



**Delaware
T²/LTAP**

INFO-CHANGE

Volume XXIII, Issue 2

Winter 2012/2013

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Message from the Director - Earl "Rusty" Lee, Ph.D.

The end of another year is fast approaching. The time has come for a new logo for the T²/LTAP Center and a new title for this newsletter. When I took over the Center in 2010, I didn't understand the logo then and had to have it explained to me. Also, this center was referred to as the T² Center, and most of the centers in other states are referred to as LTAP (Local Technical Assistance Program). I was also never sure how the newsletter title of Travel-Log related to what we do.

So, the time finally arrived for a change. First, the new logo is a highway interchange, which the dictionary defines as "a road junction designed on several levels so that traffic streams do not intersect." So, that leads to

the new title of the newsletter "Info-change". This Center exists to facilitate the exchange of information between sources that may not otherwise intersect. We make sure that what FHWA and DelDOT are doing gets disseminated to the towns and that the concerns of towns are relayed to DelDOT. We are the point in that information stream that makes sure the word gets around smoothly.

My last change is to the Center's name. The history of the program dates to 1982 with funding provided by the Congress for a set of national projects to help rural local highway agencies. The largest project was called the FHWA Technology Transfer (T²) Center Program for Rural Transportation

Agencies. This center was founded in 1992 as the T² Center within DelDOT. In 1991, the scope was changed to include providing technical assistance to cities with populations up to one million. The increased scope was also reflected in the program name, the Local Technical Assistance Program (LTAP). In our logo, mailings and articles, the Center will be referred to as T²/LTAP. We haven't changed our role or our mission. We remain the solution provider for the transportation agencies of Delaware, large and small, providing training, materials, information and advice as requested.

New Rules for Electrical Work

In the State of Delaware, the rules have changed for those engaged in electrical work. House Bill 180 made it illegal for anyone to provide electrical services after June 30, 2012 without holding a Delaware professional license as an electrician. The amended Delaware Code can be found at Title 24, Chapter 14.

The expanded rules are intended to provide clearer protections for workers asked to perform electrical work, and to protect the public and other

workers from inappropriate procedures or unsafe work.

In addition to "apprentice electrician" and "journeyperson electrician," the new code establishes definitions for "master electrician," "master electrician special," "limited

electrician," and "limited electrician special" to establish who can perform what types of electrical work.

Any person purporting to be qualified to act as a licensed electrician or engaging in the practice of electrical services must be licensed under these rules. Monetary fines apply to those who engage in regulated activities without being duly licensed.

However, exceptions do apply. Homeowners intending

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Learn more about Every Day Counts at <http://www.fhwa.dot.gov/everydaycounts/edctwo/index.cfm>

EDC-2

The Federal Highway Administration (FHWA) has rolled out a second wave of innovations for its Every Day Counts (EDC) initiative, an effort focused on shortening the time needed to complete highway projects through the use of new technologies and innovative processes.

FHWA will promote 13 innovations to state, local and regional transportation agencies, as well as to the design and construction industries. These initiatives range from

innovative construction management techniques to paving machinery designed to use global positioning systems (GPS) to achieve higher quality, longer-lasting roadways. The Every Day Counts initiative supports the deployment of innovations with proven benefits in getting highway and bridge projects built faster, which includes planning, permitting, and design phases as well as construction.

Many of these innovations offer other benefits such as

enhanced safety during construction and throughout the life of the project; better quality, so that highways and bridges last longer and require less maintenance; and less impact on the driving public during construction.

FHWA looks forward to turning attention to this new set of technologies during the next two years and working with our state and local partners to deliver better, faster and safer roads and bridges!

Fall Training Marathon

The Delaware T²/LTAP Center capitalized on several opportunities to bring a bonanza of training to Delaware this fall.



Beginning in September, a Federal Highway Administration grant enabled us to bring very low cost sessions of OSHA 10-hour training and Avoiding Runovers and Backovers to over 100 DelDOT and local

agency personnel.

Throughout the fall, we teamed with Wayne Hamilton from DelDOT and ATSSA Certified Trainer to provide Flagger Certification Training to 40 agency personnel at three locations across the state.

Matt Carter taught five sessions of the Winter Maintenance (Snow and Ice Removal) training workshop at locations

across the state to 120 personnel.

Another large group of agency personnel benefited from the snow plow simulator (see article below).

The Delaware T²/LTAP Center continues to look for new resources that will stretch our funds while bringing quality training that is relevant to the needs of the Delaware transportation community.

Snow Plow Simulator Returns



With last year's positive feedback, DelDOT brought back the L3 Communications snow plow simulator for its operators and the T²/LTAP Center joined in collaboration to allow municipalities to take advantage of the training as well.

For two weeks in October, nearly 140 operators from DelDOT, Elsmere, Middletown, New Castle, Dover, Milford, and Cecil County,

Maryland faced plowing conditions they may not have seen for years. In the simulator, they can experience white out conditions, nighttime plowing, rural and urban environments, icing and other control issues, and sudden hazards like deer or pedestrians.

As we saw last year, those new to winter maintenance and veterans alike felt they

picked up important tips from the experience. Snow and ice control is a dangerous business and this type of training clearly makes a difference.



Snow and Ice Control Important to Utility Operations

By Thomas A. Matich, Utility Locator, City of Milford, Delaware, reprinted by permission.

It is imperative during the winter months to keep the roads safe throughout Delmarva. A critical aspect of highway maintenance in winter is the effective and efficient control of snow and ice – public safety and emergency response demand passable roadways. Public works agencies should develop and periodically update their own winter maintenance programs and policies. A well-planned snow and ice removal program would include fleet and equipment inspections, training to familiarize employees with plow routes and operational policies, and constant monitoring of weather forecasts to determine exactly when crews should begin snow removal operations.

In addition to plowing snow, local programs may include one or all of these main strategies to handle ice:

Anti-Icing -- proactive preventive winter maintenance strategy of applying a liquid chemical to roads and bridges prior to the onset of precipitation in order to prevent snow and ice from bonding to the pavement. Brine solutions are examples of anti-icing.

Deicing -- traditional winter maintenance strategy of breaking the snow/ice/pavement bond after it has occurred. It requires more material to break the bond than to prevent it. This includes mechanical (plowing) and chemical (salt application) methods.

Prewetting -- addition of brine solution at the truck's salt spreader to jump start the melting process and reduce

scatter and bounce of dry salt that results from traditional deicing techniques.

In recent years, state agencies have been attempting to reduce road salt usage and intensify environmentally friendly practices during winter operations. Winter maintenance crews are applying anti-icing treatment on most interstates and major corridors. For many winter storms, DeIDOT pretreats some of its roads with a salt and water mixture known as brine. It is designed to prevent or slow down any ice accumulation on the road. The brine residue allows it to be effective days after it is applied to the road surface, even if snow or ice does not follow immediately. But one thing they don't do is put down the brine when they expect a storm will begin as rain. The rain just washes away the treatment. Used properly, anti-icing has been seen to dramatically reduce overall application of salts to the roads, saving money and helping the environment.

way Administration (SHA) will push the white stuff off the roads using a little green stuff. SHA has been using a five percent mixture of biodiesel fuel, depending upon market availability. When compared to



petroleum diesel fuel, the use of biodiesel fuel yields significant environmental benefits, such as reduction of particulate matter, unburned hydrocarbons, carbon monoxide and carbon dioxide.



As most snow storms become heavier, plowing operations will commence once accumulations reach measurable levels. Major routes are given the highest priority to be open and passable.

The Maryland State High-

The SHA maintains nearly 17,000 lane miles. There are up to 2,700 people available and up to 2,400 pieces of equipment available to fight winter storms throughout the state of Maryland. Since the year 2000, there has been an average of

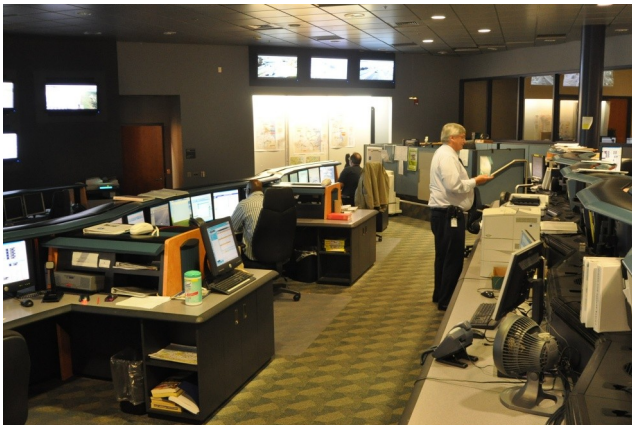
Photo by Pablo Rivera, DeIDOT

Maryland's State Operations Center; photo by thisisbossi

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Road-owning agencies and utility companies have mutual interest in speedy return of infrastructure functionality for the public's welfare. Keeping abreast of each others' activities through good communications can serve the interests of both agencies.

DelDOT's Traffic Management Center



Snow and Ice Control Important to Utility Operations

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seven snowstorms per year on the Eastern Shore.

SHA prioritizes its incident or emergency response by using a Coordinated Highway Action Response Team (CHART). CHART clears crashes or assists stranded vehicles that have potential to create major congestion or cause long back-ups.

During winter storms, the SHA monitors a bank of more than 100 SHA maintained roadway cameras throughout the state from the Statewide Operations Center (SOC) in

Hanover, Maryland. When an emergency occurs, the SOC doubles as the Emergency Operations Center (EOC). From there, operators monitor traffic, collect information from roadway sensors and deploy equipment such as snowplows and salt trucks.

There are a few things travelers need to remember during severe winter weather themselves. Don't drive during a snowstorm unless absolutely necessary. Don't crowd the plow, never pass a snowplow, and if you are driving behind a snowplow or salt truck provide plenty of space behind the truck. Slow down. Remember that bridges, ramps and overpasses often freeze first. Also, four-wheel drive vehicles are just as vulnerable to slipping on ice as regular two wheel drive vehicles, according to the SHA. Public Works Agencies' winter storm management plans should include outreach programs to remind local residents of these and other advice each year and encourage them to stay off the roads as much as possible to allow emergency

responders to do their work.

To receive the most accurate and up-to-date information on conditions and incidents on this snow event, the public can visit DelDOT's Web site at <http://www.dedot.gov>, the DelDOT Twitter account at www.twitter.com/delawareddot, or the DelDOT Facebook account at www.facebook.com/delawareddot. DelDOT is also now offering answers to some frequently asked questions, such as DelDOT snow and ice event procedures, emergency numbers and information on driving restrictions, in a FAQ online at http://deldot.gov/home/faq_snow/.

Maryland travelers can plan ahead by calling 1-800-327-3125, or by logging onto www.roads.maryland.gov and clicking on "CHART". The website offers travel information, snow emergency plans, real-time traffic camera views, weather information, average travel speed maps and incident-related road closure reports.

AAA's Top Five Tips Following a Snow/Ice Storm:

- 1) Remove ice or snow. Take time to remove the snow from the entire car so it doesn't blow onto your windshield or the windshields of other drivers. Clear windows, mirrors, and lights.
- 2) Defrost your locks. Use a lighter to quickly heat the metal tip of your electronic car key so that it can slip into the lock or use a lock deicer. Push car door inward slightly to break the ice around it. Avoid frozen locks by spraying the rubber gasket with dry silicone to prevent ice from adhering to the lock.
- 3) Watch the ice. If you hit an icy patch on the road, steer in the direction you want to go. If the drive wheels start to spin or slide while going up a hill, ease off the accelerator slightly and then gently resume speed. Don't use cruise control in precipitation and freezing temperatures.
- 4) Check visibility. Make sure windshield wipers and defrosters are in good working order.
- 5) Watch others. Now is not the time to be distracted by electronic devices or anything else. Watch other vehicles. Actions by other drivers will alert you to problems and give you extra seconds to react.

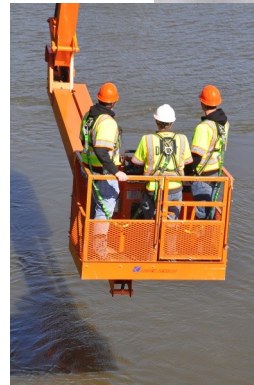
Recent Student Field Trips



UD Engineering Students are hosted by the DelDOT bridge inspection team, traveling under the Route 9 bridge over the Leipsic River in the Under Bridge Inspection Vehicle (UBIV)



UD Engineering Students tour the Rinker Materials plant in Middletown for a whole new perspective on concrete pipe.



The T²/LTAP Center organizes and supports many student field trips each semester to operational centers, construction sites, labs, and maintenance facilities. While these are sometimes associated with specific academic classes, most trips are centered around student groups from professional associations like ITE, ASHE, ASCE, etc. These excursions are very instructive to students as they decide how to focus in engineering and they are an important part of our workforce development charge.

UD Parking Pavement Distress



Pavement distresses in parking lots. The Delaware T²/LTAP Center oversaw a program to assess pavement conditions in more than 100 parking lot areas across the Newark, Delaware campus



In spring 2012, University of Delaware's Parking Services asked the Delaware T²/LTAP Center to assist them with a comprehensive review of pavement conditions throughout their Newark campus parking lots. Parking Services directly hired a civil engineering undergraduate (Micah Milner) as a summer intern and the Center provided free technical oversight as part of the Engineering Circuit Rider program.

The T²/LTAP Center provided pavement distress identification training for Micah prior to his entering the field to collect data and provided him with an installation of ArcMap for use in assembling the data. Matt Carter and Rusty Lee provided ongoing support for the technical aspects of the project.

The goal of the project was to conduct a consistent assessment of pavement conditions in the Newark campus parking lots so that Parking Services may begin to address pavement management in an

increasingly strategic, cost-effective manner.

However most distress assessment systems were designed with roadway networks in mind. In roadways, vehicles travel along relatively defined wheel paths; they tend to keep moving; stormwater drainage is typically well controlled (or at least removed from the travel lanes); and significant turning movements are concentrated at intersections.

In parking lots, wheel paths are much less defined; vehicles sit idle (and even idling) in one spot for long periods of time (concentrating point loads); stormwater often pools in areas of the main pavement areas; and turning movements occur everywhere. Hence, the distresses that are most significant to parking lot pavement life are a bit different and even the way we measure their extent and severity should be modified somewhat.

We felt that most distress assessment systems

would overlook the primary forces at work in parking lots, so we modified an existing one to reflect the driving forces in parking lots. For example, we removed corrugations because we didn't expect to see them much, we separated potholes and debonding because we see those as two separate issues in parking lots, we changed the way we looked at alligator cracking, and we changed some of the measurement methods to produce something akin to a density for the distress.

The results are still being reviewed with UD Parking, but we believe the modifications produced an overall network assessment that makes sense and is consistent.



New Rules for Electrical Work



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to install their own internal wiring or work (with the exception of swimming pools and hot tubs) may do so after obtaining a homeowner's permit.

Professional engineers licensed to practice electrical engineering in Delaware may also perform certain electrical services under the code.

The code specifically does not prevent the performance of electrical work by the

Department of Transportation, so DelDOT is enhancing its own internal procedures to protect workers and the public by ensuring that only qualified personnel perform such work using appropriate safety procedures.

Finally, various utility companies are also exempt from the code for work within their systems.

In short, no one in Delaware should engage electrical services except by

persons qualified under Title 24, Chapter 14 and no person should seek to undertake electrical services without the proper training and licensing called for under the code.

For more information, go to the Board of Electrical Examiners' webpage at <http://dpr.delaware.gov/boards/electrician/index.shtml>, where you will find the relevant codes, expanded regulations, and procedures for licensure.



Upcoming Events

The T²/LTAP Center is currently planning the following upcoming events. Others will follow. We will announce exact dates, locations, and other information as we finalize details. Monitor our website for up to the minute details and registration.

- DeIDOT Winter Workshop, February 14, 2013, Kent Polytech
- DeIDOT Materials and Research Training, February 19, 2013, Kent Polytech
- Sign Retroreflectivity - TBA
- Designing Pedestrian Facilities for Accessibility - TBA
- Manual on Uniform Traffic Control Devices - TBA



T²/LTAP Center Request Form

Your feedback and interests help us increase the T²/LTAP Center's effectiveness, so please complete and return this form or email us—all compliments, criticisms, and ideas are welcome!

_____ Please add my name to the T²/LTAP INFO-CHANGE subscription list—subscriptions are free

_____ I have an idea for a future T²/LTAP newsletter article
Topic: _____

_____ I volunteer to author this article—please contact me

_____ Please consider these topics for future training sessions
Topic: _____

_____ I would like to learn more about the T²/LTAP Center and how its free services can assist my municipality or agency—please contact me
Name: _____

Agency: _____

Address: _____

email: _____

Please return this form to:

Delaware T²/LTAP Center, Delaware Center for Transportation
360 DuPont Hall, University of Delaware, Newark, DE 19716



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article? Just let
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DELAWARE T²/LTAP CENTER

Delaware Center for
Transportation
360 DuPont Hall
University of Delaware
Newark, Delaware 19716

Phone: 302-831-6241
Fax: 302-831-0674
E-mail: matheu@udel.edu

[http://www.ce.udel.edu/
dct/T2.html](http://www.ce.udel.edu/dct/T2.html)



Helping to Bridge your Transportation Gaps

The Local Technical Assistance Program (LTAP) is a nationwide effort financed jointly by the Federal Highway Administration and individual state departments of transportation. Its purpose is to conduct training and technology transfer in the form of workshops, seminars, and conferences. The Delaware T²/LTAP Center Info-change is published semi-annually. T²/LTAP Center articles also appear semi-annually in the TransSearch - the newsletter of the Delaware Center for Transportation. Any opinions, findings conclusions or recommendations presented in this newsletter are those of the authors and do not necessarily reflect views of the University of Delaware, Delaware Department of Transportation, or the Federal Highway Administration. Any product mentioned in the newsletter is for information purposes only and should not be considered a product endorsement.



The Delaware T²/LTAP Center is a member of the
National Local Technical Assistance Program (LTAP)

**Delaware
T²/LTAP**

T²/LTAP Center Organization Contacts

T²/LTAP Center Staff

Dr. Ardeshir Faghri, Director, Delaware
Center for Transportation

Dr. Earl "Rusty" Lee, T² Program Coordinator

Matheu J. Carter, P.E., Municipal Engineering
Circuit Rider

Ellen M. Pletz, Business Administrator

Sandi Wolfe, Event Coordinator

Contact us by phone, fax, email, or snail mail

Phone: (302) 831-6241

Fax: (302) 831-0674

355 DuPont Hall, University of Delaware
Newark, Delaware 19716
matheu@udel.edu

DelDOT Liaison

Robert McCleary, Assistant Director of Engineer-
ing Support, Division of Transportation Solutions

Federal Highway Administration Liaison

Patrick A. Kennedy, P.E., Safety/Mobility Program
Leader, DelMar Division (Dover)

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