SUNGUIDE® DISSEMINATOR

Florida Department of Transportation's Traffic Engineering and Operations Newsletter

FL511 is Tweeting Traffic

By Gene Glotzbach, FDOT Traffic Engineering and Operations

The Florida Department of Transportation (FDOT) is pleased to introduce a new tool for the Florida 511 (FL511) Traveler Information System. Florida's residents and visitors can now access 511 traffic information on Twitter. FDOT recently launched 12 Twitter feeds, including regional, roadway, and a statewide feed to provide the same traffic information as the phone system, FL511.com, and the FL511 smartphone app through this popular social media network.

Much like the FL511 system, Twitter is a real-time information network connecting people and organizations through an online conversation. Registered Twitter users can "follow" other users to receive their information automatically when they visit Twitter.com. Twitter broadcasts information through tweets, which are short messages of 140 characters or less. Users can add hyperlinks to their tweets directing users to web sites, images, and videos, creating a ripe opportunity to inform Twitter users of FL511's additional tools.

A third-party data feed from the SunGuide® software, automatically populates the FL511 Twitter feeds. Incidents are marked as "New" the first time they appear in the feed, "Update" whenever their details change, and "Cleared" two minutes after the incident is removed from the SunGuide software. FDOT utilizes this free tool to provide residents with regional information previously available through the regional 511 systems. Users can also receive traffic information on Florida's major interstates. The Twitter accounts provide another redundancy in the FL511 system during emergencies. Anyone with a computer or smartphone can access the FL511 Twitter feeds.

The FL511.com web site has been updated featuring a web page with links to all of the FL511 Twitter feeds. Users can visit FL511.com and click the Twitter icon next to the 511 app icon on the bottom right corner of the web page to link to the FL511 Twitter web page (http://fl511.com/Twitter.aspx). There, users can select any region or roadway for which they would like to view traffic information.

The FL511 Twitter feeds include:

- FL511 Statewide
- FL511 Northeast

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Using FL511 tweets.

- FL511 Panhandle
- FL511 Central Florida
- FL511 Tampa Bay
- FL511 Southeast
- FL511 Southwest
- FL511 I-4
- FL511 I-10
- FL511 I-75
- FL511 I-95
- FL511 Florida's Turnpike

These Twitter feeds are the newest resource from FDOT's 511 system for real-time traffic information. Travelers can also call 511, visit FL511.com, register for My Florida 511 personalized services, or download the FL511 smartphone app on iTunes. FDOT's 511 Traveler Information System provides travelers with updates on crashes, congestion, and construction on all of Florida's interstates, toll roads, and major metropolitan roadways.

State departments of transportation throughout the nation are adding Twitter as a source of 511 traffic information for the traveling public.

"By adding these Twitter feeds to our suite of products, we are providing travelers even more custom options for receiving our traffic information," said Elizabeth Birriel, P.E., FDOT Intelligent Transportation System (ITS) Program Manager. "This is also a great

way for 511 to interact with the online community and educate more people about our ITS services."
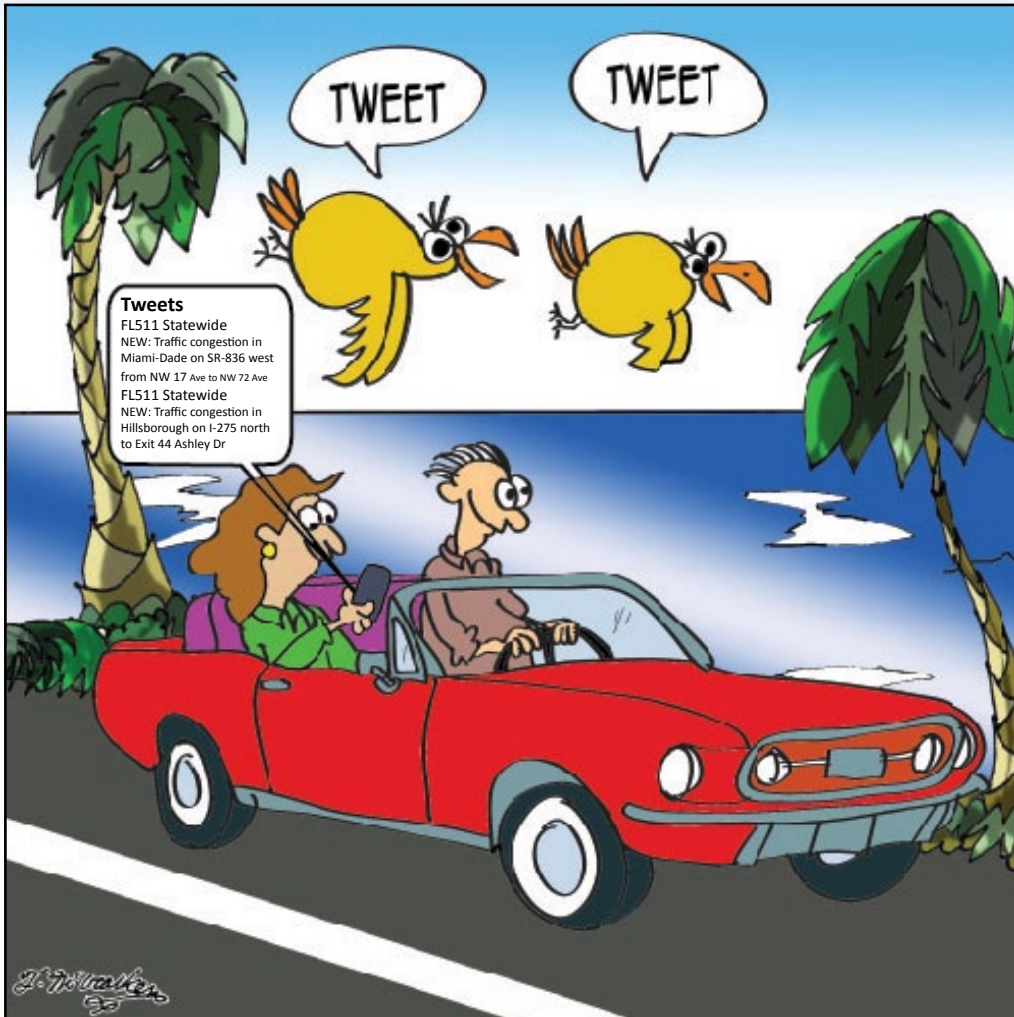
FDOT has begun marketing this new option for traffic information to the traveling public. As many media outlets and reporters use Twitter for gathering and disseminating news and information, FDOT's 511 team will work with television, radio, and newspapers statewide to ensure they are aware of the FL511 Twitter feeds. The team will also coordinate with these outlets to encourage each one to embed the FL511 Twitter feed on their traffic web sites. The FL511 marketing team will also update the Educate.FL511.com web site so our FL511 partners can utilize the new information about Twitter on their web sites, e-newsletters, and social media web pages.

The FL511 Twitter feeds are a great example of how FDOT works to provide a safe transportation system using the latest technology and innovations. FDOT reminds all travelers to check FL511 before traveling, have a passenger check FL511, or pull over to avoid distracted driving.

For information, please contact Mr. Glotzbach at (850) 410-5616 or email to Gene.Glotzbach@dot.state.fl.us.

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Moment of Humor!

Tweeting isn't just for the birds anymore!

Boy Scouts Learn About Traffic Safety

By Michael Washburn, Florida's Turnpike Enterprise

Florida's Turnpike Enterprise's Highway Operations played host to 26 Boy Scouts from the South Florida tri-county area of Monroe, Miami-Dade, and Broward Counties on January 14, helping to increase their awareness and education to achieve their Traffic Safety Merit Badge.

The Boy Scouts, troop leaders, and about a half dozen parents attended the all-day workshop in the Turnpike's Transportation Management Center

Road Ranger demonstration.

(TMC)/Emergency Operations Center conference room in the Pompano Operations Annex Building. Throughout the day, 8 a.m. to 4 p.m., Florida's Turnpike Enterprise personnel presented the scouts with a variety of traffic safety topics that included Florida Highway Patrol (FHP) safety recommendations, trooper interviews, and an FHP canine demonstration.

Florida's Turnpike Traffic Operations Engineer, John Easterling, addressed the scouts, detailing the characteristics of safe highway design and signing as well as helping to lead a tour of the Turnpike's TMC where the scouts learned how the 24/7 center monitors incidents and coordinates response and traveler information. Each individual scout was also able to use a workstation to control a roadway closed-circuit television camera. Scouts were treated to a hands-on Road Ranger service patrol vehicle demonstration while learning about vehicle braking distances in the annex parking lot.

Presenting traffic safety information.

Scout leaders cited the clinic as a success and thanked the FHP and Florida's Turnpike Enterprise for the partnering effort.

For information, please contact Mr. Washburn at (954) 934-1621 or email to Michael.Washburn@dot.state.fl.us.

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FDOT Honors FHP Trooper

By Chris Birosak, FDOT District One

While tightening up lug bolts after changing a tire on a disabled vehicle on Monday morning, January 23, District One Road Ranger Loren Cooley suffered a heart attack. Very fortunately, Florida Highway Patrol (FHP) Trooper John McGrede, who knew Ranger Cooley, had assisted the motorist prior to Loren's arrival and was still on-scene. Trooper McGrede noticed Loren had kneeled over the tire for a while and something just did not look right. He approached Loren to check on him just as Loren collapsed toward the adjacent interstate travel lane.

Simply put, Trooper McGrede's quick thinking and decisive action saved Ranger Cooley's life. Trooper McGrede grabbed Loren, dragged him into the median, immediately called emergency medical services (EMS), and then began cardiopulmonary resuscitation (CPR) with the help of a nurse who stopped to help. After performing CPR for more than 10 minutes EMS arrived, resuscitated and stabilized Loren, and then transported him to the emergency room at Manatee Memorial Hospital where he spent three days in intensive care and recovery. Loren is home now, and the Cooleys feel they have gained a new member to their family—Trooper McGrede.

At the Sarasota/Manatee Traffic Incident Management (TIM) meeting on February 14, the Florida Department of Transportation, Road Rangers, FHP's troop commander and fellow troopers, and TIM team members all thanked and recognized Trooper John McGrede for his heroic actions. Trooper McGrede's parents were there as well to share this special moment to honor their son for his bravery and grace under pressure when it counts most – saving a life.

For information, please contact Mr. Birosak at (863) 519-2507 or email to Chris.Birosak@dot.state.fl.us.

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Pictured from left to right; Chris Birosak, FDOT District One ITS Program Manager; Trooper John McGrede; and Bob Diezi, District One Road Ranger Supervisor.

Connected Vehicle: Data Management

By Elizabeth Birriel, FDOT Traffic Engineering and Operations

The Florida Department of Transportation (FDOT) Intelligent Transportation Systems (ITS) Program and the United States Department of Transportation (USDOT) met on January 5 in Orlando, to further coordinate FDOT's connected vehicle efforts. USDOT representatives included Walt Fehr (Safety Pilot Model Deployment and Connected Vehicle Test Bed), and Dale Thompson and Gene McHale (Real-Time Data Capture and Management). Elizabeth Birriel (FDOT Deputy State Traffic Operations Engineer and ITS Program Manager) hosted the meeting with support from Michael Smith (FDOT District Five ITS Engineer).

As part of the preparation for the 18th World Congress on Intelligent Transport Systems, FDOT developed a connected vehicle module for its statewide advance traffic management software, SunGuide®. During the meeting, FDOT demonstrated the module for the USDOT representatives. Florida is the first state with a connected vehicle production system using advance traffic management

software to control roadside equipment (RSE) field devices and to interact with vehicle awareness devices.

Connected vehicle data from the RSE field devices and vehicle awareness devices can be a valuable resource to USDOT in support of its Real-Time Data Capture and Management Program. The goals of this research program are to:

- Systematically capture real-time, multi-modal data from connected vehicles, devices, and infrastructure.
- Develop data environments that enable integration of high-quality data from multiple sources for transportation management and performance measures.

Through this research program, the USDOT has the opportunity to explore uses of real-time data provided by FDOT to increase safety and operational efficiencies through various applications of the data. This data will allow travelers to make better-informed travel decisions as well as transform transportation management. FDOT and

USDOT anticipate that the information developed from the Real-Time Data Capture and Management Program will reveal opportunities for achieving greater efficiencies within our transportation systems. FDOT's current focus is on data capture and analysis rather than broadcasting the data.

During the USDOT visit, FDOT also provided them with a tour of the Orlando regional transportation management center. This provided an opportunity to showcase multiple SunGuide software modules, including event management, connected vehicle, closed-circuit television cameras, and dynamic message signs.
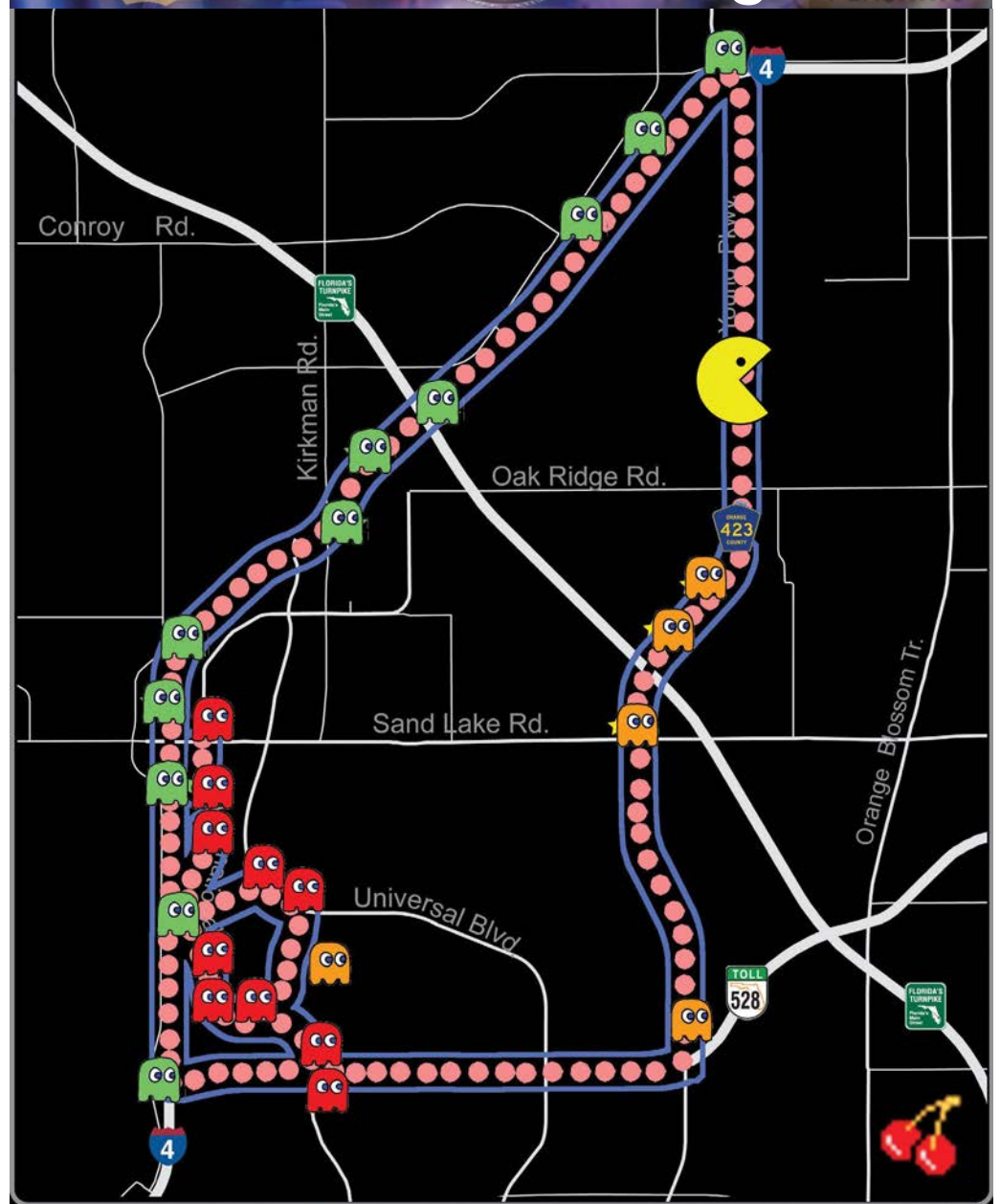
USDOT and FDOT will continue to work together to utilize FDOT's connected vehicle production system data for USDOT's Real-Time Data Capture and Management Program.

For information, please contact Ms. Birriel at (850) 410-5606 or email to Elizabeth.Birriel@dot.state.fl.us.

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We invite you to have some fun and complete the
SunGuide Disseminator Word Challenge!

Unscramble the letters to complete the word for the clue found under the boxes.
Use the letters in the red circles to complete the final puzzle.
The answers can be found on the page 8.

Enjoy
and
Good Luck!

Real-Time Traffic Data Game—☐☐☐☐☐☐☐ the "dots."

R I T E T W T
☐☐☐◯☐☐◯
FL511 uses this social media.

P A I T H D C S
☐☐☐☐◯◯☐☐☐
TBRCC provides this law enforcement activity.

P A C T E U R
◯☐☐☐◯☐☐
FDOT's connected vehicle is focusing on data _____.

S I N S U E B S
☐☐☐☐☐◯☐☐
Type of intelligence that allows operators to quickly identify incidents.

Combining District Seven's RTMC and Emergency Operations Results in Improved Emergency Response

By Terry Hensley, FDOT District Seven, and J. Michael Healy, Atkins

The original District Seven Emergency Operations Center (EOC) was hardly an "operations center." It was a small conference room in the District Seven Headquarters, with two cubicles and barely enough shelf space to house the District's emergency planning documents and contracts. Not only was it very small, but because the District Headquarters is not a hardened facility, it was vulnerable to the types of events where activation would be crucial to the District's overall recovery efforts (hurricanes, tornadoes, etc.). The size and configuration also impeded collaboration amongst a large group during a major incident, as the call center and other staff had to be located in separate parts of the District Headquarters during EOC activations. Planning for construction of the Tampa Bay SunGuide® Center presented an opportunity to remedy the situation by housing the EOC in the same building.

What began as a search for a better EOC facility turned into a perfect operational match!

The physical benefits of combining the regional transportation management center (RTMC) and the EOC in the Tampa Bay SunGuide Center were apparent early during the center's design. Adding the EOC to the Tampa Bay SunGuide Center provided additional justification for hardening the center to withstand a Category 3 hurricane. Co-location of the Tampa Bay Regional Communications Center (TBRCC), a state law enforcement dispatch, resulted in increased security requirements and access control. The design also met the need for the tighter security required to house the EOC and restricted documents.

Co-location of the RTMC, EOC, and TBRCC resulted in the incorporation of innovative technologies to accommodate the varied needs of each group. Installation of a video distribution system provided viewing capability of the cameras, news and weather stations and other applications used by the operators in the EOC offices and conference rooms.

Although the original reason for co-locating the EOC in the Tampa Bay SunGuide Center was the need for space, operational benefits became apparent almost immediately. The EOC is now able to utilize the RTMC's "Single Point of Contact" (SPOC) and connectivity to state and local transportation management centers, law enforcement dispatch, and various local resources to assist in responding to incidents. In addition, the RTMC staff serves as a 24/7 filter for reporting incidents and alerts.

As a result, the District Emergency Coordination Officer (ECO) and emergency management staff have real-time accurate situational awareness, enabling them to respond quickly to major incidents (hazardous materials, sinkholes, weather-related incidents, etc.). To help facilitate rapid and effective response, RTMC operators can access a database with contact information for a wide variety of agencies involved in incident response and have the ability to distribute alerts utilizing e-mail distribution lists tailored to the type of incident. Operators also inform the public of major incidents via message boards and the FL511 traveler information system.

Because of these efficiencies, District maintenance, construction, and traffic operations are utilizing the RTMC as the SPOC and report updates to road closures and/or repairs as well as a

Tampa Bay SunGuide Center.

resource for gathering information on incidents to which they are responding.

The enhanced situational awareness and command/control capabilities resulting from co-locating the RTMC and EOC ultimately benefit the traveling public. Before co-locating EOC and RTMC operations, the ECO or on-call maintenance personnel had to respond to the incident on-site before making any major decisions, wasting valuable resources and causing delays to the restoration of normal traffic.

Full EOC activation is typically limited to major incidents or significant events (Super Bowl, sinkholes, hurricanes, the upcoming Republican National Convention, etc.). However, if a less critical incident occurs outside the view of the RTMC cameras, the EOC provides personnel to respond to the incident and report accurate information to the RTMC. If the incident is viewable, often it is not necessary to send someone to the scene.

The EOC also benefits from access to the technology available in the Tampa Bay SunGuide Center. Monitors in the EOC offices and conference rooms provide excellent situational awareness to the EOC staff. The value of using closed-circuit television (CCTV) cameras was proven during a full-scale one-way evacuation exercise in 2008. The ability for District management and EOC staff to view and track the mock implementation of the traffic control devices on I-4 was deemed vital in determining the overall implementation time needed for a one-way evacuation. Capability is further enhanced by the use of movable cameras that can be located anywhere in the District to monitor any situation. The availability of CCTV images and traffic flow data have proven to be crucial to the District, county, and state emergency managers in

Tampa Bay SunGuide Center interior.

dynamic strategic planning, resource allocation, and pre-planning for a mandatory evacuation of the Tampa Bay area.

The fusion of the RTMC and EOC operations during emergencies will be even more beneficial if a major hurricane affects the District. Last year, county emergency managers requested that the Florida Department of Transportation (FDOT) provide "Evacuation Roadway Status Reports." The report will be prepared in the EOC and will include information collected by the intelligent transportation systems (ITS) field devices located throughout the highway system and within the RTMC.

In addition to ITS capabilities, locating the EOC within the Tampa Bay SunGuide Center improved communications capabilities during activations. The EOC, in conjunction with the RTMC, has a switchboard/phone bank capability, radio communications with maintenance personnel, a satellite phone, amateur radio capability, and radio communications with Road Ranger service patrols, and state law enforcement.

Joining the EOC and RTMC operations allows for an ongoing team approach to emergency response. This team approach carries over to planning and training, which promotes overall readiness. Training for RTMC operators and other operations staff now includes general EOC operations and specific District Seven emergency plans.

Another benefit of operating from one facility is the ability to identify existing or potential resource shortfalls. Combining operations presents the opportunity for the District to improve emergency plans, policies, and procedures. Lessons learned from a variety of incidents as well as those discussed at bi-monthly traffic incident management meetings add to the District's overall knowledge base and help enhance the safety of the citizen's within District Seven. Much of this interaction between the emergency management and RTMC personnel would not take place without the joint operation perspective.

For information, please contact Mr. Hensley at (813) 615-8611 or email to Terry.Hensley@dot.state.fl.us.

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FHWA and FDOT Host TIM Workshops in Districts Six and Seven

By Javier Rodriguez, FDOT District Six

The FHWA TIM workshop was a good way for the incident management community to come together and discuss the enhancement of their efforts.

The Florida Department of Transportation (FDOT) and Federal Highway Administration (FHWA) recently hosted two, one-and-a-half day Traffic Incident Management (TIM) workshops at two FDOT Districts in an effort to further develop and enhance the overall TIM program. FDOT Districts Six and Seven each hosted one of these workshops in late January and early February, respectively.

During these workshops, the groups discussed TIM "best practices" as well as new strategies to be used to strengthen the TIM program's effectiveness. At both locations, during the workshop's first day, the group focused on identifying the needs of the local TIM team members. Meeting attendees had a chance to voice their concerns and explored possible solutions for improvement. They also discussed the importance of monitoring TIM performance measures as a basis for improving roadway and incident clearance times, reducing secondary incidents, and optimizing responder safety. The second day consisted of more high-level objectives, such as improving the universal understanding among decision-makers of TIM processes and strategies as well as discussing best practices throughout the nation that could help safety, clearance times, and interagency communication.

Several agencies attended the sessions in both Districts, including Florida Highway Patrol Troops E and C, Florida's Turnpike Enterprise, Pinellas and Monroe Counties, fire rescue representatives, Miami-Dade Expressway Authority, and several incident management contractors. Overall feedback was very positive, with many attendees saying they were pleased with the level of interaction amongst FHWA speakers, their peers, and themselves. The groups were also pleased with the action items developed during the sessions with the help of FHWA speakers. These action items tasked each District to address particular improvement areas and included coordinating multi-agency training sessions, creating public education and outreach task forces, and identifying benefits to agencies to increase participation.

FHWA conducts these workshops nationally to help improve the country's TIM efforts. To date, more than 30 workshops have been held in major metropolitan areas nationwide. By attending workshops like this as well as continuing to communicate and coordinate with its TIM partners, FDOT hopes to continue enhancing its incident management efforts in order to provide Florida with safe, efficient, and free-flowing roadways.

For information, please contact Mr. Rodriguez at (305) 407-5341 or e-mail to Javier.Rodriguez2@dot.state.fl.us.

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Word Challenge Answer

BUSINESS
DISPATCH
CAPTURE
TWITTER
CAPTURE the "dots."
Real-Time Traffic Data Game—

SunGuide® Software: Managing Traffic Flow

By Arun Krishnamurthy, FDOT Traffic Engineering and Operations, and Clay Packard, Atkins

In this four part series, we will highlight some of the key roles of an advanced traffic management system (ATMS) software. In this part, we will focus on how ATMS software can help transportation management centers (TMC) manage traffic flow better. In future issues, we will discuss incident management, the ability to interact with other TMCs, and performance reporting.

SunGuide® software is an ATMS software used by all regional TMCs in Florida. The Florida Department of Transportation (FDOT) and Texas Department of Transportation jointly own this software.

In Florida, TMCs manage traffic flow along the roadway network by scanning closed-circuit television (CCTV) cameras, detectors, and other intelligent transportation systems (ITS) devices and coordinating with law enforcement agencies and Road Ranger service patrols. These activities are fairly time consuming; if the roadway network has too few ITS devices, TMC operators have to depend heavily on law enforcement officers and Road Rangers, spending a significant portion of their time in coordination. On the other hand, if the roadway network has a significant penetration of ITS devices, then the operator could be overwhelmed with information from each of the devices. Too little or too much information harms productivity. The key is providing the information to the operator in a concise, visual manner, making it easy to process so they can efficiently balance various activities.

As software technology improves, so does the ability to present complex information in "bite-size" pieces and optimize workflow processes. It is important to use these more recent software technologies, which ensure fast data processing and are easily customized to user needs. Automating portions of traffic management and optimizing interaction with the operator is also important. We will now talk about a few areas where FDOT has automated traffic management to better support TMC operations.

Vehicle Sensors

These days, it is common practice to visually show vehicle sensor data. SunGuide software uses a color-coded map to show travel speeds, which allows operators to spot problem areas. SunGuide software also identifies when speeds along a certain roadway segment are below a configurable threshold and sends an alert to the operator informing them of the low speed. By sending an alert, SunGuide software provides the operator with information on a potential concern even if they are not viewing the map. The software also continues to track speeds to ensure that the segment has fully recovered from a previous event before sending any new alerts on that segment.

Third Party Traffic Data Providers

In Florida, we have a combination of urban, suburban, and rural areas. FDOT has deployed ITS field devices in all of our urban areas, most of our suburban, and in limited portions of our rural areas. Since some areas in Florida (mostly rural) do not have full ITS deployments, FDOT contracts with a vendor that offers real-time traffic data along these facilities. SunGuide software is integrated with this third party traffic data provider. Also, to maintain the similar look and feel that TMC operators are used to, this data is shown on the SunGuide software map as color-coded roadway segments similar to the vehicle sensor data. Color-coded roadway segments are configurable, allowing TMC operators to choose what speed range should be considered free flow, versus what speed range should be considered as a stop-and-go traffic condition. At first glance, this may not seem to be an important configuration parameter, but consider that rural areas may have a different interpretation of congested and stop-and-go conditions than urban areas where congestion is a common occurrence during morning and evening peak hours. This feature allows the customization necessary to visually present traffic conditions data in a manner that is very easy for operators to interpret over many miles of urban roadways.

Video Feed Processing

Part of the overall objective for SunGuide software is to have a fully integrated system that offers information in a consistent format independent of the technology or type of device. SunGuide software accomplishes this by integrating with a

vendor product that processes CCTV camera feeds to identify if any stopped vehicle is in the camera's field of view. SunGuide software obtains this information from the vendor product and provides alerts to the operator in the same interface as the vehicle sensor alerts. This allows the operator to maintain only one screen to view all the alerts. Manually scanning all CCTV cameras would be a monumental task for operators. This feature provides a benefit by allowing the software to scan the CCTV cameras faster than operators could and automatically identifying potential traffic flow issues. This helps identify traffic incidents sooner with less manual work from operators.

Weather Data and Third Party Weather Data Providers

FDOT has a few road weather information systems devices deployed along its limited-access facilities. SunGuide software also receives weather data for the entire state from a vendor. This data is configurable in SunGuide software so the TMC operator can choose weather events (e.g., fog, hurricane, heavy rain, tropical storm) for which they would like to receive information. SunGuide software can notify operators of approximately 21 different weather event types. Operators can use this information to prepare for upcoming severe weather conditions. The alerts appear on the same screen as the traffic incident alerts. Operators can disseminate this information to motorists and to the FL511 traveler information system as traffic events allowing motorists to plan trips around, prepare for, or just be aware of any potential weather issues that may affect their safety and mobility.

FHP CAD Data Integration

As mentioned previously, TMC operators also receive incident information from law enforcement. About two years ago, SunGuide software was modified to receive incident information from the Florida Highway Patrol's computer-aided dispatch (CAD) system, allowing receipt of incident details as soon as they are entered or updated in the CAD system. SunGuide software provides the information as an alert on the same screen as the other alerts. This is another great traffic management tool for FDOT, especially in rural areas where FDOT has not fully deployed ITS devices.

Summary

Florida's TMC operators proactively manage traffic along Florida's roadway facilities; SunGuide software helps make this happen. SunGuide software integrates all ITS devices along the limited-access facilities and provides information visually or consolidates the "actionable" information for the operators from a single application. In this part of our series, we highlighted five different technologies that SunGuide software uses to automate traffic management, including monitoring vehicle sensors, third party traffic data feeds, video feeds, third party weather data feeds, and FHP's CAD system for incident information. It is important to build business intelligence into the software using concepts that lend themselves to offering value-added services to the TMC operators. Business intelligence allows TMC operators to identify incidents quicker. As a result, operators are able to clear incidents faster and keep traffic flowing.

Stay tuned for the future parts of this series. We will explore how SunGuide software uses business intelligence in other aspects to support TMCs.

For information, please contact Mr. Krishnamurthy at (850) 410-5615 or email to Arun.Krishnamurthy@dot. state.fl.us.

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Gainesville ITS: "Where Dreams Actually Do Come True"

By Peter Vega, FDOT District Two

The Florida Department of Transportation (FDOT) District Two intelligent transportation systems (ITS) staff visited the Gainesville Traffic Signals office on January 25 to discuss the deployment of closed-circuit television (CCTV) cameras and traffic detectors along I-75 from the south end of Paynes Prairie to the City of Alachua, a length of approximately 21 miles. Gainesville offered to purchase and install devices along this corridor with some assistance from FDOT. **Matt Weisman** and **Phil Mann** (City of Gainesville) have had success using wireless technology in their arterial advanced traffic management system and recommended a similar approach to instrument I-75. Through their partnerships with local enterprises and the existing fiber backbone on arterials, they devised a plan that would allow FDOT to install devices along I-75 using solar-powered wireless radios, detectors, and cameras.

The game plan is to wirelessly connect these devices to Gainesville's traffic signal network, which terminates at their transportation management center (TMC). From there the FDOT District Two Jacksonville TMC can connect to the cameras and traffic detectors using the virtual private network access provided by Gainesville. The second phase of this effort is to find a direct network connection to the Gainesville TMC by acquiring a leased line or the Lambda Rail used by the University of Florida system. Some of the devices will be placed on existing infrastructure (i.e. cantilever signs or luminaire poles) while other locations will require installation of concrete poles. The objective is to complete all of this work by the end of May 2012. So far, there are 19 locations chosen for this effort.

Once installed, Gainesville will assist with monitoring these cameras during peak travel times and major events. Likewise, the Jacksonville TMC will monitor these devices during incidents and will incorporate daily monitoring once a direct network connection is made to the Gainesville TMC. The objective is to have visual capabilities and detection until the existing projects in FDOT's *Ten-Year Work Program* are completed. This piece of the puzzle will add fiber optic connection from the devices to the Gainesville network as well as the addition of dynamic message signs (DMS).

Of course, none of this could have been accomplished without the foresight and determination of Phil Mann and his staff. Phil had a *Dream* that one day there would be ITS devices along arterials and the I-75 corridor in the Gainesville area, but unfortunately, it could not come soon enough. His vision was to have upgraded traffic signal cabinets, vehicle sensors, CCTV cameras, and arterial DMSs throughout the arterial roadway network. Supplementing this would be the installation of ITS devices on the Interstate system that would allow them to smoothly maneuver traffic on and off the major interchanges. Likewise, since the largest traffic generator for the area is the University of Florida, Phil also incorporated their needs into his plan.

Once Phil realized the financial aspects of his dream would require a concerted effort he pitched his vision to the city, county, metropolitan planning organization, University of Florida and FDOT. These stakeholders pooled resources and were able to generate enough funding for Phil's team to put this plan into action. The first major move made by Gainesville was to bring in a young, talented, and well-respected engineer. Matt Weisman adopted the mission that Phil had created and took off running with the game plan. In a sense, it was similar to the teaming of Urban Meyer and Tim Tebow at the University of Florida—the solid foundation behind a winning team.

Phil's efforts led to the commitment of $19.9 million for four phases of the arterial deployment. The plan included construction of Gainesville's TMC during Phases I and II. As part of the deployment, Matt also included features, such as enhanced emergency response and mass transit through system-wide traffic signal priority. Likewise, the incorporation of traffic needs on the university's campus was also a boon for the Gainesville region since a large majority of the population travel within campus limits throughout the day.

On January 30, Matt sent out an announcement stating that 100 percent of the traffic signal cabinets had been upgraded. This included 229 signalized intersections in Gainesville, unincorporated Alachua County, City of Alachua, University of Florida, Hawthorne, High Springs, Waldo, Archer, and Newberry. Thus, the team was ready to refocus its attention on FDOT's needs along I-75. This corridor is a key component of the traffic system in the Gainesville area and, therefore, needed to be included in the final scope of Phil's *Dream*.

Prior to starting this huge task, Phil and his team came to the Jacksonville TMC to get some advice from our staff. He realized that "lessons learned" would go a long way to deploying a successful project. Once they'd done their homework, the Gainesville team looked at ways to make it better based on the latest technology and knowledge gained in the ITS industry. From that came a fully functional TMC that ran circles around

No Challenge is Too Great

By Dong Chen, FDOT District Four

the existing Jacksonville TMC. From the workstations to the video wall, everything was done with the utmost precision, thereby creating the functionality and productivity needed in today's traffic management environment. Thus, "the teacher is now learning from the pupil" and FDOT has begun to take hold of Gainesville's advancements for the new Jacksonville TMC, planned to be built in fiscal year 2013.

Matt was one of the biggest proponents of using new CCTV camera technologies that have the capability to "tune" bandwidth up or down based on network limitations. Also, their experimentation and deployment of wireless systems have been a success over the past few years, thus enabling our Jacksonville operations to adopt a cheaper, yet effective, method for system communications. We expect to save nearly $100,000 in Jacksonville for wireless communications needs due to the knowledge provided by Gainesville.

What was once Phil's *Dream* has now become a reality for the Gainesville area and their region will reap the benefits from this effort. Just recently, Matt shared his experience with the new deployment. An accident occurred at an intersection that would create havoc on traffic near the university's campus. After hearing of the incident, Matt's staff looked at the cameras, coordinated with law enforcement, went all red at the intersection, and dynamically retimed signals for traffic to bypass the area. This operated like clockwork and has become the norm for daily operations at the Gainesville TMC. *Hat's off to Phil, Matt, and the rest of the Gainesville TMC staff.*

For information, please contact Mr. Vega at (904) 360-5463 or email to Peter. Vega@dot.state.fl.us.

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It took a lot of strategic planning, innovative thinking, and smart budgeting for the Florida Department of Transportation (FDOT) District Four Intelligent Transportation Systems (ITS) Unit to reach a significant milestone in 2011 with 100 percent ITS coverage.

The 60 percent increase in the number of ITS devices used to monitor highway traffic, following deployments in Palm Beach County and the Treasure Coast, was far from the only achievement last year designed to provide better, faster, and more reliable service to motorists and emergency responders. District Four completed two projects to make the Broward Regional Transportation Center hum with the precision of a well-oiled machine. Operator workstations were upgraded with the addition of five new monitors at each console. Now, 64 camera images can be displayed simultaneously on the "mini-video wall," allowing operators to more quickly detect crashes and other disruptions to

District Four "mini video wall."

traffic. In addition, projectors were mounted to the ceiling of the control room to display speed data, weather conditions, and web site status on empty wall space, nearly doubling the size of the main video wall at a fraction of the cost. This new tool gives operators a much wider view of the entire freeway network.

The *2011 SMART SunGuide ITS Annual Report* highlights these and other accomplishments. The theme of the report, quite appropriately, is "Expanding Our Operations." The report is available on the SMART SunGuide web site at http://www. smartsunguide.com/pdf/2011_Annual_Report_web.pdf.

The success of the projects is reflected in the 2011 benefit-cost ratio. This important measure shows the value of the dividends provided to motorists on ITS investments. Tracking the excellence of past years, the benefit-cost ratio was 9.39. In simple terms, for each $1 spent on ITS improvements, the public received perks worth $9.39. The dividends were delivered primarily in the form of time and fuel savings from various programs within the ITS Unit, such as the Road Ranger service patrols and the severe incident response vehicle program.

Not only was the capital cost of the Treasure Coast ITS equipment included in the 2011 benefit-cost ratio, so was the value of the District's arterial dynamic message signs and the value of the live video feed to Florida Highway Patrol (FHP), Troop L. FHP troopers can view the same camera images at their headquarters as those viewed at the TMC, giving them the needed information at a glance to more quickly activate the rapid incident scene clearance program.

A key performance measure of any ITS program is incident clearance time. Once again, District Four continued its record of consistent improvement with an average clearance time of 54.3 minutes, a five percent improvement from 56.9 minutes in 2010.

The District Four ITS Unit's "no challenge is too great" attitude attracted the attention of national and state partners throughout the year. The Intelligent Transportation Society of America recognized the District's timesaving maintenance inventory management system as the Best New Innovative Product, Service, or Application. District Four uses this one-of-a-kind software to manage ITS inventory and maintenance requests.

The ITS Unit was also honored by the Federal Highway Administration and the Roadway Safety Foundation for its Safety Patrol Sponsor-Partnership with Travelers Marketing LLC. The National Roadway Safety Awards recognize innovative, efficient roadway safety projects and programs that eliminate or sharply reduce highway deaths. State Farm's sponsorship of the Road Rangers in Broward and Palm Beach Counties allows the safety patrol contractors to heighten their presence with three additional trucks for roaming supervisors in the two counties, resulting in more efficient incident management.

For information, please contact Mr. Chen at (954) 847-2785 or email to Dong. Chen@dot.state.fl.us.

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ITS Florida: Coming Soon—TRANSPO 2012

By Jay Calhoun, Chairman for TRANSPO 2012

It's already March; soon it will be summer, then fall, and that can mean only one thing – Halloween. Well, no. Actually, it means it's time for TRANSPO 2012…and Halloween, because this year TRANSPO 2012 will begin on Sunday, October 28, and end on Wednesday, October 31 (Halloween). This will not be a scary event, because we're holding it at the Coconut Point Hyatt in Bonita Springs. This is a beautiful hotel that features a championship golf course, world-class spa, 5,000 square-foot adventure pool with a 140-foot corkscrew waterslide, tennis courts, kayak tours, cabana rentals, and a AAA, four-diamond restaurant. It even offers docking facilities for your boat and we've already heard two people say they are bringing theirs.

ITS Florida, the Florida Section of the Institute of Transportation Engineers (FSITE), and the Florida Department of Transportation (FDOT) will bring TRANSPO 2012 to you. This event will begin Sunday with a golf outing at one of the local courses. This will provide a fun kick-off event for those wanting to hit the links. It will be followed by a welcome reception on the patio, where everyone will have a chance to meet and greet.

Monday morning begins the two and a half days of technical sessions and other conference activities. Highlights will include:

- Lots of opportunities for you to present on your latest accomplishment. There will be four technical tracks, covering everything from planning to what's in our future. Look for a call for papers to go out soon and get your abstracts in.
- State and national speakers to tell us what's happening that will affect our state.
- Technical tours, including one to the state-of-the-art FDOT District One Regional Transportation Management Center. A simulated vehicle rollover and recovery activity is also being targeted as an event, but is still in the planning stages.
- A banquet that will include both ITS Florida and FSITE activities.
- Exhibitors will have the opportunity to display their products in a beautiful exhibit hall that will be the focus of non-technical events. And new this year, a limited number of exhibitors will also be able to show off their larger items outside under the porte-cochère (i.e., porch). No one will be able to miss these displays as they enter and exit the hotel.

And of course, there will be lots of opportunities for sponsors. Every firm wants their name to be seen and TRANSPO 2012 will make sure that occurs. Sponsorship information is being finalized and will be released soon. Stay tuned for more information.

So, if you can only go to one conference this year, make it TRANSPO 2012. This will be your opportunity to meet and talk with national, state, and local leaders in the transportation industry…and to have a scary-good time. Watch the ITS Florida web site at http://www.itsflorida.org/ for more details and we'll be emailing more information soon.

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Editorial Corner: TRB Impact on Programs

By Gail Holley, FDOT Traffic Engineering and Operations

In 1988, the Transportation Research Board (TRB) released *Special Report 218: Transportation in an Aging Society: Improving Mobility and Safety for Older Drivers*, and with the release of that report, the Florida Department of Transportation (FDOT) became proactive in working towards preparing our roadways to meet the demands of our aging population.

Flash forward 24 years and the TRB is still having an impact on Florida's aging road user program, **Safe Mobility for Life**. This past January, FDOT was honored to present at a highlighted TRB session on "Anticipating Cuts in Publicly Funded Transportation, Part I: Impact on Transportation for All," sponsored by the Committee on the Safe Mobility of Older Persons (ANB60). For this session, it was our responsibility to share a state's perspective on this critical issue and, in particular, the need to support sustainable transportation funding to assist aging road users. However, our participation provided us a greater opportunity to learn from experts across the globe on the latest tools and resources that we could bring back to our program to use in our efforts to

balance the safety and mobility needs of our 65-year and older population.

Through **Safe Mobility for Life**, FDOT has developed a strategic and creative approach to improve aging road user safety and mobility. While the program was initially based on TRB's early recommendations in *Special Report 218*, it has needed to evolve throughout the years in order to meet the inevitable increases to our aging population. To keep up with the changes, our program focus moved from strictly implementing roadway improvements to a broader based program that addresses both the safety and mobility needs of our aging population.

As we changed our program approach, we also needed to think more broadly about our partnerships and how we can work together to balance both the safety and mobility needs for this vulnerable population. Our solution was to create a statewide multi-disciplinary **Safe Mobility for Life Coalition** composed of 28 diverse member organizations. Working together, this coalition has developed and is implementing an *Aging Road User Strategic Safety Plan*, designed to help us to reach our ultimate goal of

reducing the crash, injury, and fatality rates of our 65-year and older population. Even though our approach has grown and changed, one thing that hasn't changed throughout the years is our research driven foundation and that will continue to remain a constant as the **Safe Mobility for Life Coalition** implements the strategic safety plan.

TRB's mission is to provide leadership in transportation innovation and progress through research and information exchange, conducted within a setting that is objective, interdisciplinary, and multimodal. This concept has proven to be a vital component at FDOT as we move our aging road user program forward. However, the opportunity to make use of this resource is not only limited to their annual meeting, TRB has a wealth of transportation information and resources available on their web site at www.trb.org.

In these times, when it is important to be both strategic and creative in program development, implementation, and funding, TRB is an extensive resource to help keep us charged and engaged as we work towards moving the goals of our program forward.

For information, please contact Ms. Holley at (850) 410-5414 or e-mail to Gail.Holley@dot.state.fl.us.

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Inside the TERL

By Jeff Morgan, FDOT Traffic Engineering and Operations

This month's article focuses on some interesting research that has been occurring at the Florida Department of Transportation (FDOT) Traffic Engineering Research Laboratory (TERL) over the last two years. It deals with a very common traffic control device – the actuated signal controller (ASC), better known as a traffic signal controller. The traffic signal controller is basically a microcomputer located at an intersection that processes various inputs and triggers outputs that control traffic signals, pedestrian signals, and other electronic devices that comprise a signalized intersection.

Because the traffic signal controller is designed to accommodate a wide variety of intersection types, ranging from simple to extremely complex, the configurable nature of the traffic signal controller makes testing the device a particularly challenging and time-consuming exercise. Comprehensive testing of the traffic signal controller requires that the device be manually operated and monitored in a consistent and controlled fashion over a long period of time. Recent National

Transportation Communications for ITS Protocol (NTCIP) requirements have only increased the complexity of testing these devices. The TERL is able to perform reasonably effective reviews of fundamental traffic signal controller features; however, it is not practical to conduct more thorough and comprehensive testing manually on each traffic signal controller received for evaluation due to the intensive and time-consuming nature of these tests.

A handful of commercial testing tools are marketed for these purposes, but first-hand trials of these products by the TERL have uncovered a number of shortcomings that prevent them from being viable for the purposes of certification testing.

Due to these limitations, the following research project was proposed, accepted, and started to overcome these limitations by developing a set of automated test procedures and test tools that would yield efficient, consistent, and effective results in a timely manner.

Tim Walton, Flotida State University research associate, working on the automated tester.

Development of Automated Testing Tools for Traffic Control Signals and Devices

The goal of this research project has been to "cut the human out of the loop," while increasing the proficiency of the testing process itself. Automated testing offers a higher probability for discovering an error or fault within a traffic signal controller while drastically cutting down on a technician's required time. These automated tests are specific to the Synchronous Data Link Control (SDLC) Port 1 Interface found on TS2 Type ASCs. The currently required hardware is limited to a laptop (with an SDLC Personal Computer Memory Card International Association [PCMCIA] being phased out) and a simple automated testing interface unit (ATIU) that the laptop plugs into to access the ASC's 15-pin Port 1 connection needed for the testing process. This keeps the testing clean and transportable. Once a technician configures the traffic signal controller, depending on the type of test, all that needs to be done is to choose the number of the test to run from the console application that has been created. The automated tests will make all necessary calls that may be needed and monitor all activity for the terminal facilities bus interface units (BIU), detector BIUs, and malfunction management unit. The laptop essentially becomes a virtual cabinet to the ASC, making it think it is a live intersection cabinet. When the test is complete, a report is generated in Microsoft® Word format displaying the results.

The development of this automated testing tool (along with standard test procedures) will ultimately reduce the amount of man-hours needed to evaluate traffic signal controllers and increase the precision, traceability, and repeatability of testing. These aspects and techniques have shown promise during past research, but have yet to be fully implemented in a production-ready system that would allow regular use in a

production-testing environment, such as the TERL.

The next research phase is being proposed that would incorporate the NTCIP component, which will omit the technician from needing to manually make any controller configurations, making the entire testing process automated and proficient.

For more information, please contact Mr. Morgan at (850) 921-7354 or email Jeffrey.Morgan@dot.state.fl.us.

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Announcements

FL511 Vendor

The Florida Department of Transportation (FDOT) has selected a vendor to deliver a new no cost traveler information system (FL511 system). The cost to develop, operate, and maintain the system will be recovered from revenue generated through the capitalization of FDOT assets. The vendor selected is Telvent. It is anticipated that a notice to proceed will be issued in March.

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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.

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