accelerated schedules, taking advantage of reduced traffic volumes. The graph on the following page shows the impact of the pandemic on traffic volumes along I-95 at NW 119<sup>th</sup> Street. The average weekday traffic volumes showed a reduction of up to 38%.

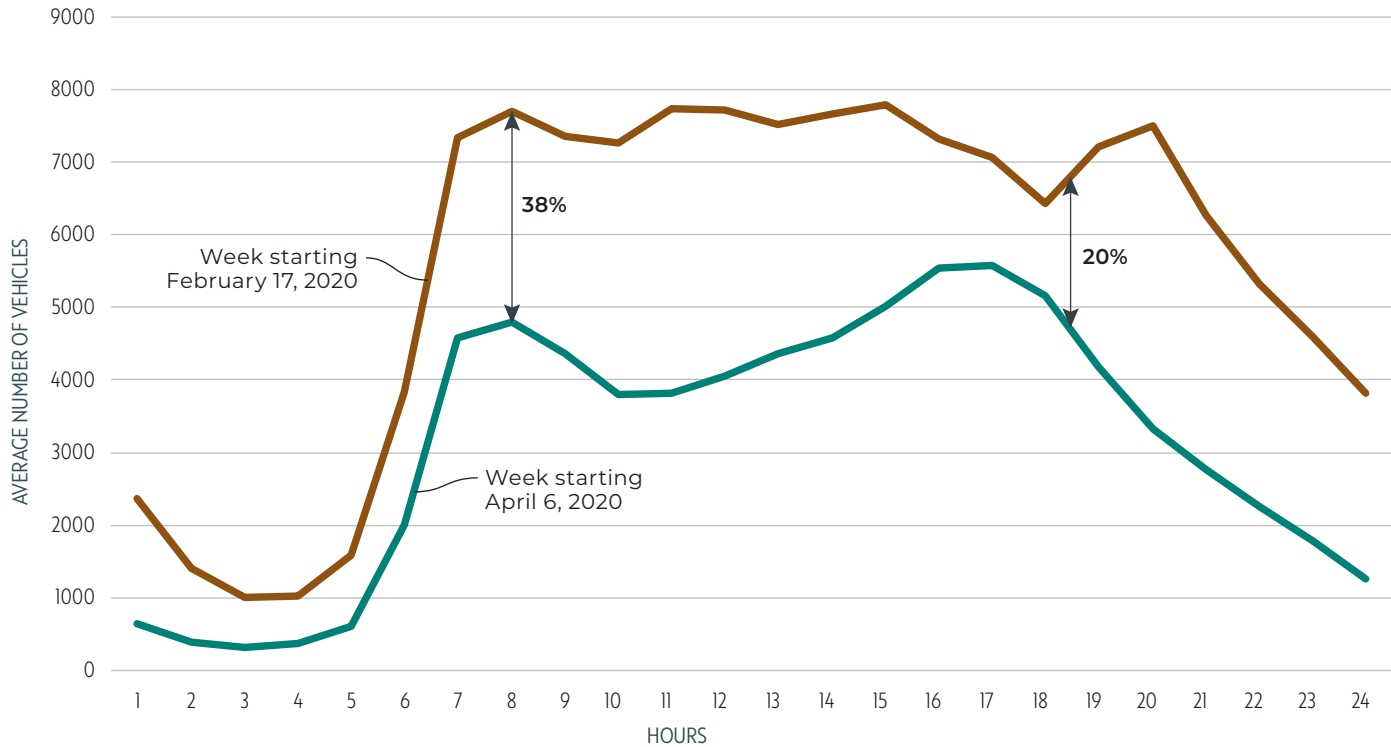
The STMC operates 24 hours a day, 7 days a week, which proved challenging during the pandemic. Essential personnel letters were needed to allow STMC staff to travel to work with stay-at-home orders and curfews in effect. The PRAP detailed the process for full remote operations in the event the building needed to be evacuated. The remote system was successfully tested but has not been needed. The STMC serves as the command and control center for traffic management (including express lanes, ramp signaling, and arterial operations) as well as its core functions of incident, work zone, emergency, and special event management. The STMC coordinates with emergency responders, Road Rangers, and other incident management resources to clear incidents as quickly and safely as possible from South Florida's roadways. This coordination is enhanced by the co-location of the partner agencies Miami-Dade Expressway Authority TMC Operations staff and the Florida Highway Patrol (FHP) dispatch.



MACDONALD  
AVENUE IN THE  
MONROE COUNTY  
TRAFFIC SIGNAL  
SYSTEM

## Average Weekday Traffic Volume at I-95 at NW 119 Street

includes northbound and southbound, express, and general purpose lanes



## ARTERIAL OPERATIONS

The STMC continued operations of the ASCT system along SW 8<sup>th</sup> Street. This system includes 30 signalized intersections from SW 142<sup>nd</sup> Avenue to SW 67<sup>th</sup> Avenue, including interchanges with Florida's Turnpike and the Palmetto Expressway. The ASCT system optimizes the signal timing patterns of individual signalized intersections, based on real-time data, while improving the traffic flow throughout the corridor.

What started out as a 2-year pilot project has turned into a multi-year operational function at the STMC. Arterial Operations staff continues to work with Florida International University (FIU) for operational assessment of the system. The results of the study are expected in July 2020, but preliminary results show improvements in vehicle throughput, total delay, and crash frequency. STMC arterial operators monitor the ASCT system,



record motorist comments, track equipment availability, and coordinate signal timing changes with Miami-Dade County.

The Monroe County Traffic Signal System (MCTSS) completed its second year of operation. Arterial Operations staff operate and maintain 17 signalized intersections, with eight emergency signals, two drawbridge signals, and 26 flashing beacons in Monroe County along US 1 / Overseas Highway from Stock Island to Key Largo. In preparation for operating the MCTSS, the TSM&O office spent time and resources making the system more resilient. This was accomplished by upgrading the traffic signal controllers and components, adding uninterruptible power supplies and batteries for improved power reliability, and adding the signals to an advanced traffic management system software. The results can be seen in the availability of the system components. During FY 2019–2020, traffic signals in the MCTSS were available 99.2% of the time, traffic signal controllers were available 100% of the time, and traffic detection was available 99.9% of the time. The TSM&O office is preparing to expand the MCTSS into the City of Key West beginning next fiscal year. The same effort is in progress to make the system more reliable and resilient.

Another challenge of the MCTSS is the geographic coverage area, soon to be 105 miles from the City of Key West to Key Largo. Arterial Operations staff work closely with the ITS Maintenance staff to respond to traffic signal problems. The TSM&O office continued its partnership with the Monroe County Sheriff's office, which helps with confirmation and initial troubleshooting of these problems. The TSM&O office is currently training the Key West Police Department for assistance in the City of Key West. The STMC works with schools to program the eight flashing beacons for the correct schedules. Next year, Arterial Operations will add an alarm system for the school zone flashing beacons.



KEY WEST POLICE TRAINING

The automatic alarms will provide email alerts for events such as power outages, malfunctions, and knock downs.

## EXPRESS LANES OPERATIONS

95 Express. The STMC continued operations of 95 Express for 21 miles. from SR 112 to I-595. The project has completed its 11th full fiscal year in operation. Despite a reduction in use during the second half of the fiscal year due to the pandemic, 95 Express continues to be regarded as one of the most successful and highly used express lane facilities in the United States.

**Palmetto Express and 75 Express.** In August 2019, District Six opened the Palmetto Express and 75 Express corridors in Miami-Dade County, connecting Miami-Dade with the existing portion of 75 Express in Broward County. The project limits are SR 826 from



RAMP SIGNAL ALONG I-95

Coral Way to NW 154<sup>th</sup> Street continuing along I-75 from SR 826 to I-595 in Broward County. The overall project length within District Six is approximately 15 miles.

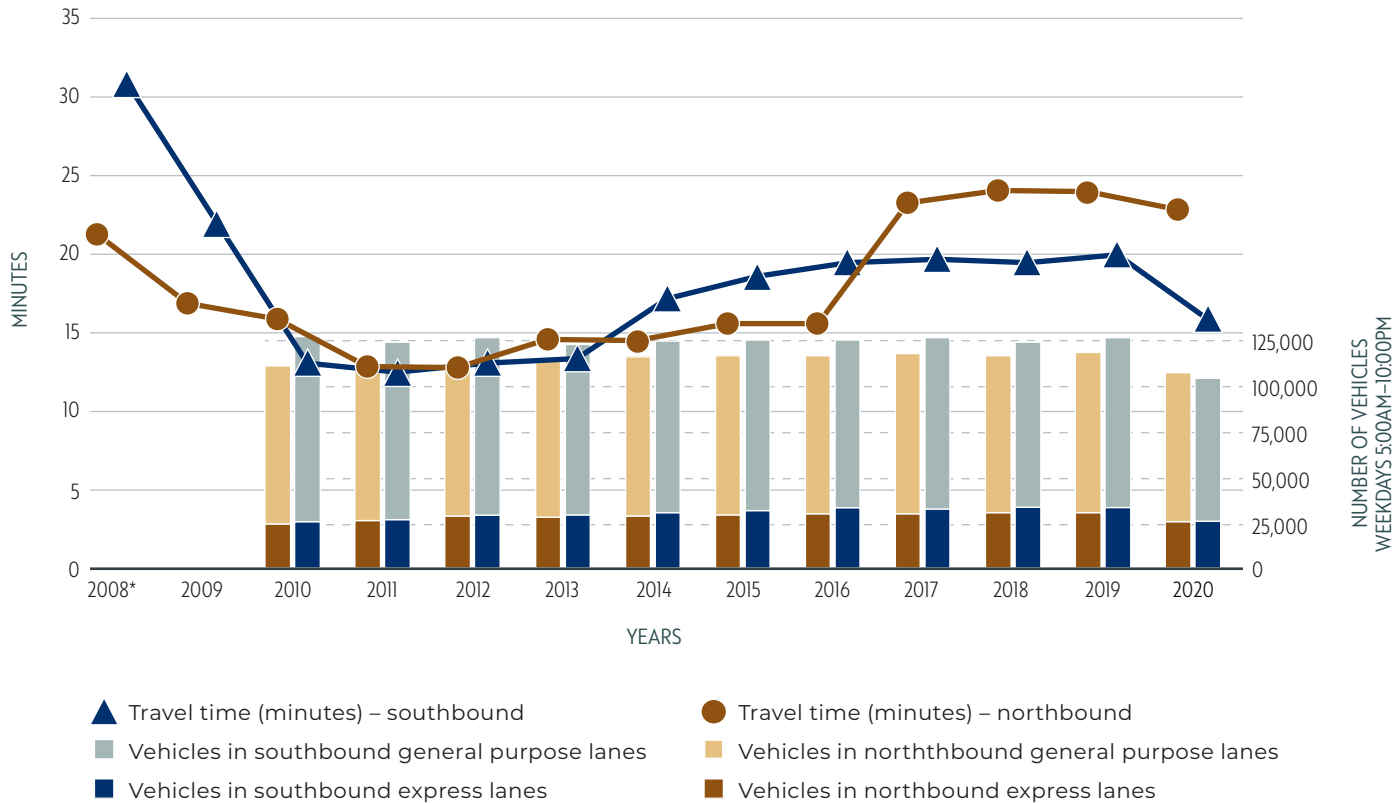
The STMC trained staff in advance of the Palmetto Express and 75 Express opening. A coordinated effort among Florida's Turnpike staff, the TSM&O office, and the design-build project team led to a smooth opening. District Six developed new standard operating guidelines and coordinated deployment efforts with regional team members. In addition to the physical geometric improvements, the Palmetto Express and 75 Express will also include system components, such as DMS, vehicle detection, CCTV cameras, ramp signals (SR 826 only), electronic toll collection, and incident management. Operation of the Palmetto Express and 75 Express is a joint effort among the TMCs in District Six, District Four, and the Florida's Turnpike. Incident management is also coordinated among the three districts. District Six hosted meetings with the districts and local first responders to determine how the regional team would function. FHP and local police/fire rescue agencies will provide emergency response, and FHP will also be responsible for enforcement.

## RAMP SIGNALING OPERATIONS

Ramp signals along I-95 entered a tenth full year of operation and continued to be an important tool for managing traffic along this corridor. There are 22 ramp signals along both directions of I-95 from NW 62<sup>nd</sup> Street to Ives Dairy Road. The system improves operations along I-95 by regulating the flow of vehicles entering the roadway during peak periods of travel. STMC operators can also activate the ramp signaling system in the case of congestion during non-peak periods or to assist during an incident or special event. The Palmetto Express project added 19 ramp signals at on-ramps from NW 25<sup>th</sup> Street to NW 154<sup>th</sup> Street. These ramp signals will become operational after planned improvements are completed along the Palmetto Express corridor.

As demand along the freeways increases in the future, ramp signaling will continue to be one of the tools helping District Six continue to be proactive in managing congestion. The graph on the following page shows the average travel times along I-95 from before the ramp signaling system's implementation in 2008. The graph does show the effect of the pandemic on travel time and traffic volume.

## Average Travel Times and Volume on I-95 from NW 62 Street to Ives Dairy Road



## CONSTRUCTION AND SPECIAL EVENT COORDINATION

An increasing challenge for STMC Operations is coordinating with multiple agencies to ensure all planned and unplanned lane blockage events are dealt with in the most efficient manner possible. During FY 2019–2020, coordination between the STMC Operations staff and these various agencies increased as several construction projects continued to affect District Six roadways.

**Construction Coordination.** Roadway construction projects continue to be a challenge for STMC Operations. Large projects along I-95, SR 826, I-75, and I-395 create different traffic patterns and dynamics during the overnight/early morning hours. Construction projects took advantage of the low traffic volume due to the pandemic and accelerated work activities with daytime lane closures. STMC operators monitored



these extended closures for any impact on traffic flow. STMC Operations staff coordinated with the project leads of several construction projects to create pre-event information plans that would advise the motoring public of upcoming construction-related closures. The STMC Operations staff developed these plans for Palmetto Express and 75 Express, MacArthur Causeway bridge construction, and I-395/SR 836/I-95 Interchange Reconstruction, among others.

**Special Event Coordination.** STMC Operations staff coordinated on several special events during FY 2019–2020. The Homestead-Miami Speedway hosted the NASCAR Weekend in October 2019, and STMC participated in on-site tabletop traffic management exercises. In January and February 2020, STMC helped to coordinate and provided on-site camera support for Superbowl LIV. Other events included music concerts, international soccer, professional and college football games, and running marathons in Miami-Dade and Monroe Counties. Once the pandemic took hold and stay-at-home orders were in place, special event coordination shifted to community support. Multiple food distribution sites were set up throughout Miami-Dade County, sometimes causing traffic congestion onto state roads. COVID-19 testing sites also caused periodic traffic congestion.

## SOFTWARE ENHANCEMENTS

During FY 2019–2020, STMC Operations software development continued to focus on supporting the Statewide Express Lanes Software (SELS). As more districts implement managed lanes, SELS must be updated to accommodate different configurations and operating strategies. SELS was developed by District Six originally for the dynamic toll system for Segment 1 of 95 Express. SELS is the statewide software for all express lane systems, and District Six continues to support this effort.

Our Operations Task Manager (OTM) software underwent several enhancements. One OTM module is the Operator Quality Control (OpQC). OpQC is used to help evaluate SunGuide traffic events, ensuring that operators are meeting performance measures. Since OTM has been distributed to all FDOT districts, these districts are starting to use other OTM modules. OpQC was updated to allow flexibility for other districts to configure the application to their operations.

Additionally, a new Responders' Site application was launched allowing first responding agencies to have access to STMC cameras. The application also includes an event list showing all active events and a button to select a camera image from the nearest camera.

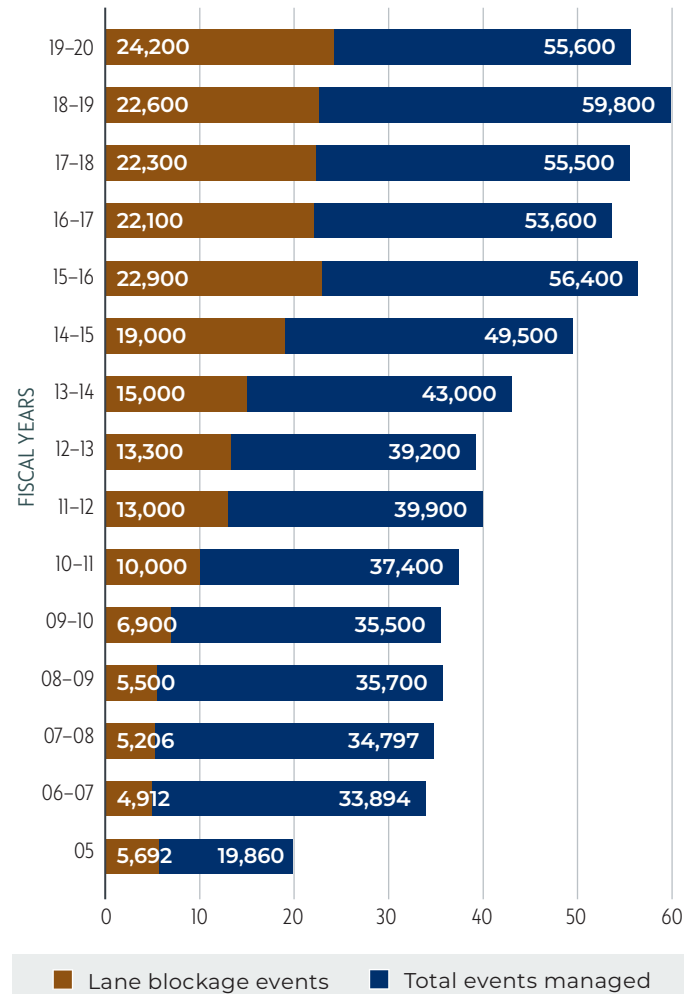
OTM will eventually be supported by the FDOT Central Office. However, until that happens, District Six is enhancing and maintaining the software based on district needs. District Six continued to be active with the SELS change management team (CMT) as this transition developed. The CMT is composed of representatives from all districts and the Central Office. The group tracks the progress of other express lanes projects, coordinates software changes to meet project schedules, and manages by consensus any proposed changes to SELS.

## PERFORMANCE MEASURES

In December 2007, District Six set targets for key operational performance measures that have the greatest impact on the public. During FY 2019–2020, STMC Operations staff continued to exceed those targets, thanks to quality control procedures and dedicated staff who provide continual guidance and training to operators and (with assistance from OTM) check all lane blocking and non-lane blocking events. Overall events decreased by 7%, but lane blockage events increased by 7%. Looking at the first halves of calendar years 2019 and 2020, overall events decreased by 20%, but lane blockage events increased by 2%. Lower traffic volumes resulted in much fewer non-lane blockage events such as disabled vehicles. However, the same reduction was not seen for lane blockage events due to increased construction and high-speed crashes.

The following graph shows the number of events compared to previous years. The effect of pandemic traffic can be seen in this graph. The table on the following page shows the performance measures' average results and targets. STMC operators managed 55,600 total events and 24,200 lane-blocking events during FY 2019–2020.

### FDOT District Six Events Managed



## FDOT District Six Events Managed

PERFORMANCE MEASURES	FY 10-11 AVERAGE	FY 11-12 AVERAGE	FY 12-13 AVERAGE	FY 13-14 AVERAGE	FY 14-15 AVERAGE	FY 15-16 AVERAGE	FY 16-17 AVERAGE	FY 17-18 AVERAGE	FY 18-19 AVERAGE	FY 19-20 AVERAGE	TARGET
DMS Efficiency (GPL)	99.82%	99.77%	99.87%	99.78%	99.74%	99.77%	99.86%	99.90%	99.82%	99.85%	≥95%
DMS Efficiency (EL)							100%	100%	100%	100%	100%
Operator Error/Event (GPL) (LB)	0.11	0.10	0.12	0.13	0.15	0.15	0.14	0.17	0.17	0.15	≤0.20
Operator Error/Event (EL) (LB)							0.06	0.06	0.07	0.08	≤0.10
Operator Error/Event (GPL) (NLB)	0.11	0.10	0.12	0.13	0.15	0.15	0.08	0.10	0.07	0.04	≤0.20
Operator Error/Event (EL) (NLB)							0.06	0.08	0.07	0.06	≤0.10
Dispatch Road Rangers (GPL)	0:00:56	00:00:44	00:00:44	00:00:44	00:00:45	00:00:46	00:00:38	00:00:29	00:00:28	00:00:33	≤00:02:00
Dispatch Road Rangers (EL)							00:00:21	00:00:18	00:00:20	00:00:25	≤00:00:60
Time to Confirm an Event (GPL)	0:01:31	00:01:42	00:01:40	00:01:48	00:01:11	00:00:57	00:00:26	00:01:16	00:01:26	00:01:14	≤00:02:00
Time to Confirm an Event (EL)							00:00:05	00:00:09	00:00:13	00:00:28	≤00:01:00
Time to Post DMS (GPL)	0:02:47	00:02:27	00:02:16	00:02:28	00:02:16	00:02:07	00:01:47	00:01:39	00:01:40	00:01:39	≤00:03:00
Time to Post DMS (EL)							00:01:00	00:00:55	00:00:56	00:01:06	≤00:01:30
Notify Other Agencies (GPL)	0:01:15	00:01:11	00:01:30	00:01:42	00:02:18	00:02:28	00:02:11	00:01:46	00:01:33	00:01:45	≤00:07:00
Notify Other Agencies (EL)							00:01:30	00:01:12	00:01:10	00:01:30	≤00:04:00

DMS = Dynamic Message Sign; EL = Express Lane; GPL = General Purpose Lane; LB = Lane-Blocking; NLB = Non-Lane-Blocking



# INCIDENT MANAGEMENT

The incident management team proved to be extremely resilient during this fiscal year. The opening of the Palmetto Express and 75 Express kept our Incident Response Vehicles (IRVs) and Road Rangers busy with new challenges. The pandemic also affected how our incident management first responders adapted with safety protocols and interacted with the public. The incident management team was provided face masks, gloves, hand sanitizer, and disinfectant. The field staff were allowed additional breaks to be able to wash their hands more frequently.

Interaction with motorists and other first responders was much different in the second half of the fiscal year compared to the first half. Keeping social distance and wearing masks made it difficult to communicate with motorists with background highway traffic noise. The goal of Road Rangers and IRV is to get vehicles relocated to a safe location out of travel lanes as soon as possible. Typically, this means towing a vehicle to the outside shoulder, an emergency stopping site, or a designated incident recovery area such as at the Golden Glades Park-and-Ride. The motorist would be transported in the service patrol vehicle to his or her vehicle. However, transporting motorists was suspended due to the pandemic. The District Six TSM&O team actively participated in statewide efforts to develop a standard procedure for transporting motorists.

District Six remained active with the Traffic Incident Management (TIM) team. The TIM team allows partner agencies to collaborate and share information and lessons learned for improved response and recovery scenarios. The primary goal, other than being focused on safety, is to support the Open Roads Policy by clearing travel lanes of incidents as quickly and safely as possible. This is shown in our average roadway clearance



ROAD  
RANGER  
VEHICLES



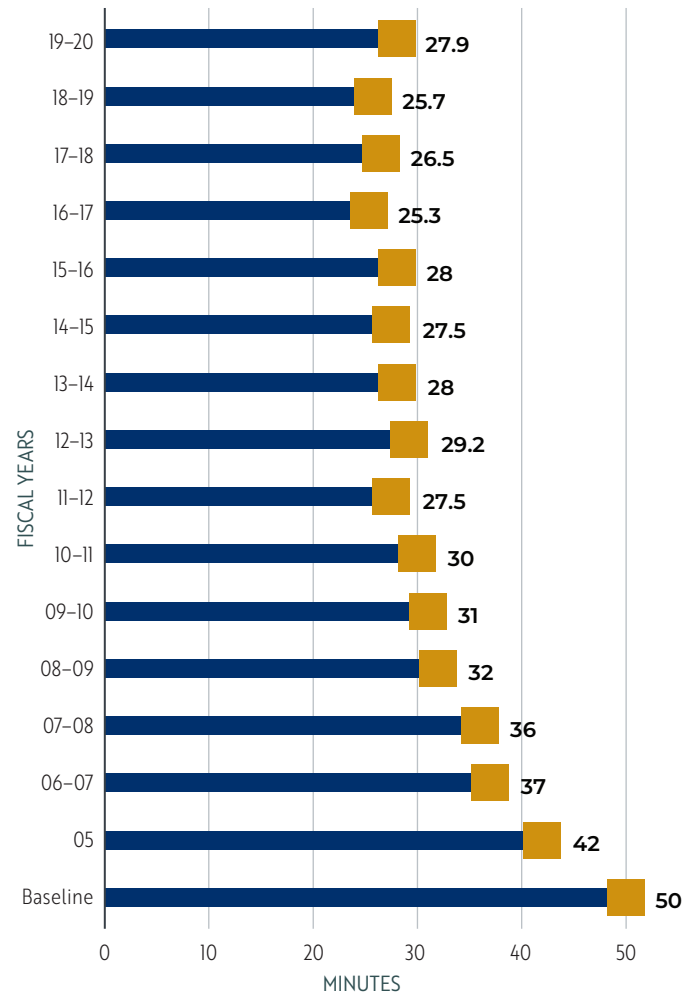
INCIDENT MANAGEMENT ALONG I-95

time of 27.9 minutes (see graph this page). This is a 44.2% reduction since the benchmark of 50 minutes in 2005.

**TIM.** TIM team meetings continued this fiscal year. However, during the second half of the fiscal year, the meetings changed to virtual meetings. TIM meetings are important to increase awareness of participating agencies on construction and special events, trends in incident management procedures, and lessons learned from incident management event clearance. One benefit of the pandemic was that having virtual meetings generally meant a higher attendance compared with live meetings. Virtual meetings made it convenient for attendees to participate from wherever they were working without having to budget time for travel. Meetings were arranged with agencies within the TIM team, including FHP, Road Ranger contractors, roadway maintenance contractors, transit agencies, and fire rescue representatives.

The District Six TSM&O office followed through on increasing the number of meetings and held meetings with smaller focus groups. TIM meetings are typically held in Miami-Dade and Monroe Counties. There was

## Average Annual Roadway Clearance Duration



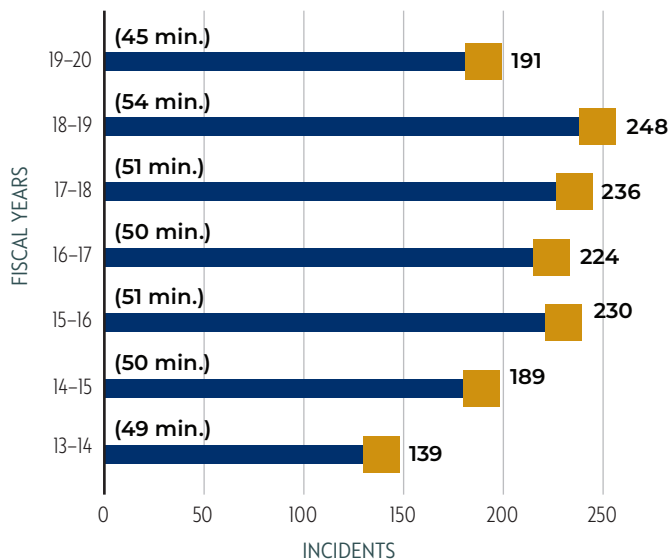
one annual meeting in Monroe County that focused on hurricane preparation and coordination for special events and construction. A second meeting was added

now that the MCTSS is being operated from the STMC and other important initiatives are happening such as starting the RISC program in Monroe County and the upcoming Keys COAST connected vehicle project.

It is difficult to hold one encompassing meeting covering all of the activities in Miami-Dade County. Therefore, two meetings were added to focus on the eastern and western regions of the county. The 95 Corridor TIM meeting covers the east half of the county including I-95, I-395, I-195, and US 1. The Palmetto Corridor meeting covers the west half of the county including SR 826, I-75, US 27, and Krome Avenue. The intent is to create a forum style meeting that will focus on the unique traffic concerns along these corridors.

### Incidents Responded To by Heavy-Duty Wrecker

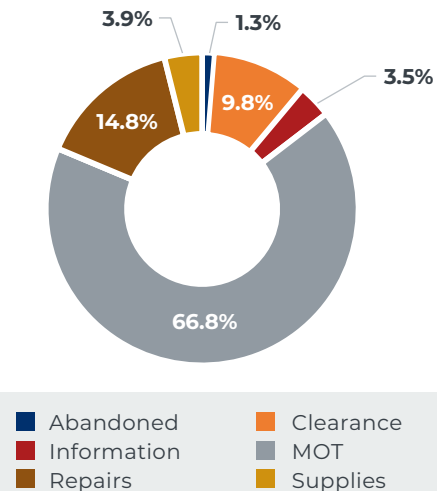
with clearance times in minutes



**Road Rangers.** Road Rangers are the face of FDOT and the TSM&O office. Road Rangers provide incident response and motorist assistance along I-95, I-75, SR 826, I-195, I-395, the MacArthur Causeway, and all express corridors. The STMC is the control center for dispatching and coordinating field operations for the Road Rangers. In 2013, the TSM&O office added a heavy-duty wrecker to the Road Ranger tool box to help with relocating heavy vehicles such as buses and box trucks. The heavy-duty wrecker still continues to provide a benefit to the program. The graph below left shows the impact on clearance times of the heavy-duty wrecker, which is used to quickly clear disabled vehicles such as transit buses, school buses, and heavy vehicles. It is important to note the change in current values was affected by pandemic traffic.

As shown in the chart below, more than 90% of Road Ranger assists are for Maintenance of Traffic (MOT), repair, or clearance services (includes tows, car pushes, and motorist transports).

### Road Ranger Assists by Type





**Incident Response Vehicle (IRV).** District Six's IRV program continued operation with seven active IRV trucks covering 95 Express, Palmetto Express, and 75 Express. IRV operators responded to 2,746 events during FY 2019–2020. IRV operators, along with the FHP, Road Rangers, and other responders, all contributed to keeping 95 Express open and available for use 94.7% of the time and Palmetto Express/75 Express open for use 97.5% of the time during the fiscal year. The graph below shows how often each express corridor was open or closed (for construction or incidents). The average travel lane blockage duration for 95 Express was 26.7 minutes in the northbound direction and 29.1 minutes in the southbound direction. The average travel lane blockage duration for Palmetto Express and 75 Express was 25.5 minutes in the northbound direction and 20.5 minutes in the southbound direction. IRVs mainly cover the express lanes, but they also assist motorists in the non-tolled general purpose lanes as needed.

District Six continued coordination between its IRV Operations staff and the District Four incident management team. This coordination is needed because of the overlapping limits for the 95 Express and 75 Express expansions into Broward County.

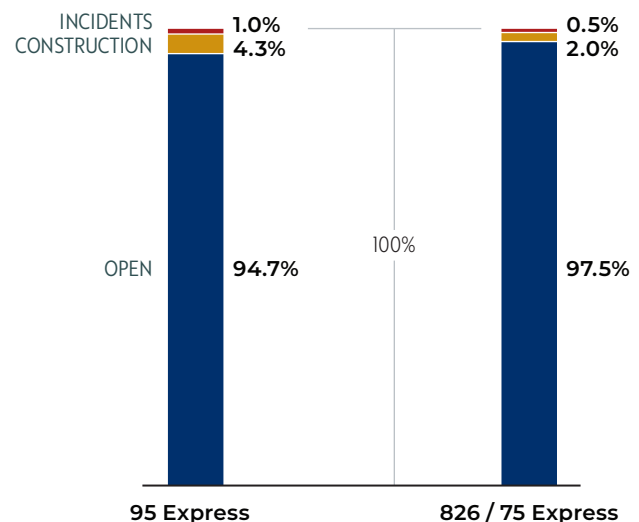
**Rapid Incident Scene Clearance (RISC) Updates.** RISC is an incentive-based program for the rapid removal of the more complex incidents that occur along District Six roadways. These incidents would normally require additional time for clearance. RISC supports Florida's Open Roads Policy. RISC contractors must respond with all required vehicles within 60 minutes and clear the travel lanes within 90 minutes to receive the incentive.

The TSM&O office successfully launched a RISC program in Monroe County in September 2019. US 1 / Overseas Highway is the only way into and out of the Florida



IRV OPERATORS

## Express Lanes Facility Availability





RISC EVENT ALONG I-95 IN DOWNTOWN MIAMI

Keys, and available recovery resources could take a long time to arrive due to distance and congestion, so long-term complex incidents in the Florida Keys can cause significant traffic congestion. The Monroe County RISC program provides a dedicated resource to respond to and clear these incidents quickly. The coverage area is from Stock Island to Florida City. Since its launch, there have been four RISC events in this fiscal year.

In addition to US 1 / Overseas Highway, the RISC coverage area includes all major freeways, Krome Avenue, and Okeechobee Road. During FY 2019–2020, the average RISC response time was 57 minutes, while the average RISC travel lane clearance time was 55 minutes. In total, STMC Operations staff summoned RISC resources 28 times during the fiscal year. The RISC program has responded to 174 events since its inception in 2009. The following table summarizes historical RISC response times by fiscal year.

## RISC Performance

FISCAL YEARS	RISC PERFORMANCE (MINUTES)				
	ACTIVATION TIME	RESPONSE TIME	TRAVEL LANE CLEARANCE TIME	TOTAL INCIDENT CLEARANCE TIME	TOTAL RISC EVENTS
2011–2012	10 m	39 m	88 m	161 m	9
2012–013	28 m	46 m	85 m	225 m	7
2013–2014	23 m	45 m	68 m	161 m	19
2014–2015	28 m	43 m	57 m	141 m	18
2015–2016	28 m	47 m	63 m	146 m	15
2016–2017	16 m	50 m	60 m	132 m	19
2017–2018	17 m	49 m	61 m	148 m	17
2018–2019	19 m	49 m	60 m	141 m	20
<b>2019–2020</b>	<b>27 m</b>	<b>57 m</b>	<b>55 m</b>	<b>158 m</b>	<b>28</b>
TARGET	—	60 m	90 m	—	—

# IT / ITS MAINTENANCE

The IT/ITS Maintenance program is the reason the TSM&O and ITS infrastructure can provide a high level of resilience. System resilience is provided by redundancy in communication paths, hardened equipment and power systems, cyber security measures, and knowledgeable staff who can troubleshoot and diagnose problems in the STMC and in the field. The IT staff were tested in new ways this fiscal year. As the pandemic situation grew more dire, it was evident that a significant number of staff would need to work remotely. The system has always provided remote access through a virtual private network (VPN), but this was for occasional use. Teleworking would require staff to be connected to VPN for a full work period. The IT staff responded with a solution that accommodated 30% of staff to work from home. Staff would either connect remotely into their workstation at the STMC or to virtual machines established by the IT staff. The STMC was able to carry on all functionality while keeping its staff safe.

The field equipment still needed to be serviced as trouble tickets were received by the system. Systems such as express lanes, ramp signals, and arterial traffic signals rely on equipment that works consistently in the field. During FY 2019–2020, the ITS Maintenance team managed more than 2,900 trouble tickets and 4,200 tickets overall, which includes field equipment maintenance by contractors on active construction projects.

The IT team helped to support video functionality for the Department. They worked with the Central Office to provide video streaming data for DIVAS, which is a statewide initiative to share video from traffic cameras throughout the state. DIVAS proved useful during the beginning of the pandemic, as a checkpoint was setup



IT TECHNICIAN  
TROUBLESHOOTING  
THE NETWORK CORE  
SWITCH



in Monroe County. FDOT representatives in Tallahassee could use DIVAS to see District Six cameras, especially those around the checkpoint, to see the pandemic's impact on traffic. DIVAS will eventually replace the camera image interface on the FL511 website.

The IT staff assisted the District Six Emergency Operations Center (EOC) with a video streaming solution to see STMC cameras during an emergency. This helps the EOC function more independently and efficiently.

IT staff continued to support data analytics and functionality. Several dynamic reports were developed to look at traffic volume trends, summarize incident management efforts, and report various TMC performance measures. Some of these dashboards are public facing and available on the [sunguide.info](https://sunguide.info) website. Most of the dashboards can be filtered for historical ranges and by roadway.

The table below shows the availability of key system components during FY 2019–2020 as compared to previous fiscal years.



SUNGUIDE TRANSPORTATION MANAGEMENT CENTER

## Annual Average System Availability

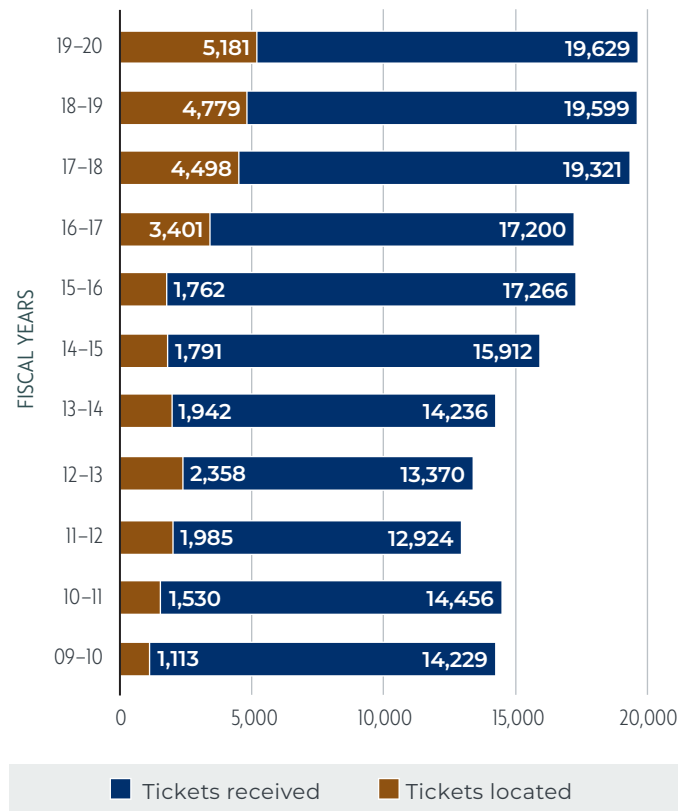
FISCAL YEAR	SUBSYSTEM					
	CCTV	DMS	VEHICLE DETECTORS	VIDEO WALL	SUNGUIDE	OTM
2012–2013	95.47%	93.85%	94.90%	97.49%	97.97%	99.85%
2013–2014	97.56%	96.66%	96.13%	97.43%	99.86%	99.97%
2014–2015	94.73%	96.15%	95.05%	98.86%	98.97%	99.68%
2015–2016	92.73%	98.25%	87.44%	99.90%	97.98%	99.98%
2016–2017	92.42%	96.66%	87.48%	99.43%	96.93%	99.99%
2017–2018	86.69%	87.00%	77.73%	98.93%	95.19%	99.61%
2018–2019	93.53%	96.26%	89.91%	99.67%	98.51%	99.98%
2019–2020	83.70%	96.75%	84.50%	99.97%	98.39%	97.54%



**Utility Infrastructure Location Services.** The one area not affected by the pandemic was our utility location services. Utility locates saw an increase over the last fiscal year in tickets received and tickets located in the field. The IT team provides a critical service by locating utilities for the District Six underground fiber optic cable and electric conductors. Locating and marking the underground infrastructure before digging or construction begins aids in preventing damage by third parties. Notifications are received from Sunshine 811 about upcoming activity that may conflict with underground utilities. The tickets are reviewed and, when necessary, the ground is physically marked showing the location of the ITS underground infrastructure. During this fiscal year, 19,629 Sunshine 811 tickets were received, and 5,181 Sunshine tickets were located. The graph on the right shows the number of locates from FY 2009–2010 to FY 2019–2020.

**Network Security.** During FY 2019–2020, the IT/ITS Maintenance staff continued to work on measures making the overall network secure. A security penetration test was conducted to identify potential vulnerabilities and weaknesses in the network. Public-facing data is kept off network as much as possible and is stored on cloud-hosted services to prevent security breaches from outside the internal network. The IT/ITS Maintenance staff continue to work with the FDOT’s Office of Information Technology to identify and minimize potential security risks.

## Locate Ticket Summary



# TRAVELER INFORMATION

Resilience in the traveler information portion of our program depends on reliable distribution sources to broadcast important information to the public. Normally this is information like lanes closed ahead, congestion information, and travel times. The STMC utilized its roadway DMS to post new types of messages about public health and the status of county border checkpoints.

Providing motorists with traffic information and, in some cases, regional safety alerts allows them to make knowledgeable decisions. These decisions include alternate travel routes, modes, and schedules when confronted with congestion, traffic events, or construction. Notifications from TMCs around the state are compiled and distributed in the statewide Florida Advanced Traveler Information System (FLATIS). Commonly known as FL511, the service publishes



DMS ALONG  
WESTBOUND I-395

real-time traffic information to the public through the internet on the FL511.com website and a smartphone application. FL511 also gathers traffic event information, camera images, and DMS messaging from all FDOT districts. District Six's TSM&O website, [sunguide.info](https://www.sunguide.info), provides the same interface to allow motorists to view live feeds of the TSM&O office's CCTV cameras in Miami-Dade and Monroe Counties. FL511 will be upgraded next fiscal year to allow live camera feeds through FDOT's new DIVAS.

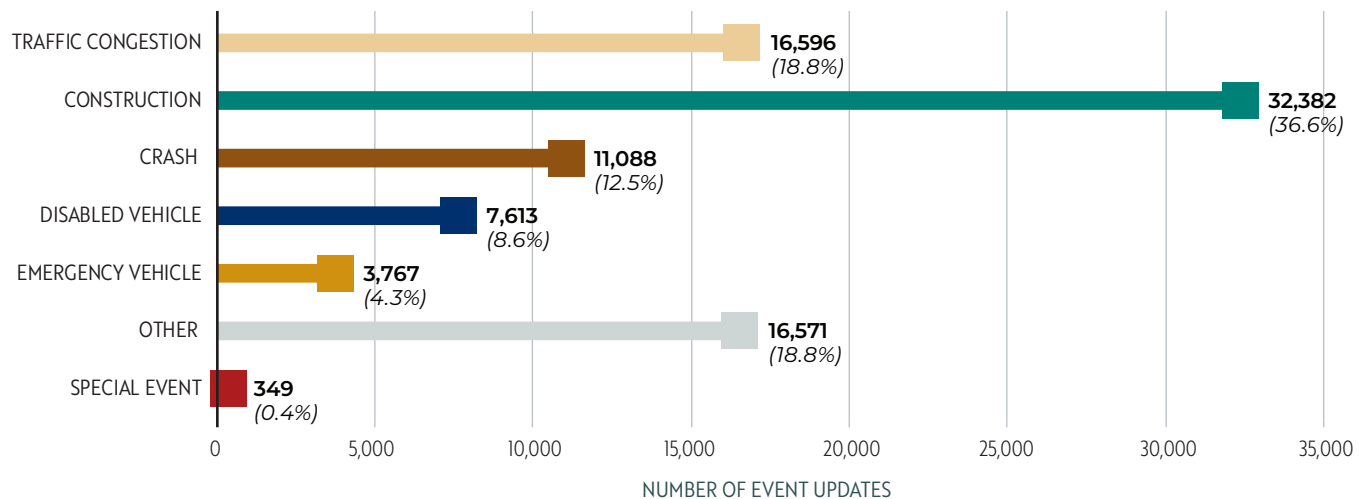
The STMC continues to utilize Waze as an additional resource for identifying traffic events, and also uses the Regional Integrated Transportation Information System (RITIS) as an aggregator of vehicle detection data. RITIS

receives traffic detector data from around the state as well as from other sources. RITIS is useful to the STMC for areas where ITS infrastructure does not yet have traffic detectors.

### FL511

During FY 2019–2020, the 511 service continued to receive calls statewide, and users from southeast Florida made up a sizable portion of those calls. District Six STMC operators published over 88,000 event updates of lane blockage and congestion events on roadways managed by the District Six STMC. The following graph shows the different types of published events on the 511 service.

#### FL511 Published Traffic Information by Event Type 88,366 published event updates

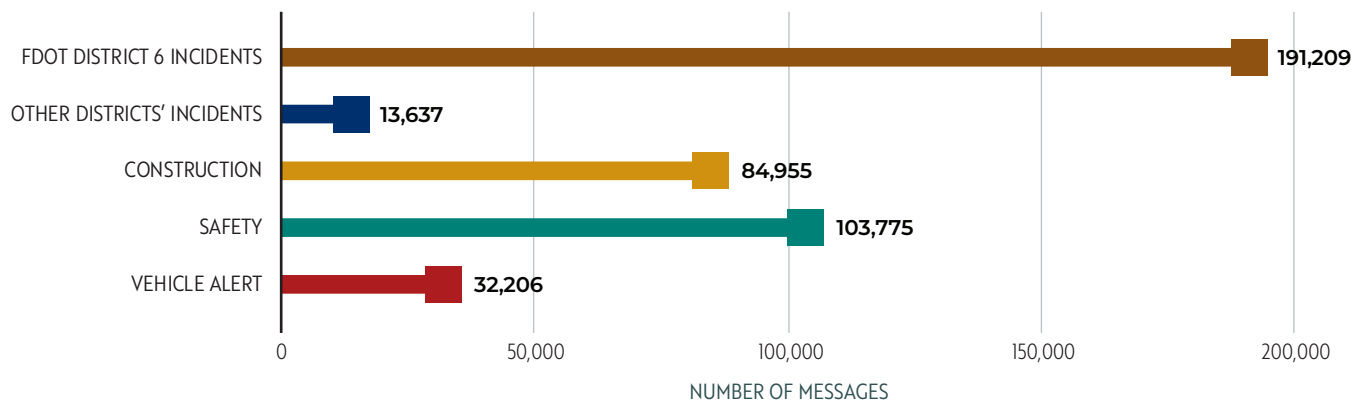


## DMS MESSAGING

The regional DMS is a critical component for dissemination of traffic information. These signs display lane blockage information, travel times, pre-event messages, and congestion messages—all of which help motorists with their travel experience in both Miami-Dade and Monroe Counties. DMSs also display

service announcements, such as child abduction alerts and silver alerts. During FY 2019–2020, more than 425,000 messages were displayed on District Six DMSs, with most messages for incidents and safety announcements. The following chart summarizes the types of DMS messages displayed this fiscal year.

### Posted DMS Messages by Type 425,782 total messages





# PUBLIC OUTREACH

Public Information (PI) is a key component of a resilient program. PI staff has the unique ability to frame delicate subjects into user-friendly messages. PI staff answer questions and respond to comments from the motoring public. The PI program transitioned from its traditional role to one more suited to the pandemic and societal challenges. The second half of this fiscal year saw the PI staff work remotely. This freed up crucial office space so that other staff housed at the STMC could spread out to maintain social distancing.

The STMC continually hosts tours, publishes articles, and participates in industry conferences to broaden its profile within the local community and nationally.

PI staff helped with monitoring social media sources to detect changes to virus testing sites and locations of new food distribution sites. This information was helpful for STMC operations staff to strategize areas of focus and plan for potential staff changes.

The PI staff continued to streamline how customer comments and questions are received and handled. The PI staff partnered with South Florida Commuter Services to support the use of the cloud-based web application. This allows District Six PI staff not only to have a user-friendly way to respond to comments but also to route comments to other transportation agencies if necessary. Customer comments are important because they provide valuable feedback for how the transportation system is working. The web application provides a hub for southeast Florida customer service. This interface is crucial to help manage the varied range of comments about transit, general traffic, and express lanes.



MONROE  
COUNTY WORK  
PROGRAM  
MEETING

The PI staff focused on improving the project website, [sunguide.info](https://sunguide.info). Several public-facing dynamic dashboards were developed summarizing data and performance in multiple ways.

**Tours.** The District Six TSM&O office conducted tours for the first half of the fiscal year. Once the pandemic crisis grew and social distance measures were put in place, all in-person tours were canceled. Staff were able to conduct tours for the following entities:

- District Seven TSM&O/TMC staff
- RISC vendors
- District Four TSM&O/TMC staff
- District Six Legal Department
- District Six interns
- Port Miami Tunnel
- Illinois Tollway Authority
- District Six Financial
- Florida International University
- FDOT Job Shadow Day
- District Six North Dade Maintenance
- GovComm graduate student interns

**Press Conferences.** The District Six TSM&O office typically hosts press conferences with other programs and agencies during the fiscal year. One highlight was the media event for the opening of Palmetto Express. FDOT District Six staff made themselves available for media outlets to visit the STMC, set up remote news staff, and ask questions. The opening of Palmetto Express and 75 Express was a momentous event, and it was crucial to get information to the community on how to use the new express lanes. PI staff also participated in National Traffic Incident Response Awareness Week, the Miami-Dade Transportation Planning Office Transportation Fair, the Monroe County Work Program meeting, and the 2020 Safe Streets Summit in Miami.



FDOT DISTRICT SIX JOB SHADOW DAY

**Customer Service.** Customer service efforts continued to be a high priority as the District continued supporting arterial operations along SW 8<sup>th</sup> Street in Miami-Dade County and for the MCTSS. Staff processed 226 comments on a variety of topics that included tolling, transit, and data requests for academic and professional institutions. There were 73 comments on traffic signals along SW 8<sup>th</sup> Street and 19 comments on the MCTSS.

# BENEFITS TO THE PUBLIC

The TSM&O office contributes many intangibles to the resilience of the community. The network of DMSs typically provides necessary traffic information for motorists to make decisions along their route and for overall awareness. As the public health emergency for the pandemic increased at the beginning of 2020, the STMC posted DMS messages for COVID-19 testing sites and where to find information at the Florida Department of Health. When testing sites and food distribution locations were established, the STMC monitored nearby traffic cameras to find congestion or queues. This information helped local law enforcement identify where assistance could be given to improve traffic flow. This is the same level of public assistance that is provided during emergency situations such as hurricanes and large traffic events and is an immeasurable benefit to the region's population.

The TSM&O office invests in its infrastructure and staff to keep the overall system and program resilient. Annual equipment replacement projects keep the system up-to-date fresh by replacing infrastructure that has reached the end of its useful life. Scheduled preventive maintenance and quick response for repairs keep the system available, while maintaining a fleet of efficient Road Rangers and IRVs and coordinating with partnering agencies all contribute to positive gains.

The addition of arterial operations a few years ago has resulted in a more resilient system by adding backup power supplies and redundant communications resulting in lower traffic signal downtime. Advanced techniques such as the adaptive traffic control system operating along SW 8<sup>th</sup> Street provide an alternative to traditional signal operation methods. The integration of an advanced traffic management system along US 1 / Overseas Highway in Monroe County has



provided a level of monitoring and connectivity that was not previously realized. Significant operations and maintenance funds are needed to keep the systems working correctly and efficiently.

The critical benefit of the TSM&O office is keeping the roadways cleared of events so that traffic and freight can continue flowing. Significant effort is spent keeping the roadways clear, which reduces incident duration and in turn reduces traffic delays.

The FDOT District Six TSM&O office's budget for FY 2019–2020 included operating, maintenance, and capital improvement costs for its freeway and arterial operations. The costs displayed in the table below are considerably less than the normal capital costs associated with construction expansion of highways and facilities.

### Fiscal Year 2019–2020 Costs

ITS Operations	\$10,543,533
ITS Maintenance*	\$6,582,081
Road Rangers	\$9,712,412
RISC	\$61,500
FDOT Cost Center Operating Budget	\$2,787,291
Other (Consultants, FTE, FHP, FIU)	\$36,010,840
Total Annual Operating Costs	\$65,697,658
Total Annualized Capital Costs	\$16,502,561
<b>TOTAL ANNUAL COSTS</b>	<b>\$82,200,219</b>

\* Includes express lanes ITS maintenance and express lane marker repair

When the delays associated with incidents are reduced, motorists and commercial vehicle operations save time. The time savings can be directly translated to a monetary amount. As shown in the benefits table, the Incident Management Program's contribution to the reduction in delay due to incidents translates into savings of \$3.3 billion. The incident clearance time of 27.9 minutes had a significant impact during FY 2019–2020 for the 24,200 events that blocked travel lanes. This is compared to the benchmark of 50 minutes when the Incident Management Program started before 2008.

### Fiscal Year 2019–2020 Benefits

Incident Management	\$3,342,279,507
Express Lanes / Ramp Signals	\$34,247,494
<b>TOTAL BENEFITS</b>	<b>\$3,376,527,001</b>

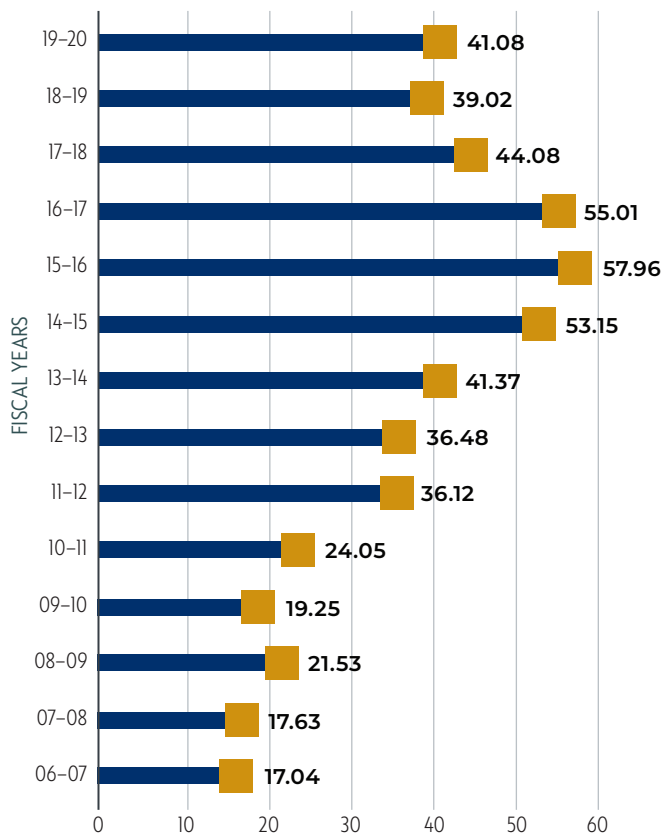
The managed lane corridors and the ramp signaling system also contributed to the reduction of delays during peak hours, translating into savings of \$34.2 million. This estimate was calculated using widely accepted statistical methods for estimating the cost implications of traffic delays. The estimate only includes time saved by motorists; it does not address road user cost savings.

When comparing the total estimated benefits of the TSM&O program during FY 2019–2020 to the total annual operating expenses and capital investments (annualized over 10 years at 7%), the TSM&O program yields \$41.08 in economic benefit for every dollar spent (benefit-cost ratio of 41.08:1).



The following graph shows the benefit-cost ratio for FY 2019–2020 and previous years. Although it still shows a favorable benefit-cost ratio, the lower trend over recent years is attributed to an increase in operational expenses and additional capital expenses.

### Benefit-Cost Ratio



# A LOOK AHEAD

Maintaining the level of infrastructure and operations so that a resilient TSM&O office can respond to all current and future challenges takes a lot of planning. Future projects will continue to push the transportation envelope forward, ensuring continued service to the region. One interesting result of the ongoing pandemic is that teleworking has proven to be a viable option for people to keep working. Until the pandemic, teleworking had been a much talked about but underutilized transportation demand management (TDM) technique. Reality has shown that it does reduce traffic volumes and improve traffic flow, and because of these and other benefits, teleworking will probably be utilized at some level once the pandemic is over. However, the infrastructure plan must move forward to accommodate long-range plans.



RISC EVENT



FY 2020–2021 will bring more challenges, as the COVID-19 pandemic is expected to continue to have an unprecedented impact on our region. This coupled with an already active hurricane season will continue test the program. The following projects are in progress or planned for FY 2020–2021.

**Microwave Communication Backbone along US 1 / Overseas Highway.** The FDOT Central Office began a project to install a high-bandwidth wireless microwave communication backbone in Monroe County. This communication system replaces the previous wireless system that was destroyed by Hurricane Irma. The new equipment is being deployed on the existing poles. The TSM&O office will be able to utilize this new system for its ITS equipment and traffic signals along the corridor. It is difficult to install fiber optic cable along the 105-mile-long roadway, which makes wireless communication a viable option. This project is expected to be completed in FY 2020–2021.

**Incident Management Smart Work Zone Pilot Project.** The District Six TSM&O will launch a smart work zone pilot project with its IRV fleet. The concept utilizes commercial off-the-shelf equipment mounted to the IRV arrow board. When the arrow board is activated, a signal is sent that is received by smart phone navigation applications such as Waze. The navigation application will alert the user that an incident management vehicle is ahead and whether to move to the left or right. The TSM&O office will partner with Florida International University for an evaluation of the pilot project. This project will start at the beginning of FY 2020–2021.

**Express Lanes Projects.** Expansion of the express



lane corridors will focus on improvements to the existing system. Next fiscal year, the Department will complete interim

northbound improvements along Palmetto Express. The northbound express lanes will be reduced from two lanes to one lane, providing additional capacity to the non-tolled general purpose lanes. The ingress at NW 36<sup>th</sup> Street will be eliminated. The egress north of NW 103<sup>rd</sup> Street will be modified so that vehicles can access the off-ramp at NW 122<sup>nd</sup> Street. The single express lane will tie directly into 75 Express at the I-75 / SR 826 Interchange. This project is expected to be completed in late 2020.

The Department will then start on the ultimate Palmetto Expressway improvement project, focusing on the southbound movement. The ingress at NW 154<sup>th</sup> Street will be shifted south to the I-75 / SR 826 Interchange. The first southbound ingress will be south of the I-75 / SR 826 Interchange near NW 122<sup>nd</sup> Street. The southbound on-ramp flyover for NW 103<sup>rd</sup> Street will be modified to allow southbound SR 826 to be widened. Currently, one of the flyover piers prevents any widening of SR 826. This widening will improve a congestion condition south of NW 122<sup>nd</sup> Street.

Express lane construction will continue in Broward and Palm Beach Counties with Phase 3 of 95 Express entering its fourth year of construction. These projects will significantly expand the 95 Express corridor. Completion of this project is expected in 2024.

**ITS Device Replacement Projects.** The ITS device replacement projects will continue in the next fiscal year with the latest starting in September 2020. This project will replace four arterial DMSs in the I-195 and Alton

Road area; replace microwave vehicle detectors; replace CCTV cameras; and replace heating, ventilation, and air conditioning systems at communication hub buildings along I-95.

#### **Golden Glades Multimodal Transportation Facility.**

This design-build project continued in FY 2019–2020 and is expected to be completed in Summer 2021. This project is converting the existing Park-and-Ride lot in the Golden Glades Interchange, transforming it and the surrounding area into a multimodal transportation facility. This project takes advantage of the diverse modes of transportation available in this area (Tri-Rail, Miami-Dade Transit, Broward County Transit, Greyhound, freight, and direct connection to 95 Express) and provides a transit hub with retail accommodations. TSM&O concepts are evident in this project, showcasing transit by combining multiple modes of transportation at a facility that is more than just a bus station.

#### **Monroe County Traffic Signal System Expansion.**

At the beginning of FY 2020–2021, the TSM&O office will begin operating all traffic signals along state roads in the City of Key West. This includes traffic signals, High-Intensity Activated Crosswalks (HAWKS), school zone beacons, and emergency signals. This will expand the MCTSS to 34 signalized intersections. In preparation, the TSM&O office already made equipment upgrades, including new traffic signal controllers and uninterruptible power supplies. The TSM&O office has coordinated with the Key West Police Department (KWPD). The KWPD has been trained to troubleshoot and perform equipment resets as part of the overall response to malfunctions. Next fiscal year will also include improvements to the overall MCTSS communication system by putting all traffic signals on the US 1 microwave wireless backbone.



GOLDEN GLADES MULTIMODAL  
TRANSPORTATION FACILITY CONCEPT

**Keys COAST.** District Six will continue forward with supporting the Florida Connected Vehicle Initiative by starting the Keys Connecting Overseas to Advance Safe Travel (Keys COAST) project next fiscal year. The Keys COAST project will be implemented along US 1 / Overseas Highway in the Florida Keys. This project will take advantage of existing traffic signal controller improvements to provide signal phasing and timing (SPaT) information and introduce automated traffic signal performance measures (ATSPM). Applications include pedestrian and cyclist safety, vehicle-to-vehicle communications (V2V), drawbridge management, emergency vehicle preemption, freight signal priority, transit signal priority, and freight vehicle weigh-in-motion.



# SAFE TRAVELS!

CONNECTED VEHICLE PROJECT CONCEPT





FDOT DISTRICT SIX  
1001 NW 111<sup>th</sup> Avenue  
Miami, Florida 33172  
305-470-5757  
[www.SunGuide.info](http://www.SunGuide.info)

District Traffic Operations Engineer  
Omar Meitin, P.E.

District TSM&O Program Engineer  
Javier Rodriguez, P.E.

