

# ITS Annual Report (Fiscal Year 2012-13)

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FDOT District Six

# MOVING



SUNGUIDE TRANSPORTATION  
MANAGEMENT CENTER  
Florida Department of Transportation  
District VI  
1001



# A MESSAGE FROM THE DISTRICT SECRETARY



**M**oving. It is what we do every day either by walking, riding a bike, driving a car, taking a bus, catching a train, or flying in an airplane. The movement of people and goods throughout our region is a paramount function of mobility and intrinsically linked to our economy. The Florida Department of Transportation (FDOT) District Six Intelligent Transportation Systems (ITS) Program's number one goal is keeping South Florida moving by enhancing and optimizing the efficiency of its roadways.

To keep South Florida moving, District Six must focus on managing the current roadway system in today's condition for optimal efficiency, adapting to ongoing roadway improvements, and preparing operational strategies for future conditions. All of this is done with safety in mind to keep the roadways safe for motorists, support field staff, and emergency responders. Supporting the goal of keeping South Florida moving requires effective data collection, analysis and problem-solving, continuous assessment and improvement, awareness of state-of-the-art technology and future trends, and ability and willingness to respond quickly and affect change. The benefits of that one goal are clear as everyday millions of pieces of data move through the ITS communications network, thousands of vehicles efficiently and safely move through our transportation system, and hundreds of traffic events are handled safely.

The team of professionals – staff and consultants – leading the District's ITS Program is helping deliver safe mobility today and is also preparing for tomorrow's needs and demands. It requires dedication, and a process for continuous review, adaptation, optimization and improvement. Equipment and software is maintained, enhanced and upgraded to maximize its utility and effectiveness. The services offered by the program are constantly studied and evaluated for how they can be offered better, faster and at a lower cost.

South Florida's economic vitality and quality of life for its citizens and visitors depends on a safe, efficient, well-connected, balanced and cost-effective transportation network. Keeping traffic moving is not just a weekday or a peak period concern which therefore requires the SunGuide Transportation Management center (TMC) to be operational 24 hours a day, 7 days a week, 365 days a year.

The team is constantly challenged to meet the safe mobility needs of a region where population and traffic volumes are expected to maintain high levels of growth. I remain confident that the ITS Program will continue moving through our current and future challenges by developing inspirational ideas and by taking bold actions.

I am proud to have an opportunity to share the District Six ITS Program's success with you. In this Fiscal Year 2012-2013 ITS Annual Report, you will see how the team is moving forward to meet our mobility needs.

A handwritten signature in blue ink, appearing to read "Gus Pego". The signature is fluid and cursive.

Gus Pego, P.E.  
District Six Secretary of the Florida Department of  
Transportation

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# INTRODUCTION

The act of “moving” can mean many things to many people. How we get from one point to another. How we are moved or feel about our mobility needs and the ease of access. How the current and future transportation demand moves the necessity for a change or improvement. The Merriam-Webster Dictionary defines moving as:

- a:** marked by or capable of movement

**b:** of or relating to a change of residence

**c:** used for transferring furnishings from one residence to another

**d:** involving a motor vehicle that is in motion
- a:** producing or transferring motion or action

**b:** stirring deeply in a way that evokes a strong emotional response

The Florida Department of Transportation (FDOT) District Six Intelligent Transportation Systems (ITS) Program provides a variety of services and support that helps keep South Florida traffic moving in more ways than one. Depending on the individual, the daily travel task can be a moving or emotional experience depending on congestion, events, and challenges encountered. The District Six ITS Program distributes information to travelers so they are aware of potential problems and can seek out alternatives if necessary.

The ITS program, which serves to support and manage South Florida’s transportation infrastructure through the applied use of integrated technologies, continues to be a viable alternative and supplement to traditional roadway enhancement projects. FDOT District Six is committed to enhancing system capacity and improving regional mobility. Fiscal Year (FY) 2012-2013, which covers July 1, 2012 to June 30, 2013, continues that philosophy.

The ITS Program encompasses the five areas listed below.

- **ITS Deployments** – Providing planning, design and procurement of ITS equipment, such as Closed Circuit Television (CCTV) cameras, Dynamic Message Signs (DMS), vehicle detectors and communications supporting ITS operations.
- **TMC Operations** – Providing a central location for data collection and dissemination. The SunGuide Transportation Management Center (TMC) in Miami-Dade County is the command center for managing traffic and incidents through applications such as express lanes and ramp signaling.

- **Incident Management** – Providing the Road Rangers – Florida’s version of a safety service patrol – and additional incident management resources. Coordinating multi-agency meetings to identify issues and develop solutions to improve incident management.
- **IT/ITS Maintenance** – Managing the maintenance of ITS field and TMC equipment to ensure system availability and stability, as well as software support.
- **Traveler Information** – Providing real-time traveler information services through various media, such as the telephone, Internet, Smartphone applications, and social media.

This marks the eighth edition of District Six’s ITS Annual Report. In this report, we highlight how the District Six ITS office focused its efforts on keeping South Florida moving along FDOT roadways by enhancing its operational strategies, software and coordination efforts. We hope you find the report informative and welcome you to join District Six as we continue moving South Florida forward to a safer, more efficient future.

## FLORIDA DEPARTMENT OF TRANSPORTATION

### ITS MISSION:

Enhance the safety, security, and efficiency of Florida’s transportation system through the implementation of interoperable ITS technology in support of local, regional, and statewide mobility.

### ITS VISION:

Be the national leader in ITS by promoting multijurisdictional coordination for the provision of an efficient, secure, reliable, and safe transportation system.

# ITS DEPLOYMENTS

## MOVING...TECHNOLOGY



**F**DOT District Six is constantly moving ahead by expanding and enhancing its infrastructure.

Technology plays an important role in the ITS Program's operations ranging from the cameras and dynamic message signs visible to motorists to the unseen communications network and computer support systems. FDOT District Six will always be dedicated to the continuous enhancement of the ITS infrastructure. Throughout FY 2012-2013, several projects helped the ITS Program move toward the goal of strengthening its reach and effectiveness. A summary of FDOT District Six ITS projects completed during FY 2012-2013 can be found below:

- **SR 826 from NW 67 Avenue to NW 47 Avenue Westbound Auxiliary Ramp Improvements** – This project included the installation of a new DMS and four microwave vehicle detectors along SR 826. Construction began in September 2011 and was completed in January 2013.
- **Addition of Auxiliary Lane on I-75 Eastbound to SR 826 Southbound** – This project provided an important roadway capacity improvement to the eastbound I-75 exit to southbound SR 826. The ITS elements on this project include the addition of two new microwave vehicle detectors and fiber optic cable. Construction began in January 2012 and was completed in May 2013.
- **I-195 Widening, Bridge Repair and Rehabilitation** – The ITS components of this project included the relocation of one DMS and four microwave vehicle detectors along I-195. Construction began in November 2010 and was completed in January 2013.
- **800 MHz Radio Installation** – District Six completed the transition to the 800 MHz radio system in September 2012. This upgrade allows the ITS office to communicate on the Statewide Law Enforcement Radio System (SLERS) delivering a more secure and clear signal between the TMC and the Road Rangers.
- **I-95 at NW 62 Street Ramp Resurfacing** – All four ramps to and from I-95 at NW 62 Street were resurfaced causing the entrance ramp detectors used for ramp signaling to be replaced. Construction of this project began in April 2013 and was completed in June 2013.



Other projects that were ongoing and/or planned during FY 2012-2013 but will continue construction during FY 2012-2013 included:

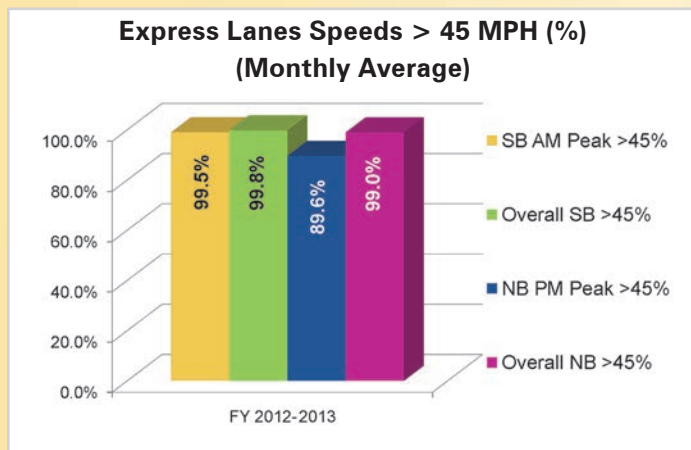
- **Palmetto Expressway (SR 826)/Dolphin Expressway (SR 836) Interchange Reconstruction Section V** – This major multilevel interchange reconstruction project includes additional ITS elements, such as new CCTV cameras, new DMS along SR 826 between SW 24 Street and NW 36 Street, vehicle detectors and fiber optic cables. The addition of these devices will provide District Six with full coverage of the SR 826/SR 836 Interchange and completes the final fiber optic cable link for SR 826. Arterial DMS will also be installed along SW 88 Street, SW 8 Street, Flagler Street, NW 25 Street, and NW 36 Street. Construction has been ongoing since 2009 and is expected to be completed in 2015.
- **95 Express Phase II Miami-Dade Deployments** – This project, which began construction in November 2011, will extend the existing express lanes from the Golden Glades Interchange in Miami-Dade County to Broward Boulevard in Broward County. ITS devices such as CCTV cameras, DMS, vehicle detectors and other infrastructure support equipment will be installed to support 95 Express Phase II. This project is scheduled for completion at the end of 2014.
- **DMS Replacement and ITS Device Installation** – This design-build project replaces two DMS, installs 21 CCTV cameras and eight vehicle detectors in Miami-Dade and Monroe counties. Construction began in June 2011 and is scheduled for completion in August 2013.

The current and planned ITS device installation bring the total field inventory to 270 CCTV cameras, 130 DMS, 315 vehicle detectors, and 22 ramp signaling stations.

The FDOT District Six SunGuide Transportation Management Center (TMC) houses FDOT operations staff who monitor and manage traffic, publish travel information and dispatch incident management resources 24 hours a day, seven days a week. TMC operators coordinate 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 Miami-Dade Expressway Authority (MDX) TMC operations staff and the Florida Highway Patrol (FHP) Troop E dispatch center within the TMC.

### 95 EXPRESS OPERATIONS

During FY 2012-2013, the FDOT's High Occupancy Toll (HOT) lanes project, 95 Express, reached the 75-million-trip milestone. The project launched in December 2008 and has seen a steady increase in popularity in South Florida leading it to be considered one of the most successful and highly used express lanes facilities in the United States. Reaching this milestone is a testament to District Six's ability to keep South Florida moving by maintaining 95 Express' reliability, despite steady increases in traffic demand. Average peak period speeds in the express lanes (EL) and local lanes (LL) are still well above the conditions before express lanes were implemented; 18 miles per hour (MPH) northbound and 20 MPH southbound.



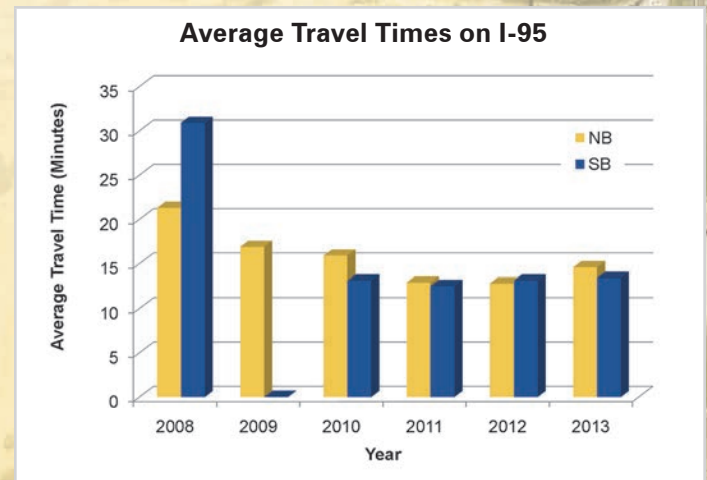
As depicted in the graph above, the average peak period speed for southbound I-95 was greater than 45 MPH for the project's target goal of 90 percent of the time for FY 2012-2013. However, the northbound I-95 average peak period speed fell just short of this goal. This is indicative of more

motorists utilizing the express lanes during the afternoon peak period and a potential need for an increase in the maximum toll rate. The demand in the express lanes increased from a weekday average of 31,000 vehicles per day (VPD) to 32,290 VPD in the northbound direction – a four percent increase. In the southbound direction, average weekday demand increased from 31,700 VPD to 33,660 VPD – a six percent increase. Non-peak period travel also continued to increase during FY 2012-2013.

District Six has successfully managed increased demand along 95 Express by closely monitoring EL performance and optimizing the EL software module. Another major help in managing increased demand is 95 Express Bus ridership. This rapid transit service saw a 10 percent increase in total commuter boardings during FY 2012-2013.

### RAMP SIGNALING OPERATIONS

Another component of 95 Express is the ramp signaling system, which entered its third full year of operation during FY 2012-2013. Consisting of 22 total ramp signals, the system helps keep traffic moving on I-95 by regulating the flow of vehicles entering the roadway during peak periods of travel. TMC 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. As demand on the freeway increases in the future, ramp signaling will continue to be one of the tools to help District Six keep traffic moving. The graph below indicates the decrease in average travel times on I-95 from before the ramp signaling system's implementation (2008) to after its implementation (northbound in 2009 and southbound in 2010).





## CONSTRUCTION AND SPECIAL EVENT COORDINATION

A crucial component of TMC operations is coordinating with several agencies to ensure all planned and unplanned lane blockage events are prepared for and dealt with in the most efficient manner possible. During FY 2012-2013, coordination between the TMC operations staff and these various agencies increased as several construction projects continued to affect District Six roadways.

- **Construction Coordination** – One of the biggest challenges keeping traffic moving is the impact of ongoing roadway construction. TMC 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 following is a list of projects that TMC operations staff developed these plans for: SR 826 Section V, Port of Miami Tunnel, NW 25th Street Viaduct Phase II, I-195/ SR 112 Project, I-75 Southbound Ramp to SR 826 Reconstruction Project, and 95 Express Phase II.
- **Special Event Coordination** – Aside from construction projects, several special events occur in South Florida that cause unusual traffic congestion on District Six roadways. TMC operations staff coordinates with representatives of these events to help ensure traffic can move as safely and efficiently as possible. Events like the annual holiday Toys in the Sun Run in Broward County, professional basketball playoff and championship games in downtown Miami, a major tennis tournament in Key Biscayne, all professional and college football-related events including the college bowl championship game at the stadium in North Miami, and downtown Miami entertainment events such as weekend long music festivals are just a few examples of events TMC operations staff handled.
- **Monroe County Coordination** – The TMC continued support for Monroe County by assisting with 372 events in FY 2012-2013. This is a 22 percent decrease compared to 476 events in the previous year. Coordination between TMC staff and Monroe County representatives resulted in more travel information dissemination to motorists traveling to and from the Florida Keys as well. TMC operators averaged nearly 600 Monroe County DMS messages posted per month, a 50 percent increase from the last fiscal year.

## SOFTWARE ENHANCEMENTS

During FY 2012-2013, already-existing TMC operations software was enhanced to streamline procedures, increase operational efficiency and provide optimized quality assurance and quality control of TMC operator data entry.

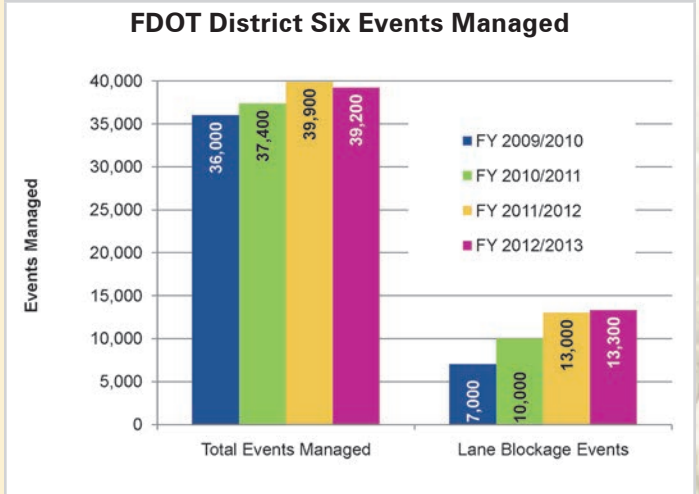
- **Operations Task Manager (OTM)** – OTM is a single piece of software that incorporates several separate software modules which serve as extensions of the statewide SunGuide software. OTM includes ten modules handling functions such as express lanes, ramp signaling, ITS device maintenance tracking, rapid incident scene clearance (RISC), and reporting functions. During FY 2012-2013, OTM was upgraded to versions 1.8 and 1.9, which included software fixes, enhancements, and several upgrades to existing modules. The Incident Notification module was upgraded to add vehicle alerts from the Road Ranger automatic vehicle locator (AVL) system. The Report Scheduling module added a DMS Usage Report which provides summary tables for the events DMS were used, which roadways DMS messages were posted, and overall summary of DMS usage.
- **Operator Performance Quality Control (OPQC)** – The TMC's operational services are provided through a performance-based contract, in which operator performance is evaluated on 34 possible errors for each lane blocking event managed. This requires a detailed quality review of all travel lane blocking events. OPQC was developed to help management by automating most of the data evaluation efforts for both lane blockage and non-lane blockage events. In FY 2012-2013, TMC enhanced OPQC's abilities even further, making the software capable of evaluating all events – including voided events and false alarms – which allows the TMC



to build more operator consistency and provide the best quality data to its customers: the motoring public. OPQC has piqued the interest of other FDOT Districts. District Six staff is currently coordinating with ITS staff in Districts One and Two to support OPQC deployment.

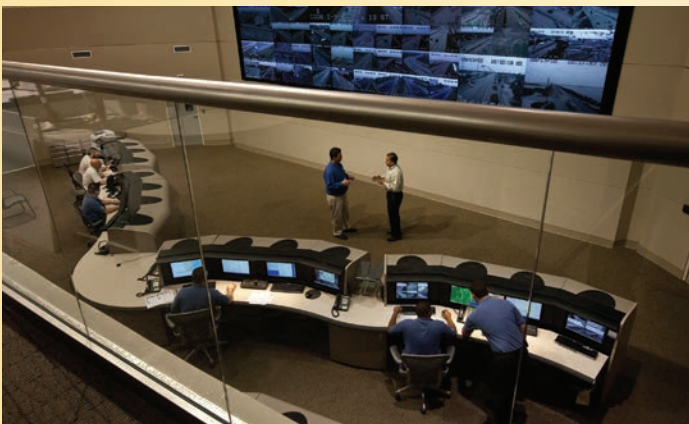
### PERFORMANCE MEASURES

In December 2007, District Six set targets for key operational performance measures that have the greatest impact to the public. During FY 2012-2013, TMC operations staff once again exceeded those targets, thanks to quality control procedures that include daily reviews of all lane blocking events. The table below shows the performance measures average results and targets. These goals continue to be exceeded as operators managed 39,200 total events and 13,300 lane blocking events during FY 2012-2013. The graph to the right shows the number of events compared to previous years.



Performance Measures	FY 10-11 Average	FY 11-12 Average	FY 12-13 Average	Target
DMS Efficiency	99.82%	99.77%	99.87%	>95%
TMC Operator Error Rate	0.32%	0.30%	0.36%	<0.59%
Time to Dispatch Road Rangers*	00:00:56	00:00:44	00:00:44	<00:02:00
Time to Confirm an Event*	00:01:31	00:01:42	00:01:40	<00:02:00
Time to Post DMS*	00:02:47	00:02:27	00:02:16	<00:05:00
Time to Notify Other Agencies*	00:01:15	00:01:11	00:01:30	<00:07:00

\*Time = Hours:Minutes:Seconds



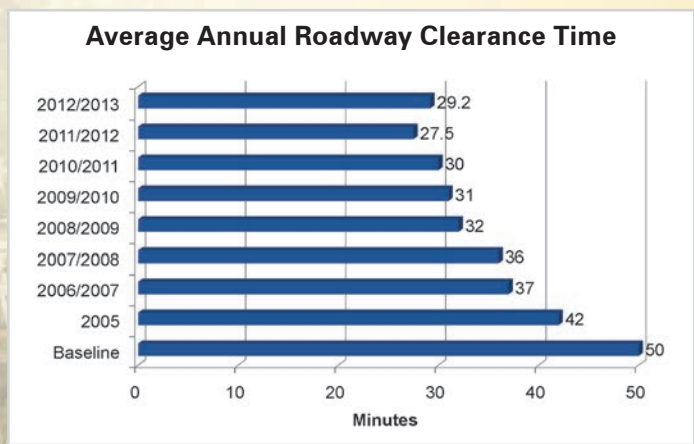


# INCIDENT MANAGEMENT

## MOVING...SAFETY



**D**istrict Six's incident management service helps maintain roadways free and clear of road blocking incidents. The multi-agency Traffic Incident Management (TIM) Team plays a big role in helping FDOT reach its goal: to reduce traffic congestion, as well as decrease the chances of secondary events, caused by prolonged exposure to traffic incidents. The result of the TIM Team's efforts is shown below as the average annual roadway clearance time was 29.2 minutes during FY 2012-2013.



### TIM

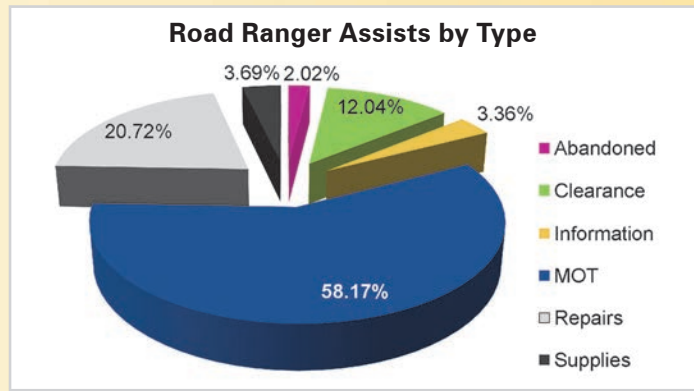
As mentioned in the TMC Operations section, special event coordination was a major component of incident management efforts in FY 2012-2013. The interagency coordination done within the TIM Team made that possible.

- TIM Coordination** – Thanks to the relationships built within the TIM Team, the TMC's TIM representatives were able to assist District Six's roadway design department. Meetings were arranged with several agencies within the TIM Team such as FHP, Road Ranger contractors, roadway maintenance contractors and Fire Rescue representatives. The group discussed upcoming FDOT projects allowing incident responders to comment on what each project needs to facilitate quick and efficient incident response conditions. As they have done since the ITS Program's inception, FHP Troop E and TMC operations staff continued to share information and resources to help detect and manage incidents on District Six roadways more efficiently. The relationships built in the TIM Team will help District Six by creating more efficient interagency coordination during future incidents, again exemplifying the commitment to keep traffic moving.

- SHRP 2 Training** – District 6 and FHP joined forces to help train TIM responders. The goal of the training was to strengthen TIM programs in the areas of responder safety; safe, quick clearance; and prompt, reliable, and interoperable communications. This was done under the FHWA Strategic Highway Research Program (SHRP 2). A total of ten sessions were conducted with more than 220 attendees ranging from Fire Rescue, Law Enforcement, Operations and Maintenance. This training will be a continual effort in the coming years.

### ROAD RANGERS

The TMC serves as the control center for dispatching and coordinating field operations and one of the largest parts of District Six's field operations are the Road Rangers. As the most visible component of District Six's incident management service, Road Rangers provide incident response and motorist assistance on I-95, I-75, SR 826, I-195, I-395 and the MacArthur Causeway. As seen on the pie chart below, more than 90 percent of Road Ranger assists are for Maintenance of Traffic (MOT), repair or clearance services.



- Incident Management Refresher Training** – District Six hosted its first ever Incident Management Refresher Training Course to review program guidelines with its Road Rangers, Incident Response Operators, and TMC Operations staff. Besides being a training session, the forum allowed for a round table discussion between those involved with incident management. Road Rangers and TMC control room operators were able to share experiences and offer ideas for process improvements. The meeting proved to be a great opportunity for TMC operators and Road Rangers to get to know the staff on either end of the radio.

# INCIDENT MANAGEMENT (CONTINUED)

## MOVING...SAFETY



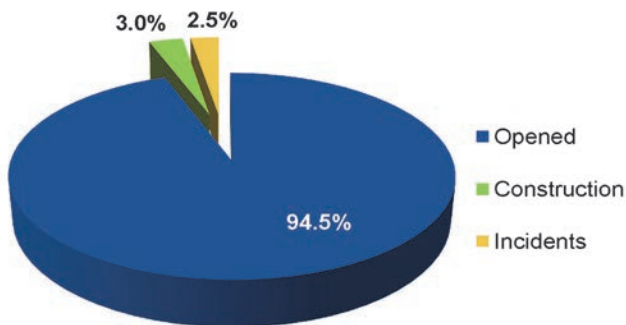
- National Incident Management System (NIMS)** – NIMS is an emergency management doctrine that prepares all agencies on how to prevent, respond to and recover from all types of incidents. During FY 2011-2012, District Six offered all District Six Road Rangers the opportunity to become NIMS certified which will allow them to be more effective incident managers.
- New Road Ranger Services Contract** – During FY 2012-2013, District Six began the process to procure a new Road Ranger services contract. This task included support through the request for proposal and scope development process, evaluation of candidate proposals, selection of the new vendor, inspection of vehicles, training staff, leading to the “hand off” of services to the new vendor. In addition to the familiar pickup trucks, tow trucks, and flatbed wreckers, the new contract adds a heavy duty wrecker. The heavy duty wrecker will be used on an as needed basis to move disabled commercial vehicles and buses out of the travel lanes to a safe area for repair or for other towing services to remove from the area.

- IRV Fleet** – A third truck was added to the District Six IRV fleet. The new truck (known as IRV 3) gives the IRV program additional flexibility during maintenance and repairs on the two in-service trucks.
- Safety and SIRV Coordination** – District Six continued coordination between its IRV operations staff and the District Four TMC’s Severe Incident Response Vehicle (SIRV) Team. This coordination is due to the overlapping construction limits for the 95 Express Phase II project. The two teams met and discussed IRV/SIRV procedures and lessons learned and plan to continue having quarterly meetings.

### INCIDENT RESPONSE VEHICLES (IRV)

District Six’s IRV Program responded to 1,110 events during FY 2012-2013. IRV operators, along with the FHP, Road Rangers and other responders were instrumental in keeping the 95 Express facility open and available for use 94.5 percent of the time during the fiscal year with the facility remaining closed due to incidents 2.5 percent of the time. The average travel lane blockage duration in the express lanes was 16 minutes in the northbound direction and 14.8 minutes southbound. Even though IRV operators focus mostly on the 95 Express lanes, they also assist motorists on the regular lanes along I-95 on an as needed basis.

**Express Lanes Facility Availability (FY 2012-2013 Monthly Average)**



### RAPID INCIDENT SCENE CLEARANCE (RISC) UPDATES

RISC supports FDOT’s Open Roads Policy by being an incentive-based program for the rapid removal of the more complex incidents that occur on District Six roadways that would normally require additional time for clearance. RISC contractors are required to respond with all required vehicles within 60 minutes and clear the travel lanes within 90 minutes to receive the incentive. TMC operations staff use the RISC module in OTM to track RISC activation, resources arrival and clearance times. During FY 2012-2013, the average RISC response time was 46 minutes while the average RISC travel lane clearance time was 85 minutes. In total, TMC operations staff summoned RISC resources a total of seven times during FY 2012-2013.

RISC Performance	FY 2012-2013	Target
Average Activation Time	28 min	--
Average Travel Time	46 min	60 min
Average Travel Lane Clearance Time	85 min	90 min
Average Total Incident Clearance Time	228 min	--
Total RISC Events	7	--

The RISC arterial pilot program continued in FY 2012-2013 covering Krome Avenue (from Kendall Drive to US 27), US 27 (from SR 826 to the Miami-Dade/Broward County line), and the MacArthur Causeway. This program was launched in 2011 to address the problem of major incident on these roadways that experience high commercial vehicle traffic volumes.

# IT/ITS MAINTENANCE

MOVING...DATA



District Six's ITS Program is highly dependent on technology to be able to move and process the tremendous amount of data throughout the TMC's computer network. The TMC's IT/ITS maintenance staff manage and maintain that technology – both in the TMC and out in the field. The entire network of equipment, including roadway detectors, CCTV cameras, DMS, communications infrastructure, servers, computers, software applications and the TMC's video wall, must remain operational 24 hours a day, seven days a week. In turn, these systems call for an aggressive maintenance program that ensures ITS equipment is operating adequately.

Last year District Six deployed a new maintenance tracking module in OTM that assists with detection, reporting, troubleshooting and, ultimately, the repair of IT and ITS equipment in the TMC and out in the field. The table below shows the availability of key system components over FY 2012-2013.


Subsystem	Annual Average System Availability
CCTV	95.47%
DMS	93.85%
Detectors	94.90%
Video Wall	97.49%
SunGuide™ Software	97.97%
OTM	99.85%

## ITS UTILITY INFRASTRUCTURE LOCATES

As shown in previous sections of this annual report, there are many ways the District Six ITS program is keeping the region moving. However, one area where District Six tries to prevent movement forward is outside entities damaging the ITS infrastructure. The ITS Program includes a large amount of underground fiber optic and electrical cables installed throughout Miami-Dade and Monroe counties. Notifications (or locate tickets) are received from Sunshine 811 regarding activity that may interfere with underground utilities. The ITS Program sorts through these tickets and when necessary will physically mark the ground showing the location of the ITS underground infrastructure. The following graph indicates the quantity of locate tickets received and the quantity of actual field locates since FY 2009-2010.



## INFRASTRUCTURE IMPROVEMENTS

- TMC Video Wall** – The TMC's video wall monitors were replaced including new LED light source engines. The video quality is noticeably better and the new light source engines allow the video wall to run virtually maintenance free. The new video wall is expected to reduce maintenance costs by at least \$25,000 per year which was previously spent replacing conventional halogen light bulbs.
 
- New Core Switch** – The ITS Program installed and integrated a new core switch into the ITS computer network. The core switch is basically the nerve center of the network where all data is passed through and routed to the appropriate location. The new Cisco Nexus 7010 replaces the Cisco Catalyst 4507R core switch which had reached the end of its life cycle. The new core switch provides the ITS network with increased speed and expandability. The new core switch can handle 5.76 billion packets of data compared to 102 million packets for the previous switch.
- Backup Server at the NAP** – District Six ITS successfully deployed backup servers at the Network Access Point (NAP) located in downtown Miami. The NAP facility is one of a few facilities located throughout the nation that serve as hubs for the multimedia communication infrastructure to converge and connect with the rest of the world. Establishment of the NAP backup servers gives District 6 the flexibility to operate the SunGuide system from essentially anywhere in the world if a severe emergency causes the TMC to be evacuated.

# TRAVELER INFORMATION

## MOVING...INFORMATION

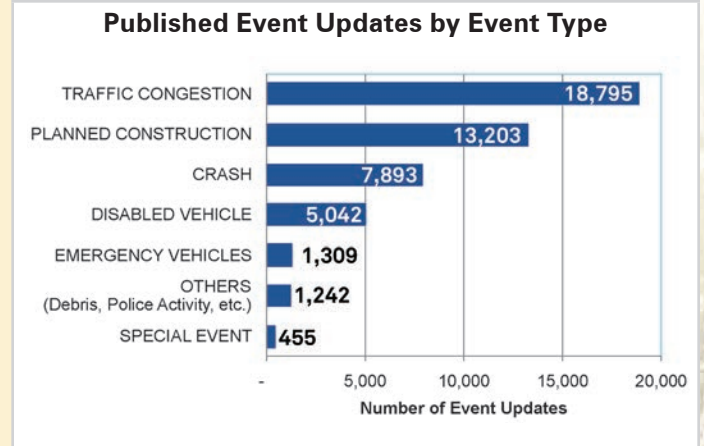
Providing traffic information to motorists in South Florida allows them to make educated decisions when confronted with congestion, traffic events, or construction. FDOT provides traveler information through the statewide Florida Advanced Traveler Information System (FLATIS), commonly referred to as 511. The service publishes real time traffic information to the public through the Internet on FL511.com and a smartphone application as well as through a phone-based Interactive Voice Recognition System (IVR). District Six's many DMS provide motorists with lane blockage information and travel times. District Six's ITS website, SunGuide.info, allows motorists to view live feeds of the ITS Program's CCTV cameras in Miami-Dade and Monroe counties.

### FLATIS

During FY 2012-2013, the 511 service continued to receive a significant amount of calls statewide with users in Miami-Dade and Broward counties making up a considerable portion of those calls. District 6 TMC operators published over 47,000 event updates from lane blockage and congestion events on roadways managed by the District Six TMC. The graph to the right shows the different types of published events.

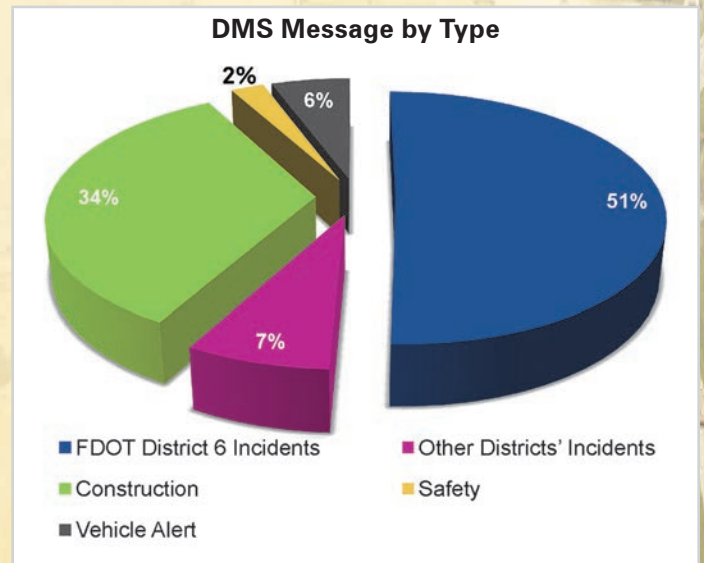
### SMARTPHONE APPLICATION AND SOCIAL MEDIA

FLATIS continued publishing information through the Florida 511 "app". Users download the application on their iPhones, iPods and iPads allowing them to receive travel information in their vicinity. The application gives users the option to have traffic incidents populate automatically based on the user's GPS location. An app for the Android platform is in development and is expected to be released next fiscal year. Florida 511 continued utilizing social media through several 511 Twitter feeds, which Twitter users can follow to populate their feeds with real-time, up-to-the-minute traveler information in the areas of Florida they desire. The 511 Twitter accounts can be found by searching "FL511" on Twitter.



### DMS MESSAGING

Another important component of District Six's traveler information service is its system of DMS, which displays lane blockage information, travel times, pre-event messages and congestion messages, all of which help motorists plan their trips and avoid congestion in both Miami-Dade and Monroe counties. In FY 2012-2013, more than 217,300 messages were deployed on District Six DMS, with the majority of messages being for incidents and construction. This is a 54 percent increase compared to the previous fiscal year.



# PUBLIC OUTREACH

MOVING...PEOPLE



**T**M C staff continued its mission to promote the ITS Program's benefits throughout FY 2012-2013. Staff completed several efforts to raise the awareness of its public services in the local community and also participated in various events that worked to increase its national profile as well. This year marked the third consecutive time the District was honored with the prestigious "Best of ITS" Award by the Intelligent Transportation Society of America during its annual meeting in Nashville, Tennessee. The District was presented the award for its development of the Operations Task Manager (OTM) software, making it the first office to have won the award multiple times in a row in the history of ITS America. Public information staff also focused on supporting 95 Express operations and customer service. The customer service software used to track questions and responses (TMC Connect) was expanded to support the upcoming 95 Express Phase II launch by allowing comments to be routed to other agencies such as Broward County Transit, Miami-Dade County Transit, and FDOT District 4.

- FDOT District 4
- University of Michigan
- Miami Youth Co-Op Group
- Israel Ministry of Transportation.
- Massachusetts Institute of Technology alumni
- Florida State Senate and House candidates

## INTERVIEWS

District Six ITS PIO staff conduct interviews with media and other programs to help increase awareness of the ITS program. Some of the interviews conducted during FY 2012-2013 include:

- WLRN Topical Currents (National Public Radio)
- Sun Sentinel
- WIOD 610AM
- Canadian News Talk 1010
- International News Corporation
- Traffic Technology International

## COMMUNITY INVOLVEMENT

District Six ITS staff participated in various campaigns and functions in the community to support important issues (such as texting and driving) and increase awareness of the ITS program. Some of the community involvement efforts over the past fiscal year include:

- Distracted driving campaign initiatives
- Employee fair with South Florida Commuter Services
- Community Traffic Safety Team
- University of Miami Safety Fair
- Miami Chamber of Commerce Leadership Committee

## INTERNATIONAL

TMC staff also participated in the ITS World Congress meeting's special session on public information in ITS and coordinated a tour of the SunGuide TMC for event delegates from India, Japan, South America and Europe.

## CUSTOMER SERVICE

Customer service efforts continued to be a high priority for the ITS office during FY 2012-2013, especially because TMC staff is responsible for handling general ITS and 95 Express-related inquiries. They received more than 250 comments from a variety of topics that included tolling, transit and data requests for academic and professional institutions from around the world.



Some of this year's outreach highlights included:

## TOURS

The District Six ITS program conducts tours of the TMC for anyone who is interested. Tours typically include a presentation of the ITS program, viewing of the control room operations, and in some instances a walkthrough of the TMC. Staff facilitated tours for:

- FDOT Employees
- Florida International University Summer Prep Program
- Florida International University Engineering Exposition
- Southeastern Association of State Highway and Transportation Officials
- Virginia Department of Transportation
- FDOT District 2

# BENEFITS TO THE PUBLIC

## MOVING...RESULTS

One of the most important financial benefits of the ITS Program to South Florida motorists is the reduction in incident duration. The average travel lane blocking incident duration during this fiscal year was 29.2 minutes; which represents a 41.5% reduction from the 2005 FDOT District Six established baseline average duration of 50 minutes.

The FDOT District Six ITS Program's budget for FY 2012-2013 included operating, maintenance and capital improvement costs. The costs displayed in the table to the right are considerably less than the normal capital costs associated with expanding highways and facilities.

When the delays associated with incidents are reduced, motorists save time. This time savings can be directly translated to dollars. As shown in the benefits table, the Incident Management Program's contribution to the reduction in delay due to incidents translates into savings of \$1.7 billion. Additionally, 95 Express and the Ramp Signaling

System also contributed to the reduction of delay during peak hours translating into savings of \$41 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 ITS Program during FY 2012-2013 to the total annual operating expenses and capital investments (annualized over ten years at seven percent), the ITS Program is shown to be yielding \$36.48 in economic benefit for every dollar spent (Benefit Cost Ratio of 36.48:1).



Fiscal Year 2012-2013 Costs	
ITS Operations	\$5,638,115
ITS Maintenance*	\$3,302,378
Road Rangers	\$3,676,861
RISC	\$20,000
FDOT Cost Center Operating Budget**	\$1,819,680
Other (Consultants, FTE, FHP, FIU)	\$2,643,916
<b>Total Annual Operating Costs</b>	<b>\$17,100,950</b>
ITS Field Deployment Projects Completed Through Fiscal Year 2012-2013	\$211,493,639
<b>Total Annualized Capital Costs</b>	<b>\$30,111,936</b>
<b>Total Annual Costs</b>	<b>\$47,212,886</b>

Fiscal Year 2012-2013 Benefits	
Incident Management	\$1,681,062,844
Express Lanes / Ramp Signals	\$41,293,359
<b>Total Benefits</b>	<b>\$1,722,356,203</b>

\* Includes Express Lanes ITS Maintenance and Delineator Repairs

\*\* Includes Utilities for Express Lanes

# A LOOK AHEAD TO FY 2013-2014

## MOVING...FORWARD



The FDOT District Six ITS program will continue moving forward with enhancements to prepare for what the near future will bring. The statewide implementation of express lanes projects will require inter-district coordination on a greater level. Motorists using the future express lane network need to see a seamless transition moving across districts on the same roadway.

### NEAR TERM PROJECTS AT THE TMC

The District 6 ITS program will need to prepare for the expansion of the express lanes network within the region. The first phase was to replace the video wall. The second phase will be to replace the control system that operates the video wall. This will allow the TMC greater reliability and flexibility using the video wall and to be prepared for the next generation of high definition CCTV cameras that are becoming available. The third phase will be to upgrade the TMC control room and operator workstations to accommodate anticipated higher staff levels and facilitate control room communications between operators and supervisors.

### 95 EXPRESS PHASE II AND PHASE III

Construction will continue into FY 2013-2014 on 95 Express Phase II. District Six is enhancing the express lane software to incorporate the new I-95 Phase II expansion. District Six will continue to support the project by preparing all necessary documents to ensure 95 Express operations continue to be a success. These documents will update software requirements, policies, procedures and incident management resources to handle the project's 14-mile expansion into Broward County. Phase III is currently in the planning stages and will extend 95 Express into Palm Beach County. District Six will be working closely with its partners to ensure all stakeholders' needs and concerns are adequately addressed and to maintain a regional approach across jurisdictional boundaries.

### OTHER EXPRESS LANES PROJECTS

Building on the success of 95 Express, FDOT is currently planning to extend express lanes to other facilities in South Florida. To fully realize and maximize the benefits provided by express lanes, each individual express lanes facility must be developed as part of an overall network of express lanes facilities, meaning all express lanes would be linked to function and operate as a seamless, region-wide network. Roadways being targeted for this expansion in the South Florida are I-75, SR-826, I-595 as well as portions of the Golden Glades Interchange and the SR 826/SR 836 Interchange.

### PORT OF MIAMI TUNNEL PROJECT

The Port of Miami Tunnel project will continue construction during FY 2013-2014 and the ITS office will continue to support the project with its incident management and traveler information services.

### SR 826/SR 836 INTERCHANGE RECONSTRUCTION SECTION V

This major multilevel interchange reconstruction project is just over 60% completed as the signature flyover connections begin to take shape. District Six's ITS Program will continue to support the project by providing incident management and distributing traveler information for project-related activities. Construction is expected to be completed in 2015.





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