

SUNGUIDE® DISSEMINATOR

Florida Department of Transportation's Traffic Engineering and Operations Newsletter

Welcome to Florida

By Elizabeth Birriel, FDOT Traffic Engineering and Operations Office

The Florida Department of Transportation (FDOT) welcomes you to the 18th World Congress on Intelligent Transport Systems. We are very excited about our Intelligent Transportation Systems (ITS) Program here in Florida and wish to share our program information with you.

Our ITS Program was officially recognized and funded over ten years ago. We have successfully deployed ITS devices in all of our major urban areas and figured out ways to collect travel information in our rural areas to provide Florida motorists with vital travel information.

This issue presents a sample of articles from the SunGuide® Disseminator over the past year. We hope that you enjoy reading this issue and encourage you to join our list of readers. We publish the newsletter online monthly at www.dot.state.fl.us/trafficoperations/ITS/Projects_Deploy/Disseminator.shtm. You can join our monthly notification list by leaving your business card with personnel at our exhibit booth.

FDOT is located in the exposition hall at booth 1525 and in the Mobility Village of the Technical Showcase. We hope to share our "stories" with you and also show you some exciting information concerning connected vehicles. In the exposition hall, we have a live, mini transportation management center, an iPad kiosk featuring statewide information on our program, and a FL-511 information center. In the Mobility Villager, we are featuring the interaction our SunGuide® software has in collecting information from roadside equipment and sending traveler alert messages back out to travelers via the vehicle awareness device.

We hope you take time to stop by and talk with us.

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

* * * *

Inside This Issue

October 2011

Welcome to Florida	1
Florida's Turnpike STARR Towing Program Proving a Success	2
New iPhone Application for FL-511 System	3
A New Public Safety Focus for FDOT and ITS	5
Systems Engineering Practice for SunGuide® Software Development	7
Truck Parking: A Florida Issue, a National Issue	8
District Four Upgrades Operator Consoles for Maximum Video Capability	10
District Six Wraps Up Successful 2010-2011—Achieves Best-Ever Road Clearance Time	11
ITS Florida: Don't Miss Out on Your Calendar	12
Inside the TERL.....	13
The Importance of Public Feedback.....	15
Announcements.....	16
FDOT ITS Contacts	16

The SunGuide Disseminator is a publication of:
Florida Department of Transportation
Traffic Engineering and Operations Office
605 Suwannee Street, MS 36
Tallahassee, Florida 32399-0450
(850) 410-5600
<http://www.dot.state.fl.us>

Florida's Turnpike STARR Towing Program Proving a Success

By John Easterling, Florida's Turnpike Enterprise

The Florida's Turnpike Enterprise Specialty Towing and Roadside Repair Services (STARR) program is helping meet safe, quick clearance goals by providing regionally-contracted towing companies to respond to tow calls within 30 minutes in urban areas. The STARR program has proven to be a significant asset in the Turnpike's Traffic Incident Management program. Through quick and safe response to and clearance of traffic crashes of varying severity levels, STARR operators contribute to the safety of customers and incident responders involved in the incidents. Through their prompt, professional actions, STARR operators minimize roadside exposure and the potential for secondary incidents, which are an all-too-common occurrence on limited-access roadways. The program also provides service to Turnpike customers who have encountered vehicle difficulties and are in need of a tow or minor repair.



Through the first two years, ending June 15 2011, contracted tow vendors have responded to more than 15,000 Florida Highway Patrol (FHP)-dispatched calls. The tow vendors have met the required quick-response timeframes more than 87 percent of the time program-wide, with an average response time of less than 20 minutes. Several vendors in the urban area of South Florida committed to a 20 to 25 minute response time. To meet these response time commitments, the vendors stage wreckers at Turnpike interchanges or at turnpike service plazas.

Customer service is also a main component of the program, as evidenced not only by the quick response time, but also by the number of customer commendations and complaints—a total of 120 comments over two years. Additional information and feedback channels are provided to customers through STARR information and maximum towing fees on the Turnpike web site and an informational brochure with a mail-in comment card. These initiatives improved customer service by better defining the program and providing towing program transparency to all customers.

The STARR program is the first of its kind in the state and provides a reliable tool for FHP Troop K for incident clearance on the Turnpike. FHP Troop K Troopers no longer have to rely on the wrecker allocation system (rotation tow), guessing which tow vendor will show up in what timeframe, and wondering if the driver, vehicle, and equipment are sufficient to do the needed recovery or assist. The program is based on the best practices of successful traffic incident management programs of other highway agencies, and allows use of a quick notification process called InstaTow for expedited dispatching even before a trooper arrives on scene.

STARR Stats	
Number of dispatched calls	15,437
Average response time (minutes)	19.6
Percent On-time	87%
Number of complaints per 1,000 calls	4.2

The STARR program capitalizes on the private sector's tow investments and their response capabilities. The program does not replace the Turnpike's State Farm Safety Patrol/Road Ranger or Rapid Incident Scene Clearance programs, but enhances overall incident management efforts for light and medium towing needs.

Currently, seven vendors are servicing ten Turnpike zones. The STARR vendors are a formal part of the Turnpike's hurricane preparedness and evacuation plan and, if needed during a storm emergency, the vendors become a valuable resource for staging wreckers for effective emergency response and evacuation.

For more information, please contact Mr. Easterling at (954) 934-1620 or email John.Easterling@dot.state.fl.us.

* * * *



New iPhone Application for FL-511 System

By Gene Glotzbach, FDOT Traffic Engineering and Operations Office

FL-511 – Now There’s an App for That!

The Florida Department of Transportation (FDOT) has launched an Apple® iPhone application (app) as part of its 511 advanced traveler information system (FL-511). The new app provides the same real-time traffic information as the 511-dial number without drivers having to make a call. The Florida 511 app was developed by LogicTree Corporation, which also built the Florida 511 phone system. An Android app is expected later this year.

The 511 app uses the iPhone’s global positioning system (GPS) to provide users with information within their location. Users can set the app to provide information for a range of up to 200 miles from their location, or can enter their My Florida 511 primary phone number and get traffic information on their customized routes. The iPhone app provides traffic information in three ways: an audible alert, an on-screen list, and a map. Users can also manually search for 511 traffic information.

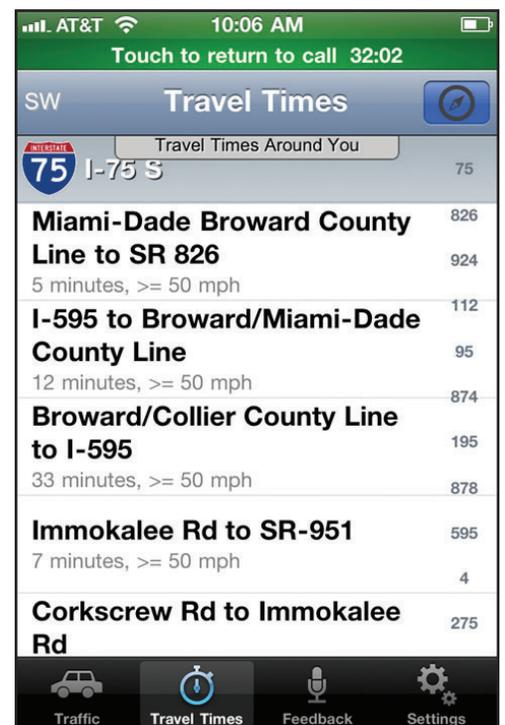
The Front-end Application Menus allow users to choose to view traffic information, travel times, leave feedback, or modify system settings.

Traffic

The Traffic window allows users to see local or personalized traffic reports. The “Traffic Near You” screen automatically lists all events within the user’s selected range. My Florida 511 users will see traffic events on their customized routes. Users can also enter a city or metro area to find events in that location. The “play all” button plays an audio recording of the incident — the same recording a caller would hear on the 511 phone call. Touching a single event plays that event’s recording, and touching the arrow button by the event takes the user to a detailed view of the event.



The map icon at the top of screen switches to a graphic view of the user’s events. Color-coded push pin icons show the location of events: red for incidents, purple for construction. Touching an icon brings up a summary of the event, and touching the “I” (information) in the summary window zooms in to the event and shows full details. The “view all” button zooms the map out to the user’s range again, and the list button takes users back to the



list view.

The app also provides the user with a camera view of the traffic where cameras are available. To view traffic cameras, users can tap the traffic camera image associated with an incident to view traffic near that location.

Travel Times

The Travel Times screen allows users to view available travel times with their selected range, or along their My

Florida 511 customized routes. The app provides the travel time segment name, average travel time, and the average travel speed on each available segment.

The app knows the user's direction of travel and provides travel times in that direction. A compass icon allows users to change the direction of travel, which is useful for users checking conditions while stopped. A list of roadways on the right of the screen allows the user to jump to travel times on that roadway.

Feedback

The Feedback screen allows users to Report Traffic or leave a General Comment on the 511 system. Users select which kind of feedback they want to leave, then select Record. They can record a message up to two minutes long, then play it back, or simply hit Send. If the feedback is about how well the system is functioning or a possible system problem, the information will be sent to a central email address to be reviewed and analyzed by engineers. If the feedback is to report traffic, the application will utilize the caller's GPS location to determine to which District to send the traffic report.

Settings

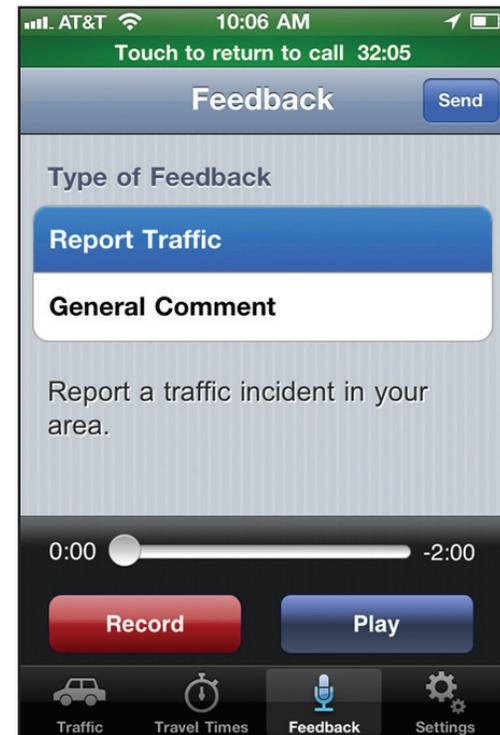
The Settings menu allows the user to customize the app. The user can enter their My Florida 511 primary phone number and link to their account. This allows them to receive information based on their profile and customized routes.

The user can modify the range in which the application will report traffic events, whether to receive construction information, and whether to have the events that are around their location play automatically. They can also choose whether to share their GPS location when providing feedback.

The iPhone app provides a safer way to access traffic information utilizing a mobile device. The technology pushes the information out to the user based on the user's predefined settings. There is no need to dial 511. The system can speak to the user when they near an event.

The new 511 app is another example of how the FDOT ITS Program is succeeding in providing a "safe transportation system that ensures the mobility of people and goods" throughout Florida. It expands our nation-leading system, which includes the interactive voice response, web site, and personalized services, and gives Floridians one more tool to help "Know Before You Go."

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



* * * *

A New Public Safety Focus for FDOT and ITS

By Randy Pierce, FDOT Traffic Engineering and Operations Office

As we strive to help keep motorists moving on the state's highways, we cannot forget that we are part of a team of public servants that must work together to ensure that drivers are safe. An area where the Florida Department of Transportation (FDOT) and public safety personnel both play an increasingly integrated role is in intelligent traffic management. The build-out of FDOT transportation management centers (TMC) over the past two decades has been impressive. It has also meant that the FDOT and public safety personnel can more easily share information and support each other's regional operations as they strive to keep motorists safe. The continuing advancements in intelligent transportation systems technologies have also meant that the liaison between the FDOT and public safety personnel is more efficient than it has ever been.

And yet, there are still areas for improvement in this relationship. When severe weather approaches Florida's coastlines, especially in the form of tropical storms or hurricanes, the FDOT and public safety personnel both respond to implement evacuation plans. However, currently only public safety personnel support the effort necessary to determine when to close coastal road bridges in advance of approaching severe weather. These critical decisions have a significant impact on the safety of motorists, the safety of citizens who may become "captured" by the bridge closure, traffic management, local emergency management, and on socioeconomic issues. Today, in most cases in Florida, these critical decisions must be made based on information gathered by public safety personnel standing watch on a bridge using no more than a handheld wind speed meter.

The FDOT wants to assist public safety personnel with this task and a special pilot project is underway on coastal bridges in District Two that may do just that. The issue to address is how to gather and disseminate accurate wind speed information in real-time without unnecessarily committing public safety personnel to stand watch at bridges—an unsafe activity that ties up the Florida Highway Patrol and local sheriff's office resources—resources that could be used elsewhere during a severe weather event. By instrumenting bridges with wind speed monitors that can transmit an alarm in real-time when a safety wind speed threshold is exceeded or reestablished, the need for standing watch is eliminated.



Accuracy of the wind speed data is a key component of this new project. According to Tom Kochheiser, Emergency Manager for Nassau County (one of the counties that will receive a bridge wind speed monitor), "There is a real need to close bridges as late as possible to ensure that a minimum number of residents are captured on Amelia Island during the storm. Opening the bridges as soon as possible is just as important, so that emergency vehicles and road clearing equipment can get through. These decisions should not have to rely on human factors." Captain Keith Gaston of the Florida Highway Patrol adds, "One of the biggest issues we face is accuracy. We have to train our officers on how to use a hand held wind speed monitor and also teach them to interpret the difference between sustained winds and wind gusts. This is not something we do every day and so there is real concern about the accuracy of the data being collected." By using permanently installed wind speed monitors that report automatically, most of these accuracy issues can be addressed.

The real-time dissemination of the data is equally important. While a sheriff's deputy on scene with a radio may be able to radio the wind speed information to his superiors immediately, the information might not get to regional transportation management personnel who need to begin planning their response or changes to evacuation plans as soon as possible when winds begin to increase or diminish. By disseminating the wind speed data to TMCs that liaison with public safety leadership in real-time, the information is shared among all the stakeholders. An added benefit of the continuous monitoring and dissemination of wind speed data is that surprise wind speed emergency conditions stand a better chance of early detection. Captain Gaston explains, "Another complicating factor is that sometimes high winds may not have been expected by weather forecasters and our officers may not be there to take measurements. The nor'easters that sometimes come through the Jacksonville area have created unsafe

wind conditions on the Dames Point Bridge that have resulted in accidents. Had there been an automatic wind speed reporting device on the bridge, we might have had enough advance warning to get out there and close the roadway to traffic.”

At first glance, such an ambitious project would seem to be cost prohibitive. Indeed, the cost of installation of the wind speed sensors and the communications networks necessary to collect and disseminate the data would seem out of reach. Add on the recurring charges for communications connections with hundreds of bridge sites that may only provide critical information once or twice a year and the costs would seem out of this world. In fact, the solution IS out of this world, but the price tag is not.

The FDOT has received permission from the federal government to use

their satellite-based environmental monitoring service to collect the real-time wind speed alarm data from the bridge monitors. The satellite service is free to qualifying agencies, such as the FDOT, so there are no recurring costs associated with collecting the data. Each wind speed monitor will send its alarm data to a satellite orbiting more than 22,000 miles above the earth. From there it will be relayed to an FDOT satellite ground station. Dissemination of the alarm data to the FDOT TMCs, and then to public safety personnel, will be accomplished via the FDOT statewide ITS network. This unique approach will keep recurring costs to a minimum—requiring just the maintenance costs for the equipment. The only significant project costs are the bridge instrumentation installations. Fortunately, there are many vendors who sell these instruments to the environmental monitoring community so even the equipment costs are reasonable.

There are still project issues to work out and the FDOT is working on them. In particular, the FDOT District TMCs will need to draft a protocol with the regional public safety community on how to handle the alarm data. The FDOT project will deliver the data to the TMCs, but the final liaison with Florida Highway Patrol or the local emergency managers will be done at the District level. In addition to this issue, the wind speed alarm thresholds are still being reviewed and the parameters for determining when to trigger an alarm are being finalized.

Also, the FDOT is considering investigating the installation of a backup ground station. One of the key aspects to ensuring real-time dissemination of the alarm data is to have a robust and redundant stand-alone network that is not reliant on the internet or public communications networks that may fail during severe weather. The current design for disseminating data includes only one ground station. This single point of failure could be eliminated with the installation of a second ground station in another strategic location.

It is hoped that this special pilot project will be on line later this year—possibly during the 2011 hurricane season. After that, the FDOT will continue to work closely with public safety personnel, especially during a severe weather event; only now there will be a new technology available to help enhance the efficiencies of both of their operations and help keep the motoring public even safer at the same time.

For information, please contact Mr. Pierce at (850) 410-5608 or email to Randy.Pierce@dot.state.fl.us.

* * * *



Systems Engineering Practice for SunGuide® Software Development

By Arun Krishnamurthy, FDOT Traffic Engineering and Operations Office

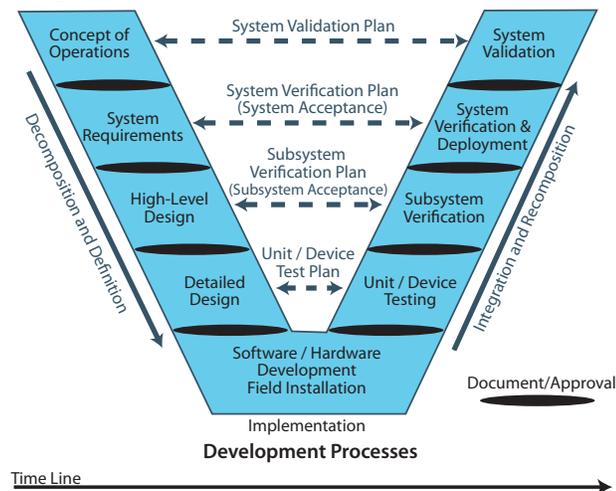
The SunGuide® software system, an advanced traffic management systems (ATMS) software, is used in 12 transportation management centers across Florida. To ensure that this system satisfies the needs of the stakeholders and stays within the budgeted cost and schedule, the Florida Department of Transportation (FDOT) employed the systems engineering process throughout the planning, design, development, and implementation of the software.

The Standish Group, a national research firm, conducted a study in 1994 and found that only 16 percent of all software-intensive system development projects were deemed successful. With software-intensive projects, there are significant risks relating to budgeting, scheduling, and identifying stakeholder needs. Studies performed by the International Council on Systems Engineering (INCOSE) show that investing in systems engineering improved the project cost-performance ratio and increased the potential for project success.

SunGuide was initiated in early 2004 with the vision of having a common standardized ATMS software framework that would allow FDOT Districts and local agencies to pick and choose software modules based on their operational needs. This would allow the Districts and agencies to realize the cost savings from not having to develop their own individual systems; however, they would also enjoy the flexibility of using a specific set of modules that meet their operational needs.

The graphic to the right illustrates the systems engineering process used for SunGuide software development. Stakeholders were involved through all stages of the development lifecycle, starting with the Concept of Operations, then leading to the systems requirements and detailed requirements, and the software design process. This allows several opportunities for the stakeholders to better understand the software concept and to offer suggestions for modifications that better fit their needs.

One of the key approaches in systems engineering is to take a complex problem and break it into smaller manageable pieces that can be comprehended and worked on by different teams. The SunGuide software is significantly complex and during software development, the software system was broken into modules that were individually developed. The modules were then connected to each other within the software system as the software was integrated.



Traceability is a powerful verification tool, ensuring that each systems engineering process fulfills the objectives of the higher level. Every requirement must map to the objectives detailed in the Concept of Operations until the requirements provide complete coverage. Similarly, every test case must map to specific requirements until all requirements are adequately covered. Traceability is used throughout the SunGuide development processes to that end for every SunGuide release; the end product distributed to the users meets the needs of the identified and approved stakeholders from the concept of operations.

Typically, there is a “disconnect” between software engineers and stakeholders for any software development project. The systems engineering process defines the protocols and processes to make this interaction efficient and effective to reduce risk, resolve interpretation ambiguities, and verify that the stakeholders’ objectives are fulfilled. SunGuide development takes advantage of the systems engineering process, which has greatly contributed to making SunGuide a successful project. With a systems engineering approach, more time is devoted to initial management, process, and planning activities. This reduces avoidable and expensive software rework when inadequacies and errors are detected at a later stage in the development process.

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

* * * *

Truck Parking: A Florida Issue, a National Issue

By Richard Easley, E-Squared Engineering, and Paul Clark, FDOT Traffic Engineering and Operations Office

We all see trucks driving down Florida's highways all the time. We depend on those trucks to get our goods to market so we can get milk, diapers, fishing equipment, furniture, etc. In fact, many people take those trucks for granted. We also see all the big truck stops and rest areas along Florida's highways loaded with empty parking spaces for trucks. Some might ask, "So what's the issue with truck parking? Lots of trucks, lots of empty spaces. No issue there." Unfortunately, the truck parking issue isn't that simple. Trucks parked illegally on our nation's highways create dangerous hazards not only for the traveling public, but for other trucks as well. Any state department of transportation in the nation can provide the numbers of avoidable fatalities that occur when vehicles crash into trucks parked illegally on the side of the road.



Example

For a clearer understanding of the truck parking issue, imagine that you live in a small town named 'Yourtown' with 20,000 residents. Yourtown has 20,000 single seat cars and 20,000 parking spaces. One might think that there's no problem – everyone has their own space. Now imagine that 4,000 parking spaces are located on the south side of town, 8,000 are on the east side, and another 3,000 are on the north side of town, with the remaining 5,000 spaces on the west side. Fairly evenly spaced out across town – no problem. Now imagine that tonight the big high school football game is at the high school on the east side of town. Everyone will be there to support Yourtown High. Everyone will drive. Unfortunately, there are only 8,000 parking spaces near the high school to accommodate 20,000 cars! That, in effect, is our national parking issue. As a state and as a nation, we have lots of parking spaces for trucks – in fact, we have more than enough. Our issue in Florida (and elsewhere) is that the heavily traveled

corridors only have a limited number of spaces and every night is a football game in the corridor. In other words, we don't have enough spaces where we need them, WHEN we need them. This usually occurs each night of the week (10 p.m.-5 a.m.) when trucks traveling the corridors need to stop and rest.

USDOT

The United States Department of Transportation (USDOT) realizes this and is trying to figure out a way to utilize technology to address this problem – to match demand with supply. They recognize that driver fatigue plays a large role in truck fatalities and there is a link between tired drivers and inadequate parking spaces. The Federal Motor Carrier Safety Administration initiated and funded the SmartPark initiative and the I-95 Corridor Coalition has also initiated a truck parking intelligent transportation systems (ITS) pilot project. These limited initiatives are looking at identifying empty spaces along major corridors and transmitting that information to truck drivers so they have enough information to make smart parking decisions (i.e. look for parking alternatives other than parking illegally on freeway shoulders and ramps).

FDOT

In an effort to be proactive, the Florida Department of Transportation (FDOT) has initiated its own truck parking study. This project has the following description:

This study seeks to understand the truck parking problem in Florida, determine the supply and demand characteristics for commercial truck parking, assess technology that can be used to improve parking management, and deploy at least one test location for a smart parking system for trucks to increase operational efficiency of commercial drivers and reduce trucks parking on shoulders, crashes due to driver fatigue, and unnecessary diesel emissions. The proposed study will be conducted in two phases: Phase-1 and Phase-2.

FDOT is sponsoring this effort and has contracted with Florida International University (FIU) to conduct the study. As stated in the project description above, two key objectives are assessing the extent of Florida's truck parking problem (and the locations along the corridors) and identifying the appropriate technology(s) that can collect and transmit key information to the drivers. The study began in April 2011 and both phases should be complete in 18 months.

ITS Technology

Truck parking technology strategies are broken down into two basic scenarios:

1. Count entrances and exits to the facility and
2. Count space occupancy within the facility.

Both concepts have been attempted around the world. A cost-effective solution without flaws has yet to be discovered. While the concept of utilizing ITS for automobile parking has been proven and is in use in almost every major city in the world, the geometrics for truck parking are highly variable and make utilizing similar technologies impractical. With regard to the concept of counting entrances and exits of trucks, depending upon the geometrics of the facility, cars have entered truck parking areas, realized they were in the wrong place, and backed out of the entrance zone; this gives false counts as two trucks when none are present. Also, trucks can sometimes drop a trailer, leaving it, and exit the facility to get another load.

Meanwhile, the counting concept indicates a newly empty space (that has a trailer parked in it). With regards to the counting space occupancy concept, the cost and maintenance associated with placing counters at each space (typically in-pavement applications) is very expensive. Considering these factors, combined with trucks that may be very long or very short or very tall or improperly parked (sitting atop two sensors), and combined with a parking space geometry that may have three trucks in one row, it quickly becomes very complicated to get and maintain accurate space counts.

The Endgame

Ultimately, Florida plans to identify technologies that can provide some level of success for a given parking facility's geometrics. Florida will utilize existing ITS communications strategies to inform drivers of real-time parking availability as well as predictive parking availability, e.g., "It's 7 p.m. now and there are 40 spaces available at rest area 27, but at 11:30 p.m. there may be only three spaces available." Ideally, Florida's system will be smart enough to provide real-time data, predictive data, AND feasible parking alternatives to parking illegally and endangering the lives of the traveling public. Existing tools in the 'truck parking solution toolbox' include (but aren't limited to) public rest areas, truck weigh stations, and commercial truck stops. Also in that toolbox are various technologies, including loop detectors, video analytics, infrared counters, license plate readers, radio frequency identification, and others.

For information, please contact Mr. Clark at (850) 410-5607 or email to Paul.Clark@dot.state.fl.us.

* * * *

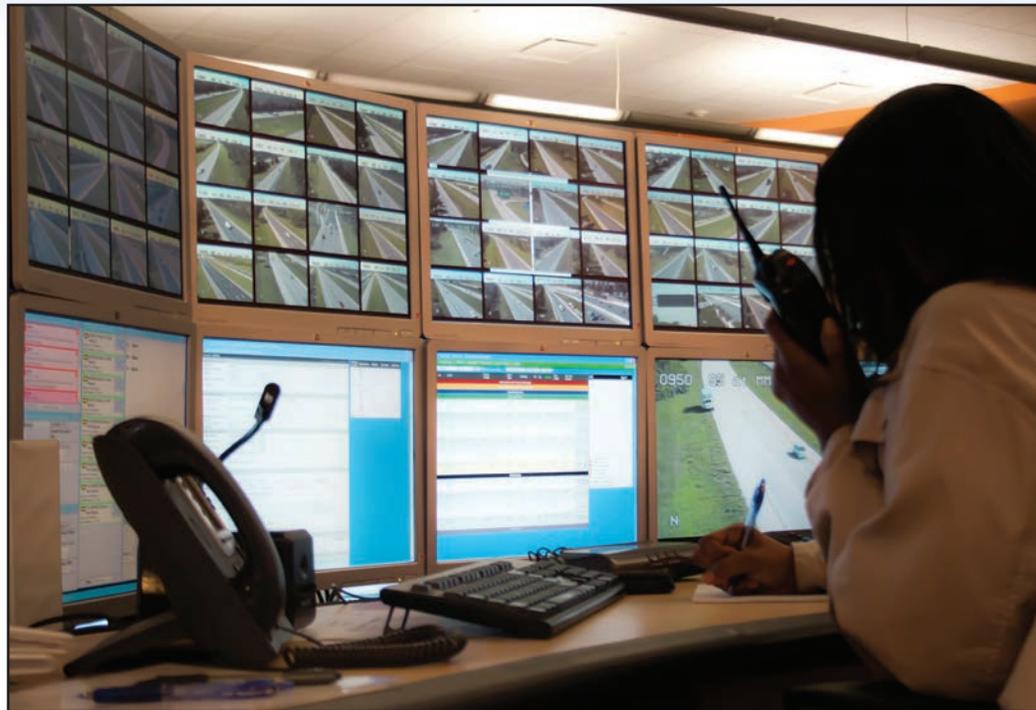
District Four Upgrades Operator Consoles for Maximum Video Capability

By Daniel Smith, FDOT District Four

The Florida Department of Transportation (FDOT) District Four Intelligent Transportation Systems (ITS) Program expanded the capacity for viewing streaming closed-circuit television (CCTV) cameras in the Broward Transportation Management Center (TMC) control room. The capacity upgrade was completed by modifying operators' consoles rather than the video wall. The cost was substantially less than trying to expand the video wall and did not require any changes to the control room size or layout. The result of the upgrade gives operators the ability to have 64 streaming CCTV images at each console at all times and to spot disruptions to traffic faster than viewing only one camera at a time.

In the last year, the Broward TMC operations staff became responsible for managing an additional 116 new CCTV cameras. This change comes from the completed ITS deployment on the Treasure Coast and taking over Palm Beach operations on nights and weekends.

Since the Broward TMC opened, operators have been working at consoles with five monitors. CCTV cameras were accessible at each desk and each operator was responsible for reviewing them one-by-one. The cameras for the most active areas were posted on the video wall at the front of the room in order to easily identify traffic incidents. This method worked while the TMC was only managing 100 cameras, which is the capacity of the portion of the video wall assigned to FDOT (the wall is shared between FDOT and Broward County Traffic Engineering). As soon as the Treasure Coast and Palm Beach cameras were ready for use, the operations staff needed to develop a new



method to manage all of the additional images. Knowing that in the coming year, FDOT is adding more cameras in Palm Beach made it important to come up with a scalable solution.

Between the operations, management, and information technology staff, a video processing unit was developed. The technical specifications of the unit make it capable of handling 32 live streams of video. In order to accomplish this, each console has two video processing units to run the video streams, a central processing unit for the SunGuide® software, and a central processing unit for regular computing. The consoles are now in use, having been modified with four new monitors for each operator to view a total of 64 cameras simultaneously, plus an additional monitor for the operators to customize based on the incident or zone they are managing. In total, each console consists of four processing units and ten monitors.

The biggest benefit of this change is directly to TMC operators. At a glance, they are able to spot changes in traffic flow, possibly saving minutes before having reached that particular camera during a normal check. The long-term benefit of implementing console-based mini-video walls is that the main video wall is now available for other operational uses, such as displaying speed data and device status profiles.

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

* * * *

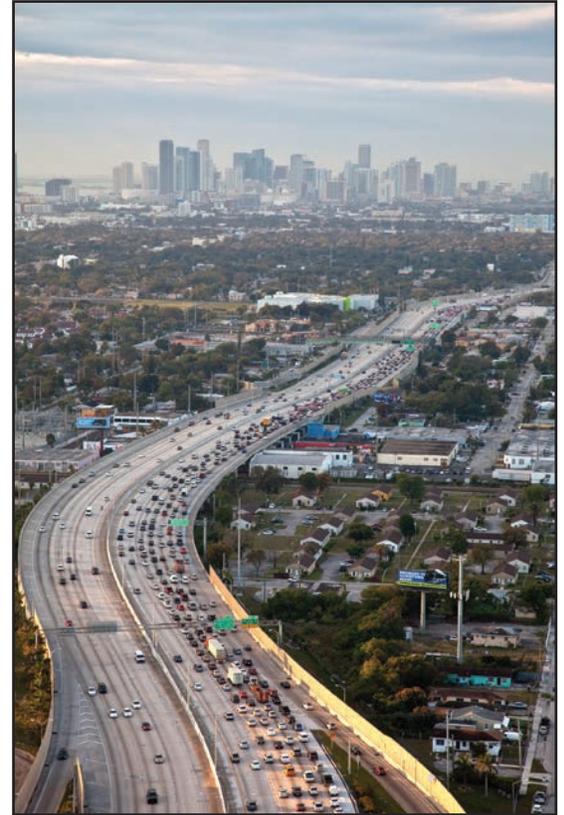
District Six Wraps Up Successful 2010-2011—Achieves Best-Ever Road Clearance Time

By Javier Rodriguez, FDOT District Six

During fiscal year 2010-2011, the Florida Department of Transportation (FDOT) District Six Intelligent Transportation Systems (ITS) Program continued enhancing its operations and expanding services, achieving a best-ever average roadway clearance time of 30 minutes while handling about 10,000 lane blockage events.

To reach that 30-minute average, transportation management center (TMC) staff focused on improving operational efficiency by creating and launching an all-inclusive software called Operations Task Manager (OTM). OTM created specific service modules and integrated them into one easy-to-use interface. Doing so allowed TMC operators to decrease the amount of time spent navigating different programs, allowing them to be more proactive with incident detection and management. A four percent increase in total events and a 44 percent increase in lane blockage events as compared to last year is evidence of enhanced efficiency. FDOT's Road Ranger service patrol program also played a tremendous role in these incident management efforts by providing nearly 70,000 assists to stranded motorists and incident responders during fiscal year 2010-2011.

Aside from successfully achieving its incident management goals, the District Six ITS Program's high-occupancy toll lanes project, 95 Express, continued providing South Florida motorists with a reliable option when traveling on I-95 during the morning and afternoon peak periods. The northbound portion of the facility averaged speeds at or above 45 miles per hour (mph) 92.6 percent of the time during the afternoon rush-hour; while the southbound portion averaged speeds at or above 45 mph 99.6 percent of the time during the morning peak period. Motorists using the general purpose lanes during peak periods also experienced a benefit compared to average peak period speeds before the project's implementation. Before 95 Express, general purpose speeds during peak periods were 18 mph and 20 mph in the northbound and southbound facilities, respectively. During fiscal year 2010-2011, these speeds rose significantly to 41 mph and 50 mph, respectively.



ITS staff also set their sights on optimizing the TMC's travel information dissemination efforts during the fiscal year. TMC management coordinated with local agencies, construction project teams, and Monroe County to ensure that TMC operators would be aware of all events that would possibly affect traffic. As a result, TMC operators deployed nearly 71,300 dynamic message sign (DMS) messages, a 32 percent increase during fiscal year 2010-2011. The team, working in conjunction with the Miami-Dade Expressway Authority and FDOT District Four, also launched travel times to Miami International Airport from I-95 and I-195 as well as travel times to Broward County on I-95, increasing the total number of posted travel time messages in District Six to 38, covering 12 destinations.

These achievements could not have been reached without the ITS team's dedication to continue enhancing and optimizing all of the ITS Program's services. This attitude is helping to ensure that South Florida's transportation system continues to be more reliable, efficient, and safer for the thousands of motorists traversing District Six's roadways on a daily basis. The team is looking forward to growing from the accomplishments made this year and achieving greater milestones to benefit the public!

For information, please contact Mr. Rodriguez at (305) 470-5341 or email to Javier.Rodriguez2@dot.state.fl.us.

* * * *

ITS Florida: Don't Miss Out on Your Calendar

Pick up your free ITS Florida 2012 Best of ITS Photo Contest Calendar at World Congress



ITS Florida is located in the ITS State Chapter Pavilion, booth number 2057.

Inside the TERL

By Jeff Morgan, FDOT Traffic Engineering and Operations Office - TERL

Florida Statute 316.0745 - Uniform Signals & Devices requires the Florida Department of Transportation (FDOT) to evaluate and certify all official traffic control signals and devices before their purchase and installation in the state of Florida. The FDOT Traffic Engineering Research Laboratory (TERL) supports this mandate, which ensures only a safe and uniform traffic control system is implemented in the state of Florida, by evaluating all traffic control signals and devices introduced into the state.

Following is a look Inside the TERL at recent improvements that increase the effectiveness and efficiency of the lab.

Product Approval Process

The approval processes and procedures used at the TERL have been revised and streamlined to maximize efficiency and reduce product evaluation time. Evaluation activities continue to be standardized and aligned with industry best practices for product certification bodies (such as those prescribed by the ISO – the International Organization for Standardization Guide 65:1996). This standardization of the TERL's operations is one step in the lab's continuous improvement efforts.

Product Specifications

Development and refinement of traffic control product specifications used to perform evaluations is a routine effort at the TERL. Specifications maintained by the TERL are contained in various FDOT documents, including the *Minimum Specifications for Traffic Control Signals and Devices*, the *Standard Specifications for Road and Bridge Construction*, and the *FDOT Design Standards*. Major updates to these specifications are regularly required due to rapidly changing technology. To manage and track the evolution of these standards, the TERL utilizes an electronic document control system that automates review cycles by multiple internal stakeholders. Automated workflows in the document control system help productivity and provide excellent document version control.

Testing Facilities

The TERL has literally been under construction over the last few years. The lab's research and development and certification lab buildings have been completely remodeled to make activities performed in these building more streamlined and cost efficient. This renovation included the establishment of TERL's transportation management center (TMC) and multiple outdoor test areas for large equipment such as dynamic message signs, portable changeable message signs, and other devices. The lab's span-wire test intersection has been



renovated and a mast-arm intersection has been added. These intersections allow TERL personnel to install and evaluate a variety of traditional and new traffic control products in a real-world atmosphere that is also a safe and controlled environment. A communications infrastructure connects the equipment locations throughout the TERL campus and allows system integration testing from the TERL

important program now and in the future.

SunGuide® - Florida's Statewide Traffic Management Software

The TERL continues to be a host facility for testing of SunGuide®, the software used in TMCs throughout the state of Florida. Release 5.1 is the latest version recently tested at the TERL.

Ready for New Challenges

The TERL remains committed to serving its customers, which include FDOT District offices, local transportation agencies, and Florida's traveling public. The lab, with its commitment to continuous improvement of its evaluation processes and testing facilities, is well-positioned to reach even higher levels as it continues evaluating, listing, and maintaining over 1,000 transportation products from over 115 vendors on the APL.



TMC and lab areas to field equipment installed outside. Though smaller in scale and quantity than a typical TMC, the TERL system architecture closely simulates actual field deployments and operations.

Similar to products, early detection and correction of software nonconformities before software deployment is critical to ensuring safety and quality of traffic systems installed in the state of Florida.

This continuous improvement philosophy embraced by the TERL allows Florida's central testing facility to accomplish its paramount goal — improving the quality of products proposed and submitted for use in Florida's transportation system. The benefits of a central test lab also provide early detection and correction of product non-conformity issues, thus lessening the risk of problems appearing

New Products

Evaluation of a full-size, walk-in full-color dynamic message sign (DMS) manufactured by Ledstar is now complete. The sign by Ledstar is the first full-color walk-in sign to be approved and listed on the Approved Product List (APL). Additional signs by other manufacturers have been submitted and are currently under evaluation.



The TERL has recently increased its involvement with the USDOT connected vehicle program by supporting activities related to pilot projects being deployed in Florida. TERL staff also participate in forums working to establish future certification programs for connected vehicle devices. Florida is excited to support this

Facilitating Product Purchasing

The TERL, in collaboration with the FDOT Procurement Office, established and continues to maintain a statewide contract for all APL products. This allows Florida end-users immediate access to competitive pricing, negating the requirements for individual quotes. This pricing is fixed for up to three years. The last contract update took place this past May 2011, and is on a 6 to 12 month rebid cycle.

before products are deployed in the field, which is critical to ensuring the safety, quality, and cost-effectiveness of traffic control products installed in the state of Florida.

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

* * * *

The Importance of Public Feedback

By Gene Glotzbach, FDOT Traffic Engineering and Operations Office

You may not always like the feedback you get, but, from a public agency standpoint, it is valuable to help determine how well you are doing—particularly for systems that interface directly with the public. No matter how diligent and thorough your process is for developing your system, you never know how well it will be received until it goes public.

The Florida Department of Transportation's (FDOT) next generation 511 system, which replaced the five regional 511 systems, was no exception. The next generation 511 system went through an extensive design process with numerous design reviews conducted by the FDOT along with acceptance testing and an independent verification and validation process. In addition, the FDOT hired a marketing firm to promote this 511 system to the public in order to get their perspective on the system design.

Even though the FDOT went through a rigorous design process, from a user's perspective, there were still issues with the new system once it launched. A significant portion of the issues reported to the FDOT by the system's feedback function were from users confusing the operation of the new system with the old, replaced regional systems. Feedback from the users who misused the new system was not unexpected and over time the public caught up with the learning curve and this type of feedback died down. A small number of callers that left feedback found and reported legitimate issues with how the system operated. Based on feedback from callers reporting both perceived and legitimate issues, the FDOT made changes to give callers a better experience with the system. This feedback from the public was the primary source of information on how well the new 511 system was working and was an important cog in the process to improve the system.

Based on caller feedback, the FDOT, through LogicTree (the system developer), made improvements to call flows, voice prompts, and recognition rates. Initial feedback suggested that, since 95 percent of the calls to the system are made in English, the system should assume the caller's want to operate the system in English. Based on feedback, callers wanted to be able to get past the opening greeting quickly and get to traffic conditions. System call flows and prompts were modified so that callers could ask for a facility as soon as the opening greeting began, allowing the caller to jump immediately to the information needed. Unless Spanish is specifically requested, the system assumes English.

Additional changes were implemented based on common problems callers had with the new 511 system. These problems are not system malfunction issues, but issues of misuse by the caller. The FDOT directed LogicTree to update the error handling process, so that the system recognizes these misuse issues as legitimate commands and puts the caller into the system at the spot where they had intended to go. Over time, the system has been fine tuned to boost up its recognition rates.

The new 511 system has been significantly improved based on caller feedback. Listening to some of the early feedback, we could have discounted the value of the feedback as some callers leaving messages got quite abusive with their language. However, we took the position that even abusive feedback was beneficial, as it indicated there was a strong disconnect between some callers and the system. Utilizing call recordings, the FDOT and LogicTree were able to determine the callers' problems and, if warranted, make adjustments.

The feedback received by the FDOT has been the catalyst in making the Florida's traveler information system one of the better systems in the country. Feedback is a necessary ingredient for all successful systems.

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



* * * *

Announcements

Visit FDOT in the Mobility Village

The Florida Department of Transportation (FDOT) is presenting the connected vehicle initiative in the Mobility Village of the Technology Showcase. FDOT will demonstrate the features and operational benefits of the SunGuide® software connected vehicle-related enhancements. FDOT will provide a glimpse into the District Five SunGuide software system, including vehicles with on-board equipment passing roadside equipment on I-4, International Drive, and a few on SR-528 and CR-423. The audience will gain an appreciation for how drivers and traffic management operators in the Orlando area can leverage this technology to promote safety and mobility.



FDOT Traffic Engineering and Operations Mission and Vision Statements



* * * *

FDOT Contacts

District 1

L.K. Nandam, DTOE
Chris Birosak, ITS
FDOT District 1 Traffic Operations
PO Box 1249
Bartow, FL 33831
(863) 519-2490

District 2

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

District 3

Jared Perdue, Interim DTOE
Chad Williams, ITS
FDOT District 3 Traffic Operations
1074 Highway 90 East
Chipley, FL 32428-0607
(850) 638-0250

District 4

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

District 5

Richard Morrow, DTOE
Michael Smith, ITS
FDOT District 5 Traffic Operations
719 S. Woodland Blvd., MS 3-562
DeLand, FL 32720-6834
(386) 943-5310

District 6

Omar Meitin, DTOE
Rory Santana, ITS
FDOT District 6
1000 NW 111th Avenue, MS 6203
Miami, FL 33172
(305) 470-5312

District 7

Gary Thompson, DTOE
Chester Chandler, ITS
FDOT District 7 Traffic Operations
11201 N. McKinley Dr.
Tampa, FL 33612
(813) 615-8600

Florida's Turnpike Enterprise

John Easterling, DTOE
Eric Gordin, ADTOE
Florida's Turnpike Enterprise
PO Box 9828
Ft. Lauderdale, FL 33310-9828
(954) 975-4855

Mark Wilson

State Traffic Engineer
(850) 410-5600

Elizabeth Birriel

Deputy State Traffic Engineer - ITS
(850) 410-5606

Trey Tillander

Deputy State Traffic Engineer - Systems
(850) 410-5617

Paul Clark

Deputy State Traffic Engineer - Incident Management
and Commercial Vehicle Operations
(850) 410-5607

Fred Heery

Deputy State Traffic Engineer - Operations
(850) 410-5419

Physical Address:

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

Mailing Address:

Burns Building
605 Suwannee Street
MS 36
Tallahassee, FL 32399

* * * *

* * * *