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AN EVALUATION OF COUNTDOWN PEDESTRIAN SIGNALS

by

Ken Petraglia, P.E., PTOE, for the NEITE Technical Committee



The use of countdown pedestrian signals is a relatively recent strategy intended to provide visual clarification of the pedestrian phase. Proponents argue that the time countdown component does indeed clarify the intent of the pedestrian clearance (flashing "DONT WALK").

Traditional pedestrian signals currently include the international symbols of a hand for "DONT WALK" and a person walking for "WALK." Pedestrians understand these symbols intuitively. Less intuitive, however, is the flashing "DONT WALK" (flashing hand) pedestrian clearance. Many pedestrians misinterpret this signal as an alert that the time to begin walking will soon end, or a warning that the pedestrian should turn back if not already half way across the intersection.

At the commencement of this study, the Manual on Uniform Traffic Control Devices (MUTCD) did not approve the use of pedestrian countdown signals, except as an experiment. Provisions have been included, however, to allow an experimental installation with prior approval.

The Technical Committee of the New England Section Institute of Transportation Engineers (NEITE) has conducted a study of three intersections in Boston to investigate the impact of pedestrian countdown signals on crossing operations. The methodology to conduct this experiment is based on recommendations by the FHWA and referenced in the MUTCD.

Countdown Pedestrian Signals

Pedestrian countdown signals combine the currently accepted international symbols (person walking or hand) with an adjacent unit that indicates a countdown with digits that count seconds backwards from the upper limit of the sequence to zero. For example, a seven second "WALK" sequence would count down from seventeen to ten, while a corresponding ten second flashing "DONT WALK" sequence would count down from ten to zero. NOTE: Locations included in this study only incorporate the countdown signals in the flashing "DONT WALK" portion of the pedestrian timing.

Locations

Three locations were included in this study, including:

- Charles Street/Center Gate
- Tremont Street/Winter Street
- Cross Street/Salem Street

Each of these is effectively a mid-block signalized pedestrian signal location. The roadway widths vary, from Charles Street (four travel lanes, one parking lane), to Tremont Street (four travel lanes), to Cross Street (three travel lanes, one parking lane). In each case, the roadway crossed by pedestrians carries one-way traffic flow.

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The New England Chronicle is a publication of the New England Section of the Institute of Transportation Engineers. All interested parties are invited to submit feature articles or editorial comments. All inquiries should be addressed to the Editor.

Visit our website at www.neite.org!

EDITOR'S CORNER

As we finish another edition of the New England *Chronicle*, we would like to take this opportunity to thank all of those who have provided us with articles, updates or other information to include in the *Chronicle*. We could not do it without you.

We are always looking for interesting articles and information to present in the *Chronicle*, so please continue to send us any exciting transportation related information you would like to see included. We welcome your ideas and input in perfecting the quality of the *Chronicle*. We work with a fairly tight schedule, so please try to submit your information as early as you possibly can. The deadline for articles and information to be included in the September issue of the *Chronicle* is August 13, 2004.

Finally, we would also like to take this time to thank our new sponsors, in addition to all of the returning sponsors. If you are interested in becoming a sponsor it is not too late. Please contact Bill McNamara (401-231-6780) at Ocean State Signal for more information.

Chronicle Team

Christine Ann Palmer
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CONTACT THE CHRONICLE EDITOR AT:
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Data Collection

Data was collected using forms suggested by the FHWA. Two forms were used; one for collecting pedestrian data, and the other for collecting vehicular data. NOTE: A pedestrian interview survey was not conducted as part of this study.

Time Periods

Data was collected at each location before and after the installation of the countdown signals. The data collection was conducted during both AM and PM peak periods, and the day of week was consistent for each location.

Evaluation Process

The evaluation of the countdown pedestrian signals began by summarizing the observations of pedestrian and motorist behavior by intersection and time of day. The observed behavior before and after the countdown pedestrian signals were installed was compared and analyzed to determine each signal's degree of effectiveness. Several iterations of the analysis were performed to define the characteristics that are most indicative of the signal's performance.

Initially, it was expected that the evaluation process would be based on the following comparisons of before and after conditions to evaluate the effect of the countdown signals:

- Number of pedestrians starting on "WALK" – an increase might indicate a benefit of countdown signals (increased safety).
- Number of pedestrians starting on flashing "DONT WALK" – an increase might indicate a disadvantage of countdown signals (decreased safety).
- Number of pedestrians finishing on "DONT WALK" – an increase might indicate a disadvantage of countdown signals (decreased safety).
- Number of pedestrians running or aborting – an increase might indicate a disadvantage of countdown signals (decreased safety).
- Number of pedestrians/conflicting with vehicles – an increase might indicate a disadvantage of countdown signals (decreased safety).

Summary of Data

The wide range of behaviors observed across all of the intersections and time periods does not indicate any obvious trends relative to the countdown signals. It can be seen, however, that the rate of compliance with signals by pedestrians is low while the rate of compliance by the motorists is high. Only 30% of the pedestrians in the study began their crossing during the "WALK" interval, while over 90% of the motorists in the study departed the intersection during the "GREEN" interval. Based on an initial analysis, the most significant data were those related to flashing "DONT WALK." For purposes of this summary report, discussion will be limited to that segment of the data.

Methodology

The purpose of the flashing "DONT WALK" interval is to operate as a clearance period, that is, to allow those that have initiated a crossing to complete that crossing, while telling those who have not started their crossing to stay in place. The object is to have the pedestrians off the roadway before the pedestrian indication shows a steady "DONT WALK," which is usually when the vehicular signals indicate "GREEN."

The success of any test of the flashing "DONT WALK" interval is to maximize the pedestrians who finish their crossing during the flashing "DONT WALK" interval. Any change that results in an increase in the number of pedestrians who complete their crossing during the "DONT WALK" interval yields a less safe condition.



The addition of a countdown timer will provide more information to the pedestrian on how long they have to cross the street before the "DONT WALK" interval starts. A look at only those crossings made during the flashing "DONT WALK" can determine how many finish during the flashing "DONT WALK" (safe), and how many finish during the "DONT WALK" (unsafe). If the change to countdown signals results in an increase of flashing "DONT WALK" completions, this would indicate an improved safety condition for pedestrians. If, however, the result were an increase in "DONT WALK" completions, safety would be compromised.

A CHI-Square Contingency Table was used to test these data and compare the two criteria (completions during flashing "DONT WALK" and completions during the "DONT WALK"). This test was conducted for both the standard flashing "DONT WALK" indication (benchmark, before data) and the modified flashing "DONT WALK" indication, with the countdown timer (after data). This test requires an assumption of independence; that is, the data from the before and after come from different populations.

Qualitative Factors

The results discussed in the previous section are based purely on the breakdown of collected data. As in any data collection effort, the results need to be tempered by human and location specific factors. Following is a discussion of observations and anomalies.

Observations – All of the study area locations are in Downtown Boston, with pedestrians who have tendencies to assume

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that any gap in traffic is a reason to begin walking. Another factor, that is independent of the type of signals (e.g., countdown or traditional), is the fact that many pedestrians simply do not understand the flashing "DONT WALK" signal.

Anomalies – These are factors created mostly by location/geometric features, such as the effect of upstream traffic signals. This was a significant factor at two of the study locations. At both the Charles Street/Center Gate and Tremont Street/Winter Street locations, upstream traffic signals created artificial gaps in which pedestrians were faced with a "DONT WALK" signal with no traffic near the intersection. Each of the locations studied consisted of a mid-block setting on a one-way street. This configuration results in a single conflict point; that is, pedestrians crossing against a single opposing through movement. The width to be crossed varied significantly for each location, with the narrower crossings requiring shorter gaps in the traffic stream and being more inviting to the pedestrian.

Findings

A summary of findings is included the table below, which tabulates the difference in safety to pedestrians between operation without and with the countdown signals. The results indicate that the introduction of pedestrian countdown signals had either a neutral effect or a negative effect. In no case did

Summary of Findings

Location	Time	Findings
All Three Locations	AM	No Significant Difference
	PM	Significant Difference - Countdown Timer Degraded Pedestrian Safety
	AM&PM	Significant Difference - Countdown Timer Degraded Pedestrian Safety
Charles Street/Center Gate	AM	Insufficient Data Without Countdown Timer
	PM	No Significant Difference
	AM&PM	Significant Difference - Countdown Timer Degraded Pedestrian Safety
Tremont Street/Winter Street	AM	No Significant Difference
	PM	No Significant Difference
	AM&PM	No Significant Difference
Cross Street/Salem Street	AM	No Significant Difference
	PM	Insufficient Data With Countdown Timer
	AM&PM	Significant Difference - Countdown Timer Degraded Pedestrian Safety

There may be several factors for the results in this study. One is that they are indicative of the true effect of the pedestrian countdown signals. Others, however, are discussed in the preceding section, Qualitative Factors. Finally, the data set was limited, including only three intersections, some of which had too few samples for a reasonable statistical significance. Despite the limitations of these locations, however, the general results of this study are consistent with findings from similar studies, including Minnesota, San Francisco, San Jose, Saint-Laurent in Quebec, and Toulouse, France.

Conclusions

The relevant factor in a comparison of operations is the difference in safety for pedestrians between the "before" conditions (traditional pedestrian signals) and the "after" conditions (installation of pedestrian countdown signals). For purposes of this study, any change that results in an increase of the number of pedestrians who complete their crossing during the "DONT WALK" interval yields a less safe condition. The three intersections studied exhibited the following:

- At Charles Street/Center Gate, insufficient data were available for a reasonable comparison during the morning peak. The afternoon peak hour analysis indicated no difference in pedestrian safety. The sum of morning and afternoon data indicated that the countdown timer had a negative effect on pedestrian safety.
- One of the three locations (Tremont Street/Winter Street) indicated no difference in operation with or without the countdown timer. Use of this device had no effect on pedestrian safety.
- At Cross Street/Salem Street no significant difference in operation was indicated during the morning peak. The afternoon peak had insufficient data for a reasonable comparison. The sum of morning and afternoon periods indicated that the countdown timer had a negative effect on pedestrian safety.
- The composite of all data collected for all intersections

indicated no difference in pedestrian safety during the morning peak. Afternoon data and composite morning and afternoon data do indicate that the countdown timers had a negative effect on pedestrian safety.

This summary indicates that pedestrian safety can be degraded with the installation of the countdown timers. At best, the indication was that no improvement was gained. One qualitative factor of interest is evident in the pedestrian interviews conducted in some of the previous studies – that is "pedestrian confidence." While the accompanying data

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seem to contradict the responses that the countdown signals increase an understanding of the flashing DONT WALK interval, the pedestrians do seem to feel more confident during the crossing.

Despite the limited data set and the qualitative factors associated with this study, the results are consistent with previous studies. It is recommended, however, that more studies be conducted outside of major downtown districts to test the impact of countdown timers without the qualitative factors predominantly associated with an active business commuter district.

☞ DISTRICT 1 ANNUAL MEETING ☜

District 1 Annual Meeting Ready to Roll!



The Local Arrangements Committee has been working hard to put the final touches on the 2004 District 1 Annual Meeting in Burlington Vermont, May 19th -21st. If you are looking for details about the meeting all the information including registration forms and a link to the hotel are included on the

conference web site and www.neite.org/vt. The conference will start on Wednesday with a free FHWA course in the afternoon and the District Board Meeting. Following the days technical and business sessions we will adjourn to the Lake Champlain Echo Center, just a short walk away, for a welcome reception. Thursday will start with a full breakfast and a chance to hear and meet the two candidates for International Vice-President. The ITE International President will update all of us on what's new with ITE during lunch. After finishing our technical sessions for the day the Traffic Bowl will kick into gear followed by a dinner cruise on Lake Champlain. Friday morning will have more technical presentations and a closing "Hot Topics" session. Hot Topics will be your chance to speak out on issues that our profession is wrestling with, we don't promise answers just good discussion.

The normal registration rates are in effect until May 10th, but we encourage you to register early. All signs are this will be an informative and enjoyable meeting. If you haven't been to Vermont or Burlington there is no better time to come than May, when everything is in bloom. Please remember that business casual will be the attire for the entire conference. The Local Arrangements Committee especially wants to thank all the firms that have graciously agree to sponsor the annual meeting. Currently we have six Gold, seventeen Silver and three Bronze sponsors. In addition to the sponsorship we have twelve of sixteen vendor tables spoken for.

Older Drivers Workshop

At the June NH/ME/NEITE joint meeting an Older Driver Highway Design Workshop will be held. The all-day workshop will be presented by the Federal Highway Administration, and was developed in conjunction with the "Older Driver Highway Design Handbook." The goals of this workshop are to illustrate why designing for older drivers is necessary by outlining and depicting the changes that occur with aging and how they impart highway design, to highlight the relationship between older driver requirements and existing design standards, and to demonstrate application of the guidelines in the Handbook. In the first half of the workshop participants will be fitted with devices to simulate the effect of age related changes giving them first-hand experience of how older drivers interact with the roadway and their environment. This workshop targets transportation and safety professionals who are responsible for developing street and highway projects.

NEITE will provide professional development hour certification for the workshop participants. Additional workshop and registration information is included on the NEITE website at www.neite.org. You can also contact John Mirabito, at jmirabito@fstinc.com or (781) 221-1126.

INSTITUTE OF TRANSPORTATION ENGINEERS 2004 INTERNATIONAL DIRECTOR DISTRICT 1 CANDIDATE NOMINATIONS

The District 1 Nominating Committee has nominated the following candidates for the office of International Director. All have indicated their willingness to serve the district.

- **Robert Jurasin, P.E., Wilbur Smith Associates, New Haven, Connecticut**
- **Kim E. Hazarvartian, PhD, P.E., PTOE, TEPP LLC, Concord, New Hampshire**
- **Rodney C. Emery, P.E., PTOE, Edwards & Kelcey, Charlestown, MAassachusetts**

According to Article IV, Section 4.4 of the District 1 Bylaws, additional nominations may be made based on the following criteria:

"Additional nominations may be made by petition, signed by not less than 15 voting members of the District, with at least three petitioners from each Section in the District. Each such petition shall be accompanied by the written consent of the nominee to hold office if elected and each such petition shall be received by the Secretary-Treasure not later than 75 days prior to the Annual Meeting of the Institute." (The petitions must be received by May 18, 2004.)

In June, you will receive the official ballot, which will contain bios of the candidates.

⌘ GEOGRAPHICAL DISTRIBUTION COMMITTEE ⌘

Background – Problem Statement, Description and Schedule

In recent years there has been a feeling by some members that perhaps the geographical distribution of New England Section Board members has been overly skewed towards Massachusetts. Others felt that since Massachusetts makes up approximately 50 percent of the section, it is natural and fitting that the board has more Massachusetts members.

While the recent trend has been that Massachusetts members have dominated the presidency, Maine has also had three presidents in the recent past. Longer ago, Connecticut had several presidents.

There have been feelings on both sides of this issue and the current board felt that the issue had to be addressed. At the president's request, the vice-president formed a committee for this purpose and served as chair.

This issue coincided with recent discussion about the role of the Past Presidents Council, and how we as a section can take advantage of the experience of those who have led before us. With this in mind, we decided to use the Past Presidents Council as a resource to examine the geographical distribution issue. Presidents who have served in the last fifteen years were invited to serve on this committee. The process followed by this committee is described below:

- Each committee member was asked to reply with initial thoughts on the issue.
- Sub-groups were formed to contact current members in each state to gain an understanding of the general membership's feelings on the issue.
- Each committee member was then asked to summarize general membership's feelings. The committee members were then asked to describe any changes to their own initial position, based on the general membership input.
- The results were discussed at the March 30, 2004 board meeting.
- The board of directors discussed the findings and voted to accept the report.

Committee Members

The following past presidents agreed to participate on this committee:

- Massachusetts - Frank Tramontozzi, Rod Emery, Doug Prentiss, Joe Herr, Gary Hebert, Bill Lyons, Jack Gillon, John Kennedy
- Maine - Tom Gorrill, Diane Moribito
- Connecticut - Bob Jurasin, Bob DeSanto, Jim Bubaris
- Rhode Island - Paul Smith
- Vermont - Dave Scott (Not a past president, but graciously agreed to accept the assignment.)
- New Hampshire - Kim Hazarvartian

Results

The committee's findings were universally in agreement that the current system works fine. While one or two members suggested alternative methods to select directors, even they agreed that the current system works. The most common observations were:

- Those who are elected as section directors, and subsequently rise through the ranks, are members who attend section meetings, work hard on committees and otherwise distinguish themselves.
- Since formation of the state chapters, many get involved at that level and are not as focused on the section.
- The nominations committee should reach out to each state by contacting the chapter presidents for potential director nominations.

Recommendations

While the basic system does not need fixing, there were still some recommendations the committee feels would be worthwhile:

- When soliciting input for nominations of directors, the Nominating Committee should seek input from the chapter officers of each state. While Rhode Island currently does not have a chapter, plans are underway to start one.
- The Nominating Committee should still be free to accept or reject nomination suggestions from the chapters, or to nominate others on their own.
- State/student chapter presidents should be encouraged to attend board meetings.
- We need to promote communication between the section and the chapters. The section and the chapters should actively encourage attendance to each others' meetings. While this is a two-way effort between the section and the chapters, the section board members should take a leadership role by attending some chapter meetings, particularly from states other than their own.
- The section should put together a "How To" memorandum on the election process with recommendations for how members can get involved and position themselves for election as a director.
- While no one seems to think a formalized process is necessary, the Nomination Committee should be aware of geographical distribution.
- It should be stressed, however, that recognizing the efforts and talents of potential nominees, regardless of their home state, takes priority over trying to effect exact geographical distribution

This summary of the committee's work was presented at the March 17, 2004 board of directors meeting. The summary will also be posted on the NEITE website, and the full report is available upon request (contact Ken Petraglia at 617-357-7755).

CONTINUING EDUCATION COMMITTEE

What is the Continuing Education Committee and what does it do? The answer seems simple enough. The NEITE Continuing Education Committee provides educational opportunities for the section members through training courses and seminars. But it is much more than that. Working with the Program Committee, and the state and student chapters, the committee develops an annual training program designed to provide exposure to a variety of topics and meet the expressed desires of the membership.

Ideas for training courses come from a multitude of sources. FHWA, LTAPP Centers, universities, ITE headquarters, other professional societies, and member's suggestions have all been the impetus for courses. There is a virtual web of training contacts, professional instructors; government agencies; ITE staff; and working professionals, all willing to help arrange training courses or direct you to the appropriate person or agency.

Once the training courses have been identified the Continuing Education Committee coordinates with the *Chronicle* editor and the Webmaster to notify the section membership of upcoming courses. Now that many section members require professional development hours (PDH's) for renewal of their PE licenses and PTOE certification the committee produces PDH certificates for the training courses and seminars, and works with the secretary to maintain the section's PDH records.

Despite all the advance planning that is done there are a few things that are inevitable. First, some time in March, when you will think that you have the entire year programmed and are just about to settle in to cruise control, you will get a couple phone calls and before you know it you have zero courses planned. At this point you quickly switch from cruise control to panic mode. The second thing you can count on is that at the first board meeting of the year, in *January*, Bill McNamara will say "If we are going to have a school in December I need to know *now* to make the arrangements at the hotel." Before you have a chance to respond, "Not only do I not know what we are doing in December, I have no clue of what we are doing next month" Bill will follow up with "Why do we have the school anyway? It just interferes with the social hour." The third and most important corollary is that your fellow board members, committee members, and chapters will all pitch in and before you know it all the courses are set (maybe not what you originally planned, and often better), everyone has their PDH certificates, and it is time to start thinking about next year.

I did not fully know what the Continuing Education Committee did when I volunteered to take over the committee from Kevin Hooper, who had much bigger things to do. The Continuing Education Committee serves a vital role for our section and as the third corollary states the support of the section board and members ensures the committee's success.

PUBLIC RELATIONS COMMITTEE

Many people may be wondering, what is the Public Relations Committee and where has it been? I asked the same question when I was appointed to be chairman of the committee. Upon being notified of my involvement with the Public Relations Committee, I conducted some research on what the committee may have done in past and what exactly constitutes "public relations." In what many may consider "appropo," public relations for our transportation profession in the New England states may be more important than ever as the United States Congress begins re-authorization hearings for the next transportation bill.

Based upon the meeting minutes from past NEITE board meetings, it was acknowledged that the committee needs more direction. It is my goal to provide this direction and enact, establish, and initiate efforts to make this committee a vital part of the board in the future.

Since we are mostly transportation engineers and planners in NEITE, "public relations" does not usually play a significant role in our everyday work environment. This may be part of the reason why the committee never really got off the ground in recent years, the unknown factor. What to do, how to do it, etc. Because of this, I decided to start with defining the phrase, public relations. Basically, the public relations committee vision must include promotion of NEITE and its members to the general public using available media. More intensive searching for public relations information led me to the ITE website which has several items on public relations for ITE districts and sections. In fact, ITE's Constitution preamble specifically references public relations.

One other item for the committee to address is the NEITE directory. It has been a number of years since it was last updated. As of this article, I have drafted an updated version and have begun final editing before transmitting to the board and ultimately, the membership.

In summary, I look forward to coordinating with upcoming event organizers to ensure public relations is considered in the planning of the events on both the section and chapter level, and with the District 1 for the annual meeting. Please feel free to lend me your ideas and suggestions for this committee. I am also in need of volunteers to assist the committee in espousing our public relations message.

TECHNICAL COMMITTEE

The Technical Committee is currently in the research phase for our Accessible Pedestrian Signals (APS) Guidelines. We compiled work on accessible pedestrian signals done by others and then distributed these documents to committee members for review. At our next meeting, we will each make a summary report of our reviews. We will then identify those items from our reviews that we should carry into our guidelines. We also plan to invite sight impaired individuals and a mobility specialist for further input.

THOMAS E. DESJARDINS GOLF TOURNAMENT

On Tuesday, May 25, 2004 the NEITE is proud to sponsor the 5th Annual Thomas E. Desjardins Golf Tournament to benefit the Thomas E. Desjardins Memorial Scholarship Fund, which annually awards a scholarship to a deserving transportation student in the New England area. This year's tournament will take place at Sandy Burr Country Club in Wayland, Massachusetts. The tournament is scheduled for a shotgun start at approximately 9:00 AM and will be followed by a barbecue luncheon and raffle. Last year we had 100 golfers sign up for the tournament. We look forward to a spectacular day of golfing and socializing, and most importantly raising money for our ITE scholarship fund. In addition to the golf activities scheduled this year, we will be featuring a raffle with prizes.

For more information please contact Rodney Emery at (617) 241-4251, fax (617) 242-9824, or via email at remery@ekmail.com.



THOMAS E. DESJARDINS MEMORIAL SCHOLARSHIP

The Thomas E. Desjardins Memorial Scholarship is typically given to a college junior or senior student; however, individuals other than college juniors and senior may be selected. The recipient must be of high moral character and academic achievement, who also has involvement in extracurricular activities. Applicants should demonstrate a strong commitment to the discipline of transportation engineering in their coursework and extracurricular activities. There is no restriction as to location of residence or high school attended, but the recipient must be a student at an accredited civil engineering school in one of the New England states. The scholarship award is for a single academic year. Application forms for the scholarship will be available from the New England Section website (www.neite.org). The application deadline is July 1, 2004.

NATIONAL WORK ZONE AWARENESS WEEK

"How would you like it if someone drove through your office? The people who build our highways work where you drive." That was the safety theme of the 2004 National Work Zone Awareness Week, which ran from Sunday April 4, 2004 through Saturday April 10, 2004. Federal Highway Administrator Mary Peters set up her office in the middle of a northern Virginia interchange on I-95 to demonstrate the danger to drivers, passengers and workers from unsafe driving habits in highway work zones. Peters emphasized that safe driving habits can significantly reduce the more than 52,000 injuries and fatalities that occur each year in highway work zones. "Safety is not a spectator sport," Mary Peters said. "drivers should remember that they and their passengers are also in danger from carelessness in work zones."

According to the United States Department of Transportation Federal Highway Administration work zone fatalities increased 53 percent nationwide from 1998 to 2003. Four out of every five people killed were either drivers or passengers. In 2002, there were more than 17,500 work zone crashes nationwide, resulting in one injury every fifteen minutes (143 a day) and 1,181 work zone fatalities (one every seven hours). Financial losses from work zone crashes in 2001 topped \$3 billion.

Several New England state including Rhode Island and Vermont joined other states across the nation in promoting work zone safety during Nation Work Zone Awareness Week. "Motorists need to be aware that the people who build our roadways work where we drive," said James R. Capaldi, P.E., Rhode Island Department of Transportation (RIDOT) Director. "RIDOT's construction season officially began on Thursday, April 15, 2004, but even before that drivers saw construction work starting all over the Ocean State."

"A well-known national advertisement really brings home the danger," said Vermont Secretary of Transportation, Pat McDonald. "It depicts a business person sitting at their desk on the side of a highway, with cars and trucks passing by at 65 to 75 MPH or more. I believe anyone can relate to how they would feel if their working environment was only a few feet from vehicles traveling at high speeds."

Tips for driving safely in work zones include:

- Expect the unexpected.
- Slow down.
- Keep a safe distance between you and the vehicle ahead of you, and the construction workers and equipment.
- Pay attention to the signs.
- Stay alert and minimize distractions.
- Obey road crew flaggers.
- Keep up with the traffic flow.
- Be patient and stay calm.
- Allow enough time to drive safely.

MASSACHUSETTS CHAPTER

The chapter is co-sponsoring the Bertman Berger Memorial Seminar and Luncheon on April 30, 2004. This yearly event attracts a large number of attendees and high caliber speakers. This year's topic will be none other than the Democratic National Convention. The guest speaker will be U.S. Representative of the Eighth Congressional District, Rep. Michael E. Capuano (D). He is also a member of the House Transportation and Infrastructure Committee. Other notable invitees are Representative Joseph F. Wagner, Chairman of the Massachusetts Joint Committee on Transportation, Astrid Glynn, Deputy Secretary of Transportation, and Stanley Gee, from the Federal Highway Administration. The two technical sessions are: *Democratic National Convention Coming to Boston HOW? A Behind the Scenes Look and Legislative Update - State and Federal Transportation Funding*. The event will be held at the 57 Restaurant at the Radisson Hotel located at 200 Stuart Street in Boston.

On behalf of the Massachusetts chapter of ITE, we wish to express our thanks and appreciation to BSCE for inviting us to co-sponsor this successful event.

The MAITE Chapter held its monthly meeting in the 7th floor conference room at 10 Park Plaza on Wednesday, April 7, 2004. Approximately, fifteen people attended the meeting. We are happy to report that this meeting was the best-attended meeting to date. We had Ken Petraglia, and John Mirabito (Past President), members of the New England Section Board of Directors. Other attendees included representatives from both public and private agencies. Topics discussed during the meeting included board election, website updates, and meetings. The board would like to thank all attendees and we hope that they will continue to attend.

UMASS AMHERST STUDENT CHAPTER

The UMass-Amherst ITE Student Chapter has been busy these past months. The chapter prepared and submitted the Annual Report detailing all the work the chapter has accomplished over the past year. It is available in PDF format on their website at www.ecs.umass.edu/ite. The chapter hosted a Technical Day on the UMass campus on April 14, 2004. The event was attended by professionals from the public and private sectors, professors and students. The students were comprised of the UMass-Amherst and North-eastern ITE Student Chapters. Future plans for the chapter include attending the District 1 Annual Meeting in Burlington, Vermont. The Chapter will be sending seven students to the event, four of whom will be presenting.

**BE SURE TO GET YOUR CHAPTER INFORMATION
AND ANNOUNCEMENTS IN THE NEXT CHRONICLE
BY CONTACTING THE EDITOR AT:
KHO@BETA-INC.COM**

NEW HAMPSHIRE CHAPTER

The New Hampshire Chapter is please to announce that the following two people have joined the leadership of the chapter:

- David Debaie (VHB, Inc.) – Membership Chair
- Nick Sanders (VHB, Inc.) – Program Chair

Thank you for your willingness to serve the New Hampshire Chapter!

On Tuesday, March 16, 2004 the New Hampshire Chapter welcomed Frank Bauer, P.E. from the New Hampshire Department of Transportation to make a presentation entitled, "Design Considerations for Traffic Control Plans." Frank shared his extensive experience as District Construction Engineer with the attendees to provide real life examples of the dos and don'ts of traffic control during construction and what designers can consider during the design phase to better prepare traffic control design plans.

The New Hampshire Chapter, along with the Maine Chapter and the New England Section, will be holding their joint meeting and training course in Portsmouth, New Hampshire on June 22, 2004 at the Sheraton Conference Center in Portsmouth, New Hampshire. The course topic is "Older Driver Highway Design Workshop."

CONNECTICUT CHAPTER

The Connecticut Chapter of ITE held its Joint Annual/New England Section meeting on March 30, 2004 at the Sheraton Hartford Hotel in East Hartford, Connecticut. The meeting included two Technical Sessions: 1) Traffic Impact Studies with guest speaker Kim Hazarvarian, and 2) Roundabout Panel Discussion with the speakers Will Britnell (ConnDOT), Bill Bent (MassHighway), Howard McCullough (New York DOT), Bob White (Connecticut Roundabout Advocate), Steve Mitchell (F.A. Hesketh Associates), and Gary Fontanella (Tectonic Engineering). The dinner speaker was Michael Sanders, the Transit and Rideshare Administrator for the Connecticut Department of Transportation, and the dinner topic was Bus Rapid Transit in the Greater Hartford Area. Over ninety people attended the meeting.

Awards were given to the following people:

- Carl F. Bard, P.E. – Transportation Leadership
- Michael Sanders – Transportation Achievement
- Ted DeSantos, P.E., PTOE – Service to the Chapter
- Julie M. Annino, Ph.D. – Past President

The Connecticut Chapter also held elections. The results were:

- Jennifer Carrier, E.I.T. – President,
- Timothy Sorenson, P.E. – Vice President
- Carla Tillery – Secretary/Treasurer.

The next meeting of the Connecticut Chapter will be in the fall of 2004.

For comments, or to make a submission to the **Agency Corner**, please contact the editor via email at kho@beta-inc.com or at (781)-255-1982.

⌘ New Hampshire ⌘

A ten-week trial period of one-way tolling at the Hampton Toll Plaza on I-95 significantly reduced congestion at the plaza during the heavy traffic periods without jeopardizing motorist safety. That is according to a sixteen page "One-Way Toll Report" presented to Governor Craig Benson and the Executive Council by the New Hampshire Department of Transportation Commissioner Carol Murray.

On August 14, 2003, Governor Craig Benson directed the Department of Transportation to reduce the traffic backups at the Hampton Toll Plaza by developing a test plan for one-way toll collection. The report details the purpose and scope of the one-way toll experiment, its implementation and operation between August 22, 2003 and November 1, 2003, and its effect on traffic and revenue. Among the report's findings:

- The test succeeded in meeting its purpose of significantly reducing traffic backups and congestion on I-95 during a busy time period.
- Backups in the southbound, non-tolled direction were virtually eliminated.
- The addition of an eleventh lane in the northbound direction helped to reduce backups.
- Traffic responded positively to the new toll situation and no accidents occurred.
- The one safety issue of concern during the test period was motorist speed through the southbound toll plaza.
- Southbound traffic increased 6.1% southbound during the test compared to 2002.
- Northbound traffic declined by 3.7% compared to 2002 traffic counts.
- The rate of traffic diversion declined as the testing period continued.
- Traffic on US Route 1 increased 10% over 2002 traffic levels during the trial.
- After the test, traffic on US Route 1 returned to roughly pre-test levels.
- The gross revenue loss during the ten-week period was approximately \$180,000.
- Personnel costs were reduced by \$47,000 during the test.

In a letter accompanying the One-Way Toll Report, Commissioner Murray recommended returning to one-way toll operations this spring through fall of 2004 so more data can be gathered for a full evaluation of the one-way toll experiment.

"Given the positives associated with one-way toll collection's elimination of backups at the Hampton Toll Plaza in the areas of customer satisfaction, air quality and convenience, seasonal implementation is recommended," Commissioner Murray wrote.

⌘ Rhode Island ⌘

Each year, ITS America honors the top achievements in the ITS industry through the ITS America Best of ITS Awards program. Finalists for this year's awards in the Education and Training category include the Rhode Island Department of Transportation (RIDOT). RIDOT was selected for its Interactive Approach to Transportation Management Center Training.

Recognizing that an approach to formal training was required in order to meet the needs of the Transportation Management Center (TMC) as it relates to operations, RIDOT has developed an interactive CD-ROM training approach that could serve as a model for other TMC's to emulate. The program recreates an intensive two-day training session inclusive of interactive presentations. The training cross-references the Standard Operating Guidelines (SOG) Manual regarding TMC policies, procedures and protocols. This approach is important as travel budget constraints may be cost prohibitive to provide a sufficient level of classroom training. The purpose of this approach to training is to provide hands-on interactive self-training modules emulating the formal training documents.

The other three finalists selected for this year's award in the Education and Training category include the U.S. Department of Transportation, the Virginia Department of Transportation, and the Consortium for ITS Training and Education. The 2004 Best of ITS Awards Presentation will take place on April 26, 2004 at the ITS America Annual Meeting and Exposition in San Antonio, Texas.

⌘ Massachusetts ⌘

MassHighway with the support of the Executive Office of Transportation and Construction, has teamed up with the other state and local agencies to work with AASHTO on the Lead State Initiative as part of the Strategic Highway Safety Plan. The Strategic Highway Safety plan is a comprehensive strategic approach to effectively reduce highway fatalities to meet AASHTO's national safety goal of a reduction in the fatality rate to 1.0 death per 100 million vehicle miles and 9000 lives saved by 2008.

In working with AASHTO on the Strategic Highway Safety Plan, Massachusetts has volunteered to participate in the NCHRP 17-18 Lead State Initiative Project to examine roadway departure crash data statewide and investigate strategies aimed at alleviating any problem areas. In support of the Lead State Initiative, MassHighway will take the lead role in evaluating crash data records related to run off road, head on collisions, and collisions with hazardous trees to determine a goal detailing a specified statewide reduction in related crash totals.

A review of the crash data for the period from 1996 to 2000 indicates the following:

- There were a total of 96,080 run-off-the-road crashes. This comprised 11 percent of all Massachusetts crashes.

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- There were a total of 42,685 run-off-the-road crash injuries. This comprised 9 percent of all crash injuries.
- An average of 37 percent of all crash fatalities were from run-off-the-road crashes.
- 98 percent of the run-off-the-road crashes leading to those fatalities were single vehicle crashes.
- Single vehicle run-off-the-road crashes accounted for 36 percent of all fatal crashes

To accomplish the ambitious task of reducing the roadway departure crash totals, a team of transportation and safety professionals responsible for implementing strategies for roadway safety within their organization are working together to address the goal of reducing the number of deaths and serious injuries on the Commonwealth's roadways. Over the next few years, this initiative will be a key focal point for safety on the roadways in Massachusetts.

⌘ Vermont ⌘

Archaeological investigations associated with the Vermont Agency of Transportation's Bennington Bypass project in southwestern Vermont have enriched our understanding of Native American lifeways and 19th century Euroamerican life while providing educational and economic opportunities for the surrounding communities and fostering community cooperation for the project. The \$135 million, 11 mile, Bennington Bypass will provide through traffic with the alternative of a convenient, high capacity, limited-access highway around urban Bennington. This will reduce delay for through and local traffic while improving safety, decreasing congestion, providing infrastructure for commerce and tourism to grow in the Bennington area, and allowing better use of the local street system for pedestrians and commercial and residential traffic.

The identification of several dozen Native American sites and a few historic Euroamerican sites resulted from the archaeological studies in advance of the final project design. This \$3 million effort by the Vermont Agency of Transportation, Special Projects team and the Federal Highway Administration have been in cooperation with the Vermont Division for Historic Preservation, the Bennington Historic Preservation Commission and the broader Bennington Community.

One of the most significant archaeological sites investigated in the Bennington Bypass project area represents the remains of a 4,000-year-old Native American village, the Cloverleaf site. The Cloverleaf site is situated on the floodplain of the Walloomsac River, in close proximity to its confluence with Furnace Brook in the town of Bennington, Vermont. The site location is within the middle portion of the Hudson River drainage; the Walloomsac River drains into the Hoosick River to the northwest of the site.

Archaeological investigations at the Cloverleaf site were extremely productive and the wealth of information gathered

there offers an unusually detailed glimpse into a relatively short period of time during the River phase of the Late Archaic period, dated to between 1900-2000 BC (or 3900-4000 BP). An overall total of 450.25 square meters of site sediment has been excavated at the Cloverleaf site as a result of the cumulative investigations there.

Well over 100 volunteers worked with the University of Maine at Farmington archaeologists during the two seasons of data recovery excavations, and 750 other people visited the site, for a total of nearly 3,900 individuals involved in the Education and Outreach program. Volunteers and site visitors came from as far away as South Korea, Japan, Germany, Canada, California, Arizona, Oregon, Virginia, Pennsylvania, Massachusetts and New York among other distant places attesting to the tremendous interest there is among the public for heritage studies.

The Vermont Agency of Transportation, Special Projects team and the Federal Highway Administration have supported these archaeological studies conducted in advance of the Bennington Bypass and encouraged community participation. This work has resulted in more than just a wealth of knowledge of the past, but has allowed the public to be active participants in the important work of historic preservation while learning about our heritage.

⌘ Maine ⌘

Maine's first highway design-build project – a new way of doing business!

Ground breaking ceremonies were recently held for the Portland Connector project in Portland, Maine. The project provides a shortcut from I-295 to Portland's working waterfront. The \$23 million project is designed to increase safety, improve traffic flow, and stimulate economic development in the area. The one-mile span of highway and three bridges along the Fore River will connect the outer Congress Street Exit of I-295 with western Commercial Street. Carrying 12,000 vehicles daily, Portland's new connector will bypass busy city streets, lighten traffic, and increase pedestrian safety.

Embracing the design-build philosophy, MaineDOT awarded all phases of construction to a single bid team. MaineDOT selected Cianbro and their design-build teammates – Shaw Brothers Construction, The Louis Berger Group and S.W. Cole Engineering. Partnering from start to finish, this innovative approach provides solutions and achieves the highest quality at the lowest cost.

Cianbro and their design-build teammates kicked off the construction phase of the project by ceremoniously removing the anchor at Veteran's Circle. The anchor, donated by the Portland Propeller Club to commemorate the dedication of the Veteran's Memorial Bridge in 1955, will be stored in a safe place and later installed at an appropriate location along the new connector when complete.

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03-TR-01

Civil/Transportation Engineer

Our Rocky Hill, Connecticut office is seeking a full-time civil engineer to work on transportation and civil/site projects. Applicant must be a highly motivated self-starter with excellent organizational and written communication skills who works well in a team atmosphere. Candidate should have three (3) to five (5) years of experience in the field of transportation and civil/site engineering with an emphasis on Connecticut DOT and/or municipal projects. Working knowledge of AutoCAD and Autodesk Land Desktop required. Knowledge of Microstation is also desirable but not required. Candidate should have a Bachelor of Science Degree in Civil Engineering and Fundamentals of Engineering Registration.

04-TR-01

Transportation Engineer

Our Lincoln, Rhode Island and Norwood, Massachusetts offices are seeking full-time engineers in the Transportation Department. Applicants must be highly motivated self-starters with excellent organizational and written communication skills and work well in a team atmosphere. Two (2) to five (5) years of experience in the field of transportation with an emphasis on roadway design including drainage analyses and water quality/detention basin design required. Experience in quantity take-off, traffic assessments including signal design/analyses and signal warrants desired. Proficiency in Land Development required. Requires a Bachelor of Science Degree in Civil Engineering. Fundamentals of Engineering Registration preferred.

04-CE-01

Civil Engineer

Our Lincoln, Rhode Island and Norwood, Massachusetts offices are seeking full-time civil engineers in the Transportation and Civil/Site Engineering Department. Applicants must be highly motivated self-starters with excellent organizational and written communication skills and work well in a team atmosphere. Two (2) to five (5) years of experience in the fields of transportation and civil/site engineering, with an emphasis on roadway design required. Proficiency in hydraulic analyses with Rational Method, SCS Methodology and SWMM Modeling required. Proficiency in Land Development required. Requires a Bachelor of Science Degree in Civil Engineering. Fundamentals of Engineering Registration preferred.

If interested, please submit resume to rkelly@beta-inc.com and reference the position number indicated.

MDM is currently seeking qualified candidates for the following positions:

Transportation Planner/Engineer – Entry Level

Position involves field research, data collection, crash analysis and capacity analysis. Applicant would assist in the preparation of traffic impact and access studies, environmental impact reports, functional design reports, quantity/cost estimating, and plan preparation for roadway and traffic signals improvements. Experience with Synchro®, aaSIDRA®, Excel, MS Word, AutoCAD Land Development Desktop is desirable. BSCE, excellent written and oral skills required. F.E. preferred, working toward PE registration is desired.

Transportation Planner/Engineer – 2 to 6 Years Experience

Position involves preparation of traffic impact and access studies, corridor studies, environmental impact reports and multi-modal transportation analysis. Position also involves roadway and intersection design, traffic signal design, preparation of design plans, specifications and estimates. Experience with Synchro®, Excel, MS Word is required. Experience with AutoCAD Land Development Desktop, aaSIDRA® is desirable, but not required. BSCE, F.E., excellent written and oral skills and a minimum of 2-6 years experience required. Working toward PE and PTOE registration is desired.

MDM offers a challenging opportunity for career growth as a Transportation Planner/Engineer in our Marlborough, MA office. We offer a dynamic working environment with Principal Transportation Planners and Engineers on high-profile land development and municipal contracts. MDM is an Equal Opportunity/Affirmative Action Employer and offers an excellent benefits package.

For confidential consideration, please forward a cover letter and resume to:

MDM Transportation Consultants, Inc.
2 Mount Royal Avenue, Suite 450
Marlborough, MA 01752
Fax: (508) 303-0371
e-mail: rdesrosiers@mdmtrans.com

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⌘ ANNOUNCEMENTS ⌘



**May 19-21, 2004
Burlington, VT**

**5th Annual
Desjardins Golf Tournament
May 25, 2004, Wayland, MA**



⌘ UPCOMING EVENTS ⌘

Date	Location	Event
May 19-21, 2004	Burlington, VT	ITE District 1 Annual Meeting
May 25, 2004	Wayland, MA	5 th Annual Desjardins Golf Tournament
June 22, 2004	Portsmouth, NH	Joint NEITE & NH Chapter Annual Meeting
September, 2004	TBA	Joint NEITE & MA Chapter Annual Meeting

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