# Florida Technology Transfer Quarterly A Traffic Engineering and Safety Workforce Training Update



Florida Transportation Technology Transfer Center





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- Federal Highway Administration (FHWA)
- Florida Department of Transportation (FDOT)
- Local Technical Assistance Program (LTAP)
- Center for Transportation Training (CTT)
- Highways for LIFE (HfL) Demonstration Showcases
- Pedestrian and Bicycling Safety Resource Center (SRC)
- Florida Occupant Protection Resource Center (OPRC)

Interested parties may receive the electronic publication and annual printed portfolio by sending name, agency, mailing address, phone, and email to t2@ce.ufl.edu. Newsletter content and accuracy is the exclusive responsibility of the Florida T2 Center.



## MUTCD Update — New Regulatory Rulings Finalized

The Federal Highway Administration (FHWA) has completed its rulemaking process on two fronts for the Manual on Uniform Traffic Control Devices (MUTCD) and issued Revision 1 (addressing engineering judgment) and Revision 2 (addressing compliance deadlines) to the federal MUTCD.

Both of these changes can be potentially significant to roadway agencies, but neither is the "get out of jail free" card they might first appear to be. If anything, these changes arguably increase agency responsibilities and should be incorporated into agency programs with care. Let's look very briefly at each one.

Revision 1 deals primarily with Section 1A.09 Engineering Study and Engineering Judgment, restoring language that was removed in the revisions that became the 2009 edition of the MUTCD. Specifically, Revision 1 adds the following guidance statements. "The decision to use a particular device at a particular location should be made on the basis of either an engineering study or the application of engineering judgment. Thus, while this Manual provides standards, guidance, and options for design and applications of traffic control devices, this Manual should not be considered a substitute for engineering judgment. Engineering judgment should be exercised in the selection and application of traffic control devices, as well as in the location and design of roads and streets that the devices complement."

This language, though welcomed by many in the profession, should not be interpreted as permission to deviate from the standards, guidance, and options of the MUTCD by casual measures or anecdotal information. Section 1A.13 of the MUTCD defines

"engineering study" and "engineering judgment." In the State of Florida, a licensed professional engineer is required to perform the engineering study and render engineering judgment. Chapter 471.005 (5) of the Florida Statutes defines an Engineer as follows; "Engineer' includes the terms 'professional engineer' and 'licensed engineer' and means a person who is licensed to engage in the practice of engineering under this chapter." Licensure is discussed in Florida Statute 471.015.

Revision 2 primarily affects Table I-2, Target Compliance Dates Established by the FHWA. The most significant change to this table is that 46 of the 58 compliance dates previously listed have been eliminated. Any date that has expired, but is no longer shown in the table, is no longer applicable. Conformance is therefore achieved through systematic upgrading for those particular provisions ("programmatic changes"). Dates that have already expired, but are still listed in the table, are still in effect.

The State of Florida has adopted the MUTCD for mandatory use on the State Highway System. The Florida Department of Transportation (FDOT) has several state-specific standards which supplement the MUTCD. Links to these Florida-specific standards can be found at *dot.state.fl.us/rddesign/CS/CS.shtm* along with the FDOT Central Office contact. Visit *mutcd.fhwa.dot.gov* to see the changes to the federal MUTCD.

Adapted by Sam Middleton, PE, PTOE, with permission, from the Delaware T2 Center Travel-Log, Spring 2012, Volume XXIII, Issue 1

## **New at the T2 Media Center** Below is a sample of new items added to the Media Center collection since the last newsletter. Visit t2ctt.ce.ufl.edu/t2ctt/T2 Media Center.asp to view all new listings.

As always, any non-copyrighted publication can be printed and checked out to you upon request. Visit the website, call 352.273.1695, or email *mediacenter@ce.ufl.edu* for more information.

- Alternative Approaches to Funding Highways
- An Agency Guide on Overcoming Unique Challenges to Localized Congestion Reduction Projects
- A Comprehensive Framework for Off-Highway Vehicle Trail Management
- The Relationship of Title VI Requirements to Planning Processes in Florida
- A Primer on Work Zone Safety and Mobility Performance Measurement
- Safety Impacts of Pavement Edge Drop-offs
- The Superpave Mix Design System: Anatomy of a Research Program

- Optimization of Tack Coat for HMA Placement
- Mechanical Properties of Warm Mix Asphalt Prepared Using Foamed Asphalt Binders
- Standardization of Crash Analysis in Florida
- State of the Nation Report on Cell Phone Distracted Driving
- Evaluation of Alternative Pedestrian Control Devices
- Improving Pedestrian Safety at Unsignalized Crossings
- Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way

### **FACERS Awards Winners**

#### Recognizing excellence in Florida's public works agencies

The Florida Association of County Engineers and Road Superintendents (FACERS) recognizes excellent service in Florida's public works agencies. The FACERS awards are the most prestigious professional recognition in Florida for transportation and public works personnel. This year, awards include Public Works Employee of the Year, Small Agency/Rural Agency Engineer of the Year, Local Agency/State Agency Project Collaboration, and a shared award for Team Project of the Year.

Visit *facers.org* for more information. Nominees are not required to be FACERS members.

#### Small Agency/Rural Agency Engineer of the Year

#### Scott Cottrell, Public Works Director Sumter County Pavement Management

As Director of Public Works, Scott Cottrell is responsible for the nearly 700 miles of paved roadways within Sumter County. Recognizing the worsening condition of the County's infrastructure, he realized the need for a systematic approach to planning County pavement improvements and a tool to help justify appropriate road program funding. Cottrell's suggestion led to the implementation of a Pavement Management System to assist with the development and prioritization of the County's five-year pavement improvement program.

→ Scott Cottrell (left), Sumter County, accepts Small Agency/Rural Agency Engineer of the Year Award from Fred Schneider. FACERS President



Following the initial pavement management analysis, funding for pavement improvements was increased from \$1.1 million to \$3.2 million. "Neighborhood Pavement Preservation Supplemental Funds" were also designated to improve the coordination of pavement treatments. Mr. Cottrell worked with Chris Wert, Assistant Director for Engineering, to establish a five-year prioritized pavement maintenance and rehabilitation plan sensitive to Sumter County's very diverse socioeconomic character. Projects and treatments recommended by the system were reviewed in the field by County staff and refined, if necessary, to coordinate work along a given roadway or within a particular neighborhood.

The Pavement Management System is based on the proven MicroPAVER software system; however, multiple innovations were incorporated in the implementation method. The initial database was based on available data provided by both the County and the Metropolitan Planning Organization (MPO), such as traffic counts, including classification counts to determine truck traffic volume on select roadways.

Mr. Cottrell and his team exhibited exemplary project implementation that is beneficial to the County, its residents, and environment. For this dedication to excellence, Scott Cottrell received the FACERS Small Agency/Rural Agency Engineer of the Year Award. Congratulations on a job well done!

#### Local Agency/State Agency Collaboration

#### City of Temple Terrace Engineering Division 56th Street Corridor Improvements

Traffic congestion and pedestrian safety spurred the City of Temple Terrace to launch and complete their 56th Street Corridor Improvement Project, which required working closely with the Florida Department of Transportation (FDOT) and numerous agencies and groups. Work encompassed extensive modifications, including new medians, lighting, landscaping, crosswalks, decorative pavers, and other improvements to the .76 mile corridor. The installation of a historical



▲ Bob Gordon (left), City of Temple Terrace, accepts Local Agency/State Agency Collaboration of the Year Award from Fred Schneider, FACERS President

tower, architecturally designed bench seating, and bus shelters, together with strategically placed landscaping and City waste bins, transformed this once vehicle-focused facility into an inviting area for pedestrians and bicyclists.

The City invested \$2.3 million as well as funding from federal, state, and local grants to relocate overhead utility lines underground and replace the unsightly utility poles with majestic Medjool date palms. The City also spent the funds on safety enhancements such as widened sidewalks, fewer

driveway aprons, and landscaped medians to replace dangerous dual turning lanes, resulting in a well-constructed project with less than 1% cost overrun.

The City of Temple Terrace showed excellent teamwork in coordinating work efforts with all agencies in completing this extensive project punctually and with detailed consideration to the end result and its impact on the community. The City is well deserving of this year's FACERS Local Agency/ State Agency Collaboration award. Congratulations on a job well done!

#### Public Works Employee

Mr. Quanor "Butch" Skipper, Engineering Tech Manager, and Mr. Chris Wood, Superintendent

#### **Alachua County Public Works**

#### **Unimproved Road Chip Seal Paving Projects**

With over 500 miles of limerock roads graded on a six-week cycle, Alachua County's idea of the Chip Seal Program to reduce the dust, lower maintenance and grading costs, and improve the travel conditions for roadway users while reducing stormwater and pollutant runoff makes sense. The program also responded to many residents' complaints about dusty conditions, potholes, and washboarding on County-maintained, unpaved roads while providing a greater level of service at similar costs to roadway grading.

At the direction of the Alachua County Commissioners, Public Works staff published a report that outlined some of the issues associated with County-maintained limerock roads. After prioritizing a list of roads, a Chip Seal Process was developed to enhance roads at a reduced cost. The Construction Crew, directed by Mr. Butch Skipper and Mr. Chris Wood, began the Chip Seal process on the prioritized roads.

**Quanor** "Butch" Skipper (left) and Chris Wood (center), Alachua County Public Works, accept Public Works Employee of the Year Award from Fred Schneider, FACERS President



Mr. Skipper and Mr. Wood provided an excellent leadership style, empowering the 12 construction crew employees and gaining support for the Chip Seal Program. Their direct, hands-on approach to explain processes, ensure all materials were accounted for, and promote quality control of the delivered product guaranteed the project met all measures, schedules, and quality standards, and ensured the Chip Seal road would reduce maintenance costs. Innovative methods were used to recycle concrete, asphalt milling materials, and various other components of the chip seal process. The surface treatment had many other benefits, such as improving public health by reducing dusty conditions, lowering the risk of crashes and fatalities by improving visibility and friction, and limiting environmental impact by minimizing erosion, sedimentation, and runoff.

 Mike McCain (left) and Commissioner Kathy Bryant (right), Marion County, accept Team Project of the Year Award from Fred Schneider, FACERS President Quanor "Butch" Skipper and Chris Wood worked tirelessly with their team to deliver a project for the better of the County's motorists, wildlife, and budget. Mr. Skipper and Mr. Wood were worthy recipients of this year's Public Works Employees of the Year award. Congratulations on a job well done!

#### Team Project of the Year – Shared

t2ctt.ce.ufl.edu

## Marion County Road Division Shoulder Paving Crew Safety Edge

Marion County had a severe problem with pavement edge drop-offs. To address this issue, the County added the Safety Edge (documented as a significant countermeasure to address safety associated with pavement edge drop-off problems) to new work on major rural roads. After installing an existing Safety Edge "Shoe" device on the County's widener, the crew discovered that the device was designed to work with a conventional paver and did not perform as expected. So, the Shoulder Paving Crew fabricated a new Shoe using the original basic concepts to allow the device to work with the County's equipment.





Placing a thick, narrow Hot Mix Asphalt (HMA) strip required the entire crew to use a much different compaction procedure to make the effort work. This project and their efforts were also part of the Federal Highway Administration's (FHWA) demonstration in June 2011 and may have been one of the first instances where the Safety Edge was used with a widener instead of a conventional paver. The County did incur modest cost for Shoe fabrication and initial testing, but continued use of the device will not add any cost to future projects.

The Marion County Road Division Shoulder Paving Crew's innovation is an inspiration and an example of low-cost improvements for the good of all involved. Congratulations on a job well done and receiving a FACERS Team Project Award!

#### Team Project of the Year – Shared

#### Volusia County Road and Bridge Division Coastal Reef Project

Volusia County's Coastal Division Director was tasked by the County Council to provide artificial reefs in County waters to benefit the recreational fishing industry in Volusia County. As this project was not normal department business (the last artificial reef was constructed in 2004), experienced supervisors met several times to mastermind a plan of action to include hours of service, staffing, material types, material handling, staging area size, traffic plans, vehicle

A Steve Farney (far left), Joe Nolin (center left), and Judy Grim (center right), Volusia County, accept Team Project of the Year Award from Fred Schneider, FACERS President maintenance support for fueling and service, appropriate record keeping, and interaction with the Coastal representative.

Recycled or damaged drainage structures and pipe, as well as other large concrete items, were selected as the most cost-effective project materials, supplied by the County, other municipalities, and some private companies, and staged in a small area in New Smyrna Beach. This unique project has provided a very cost-effective approach to expanding local industry and, with the County Council's support, will continue in the future. Recent studies indicate that the return on investment to the local economy is as much as \$138.00 for every dollar spent building artificial reefs.

The project has been well received by both the diving and recreational fishing industry in the County and has provided a direct, positive impact on the community by creating fish habitat off the coast. This was a team effort with input and assistance from various agencies coming together to complete a project beneficial to the County's community and economy. Congratulations on a job well done and receiving a FACERS Team Project Award!

## Florida's Pedestrian and Bicycling Safety Resource Center

Supplying materials to make your safety event successful

Make your ped/bike events and educational activities more successful by providing items that reinforce safe walking and bicycling practices. Items listed below are available at no charge to qualifying organizations. Visit www.pedbikesrc.ce.ufl.edu for descriptions, illustrations, and ordering information.

#### **Tattoos**

- I'm Safe Think Before You Step
- I'm Safe Be Safe! Wear a Helmet
- I'm Safe Think B4 You Step
- I'm Safe Use Your Brain! Wear a Helmet!

#### **Stickers**

- Use Your Head (Dog)
- Use Your Head (Moose)
- Walk Safely!
- Walking School Bus

#### Reflective

- "Be Safe Be Seen" Reflective Wristlet
- SRTS Reflective Wrist Band

#### **Other Fun Stuff**

- Brain Erasers
- 4-Pack Crayola Crayons
- Be Safe Be Seen Mood Pencils NEW!
- Be Safe Be Seen Mood Pens NEW!
- Flip Top Water Bottles **NEW!**

#### **Books**

- A Resident's Guide for Creating Safe and Walkable Communities
- Cycling Skills Clinic Guide
- Florida Bicycle/Pedestrian Law Enforcement Guide
- Florida Bicycling Street Smarts
- How to Develop a Pedestrian Safety Action Plan
- Pedestrian Safety Guide for Transit Agencies
- Pedestrian Safety Workshop:
   A Focus on Older Adults
- Pedestrian Safety Workshop: A Focus on Older Adults Instructor Guide
- Practice Bike Safety
- Statewide Bicycle Facilities Study
- The Guide to Bicycle Rodeos
- Traffic Safety

#### **Posters**

- Are You A Safe Walker?
- Bicyclist Poster II (Spanish)
- Bicyclist Poster (Spanish)
- Pedestrian Poster: Sidewalks (Spanish)
- I'm Safe On My Bike

#### **Publications**

- A Kid's Guide to Safe Walking
- Bicycle Safety
- Bicycle Safety: What Every Parent Should Know \*E/S
- Bicyclist Make Safe Choices/Rules of the Road
- Bike Riding Dangers
- CROSSWALK COUNTDOWN!
- Crosswalk Safety \*E/S
- Easy Steps to Properly Fit a Bicycle Helmet
- EL EQUIPO ADECUADO
- GOT GEAR?? Safe to the Xtreme
- How To Fit & Wear Your Bicycle Helmet \*E/S
- I'm A Safe Walker
- I'm Safe On My Bike
- I'm Safe on My Bike Coloring Book
- I'm a Safe Walker Coloring Book
- I'm Safe! Paint Sheet Bike \*E/S
- I'm Safe! Paint Sheet Pedestrian \*E/S
- Kids Physical Activity \*E/S

- Know the Rules Going To & From School \*E/S
- Let's Walk to School Coloring Book
- Neighborhood Safety \*E/S
- Parent's Guide Child Safety on Your Street
- Paul's A-Maze-ing Trip
- PEATÓ & PONGA ATENCIÓN...
- Prevent Pedestrian Crashes
- Road Riders Are Drivers
- Safety Fun Activity Book \*E/S
- Sara and Her Bike
- Secret Code
- Stepping Out
- The Top Ten Rules of Bicycle Safety
- Tips for Parents and Other Adults for Teaching Pedestrian Safety to Children \*E/S
- Tips for Walking Safely to School \*E/S
- Walk 'n Roll Activity Book
- Walk 'n Roll Bookmark
- Walk 'n Roll Punch Cards
- Wear Your Helmet
- What's Wrong with This Picture?
- You Can Teach Your Child to Walk Safely \*E/S
- You Can't Stop a Train

\*E/S — Available in English and Spanish

► The Ped/Bike Booth and OPRC Booth at the Lifesavers Conference in Orlando, FL on June 14–16, 2012



## Occupant Protection Resource Center (OPRC) Update

Gaining knowledge and experience to better promote occupant protection in Florida

This past quarter has been exciting for the Florida Occupant Protection Resource Center (OPRC): scholarships were added, lots of new items were ordered, and the Center had a booth at the Lifesavers conference in Orlando. Lots of great things are happening to promote occupant protection in Florida!

In June, scholarships covering the \$75 fee to become a qualified Child Passenger Safety (CPS) technician were made available for anyone in the State of Florida who would like to serve their community as a CPS tech. To apply, visit *floridaoprc.ce.ufl.edu*, click on Links, and then Forms, to complete and submit the application. Also available is a one-time stipend for Florida CPS Instructors teaching classes before September 15, 2012. Only one award will be given per instructor for this grant year in order to accommodate as many instructors as possible. The application is in the CPS Instructors section of the website.

During the Lifesavers 2012 conference, the OPRC was able to showcase a variety of resources available through the center to illustrate the support provided by the FDOT to the CPS community across Florida (below). The example set by the OPRC program inspired many other state delegates to begin exploring options for a similar resource center for their own state. Thanks to the CPS instructors and technicians who stopped by to visit the booth — it's so nice to match faces with names, and we hope to meet many more of you throughout the year! The OPRC has received great feedback through the two conference calls that have taken place to date (audio recordings are available in the instructor/technician only website sections).

Below is a list of items available to order at no charge through the Promotional Items portion of the



website. Visit the website to order, and be sure to check back for the soon-to-be-added instant download page (under the Links section) with a list of items you can download and print right from the site. The OPRC has learned so much over the last quarter and would love to hear about any improvements that can be made to serve you better. Please email <code>floridaoprc@ce.ufl.edu</code> or call 352.273.1671 to provide your valued input.

#### **Activity Books**

- I'm Safe! in the Car Activity Book
- I'm Safe! in the Car Paint Sheet \*E/S
- Road Warriors Safe to the Xtreme

#### **Stickers**

- Be Safe Buckle Up 5-point Harness
- Be Safe Buckle Up in a Booster \*E/S
- Be Safe Buckle Up Moose \*E/S
- I'm Safe! Sticker Sheets

#### **Tattoos**

- Be Safe Buckle Up
- Pre-teen Car Safety

#### **Other Fun Stuff**

- Key Chain Flashlight
- Window Clings
- Crayons
- Pens
- Post-it Notes
- Are You Safe in the Car Poster
- Coffee Mug
- Fans (Handheld)
- OPRC Magnet
- Water Bottle

#### **DVDs**

- I'm Safe! in the Car
- 2012 Child Restraint Manufacturers' Instructions with Summary Sheets \*I/T
- Simple Steps to Child Passenger Safety (Living Legacy) \*I/T

#### **Publications**

- Easy Reader Tip Sheet
- Easy Reader Tip Sheet
- I'm Safe! in the Car Bookmark
- Spanish Flip Book \*I/T
- The LATCH Manual, 2011 Edition \*I/T

\*E/S — Available in English and Spanish

\*I/T — Available to CPS Instructors and Technicians only

## **Making Roadways Safer for Motorcycles – Part 3**

Lane Ridges, Rises, and Lane Changes

This article reviews the third segment in a series of eight recently-developed training segments funded by the Florida Department of Transportation (FDOT). The series is designed to raise the awareness of public works and transportation employees who are responsible for the planning, designing, construction, and maintenance of our roads. The visuals-based curriculum has a simple message: motorcycles are different from vehicles, and riders react differently to roadway conditions than drivers do.

As presented in the review of Segment 2 in our May 2012 issue, riding a motorcycle is an active operation, and a motorcycle tire's footprint is very small. Any changes in the road surface that a driver of a car or truck traverses with ease can present a safety issue to a motorcyclist, especially when changes are longitudinal to the roadway, like ridges and rises. Lane ridges and rises may occur due to poor longitudinal joints or from paving during construction that leaves one lane higher than the next. Standards limit a dropoff to a maximum of 1-1/2 inches, but direction plays a big role. If a motorcycle is traveling on the new mat (higher) and has to transition to the old mat (1-1/2 inches lower), that is an operation that most riders can handle fairly easily; however, if the motorcycle is traveling on the old mat and has to transition to the new, higher mat (low side to high side), even a 1-1/2 inch difference can present a safety challenge.

Consider a typical construction project with the main line paving performed first and ramps paved later. When a motorcyclist is riding on an Interstate that is under construction, moving from the newly paved road on to the lower, older pavement is much easier than negotiating an onramp with a diagonal rise while accelerating to highway speeds. The same issues apply for turn lanes and crossovers during construction, as well as new lanes left open to traffic. It can also apply to resurfacing a two-lane road when one side is paved and the other is not. Motorcycle riders must be very careful not to lose control when transitioning from high to low side ridges and, even more importantly, low to high side ridges.

In order to improve conditions for motorcyclists, roadway designers should take care to discuss transitions, lane changes, and traffic shifts with an emphasis on motorcycle safety, minimizing such conditions where possible. Suggestions that can be executed during construction include ensuring drop-off criteria are met, drop-offs are backfilled and brought flush to surface, required signage is in place, and longitudinal joints are flush with adjoining pavement. Also helpful would be to drive through the project and observe it from a motorcyclist's perspective, looking for areas where improvements could be made. It is also a good idea to avoid leaving lane drop-offs in traffic lanes any longer than necessary. A final important measure to take is maintaining and repairing longitudinal joints and drop-offs, when needed.

Remember that any irregularity in the road surface can have a significant effect on the motorcyclist's control of his/her vehicle. Following these suggestions and others found in the curriculum can help ensure your roads are in the best shape for all of your road users, no matter how many wheels their vehicles have.

Please visit t2ctt.ce.ufl.edu/t2ctt/Motorcycle\_ Safety\_Materials.asp to view the full curriculum and share it with your staff. Also stay tuned for Part 4 in an upcoming issue of the newsletter. Together, we can make roadways safer for all users.



## **Upcoming Workshops**

Visit *t2ctt.ce.ufl.edu* to view the full course listings or to register for any of our sessions. For more information about T2 workshops, email *t2workshops@ce.ufl.edu* or call 352.273.1670. For CTQP courses, email *ctt@ce.ufl.edu* or call 352.273.1669. We look forward to serving you. Training on *your* terms.

Advanced Maintenand		September 5, 2012	Chipley	Intermediate Mainte	
August 8–10, 2012	Temple Terrace	September 5, 2012	Jacksonville	August 15–16, 2012	Cape Coral
August 29–31, 2012	Cape Coral	September 5, 2012	Pompano Beach	August 15–16, 2012	Orlando
September 12–14, 2012	Gainesville	September 5, 2012	Tampa	August 29-30, 2012	North Miami Beach
September 18–20, 2012	Tallahassee	September 12, 2012	Fort Myers	September 12–13, 2012	Punta Gorda
October 17–19, 2012	Punta Gorda	September 14, 2012	Chipley	September 26-27, 2012	Temple Terrace
October 24-26, 2012	Temple Terrace	September 14, 2012	Fort Myers	October 10-11, 2012	Tallahassee
November 1-2, 2012	North Miami Beach	September 18, 2012	Chipley	October 17-18, 2012	Cape Coral
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Advanced MOT - Refre		October 2, 2012	Davie	October 24-25, 2012	Gainesville
August 7, 2012	Temple Terrace	October 3, 2012	Chipley	October 24-25, 2012	Orlando
August 28, 2012	Cape Coral	October 3, 2012	Jacksonville		
September 11, 2012	Gainesville	October 3, 2012	Pompano Beach	Intermediate MOT -	
September 17, 2012	Tallahassee	October 3, 2012	Tampa	August 14, 2012	Cape Coral
October 16, 2012	Punta Gorda	October 5, 2012	Davie	August 14, 2012	Orlando
October 23, 2012	Temple Terrace	October 16, 2012	Chipley	August 15, 2012	North Miami Beach
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Asphalt Paving Level		October 15–16, 2012	Chipley	Pile Driving Inspec	
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October 3–5, 2012	Davie	August 23–24, 2012	Davie	August 17, 2012	Orlando
Asphalt Plant Level 1		October 17–18, 2012	Chipley	September 6, 2012	Gainesville
September 5–7, 2012	Gainesville	0010001 17-10, 2012	Gilipicy	October 4, 2012	Gainesville
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August 8–9, 2012	<b>O</b> cala	<u> </u>	ee, Ocoee, Davie	November 1, 2012	Gainesville
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Concrete Batch Plant Operator August 7, 2012 Chipley		FDOT Concrete Field Inspector		Quality Control Manager	
August 1, 2012	Chipley	Specification		September 13-14, 2012	Chipley
CTQP Written Exam Or	nly	September 10-12, 2012	Chipley	September 13-14, 2012	Fort Myers
(No books provided)	•	September 10-12, 2012	Fort Myers	October 25-26, 2012	Gainesville
August 7, 2012	Chipley	October 22–24, 2012	Gainesville		
August 14, 2012	Tampa	Final Estimates Level	1		
August 17, 2012	Tampa	September 12, 2012	I Gainesville	TO	CTT
August 22, 2012	Davie	<b>Ն</b> ԵՐԵՍՍԱԵՐ 12, ՀՄ12	uaillesville		
August 24, 2012	Davie	Final Estimates Level 2	2	Florida Transportation Tech	nology Transfer Center
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Gainesville

## **September is International Walk to School Month**

Orlando

September 13–14, 2012

August 31, 2012



Non-profit Organization U.S. Postage PAID Gainesville, FL Permit No. 94

## FDOT Summary of Final Research Reports New topics available!

Access dot.state.fl.us/research-center for these summaries and final reports. Go to the Research Center Topics drop-down menu in the lower left corner of the page and click on Completed Research. Summaries are listed by category.

#### Geotechnical

 Development of Variable LRFD Factors for Deep Foundation Design Due to Site Variability (BDK75 977-23)

#### **Planning**

 Multimodal and Corridor Applications of Travel Time Reliability (BDK77 977-10)

#### Safety

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- Development of a Binder Fracture Test to Determine Fracture Energy (BDK75 977-27)
- Development of a Test Method That Will Allow Evaluation and Quantification of the Effects of Healing on an Asphalt Mixture (BDK75 977-26)
- Development of Tiered Aggregate Specifications for FDOT Use (BDK75 977-29)
- Effects of Laboratory Heating, Cyclic Pore Pressure, and Cyclic Loading on Fracture Properties of Asphalt Mixture (BDK75 977-28)
- Improving the Properties of Reclaimed Asphalt Pavement for Roadway Base Application (BDK81 977-02)

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