DISTRICT 5’s NEW REGIONAL TMC

FDOT UPGRADES SUNGUIDE® SOFTWARE
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MISSION
Provide leadership and serve as a catalyst in becoming the national leader in mobility.

VISION
Provide support and expertise in the application of Traffic Engineering principles and practices to improve safety and mobility.

LOOKING TO BE A CONTRIBUTOR FOR THE NEXT ISSUE OF THE TSM&O DISSEMINATOR?

Email Jennifer Rich (Jennifer.Rich@dot.state.fl.us) with your story subject and title.

We’d love to have your contribution be a part of the next edition.

CONTACTS ON THE BACK COVER

PHYSICAL ADDRESS:
Rhyne Building
2740 Centerview Drive, Suite 3B
Tallahassee, FL 32301

MAILING ADDRESS:
Burns Building
605 Suwannee Street, MS 90
Tallahassee, FL 32399
On May 30, 2017, the Florida Department of Transportation (FDOT) District Five held a ground-breaking ceremony for the new Regional Transportation Management Center (RTMC). The new facility is a well-timed addition as FDOT further embraces Transportation Systems Management and Operations (TSM&O) by incorporating freeway management and arterial operations into an integrated corridor management (ICM) approach. Moreover, with the I-75 Corridor and I-4 Ultimate projects coming online, there was already a need for increasing operational staff that simply could not be accommodated within the existing facility.

The RTMC serves as the command post that monitors and manages Intelligent Transportation System (ITS) technologies to provide incident, freeway, active arterial, work zone, special event, and emergency management services. The RTMC coordinates with incident responders in Brevard, Flagler, Lake, Marion, Orange, Osceola, Seminole, Sumter, and Volusia counties to maintain information flows in the District. RTMC collocation with the Florida Highway Patrol (FHP) dispatch unit enhances agency coordination during incident management. From large-scale crashes to roadside debris, operators manage these traffic-related incidents and dispatch the appropriate resources to reduce the impacts these events have along the state highways. The RTMC also serves to broadcast important traffic information via its public dissemination tools, such as Dynamic Message Signs (DMS) and the FL511 website. It provides motorists with up-to-the-minute traffic reports and keeps the vehicles moving while supporting the ITS program mission to optimize capacity and provide motorists with information on roadway safety and travel conditions along the regional highway systems.

<table>
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<tr>
<th>EXISTING</th>
<th>ADDITIONAL FUTURE CAPABILITIES</th>
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| Operate I-4, I-75, and I-95 by:  
• Gathering traffic and incident information for dissemination via Dynamic Message Boards and the Statewide 511 System  
• Coordinating with first responders, road ranges, and Local FDOT maintenance yard  
• Provide coverage of CFX roadways  
• Operate the Traffic Incident Management Program |  
• Actively Manage Traffic Signals on select roadways  
• Manage signal timing in connection with freeway for detour events due to crashes on I-4  
• Price Express Lanes for I-4 Ultimate and I-4 Beyond the Ultimate  
• Operations of the Wekiva Parkway like I-4, I-75, and I-95  
• Manage Ramp Metering on I-4  
• Monitor transit signal priority for local transit agencies  
• Provide backup dispatch office for SunRail  
• House the statewide video dissemination equipment for FL511.com bringing videos feeds where today we have snapshots |

This new RTMC facility will be located on a land parcel acquired by FDOT to construct the Wekiva Parkway and I-4 Ultimate projects. This tract of land will include a new interchange for the Wekiva Parkway, but will also provide space for the RTMC. The RTMC site is approximately 7.5 acres and is bordered by Wilson Road on the north, International Parkway on the west, and I-4 on the east. RTMC Address: 4975 Willson Road, Sanford, Florida 32771.

This RTMC facility will be approximately 44,944 sq. ft. in size. Expected staffing levels for FDOT will be approximately 150 Full Time Equivalent (FTE) consultant staff and 20 FTE state employees that will work in 3 shifts on the operations floor.

FHP dispatch will also have staff in 3 shifts with supervisors present.

The heart of the Intelligent Transportation System (ITS) is the operations floor. Real-time information and the simultaneous verification of events will enable actions that account not just for the localized incident area but also considers the impacts on the transportation flows of the arterial network.

For the RTMC, the district decided to work with the traditional Design Bid Build process rather than CM®Risk or design build methodology. AECOM was selected as the design firm on June 30, 2015. Kickoff for design was set for July 21, 2015, with design completed on November 1, 2016. The project was advertised for contractor selection in December 2016 and bids were opened in early February 2017. The district selected Collage Design and Construction Group, Inc. as they were the lowest bidder. Collage was provided with the Notice to Proceed (NTP) on May 22, 2017, with a 580 calendar day contract time to complete this project. Construction completion is expected in early 2019.
With projects looming, the timing of completion of the facility is critical. Several steps have been taken to expedite the development process. The Department handled the State Fire Marshall, Seminole County, and Department of Environmental Protection permits. This also eliminated risk from the contractor, reducing the bid cost and saved approximately 4 months of contract time. Another 4 - 5 months of time was saved by letting a separate contract to clear, grub, and perform site preparations, including preparing the pond area and bringing the site to the correct elevation with clean fill material, along with compacting the site. This contract was advertised in August 2016 and the NTP was delivered to the contractor in November 2016 with work completed in mid-May 2017.

This project has been exciting and challenging. As a project manager, this is just the beginning as the coordination and involvement will carry through the completion of the construction and landscape phase. There will be separate contracts for the video wall equipment and office furniture that will need to be procured. This is to ensure the district is getting the latest and greatest technology for this facility. Another challenge is the relocation of staff from network communications, network equipment, and operations from the existing facility to the new one. The relocation will need to be carefully planned and executed. Having a separate district office site in Deland with complete redundancy of equipment and communications will mitigate any interruption of operations.

For additional information, please contact Jeremy Dilmore by email at Jeremy.Dilmore@dot.state.fl.us or by phone at (386) 943-5360.
Building on the Phase 1 Wrong Way Detection Deployment performed at select South Florida locations in the fall of 2014, the Florida Turnpike Enterprise has recently doubled its wrong way detection coverage by expanding into the Central Florida area. At the end of May 2017, FTE accepted and placed into operation, its next generation wrong way detection and deterrent system along SR-417 in Osceola, Orange, and Seminole Counties. In total, 72 signs were installed at 18 ramp locations to complete the wrong way detection deployment along SR-417.

Similar to the Phase 1 deployment, this project included multiple coordination meetings with Florida Highway Patrol (FHP) Troop K and Troop D from the District 5 Transportation Management Center (TMC), as well as local law enforcement agencies, to establish access to the web interface (provided by the manufacturer) for monitoring and alerts at each remote site location.

This deployment was unique in the selection and deployment of Red Rectangular Rapid Flashing Beacon (RRFB) at the top and bottom of the static signage. The use of this RRFB flashing unit, although detailed in the MUTCD, was not intended for the color red and was required to be approved from Central Office and the FHWA, under their Request for Experiment (RFE) process. The application of Red RRFB was approved, and will require semi-annual reports to the FHWA on the effectiveness of the application, potential adverse effects if any, and will be detailed and reported by the University of Central Florida (UCF).

With the integration of the ramp technologies to the TMC, Turnpike TMC Operators and FHP Dispatchers have been monitoring the manufacturer’s website which allows for immediate notification and visual verification of a wrong-way vehicle entry. The ramp technology utilizes front and rear radar, as well as a high-quality camera to capture images of the vehicle which has activated the sign and generated the alert.

When a vehicle enters the ramp in the wrong direction, the front radar first activates the sign and triggers the camera to begin taking images. As the vehicle passes the camera, the images are reviewed to determine motion in the wrong direction. Once the vehicle passes the camera and is detected by the rear radar, the images and time stamp of the event are transmitted wirelessly over commercial cellular network to the web interface hosted by the manufacturer.

The TMC and the FHP regional communications center continually monitor the website for an audible alarm which is triggered when the website is populated with the event data. This occurs within approximately sixty (60) seconds of the field event, allowing TMC operators to respond to the event, view the wrong way driver on available CCTV cameras, coordinate with the FHP Dispatch, notify any Road Rangers located in close proximity, and activate Dynamic Message Signs (DMS) in the area.

After approximately one month of operation along SR-417, four (4) vehicles have been detected entering the project sections in the wrong direction, all of which have resulted in a complete activation of TMC and FHP response plans, including DMS messaging in both directions. Evidence to date suggests that all vehicles have self-corrected, as no crashes have been reported.

As evaluation of the pilot program continues, Florida’s Turnpike continues to coordinate with all agencies and partners, including CFX, to provide prompt responses to wrong way detection events.

For additional information, please contact John Easterling by email at John.Easterling@dot.state.fl.us or by phone at (954) 934-1620 or Eric Gordin by email at Eric.Gordin@dot.state.fl.us or by phone at (407) 264-3316.
During February, the District Four Traffic Incident Management Team held a district-wide training for new incident responders about with the Rapid Incident Scene Clearance (RISC) program.

First developed in 2004 by the Florida Turnpike Enterprise, RISC is an innovative, incentive based program that allows heavy-duty wrecker vehicles to assist in removing major incidents from District Four’s major highways. If the on-call wrecker arrives on scene within 60 minutes and clears the lanes within 90 minutes, they are awarded an incentive. If after 180 minutes, the lanes remain closed, the wrecker company will lose their incentive and may be assessed liquidated damages.

Due to personnel changes by District Four’s incident responder partners, the TIM Team developed the training to increase program awareness and properly instruct newer RISC responders. Since program inception in 2009, District Four has recorded 134 RISC activations (18 in 2017 to date).

According to Michael McGee, District Four Traffic Incident Management Coordinator, “the hope of this updated RISC training is to improve on-scene decision making during possible RISC activations, which will lead to faster highway clearance.”

For additional information, please contact Dong Chen by email at Dong.Chen@dot.state.fl.us or by phone at (954) 847-2796.
The SunGuide software is an Intelligent Transportation System (ITS) software system that allows for the control of roadway devices as well as information exchange across a variety of transportation agencies. The Florida Department of Transportation (FDOT) Central Office upgraded to the new SunGuide software release 7.0 to enhance its ITS operations. This advancement is part of the commitment to ensure the transportation management center (TMC) is using the most up-to-date software and helps position it to manage future traffic demand. Two new subsystems were included in this latest release: the Truck Parking Subsystem (TPS) and the Traffic Control Subsystem (TCS).

The objective of the TPS is to improve highway safety by notifying commercial vehicle drivers of parking availability at public parking facilities. Parking facilities information is collected through vehicle presence detection sensors for individual parking spaces or by vehicle passage detection sensors implemented at the entrance and exit of a parking facility. With this upgrade, SunGuide software allows users to configure truck parking facilities into the system. SunGuide software also allows the user to incorporate dynamic message signs (DMS) and cameras for TPS. SunGuide software publishes truck parking availability information via center-to-center communications to the FL511, which in turn sends the information out through a third-party data feed. By posting the information on the FL511 and the third-party data feed, more commercial vehicle operators can be aware of parking availability at public facilities throughout the State.

The inclusion of TCS in this SunGuide Software 7.0 upgrade allows an interface to the Trafficware ATMS.now software based on the protocol defined by ATMS.now. TCS has three different signal plans: Low (permits for more traffic to flow along the major arterial roadway because of a minor increase in traffic volume), Moderate (permits for significantly more cars to flow through the intersection along the major arterial roadway because of a significant increase in traffic volume), and High (permits the maximum amount of traffic to flow through the intersection along the major arterial roadway because of a crash, evacuation, or diversion). By enabling SunGuide to change signal timings through the ATMS.now software, TMC Operators will be able to decrease congestion on arterial roadways when rerouting traffic from an incident on the Interstate.

One of the upgrade’s key features is alarm sound configuration. The software allows the user to configure whether or not to receive audible alarms for the following types of alerts: Road Ranger Geofence Alerts, Road Ranger Stop Alerts, WWD alerts, FHP Alerts, Waze Alerts, TSS Alerts, VisioPad Alerts, and RWIS Alerts. By having configurable sounds, operators can select different sounds for critical alerts, so they are quickly aware and can react to more time sensitive alerts like a wrong way driver.

Other key features are the Auto Merge Event and Travel Time Messages. These features allow event messages and travel time messages to automatically merge on a message queue. When configuring a DMS sign, the software allows the user to select whether or not travel time messages sent to the sign should attempt to automatically merge with other messages. Auto merging messages allow us to quickly provide incident information as well as travel time information to the motorist. This gives the motorist a better picture of the situation.

System Message Filtering is another key feature. With this feature, filtering system messages can be based on the category of message being reported. The software saves a user preference for the category of system message a user wishes to view and load that filter each time the System Message dialog is opened. This helps by having only the messages the user needs to see appear in the system messages dialog. This will make the system messages dialog manageable and provide useful information, instead of bombarding users with information they don’t need.

For additional information, please contact Derek Vollmer by email at Derek.Vollmer@dot.state.fl.us or by phone at (850) 410-5615.
A newly published report has revealed that enhancements made to 95 Express have improved the safety and mobility levels of Interstate 95 (I-95) in Miami-Dade County.

The improvements are a result of a multi-pronged safety initiative that targets illegal lane changing and aggressive driving on I-95. The first part of the initiative was completed in December 2016 and focused on the express lanes markers (ELM) that separate the express lanes from the non-tolled general use lanes. The space between each marker was reduced from ten feet to five feet and the ELMs were replaced with sturdier, more durable markers to discourage these unsafe driver practices.

The District Six Transportation Systems Management and Operations (TSM&O) Office partnered with the Florida Highway Patrol (FHP) and launched the safety initiative with a joint press conference in summer 2016. The initiative consisted of a targeted approach for education, enforcement and engineering. In addition to reducing the space between ELMs along the roadway, District Six and FHP held a public safety campaign to increase driver awareness about the consequences of lane diving. FHP increased their presence by adding more troopers along the facility.

The results of these initiatives have had a positive impact. The latest monthly report shows the facility experienced significant improvements in safety, performance and maintenance. The data revealed illegal lane changing decreased by 86% and driver crashes decreased by 33% while traffic volumes in the express lanes increased by 1.7%. The report also showed the new ELMs proved more resistant to impacts since replacement efforts went down by 92%.

The combination of these efforts demonstrate FDOT’s ongoing commitment to driver safety. The Department has begun work on additional initiatives that aim to enhance current improvements. Keep up-to-date on the latest construction information or view the report by visiting www.fdotmiamidade.com.

For additional information, please contact Javier Rodriguez by email at Javier.Rodriguez2@dot.state.fl.us or by phone at (305) 640-7307.
The Data Integration and Video Aggregation System (DIVAS) represents the latest advancement by the Florida Department of Transportation (FDOT) Transportation System Management & Operations (TSM&O) Central Office in the integration and management of actionable, real-time information. DIVAS will be the Department’s first centralized data hub for the aggregation, fusion and dissemination of near real-time transportation information, and live streaming video. The system will be used internally by the Department to better support Regional Transportation Management Centers (RTMC), and by other state agencies, the statewide traveler information service (FL511), and authorized external third parties.

DIVAS consists of two primary subsystems; a Data Integration (DI) Subsystem and Video Aggregation (VA) Subsystem. The DI Subsystem will collect and integrate transportation and related (i.e. transportation impacting) data from numerous designated sources, and integrate that data for internal and external dissemination and consumption. The VA Subsystem will aggregate live streaming video from FDOT and external agency cameras for distribution using ubiquitous, modern video streaming technologies, such that video is made available to users regardless of their specific location or device platform.

Initially, the DI Subsystem will decouple the data received from SunGuide ATMS software deployments from Florida’s Next Generation FL511 System, and absorb the NG FL511 System’s Third Party Data Feed Service. The DI Subsystem will use existing SunGuide Center-to-Center (C2C) interfaces (currently in use by the NG 511 System) to obtain SunGuide data. The DI Subsystem will include data structures for SunGuide, the National Weather Service (NWS), roadway weather information systems (RWIS), truck parking systems, and connected vehicles (Basic Safety Messages, Traveler Information Messages). Interfaces and data structures for SunGuide and the NWS will be implemented with the first DI Subsystem release, with other interfaces implemented as data becomes available. A new, bi-directional interface will be developed for the NG FL511 System, while the third party data feed service will be upgraded to include additional methods and data (ensuring backward compatibility).

DIVAS will aggregate all data and video at the District 5 Regional Transportation Management Center (RTMC) for integration and dissemination. Live streaming video and SunGuide data will be obtained using FDOT’s ITS WAN, with video being processed and distributed to end users by several Wowza Media Engine instances running on FDOT private cloud infrastructure. The NG FL511 System will leverage the VA Subsystem to provide the public with access to live streaming video through the FL511 website and mobile app – a new system feature.
The Florida Department of Transportation (FDOT) District Three wishes
Lee Smith, P.E., former District Three TSM&O/ITS Program Manager,
best of luck in his future endeavors. Lee’s
last day with the District was June 9,
2017 and the Department celebrated with
representatives from the District, Central
Office, and Okaloosa County.
Lee started with the District on January 22,
2013. During his four and half year tenure
Lee was responsible for all Intelligent
Transportation Systems (ITS) deployments,
maintenance/operation of existing
deployments, and sought to pursue bold and innovative milestones
in freeway and arterial traffic management throughout District 3 of
FDOT. Significant accomplishments under Lee’s leadership include:

• RTMC Expansion – District Three has established not one, but
three Regional Transportation Management Centers (RTMC)
throughout the district. The latest was the Northwest Florida
SunGuide Center, dedicated on December 10, 2015 under
Lee’s leadership. The $24.5M RTMC communicates via a fiber
optic network covering 158 miles along I-10 and connects the
Pensacola ITS deployment to the Tallahassee ITS deployment
and supporting centers.

• FICE Award – Lee worked tirelessly at facilitating partnerships
with the local jurisdictions such as the City of Tallahassee.
In this unique three-agency collaboration, state-owned ITS
infrastructure on I-10 is being seamlessly operated by a city-
county RTMC along with Tallahassee’s arterial ATMS. This
partnership is evident in the selection of the Tallahassee RTMC
as a recipient of the 2016 Engineering Excellence Grand Award
from the Florida Institute of Consulting Engineers on August
5, 2016.

• Department Connections – As one of his most recent projects
Lee combined forces with neighboring District 2 to establish
interdepartmental connectivity throughout the district. By
leveraging a District 2 ITS project, connectivity from District
2 to the Tallahassee RTMC is currently being designed and
implemented to facilitating full coverage of I-10 along the
District.

Lee relocated to Nashville, Tennessee to accept a position with WSP-
Parsons Brinkerhoff. Lee leaves the District in great hands with the
remaining staff and recognizes the growth in the District 3 TSM&O/ITS
Program is due “to the dedication, skill, and teamwork of those with
whom I have been blessed to work”.

In order to make live streaming video available as soon as possible, the project has been reorganized into two phases,
with the first phase being the rapid design and deployment of
the VA Subsystem. The private cloud infrastructure required to
host video streaming capabilities has already been ordered, and
video streaming capabilities are expected to be operational by
Fall 2017. The implementation of the DI Subsystem will follow,
and is currently expected to be operational by Spring 2018.
Stay tuned as these new and innovative systems are rolled out.

For additional information, please contact Russell Allen by
e-mail at Russell.Allen@dot.state.fl.us or by phone at
(850) 410-5626.
Mr. Gwynn was appointed as FDOT District Seven Secretary in July of 2017. Prior to this appointment, David served as Director of Transportation Operations for FDOT District One in Bartow.

Mr. Gwynn spent 30 years in the private sector, providing consulting services to the transportation industry before joining FDOT in January 2016. He co-founded TEI Engineers & Planners in 1991 and led the growth of the firm to over 125 staff members throughout Florida and Georgia. He later served in senior executive roles for several large engineering consulting firms, leading business units of up to 700 staff members throughout the Southeastern United States.

As the District Seven Secretary, David provides administrative oversight for the planning, development and operations for all transportation modes within Citrus, Hillsborough, Hernando, Pasco and Pinellas counties.

Mr. Gwynn is a 1983 graduate of the United States Military Academy at West Point, where he earned a Bachelor of Engineering degree. During his military service, David served as a Field Artillery Officer in the U.S. Army as well as the Florida National Guard. In addition, he also holds a Master of Transportation Engineering degree from the University of Florida. Mr. Gwynn resides in Tampa with his wife and has five children and two grandchildren.

District One’s New Director of Transportation Operations

Rick Lilyquist, P.E. has been appointed the new Director of Transportation Operations in District One effective, Friday, August 4, 2017.

Rick received both his Bachelor’s and Master’s degree in Civil Engineering from the University of Florida, also earning the designation of Certified Public Manager. Rick has 33 years of experience in the engineering field, including 28 years in local government, most of which was with the City of Lakeland where he served as the Director of Public Works.

Since May 2016, Rick has served the Department in the capacity of Project Management Engineer Supervisor. Rick is a native Floridian, born and raised in Highlands County, and is married to Lisa and they have six children and one granddaughter. In his spare time, Rick enjoys running, cycling, and training his Sheltie.

L. K. Nandam, P. E., District One Secretary would like to thank Sharon Harris for serving as the Interim Director of Transportation Operations. She has done, and continues to do, a great job for District One. The Secretary would like to thank Amy Perez for covering Sharon’s duties while she served as the interim.

District Three’s TMC Operations Manager

William “Greg” Reynolds has been promoted to District Three’s TMC Operations Manager. Greg will work in the TMC and reporting directly to the new ITS Engineer.

In his new role Greg will lead efforts to manage and supervise the TMC operations staff, facilitating a cohesive and balanced operation.

In 2007, Greg started with the Florida Department of Transportation, in Tampa, working in Consultant Project Management and graduating to Traffic Operations. Prior to that, Greg spent 10 years with GTE/Verizon as an outside plant technician and designer. Prior roles included those of technician, manager, designer, planner, and trainer at a telecommunications contract company and as a field technician and field designer with an independent contractor. Please welcome Greg as he assumes his new duties.
CONTACTS

DISTRICT 1
Keith Slater, DTOE
Mark Mathes
FDOT District 1 Traffic Operations
801 N. Broadway Avenue
Bartow, FL 33830
(863)-519-2490

DISTRICT 2
Jerry Ausher, DTOE
Peter Vega
FDOT District 2 Traffic Operations
2198 Edison Avenue
Jacksonville, FL 32204
(904) 360-5630

DISTRICT 3
Steve Benak, DTOE
FDOT District 3 Traffic Operations
1074 Highway 90 East
Chipley, FL 32428-0607
(850) 638-0250

DISTRICT 4
Mark Plass, DTOE
Melissa Ackert
FDOT District 4 Traffic Operations
2300 W. Commercial Blvd.
Ft. Lauderdale, FL 33309
(954) 777-4350

DISTRICT 5
Jim Stroz, DTOE
Jeremy Dilmore
FDOT District 5 Traffic Operations
719 S. Woodland Blvd., MS 3-562
DeLand, FL 32720-6834
(386) 943-5310

DISTRICT 6
Omar Meitin, DTOE
Javier Rodriguez
FDOT District 6 Traffic Operations
1000 NW 111th Avenue, MS 6203
Miami, FL 33172
(305) 470-5312

DISTRICT 7
Ron Chin, DTOE
Chester Chandler
FDOT District 7 Traffic Operations
11201 N. McKinley Dr.
Tampa, FL 33612
(813) 615-8600

FLORIDA’S TURNPIKE ENTERPRISE
John Easterling, DTOE
Eric Gordin
Florida’s Turnpike Enterprise
PO Box 9828
Ft. Lauderdale, FL 33310-9828
(954) 975-4855

CENTRAL OFFICE
Trey Tillander, Director
Traffic Engineering and Operation Office
(850) 410-5419
Fred Heery
State TSM&O Program Engineer
(850) 410-5606
Jeff Frost
State TIM/CVO Program Manager
(850) 410-5607
Alan El-Urfali
State Traffic Services Program Engineer
(850) 410-5416
Elizabeth Birriel
Traffic Engineering Research Lab Manager
(850) 921-7361

PHYSICAL ADDRESS
Rhyne Building
2740 Centerview Drive, Suite 3B
Tallahassee, FL 32301

MAILING ADDRESS
Burns Building
605 Suwannee Street, MS 90
Tallahassee, FL 32399