FLORIDA DEPARTMENT OF TRANSPORTATION

TSM&O DISSEMINATOR

TRANSPORTATION SYSTEMS MANAGEMENT & OPERATIONS
March-April 2022

District Six Implements Innovative Maintenance Contract

I-4 Express Opens Smoothly In District Five

Suncoast Parkway Extends Benefit to Florida Motorists

FLORIDA DEPARTMENT OF TRANSPORTATION'S
TRAFFIC ENGINEERING AND OPERATIONS PUBLICATION

FDOT TSM&O
Transportation Systems Management & Operations

INSIDE THIS ISSUE

FDOT TRAFFIC ENGINEERING AND OPERATIONS MISSION AND VISION STATEMENTS

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?

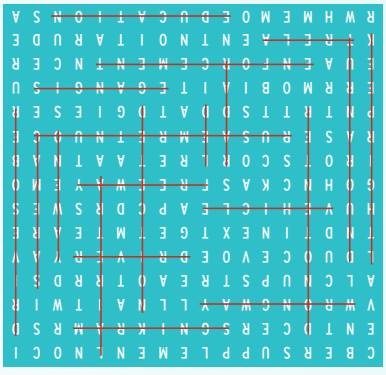
Email Deborah Fiesler (deborah.fiesler@dot.state.fl.us) with your story subject and title.

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

Photo credits: FDOT

PHYSICAL ADDRESS:
Barry Building
3185 South Blair Stone Rd.
Tallahassee, FL 32301

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



District Six Implements Innovative Maintenance Contract

By Javier Rodriguez, PE, District Six TSM&O Program Engineer, FDOT

The District Six Transportation Systems Management and Operations (TSM&O) Office has implemented a new availability-based contract to support its Intelligent Transportation Systems (ITS) maintenance efforts.

The new contract tracks the time devices remain available for use in the network and uses it as a metric for compensation. More specifically, the contractor is paid when the assets meet or exceed these requirements and financial consequences are assessed when availability thresholds are not met. It incentivizes performance by paying the contractor 105% of the invoice amount when they exceed requirements, 100% when they are met, and are deducted portions of payment for different levels of availability. The contractor is not paid if availability levels fall below 70%. District staff conducts detailed evaluation checks to track contractor performance on a monthly basis. These evaluations are critical as they not only work to uphold contract standards but serve to identify areas of improvement for faster resolution. This results in a more efficient contract that benefits all parties.

The contract was selected by the TSM&O Office which was looking for ways to improve upon its contract management structure. It searched through national best practices for the effective model that would meet the District's needs. The TSM&O Office implemented this approach since it was successful in other parts of the country and launched it as a two-year pilot project along Interstate 195 in Miami-Dade County. Although the contract is fairly new, the Department has already seen improvements in several aspects of the contract including invoice processing and spare parts management. District Six will conduct a final performance review at the end of the pilot period to determine its effectiveness and if it will be expanded to other areas.

District Six is always looking for ways to improve upon its operations to optimize the quality of service delivered to the motoring public. This pilot project is an example of its commitment to achieving this goal and to using innovative techniques to enhance the operational continuity of our roadways.

For more information about the District Six TSM&O Office, please visit www.sunguide.info

Jeremy Dilmore, P.E., FDOT TSM&O Program Engineer for District Five looks on as Jovanny Varela tracks the removal of traffic maintenance barrels and barricades, opening I-4 Express ramps to traffic.

I-4 Express Opens Smoothly in District Five - Thanks to Years of Planning

By Jay Hamburg, Global-5

While any new roadway requires intense planning and meticulous inspections, the recent opening of 21 miles of managed lanes within the new I-4 Ultimate project in Central Florida took that planning to an extremely high level.

The huge effort – a project of the Florida Department of Transportation's (FDOT's) District Five – was unprecedented in its scope in Florida.

With the addition of four managed lanes (two in each direction), 13 tolled segments, 18 toll and data collection areas, 28 entry and exit ramps – including several direct-connect access points – and multiple levels of data integration, the effort required a special approach with regular meetings extending back two years.

I-4 Express runs down the center of Interstate 4 (I-4) separated from the general use lanes by concrete barrier walls and stretches 21 miles from west of Kirkman Road (State Road 435) to east of State Road 434. It is part of the I-4 Ultimate project to improve safety and mobility on the busiest roadway in the Orlando metro area.

That was the challenge that faced those who successfully opened the first managed lanes in Central Florida – known locally as I-4 Express – at about 7:45 a.m. on Saturday, February 26. For many involved in the effort, the task began long before motorists saw the first shovel hit the dirt.

"I've spent nearly 12 years of my life planning and helping manage this project," said Jeremy Dilmore, TSM&O Program Engineer for District Five. "The complexity was enormous."

Ultimate Success Will Be Measured by Mobility and Safety

I-4 Express was part of the project that realigned the path of the interstate, including the so-called Fairbanks Avenue curve – an alignment that would affect the managed lanes as well.

I-4 Express Opens Smoothly in District Five - Thanks to Years of Planning,

continued from page 4

Those managed lanes provide a new option to lower congestion in all lanes and provide more reliable travel time. Dilmore believes that the success of the project is not measured in tolls collected, but in time saved by drivers, crashes prevented and lives saved.

"As long as it's reducing congestion, it's doing its job," Dilmore said. "As long as it's increasing safety, it's doing its job. It's not about making money."

Managing Complexity Through Collaboration

The job of managing the opening of I-4 Express and keeping everyone in sync fell to Bryan Frohlich, P.E., PMP, who is a consultant Toll System Program Manager for Florida's Turnpike Enterprise.

The project team used a "triangle" approach. That meant a three-group effort consisting of the construction group, Florida's Turnpike Enterprise, and FDOT District Five.

"The three had to interlock arms and stay in step with one another," Frohlich said. But it wasn't as simple as having a checklist for each team. Some tasks had to be completed almost simultaneously as construction crews timed their efforts with the tolling equipment installers of Florida's Turnpike and the data and roadway managers of District Five.

"We had to make sure that one side was not getting too far ahead of another or too far behind," Frohlich said. To keep everyone informed and sharing information over the course of two years, the once-a-month meetings increased steadily until the final push when meetings were held several times a week.

Managing the Customer Experience

To allow motorists to test the first managed lanes in the Orlando area and get used to directional and electronic pricing signs, FDOT provided five days of zero-dollar toll driving.

Next came a temporary period of fixed rates to be followed by a gradual transition to dynamically tolled lanes. The team must first collect enough traffic data to set rates in accord with rising and falling traffic volume on the general use lanes.

Although this was Frohlich's fourth express lane opening, it was the first in his home area. "The customer's experience always has to be seamless," he said. "But it was a good feeling to see this one go off well because it's our friends and neighbors who will travel on this."

RTMC Operator Binh Nguyen monitored the opening of I-4 Express via live cameras from the operations floor while (from left) Dale Cody P.E., Edward Grant, Manny Rodriguez, P.E., and Jeff Gerken P.E. take in the historic event as the first vehicles entered the managed lanes.

I-4 Express Managed Lanes May Reach Tampa

The opening of I-4 Express is not an end. It is a beginning – the start of even more intensive planning to extend the lanes to the Tampa area.

Dilmore, who will be helping to plan its extension, at least through Orange and Osceola counties, said providing reliable, safe options remains the goal.

"But this is just the start."

For more information on using I-4 Express, visit: https://i4express.com/

Suncoast Parkway Extends Benefit to Florida Motorists

By Kelly Kinney, Florida's Turnpike TMC Program Manager

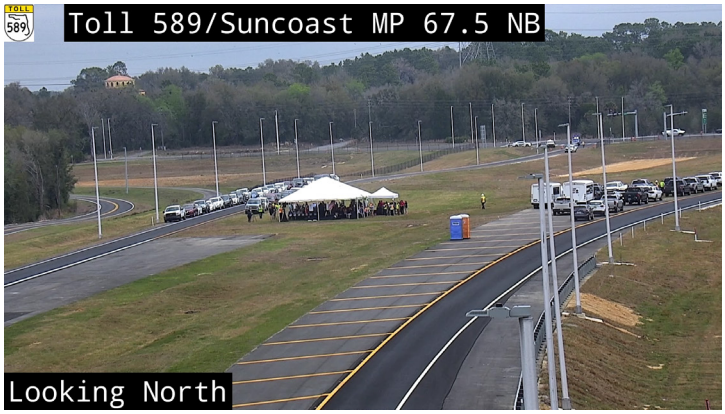
The 13-mile extension of the Suncoast Parkway opened to traffic on Monday, February 28, celebrated by a small ceremony and ribbon cutting at the north end of the new expansion. The project extends the Suncoast Parkway, SR 589, northward from US 98 to State Road 44 in Lecanto, improving mobility and connectivity for motorists on Florida's Nature Coast. "The Suncoast Parkway serves millions of drivers every year — offering a safe, efficient, and convenient travel option for residents and visitors," said FDOT Assistant Secretary Will Watts, P.E. "This extension provides additional transportation infrastructure to support Florida's continued growth and reflects the department's unwavering commitment to the people of West Central Florida."

Work on the Suncoast 2 extension began in February 2018 and was completed ahead of schedule for the February 28, 2022, opening. The project also includes the expansion of the Suncoast Trail, running parallel to the new roadway, as part of the Florida Greenways and Trails System. Additional phases of the project will continue northward to CR 486, and eventually US 19 in Citrus County.

The Suncoast 2 has been outfitted with a robust Intelligent Transportation System (ITS) infrastructure, inclusive of Dynamic Message Signs (DMS) as well as Arterial DMS on feeder roadways US 98, Cardinal Street, and SR 44. In addition, there is a full deployment of CCTV cameras, BlueTooth travel time devices, and other ITS devices to transmit motorist information. The Turnpike Transportation Management Center (TMC) monitors the roadway 24/7 from the Turkey Lake Operations center in Central Florida. The TMC utilized DMS messaging prior to opening as well as post-opening on the Suncoast Parkway and arterial roadways in the Hernando and Citrus County corridor. The Turnpike's Road Ranger patrol hours were expanded, and patrol zones reconfigured in order to provide 24/7 coverage of the new roadway section. The TMC has been monitoring the new well-traveled roadway section and enjoying the CCTV coverage of the picturesque Citrus County landscape.

To learn more about the project, visit: https://floridasturnpike.com/turnpike-projects/featured-projects/suncoastparkway2/.

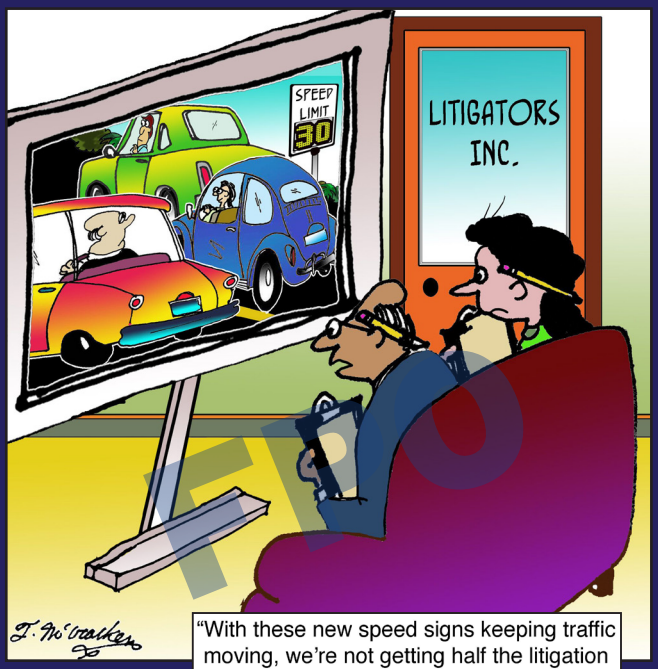
Suncoast Parkway Extends Benefit to Florida Motorists, continued from page 6



Break Time

C B E R S U P P L E M E N L N O C I
E N T D C E R S G N I K R A M R S D
V W R O N G W A Y L L N A I T W I R
A L C N U P S T R E A O T R R D S I
L D U O C E V O E D R I V E R Y A V
T N D T I N E X T G E T M T E A R E
H U V E H I C L E A P C D R S W E S
G O H N C K A S F R E E W A Y E M O
I R O T S C O R L R E T A A T N A B
R A S E R U S A E M R E T N U O C E
P N T R T T S D D A T D G I E S E R
E R R M O B I A I T E G A N G I S U
E U A E N F O R C E M E N T N C E R
K T R E L A E N T N O I T A R U D E
R W H M E M O E D U C A T I O N S A

WRONGWAY
DONOTENTER
COUNTERMEASURES
LED
DETECTION
RADAR
ENFORCEMENT
FREEWAY
ARTERIAL
DRIVER
VEHICLE
DRIVESOBER
ONEWAY
SIGNAGE
MARKINGS
CAMERAS
TURNAROUND
ALERT
EDUCATION
KEEPRIGHT



"With these new speed signs keeping traffic moving, we're not getting half the litigation work from accidents that we did before."

District Four SIRV Pilot Tests Smart Sequential Road Flares

By Alexandra Lopez, P.E., District Four TSM&O Program Engineer, FDOT

In 2021, 65 incident responders were struck and killed while working incidents on freeways in the United States. This number represents a 41 percent increase over 2020. District Four's Severe Incident Response Vehicle (SIRV) team participated in weekly meetings with other Safety Service Patrol (SSP) teams throughout Florida to better understand and brainstorm possible mitigation strategies.

One thing noted from these meetings was the limited use of chemical flares. Chemical flares have an estimated burn time of 30 minutes, which means responders must deploy additional flares every 20 - 25 minutes. For illustration, an hour-long incident with a string of 10 requires the use of 30 flares. It is also important to remember each time an SSP Operator walks out to deploy or replace flares, they are exposed to dangerous oncoming traffic.

The District Four SIRV team currently uses electronic flares with an estimated burn of at least two hours. While they are effective, they have limitations, such as diminished visibility due to the flashing lights of emergency vehicles.

These limitations prompted District Four to research a more efficient alternative - Smart Sequential Road Flares produced by Pi-Lit. These rechargeable road flares come attached by magnets to an exoskeletal case and self-activate when removed. Subsequent flares removed from the case automatically sync with the previously deployed flares. This unique feature results in a group of flares that operate sequentially, much like the runway lights at an airport.

By operating in this manner, these road flares warn oncoming traffic in the appropriate direction of travel. Lastly, since these rechargeable flares flash sequentially, they also help differentiate from other flashing lights at incident scenes.

In October 2021, District Four SIRV obtained three sets of the Smart Sequential Road Flares for testing. They have been integrated into standard operations and used by Road Rangers, SIRV Operators, Law Enforcement Officers, and Fire Rescue workers with outstanding success.

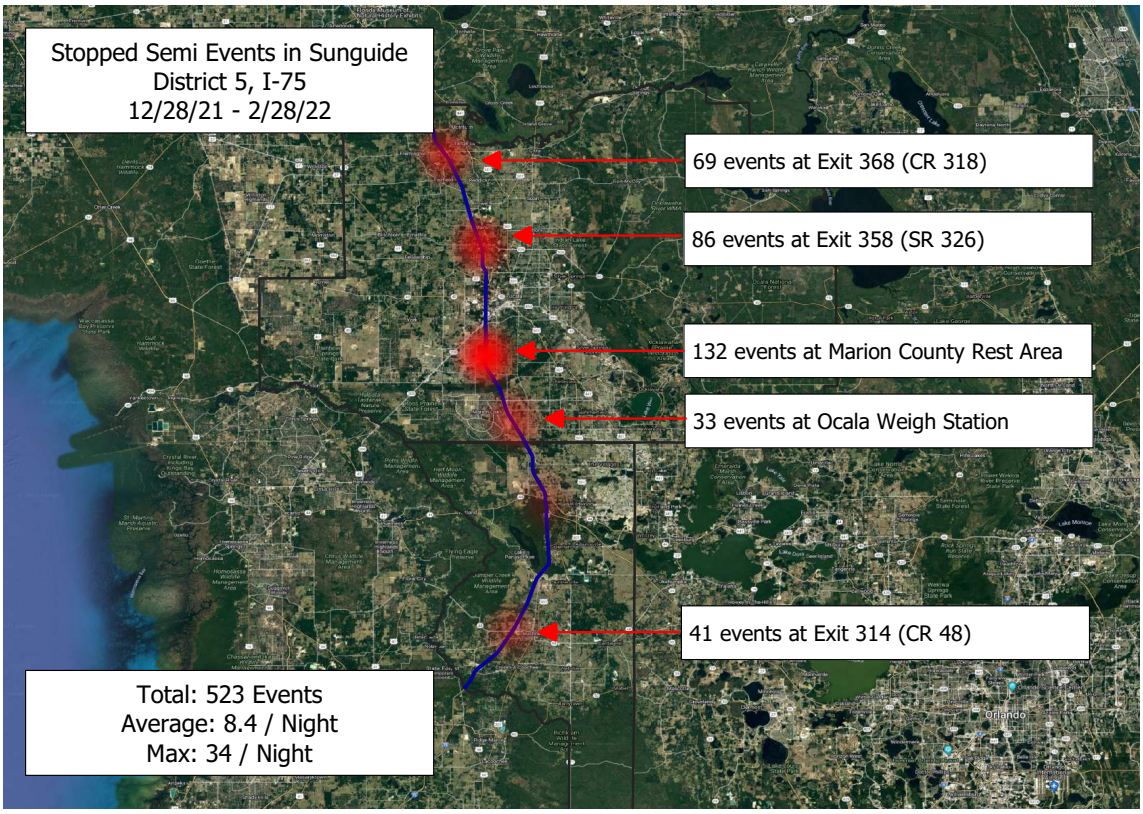
Responders can use this type of flare alongside traffic cones or beneath them to illuminate their interiors. The District Four SIRV team hopes to equip its entire fleet with these devices to delineate incident scenes and protect all emergency responders.

For more information on the use of Smart Sequential Road Flares in District Four Traffic Incident Management efforts, please contact Joudy Mendez at joudy.mendez@dot.state.fl.us.

Commercial Truck Parking on I-75

By Sheryl Bradley, District Five ICM Project Manager, FDOT

After two months into a new Integrated Corridor Management (ICM) contract, the District Five I-75 ICM team had noticed a significant number of commercial vehicles parking outside of designated areas.



An effort to document these occurrences was undertaken with counts performed by the operations team every four hours throughout the day and night as part of their Truck Parking Availability System (TPAS) checks. The findings were quite interesting. On most nights, the southbound rest area in Marion County is nearing capacity (or full) by 8:30pm. The available parking at the southbound Marion County weigh station follows closely behind, generally reaching capacity by approximately 10:00pm. To take the review further, operators would document commercial vehicles lined up on the shoulders of the exit ramps and along the mainline extending from the ramps from the rest areas and weigh stations. Additionally, there was several areas where trucks were parking on the ramps to or from other exits, and along the mainline shoulders, throughout the Sumter and Marion County segments of I-75. This information is visually represented by a heat map which was generated from the collected data. Note, from the graphic that the average count for commercial vehicles parked outside designated truck parking areas was eight per night, however, that number was largely driven down by weekend counts. During the week, the number was generally much higher, with a maximum count of 34 in a single night over the two-month period. The count did not include commercial vehicles in overflow parking within the rest areas or weigh stations, or parked along arterials adjacent to the interstate.

The study highlighted a potential safety concern, heightening awareness of our Regional Transportation Management Center (RTMC) operations team. From an operational perspective, our operators are more closely monitoring these areas and reporting commercial vehicles that are parked too close to the travel lanes. Data collected from the study has also been provided to District Five leadership, Central Office, and to the Planning group for utilization in a new Master Plan for the I-75 corridor.

In addition to impromptu studies gleaned from operational observations, the RTMCs have a wealth of historical data that can provide invaluable insights to planners and designers. This data can be reviewed across greater lengths of time and take into consideration seasonal and time of day impacts that may be poorly represented in short-term sight visits or at minimally placed Telemetered Traffic Monitoring Site (TTMS) sites. RTMC data can be used to assess traffic volumes, speeds, hotspots for congestion and incidents, and lane closures, among other data sets.

For more information please contact Sheryl Bradley at sheryl.bradley@dot.state.fl.us

Road Ranger Safety

By Sheryl Bradley, District Five ICM Project Manager

In 2021, District Five's Road Ranger struck-by incidents rose by a whopping 110%. We were very fortunate that none of our struck-by incidents involved serious injury or fatality in 2021, but that has not always been the case. Statewide, we have had serious injuries and loss of life in the line of duty.

As part of a larger-scale initiative out of Central Office, District Five surveyed Road Rangers from three Districts and one of the tolling agencies, to gain insight into the challenges and safety concerns they face on a daily basis. The boots-on-the-ground information was enlightening.

In a short turnaround, we received a 67% response rate, with 110 out of 164 Road Ranger Service Patrol (RRSP) operators participating in the survey. More than half of the respondents had served in the capacity of a Road Ranger for 1-5 years. Below are some insights gleaned from the survey:

31%

31% felt they needed more training more specific to emergency response/short term Temporary Traffic Control (TTC). Comments included that the Intermediate Maintenance of Traffic (MOT) training is too construction-oriented and did not relate to their needs. Others noted that the training should balance the risk of exposure to the need for MOT deployment. The example given was a quick stop to provide fuel, where a Road Ranger spends more time exposed to traffic while deploying cones than they do providing the service.

54%

54% felt new hire training (length and content) could be improved upon by a standardized statewide training. They wanted more time in a truck with a trainer and less online training.

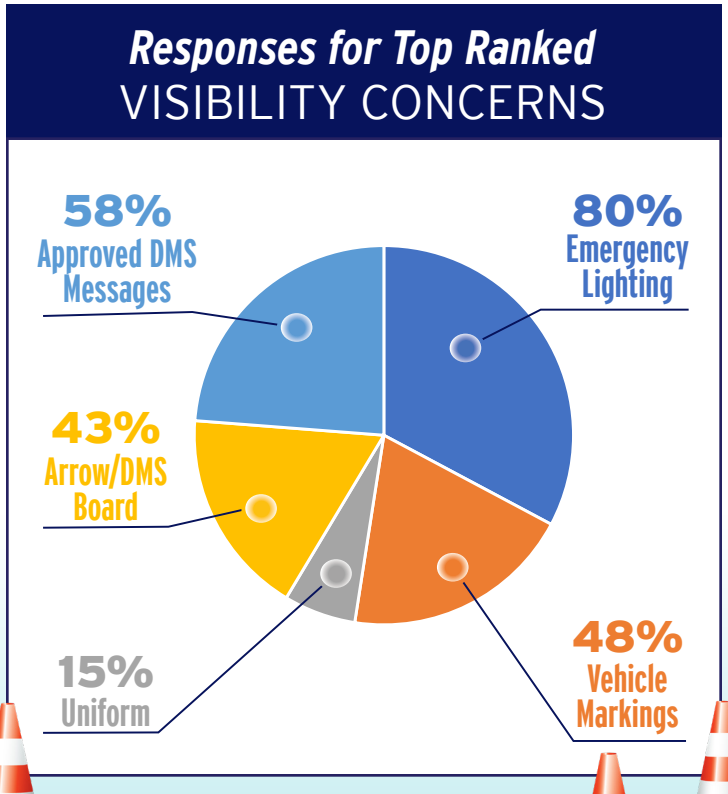
70%

The overwhelming majority (70%) believed they have sufficient continuing education, but would like more training on vehicle relocation (push, pull, drag), more or better CPR/First Aid training, and annual or bi-annual refresher courses.

Road Ranger Safety, continued from page 10

Some of the most enlightening information came with questions about recommended safety improvements.

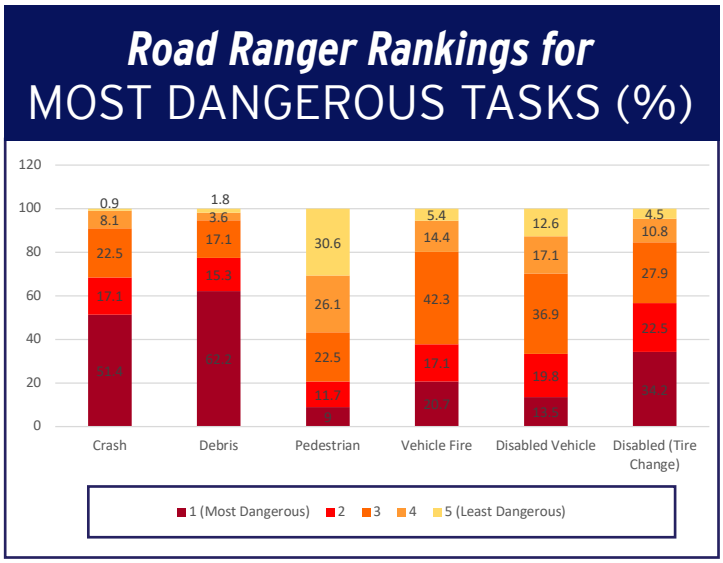
- 50% made comments or requests for better safety equipment including improved lighting (addition of red lights, side lights, undercarriage lighting, directional lightbars, etc) and air horns or sirens. Some asked for relatively low cost additions such as better flashlights, personal lighting (helmet lights, lighted vests, etc), front jump boxes with extended cables to maintain sufficient buffer distances between them and the vehicles they're working on, and a preference for DMS message boards over arrow boards.
- Piggybacking on the previous question, 56% felt their visibility as a Road Ranger could be improved. Again, improved lighting was referenced, along with a more official appearance (removal or minimization of sponsorship logos), uniformity of trucks across all districts, and an increased presence on the roadway with extended hours and more trucks to increase visibility/awareness of the Road Ranger program. Some operators who utilize tow trucks also noted the decreased rear space for markings and noted that the benefit of a tow truck did not outweigh the risk of minimized visibility.
- Road Rangers were asked to identify their greatest concerns with regards to conspicuity/visibility. The responses are reflected in the graph below:



- 84% of the respondents did not feel they are respected by the motoring public, noting a need for more "Move Over" enforcement, removal or minimization of sponsorship logos as they're commonly mistaken for roadside assistance, and more outreach/education on the Road Rangers and their role/function in incident management. Some recommendations included paid media such as billboards and commercials, along with participation in outreach events, and outreach specifically to other responders.

And what did Road Rangers identify as the most dangerous task they perform on a daily basis? See below.

In an open comment section, Road Rangers provided additional insight into safety needs, including the following:



- 8-10' shoulders in construction zones
- A balanced approach to hiring with consideration of the mechanical needs and emergency response experience
- Additional cones on their trucks and more units on the roadway for back-up in key locations with consideration of roadway characteristics such as the number of lanes and sightline issues
- Improved interoperability and overall communications between Road Rangers and the RTMC, as well as other responders

District Five was enlightened through this process and greatly appreciated the well-thought out and constructive input provided by our Road Ranger partners. We identified several low-cost items that we can accommodate via sponsorship funds with the goal of overall safety enhancements from the program. The District has also determined that this type of survey should be an annual process to give our boots-on-the-ground partners a voice in the program and their own individual safety.

For more information please contact Sheryl Bradley at sheryl.bradley@dot.state.fl.us

ITS Florida President's Letter

By Craig Carnes, Metric, ITS Florida

Greetings,

We all thought that 2020 was a crazy year, but I think 2021 was just as crazy, if not worse. I'm hopeful that 2022 will be a much better year that helps return all of our lives to a somewhat similar "normal" as we had pre-pandemic. As it relates to ITS Florida, the pandemic has caused us to reschedule our Transpo event two years in a row. The Transpo is now scheduled for July 17-20, 2022. Additional information for the event is provided below. In addition, ITS Florida is one of 5 ITS Chapters participating in the Southeast ITS Summit, which will be held in Atlanta, GA from November 6-9, 2022. The participating Chapters for the Summit are Gulf Region ITS (GRITS), ITS Carolinas, ITS Florida, ITS Georgia, and ITS Tennessee. Both of these conferences should have a great turnout relative to exhibitors and attendees, as everyone looks to get out and see what new innovations have been created over the past two years. I can't wait to see everyone at one or both of these events.

As the 2022 ITS Florida President, my focus will be twofold. First, the same as last year, I would like ITS Florida to increase the awareness of advances in technology to our members, as well as State and local government officials. I will be reaching out to other organizations to see how we can collaborate to benefit the members of multiple organizations and gain a wider audience for meetings, technical demonstrations, and training. I feel that this is wanted and needed by our members as we come out of the COVID pandemic, and therefore I am committed to trying to get as many exhibitors as possible to display their products at Transpo 2022 and the Southeast ITS Summit.

Second, I've noticed that the ITS Florida Board is not very diverse, and I would like to see the Board become more Diverse and Inclusive. I think that the way to work toward that goal is to begin with more diverse membership in attendance at our monthly Board Meetings (whether in person or via teleconference) and our Quarterly Technical Committee Meetings. I urge everyone who is interested in joining in our meetings and contributing to the success of, not only ITS Florida, but the continuing evolution of ITS in the State of Florida to contact me to discuss how you can participate in ITS Florida.

NOTE: Please mark your calendar for this upcoming ITS Florida event:

TRANSPO 2022
July 17-20, 2022
Hyatt Regency Coconut Point Resort and Spa
Bonita Springs, Florida

ITS Florida needs and welcomes your input to continue to grow our organization. Please feel free to contact me with your ideas, suggestions, and concerns at ccarnes@metriceng.com or (407) 948-2179.

Craig Carnes
2022 ITS Florida President

CONTACTS

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

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

DISTRICT 3
Kimberly Toole, DTOE
Amy DiRusso
FDOT District 3 Traffic Operations
1074 Highway 90 East
Chipley, FL 32428-9900
(850) 638-0250

DISTRICT 4
Mark Plass, DTOE
Alexandra Lopez
FDOT District 4 Traffic Operations
3400 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
Megan Arasteh
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 Operations Office
(850) 410-5419

Fred Heery
State TSM&O Program Engineer
(850) 410-5606

Raj Ponnaluri
Connected Vehicles, Arterial Management, Managed Lanes
(850) 410-5616

Jeff Frost
State TIM/CVO Program Manager
(850) 410-5607

Derek Vollmer
Traffic Engineering Research Lab Manager
(850) 921-7361

Alan El-Urfali
State Traffic Services Program Engineer
(850) 410-5416