

Get Involved with TATE!

by Dr. Airton G. Kohls, Dr. David B. Clarke & Frank Brewer

For the last 13 years, The Tennessee Academy for Transportation Engineering (TATE) program provides *Continuing Education* to engineers, planners, designers, technicians and other personnel working in the transportation field. TATE offers a series of classes addressing various topics in design, operation and maintenance of transportation facilities.

TATE prioritizes your commitment to *Continuing Education** by offering affordable classes with the most relevant and updated information on standards and practices. TATE will provide the educational principles in Transportation that will help you excel in different levels of your career.

All classes are open to the general public and TATE candidates are required to successfully complete individual class examinations. Due to different requirements, TATE records will be reviewed to provide the current status of candidates that started the program prior to June 2007. Candidates are encouraged to e-mail fbrewer1@utk.edu for further information.

**TATE classes are eligible for Professional Development Hours.*

The Basic TATE Certificate

(Total of 54 class hours)

- 6 Core classes;
- 3 Elective classes.

The Advanced TATE Certificate

(Total of 108 class hours)

- Completion of the Basic TATE program;
- Additional 9 Elective classes.

Core Classes

- Geometric Design for 2-Lane Roads and Streets
- Basic Traffic Studies
- Fundamentals of Traffic Control
- Traffic Flow Principles
- Highway Safety Analysis
- Introduction to Highway Capacity Analysis

Elective Classes

- Intersection Design
- Design of Roundabouts
- Traffic Calming
- Roadway Drainage Design
- Pavement Management Systems
- Traffic Access Management/ Site Impact
- Roadside Safety Standards
- Traffic Signs and Pavement Markings
- Introduction to Traffic Signals
- Signal Timing
- Highway Capacity Analysis – Uninterrupted Flow
- Highway Capacity Analysis – Interrupted Flow



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The views, opinions, and recommendations contained within this newsletter are those of the authors and do not necessarily reflect the views of FHWA and TDOT.

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From the Director

That cold snap I mentioned in my opening to the Fall column seems to have settled in. I can't recall a colder winter since 1977, though here in Knoxville we haven't had the snowfall of say, the winter of 1993. I understand that the frequent small snow and ice storms have severely taxed salt supplies, and many of you have been putting in long hours keeping our roads and streets passable. Everybody who uses them should join me in offering heartfelt thanks for a job well done. Because Tennessee hasn't generally experienced severe winter weather in recent years, we've not tended to emphasize winter maintenance too much at TTAP. Perhaps we need to rethink that strategy!

At the Transportation Research Board Annual Meeting in January, I heard a lot of discussion about the future of transportation in the U.S. Of course, there was much concern about the impact of the financial downturn on federal, state, and local finances. Many attendees seemed to think that the era of federal financing for transportation could be nearing an end. My opinion is that this outlook is a bit extreme. But, there's no doubt that it could be difficult in the near term to find large amounts of federal funding for major infrastructure projects. There seems to be no political appetite for measures to increase revenues, such as raising the fuel tax.

During this trip, I went down to the Capitol to see what could be gleaned about the status of the surface transportation reauthorization bill. On the positive side, there should be movement during the spring to get a House version drafted. However, there is a strong movement to reduce funding sharply downward from the levels of the past several years. House members feel that a reduction of about \$15 billion annually is needed to bring spending in line with trust fund income. Transportation and Infrastructure Committee staff members told me that all programs or projects will be scrutinized, and no new spending will be approved without equivalent cuts.

We don't know how the Senate or the Administration will respond to the House's budget proposals. One possible scenario is that the Senate will view steep budget cuts as too risky to address before the 2012 election, stalling reauthorization. The Administration's recent proposal for a \$53 billion high-speed rail program seems to indicate that the President will not favor spending reductions.

Regardless of how all this political theater turns out, there will probably be less money trickling down from Washington to support local road programs. This will make it more important than ever to reduce costs, work smarter, look for innovations, and take other measures to stretch limited resources. TTAP stands ready to help in this regard. We look forward to serving you.



Final Thoughts (for now) on the 2009 MUTCD

by Matt Cate, P.E.

The final rule on the 2009 Edition of the Manual on Uniform Traffic Control Devices was released in December 2009. Since then we have had more than a year to study the list of additions and modifications to the MUTCD and consider the impact of these changes to the design and operation of our roadways.

At first glance, several additions stood out because they were drastically different than the traffic control devices we had seen and used in the past. Flashing yellow and red arrows and hybrid pedestrian beacons (also known as HAWK signals) were included in this list of devices receiving early attention.

However, as I began to study the list of changes and, more importantly, answer questions from participants in TTAP's 2009 MUTCD workshop, my focus turned to a pair of changes that initially attracted little

attention. The first of these was a seemingly minor change to the language defining standard, guidance, and option statements. A single sentence added to the discussion of standard statements seemingly changes the entire tone of the MUTCD for many practicing engineers: "Standard statements shall not be modified or compromised based on engineering judgment or engineering study." Many engineers and agencies expressed serious concern that this sentence would greatly limit their ability to provide effective traffic control devices in difficult or unanticipated circumstances.

In October 2010, FHWA issued an official interpretation (1(09)-1 (I)) to address these concerns. In the interpretation letter, FHWA Associate Administrator for Operations Jeffrey Lindley states that "the added sentence of the

definition of Standard 1A.13 was intended as a clarification and was not intended to change the meaning of Standard or remove the application of engineering judgment or studies in applying Standards where the language of a particular Standard explicitly or implicitly requires it." While this interpretation may provide some relief, it still represents a much stronger weight for standard statements than many engineers had previously held.

The second major change for agencies at all levels are the recommendations and requirements for the use of horizontal alignment warning signs, advisory speed plaques, and chevrons contained in Section 2C.07 and Table 2C-5 of the 2009 MUTCD. These recommendations and requirements are based on the difference between the posted regulatory speed limit (or operating speed, whichever is higher) and the advisory speed for the horizontal curve. At a difference of just 5 MPH, the warning sign and advisory plaque are recommended. Both warning signs and advisory speed plaques are required with a difference of 10 MPH. At a 15 MPH difference between the regulatory speed limit and the curve advisory speed, warning signs, speed plaques, and chevrons are required at the curve or turn. This new standard marks a major change for many agencies.



Horizontal alignment and chevron warning signs like these will become more common as agencies move to comply with new requirements in the 2009 MUTCD.

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December 31, 2019 marks the compliance date for this change to the MUTCD, meaning that agencies have ten years to assess all horizontal alignment changes on roadways that 1) are classified as arterials or collectors and 2) have an average daily traffic of at least 1,000 vehicles per day. In addition to the cost of additional signs, plaques, and chevrons, agencies must also devote staff time to determining the proper advisory speed of the curve using instruments such as an accelerometer or a ball bank indicator.

My final lasting impression of the 2009 MUTCD is that the sheer number of changes is difficult to grasp. There is no simple change list. Instead, every chapter of the manual contains dozens (if not hundreds) of changes, leaving most users with some degree of uncertainty. In fact, the TTAP full-day workshop on the 2009 MUTCD could only offer discussion of about half of the total changes to the manual.

While we will eventually adapt to the changes brought about by the 2009 Edition of the MUTCD, change is the only constant in the world of traffic control devices. We have already seen the changes that will likely make up Revision 1 to the 2009 MUTCD in the form of minimum retroreflectivity standards for pavement markings. FHWA also issued a call for comments on several key compliance dates, including those for traffic sign retroreflectivity. This request may indicate that FHWA is considering some relief to transportation agencies in the form of delayed compliance dates, but there are no promises as these compliance dates grow closer by the day.

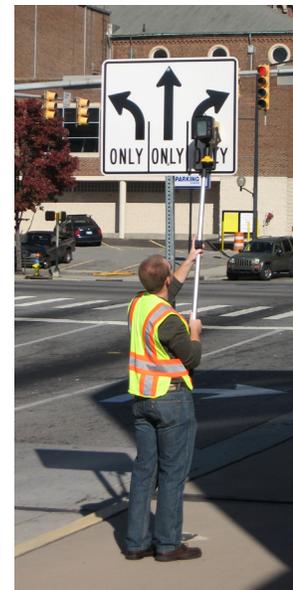
Twenty years from now we may look back on these changes and wonder why we ever did things differently. You may one day tell your grandchildren about a time when we didn't have flashing yellow arrows to indicate a permissive left turn or purple signs to indicate electronic toll collection. Keep in mind that the ubiquitous red stop sign used to be yellow. What were they thinking back then?

April 4-8, 2011 (National Work Zone Awareness Week)

Each year in April, National Work Zone Awareness Week (NWZAW) is held to bring national attention to motorist and worker safety and mobility issues in work zones. Beginning in late 1999, FHWA has worked with the American Association of State Highway and Transportation Officials (AASHTO) and the American Traffic Safety Services Association (ATSSA) to coordinate and sponsor the event. Since then other transportation partners have joined the effort to support NWZAW. In addition to a National event conducted each year, many States host their own NWZAW events. The 2011 National Work Zone Awareness Week (NWZAW) will be held April 4-8, 2011, with the national kickoff event in Maryland.

Handheld Retroreflectometer Available

Call 1-800-252-7623 or email TTAP@utk.edu if you are interested in borrowing the retroreflectometer from TTAP. The offer is open to city and county transportation agencies across the state of Tennessee.



TTAP Attends FHWA Every Day Counts Summit in Atlanta

by Matt Cate, P.E.

The Federal Highway Administration held its tenth and final Every Day Counts (EDC) Regional Innovation Summit in Atlanta, Georgia on December 13 and 14, 2010. These summits allowed FHWA to gather representatives from state departments of transportation, metropolitan planning organizations, local transportation agencies, contractors, Local Technical Assistance Program centers, and other stakeholders to tout the fifteen technologies and practices that make up the EDC initiative and provide an opportunity for an in-depth discussion of these elements. The Atlanta summit was attended by representatives from Alabama, Florida, Georgia, Mississippi, Puerto Rico, South Carolina, and Tennessee.

At its core, EDC is “designed to identify and deploy innovation aimed at shortening project delivery, enhancing the safety of our roadways, and protecting the environment.” These initiatives are divided into two broad categories: Accelerating Technology and Innovation Deployment and Shortening Project Delivery.

Accelerating Technology and Deployment includes the following innovations:

- Warm mix asphalt
- Prefabricated bridge elements and systems
- Adaptive signal control technology
- The Safety Edge
- Geosynthetic Reinforced Soil (GRS)

Each of these technologies is ready for deployment or is already in use. Some, such as warm mix asphalt and adaptive signal control, will trickle down to local agencies as they are adopted by state departments of transportation around the country. Other technologies, particularly the Safety Edge, can be adopted immediately by any interested agency.

Innovations and practices to Shorten Project Delivery encompass a longer list of items, including:

Planning and environmental linkages

- Legal sufficiency enhancements
- Expanding use of programmatic agreements
- Use of in-lieu fee and mitigation banking
- Clarifying the scope of preliminary design
- Flexibilities in right of way
- Flexibilities in utility accommodation and relocation
- Enhanced technical assistance on delayed EISs
- Design build
- Construction manager/general contractor

These initiatives focus on the elimination of duplication of effort, encouraging the use of existing regulatory flexibility, and accelerating the construction phase of a project. While many of these practices are focused on state DOTs, local agencies will see benefits as much-needed projects are delivered more quickly and efficiently in the future.

Over a day and a half, representatives from the six states and Puerto Rico were exposed to the overall EDC concept and then broken into smaller focus groups to receive detailed information and participate in discussions with staff from FHWA headquarters, the FHWA Resource Center, and FHWA division offices. As TTAP’s representative at the summit, Matt Cate participated in the Accelerating Technology and Deployment group with a focus on the Safety Edge. In these sessions, key staff members from the Tennessee Department of Transportation (TDOT) expressed their interest in incorporating the Safety Edge treatment into many construction and resurfacing projects to reduce the occurrence of crashes related to edge drop offs. TTAP will share TDOT’s experiences in the initiatives relevant to local agencies as this effort continues over the next two years.

To learn more about the Every Day Counts initiative and the technologies and practices at its core, visit the Federal Highway Administration’s Every Day Counts website at <http://www.fhwa.dot.gov/everydaycounts/index.cfm>.

FHWA Every Day Counts Website
<http://www.fhwa.dot.gov/everydaycounts/index.cfm>

Training Schedule

Education and training opportunities are available through the University of Tennessee Center for Transportation Research (CTR) and the Tennessee Transportation Assistance Program (TTAP). This listing of courses currently available includes both TTAP and TATE courses. Additional workshops will be added throughout the year. Please check our website ctr.utk.edu/ttap for updates.

Local roadway departments can benefit from all of the workshops. Because of this, we ask that you please share this listing with others who might be interested in our workshops. TTAP is always eager to meet your research and training needs. If you have a special course in mind or would like a course held on site especially for your employees, please contact Diana Webb at 1-800-252-ROAD.

****TATE classes are eligible for Professional Development Hours.***

Title	Date	Instructor/s	City
Work Zone Traffic Control/Flagging	Mar-15	Brewer	Nashville
*Introduction to Traffic Signals	Mar-16	Kohls	Chattanooga
Railroad Track Inspection and Safety Standards	Mar 21-25	Clarke	Chattanooga
Drainage System Maintenance	Mar-31	Clarke	Jackson
Local Government Guidelines and Right-of-Way	Apr-05	Various	Cleveland
Traffic Sign Retroreflectivity	Apr-20	Cate	Chattanooga
Work Zone Traffic Control/Flagging	Apr-28	Brewer	Chattanooga
*Signal Timing	May-03	Childers	Knoxville
Timber & Steel RailRoad Bridges	May 23-25	Clarke	Knoxville
*Basic Traffic Studies	May-24	Clarke/Cate	Bristol
*Signal Timing	May-26	Kohls	Jackson
*Design of Roundabouts	May-31	Childers	Knoxville
Asphalt Pavement Maintenance	Jun-01	Calvert	Bristol
*Introduction to Traffic Signals	Jun-07	Kohls	Bristol
*Signal Timing	Jun-15	Kohls	Nashville
*Signal Timing	Jun-22	Kohls	Chattanooga
*Geometric Design for 2-Lane Roads & Streets	Jun-28	Clarke	Nashville
Asphalt Pavement Maintenance	Jun-30	Calvert	Chattanooga
Work Zone Traffic Control/Flagging	Jul-12	Brewer	Knoxville
Traffic Sign Retroreflectivity	Jul-20	Cate	Bristol
Traffic Sign Retroreflectivity	Jul-28	Cate	Jackson
*Signal Timing	Aug-09	Kohls	Bristol
Local Government Guidelines and Right-of-Way	Aug-16	Various	Nashville
*Design of Roundabouts	Aug-23	Childers	Jackson

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Title	Date	Instructor/s	City
*Traffic Access Management/Site Impact	Sep-01	Clarke	Knoxville
*Advanced Topics in Signal Timing	Sep-13	Childers	Knoxville
*Basic Traffic Studies	Sep-20	Clarke/Cate	Nashville
*Advanced Topics in Signal Timing	Sep-22	Kohls	Chattanooga
*Design of Roundabouts	Oct-06	Childers	Nashville
*Advanced Topics in Signal Timing	Oct-11	Kohls	Nashville
Work Zone Traffic Control/Flagging	Oct-13	Brewer	Jackson
Drainage System Maintenance	Oct-19	Clarke/Cate	Chattanooga
Drainage System Maintenance	Oct-20	Clarke/Cate	Knoxville
*Advanced Topics in Signal Timing	Oct-25	Kohls	Jackson
Work Zone Traffic Control/Flagging	Nov-03	Brewer	Nashville
*Traffic Signs & Pavement Markings	Nov-09	Cate	Chattanooga
MUTCD & Signalized Intersections	Nov-15	Kohls/Cate	Nashville
Traffic Signal Controller Programming	Nov-30- Dec-01	Kohls	Knoxville
Work Zone Traffic Control/Flagging	Dec-06	Brewer	Chattanooga



SIGNAL TIMING

May 3, 2011
Knoxville, TN

May 26, 2011
Jackson, TN

June 15, 2011
Nashville, TN

June 22, 2011
Chattanooga, TN

Training Workshops
Sponsored by
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TALK TO TTAP

We are always looking for your comments, ideas and suggestions to help make the TTAP Program more useful to you. Please fill out and fax the form below to TTAP at (865) 974-3889 or mail to TTAP; Suite 309 Conference Center Building, Knoxville, TN 37996-4133.

1. Please send me more information on the following articles mentioned in this newsletter.

2. Please list any additional training workshops you would be interested in attending.

3. Please list topics for videos you would like TTAP to obtain.

4. Please list any other ideas or suggestions on how TTAP could assist you.

5. Please list your name and organization to verify for TTAP's mailing list.

Name _____

Address _____

Title _____

Organization _____

Phone _____ Fax _____

Email _____

Are you currently on TTAP's mailing list?

___ yes ___ no

Do you wish to be on the mailing list?

___ yes ___ no