

## Tips and Trends in Traffic Engineering

*Compiled by Jim Harris (M) and John Gallagher P.E., PTOE (M)*

**Using Constrained Volumes in Network Analysis:** When doing HCS analysis of future traffic on a network, it is typical to take existing volumes and project them out to some future date using a growth factor. Then we analyze the network using the new, projected volumes. However, are there any intersections that are now over capacity that weren't under existing conditions? Are there any individual intersection turning movements that are now over capacity? If so, that intersection (or that movement) will constrain the traffic to upstream intersections or roadway links. That upstream future volume must be corrected.

There are many theories on how to correct the volumes, but at minimum, you should reduce the volume of a movement until its v/c ratio is less than or equal to 1 (some use lower values). The leg of the intersection that receives this turning movement should have its future volume reduced by the same amount.

**Pilot to Alter Rest Areas:** Public wireless hotspots could be available at every roadside rest area in California if a pilot scheme in the San Joaquin Valley proves successful.

Two rest areas along State Route 99 will be equipped with interactive information kiosks. Members of the public parked at the rest stops will be able to wirelessly access the internet.

Filters will be employed to prevent users accessing inappropriate material from using the hotspots and travelers will be able to use them for 60 minutes free of charge before a pricing system kicks in.

"There are 88 rest areas in the state of California," says Lindsee Tanimoto, of the California Department of Transportation Office of Policy, Planning and Innovation. "The pilot will run for two years and if all goes well, there will then be state-wide deployment."

**Transportation Research Board Posts New Study Report:** TCRP Report 112/NCHRP Report 562: Improving Pedestrian Safety at Unsignalized Crossings has been posted on the internet and can be viewed at the following address: [http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp\\_rpt\\_562.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_562.pdf).

A tool developed in the study can be found in "Appendix A: Guidelines for Pedestrian Crossing Treatments." The guidelines include procedures to determine what category of pedestrian crossing treatment is recommended given crossing width, traffic volumes, traffic speed and other variables. A paper worksheet is included in the appendix. A spreadsheet is being developed as well.

There is a ton of research data in the other appendices. Appendices B to O are published in a Web-only document: [http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp\\_w91.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_w91.pdf).

*(Contributed by Marcus A. Brewer, P.E., Assistant Research Engineer, Texas Transportation Institute, Texas A&M University System, Transportation Operations Group, (979) 845-7321 (Phone), (979) 845-6481 (Fax) or [m-brewer@tamu.edu](mailto:m-brewer@tamu.edu))*

**Ethernet Cameras For Tolling Applications:** What are claimed to be the world's most advanced commercially available ethernet-enabled cameras are being installed on U.S. toll roads owned by the Texas Department of Transportation (TxDoT), Florida Turnpike Enterprises and the Maryland Transportation

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# Chair's Message

by W. Martin Bretherton Jr., P.E. (F)

I hope you have had a great summer. I enjoyed attending the Annual Meeting in Milwaukee. Our members in Wisconsin are to be commended for doing an excellent job putting on a great technical meeting.

I would like to highlight some important activities from the ITE Board and Traffic Engineering Council (TENC) Executive Committee (EXECOM):

- ◆ The ITE Web site is being redesigned to improve the relevant technical information and to make it easier to find the information.
- ◆ All newsletters will be emailed from now on.
- ◆ E-balloting was a big success in the recent ITE election. Over 4000 ballots were cast, which is the second highest vote total in ITE history.
- ◆ The ITE Board has rescinded 10 Recommended Practices that were deemed unnecessary or out-of-date.
- ◆ Wayne Tanda was given the Coordination Council Special Recognition Award at the 2006 ITE Meeting in Milwaukee. Wayne was the chair of the TENC 8 years ago. Congratulations to Wayne.
- ◆ The TENC LED Specifications Committee was awarded the 2005 Best Project by the Coordinating Council in Milwaukee. Congratulations to the Chair, Nathaniel S. Behura, and the entire Committee.

ITE would like to attract more technical articles. There is presently no backlog of articles. ITE will allow the TENC to sponsor two technical articles per year. If you have done some research on a traffic engineering problem that would be of interest to our membership, please consider writing it up for publication in *ITE Journal*. If you have any questions about publishing an article, please contact me at [martin.bretherton@gwinnettcountry.com](mailto:martin.bretherton@gwinnettcountry.com).

ITE is going to add a section to their Web site about Intellectual Property and Copyright requirements. Members will be able to understand, in easy terms, how they can use ITE materials when someone gives ITE a paper or an article. Generally, the Institute has a clause in its copyright waiver forms that allow an item to be used for all derivative works (purposes).

The EXECOM sees the TENC listserv as the best way to communicate and serve our membership. There are over 440 TENC members presently using the listserv. If you want to join, please go to the ITE Web site ([www.ite.org/councils/TENC/index.asp](http://www.ite.org/councils/TENC/index.asp)) and go to the TENC section to find out how to sign up for the listserv. The listserv is listed under the "Discussion Group" heading. The listserv is a great way to get answers to your technical questions from your peers.

# Hot Topics on the Traffic Engineering Council Listserv

*by Jim Harris, MITE*

The Listserv has been very busy this past quarter with over 500 postings, up from 400 last quarter. Here are some of the most recent questions posted:

- "Is anyone familiar with local jurisdictions posting 'honorary' street name signs, either temporary or permanent, in conjunction with the regular street name sign? We are getting a request from our City Council to do this on select roadway corridors. I would think it would confuse not only ME, but the driving public in general, enforcement officers and postal/deliveries for starters."
- "I am looking for information regarding municipalities taking over maintenance responsibilities for state highways in the respective municipality, whereas the state highway department retains ownership, but does not maintain or operate the roadway, intersection or traffic signal. The municipal does under an agreement with the state. Does anyone have an example of this, maybe a sample agreement or copy thereof? I realize it may be more towards a legal/Rights Of Way question. I am aware of a limited number of communities doing this, but not necessarily having an actual policy or agreement in place."
- "Our city is considering a request from our largest school district to post school zones from 7-4 instead of using When Children Are Present. I have some concerns with establishing all-day 20 zones on non-local roads. Since we can't afford flashing beacons for every school, one alternative would be to post the 20 zone from 7-9 and 2-4. I am looking for feedback on how time-specific School 20 zones have worked for other jurisdictions."
- "Do folks tend to allow vehicles to park on the top end of a T-intersection? Is it situational (not when there are ramps and/or crosswalks but allowed when there are not)? This question has come up a couple of times. I've been filleted for restricting parking in these situations in heavily parked up areas."
- "Does anyone have any guidelines as to where they use Playground warning signs; more detail than the general wording in the MUTCD (types of streets, how close the equipment is to the street, traffic volumes or pedestrian volumes)? Every time I drive by a W15-1, I wonder why it's a teeter-totter. I think the old sign of the kid chasing the ball better conveys the hazard to the motorist. (I've never seen a teeter-totter fly into the roadway.) Maybe a better question for the NCUTCD."
- "Looking for any published standards that you might be willing to share regarding parking requirements for Hand Detail Car washes."
- "I just got through with a separate exercise involving attempts to stop jaywalking and was forced to accept that jaywalk-d discouraging median treatments are fairly futile, as a lot of respondents to your posting have pointed out. In the process, I did pick up a few interesting ideas on ways to discourage jaywalking across medians, including my favorite (put a "water feature" in the median as a jaywalking barrier, especially if the median is already serviced for irrigation) and a variation on that (stock the water feature with alligators)."

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- “The MUTCD says ‘the changeable message legend should be a yellow legend on a black background or the reverse’... It doesn’t specifically prohibit any supplemental lighting. The RU2 devices include an option that will flash red and blue at higher speeds. Is the supplemental lighting consistent or inconsistent with the MUTCD?”
- “Does anyone know of any documented studies or have experience in your jurisdiction where the installation of an unwarranted 4-way STOP condition actually resulted in increased accidents?”
- “Does anyone have a quantifiable methodology for ranking proposed roadway capital improvement projects? Perhaps something that uses v/c, collisions, pavement quality – criteria that can be measured and placed in a matrix or spreadsheet to develop a project ranking.”
- “Can anyone provide me with information regarding before and after study data quantifying the benefits of various traffic calming devices on speed?”
- “A village that we provide assistance to wanted us to check whether anyone has a pamphlet or written guidelines on how Parking Enforcement Officers should act when confronted by someone who was just issued a ticket. It seems that there have been a growing number of confrontations lately. Does anyone have anything on this?”

In addition to the above, there were trip generation inquiries like the following:

- Rates for new and used recreational vehicle sales operations
- Rates for baseball park and soccer/track and field facilities
- General office vs. medical/dental office rates
- Weekday vs. weekend rates for hotel with water parks and restaurants
- Internal trips between differing land uses

Some software related inquiries included:

- HCS+ vs. HCS2000
- Queue length estimation
- Spreadsheet of Circular 212 methodology
- ICU vs. HCM
- Estimating incident caused delays on freeways
- Alternatives for bus transportation plan for a construction project (Corsim vs. Vissim)

Traffic signal questions included:

- Use of Wi-Fi communication
- Guidelines for choice of protected/permissive vs. fully protected left turn phasing
- Lifespan and costs of traffic signal construction
- Countdown signals for drivers
- Installation (or not) of unwarranted signals
- Use of embedded strobe lights in red signal faces
- Lagging left turn phases clearance intervals

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- Programming of track clearance phases for railroad preemption
- Installation of signals for fire stations on high speed, high volume roadways

Other questions involved speed cushions vs. emergency response vehicles, bicycle lane shifting taper lengths, bicycle speed limits and rumble strips, use of "redundant signs" with roundabouts, roadway narrowing criteria and experience, estimating 4<sup>th</sup> and 8<sup>th</sup> highest hours from ADT and peak hour movement counts, speed limits vs. "accuracy" of speed surveys and 85<sup>th</sup> percentile calculations, increase of speed limits vs. actual speeds, LOS levels worse than F (see Tips and Trends for discussion) and, finally, right turns on red vs. pedestrian activity.

As someone shared, for a little humor, go to <http://atom.smasher.org> and make custom signs for yourself.

As a courtesy to others, please include a signature with any posting to the listserv. It helps others get an idea of your perspective on your question or comment, i.e. consultant versus agency, east coast versus west coast, north versus south, rural versus urban, big city versus small town, etc. Include your name, title, agency or company name and phone number and email address if someone can contact you. Thanks for using the TENC listserv.

Did you know you can retrieve past postings to the TENC listserv? Access the listserv archives at <http://list.ite.org/lists/itetraffic.html>. You may have to register and obtain a password but it may be worth your time.

If you don't use the TENC listserv and wish to, go to <http://list.ite.org/lists/itetraffic.html> and click on the "Join or leave the list (or change settings)" link and follow the instructions.

## Traffic Engineering Tips Update

The TENC is looking for volunteers to join an existing TENC Committee tasked with reviewing and updating the traffic engineering TIPS (Traffic Information Program Series) on the ITE web site: <http://www.ite.org/councils/tengineering.asp#tips>.

TIPS are a series of information and fact sheets that address common questions relating to a wide-range of transportation matters. TIPS are written in lay language so they serve as an information source not only for transportation professionals, but also for the general public.

We are planning for a committee of 8 to 10 people, who would review an existing TIP or two, update it to current state-of-the-practice and then have the remainder of the Committee review the submission. In addition, the Committee may also look to adding TIPS on recurrent and timely traffic engineering matters.

If you are interested in assisting in this effort, please contact: Please contact the committee chair, Jim Harris, directly at [jharris@ci.rancho-cucamonga.ca.us](mailto:jharris@ci.rancho-cucamonga.ca.us).

#### Authority.

The cameras are being used to meet the agencies' demanding needs for Violation Enforcement Systems and video tolling on both traditional barrier toll lanes and at high-speed multi-lane Open Road Tolling points.

The cameras are designed to do more than meet the basic requirement of producing a license plate image that is legible to the human eye. They also provide an image of passing vehicles at a high enough fidelity to enable fully automatic vehicle identification through advanced image processing software. TxDoT will be using software to automatically read Texan and neighboring U.S. and Mexican state license plates at very high levels of performance.

The ethernet cameras are being installed on the Selmon Crosstown Expressway Bridge in Tampa, Florida, as part of a pilot project to demonstrate video tolling later this year. This project will use advanced vehicle pattern recognition software to automatically recognize previously seen vehicle patterns. The goal of the pilot project is to demonstrate that video tolling offers a cost-effective complement to transponder-based tolling, enabling all drivers to use the toll road.

*(Adapted from article published in ITS International, July/August 2006)*

**Knock Down Poles:** Traffic management has been improved at Manchester's Stadium, United Kingdom, following the installation of new soft poles. The original steel bollards were soon found to be unsuitable so the site has now switched to using Jislon Pole Cones. While these units look like steel bollards they are deformable and can in fact be completely run over and will spring back upright with a minimum risk of damage to a vehicle or the cone.

The units are tested by being run over 1,000 times by a two-ton vehicle at 70kmh, to ensure the units are both durable and flexible enough to cope with the application. Because the poles can be removed quickly when heavy vehicles are making deliveries, they are versatile and the units are lightweight, which makes the process easier. These units are effectively maintenance-free, require no painting and can feature reflective glass beads for low light visibility.

*(Adapted from article published in World Highways, July/August 2006)*

**Standardizing the Use of HCS in Traffic Studies:** There are many suburban communities seeing large retail development where they had none in the past. They are faced with the challenges of implementing some form of traffic impact guideline so infrastructure keeps up with development. Most agencies that review traffic impact studies have seen studies where HCS analysis was "cooked" to skew results. These suburbs must be aware of this practice. One case I am aware of removed the all-red time in an HCS run on a signalized intersection to keep the intersection at LOS C, the minimum before the developer had to make infrastructure improvements.

For newly developing communities, standardizing the use of HCS for traffic impact studies seems like a large task that may not pay significant dividends. However, it is easy and has worthwhile benefits. Start by dictating that the default values HCS provides will be used. The peak hour factor is an example. Even if it is measured to be higher or lower, the default is used. Values that don't have defaults need to be set by the agency, but there are few if the others are accepted. The benefit will be traffic impact studies that are all comparable and easily reviewed because they are all based on the same foundation.

**Data Loggers for Contract Pavement Marking Equipment:** In the Ohio valley region of the US, there have been decades of work by DOTs to improve the quality of pavement markings. Snow plowing, heavy trucks, heavy traffic and poor environmental conditions have led to undesirable marking quality or life span. Some states, such as Kentucky and Michigan, have used performance specifications as a potential solution: the contractor places the markings; the agency waits a contractually designated time and then meas-

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ures the performance of the markings (generally retroreflectivity). If the markings do not meet performance specifications set in the contract, the contractor is penalized. This penalty can be replacement or rehab of the marking, withholding of final contract payment, etc.

The concept is good, but it has received mixed reviews from agencies and contractors. When the concept was originally developed, an unforeseen problem was the agency manpower required for retroreflectivity readings on the markings. A single pavement marking contract places new markings in many portions of a state over a long period centered on summer. Assigning a person to take retroreflectivity readings over this vast area and time period was a strain on the "do more with less" DOT mentality.

To avoid manpower issues of performance specifications, Ohio is data logging to improve marking quality. Any contractor with a large pavement marking contract must have a data logger on their striping equipment. The instrument logs striping speed, application rates, weather conditions, etc. Ohio feels this will guarantee markings are being placed correctly and to specification.

Large statewide "Pavement Marking Summits" were held to discuss this issue. When contractors were faced with performance based specifications or data logging, the contracting community was accepting of the data logger.

**Use of LOS in the Engineering Community:** The A through F LOS scale was originally developed so one could make easy reference to the performance characteristics of a roadway section or intersection. It has succeeded in that area, but is this valuable enough for the engineering community? Many argue it is not. There have been cases made that a plus or minus or "strong" or "weak" be added to the value. For example, an intersection with a "C+" or "strong C" would have less delay than a C. The drawback is if someone says an intersection is at LOS B, is that a regular B or a B on a scale with plus or minus? There have been suggestions to add letters to the end of the scale such as G, H, I, etc. A LOS having a letter assigned to it whether it has a plus or a minus added to it is good for the public, but we are traffic engineers and numbers people. Can't we just use the actual delay value to indicate the performance of an intersection?

This argument is the strongest in the development and traffic impact world. If an LOS C is the lowest value allowed before a developer is required to mitigate their impacts, is it fair to require this developer to do improvement X if they have only dropped the delay at an intersection by 0.5 seconds? Probably not, however, this is done all the time if the developer is in an area where intersection delay is only a few tenths of a second from being LOS D. What if an intersection is already at LOS F prior to the development? It's F now and F after the development. Did the development have an impact? Sure it did. Using the actual delay value for an intersection, we can still see the impact and an agency can set a value for acceptable delay and for the increase in delay allowed before a developer is required to provide mitigative improvements.

**Adjusting Signal System Timing on a Shoestring:** Do you have a closed loop system in a commuter corridor but no money to retime it? If it's a commuter route where you are trying to get people into town in the morning and out of town in the evening (or vice versa), you could "eyeball" it! Folks in Pickerington, Ohio did just that. Start at the signal farthest away from the direction the commuters are headed. Leave the offset in this controller as it is. Now go watch the next signal. When the platoon from the first signal reaches you, see if the signal turns green when it should. If it is turning too soon and providing red to the end of the platoon, lower the offset. If it is turning too late and the front of the platoon is hitting the red just before it goes to green, raise the offset. Go through the same procedure at the rest of the signals until you've completed the corridor. This will give you "perfect" progression in the heaviest direction.

You are not finished yet. Go back and check the non-commuter direction starting at the other end of the system. Using the same procedure, make small adjustments in the offset to improve the flow in this direction. The goal is not to make it "perfect" but "acceptable". Make sure these small adjustments

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still allow the platoon in the commuter direction to pass through the signal on the green. (Editor's Note: If during your trip down the non-commuter direction, you notice platoons from each direction arriving widely spaced, consider installing lead/lag left turn operation at appropriate locations.)

I have seen arguments about pitfalls to this procedure but the main argument is that it is based on the actual traffic characteristics and not some simulation or equation that volumes are plugged into. Give it a try; I think you will like the results.

**Determining the Traffic Distribution of a Proposed Development:** Many traffic impact studies, at least in the Mid West, use a distribution of traffic based on engineering judgment. "My feeling is that X percent will go east and Y percent will go west." The review agency, the developer and maybe others will sit down and modify this until everyone is happy. This is NOT the best way to determine this.

Is there a similar development (commercial to commercial or residential to residential for example) down the street? Generally there is. Have the person doing the study conduct a count of that development's drive(s) and use that distribution of traffic to set the distribution of the new development. Sometimes this works perfectly and the count of the existing location needs no modification: existing drug store with one drive is counted and that distribution is used without modification for a proposed next door convenient store with one drive. Generally, this method is not so perfect and the distribution has to be modified, but the result is much better than going purely on engineering judgment.

Agencies in Central Ohio started using this method several years ago surprisingly found that their engineering judgment of the distribution was way off in most cases.

**Tips from John:** If you need to know how much traffic a commercial parcel will generate, use 10,000 sf/acre to estimate the building space that may occupy the parcel. Once the building size is known, the trips can be generated using ITE Trip Generation.

Ever had someone ask for a ball-park estimate on the cost of a parking garage? Use \$12,000 per parking space to estimate the cost.

Have an ADT but need the peak hour volume? Have a peak hour volume but need an ADT? (This has been discussed recently on the TENC listserv.) Ten percent is a good estimate of how much of the ADT occurs in the peak hour. Remember this is an ESTIMATE for this value and it can vary quite a bit. This percentage will be lower if the roadway is urban and higher if it is rural. I have heard that in Manhattan, the peak hour is 6 percent of the ADT, the lowest I have seen. Others have said it can go as high as 20 percent, much higher than I have experienced. Both of these values are probably rare cases and location specific. Ten percent is a good middle of the road value. If you want to adjust it for urban or rural situations, increase or decrease that value a percent or two but not more.

## Prohibition of Turns on Red – Informational Report

At their August 2006 Meeting, the ITE Board recommended that the current update to the *Prohibition of Turns on Red Recommended Practice* should be reviewed with the intent of revising the content to form an Informational Report (IR). The current RP is concise and provides a set of uniform guidelines for use by agencies in determining those intersection approaches where right-turn-on-red should be prohibited.

Anyone interested in assisting with this update, please contact TENC Technical Committee Management, Russell Brownlee at 416-596-1930 X1344 or [rbrownlee@ibigroup.com](mailto:rbrownlee@ibigroup.com).



# Free Spreadsheets

Rick Perez, the City Traffic Engineer in Federal Way, Washington, USA, has provided four spreadsheets he uses in his traffic engineering duties. He says, "You have my permission to post this on the ITE Web site for distribution. I strive for accuracy, but provide no warranty. Feedback is appreciated." See below for contact information.

All-Way Stop Warrant: Go to [www.ite.org/councils/TENC/update.asp](http://www.ite.org/councils/TENC/update.asp) on the ITE Web site to download the spreadsheet. This spreadsheet is based on the 2000 MUTCD, although nothing has been found in the 2003 MUTCD that would change it. Just fill in the shaded cells. When you fill in the peak hour volumes, the spreadsheet uses a generic hourly distribution to populate the hourly volume cells. You can edit the hourly volume cells to revise the formulas based on local data, or overwrite these volumes with actual count data.

Signal Warrant: Go to [www.ite.org/councils/TENC/update.asp](http://www.ite.org/councils/TENC/update.asp) on the ITE Web site to download the spreadsheet. This spreadsheet is similar to the all-way stop warrant spreadsheet and is based on the 2000 MUTCD, although nothing has been found in the 2003 MUTCD that would change it. Fill in the shaded cells. When you enter the peak hour volumes, the spreadsheet populates the hourly volumes on the same approach using a generic distribution. You can modify the formulas using local data or you can overwrite the values using your own data. Joe Araucto, P.E., of Island County, Washington, developed the formulas for the graphs from the 4-hour and Peak Hour Volumes using statistical analysis software. The spreadsheet uses a Poisson distribution to estimate gap sizes for the pedestrian-related warrants. The macros are a holdover from DOS days and can be disabled.

Intersection Sight Distance: Go to [www.ite.org/councils/TENC/update.asp](http://www.ite.org/councils/TENC/update.asp) on the ITE Web site to download the spreadsheet. This is based on the AASHTO 2001 Green Book methodology. The 2004 version has not been checked to see if anything changed. The understanding is that they didn't change anything. Similar to the others, just fill in the shaded cells. The prompts should be self-explanatory. One feature added recently was the tabs: this spreadsheet generates (albeit crudely) graphs of how the sight distance triangles are laid out. At least our Development Services staff thought it was pretty cool.

Trip Generation: Go to [www.ite.org/councils/TENC/update.asp](http://www.ite.org/councils/TENC/update.asp) on the ITE Web site to download the spreadsheet. This spreadsheet is intended to be used with your copy of *Trip Generation* right in front of you. It was developed to reduce the number of philosophical arguments between staff and consultants representing development applicants. It is based on the methodology laid out in the 3rd edition of the *Trip Generation Handbook* in order to decide whether to use the rate or the equation and then calculate the weighted average if data on multiple variables is available. You can also modify this slightly by using multiple related land uses (like Apartments and High-Rise Apartments, for example) and the same independent variable by reversing your input in those cells and let the spreadsheet calculate the weighted averages for you. Here the input cells are italicized, but the prompts should be self-explanatory for regular *Trip Generation* users. Just like real life, judgment is required when answering the number of outliers and whether the rate or the equation has the closest data points.

You can contact Rick by calling him at (253) 835-2740, Fax (253) 835-2709, or e-mail at [rick.perez@ci.federal-way.wa.us](mailto:rick.perez@ci.federal-way.wa.us).

## WHAT'S YOUR E-MAIL ADDRESS?

This newsletter is distributed by e-mail instead of by regular mail. This enables us to get the newsletter to you much quicker and will help keep costs down. ITE currently has e-mail addresses for approximately 83 percent of Traffic Engineering Council members. If you are a member of the Traffic Engineering Council and did not receive this newsletter directly from ITE, please send your e-mail address to ITE Headquarters ([info@ite.org](mailto:info@ite.org)) so that you will not miss any future editions.

# Traffic Signal Operation Self-Assessment – Coming Soon!

Traffic signals are one of the most commonly used traffic control devices for traffic engineers. There are more than 300,000 traffic signals across the country in jurisdictions of all sizes. Unfortunately, traffic signal systems are historically under funded and under staffed. They are one of the first areas to be cut in tight budget times. And yet, investment in traffic signal operations is one of the most cost effective means to improve transportation system operation. ITE in partnership with the National Transportation Operation Coalition (NTOC) and FHWA will release an updated traffic signal operation self-assessment as part of a national effort to bring more attention to the need for additional investment in traffic signal operations.

The traffic signal operation self-assessment has two purposes. The first is to give agencies a tool to help them understand opportunities for improvement of their own policies and practices. Secondly, for agencies that choose, the results of the self-assessments will be used (anonymously) in the 2nd National Traffic Signal Report Card. The national results will be released in late Summer 2007 as part of a national media event designed to focus attention on the need for more resources for traffic signal operations.

The self-assessment, which will be released in early November 2006, is intended for any agency with responsibility for the ongoing operation and maintenance of traffic signals. The self-assessment was developed by representatives from several associations and includes traffic engineering practitioners. The self-assessment contains six sections:

- Management
- Individual intersections
- Coordinated systems
- Signal Timing Practices
- Traffic Monitoring and Data Collection
- Maintenance

The self-assessment is designed to be self scored and completed in about one hour with input from key staff responsible for traffic signal operations. No data collection is required. Completion of the self-assessment is completely voluntary. For agencies that would like to support the national report card, self-assessment results will be collected (anonymously) and rolled together into a national view of traffic signal operations. No agency's individual results will be discernible from the national report card. The objective of the national report card is to highlight the lack of funding for traffic signal operations, the poor performance that results, and the cost effectiveness of increased investment for traffic signal operations. The release of the national report card results will be the topic of a national press event.

If you believe that more investment is needed in traffic signal operations, here's what you can do and how you can participate.

- Watch for the self assessment,
- Complete the self assessment and
- Provide your results for the National Traffic Signal Report Card.

Please join the effort and participate!

For additional information, watch ITE Journal, ITE Web site, ITE Council newsletters and your District newsletter.

**DEPARTMENT OF TRANSPORTATION  
Federal Highway Administration**

23 CFR Part 630  
[FHWA Docket No. FHWA-2006-25203]  
RIN 2125-AF10

**Temporary Traffic Control Devices**

**AGENCY:** Federal Highway Administration (FHWA), DOT.

**ACTION:** Notice of proposed rulemaking; request for comments.

**SUMMARY:** The FHWA proposes to supplement its regulation that governs work zone safety and mobility in highway and street work zones to include conditions for the appropriate use of, and expenditure of funds for, uniformed law enforcement officers, positive protective measures between workers and motorized traffic, and installation and maintenance of temporary traffic control devices during construction, utility, and maintenance operations. The proposed changes are intended to decrease the likelihood of fatalities and injuries to workers who are exposed to motorized traffic (vehicles using the highway for purposes of travel) while working on federal-aid highway projects. This proposal is in response to section 1110 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), Public Law 109-59, 119 Stat. 1227.

**DATES:** Comments must be received on or before January 2, 2007.

**ADDRESSES:** Mail or hand deliver comments to the U.S. Department of Transportation, Dockets Management Facility, Room PL-401, 400 Seventh Street, SW., Washington, DC 20590, or submit electronically at <http://dmses.dot.gov/submit> or fax comments to (202) 493-2251. Alternatively, comments may be submitted via the Federal Rulemaking Portal at <http://www.regulations.gov>. All comments should include the docket number that appears in the heading of this document.

**FOR FURTHER INFORMATION, CONTACT:** Mr. Chung Eng, Office of Transportation Operations, (202) 366-8043; or Mr. Raymond W. Cuprill, Office of the Chief Counsel, (202) 366-0791, U.S. Department of Transportation, Federal Highway Administration, 400 Seventh Street, SW., Washington, DC 20590.

**Background**

Increasingly, maintenance and reconstruction of the nation's highways are taking place while traffic is maintained on the facility under repair. This has resulted in an increase in the exposure of workers to high-speed traffic and a corresponding increase in the risk of injury or death for highway workers, adding to worker safety concerns within an industry where the fatality rate for highway construction workers is already more than double that of other construction workers. Over the last ten years, the number of fatalities in work zones has risen from 789 in 1995 to 1,068 in 2004. Of the 1,068 fatalities in 2004, 89 percent, or 953 were either motorists or passengers. On average, more than 100 workers are killed and over 20,000 are injured each year in the highway and street construction industry. According to the National Institute for Occupational Safety and Health, 55 percent of the work related fatalities in the U.S. highway construction industry between 1992 and 1998 were vehicle or equipment related incidents that occurred in a work zone. This same source indicated that highway worker fatalities where a worker on foot was struck by a vehicle were about equally likely to have been struck by a passing traffic vehicle versus a construction vehicle. Overall, highway worker safety represents a small but important and increasing part of the work zone safety problem.

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<http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/E6-18283.htm>

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