



SUNGUIDE[®]

DISSEMINATOR



Florida Department of Transportation's Traffic Engineering and Operations Newsletter

Florida's Truck Parking Research Project

By Paul Clark, FDOT Traffic Engineering and Operations

Florida's transportation system has seen an increase in commercial vehicle traffic over the years. The high percentage of freight transported by trucks shows how significant and important the roadway network is to Florida as it relates to just-in-time deliveries. With the increase of commercial vehicle traffic, additional issues arise; one of these issues deals with commercial vehicle operators and the Federal Motor Carrier Safety Administrations (FMCSA) hours-of-service (HOS) rules.

FMCSA put HOS rules in place to ensure that commercial vehicle operators receive adequate rest periods; they were designed to prevent commercial vehicle-related crashes and fatalities by prescribing on-duty and rest periods for drivers. With these



Truck parking at rest area.

Inside This Issue

June 2012

- Florida's Truck Parking Research Project1
- District Four Uses a Network Management Solution.....3
- 95 Express Services 50 Million Trips!4
- ITS Florida 2013 Calendar5
- Editorial Corner: SunGuide[®] Software Testing6
- Announcements7
- FDOT ITS Contacts8

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rules in-place drivers are often looking for locations to park their vehicles to get the adequate amount of rest required by HOS rules. In many situations their planned resting location, i.e. a rest area or weigh station, is already at capacity causing them to park illegally on the shoulder of the interstate or possibly on an off-ramp.

The Florida Department of Transportation (FDOT), in cooperation with Florida International University (FIU), began researching this issue in 2011. The objective (phase 1) of the research is to determine trends for commercial motor vehicle parking at rest areas and weigh stations throughout the state. The goal is to identify facilities that are being used and to what capacity, and to also determine the time-of-day usage. This information can be used to determine where areas of abuse (i.e. parking on the shoulders, etc.) are occurring.

After the information is gathered, FDOT will determine the suitable type of smart parking technology for commercial vehicles and deploy at least one test location (phase 2). The goal is to utilize the collected parking trend and sensor information at the parking locations to estimate when the facility will be full so commercial carriers can find an alternate location to park rather than on the shoulder at these locations.

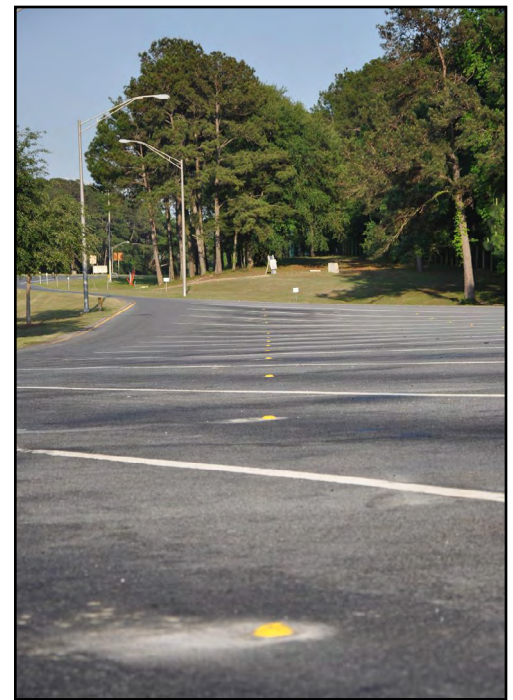
FIU has completed phase 1 of the research and visited all pre-identified rest areas and weigh stations in the state to identify parking trends and areas of abuse. These site visits were done in the evening hours, when commercial vehicle parking tends to peak. Often, FIU conducted an interview with the nighttime security staff to identify possible issues that were not present at the time of the site visit. These visits ranked the level of truck parking capacity issues as high, medium, or low.

With phase 1 of the research completed, FIU has moved onto phase 2. Currently, FIU selected and installed a wireless parking occupancy detection platform at the I-10 Leon County east and west bound rest areas. This system can monitor real-time occupancy information on individual parking spaces and, since these commercial vehicle spaces are quite large, three sensors per space are being utilized. This system is fully wireless and does not require communication or power wiring, making it ideally suited for installation in existing facilities.

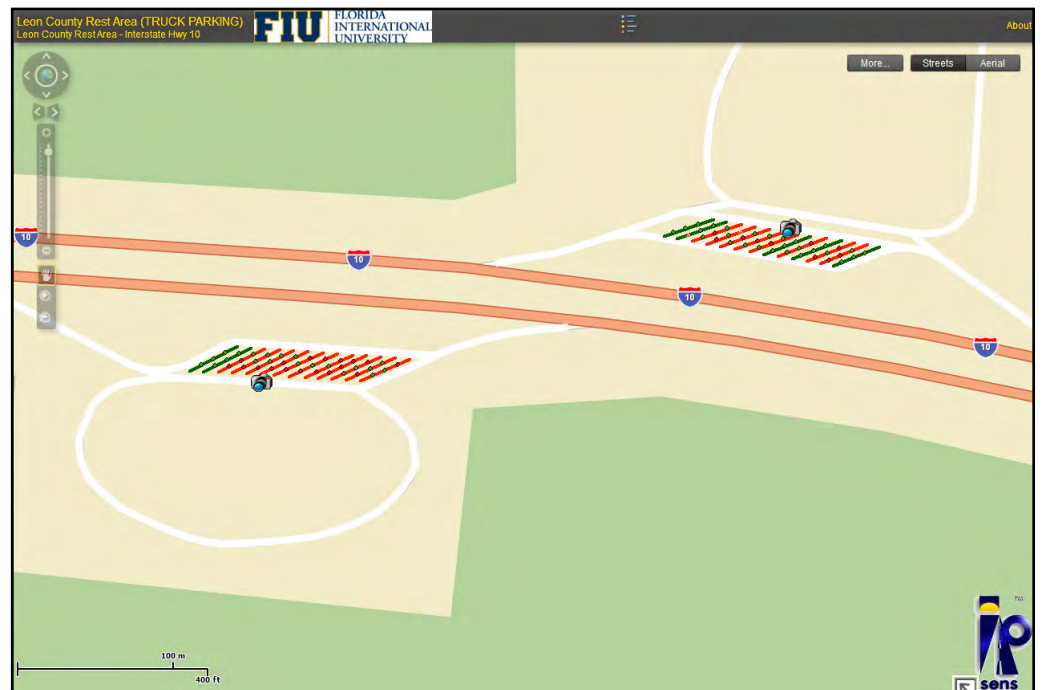
Measuring occupancy of these individual commercial vehicle parking spaces will allow FDOT to facilitate parking guidance. In this research, providing this guidance will be accomplished by using a message board stating that there is or is not commercial vehicle parking available at the rest area.

This truck parking research will allow FDOT to review the outcomes and determine how to utilize the data for possible future developments regarding commercial vehicle parking systems.

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



Wireless parking occupancy detection platform.



Web shot showing available truck parking at a rest area.

District Four Uses a Network Management Solution

By Daniel Smith, FDOT District Four

The District Four Intelligent Transportation System (ITS) Unit has a series of hub sites throughout its five counties. These hub sites house the core router switches for the fiber optic network. All routers and switches are connected with redundant power supplies. While this is a necessary way of preventing power loss, there has been no easy way to determine if this secondary power source is online. There is a high risk of running on this backup power source without anyone knowing because the main source of power must be restored before the backup power fails.

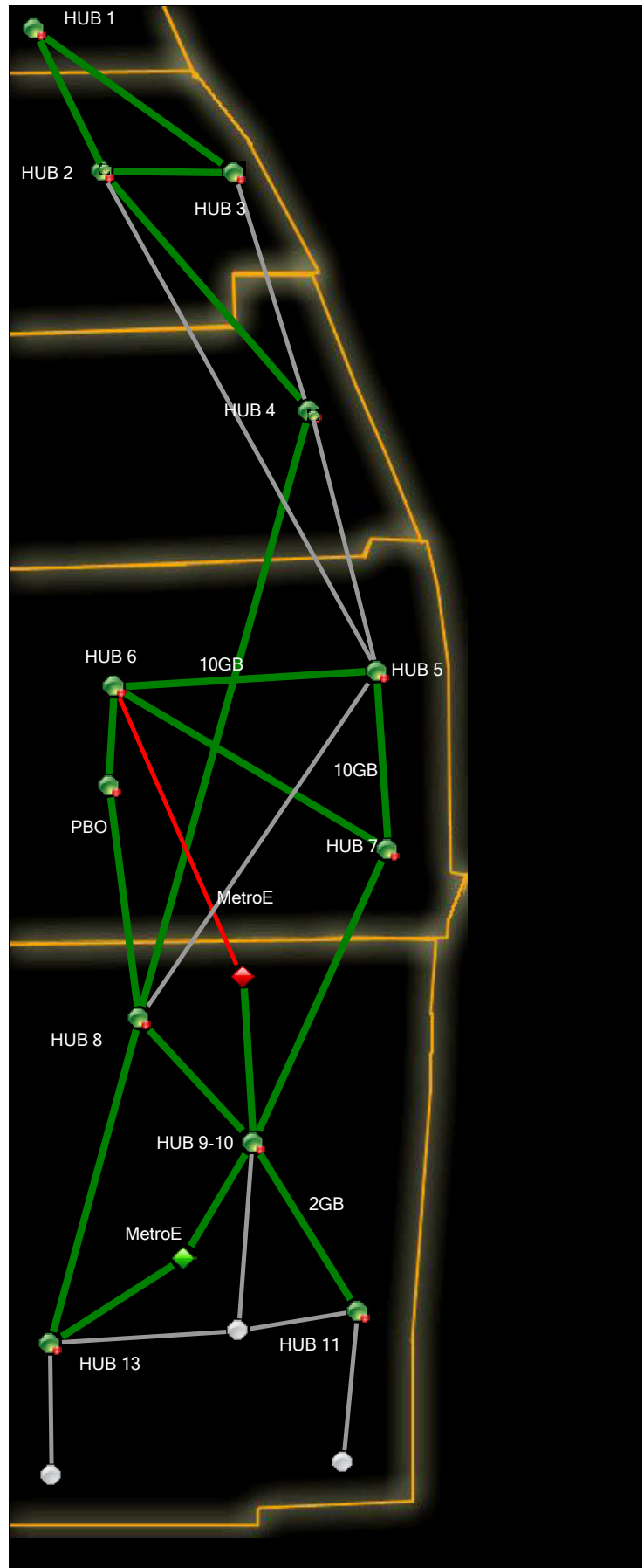
To make sure this never happens, the ITS Unit decided to implement SolarWinds®, a network management solution used to manage connections and generate alerts whenever change is detected. SolarWinds notifies information technology (IT) and maintenance staff of any network failures and shows the network location. This allows for quick action if, in any event, restoration of “normal” power is required. SolarWinds perfectly fits into the Districts’ hurricane preparedness efforts.

As a way to visualize site link status, the ITS Unit now displays a map of the network fiber optic backbone and core routers and switches in real-time on the transportation management center video wall. If there is a network connection failure due to power loss, the link changes from green to red and email alerts are sent out to the team. A second map that provides a much greater level of detail is available to IT and maintenance managers, but is not posted in the control room due to its complexity.

Displaying the SolarWinds map on the video wall was part of the ITS Unit’s decision to improve situation awareness for all operators and provide them with as much information on the system as possible. Using the video wall for “big picture” information display was the result of upgrading operator computers with the processing power to display a mini-video wall in front of each workstation. Operators can view up to 81 streaming videos simultaneously, allowing them to more quickly detect crashes and other incidents.

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

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District Four SolarWind location map.

95 Express Services 50 Million Trips!

By Javier Rodriguez, FDOT District Six

The Florida Department of Transportation's (FDOT) 95 Express Project reached a major milestone this spring (2012) by servicing 50 million trips on the express lanes! The project, which launched in December 2008, has been steadily increasing in popularity with south Florida drivers and today is considered one of the most successful and highly used managed lanes systems in the United States. The milestone is a testament to the reliability of 95 Express. It shows that it continues to be a viable option for travel time and mobility benefits despite the year-to-year increases it has faced in volume and demand. This reliability is a result of the ongoing enhancements made to the project's operational and transit services – which were all made possible by FDOT's continued commitment to 95 Express.



95 Express – a successful and highly used managed lanes project in south Florida.

The project's popularity was especially evident during the month of March, which continues to be the highest trip producing month for 95 Express, and 2012 was no exception at nearly 1.9 million trips...the highest trip total to date! Exempt vehicle trips are also increasing, as are higher toll amounts (southbound).

For the latest operational reports and project information, please visit the 95 Express Project web site at www.95express.com.

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

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ITS Florida 2013 Calendar

By Erika Birozak, ITS Florida

Be a Sponsor and Be Seen!

ITS Florida is offering member firms/agencies an opportunity to sponsor the ITS Florida 2013 Calendar, which will be distributed at Transpo2012 in Bonita Springs, Florida, in October 2012. The ITS Florida calendar has become very popular among the intelligent transportation systems (ITS) industry and transportation professionals over the last five years. This calendar is the place to reach your customers and be seen without spending the traditional cost of advertising. What better way to reach the customer base that you serve than to partner up with ITS Florida for the 2013 Calendar showcasing the best photos in ITS!

Benefits of Sponsorship

- Reach your target customer base for a reasonably low cost.
- Reach new potential customers that meet your target customer base through the wide distribution of the ITS Florida 2013 Calendar at Transpo2012 in Bonita Springs.
- Enjoy the opportunity to be seen by your customer several times a year, depending on the level of sponsorship you select.

Sponsorship Levels

PLATINUM SPONSOR - ***SOLD OUT*******

The two Platinum Sponsors will have their logos prominently displayed underneath the feature photo for each month of the year and throughout the calendar in the most visible locations. The Platinum Sponsors' logos will be larger than the other sponsors' logos in an effort to draw more attention to them. These sponsors will have their contact information and other pertinent information included in the calendar making it easier than ever for their customers to reach them. This sponsorship level is limited to two sponsors due to the space needed throughout the calendar.

GOLD SPONSOR - \$500

The Gold Sponsorship level will include display of the sponsor's logo four times throughout the calendar. The sponsor's contact information will also be included in the back of the calendar. Due to the space required for these sponsors, the number of Gold Sponsorships is limited! This is a low-cost opportunity to reach your customers numerous times during the year.



2012 ITS Florida calendar.

BRONZE SPONSOR - \$100

The Bronze Sponsorship level was formerly known as “Friends of ITS Florida” on past ITS Florida calendars. This level provides a display of the sponsor’s logo on the back cover only of the calendar. Being a Bronze Sponsor is a great way to keep your logo in front of your customers to stay at the forefront of their minds. Due to the limited space of the back cover of the calendar, the number of Bronze Sponsorships is limited! Make sure to sign up now!

Become a Sponsor Today!

To secure your ITS Florida calendar sponsorship today and avoid possibly missing this low-cost, effective opportunity to reach your customers throughout the year, please contact Ms. Sandy Beck at itsflorida@itsflorida.com or Ms. Erika Birosak at erika.birosak@transcore.com as soon as possible. These opportunities are limited and will be sold on a first come, first served basis.

You can pay by credit card online at <http://www.itsflorida.com/store/default.aspx> or checks for sponsorship can be mailed to Sandy Beck’s attention to: ITS Florida, 215 NW Monroe Circle N., St. Petersburg, FL 33702.

Along with your commitment to sponsor, ITS Florida needs one high-resolution, electronic copy of your company logo. This can also be sent to Ms. Beck at the email address shown above. For Platinum and Gold Sponsors, please include your company’s web site address and all other contact information (including a main point of contact name) to be included in the calendar.

Deadline for sponsorship is July 1, 2012! Don’t miss this fantastic opportunity!

For any questions regarding the ITS Florida calendar, please contact Ms. Erika Birosak at erika.birosak@transcore.com or (813) 376-0036, or Ms. Sandy Beck at itsflorida@itsflorida.com.

If you have any questions or wish to provide an article to ITS Florida, please contact Sandy Beck at itsflorida@itsflorida.com.

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Editorial Corner: SunGuide® Software Testing

By Arun Krishnamurthy, FDOT Traffic Engineering and Operations

How We Do It and Why We Do It?

I still remember when I had just taken the position with the Florida Department of Transportation (FDOT) as the SunGuide® software contract manager. Within just a few days of joining, I attended a formal software testing event. I was amazed by the exhaustive planning, preparation, and effort that goes into the software testing. Software testing is a critical component of the development life cycle and is essential to ensure that the software meets the our requirements and needs. Also, as SunGuide software is an operational software that runs at transportation management centers (TMC), any software defect or failure can have an adverse impact on the our ability to respond to crashes and disseminate traffic information to motorists. Software testing provides us with the confidence that the software will function properly prior to deployment. It is sometimes not feasible to test all aspects of the software, but it is important to make an attempt to comprehensively test the affected portions of the software and any associated portions that may be impacted by the changes made within the software.

Why Am I Telling You This?

Testing is an integral part of any project—whether it involves software, device deployment, or any other form of product or service. Depending on the complexity of the project, the testing phase could be insignificant or last for months. It helps you to make sure that the product meets your needs and any specifications that you stipulated in the project. If the product is not properly tested and it is accepted, it may require significant maintenance or, even worse, may not be operational. So it is important to have a comprehensive plan for testing products.

How Is SunGuide Software Testing Done?

With SunGuide software, FDOT conducts a comprehensive set of tests before deploying the software. There are two types of releases in the SunGuide software release cycle: minor and major. For minor releases, FDOT requires the software to undergo a

reduced level of testing; for major releases with significant software modifications, comprehensive software testing is required. During the initial stage of the software development, we define the software requirements. These requirements document the functions that need to be incorporated in the software. So when we conduct the software testing, we test against these documented requirements and any existing requirements (existing portions of the software). This is called functional testing.

We also conduct what is called non-functional testing; this could include load tests, or stress tests. We conduct these stress tests by simulating a significant number of ITS devices using device simulation programs to determine if the software will perform acceptably when it is deployed at a facility that manages a similar quantity of ITS devices. As part of the non-functional testing, we sometimes conduct performance testing. This would include verifying if the software is able to perform actions within a pre-defined time. Typically, during the software requirements phase, we define the maximum time the software should take to perform a pre-defined action. It is important to remember that sufficient time and effort should be invested in developing requirements as they form the basis of the product that is developed.

Now let's talk about the software testing events that are conducted as part of the SunGuide software project. First, the software development contractor conducts the unit testing and integration testing as they prepare the final software product. Once the software has been developed, the contractor invites FDOT personnel to attend the formal factory acceptance testing. The contractor conducts this testing at their facility and FDOT personnel attend this testing event. The contractor executes the test cases and conducts the functional testing and non-functional testing.

After accepting the software product, FDOT conducts independent verification and validation. This is an important part of the testing process. Validation ensures that the software meets the correct needs, while verification ensures that the needs were met correctly. Both validation and verification are required for the software to be acceptable for operational use. This independent testing is conducted at FDOT's Traffic Engineering Research Laboratory or a District TMC by FDOT's general consultant team. The test cases are carefully written to validate and verify the software requirements. This increases the confidence that the product can be used by FDOT independently from the developer to meet the needs of the users in their own environment. Also, independent testing offers a variation of system environments to test against, providing the opportunity to test under different conditions that may or may not have been accounted for in the development environment.

Wrapping Up

Testing is an important step before FDOT takes ownership of a product from the contractor. This is done in every industry. Testing has offered significant value to FDOT over the years, as we have identified defects and failures that may not have been found before product acceptance, or may not have surfaced due to different system environments. This effort offers assurance to FDOT that products meet our needs and are defect free.

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

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Announcements

Deadline Extended...

There is still time to get your photos in for the ITS Florida 2013 Calendar. *The submission deadline has been extended to June 15, 2012, so act quickly!*



ITS Florida 2012 calendar

The photos are normally pictures of ITS projects or aspects of ITS located within the state of Florida. ITS Florida looks for unique qualities or unique characteristics when judging the photos.

The ITS Florida 2013 Calendar will be distributed at Transpo2012.

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Make Plans to Attend Transpo2012

Transpo2012 is around the corner!

ITS Florida invites you to join us at the Bonita Springs Hyatt Regency Coconut Point in Bonita Springs, Florida for Transpo2012 on October 28-31, 2012. Program and planning



committees are already busy organizing an outstanding lineup of exhibits, demonstrations, and technical sessions that will build on topics driving the ITS industry. *Please plan to attend this premier conference.*

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Good Luck Trey!

Please join us in saying good-bye to Trey Tillander as he leaves for his new position as the State Specifications Engineer. Trey has over 19 years experience in transportation engineering and started his career with FDOT as a PE Trainee in District Four. Most recently, Trey worked in the State Traffic Engineering and Operations Office for about six years, with about three years spent on intelligent transportation systems software projects and the last three years as a Deputy State Traffic Engineer overseeing the Traffic Engineering Research Lab and the Approved Product List. Trey began his new appointment on May 25, 2012.

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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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