FDOT's Monthly ITS News

SUNGUIDE®

DISSEMINATOR

Truck Parking: A Florida Issue, a National Issue

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.

Inside This Issue

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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.

This article was provided by Richard Easley, E-Squared Engineering, and Paul Clark, FDOT Traffic Engineering and Operations Office. For information, please contact Mr. Clark at (850) 410-5607 or email to Paul.Clark@dot.state.fl.us. To reach the FIU Project Manager for this initiative, contact Mehmet Emre Bayraktar, Ph.D. at (305) 348-3174 or by email at BayrakM@fiu.edu.

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ITS—Going Green

The Florida Department of Transportation (FDOT) Traffic Engineering and Operations Office, Telecommunications Section operates and maintains a statewide microwave network. Consisting of over 70 stations, this network allows traffic information to flow between District transportation management centers, the State Emergency Operations Center, and the Florida's Turnpike Enterprise operations center. The network also supports the operation of the roadside emergency callbox system, with each request routed to the nearest Florida Highway Patrol dispatch center for immediate and appropriate response.

As you would expect, this network utilizes sophisticated computers, radios, and processing equipment to move the information from origin to destination. This equipment requires a carefully controlled environment, safe from typical Florida environmental factors, such as high temperatures, humidity, lightning, hurricane winds, and severe rainstorms. FDOT engineers have developed an integrated equipment building design, which supplies the environment needed to ensure long equipment life and protection from nature's elements. The building supplies a complete, integrated, and stable environment, isolated to the maximum extent possible. One prime requirement is a stable and humidity-controlled air temperature. This ensures proper operation of the various electronic systems.

With many of the installations over 25 years old, the air conditioning and heating units were at or past their useful life, in a word—obsolete. Current environmental regulations mandate the use of new refrigerant fluids intended to minimize the deterioration of the ozone layer.

After considering the problem, the ITS engineers sought a solution to provide improved efficiency, reliability, and better operation. A specification was developed and new units were obtained through the bid process. The units use R 410A refrigerant, a mixture of difluoromethane and pentafluoroethane. This combination is not ozone-depleting. Two stage, rotary scroll compressors are employed for smooth operation, low-impact starting, and long life.

The ITS maintenance contractor, Transcore, was tasked to install these new units. Following a detailed specification, Transcore completed the installations with minimum impact to ongoing operations. Transcore employees supplied all equipment and personnel, monitoring each step of the procedure. Old units were carefully removed and transported to recycle centers for proper handling of the R 22 refrigerant and all other useful materials.

A major benefit of the new units is a decrease in operating cost. While still preliminary, short-term current measurements indicate that electrical power usage will decrease by at least 33 percent. The cooling and heating cycle is the highest component of the electricity used in equipment building operation. These savings will quickly help to offset the cost of the replacement equipment.

A small step accomplished, but a very important part of FDOT's overall operation. Little-by-little, going green helps us all to protect our environment and reduce the impact of providing better service to the motoring public.

This article was provided by Randy Pierce, FDOT Traffic Engineering and Operations Office. For information, please contact Mr. Pierce at (850) 410-5608 or email to Randy.Pierce@dot.state.fl.us.

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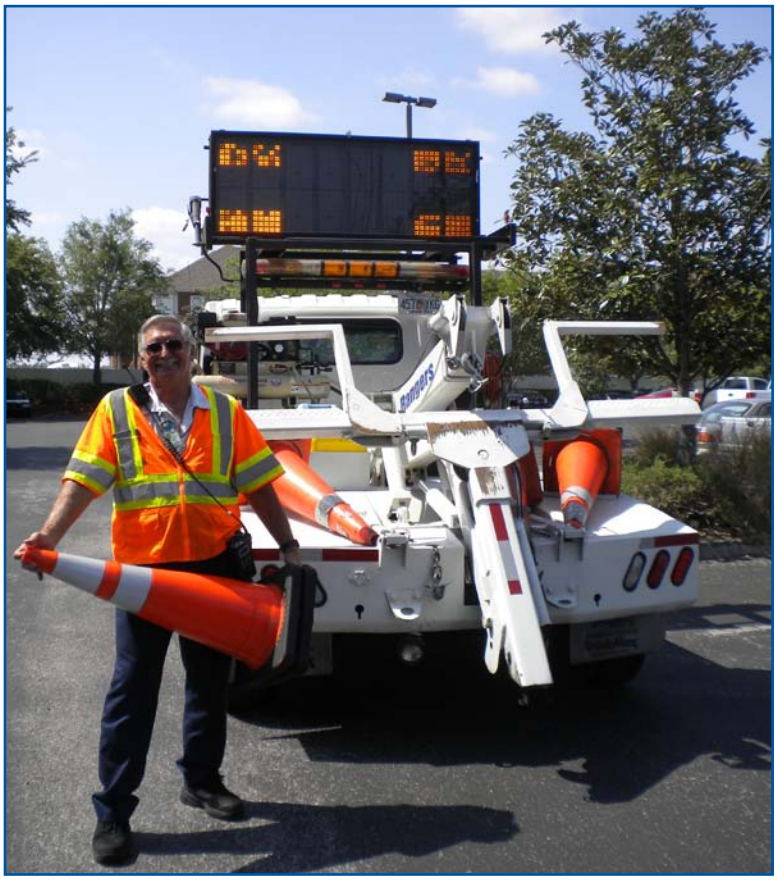
Ten Questions—More or Less: Tampa Bay SunGuide® Road Ranger

In last month's SunGuide® Disseminator, we brought you the first installment of this three-part series featuring high-profile operations personnel working for District Seven's Tampa Bay SunGuide Intelligent Transportation Systems (ITS) Program. In this month's SunGuide Disseminator, we bring you the second installment—a one-on-one discussion with Road Ranger Mark McBride of Anchor Towing, Inc. Our "ride along" interview with Mark gives you an interesting perspective of the ebb and flow of a Road Ranger's day out on Tampa Bay's highways. Next month, we conclude our three-part series with a discussion on maintaining all that delicate ITS equipment in the face of all sorts of calamities—natural and man-made. The interviews in this three-part series highlight the critical contributions that our operations personnel make every day to ensure the successful operation of District Seven's Tampa Bay SunGuide ITS Program.



Ten Questions—More or Less

1. Q: Here's an easy warm-up question – how long have you been a Road Ranger and how many road miles have you logged?

   A: I've been a Road Ranger for over ten years and have driven over half a million miles, easily.

2. Q: Your Road Ranger truck is in constant motion, literally 24 hours-a-day, day after day. What is the preventive maintenance schedule for your truck?

   A: About every 7,000 miles it gets an oil change and maintenance. I wash my assigned truck daily.

3. Q: Besides maybe an occasional ham sandwich, what other equipment and tools and such do you carry onboard your Road Ranger truck?

   A: I don't carry ham sandwiches. We carry everything necessary to do tire changes, fuel and water for motorists, and all the necessary equipment for MOT (maintenance of traffic).

4. Q: It must take a while to become a certified Road Ranger. What training coursework and/or apprenticeship got you ready to be a Road Ranger?

   A: Originally, when I started we had 40 hours OJT. I have certification in advance MOT and completed the Road Ranger MOT training course.

5. Q: Is there something on a vehicle that just seems to break down more often than any other thing?

   A: The majority seems to be flat tires and running out of gas.

6. Q: How prevalent is alcohol or drug use by the drivers that you have encountered on the freeways?

   A: It's a very small percentage; the biggest distraction is cell phones.

7. Q: What is the best advice about vehicle maintenance you can offer to a traveler to help him or her have a safer trip?

   A: Have regularly scheduled maintenance on your vehicle and check the air pressure on your tires.

8. Q: How important is the Road Ranger program to the traveling public?

   A: I never have a day that someone hasn't thanked me for the assistance and told me how they want the program to be continued. Also, our assistance at accidents helps prevent secondary crashes and keeps the traffic moving; we also provide MOT for fire/rescue and law enforcement vehicles keeping them safer.

9. Q: Do you ever get letters from the travelers you have assisted?

   A: Actually, I have. About three years ago, I found a book bag at the side of the road that belonged to a young lady at the university. It contained about $3,000 worth of brand new books she had bought the day before. We found out who she was and returned them and she wrote a very nice thank you letter. I also receive stacks of positive comment cards from motorists.

10. Q: What elements of our freeway system, such as signage, pavement, ITS, drainage, etc., work really well? What parts do not?

    A: The DMS (dynamic message sign) boards are terrific. I think that's one of the best things they have going. Speed limit signs do not work well; not because they are not out there… nobody pays any attention to them.

11. Q: And here's the wrap-up question – are men or women better drivers?

    A: Yes. (I've been married a long time, I'm not dumb).

This article was provided by Chester Chandler, FDOT District Seven. For information, please contact Mr.Chandler at (816) 615-8610 or email to Chester.Chandler@dot.state.fl.us.

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District Four Expecting a New Variable Speed Limit System

Florida Department of Transportation (FDOT) District Four has initiated a project to deploy a variable speed limit system (VSLS) along SR-25/US-27/Okeechobee Road near the South Broward High School in Broward County. The purpose of this system is to inform motorists of adjustments to the existing SR 25/US27 speed limits on school days, during which time the school's flashing school beacons (FSB) will be in operation, and also for periods of school activities (e.g. sporting events) associated with West Broward High School. At other times, the VSLS will display the normal speed limit of 65 MPH.

Presently, West Broward High School uses FSBs along SR25/US- 27 to alert motorists of the 15 MPH school zone speed. Approaching the school crossing, fixed signs display speed limits of 55 MPH then 50 MPH, reduced from the normal 65 MPH in affect along SR25/US27. These lower speed limits are in effect at all times, even though the FSB hours are typically on less than two hours in the morning and two hours in the afternoon and only on school days.

By using intelligent transportation systems (ITS) technology, an active "smart" system can provide the flexibility to control speeds as situations dictate, thereby optimizing traffic flow rather than imposing the same fixed speed for all conditions.

This system will include closed-circuit television cameras (to monitor the VSLS devices and traffic flow for the purposes of verifying proper VSLS operation) and related communications equipment. The FDOT District Four SMART SunGuide® Transportation Management Center in Fort Lauderdale will operate the VSLS.

This article was provided by Daniel Smith, FDOT District Four. For information, please contact Mr. Smith at (954) 847-2785 or email to Daniel.Smith@dot.state.fl.us.

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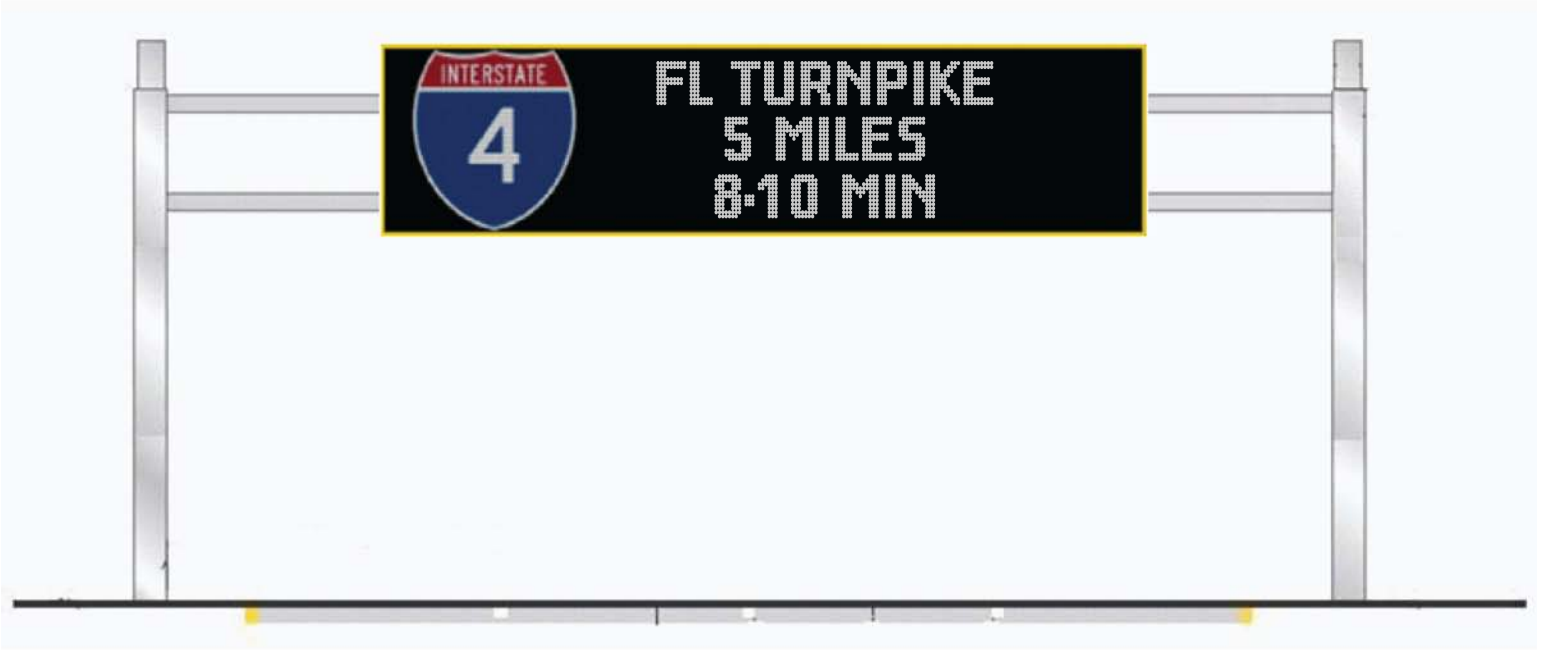
Benefits of Color Dynamic Message Signs and Their Integration into SunGuide®

Studies reveal that color dynamic message signs (DMS) have significant benefits over the traditional single-color (amber) DMS. Two of these benefits are increased ease of message recognition and the ability to provide additional information using pictures that traditionally cannot be conveyed due to space restrictions.

In a study by the University of Rhode Island, titled "Employing Graphics to Aid Message Display on Dynamic Message Signs," researchers found that motorists show a definite preference for messages with Manual on Uniform Traffic Control Devices (MUTCD) graphics over those that contain only text. As a part of this study, participants viewed simulated video of messages from a motorist's point of view. In this test, participants identified the content of a message with only text in an average of 20 seconds, while a message with a graphic took an average of 14 seconds. This indicates that the color DMS allows motorists to comprehend messages sooner and allows them to focus more time on the roadway, hence increasing safety.



Color DMSs allow traffic management centers (TMC) to format DMS contents differently by adding graphics. For example, when displaying travel times, TMC staff can use roadway shields to represent the current roadway and the travel time to a destination.

In order to display graphics, the resolution of the color DMS is critical. Resolution is not so crucial with single-color DMSs as they only displayed text in which quality is not easy to distinguish. However, resolution plays a significant role in the choice of DMSs displaying graphics. One of the common images displayed on the color DMS is the roadway shield. It is important to ensure that the resolution is sufficient to capture details on the shield. If the resolution of the DMS is not high enough, the image will not be easy to discern and could result in the driver spending more time trying to understand the information being conveyed through the graphics.

SunGuide® software, Florida's statewide traffic management center software, will be modified to support color DMS. One of the key modifications will include software compliance with the most recent version of National Transportation Communications for ITS Protocol (NTCIP). SunGuide software is currently compliant with the earlier version of NTCIP that was used by amber DMS. The software will also support creating templates for commonly occurring event types so the TMC staff does not have to design messages for each event. This will help TMC staff to disseminate information quicker and save time.

The Florida Department of Transportation (FDOT) has been deploying intelligent transportation systems for several years and some of the DMSs are reaching their end-of-life. FDOT will need to replace the existing DMSs and the color DMS will be an alternative for consideration. A few regions in Florida, including Orlando, Fort Lauderdale, and Miami, are deploying this device in the near future.

This article was provided by Brian Ritchson, FDOT Traffic Engineering and Operations Office. For information, please contact Mr. Ritchson at (850) 410-5579 or email to Brian.Ritchson@dot.state.fl.us.

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District Six ITS Web Site Proves an Effective Public Outreach Tool

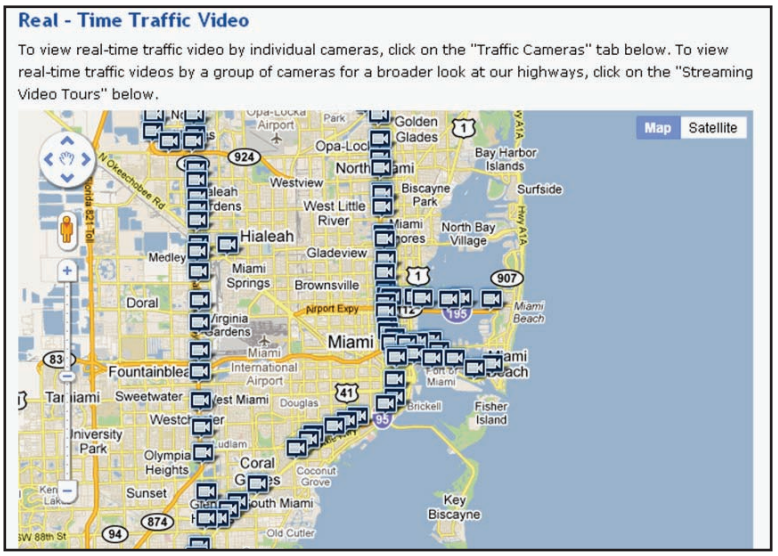
It has been more than a year since the Florida Department of Transportation (FDOT) District Six Intelligent Transportation Systems (ITS) Program launched its revamped ITS web site, SunGuide.org. Since that time, the site has grown to become a more robust tool used for public education and outreach, team member recognition, and even as a way to assist South Florida motorists with trip planning.

When it first launched in October 2009, the site served mainly as a hub for general program information. Staff updated the home page with the latest news about program events, projects, and activities. The site also offered reports on the program's performance, photo galleries, and a feature for public feedback and questions.

Within the next year after launching—at little to no cost to FDOT—the transportation management center (TMC) staff steadily added several new enhancements to increase the site's effectiveness and improve overall user experience.

One of the most important features added was streaming of the District's live traffic videos directly to the web site. The live cameras allow South Florida motorists to view real-time traffic conditions before setting out on their trip and empowering them to make better route planning decisions for their commute. This can potentially lead to reduced congestion, which leads to improved safety and reduced travel times. Currently, more than 200 District cameras in both Miami-Dade and Monroe Counties are available for live viewing in the "Traffic Videos" section via an easy-to-use Google® map. The traffic videos section has also been used as a resource on web sites for other FDOT projects, such as the State Road (SR) 826/SR 836 Interchange Reconstruction and the Port of Miami Tunnel Projects.

Sunguide.org features the latest District Six ITS Program information.



The streaming video page on SunGuide.org is a great resource for area drivers.

Additionally, in an on-going effort to keep the public informed about the latest program news, staff added an e-mail notification alert option, a really simple syndication (RSS) feed, expanded the TMC Reports section, and added a TMC calendar of activities page. The e-mail alert notifications allow users to stay informed about the latest news by signing up to receive weekly, automated e-mails directly from the site. The e-mails contain the latest content posted from the previous week. RSS feeds offer a similar service. RSS is used by many internet-users to keep track of web sites they are interested in without having to visit each one individually. By creating an RSS feed, any user can add SunGuide.org to his or her RSS reading application and stay up-to-date on all of the new additions to the web site. TMC staff also expanded the reports section on the site to provide more detailed information on the ITS Program's monthly performance; the calendar of events displays a log of all TMC-related activities. The combination of these features are helping keep the public, partner agencies, and industry professionals alike informed about the program's performance and latest activities.

Finally, the awards section serves to recognize Road Ranger of the Month award recipients and also displays the honors received by District Six for successful projects and accomplishments. This section was created to offer motorists a more personalized look at the Road Rangers who are providing roadway assistance services.

The District Six ITS team is always looking for new ways to enhance the web site and continue to make it a resourceful tool for South Florida motorists. Currently, the team is researching ways to enhance the accessibility of the web site and expand its reach.

This article was provided by Javier Rodriguez, FDOT District Six. For information, please contact Mr. Rodriguez at (305) 470-5341 or email to Javier.Rodriguez2@dot.state.fl.us.

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District One Expands Intelligent Transportation Systems into Charlotte County!

Local television reporters camped alongside Interstate 75 (I-75) to cover the launch of the Florida Department of the Transportation's (FDOT) expansion of intelligent transportation systems (ITS) into Charlotte County on Friday, March 25, 2011. At exactly 12:05 p.m., operators at the Southwest Interagency Facility for Transportation (SWIFT) SunGuide® Center activated the first travel time messages onto the highway's newly installed dynamic message signs (DMS). The "go live" moment was transmitted on live television throughout southwest Florida.

Local media aired live coverage of ITS activation in Charlotte County.

This moment also marked the culmination of more than three and a half years' worth of work for the FDOT District One traffic operations, ITS, and construction offices. Consultants and FDOT staff worked closely together to get the project live and operational. All were particularly pleased that the field component installation was completed with minimal effects to drivers using I-75.

Once the project was fully operational, benefits to the community were immediate

Truck driver, Humberto Sanchez, is interviewed by local television station on launch day.

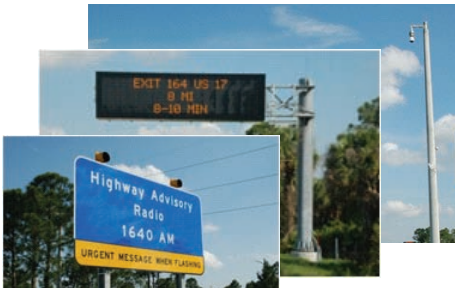
"I was having trouble with my truck, so I was trying to find the next exit to find some water," said Humberto Sanchez, a truck driver who transports sugar cane along I-75 every week. "The sign told me it was about eight minutes to the next exit, so it definitely helped me out."

This situation shows precisely why ITS is valuable to drivers. And, communicating reliable information about conditions on the interstate will only continue to benefit motorists. District One's ITS Program now provides real-time traffic management services on I-75 in Collier, Lee, and Charlotte Counties that help improve highway commute times, safety, and mobility.

This improvement is due primarily to 30 new closed-circuit television (CCTV) cameras installed between mile markers 148 and 172. The new cameras are providing operators with the resources needed to monitor traffic and clear incidents more quickly and efficiently.

Additionally, Charlotte County's $9.8 million project installed 49 roadway sensors that give operators continuous traffic condition information to improve event detection efforts. It also added ten DMSs, one roadway weather information system (RWIS), and five highway advisory radios to alert drivers about traffic or weather-related information that may affect their trip.

In total ITS in southwest Florida's three counties now includes 36 DMSs, 109 CCTV cameras, 160 roadway sensors, and three RWIS that cover 123 miles of I-75. The SWIFT SunGuide Center's latest report (March 2011) shows an improvement in operational performance with 192 more events managed, 507 more DMS messages posted, and a five-minute reduction in event duration times compared to the previous month.



ITS field components improve highway mobility and increase safety.

FDOT looks forward to the next project that further enhances regional traffic management efforts to keep southwest Florida moving. In 2012, FDOT will start a project that takes ITS on I-75 into Sarasota and Manatee Counties.

This article was provided by Debbie Tower, FDOT District One. For information, please contact Ms. Tower at (239) 461-4300 or email to Debbie.Tower@dot.state.fl.us.

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ITS Florida Webinar News

ITS Florida's Continuing Education Committee (CEC), formerly the Professional Capacity Building, held a Lunch and Learn Webinar on April 12, 2011, in conjunction with the monthly Board of Directors Meeting. More than 35 industry professionals gathered for the informative web-based "seminar," with 22 additional external teleconference connections (with multiple attendees per line) statewide. The webinar featured presenters from each of the Florida Department of Transportation (FDOT) Districts, including the Florida Turnpike Enterprise, discussing the FDOT Work Program as well as providing overall updates on the continued success of the various District programs. Key topics for each presenter included current intelligent transportation systems (ITS) project status updates, future ITS project funding and anticipated project lettings, and a general overall ITS program update for each District. After each presentation, the floor was opened for questions from attendees for clarification and additional information. In addition, one professional development hour (PDH) credit was offered to registered attendees for this session.

The webinar was provided free of charge for all ITS Florida members and the optional networking luncheon (provided the hour beforehand) was provided for only $15 per person. As has become the standard with prior ITS Florida webinar sessions, attendees found the content to be informative and extremely useful material for their professional development. This webinar correlated perfectly with ITS Florida's mission to "promote safe and efficient transportation by delivering innovation, information, advocacy, and interest in ITS solutions."

Please note that if you missed the webinar and are interested in obtaining the presentations, they are available for download at http://itsa.na5.acrobat.com/itsfl/

- You will need to login with your name (as a guest)
- On the bottom left-hand side, in the box titled "File Share," select the presentation (Combined Florida Districts ITS…)
- Select "Save to My Computer" at the bottom of the File Share box (Be sure to enable your pop-up blocker, if necessary)
- In the pop-up box, select "Click to Download"

Special thanks go out to the FDOT and its representatives for the effort in presenting this information; to OOCEA for hosting the physical event; to ITS America for providing the host site, teleconference line, and webinar moderator; and to the FDOT Central Office for their assistance in compiling the presentations.

Finally, ITS Florida will be presenting three more webinars in June, July, and August of this year! On June 1, the FDOT Traffic Engineering Research Lab (TERL) will present the latest on ITS product approval in the state; and in July, Dr. Hadi will present on Performance Measures for ITS. The August webinar topic is still pending.

This article was provided by Dale Cody and Shawna Slate, Metric Engineering, Inc. For information, please contact Mr. Cody at (407) 644-1898 or email to DCody@metriceng.com.

For more information on ITS Florida, please check the ITS Florida Web site at www.itsflorida.org or contact Sandy Beck, Chapter Administrator, at itsflorida@itsflorida.org. If you wish to contribute an article to the SunGuide Disseminator on behalf of ITS Florida, please email Mary Hamill at MaryKHamill@global-5.com.

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Editorial Corner: A New Public Safety Focus for FDOT and ITS

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.

This editorial was provided by Randy Pierce, FDOT Traffic Engineering and Operations Office. For information, please contact Mr. Pierce at (850) 410-5608 or email to Randy.Pierce@dot.state.fl.us.

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Announcements

Make Plans to Attend the 18th World Congress!

Now is the time to make preparations to participate in this exciting conference. Registration is open for the 18th World Congress on Intelligent Transportation Systems in Orlando and ITS America's Annual Meeting & Exposition.

Top reasons to attend?

- Valuable networking events
- Exciting technical tours
- Interactive technology showcases
- Internationally acclaimed awards
- More than 250 sessions

ITS America's "Best of ITS Awards" recognize the best and brightest of the transportation technology community. This is a unique opportunity to be recognized at the premier global event on advanced transportation technologies in front of hundreds of transportation professionals, policymakers, and press. The deadline for entries is May 31, 2011.

We hope you will get involved; help us showcase the best of ITS here in Florida.

To learn more please visit www.itsworldcongress.org.

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Join Us in Welcoming…

Kelli Hinson joined ITS general consulting team as a quality assurance specialist on April 4. She has a Bachelor of Science degree from Florida State University. Kelli is currently working at the Traffic Engineering and Research Lab in support of the Quality Assurance Program and International Organization for Standardization document control.

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Also Welcoming… and Thanking…

April 19 began a new chapter for the Florida Department of Transportation Central Office Traffic Incident Management / Commercial Vehicle Operations (TIM/CVO) Program. Please join us in welcoming Heather Nelson now with our TIM/CVO general consultant, Atkins. Heather is providing on-site support for this program. She previously served as the Grants Manager at the Florida Department of Law Enforcement in Tallahassee and brings strong

communications skills complemented by technical experience to support performance measurement and data analysis.

We would also like to take this opportunity to acknowledge the contributions of Charlie Creel to the Central Office and TIM efforts throughout Florida. When Charlie began supporting Central Office TIM efforts in 2007, there was a strong focus on outreach and training to TIM partner agencies. Charlie played a major role in bringing together TIM responders for FDOT's successful implementation of TIM initiatives including:

- TIM in '10
- State Law Enforcement Radio Systems training
- Rapid Incident Scene Clearance training
- TIM initiative endorsements from multiple law enforcement and emergency response agencies

Charlie is transitioning to Atkins in Tallahassee and will continue to be available to assist with training, outreach, and other tasks as needed. Please contact Paul Clark for any TIM support needs from Charlie.

Please extend a welcome to Heather and join us in expressing appreciation for all of Charlie's contributions to Florida's TIM Program.

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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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