FDOT's Monthly ITS Newsletter
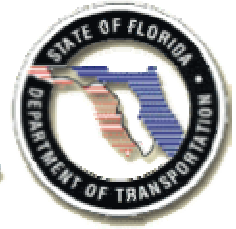
SunGuide^SM DISSEMINATOR

INSIDE THIS ISSUE

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is a publication of:

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Florida Department of Transportation (FDOT)
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www11.myflorida.com

Link to Florida's Statewide ITS General Consultant

UPDATE: SunGuide^SM Transportation Management Center

The SunGuide^SM Transportation Management Center (TMC) was substantially completed as of January 22, 2003. The TMC is collocated with the Florida Highway Patrol near the interchange of the Dolphin Expressway (SR-836) and the

Homestead Extension of Florida's Turnpike (HEFT) at the western end of Miami-Dade County.

The TMC is a 32,000 square foot facility secured with closed-circuit TV cameras positioned to monitor the building's exterior and interior, including sensitive areas restricted through a card entry access system. ID badges will be provided with separate restrictions for FDOT and FHP personnel for access clearance to the building and sensitive areas.

A full, descriptive article on the TMC was previously published in the _SunGuide^{SM} Disseminator's April edition_.

Based on the current schedule, FDOT's District 6 ITS group should be in this new facility as soon as:

- new specialty equipment, such as the video wall display (VWD), becomes operational;
- SunGuide^{SM} ITS computer system is operational with the VWD; and
- communications with the field detectors and dynamic message signs have been re-established and functioning in a fully integrated ITS surveillance mode.

Completion of this work and the move to the new facility is anticipated by the Fall of 2003.

For information, please contact Jesus Martinez, ITS Administrator, at FDOT's District 6 Office, (305) 470-5341 or email to Jesus.Martinez@dot.state.fl.us.

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Digital Traffic Systems, Inc. Releases Smart Camera Product

TigreEye — Advanced Video Image Processing Software

Digital Traffic Systems, Inc. (DTSinc) announces the release of TigreEye — Advanced Video Image Processing (AVIP) software that transforms a standard video camera into an automated intelligent data collection system for surface transportation.

In a typical transportation management center, video cameras capture images that must be continually observed and interpreted by human operators. As
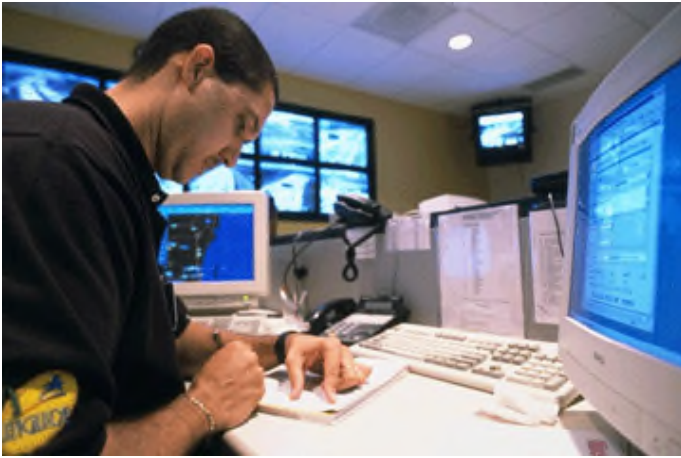
the number of cameras and surveillance stations grows, it becomes increasingly difficult for operators to monitor all camera images for significant traffic incidents or other impacts to traffic flow. To satisfy escalating demands for real time data interpretation,

TigreEye analyzes images from an ordinary video camera and extracts value-added information concerning vehicular activity in real-time. It computes traffic flow parameters such as traffic speed and volume, thereby deriving the additional parameters of headway, gap, and occupancy. These metrics can be stored, interrogated, and displayed. Operators can receive real-time alert messages of significant conditions. For example, operators can be notified when:

- vehicles are moving too slowly or stopping in unauthorized areas;
- hazardous materials are present; and
- secure areas are violated, etc.

With this information, operators are able to provide real-time information to motorists, media outlets, and emergency response agencies. Stored data may be used for planning, federal reporting requirements, and statistical analysis.

TigreEye's compatibility with most existing traffic cameras offers a convenient, economical solution to problems of upgrading new or old traffic surveillance systems as well as offering the opportunity for dual use of video technology. There are no requirements for proprietary cameras or hardware in implementing the system. Simply connect an existing video feed to TigreEye, go through a calibration procedure, and start extracting data immediately. All vehicles are tracked throughout the camera field of view, so data is gathered over the length of the visible roadway in dual directions, not just at a single point.

DTSinc develops, installs, and operates certain traffic information technology for the surface transportation industry. These ITS technologies offer substantial improvements in the efficiency of traffic operations. Based in Albuquerque, NM, the company is an information technology services firm providing high-quality, sensor-derived vehicle and traffic flow information.

For information or to schedule a demonstration, please contact Gary Flynn at DTSinc, (703) 715-2556 or email to Jgflynn@aol.com.

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Secretary Tom Barry Announces Retirement From FDOT

On December 3, 2002, Secretary Thomas F. Barry, Jr. announced his intention to retire from FDOT effective February 28, 2003. In a message to the FDOT staff Secretary Barry stated:

"Today I informed the Governor that I will be resigning from the Department, effective February 28, 2003.

I did not come to this decision easily. Each year, I believe it is important to assess where I am in my personal and professional life. This coming summer would have been a major decision point for me and my family, with the combination of my years as Secretary and my girls' ages. Having had the time over the Thanksgiving holiday to reflect a great deal on the issue, I came to the conclusion that now is the right time for me to move on.

I am confident that the Department can and will continue to operate at a high level of excellence after I am gone, because our strength has always been in our employees."

Secretary Barry leaves FDOT after 23 years of service, the last five as Secretary. Tom began his career with FDOT in 1979. During his tenure, he served as the District Five Secretary and Assistant Secretary for Finance and Administration in the Central Office.

Tom's plans are to stay in Florida, continuing in the transportation business, leaving him on our radarscope. All FDOT employees around the state wish Tom and his family the best as they venture along this new road in their lives.

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We invite you to have some fun and complete the *SunGuide^SM Disseminator* Word Challenge!
An answer guide follows the Editorial Corner.

Enjoy and Good Luck!

D	L	Y	V	D	T	N	V	Y	N	V	O	S	R	Q	T	S	O	W	S
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Words to Find

AVIP	Policy
Barry	Retirement
CCTV	RTMC
Digital	Security
Disseminator	SunGuide
Emergency	Surveillance
HEFT	Tallahassee
Hillsborough	Technology
ITS	TigreEye
Lambert	Transportation
Martinez	Video
Miami	Worrall

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How ITS Can Address Transportation Policy Objectives

The purpose of ITS is to apply information and telecommunications technologies to save time, lives, and money, while enhancing the quality of life. Overall, we tend to focus on these technologies as they are brought to bear on traffic management, incident response, and traveler information. In addition to these functions, ITS can also provide the means to address a number of other facets of transportation policy of especially high concern to public officials. This article explores some of the ways ITS can address transportation policy issues.

ITS Can Encourage Modal Shift

In many communities, public officials want to encourage movement of travelers from single-occupant automobiles to transit and carpooling. This may be essential to achieve air quality requirements. Reduction in vehicle-miles traveled will contribute to improved air quality and reduction in traffic congestion. ITS-generated data provides linked origination-destination information identifying clusters of travelers living and working near one another for whom special transit services can be designed and marketed. Transit becomes easier to use with customized payment systems that provide single payment account cards for tolls, parking, buses, trains, taxis, etc. Concepts that allow toll facilities to set tolls based on vehicle occupancy and time of day encourange transit use and car pooling, thereby reducing congestion.

ITS Supports Transportation Customer Service

A key concern for any public official is the satisfaction of constituents. Transportation system customers are also voters. Private sector services, such as overnight delivery companies and online purchasing, have created increased public expectations for speed, reliability, and immediate, accurate information. Market research shows that travelers value predictability and reliability of total trip time

more than speed. When they are
delayed, they not only want to know
why, but also what to expect.

Variable message signs, 511 travel information telephone services, web sites with speed maps, highway
advisory radio stations, and in-vehicle information services provide unprecedented speed information and
detail about travel conditions and incidents.

Smart cards allow painless, cashless payment of tolls, transit, parking, and drive-thru food and services.
Advanced incident detection and response provide immediate assistance to stranded motorists, clearance
of blockages, and treatment for crash victims. Aggressive traffic management enhances arrival to and
departure from special events. All of these contribute to customer satisfaction.


ITS Enables Evacuation Management

The tragic events of September 11, 2001,
along with recent experiences with
evacuation in anticipation of hurricanes, have
underscored the need to enhance the
capability of public officials to manage
traffic flows associated with major
emergencies.

ITS provides emergency response managers
with:

- real-time information on transportation
  system status and traffic conditions;
- video images of weather conditions;
- traffic controls to adjust movements;
- communications with transportation
  system managers and incident
  response crews; and
- means to communicate with travelers,
 both before and during trips.

On September 11, 2001, the New York Metropolitan ITS Program provided messages for rerouting traffic
in the city, region, and eastern seaboard; coordinated road closures and traffic restrictions to enable
movement of response vehicles to ground zero; and maintained a clear picture of traffic flows to support
vehicle restrictions and the lifting of restrictions in to and out of Manhattan.

ITS supports hurricane evacuation by providing pictures and maps of traffic flow and managing traffic control devices including enabling contraflow freeway operations. In many cities, the ITS transportation management center is collocated with the emergency management center and during times of crisis, houses key public officials.
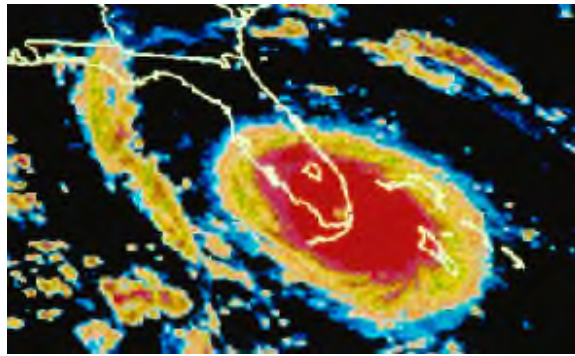
ITS and Decision Support

Decision support tools, such as models and simulation/visualization programs, have become more and more powerful and sophisticated over the years. However, these tools are only as good as the data that supports them.
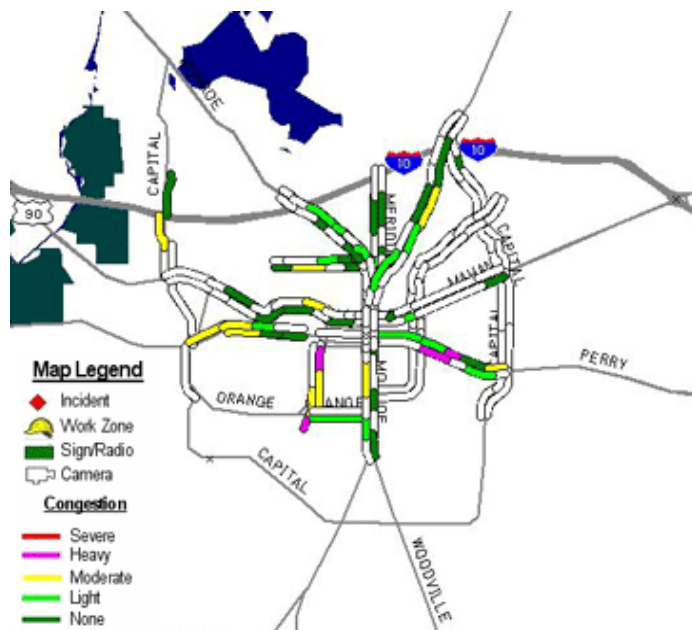
Decision support and planning tools are becoming more powerful with:

- computation capability allowing greater detail and system granularity; and
- graphic mapping and simulations improving visualization and user comprehension.

ITS adds an additional measurable level of value in the quality and quantity of data. Traffic flows with linked origination-destination data may be recorded and analyzed for virtually every condition, e.g., weather, special events, incidents, etc.

Information on transportation system conditions and performance is:

- generated in real-time for multiple modes, facilities, and jurisdictions; and
- integrated and disseminated to all who must make informed operational decisions.

The shared information helps identify and support the decisions that must be made at the highest levels.

A very important component when reaching out to politicians and non-technical decision-makers is making a direct connection between the capabilities and impacts of ITS, and the satisfaction of transportation policy objectives. There are many more examples of how ITS can help address and maybe even influence policy issues. The examples described in this article illustrate how we can make the connection and provide a clear explanation of why ITS can make a difference.

This article was provided by Craig Roberts of PBS&J. If you have some thoughts, comments or opinions related to this article, or if you would like to suggest a topic that you would like ITS Florida to address in the coming months, please share them with us by emailing BobMcQueen@pbsj.com.

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Editorial Corner

Let's talk about weather! Everybody likes to talk about weather, right?

First, I should tell you that I am not a meteorologist. I am just an urban planner who has averaged about 25,000 miles a year, for the past 20 years, driving around Florida doing my planning thing. That experience, I contend, qualifies me to talk about how severe the weather can get while driving around Florida. And, because I also have personal experience with the potential unfortunate consequences of driving in severe weather (I was involved in a pileup caused by limited visibility), I contend that I am also qualified to comment on the hazards of **driving while under the influence of severe weather**.

I think you will agree, if you have lived in Florida for a while, severe weather can occur in very limited geographic areas in our state. I often joke (to my friends and relatives visiting from "up north") about how it can be raining in my front yard and sunny in my backyard at the same time — maybe you do the same thing. Summer thunderstorms, fog, and smoke from wildfires are no joking matter when they suddenly reduce visibility for travelers on high-speed highways.

Motorists are often caught by surprise by severely reduced visibility, and this has been the cause of many fatal accidents in recent years. We've all read about the worst cases where reduced visibility has been blamed for pileups involving several dozen vehicles. Anecdotal evidence (my own experience) suggests that motoring tourists are especially susceptible to the "surprise factor" that our summer thunderstorms can present. High wind speed on high bridges can also catch motorists off guard, particularly those driving high-profile vehicles such as vans and motor homes (often driven by tourists). Wet pavement is another obvious hazard that can be especially problematic on those sharp curves associated with exit ramps. Finally (and to be fair to tourists), since icing conditions are not common occurrences in Florida, when roads or bridges do get icy our 'native' motorists are often caught off guard.

Simply stated, with all these weather-related driving hazards, it should seem obvious to anyone that travels in Florida that it would be safer if we had a statewide Road Weather Information System (RWIS) that was designed specifically for the special weather conditions in Florida.

Fortunately, this need has already been recognized in FDOT's *ITS Strategic Plan* as stated in the following two goals:

- "to reduce weather-related traffic accidents by using road-weather information systems;" and
- "to improve emergency management communications while providing real-time traveler information systems for evacuation."

The primary goal for our statewide RWIS is to provide timely and useful "early warning" weather information to travelers, transportation managers, law enforcement, and emergency managers in order to ensure safe transportation in both normal and evacuation conditions for residents, visitors, and commerce.

Our RWIS should focus on weather situations that could be important to traveler safety including low visibility from fog, smoke, and heavy rain as well as hazards presented by strong winds, wet pavement, and freezing temperatures.

The most important objective, at least from my perspective, is that our statewide RWIS should be able to provide real-time, in-transit "early warning" to motorists when low-visibility, high wind, or road icing conditions may be experienced on the road ahead. This "early warning" information could be delivered through dynamic message signs, highway advisory radio, 511 systems, and kiosks at rest areas.

In addition to in-transit warnings, travelers planning a trip should be able to access the current and forecasted travel weather via a web site on MyFlorida.com. Transportation managers, law enforcement, and emergency managers would, of course, benefit greatly from having specialized access to real-time road weather conditions for support of both day-to-day and evacuation operations.

In addition to current weather information, the RWIS should be able to produce road-segment-specific weather predictions to provide motorists with forecasts of future hazardous driving conditions. These forecasts, and the operational decisions that are based on them, will lead to safer and more efficient traffic flow. To meet this challenge it is imperative that the RWIS be a collaborative effort with the National Weather Service — the primary provider of the nation's weather forecasts.

There are several other, less obvious, benefits that an RWIS could provide as well. For instance, in addition to current and forecasted road weather information, historical information could be valuable to those who want the ability to correlate accidents with severe weather events. Road weather information could also be valuable to emergency managers in the event of a hazardous chemical spill resulting from a traffic accident.

It has also been suggested that road weather information could assist in traffic management during evacuations necessitated by the airborne dispersal of biological or chemical agents as a result of an industrial fire/explosion, or even a terrorist attack. In these cases, local officials must make quick decisions in order to save lives and property. These decisions include determining which municipalities to evacuate, deciding the order in which to evacuate them, selecting the best approach routes for police and firefighters, and choosing the type of equipment to dispatch to the disaster site. Road-specific weather information such as wind speed/direction and surface temperatures will be important factors to these key decisions. When local officials know the expected movement of airborne hazards, such as smoke or dangerous chemicals, relative to their travel route, they can make better-informed decisions that will save lives.

Having made the case (I hope) for needing an RWIS in Florida, I am glad to be able to tell you that FDOT is currently supporting research on the development of a Florida RWIS through a grant from the FDOT Research Center that has been awarded to a unique team of researchers representing the disciplines of engineering, meteorology, geography, urban planning, and computer science.

This interdisciplinary team includes: myself (the principal investigator for the project), my staff, and students at the University of North Florida Applied Global Systems Lab (who are engineers and computer scientists — **John Sarman, Mark Price, John Marinatos, Ray Mathews, and Matt Mahin**… THANKS Guys!), **Dr. Henry Fuelberg** and his graduate students at the Florida State University (FSU) Department of Meteorology (yes, we do have real meteorologists on the team), **Dr. Jim Elsner** (another renowned meteorologist), and his graduate students at the FSU Department of Geography, **Dr. Simon Foo** and **Dr. Bing Kwan** and their graduate students at the FSU-FAMU Department of Electrical Engineering, **Dr. Pat Welsh**, the Science and Operations Officer at the Jacksonville Office of the National Weather Service, and **Mr. Andrew Watson**, the Science and Operations Officer at the Tallahassee Office of the National Weather Service (we could not do this without the NWS team!). It is

noteworthy that the team has been provided with invaluable technical and engineering design assistance from FDOT telecom contractors from **PB Farradyne** and **RCC Consultants**. **Russell Allen**, an engineer with RCC, deserves special recognition for his efforts. **Nick Adams** at FDOT's ITS Office is currently managing the project for FDOT (Nick is an amateur meteorologist, like me, so he's enjoying this assignment…).

For the past year, this multi-university interdisciplinary team has been working together to build a prototype state-of-the-art, real-time, web-enabled RWIS for FDOT District 2 (northeast Florida). In a future article for this newsletter I will describe our research team's progress and findings in more detail. For the time being, I hope I have convinced you that Florida needs an RWIS, and I hope that you will support our efforts to get one built sooner rather than later. If you have ideas or suggestions for how we should implement an RWIS in Florida, please send your comments to jlambert @unf.edu.

This editorial was provided by J. David Lambert, Ph.D, University of North Florida.

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SunGuide^{SM} Disseminator Word Challenge Answers

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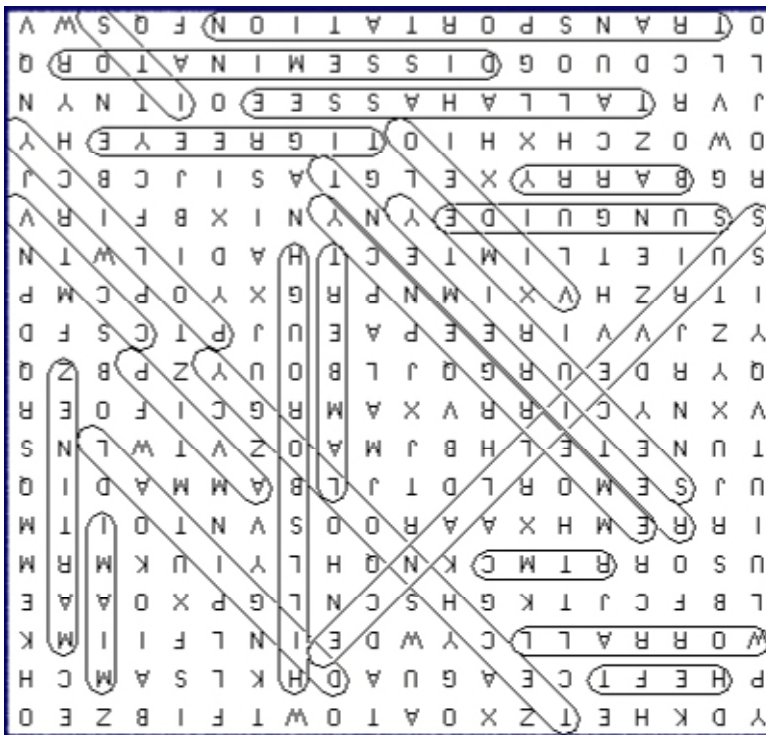
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Announcements

ITS Working Group Meeting

FDOT's ITS Working Group Meeting will be held March 19, 2003, from 9:00 a.m. to 4:00 p.m., and March 20, 2003 from 9:00 a.m. to 12:00 noon. The meeting will be held at Florida's Turnpike Enterprise Turkey Lake facility in Auditoriums A & B.

The ITS Working Group Meeting is open for all to attend and provides a forum for the FDOT District Offices' staff and the Central Office staff to discuss statewide ITS issues.

Additional information may be found at ITSFlorida.org. If you plan to attend, please contact Leslie Boatman at (850) 410-5620, or email Leslie.Boatman@dot.state.fl.us no later than Monday, March 3, 2003.

Hillsborough County's Planning and Implementation of Traffic and Transportation Data Systems

Hillsborough County announces the selection of four firms to handle responsibilities associated with the Planning and Implementation of Traffic and Transportation Data Systems contract. The four firms were selected from a short-list of seven and are:

- Tindale-Oliver & Associates;
- Kimley-Horn & Associates;
- Gord Associates; and
- Bucher, Willis & Ratliff Corp.

The selection is subject to approval by the Hillsborough County Board of Commissioners which should occur this month.

The challenge of this contract will be to form a foundation for traffic and transportation data in relation to ITS, among other responsibilties.

*i*Florida Shortlist

FDOT has been short-listed for the *"Surface Transportation Security and Reliability Information Systems Model Deployment Initiative"* request for applications issued by the FHWA. The grant provides $10,000,000 in Federal funds to demonstrate today's best practices and innovative approaches in the collection, processing, use, dissemination, sharing, and archiving of transportation information.

Tampa Bay ITN Shortlist

District Seven has received two responsive proposals to their invitation to negotiate for an advanced traveler information system for the Tampa Bay area. The two responsive proposals came from Mobility Technologies and TransCore.

Statewide Transportation Management Center Software Library System (STMCSLS)

FDOT's STMCSLS Technical Evaluation Committee has reviewed Replies of Qualifications Questionnaire from six companies and provided the Executive Selection Committee with their rank. After meeting on December 19, 2002, the Executive Selection Committee provided the Procurement Office with the following shortlist:

- Lockheed-Martin Transportation Systems;
- Southwest Research Institute - PB Farradyne; and
- Northrop Grumman Corporation (formerly TRW Transportation Systems Inc.)

Northrop Grumman Corporation withdrew from the invitation to negotiate (ITN) processes on January 20, 2003.

FDOT received the technical and cost proposals from the remaining two proposers and has scheduled Oral Presentations on February 18, 2003.

Heavy Vehicle Recovery Demonstration

The Heavy Vehicle Recovery Demonstration which was to take place in Tallahassee this March **has been postponed**. When it occurs, this demonstration will illustrate how roadways can be quickly cleared with state-of-the-art roadway clearance vehicles. The recently signed memorandum between Florida Highway Patrol and FDOT has a roadway incident clearance goal of 90 minutes.

This demonstration will be rescheduled on a later date.

ITS Florida's Member of the Month

ITS Florida is publishing monthly articles on ITS professionals on their web site at ITSFlorida.org. Check to see who is in the spotlight this month!

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