

## Unique Data Collection Efforts for the Tierra Verde Bridge (S.R. 679) PD&E

By: Kirk Bogan (FDOT, District 7), Doug Reed (PBS&J), and Michael Dorweiler (PBS&J)

The Florida Department of Transportation (FDOT) recently conducted a Project Development and Environment (PD&E) Study for bridge and roadway improvement alternatives along S.R. 679 (Pinellas

Bayway Structure E) over the Intracoastal Waterway. The purpose of the PD&E Study was to provide documented environmental and engineering analyses to assist FDOT and the United States Coast Guard (USCG), the lead federal agency, in reaching a decision as to the type, location, and conceptual design of roadway and bridge improvements.

The PD&E Study limits encompassed 1.088 miles as shown in the exhibit. The limits were S.R. 679 from south of Madonna Boulevard in Tierra Verde to south of S.R. 682 in St. Petersburg, Florida.

S.R. 679 was originally constructed in 1961 to join the man-made islands of Tierra Verde in unincorporated Pinellas County with Isla Del Sol in St. Petersburg. S.R. 679 is a north-south urban minor arterial that provides the only vehicular access to the islands of Tierra Verde and Mullet Key, where Fort De Soto Park is located.

The Tierra Verde Bridge is a low-level, bascule structure (draw bridge) that spans the Intracoastal Waterway, a marked federal navigational channel which generally runs between the mainland and the nearly contiguous barrier islands along the Gulf of Mexico. While S.R. 679 is not part of the Florida Intrastate Highway System or the Strategic Intermodal System (SIS), the Intracoastal Waterway within the PD&E Study area is on the SIS. In



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addition, S.R. 679 is designated as a hurricane evacuation route by the Florida State Emergency Response Team (SERT).

The PD&E Study documented the need for the improvements and included the procedures that FDOT utilized to evaluate alternatives including rehabilitation and replacement of the existing bascule bridge. FDOT collected information relating to the engineering and environmental characteristics, established design criteria, and developed preliminary alternatives. The process identified the alternative which would have the least impact, while providing the necessary improvements. The study also solicited input from the community and users of the facility. The design year for the analysis was 2030.

*Bridge continued on page 2*

*Bridge continued from page 1*

Routine bridge inspections identified safety and structural problems associated with the age of the existing bridge, including concrete delaminations, spalls, cracks, and other deficiencies. The Tierra Verde Bridge was rated functionally obsolete and was rated “scour critical.” The remaining service life under normal maintenance conditions was estimated to be two years, meaning that under the current normal maintenance program, the bridge

needed to be rehabilitated or replaced by the year 2011. Improvement alternatives considered for this facility included rehabilitation; rehabilitation (with widening); or replacement. The replacement options included a low-level, bascule bridge; a mid-level, bascule bridge; or a high-level, fixed-bridge.

The PD&E Study needed to recognize the unique travel characteristics related to vehicular and boat traffic in determining the Recommended

Alternative. Due to the mix of residential and recreational uses along S.R. 679 with Tierra Verde and Fort De Soto Park and boaters on the waterway, typical AM and PM peak hour travel conditions did not apply. Therefore, the Recommended Alternative needed to consider an improvement to the existing bridge structure which would minimize delay for both modes of travel during atypical peak hours of travel. In addition, the

*Bridge continued on page 3*

S.R. 679 (Pinellas Bayway Structure E) at Intracoastal Waterway  
Bridge No: 150049  
Pinellas County, Florida  
Project Development and Environment (PD&E) Study WPI Segment No: 410755



Looking Southwest from the Tierra Verde Causeway  
Existing Structure



Artist's Rendering - Recommended Alternative\*



\*Aesthetic details to be determined in the design phase.

S.R. 679 (Pinellas Bayway Structure E) at Intracoastal Waterway  
Bridge No: 150049  
Pinellas County, Florida  
Project Development and Environment (PD&E) Study WPI Segment No: 410755



Looking Northwest from The Villages' Balcony  
Existing Structure



Artist's Rendering - Recommended Alternative\*



\*Aesthetic details to be determined in the design phase.

S.R. 679 (Pinellas Bayway Structure E) at Intracoastal Waterway  
Bridge No: 150049  
Pinellas County, Florida  
Project Development and Environment (PD&E) Study WPI Segment No: 410755



Looking Northwest from The Villages' Swimming Pool  
Existing Structure



Artist's Rendering - Recommended Alternative\*



\*Aesthetic details to be determined in the design phase.

Bridge continued from page 2



Pinellas County Metropolitan Planning Organization 2025 Long Range Transportation Plan completed in December 2004 shows a future designation for S.R. 679 as part of the Pinellas Trail Extension linking the existing Pinellas Trail to the Fort De Soto Park Trail, which needed to be accommodated as part of the Recommended Alternative.

The Recommended Alternative from the PD&E Study will replace the existing two-lane, bascule bridge with a two-lane, high-level, fixed-bridge structure providing 65-feet (ft) vertical navigational clearance over the existing channel. Based on the data provided by the bridge tender at Tierra Verde Bridge and allowing for tidal fluctuations, this height would allow over 99 percent of the waterway users that currently use the channel to safely navigate under the proposed structure. In addition, a 12-ft sidewalk is provided on the east side to accommodate Pinellas County's planned multi-use path.

Findings for the PD&E Study will be presented at the August 20, 2009 TBAG meeting.

## Indy Racing on the Waterfront

By: Joe Kubicki, Director of Transportation & Parking – City of St. Petersburg

The City of St. Petersburg is host to the Honda Grand Prix, which is part of the Indy Racing League (IRL). Held on the City's beautiful waterfront, the Honda Grand Prix is often compared to the world-renowned beauty of the Monaco track in France, both with stunning backdrops for the events.

The Honda Grand Prix has transitioned to the second most popular race in the IRL series after the Indy 500, which is held on a track with a 100-year tradition of racing.

The race was the first IRL event held during the 2009 season, a significant testament to the popularity of the location. Attendance for the race exceeded 2008 World Series attendance numbers for individual Games. Games 1 and 2 were held at Tropicana Field in St. Petersburg.

The contract to hold the race in St. Petersburg has been renewed year-by-year, but a recent agreement secures the race for the next five years.

Coordination for the Honda Grand Prix course is unique and impressive. The City takes advantage of many spread out parking assets and the venue itself is created out of thin air by closing sections of roadway, parking lots and an airport runway.

Coordination details for the race will be presented at the August 20, 2009 TBAG meeting.



## Transportation Planning for SuperBowl XLIII

By: Mike Witte, Gameday Management Group

The Florida Department of Transportation, District 7 and the City of Tampa partnered with Gameday Management Group to coordinate the traffic needs for SuperBowl XLIII. Gameday, a National Football League (NFL) affiliated company, coordinated the transport systems for the athletes, media, officials, spectators, and sponsors. Gameday also developed methodologies for venue transportation operations and logistics, including parking, permitting and access control systems. Transportation planning details will be presented by Gameday at the August 20, 2009 TBAG meeting.

Founded in 1994, Gameday Management Group began working with international, high-level security events such as the 1994 World Cup and the 1996 Summer Olympic Games in Atlanta. In 2003, Gameday introduced Click and Park (CNP) and Click and Ride (CNR), a web-based travel demand management tool offering pre-paid parking, fleet car, black car and shuttle reservations. Attendees to a major event consult Gameday's website on the best way to get to and from an event.

Gameday utilizes the most advanced and only LIVE real-time tracking GPS in the market, configurable for 1-, 5-, or 10-second updates depending on the client's needs. The technology is capable of worldwide coverage, tracking hundreds of vehicles at once on the same screen, thus allowing vision of vehicle speeds LIVE and a replay of complete trip information for all vehicles tracked.

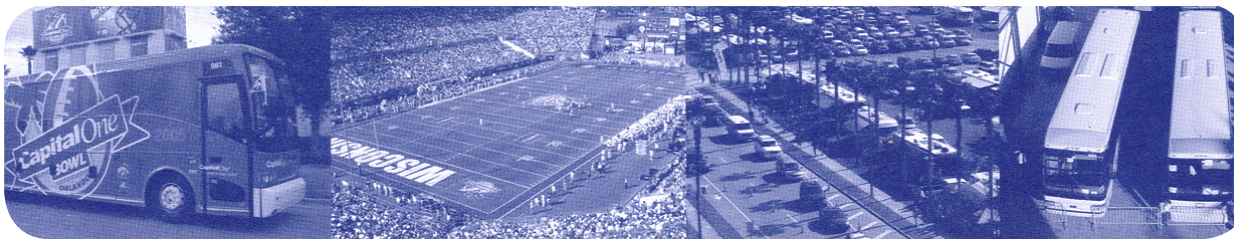
Virtual fences send notification via SMS text-message or e-mail whenever a vehicle enters or leaves the preset zones. Speed alerts send notification via SMS text-message or e-mail whenever a vehicle exceeds defined speeds. Such state-of-the-art GPS technology allows better management of assets and more efficient operations in support of the various constituent groups needs.

Additional technology employed by Gameday includes "smart cards." These cards are used for tracking, ticketing and security access during an event. The "smart cards" provide a means of creating seamless Very Important Person (VIP) processing in a flexible, secure way with minimal human intervention.

*Gameday continued on page 6*

### Gameday Events

- Super Bowls XXXIII – XLIV (1999-2010)
- 2010 Vancouver Winter Olympics
- 2010 World Equestrian Games (Lexington, KY)
- 2002 Salt Lake Winter Olympics
- Daytona 500, 2004-Present
- New York Jets and New York Giants, 2007-2010
- City of Glendale, AZ; University of Phoenix Stadium, 2006-Present
- Champs Sports Bowl (Orlando), 1994-Present
- Capital One Bowl (Orlando), 1994-Present
- University of Florida, 2001-Present
- 2009 NCAA Men's Final Four (Detroit)
- 2008 NCAA Women's Final Four (Tampa)
- 2008 World Market Center (Las Vegas)
- 2007 Cricket World Cup (West Indies)
- 2007 Men's Gold Cup (Various U.S. Cities)
- 2006 Winter Olympic Games Consultant (Torino, Italy)
- 2005 Presidential Inauguration (Washington, DC)
- 2004 G8 Summit (Sea Island, GA)
- 2004 Summer Olympic Games Consultant (Athens, GA)
- 2004 World War II Memorial Dedication Ceremony (Washington, DC)
- 2004 & 2005 Major League Baseball All Star Games (Houston, TX & Detroit, MI)
- 1999 NCAA Men's Final Four (Tampa)
- 1999 Women's World Cup (Various U.S. Cities)
- 1996 Summer Olympic Games (Atlanta, GA)
- 1994 Men's World Cup (Various U.S. Cities)



# Tampa Bay Applications Group – Brown Bag Meeting

August 20, 2009

Alfano Center - Across from the FDOT District Seven Office

12:00 p.m. to 2:00 p.m. (Center Opens at 11:30 a.m.)

## Transportation Planning for Unique Events and Studies Super Bowl XLIII, Honda Grand Prix, Rays ALCS and World Series

### What do Major League Baseball and the Indy Racing League Have in Common?

*Joe Kubicki, Director Transportation and Parking*

*Evan Mory, Parking Manager*

*Sgt. Gary Dukeman, City of*

*St. Petersburg Police Department*

The City of St. Petersburg is home to the Tampa Bay Rays and the City is host to the annual Honda Grand Prix, which is held on the waterfront. These two sporting events have two unique issues in common. First, both events require extensive traffic management; and second, both sporting events just got a lot bigger!

In 2008, the Rays executed one of the biggest turnarounds in major league history. During the American League Championship Series (ALCS), the seating capacity of the stadium was increased by almost 6,000. For the World Series, the Department of Homeland Security closed major

arterial roadways surrounding the stadium as a safety precaution. The exciting season increased the fan base and the need for more parking.

This past April, the attendance at the Honda Grand Prix exceeded Game 5 of the World Series. The Grand Prix has transitioned to the second most popular race in the Indy Racing League (IRL) series after the Indy 500, and a recent agreement secures the race for the next five years. The Grand Prix course has very spread out parking assets and the venue itself is created by closing sections of roadway, parking lots and an airport runway.

This presentation will discuss the approaches that the City of St. Petersburg utilizes to manage event day traffic and parking for Tropicana Field and the Honda Grand Prix.

### Transportation Planning for SuperBowl XLIII

*Mike Witte, Gameday Management Group, (NFL Affiliated Company)*

The City of Tampa was host to Super Bowl XLIII. Assisting the City, the FDOT, and many other agencies with transportation for this event was Gameday Management Group (a National Football League affiliated company).

Founded in 1994, Gameday specializes in venue transport, bus operations, and parking and has supported high level security events such as the 1994 World Cup and the 1996 Summer Olympic Games in Atlanta. Beginning in 1999, Gameday was selected to provide bus operations for Super Bowl XXXIII in Miami and has continued supporting the NFL for traffic, parking, access control, fleet management, and logistics plans.



In 2003, Gameday introduced Click and Park (CNP) and Click and Ride (CNR), a web-based travel demand management tool that instructs attendees on the best way to get to an event resulting in more organized parking and traffic flow.

This presentation will discuss the coordination for Super Bowl XLIII including the management of the transportation systems for the teams, spectators, media, NFL staff, NFL Experience, and NFL sponsors, as well as operational management for Super Bowl sanctioned venues.

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## Transportation Planning for Unique Events and Studies

### Super Bowl XLIII, Honda Grand Prix, Rays ALCS & World Series

*Brown Bag continued from page 5*  
**Studying the Traffic Issues for the  
Tierra Verde Bridge**  
*Michael Dorweiler, PBS&J*

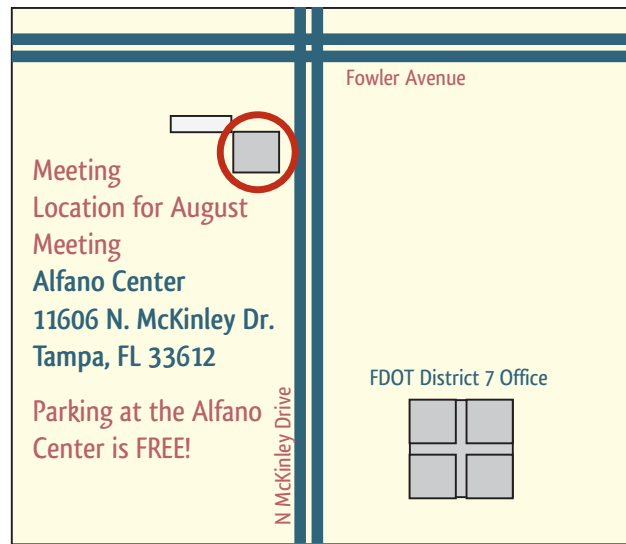
The Tierra Verde Bridge (S.R. 679) spans the Intracoastal Waterway, a marked federal navigational channel which runs between the mainland and the barrier islands along the Gulf of Mexico. S.R. 679 was constructed in 1961 to join the man-made islands of Tierra Verde in unincorporated Pinellas County with Isla Del Sol in St. Petersburg.

The Tierra Verde Bridge, a low-level bascule structure, serves as the link to the Tierra Verde residential community and Fort De Soto Park. Fort DeSoto is Pinellas County's largest park and has the largest boat ramp.

This PD&E was unlike other studies which focus on AM and PM peak hour conditions. The mix of residential and recreational uses and boat traffic in this area created the need for nonconventional data collection and analysis.

For example, a boat survey was required to document travel times and needs of the recreational community. The PD&E needed to minimize delay for both modes of travel during atypical peak hours.

The presentation will focus on the unique traffic issues addressed as part of the PD&E study and the methodologies followed to reach a viable preferred alternative.



*Gameday continued from page 4*

Gameday uses electronic counting solutions to track attendance at an event. Some of the more common uses for this technology include:

- Measuring the effectiveness of an out-of-home ad campaign;
- Retail intelligence to measure pedestrian traffic, asset placement, traffic patterns and venue layout;
- Service planning for maintenance and cleaning;
- Safety in the event of an evacuation or emergency; and
- Resource usage for stadiums, arenas, and performing arts centers.

Gameday is currently working with the Florida Department of Transportation in Miami, Florida for the upcoming Super Bowl XLIV in 2010.

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## USF Graduate Transportation Course Offerings – Fall 2009

### Classes Begin: August 24, 2009

USF offers a variety of graduate transportation courses to support your professional development and academic advancement.

Course	Description	Number	Schedule	Instructor
Traffic Systems Engineering**	Covers a range of transportation engineering concepts including fundamental traffic models, capacity and level of service analysis, intersection analysis, traffic signal timing, and traffic simulation.	TTE 5205	Date Tue 5:15 – 8:00pm	Dr. John Lu
Transportation Planning and Economics**	Presents an overview of urban transportation planning and transportation systems evaluation including travel demand modeling based on trip generation, trip distribution, modal choice and trip assignment.	TTE 5501	Date Mon 6:20 – 9:05pm	Dr. Chanyoung Lee
Intelligent Transportation Systems**	Deals with ITS, ITS architecture design and evaluation, simulation and modeling, advanced traffic management systems, traveler information systems, vehicle control systems, etc.	TTE 6270	Date Wed 6:20 – 9:05pm	Dr. John Lu
Land-use and Transportation**	A range of theories, concepts and models of land-use and urban transportation interactions and relevant transportation planning and policy discussions.	CGN 6933	Date Thu 5:15 – 8:00pm	Dr. Steve Polzin
Discrete Choice Models of Travel Behavior	Discrete choice models (multinomial logit, nested logit, ordered logit): Theory and application to travel behavior analysis and demand forecasting (mode choice, destination choice, car ownership, etc).	TTE 6505	Date Mon 3:05 – 5:50pm	Dr. Abdul Pinjari

\*\* These four courses will be offered for distance-learning students also (via video streaming of the lectures on the internet). Students can listen to the recorded lectures at a time convenient for them. For more information on registering for distance-learning, contact the USF-APEX office at 813-974-3783 or <http://apex.eng.usf.edu/>.

Non Degree-Seeking Students: Non-degree seeking students can submit a non-degree seeking enrollment application form prior to course registration. The application process is straightforward, and there is a \$30 fee. This can be done at: <http://www.usf.edu/Admission/non-degree-seeking.asp>. From this link, one can apply online or complete an enrollment application through a records and registration office on any USF campus. Once the application is processed, one can register for classes through USF's OASIS system, beginning August 17.

For any questions or approvals before enrolling into a course, non-degree seeking and non-engineering students are encouraged to contact Dr. Abdul Pinjari at [apinjari@eng.usf.edu](mailto:apinjari@eng.usf.edu) or 813-974-9671 or Dr. Steve Polzin at [polzin@cutr.eng.usf.edu](mailto:polzin@cutr.eng.usf.edu) or 813-974-9849.