

INFORMATION HIGHWAY

ANNUAL REPORT

Fiscal Year
2022–2023



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



A MESSAGE FROM THE DISTRICT SIX SECRETARY

Every day we are presented with a vast amount of information, from news stories to entertainment reviews. Traffic falls into the same bucket! Motorists have many options to receive traffic data, travel route suggestions, and congestion status. In the 1990s, the phrase “information superhighway” was coined to describe the increasing accessibility and availability of digital information. This phrase can now, literally, be applied to our roadway network as we employ new technology to increase connectivity between vehicles, road users, and infrastructure.

Fiscal Year (FY) 22-23 (July 2022 through June 2023) allowed the District Six Transportation Systems Management and Operations (TMS&O) Office and the SunGuide Transportation Management Center (STMC) to continue our mission to serve as the clearinghouse for data analytics throughout Southeast Florida. That mission will take a substantial leap forward as the District nears completion of the Keys Connecting Overseas to Advance Safe Travel (Keys COAST) pilot project along US 1 in Monroe County.

Keys COAST will be the first connected and automated vehicle (CAV) project in District Six. The project will allow vehicles equipped with onboard units (OBUs) to communicate with roadside units (RSUs) installed along US 1. Users of this system will receive important information from their OBU or a smartphone application. Keys COAST is expected to be operational in early 2024.

Gathering and sharing data is key to Florida Department of Transportation’s (FDOT’s) Target Zero initiative, which aims to reduce transportation-related injuries and deaths across Florida to zero. This effort is supported by the installation of wrong way detection systems (WWDS) at critical freeway off-ramps statewide. Here, in District Six, four WWDS are operational and provide critical information to the STMC and road users. An additional 11 WWDS will be operational in early 2024 and, ultimately, there will be 95 WWDS deployed throughout Miami-Dade County.

In FY 22-23, STMC staff continued coordinating and providing onsite support for numerous special events including college and professional football games and an annual high profile international car race. The STMC also provides onsite support for races held at the Homestead Speedway. This support helps with traffic management and provides real-time traffic information to the event coordination team while strengthening our working relationships with important transportation partners including Florida Highway Patrol (FHP), Miami-Dade County Department of Public Works Traffic Signals and Signs Division, Florida’s Turnpike Enterprise, and other local law enforcement and rescue agencies.

This coordination also benefits our Traffic Incident Management (TIM) teams, which are comprised of local, county and state law enforcement agencies, incident responders, and emergency service



Stacy L. Miller, P.E.
District Six Secretary Florida
Department of Transportation

providers, to name a few. District Six supports two TIM teams, one in Miami-Dade County and one Monroe County. TIM teams meet several times a year to share lessons learned, changes in incident management policies, information on new and on-going construction projects, and information about upcoming special events with the goal of making incident response more efficient.

In 2023, an incident resulted in damage to a Florida's Turnpike bridge located within the Golden Glades Interchange. The bridge serves as a critical route, as it passes over SR 826/Palmetto Expressway and provides access to the Turnpike from I-95. In response to the event, District Six deployed three intelligent transportation system (ITS) trailers with cameras and traffic detectors. The information provided by these cameras and other permanent District Six ITS resources allowed Florida's Turnpike to proceed with this critical bridge repair and reopen the bridge as quickly as possible.

Incident management resources contribute to the information superhighway. Road Rangers and Incident Response Vehicles (IRV) are equipped with a device that sends a signal to smartphone navigation applications when their flashing light bars are activated, providing participating road users with an advisory to move over. Incident clearance time in FY 22-23 averaged 30.6 minutes, representing a 39% reduction over the 2005 baseline of 50 minutes. Road Rangers responded to over 54,900 activations for the FY.

Our TSM&O community outreach staff assisted with social media presence and ensuring web access to all the TSM&O Office's efforts. Our Move Over Law press event was held in January 2023. This event gave the news media the opportunity to hear from District Six, FHP, and Road Rangers on the importance of the public to recognize first responders and move over to keep them safe. The event stressed the need for everyone to be safe and return home to their families. This coincides with the objectives of Target Zero.

In the coming year, we are excited for new projects that will increase safety and mobility while providing greater access to our information superhighway and pledge to continue to provide traffic management and data dissemination for the southeast Florida region. I invite you to learn more about the District Six TSM&O Office and how they manage and navigate the information superhighway!

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INTRODUCTION



Installing segments for Signature Bridge arches

The theme for this year's annual report is the **Information Highway**. The District Six TSM&O office and its STMC continues to set itself as the data hub for the southeast Florida region. For many years, staff at the STMC have been providing information to the motoring public through its dynamic messages signs (DMS) and FDOT's Florida 511 ([FL511](#)) Advanced Traveler Information System. In more recent years, information has been provided over a more diverse spectrum such as smartphone navigation applications, the TSM&O website ([sunguide.info](#)), and partnerships with traffic media companies. The STMC's Information Highway will be expanding as new sources become available through CAV deployments and advanced traffic signal controller data.

The STMC plays a large role on the Information Highway as operator and maintainer of how information is provided to the motoring public. The STMC also shares data among its partners including the FHP, FDOT District Four, Greater Miami Expressway Agency (GMX), Florida's Turnpike Enterprise, Miami-Dade County, Port Miami Tunnel, City of Miami Beach, and others. These agencies work together to keep traffic moving and clear incidents quickly. Part of that plan is to give the motoring public accurate traffic information so that trips can be planned and route adjustments can be made.

This fiscal year has several examples of how the TSM&O office is enhancing the Information Highway for motorists. WWDS provide visual notifications to potential wrong way drivers before they can enter the mainline. This systems also sends an alert to the STMC so warning messages can be posted quickly on DMS. The Bridge Notification System (BNS)

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.

provides information when drawbridges are up or down. FL511 users can receive BNS alerts for areas where drawbridge operation can cause traffic congestion.

Quick information exchange allowed District Six and the Florida's Turnpike to respond to a damaged bridge in Miami-Dade County. The Turnpike bridge passes over the east portion of SR 826. An oversized commercial vehicle struck the bridge on a Friday during the evening peak period. Several support beams were damaged. District Six quickly deployed three mobile cameras to allow the Turnpike and FDOT Central Office to check on the damage, repair efforts, and traffic impact. District Six coordinated detour routes to direct traffic around the impacted area. The Turnpike was able to get the bridge repaired quickly. It took only 16 days from the initial impact to final completion of the repairs.

This FDOT District Six TSM&O Annual Report aligns with the program's five primary functional areas listed below.

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, DMS, vehicle detectors, arterial systems, and communications.

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 – The STMC dispatches Road Rangers and other incident management resources to safely and quickly clear lane-blocking events and assist 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 – IT/ITS staff maintains the indoor STMC IT system and outdoor ITS devices, and provides software support to ensure system availability and stability.

Traveler Information – This essential system provides real-time traveler information through various sources such as internet, smartphone applications, and social media to keep the motoring public informed.

This is the 18th edition of District Six's TSM&O Annual Report. The report contains informative details about the TSM&O program. We welcome you to read on and learn how District Six navigates the Information Highway with traffic management systems and how they help the southeast Florida multimodal transportation infrastructure.

ITS DEPLOYMENTS

The Information Highway continues to expand as more ITS devices and technologies are deployed. Cameras and traffic detectors help operators at the STMC determine traffic conditions and provide information to motorists using the DMS and FL511. A summary of FDOT District Six TSM&O projects in progress or completed during FY 2022–2023 follows.

I-395/SR 836/I-95 Design-Build Project –

The I-395/SR 836/I-95 design-build project continued during FY 2022–2023. This project, which began in January 2019 and is expected to be completed in 2027, will completely reconstruct the existing interchange and much of SR 836 to the west and I-395 to the east. There are ITS and incident management improvements with this complex project. Several cameras became operational and are being used by the STMC. Additional ITS devices will be added as the elevated infrastructure takes shape. For more information, visit the [project website](#).

Districtwide ITS Replacement Project (Miami-Dade and Monroe Counties) –

The TSM&O office continued its ITS replacement projects this year. The most recent project started in July 2021 and replaces 26 DMS throughout the district with new color LED full-matrix signs.

Bridge Notification System – The TSM&O office implemented a BNS for the Brickell Bridge in downtown Miami. The Brickell Bridge is a drawbridge, which can be disruptive to traffic when it is in the up position. Working with Miami-Dade County, the TSM&O office was able to retrieve data from the nearby traffic signal controller for the bridge's up/down status. This information was programmed into our SunGuide software and then sent to the FL511 system, so users of FL511 can receive alerts for this bridge. A BNS was then



DMS replacement along US 1

implemented for the two drawbridges along NE 79th Street/John F. Kennedy Causeway. In this case, the TSM&O office installed equipment to detect when the drawbridge is raised. This information is received at the STMC and then sent to FL511. There are 15 drawbridges in District Six. The plan is to expand the BNS for each drawbridge.

SR 826 Southbound Capacity Project – This project began in April 2022 and is modifying southbound SR 826 between NW 103rd Street and I-75. The main objective of this project is to increase capacity for the general purpose lanes and modify the flyover at NW 103rd Street to allow roadway widening. The project will also add three WWDS and enhance the ITS devices in the area to accommodate the new roadway configuration. This project is expected to be complete in summer 2024. For more information on this project, please visit the [project website](#).

Wrong Way Detection System Projects – The expansion of the WWDS continued this fiscal year. One project completed installation of WWDS along the I-95 northbound and southbound off-ramps to NW 95th Street. These WWDS consist of video detection, infrared detection, and flashing wrong way signs. Another project began installation of WWDS at 11 off-ramps along I-95, SR 826, I-195, and I-75. This project is expected to be completed in early 2024. The intent of the WWDS is to alert a wrong way driver to self-correct and avoid entry



WWDS along southbound SR 826 off-ramp to SW 56 Street

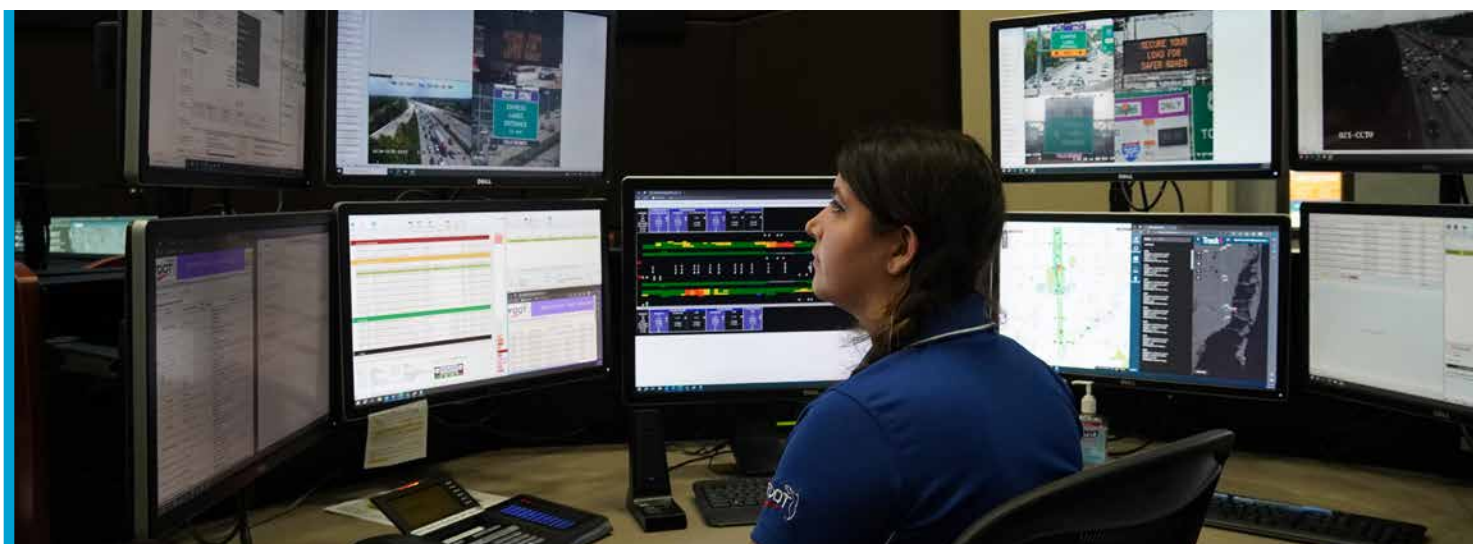
to the mainline highway. Alerts are received by operators at the STMC who send DMS notifications to the public and dispatch law enforcement to intercept. These systems will be installed in phases over the next several years for a total of 95 WWDS.

The following table illustrates the increase in deployed ITS devices from 2005 to 2023.

Increase in deployed ITS devices from 2005 to 2023

ITS DEVICE	2005	2023
CCTV cameras	69	427
DMS	22	195
Detectors	205	540
Ramp signals	0	41*
WWDS	0	4

* 19 ramp signals along SR 826 are not yet operational



Express Lanes operator monitoring traffic along I-95

STMC OPERATIONS

STMC Operations keeps the Information Highway moving by utilizing ITS devices and technologies to inform the motoring public. The STMC serves as a data hub for southeast Florida, collecting, sharing, and disseminating information with partnering agencies, communities, and the motoring public.

FREEWAY OPERATIONS

Traveler information is communicated by the STMC through DMS, FL511, and other technologies.

95 Express – The STMC operates 21 miles of 95 Express from SR 112 to I-595 and is completing its 14th year in operation. The challenge for 95 Express has been ongoing construction projects at the north and south ends that reduced corridor length. The I-395/SR 836/I-95 design-build project returned the 95 Express northbound ingress and the southbound terminus to NW 29th Street. Phase 3 construction of 95 Express at the north end continues from the Miami-Dade/Broward County line. The adjacent portion of that project, Phase 3C, is expected to be completed in 2025.

Palmetto Express and 75 Express – The SR 826 southbound capacity project began construction in April 2022. This project modifies SR 826 and Palmetto Express between NW 103rd Street and I-75. This project will have an operational impact on how Palmetto Express is managed until its expected completion in the middle of 2024.

Ramp Signaling Operations – Ramp signals along I-95 moved into their 13th year of operation and continue to be a critical tool for managing traffic along this corridor. There are 22 ramp signals along both directions of I-95 from NW 62nd 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.

SR 826 has 19 ramp signals at on-ramps from NW 25th Street to NW 154th Street that were installed as part of the Palmetto Express project. These ramp signals are not yet operational. They will be activated after the SR 826/Palmetto Expressway Capacity Project is completed in 2024.

ARTERIAL OPERATIONS

Monroe County Traffic Signal System (MCTSS) –

The Information Highway includes our arterial traffic signal operations as well. The MCTSS continued to deliver reliable service for its users by quickly responding to equipment issues and addressing motorists concerns and comments.

The Keys COAST project continued during this fiscal year. RSUs and OBUs continued to be installed. All RSUs and OBUs were registered with the Security Credential Management System for certification confirmation. Toward the end of 2023, STMC staff will begin the process of integrating these new devices into the SunGuide software. The MCTSS was also expanded by a project that is updating seven emergency signals along the US 1/Overseas Highway corridor.

The results of the effort and coordination for the MCTSS can be demonstrated in the continued reliability of the system. During FY 2022–2023, the traffic signals in the MCTSS were available 99.9% of the time, traffic signal controllers were available 99.3% of the time, and traffic detection was available 99.9% of the time.

SW 8th Street Adaptive Signal Control

Technology (ASCT) – The ASCT pilot project ended its successful run in May 2023. The project equipment was removed to make way for Miami-

Dade County's extensive traffic signal controller replacement project. The ASCT system covered 30 intersections from SW 142nd Avenue to SW 67th Avenue. The ASCT corridor continued to show improvement when compared to the baseline year of 2016. Peak period travel times improved in the range of 4.6% to 10.5%, and peak period average speed increased in the range of 5.9% to 12.6%.

Traffic Signal Retiming – The District Six TSM&O office has an active traffic signal retiming program covering Miami-Dade and Monroe Counties. It identifies and prioritizes candidate arterial segments, performs traffic data collection, and develops new signal timing plans. The goal of the program is to make sure that the arterial signal timing plans are updated for the ever-changing regional traffic patterns. During FY 2022–2023, the TSM&O office completed the retiming for 228 traffic signals.

Traffic Signal Maintenance and Compensation Agreement (TSMCA) – There are approximately 2,800 traffic signals in Miami-Dade County. Of those, approximately 1,300 are on state roads. FDOT District Six is responsible for the traffic signals on its state roads but works with the county through the TSMCA. The TSMCA is a mutual agreement between FDOT and Miami-Dade County to compensate the county for operating and maintaining the traffic signals on state roads. These traffic signals are operated by the county's traffic signal system and maintained with the county's resources. The TSM&O office has made significant strides in streamlining the process and ensuring that the state's traffic signals are well maintained.

SOFTWARE ENHANCEMENTS

The software development team moved forward with a focus on improving efficiencies within the STMC by enhancing several Operations Task Manager (OTM) modules. Enhancements continued for the Purchase Tracker Module (PTM). PTM simplifies the purchasing process for the TSM&O office by managing quotes, tracking payments, and summarizing reports based on the various funding sources. The Operator Quality Control module continued to be enhanced based on error checks requested by other FDOT districts.



Keys COAST camera installation in Key West

The software development team continues to be active with the Statewide Express Lanes Software (SELS) and its change management team. The FDOT Central Office will be developing the next-generation SELS application and has chosen a development team for the task. District Six software engineers have been asked to provide advice and input in the development of "NextGen 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 2022–2023, STMC Operations staff continued to exceed those targets, thanks to quality control procedures and dedicated staff who provide continual guidance and training to operators with assistance from OTM.

Figure 1 shows the number of events during FY 2022–2023 compared to previous fiscal years. STMC operators managed 52,000 total events and 20,500 lane-blocking events. Figure 2 summarizes performance measures from FY 2022–2023.

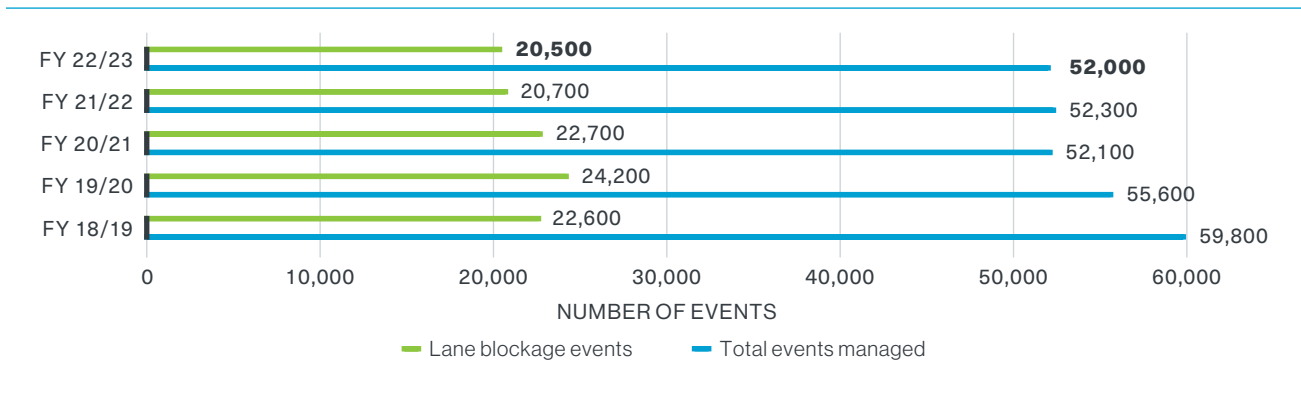
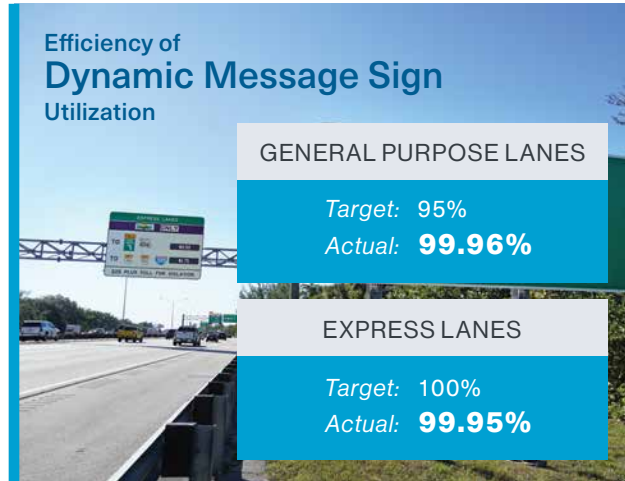


FIGURE 1. FDOT District Six events managed

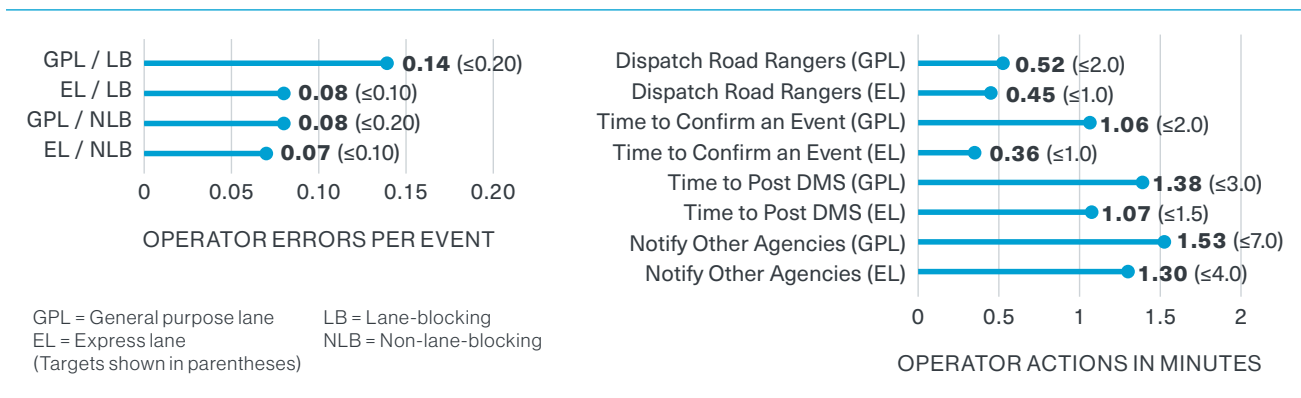


FIGURE 2. Performance measures

INCIDENT MANAGEMENT

The incident management program operates along District Six highways and selected arterials. Information Highway technologies have enhanced the incident management program by allowing the STMC to successfully manage resources to meet the demand and provide information to the motoring public. Automatic vehicle location (AVL) systems help STMC staff visually see where the incident response resources are and make critical decisions on which resource to dispatch. Advance warning alerts allow information from equipped incident management resources to automatically send information to navigation applications to give warnings to the public.

The District Six TSM&O office helps to maintain the collaborative approach between its Road Rangers, IRV, and Rapid Incident Scene Clearance (RISC) resources through its TIM teams. District Six hosts two TIM teams: the Miami-Dade TIM and the Monroe TIM. These teams allow incident management stakeholders to network and share lessons learned. Incident responder safety and safe, quick clearance for every traffic incident is the overall goal. This is represented by our average roadway clearance time of 30.6 minutes (see Figure 3), which is a 39% reduction since the benchmark of 50 minutes in 2005. The reduction in time that incident management resources are on the roadway results in a reduced chance for a related incident.

TIM – The TIM team meetings are an excellent way for many agencies to share information and get to know each other. The TIM teams in Miami-Dade and Monroe Counties are more of an incident management community. It is helpful when resources are deployed for a crash in the middle of the night that responders are familiar with each other and are on the same page for the task at hand. The District Six TSM&O office maintained its schedule of two joint regional meetings with District Four and the Florida’s Turnpike, two meetings



Incident management at the Golden Glades Multimodal Transportation Facility

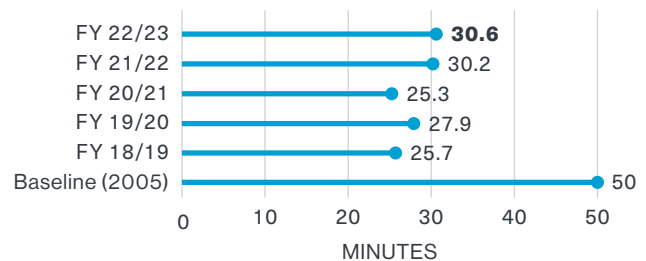


FIGURE 3. Average annual roadway clearance duration

in Monroe County, a 95 Corridor meeting, and a Palmetto Corridor meeting. The intent of the 95 and Palmetto Corridor meetings was to create a smaller forum-style meeting to focus on the unique traffic concerns along these corridors and related parts of Miami-Dade County.

Road Rangers – Our Road Rangers are frequently the first sign of help that stranded motorists see. Road Rangers are ready to assist but need to be concerned with their own safety. District Six continued to support and increase awareness of the state’s Move Over Law. This law requires vehicles to either move over one lane or slow down

to 20 mph below the posted speed limit for stopped law enforcement; emergency, sanitation, and utility service vehicles; and tow trucks.

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. Some Road Rangers patrol sections of the highways along defined beats. Based on an analysis of these beats and incident response times, a new beat was created to cover I-195 and I-395. This new beat was implemented at the beginning of 2023. The results of this effort will be evaluated with the expectation of making this a permanent beat.

In 2013, the TSM&O office added a heavy-duty wrecker to the Road Ranger program to help with relocating disabled heavy vehicles such as buses, transit vehicles, and box trucks. Figure 4 shows the heavy-duty wrecker activity and average clearance times.



FIGURE 4. Incidents Responded To by Heavy-Duty Wrecker with clearance times in minutes

Figure 5 shows that 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 Rangers responded to over 54,900 activations covering the 52,000 traffic events. Multiple Road Rangers can be activated for a single traffic event.

Incident Response Vehicles – District Six’s IRV program continued operation with seven active IRV

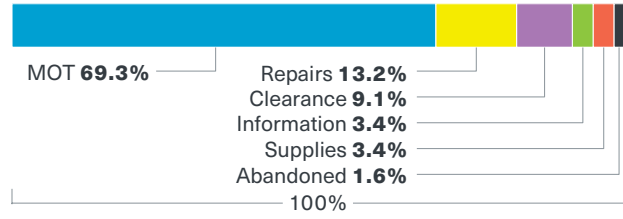


FIGURE 5. Road Ranger Assists by Type

trucks covering 95 Express, Palmetto Express, and 75 Express. IRV operators responded to 471 events and provided 2,803 assists during FY 2022–2023. IRV operators, along with FHP, Road Rangers, and other responders, all contributed to keeping 95 Express open and available for use 97.9% of the time and Palmetto Express/75 Express open for use 99.3% of the time during the fiscal year. The average travel lane blockage duration for 95 Express was 28.8 minutes in the northbound direction and 25 minutes in the southbound direction. The average travel lane blockage duration for Palmetto Express and 75 Express was 20.9 minutes in the northbound direction.

RISC Updates – RISC is an incentive-based program for the rapid removal of the more complex, longer duration incidents that occur along District Six roadways such as overturned tractor trailers or large debris spills. 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.



RISC event along SR 826

The RISC coverage area includes all major freeways, Krome Avenue, and Okeechobee Road. During FY 2022–2023, the average RISC response time was 58 minutes, while the average RISC travel lane clearance time was 57 minutes. RISC was used 26 times during the fiscal year.

IT/ITS MAINTENANCE



ITS maintenance technician repairing a DMS

There is no Information Highway without its construction workers, which means highly skilled IT professionals and ITS maintenance staff. The IT/ITS Maintenance program maintains existing networks and communications, makes repairs when needed, and conducts system upgrades to keep information flowing reliably and quickly. The IT/ITS Maintenance program has consistently protected the STMC systems from cyber-attacks and other threats utilizing a secured closed system. However, cloud technology has become an inevitability that has forced our IT staff to provide another level of security. All of the data transmitted to and from multiple systems to create alerts for wrong way driving, crashes, and bridge notifications would not be possible without help from the IT/ITS Maintenance program.

IT staff continued upgrading its Layer 3 communications network infrastructure by migrating to new switches. This initiative requires close

coordination between both IT staff and the field ITS Maintenance contractor. This migration is expected to be completed in February 2024.

The ITS Maintenance contractor has a critical role in making sure the field equipment is working correctly. The ITS Maintenance contractor responds, troubleshoots, and repairs ITS field devices to keep STMC Operations going. During FY 2022–2023, the ITS Maintenance team managed more than 1,830 critical trouble tickets and more than 3,200 tickets overall, which includes field equipment maintenance by contractors on active construction projects.

The MCTSS geographic coverage area of 105 miles does provide a challenge for our maintenance services. Our ITS Maintenance contractor has staff who reside in the Florida Keys, which cuts down on response time. Arterial Operations staff work closely with the ITS Maintenance contractor to minimize troubleshooting and repair time.

The following table shows the availability of key IT/ITS system components during FY 2022–2023 compared to previous fiscal years.

Availability of key IT/ITS system components during FY 2022–2023 compared to previous fiscal years

SUBSYSTEM	2018–2019	2019–2020	2020–2021	2021–2022	2022–2023
CCTV	93.5%	83.7%	96.2%	97.2%	96.6%
DMS	96.36%	96.8%	97.8%	97.9%	97.4%
Vehicle Detectors	89.9%	84.5%	95.6%	97.2%	96.6%
Video Wall	99.7%	99.9%	99.8%	100%	100%
SunGuide	98.5%	98.4%	100%	100%	98.7%
OTM	99.9%	97.5%	99.8%	99.9%	100%

Utility Infrastructure Location Services –

The utility locate team helps keep the Information Highway intact from third-party damage, responding to Sunshine 811 requests for the ITS underground infrastructure of electrical conductors and fiber optic cable. Cuts or damage in any of this infrastructure can have a negative impact on field device availability. District Six also shares fiber optic

cable with other partner agencies, so a fiber cut can impact others. The team locates and marks the underground ITS infrastructure before digging or construction begins. During this fiscal year, 21,037 Sunshine 811 tickets were received, and of those, 6,432 tickets were located. Figure 6 shows the number of locates from FY 2013–2014 to FY 2022–2023.

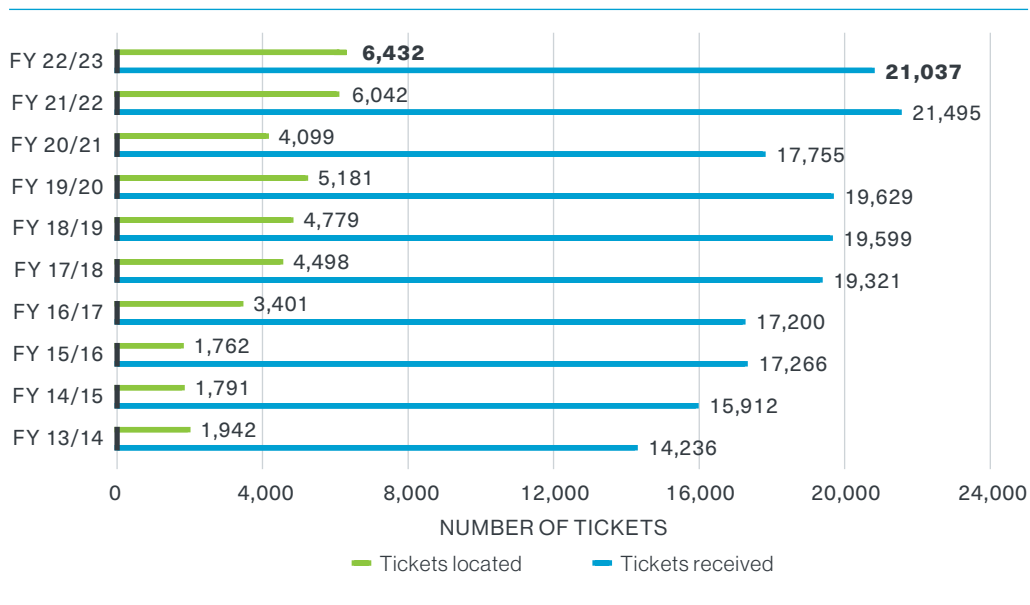


FIGURE 6. Locate Ticket Summary

TRAVELER INFORMATION

Traveler information is the primary way that the TSM&O office can connect the motoring public to the Information Highway. Over the years, traveler information has progressed from email alerts and phone messages to real-time data on smartphones applications, social media, and DMS. The information on our DMS has been supplemented with graphics. Besides roadway shields, infographics have been added to public service announcements.

During FY 2022-2023, more than 690,000 messages were displayed on District Six DMS, with most messages for public safety announcements and traffic incidents. Figure 7 summarizes the types of DMS messages displayed this fiscal year.

District Six publishes real-time traffic event information on [FL511's website](#) and smartphone application. FL511 also gathers traffic event information, camera images, and DMS messaging from all FDOT districts.

During FY 2022-2023, District Six published over 59,000 traffic event updates to FL511. Figure 8 shows the types of events published on FL511.



DMS message with infographic

District Six's TSM&O website, [sunguide.info](#), provides the same FL511 interface to allow motorists to view live feeds of the TSM&O office's cameras in Miami-Dade and Monroe Counties. The website provides access to the TSM&O office's services, newsflashes, publications, and newsletters.

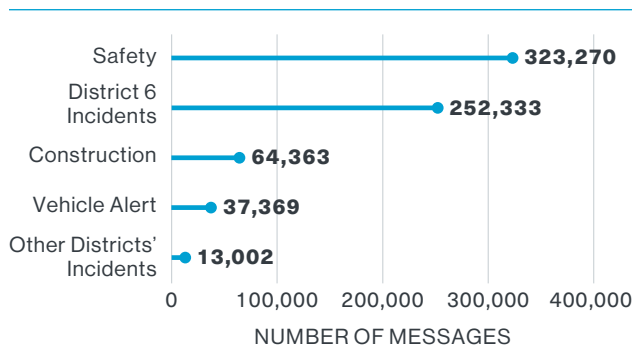


FIGURE 7. Posted DMS messages by type

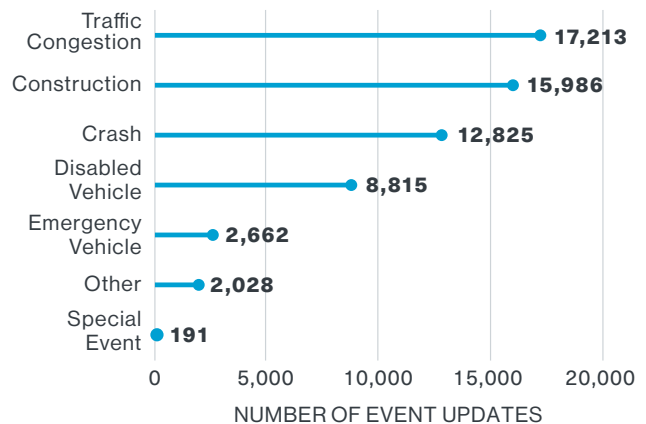


FIGURE 8. FL511 Published traffic information by event type

PUBLIC OUTREACH

Our Public Information (PI) staff is the on-ramp to the Information Highway. Their outreach efforts and customer service help answer questions from the public while educating them on the TSM&O office's services. PI staff hosted several tours at the STMC for the following groups:

- FDOT District Six Maintenance
- Indiana DOT and Federal Highway Administration (FHWA)
- Miami-Dade Transportation Planning Organization
- FDOT New Employees
- Florida's Turnpike Enterprise
- FDOT District Four
- FDOT Central Office FL511 Staff
- FDOT Take Your Child to Work Day
- Career Day
- State and Local Emergency Management Staff

The PI staff helped coordinate several media events to provide awareness on several initiatives by FDOT District Six. Media events covered the following topics:

- Move Over Law Press Conference
- Wrong Way Driving Media Day
- 95 Express Ingress Relocation
- Golden Glades Interchange Projects
- FL511 Summer Travel Safety
- Crash Responder Safety Week

The FDOT/FHP Move Over Law press conference was a highlight and well attended by local media. This press conference reminded the public of the Move Over Law requiring vehicles to move over a lane or slow down to 20 mph below the speed limit when approaching first responders. Speakers included dignitaries from FDOT, FHP, and the Road Ranger team. Ultimately, the theme was that everyone deserves to return home safely.



Incident management lesson at Take Your Child to Work Day

The STMC participated in Crash Responder Safety Week (CRSW) during the week of November 13 through 17, 2022. CRSW is an initiative from the FHWA to increase awareness about responder safety. The theme was Respect Our Roadside Heroes. District Six participated by posting several video testimonials from our Road Ranger and IRV teams along with DMS messages.



IRV social media video for CRSW

BENEFITS TO THE PUBLIC



Move Over Law media event

Managing and advancing the Information Highway is just as important as improving the physical highways. Improvements in our communication and data gathering is providing reliable, real-time information to the motoring public. This also leads to more efficient coordination of incident response resources to clear lane-blocking traffic events.

The TSM&O office continues to invest in its infrastructure and staff to keep its state-of-the-art information resources up to date. There is a lot of effort to keep the overall system operating along the Information Highway. Planned construction projects, annual equipment replacement projects, and in-house projects keep the field device deployment refreshed based on equipment end-of-life dates. Ongoing repairs and preventive maintenance ensure the overall availability of the system. Keeping incident management resources

such as Road Rangers, IRV, and RISC on the road provides benefits in reducing motorists' delay by providing quick clearance of lane-blocking events.

The critical function of the TSM&O office is two-fold: improving safety by keeping to the mission of Target Zero and keeping the roadways clear so that traffic and freight operations can move. These endeavors to keep the roadways free of lane-blocking traffic events reduce incident duration and in turn reduce traffic delays and improve safety.

The FDOT District Six TSM&O office's budget for FY 2022–2023 included operating, maintenance, and capital improvement costs for its freeway and arterial operations. One benefit of TSM&O strategies is they are cost efficient when compared to the capital costs for road and bridge construction projects.

The incident management program has a direct impact on the relationship between travel delay and lane-blocking traffic incidents. When delays associated with incidents are reduced, motorists and commercial vehicles save time. The time saving translates directly to a dollar amount when user costs of vehicles are taken into consideration. As shown in the benefits table, the incident management program's contribution to the reduction in delay due to incidents translates into savings of \$3.4 billion.

The express corridors and the ramp signaling system also contributed to the reduction of delays during peak hours, translating into savings of \$26.6 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 2022–2023 to the total annual operating expenses and capital investments (annualized over 10 years at 7%), the TSM&O program yields \$42.78 in economic benefit for every dollar spent (benefit-cost ratio of 42.78:1).

Fiscal Year 2022–2023 Costs

ITS Operations	\$10,629,910
ITS Maintenance*	\$8,459,629
Road Rangers	\$9,040,596
RISC	\$59,100
FDOT Cost Center Operating Budget	\$3,017,078
Other (Consultants, FTE, FHP, FIU)**	\$33,990,792
<i>Total Annual Operating Costs</i>	\$65,197,105
<i>Total Annualized Capital Costs</i>	\$16,005,234
Total Annual Costs	\$81,202,339

Fiscal Year 2022–2023 Benefits

Incident Management	\$3,446,900,771
Express Lanes / Ramp Signals	\$26,603,554
Total Benefits	\$3,473,504,525

* Includes express lanes ITS maintenance and express lane marker repair
 ** Includes Florida's Turnpike Enterprise operational costs for express lanes in Miami-Dade County (District Six)

Figure 9 shows the benefit-cost ratio for FY 2022–2023 and previous years.

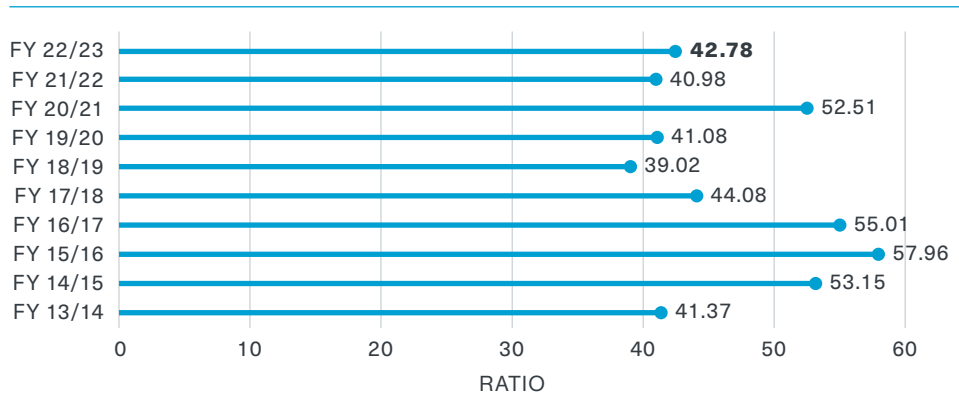


FIGURE 9. Benefit-Cost Ratio

A LOOK AHEAD

The TSM&O office is committed to managing and improving its Information Highway. Future traffic demands and traffic technology requires the TSM&O office to continue upgrading its systems and adapting its procedures. The TSM&O office plans for the future by projecting investments, initiatives, and projects. Next fiscal year will mark the 20-year anniversary of the STMC. The following projects are in progress or planned for FY 2023–2024.

Video Wall Upgrade – The STMC will install a new Direct View LED technology video wall. The new video wall will significantly increase the resolution of the video images and provide seamless operation. The project starts in September 2023 and is expected to be completed in August 2024.

US 27/SR 25/Okeechobee Road Projects – The first project along Okeechobee Road from the Broward/Miami-Dade County line to just west of the Florida's Turnpike will be completed in October 2023. This project adds seven CCTV cameras, two DMS, and 11 traffic detectors. This is the first of five projects that will bring needed roadway and traffic signal improvements to this corridor. The overall project extends through the SR 826 interchange and is expected to be completed in 2032.

Golden Glades Interchange Enhancement Project – District Six will start construction of enhancements to the Golden Glades Interchange where I-95, SR 826, Florida's Turnpike, and US 441 converge. This massive undertaking will be completed in several phases. The project will impact 95 Express, incident management efforts, and the overall ITS infrastructure within the project limits. The first phase is expected to start in spring 2024, with the overall project lasting about 8 years.

Express Lanes Projects – Regional express lane projects will continue to focus on improvements and expansion of the existing system. The Palmetto Express southbound capacity improvement project is estimated to be completed in mid-2024. The 95 Express Phase 3 project will be nearing completion next fiscal year. The project spans from the Miami-Dade/Broward County line into Palm Beach County. Next fiscal year will focus on integrating the entire system and creating a seamless connection between Districts Four and Six. There will also be a focus on integrating the next version of the statewide express lanes software, NextGen SELS.

Keys COAST – This project brings connected vehicle technology to the Florida Keys along US 1/Overseas

Highway. The project will 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, drawbridge management, emergency vehicle preemption, freight signal priority, transit signal priority, and freight vehicle weigh-in-motion. The project is anticipated to be completed in early 2024.

Districtwide Traffic Signal Retiming – At the beginning of 2024, the TSM&O office will continue its next round of traffic signal retiming focusing on the MCTSS. This will coincide with the completion of the Keys COAST project. Signal retiming efforts will also continue along selected corridors in the City of Miami Beach.

Wrong Way Driving Countermeasures – District Six will continue WWDS countermeasures deployment with its Phase 1 project at 11 off-ramps along I-95, I-75, I-195, and SR 826. Phase 1 is expected to be completed in the first quarter of 2024. Phase 2 will start at the end of 2023 covering 24 off-ramps. Phase 2 is expected to be complete at the end of 2025.

SR 997/Krome Avenue TSM&O Infrastructure Deployment – The next TSM&O project will be along Krome Avenue. Krome Avenue is considered a Strategic Intermodal System Corridor, a Statewide Arterial Management Program Priority Corridor, and an emergency evacuation route. This project is currently in the planning stages and will cover 34 miles from Campbell Drive to Okeechobee Road. The goal is to improve safety and mobility along the corridor by deploying a fiber optic backbone, CCTV cameras, arterial DMS, traffic detection, and other TSM&O strategies.

City of Miami Beach Traffic Management Center (TMC) – The City of Miami Beach will open its TMC co-located within the STMC. This will help the two groups coordinate regional traffic events such as college spring break season, cultural events, and festivals. The STMC looks forward to working with its coastal partner.



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