



**NCITE
TRAFFIC SIGNAL COMMITTEE**

Meeting Minutes
October 2, 2002

This document is available online at <http://www.nc-ite.org/trafficsignal.htm>

ATTENDEES

Linda Taylor – Mn/DOT – Committee Chair
Wayne Sandberg – Washington County – Committee Co-Chair
Ray Starr – Mn/DOT
Paul Zager – Parsons
Roger Plum – SEH Inc.
John Maczko – City of Saint Paul
Jerry Smrcka – Hennepin County
Marc Culver – City of Maple Grove
Steve Manhart – Bolton & Menk, Inc.
Kristi Sebastian – Dakota County
George Stuempfig – SRF Consulting Group, Inc.
Nickolas Erpelding – RLK Kussisto LTD

LOCATION

The meeting was held at the St. Paul Traffic Operations Building, located at 899 N. Dale Street, St. Paul.

CORRECTIONS

No corrections to the September minutes

HANDOUTS

1. DRAFT Letter to Scott Windley of the US Access Board concerning NCITE's response to the proposed *Draft Guidelines on Accessible Public Rights of Way*.
2. DRAFT NCITE Signal Committee Synchro Training Survey
3. *Sensor Technologies for Arterial and Freeway Traffic Management*, 2002 Mid-year TRB Freeway Operations and Signal Systems Committee Meeting, June 21-23, 2002
4. *Signal Timing with Video Detection*, Sabra, Wang & Associates, July 19, 2002
5. UTAH Traffic Operations Center Informational Guide

ROUND ROBIN

John Maczko – John showed us one of the flags for his Waive, Wait and Walk Campaign. They are leaving the flags at approx. 30 intersections in Saint Paul and pedestrians are instructed to wave the flags to obtain the drivers attention before entering the crosswalk. This program developed in part by working with the Safe Routes people. The goal is to empower the pedestrian to notify motorists of their presence. Even if the flag is

NCITE Signal Committee Meeting Minutes

October 17, 2002

Page 2 of 5

not available, the hope is pedestrians begin to understand the need to get drivers attentions before stepping in front of them.

Marc Culver – Marc states that the web site has not been updated recently, but he is going to make a large update soon, and included in that will be the addition of recent NCITE Signal Committee meeting minutes.

Steve Manhart – Steve reminded everyone of the upcoming PTOE Exam and wished everyone who was going to take it good luck!

Ray Starr – A recent issue that has come up is the UL Listing of traffic signal cabinets. There has been a couple of incidents where Electrical Inspectors are not allowing traffic signals to be turned on, because the cabinets are not UL Listed. There is no current UL Listed Controller on the market. Ray, Mn/DOT EE, is trying to write-up a certificate that addresses Mn/DOT's cabinet configuration. Jerry Smrcka reminds everyone that a traffic signal cabinet is a closed system, and thus should not need UL Listing. Ray stated that State Law reads that approval is based on electrical code and that the product must be UL Listed or have a certificate.

George Stuempfig – Ground Rods. Brian Holt, SRF Electrical Engineer, signs their signal plans. Brian has insisted on placing ground rods in the bases of signal poles. Research has shown that there have been fatalities due to the lack of proper grounding of the poles. SRF has put together a memo (ATTACHMENT A) discussing the issue. Brian views that adding an additional \$100 to the signal cost is well worth the added protection.

Ray states that when plastic conduit is used, Mn/DOT currently places ground rods at the poles.

George mentions that having a ground rod at each pole may stop lightning strikes from making it to the cabinet.

Draft Guidelines for Accessible Public Rights-of-Way

Kristi Sebastian handed out the latest draft of the NCITE committee response. The tone of the letter is purposefully technically neutral, with a “work together” feel. She also purposefully kept the letter to two pages. The group liked the technically neutral feel, however, there were some technical issues that the committee wanted included, specifically Roger Plum's write-up on railroad safety impacts with signaling the approaches. The committee decided to include Roger's write-up in an Appendix to the letter, which could contain the more technical analysis of the guidelines and their impacts.

Jerry Smrcka stated that Hennepin County sent a strong letter of their own to the US Access Board concerning the Draft Guidelines for Accessible Public Rights-of-Way.

NCITE Signal Committee Meeting Minutes

October 17, 2002

Page 3 of 5

Steve Manhart mentions that the NCITE Board of Directors is meeting next Thursday, October 10, 2002. Steve needs the final version before that meeting, so that it can be discussed and approved. The committee then went into specific wording of the letter with minor changes noted. A comprehensive carbon-copy list was developed which included Dave Kopacz, National ITE, TRB Signal Committee and the Federal MUTCD Committee.

ACTION ITEM – Kristi Sebastian will take the comments from the committee and incorporate them into a final version. The letter will be forwarded to Steve Manhart and John Crawford for consideration at the NCITE Board of Directors meeting on Thursday October 10, 2002.

Future Signal Coordination Training

Linda Taylor created a draft survey that could be used to assess the regional training needs for both an entry level and Advanced Synchro/SimTraffic training, determine train focus area and specific topics of interest, training methods, and pre-qualification requirements of the attendees. The committee discussed having the survey accessible on the NCITE web site. Marc Culver mentioned that he thought we could do the survey online, and he will investigate the amount of work that would be required and the time involved in creating an online survey.

Linda Taylor mentioned that Mn/DOT has shown interest in helping to fund classes, but will need assistance in developing the class and the associated class materials.

The committee will also need to work on deciding who should be on the distribution list for this survey. Steve Manhart mentioned that the NCITE Board will consider this an outreach opportunity and would probably recommend that every member receive a copy.

ACTION ITEM – Marc Culver will investigate what it would take to make this an online survey.

TRB Signal System Committee briefing

George Stuempfig briefed the committee on the highlights of the TRB Signal System Committee meeting in Salt Lake City. The TRB Signal System Committee focus was on sensor applications and technologies. Minnesota is definitely on the leading edge with non-intrusive detector program.

Purdue University completed work on video imaging technology. The results indicated that intersection lighting does impact the VIDS performance. Under low or inadequate lighting conditions, the head lights can significantly alter the VIDS detection zones.

TTI, UMass-Amherst and Kittelson & Associates are working toward a National standard for displays for protected/permissive left turn phasing (NCHRP 3-54). A summary of their work to date can be seen at

NCITE Signal Committee Meeting Minutes

October 17, 2002

Page 4 of 5

<http://www.kittelson.com/pplt>.

University of Utah (Peter Martin) has developed a real-time SCOOT simulation. They are now integrating VISSIM to incorporate LRT. TTI is working on integrating a traffic signal controller or signal control software into the simulator. Eil Kwon from Mn/DOT is also doing similar research using the VISSIM model.

Utah hosted a tour of their new Traffic Control Center and extensively talked about the traffic challenges with the Winter Olympics.

LED Specification– Ray Starr

Currently there is no yellow LED indication on the market that meets current ITE and Mn/DOT specifications. Several manufactories are producing yellow LED to Caltran specification. Mn/DOT is trying to determine whether or not to spec green tinted lenses for green LED. The tinted lenses may have an impact on color blind individuals.

Overhead Flashers- Ray Starr

There is a new Technical Memo under development that will eliminate the application of yellow/red overhead flashers. Instead of using an overhead yellow/red overhead flasher, we would put a red flasher on the stop signs and yellow flasher on the intersection ahead sign. These changes could be incorporated in the MMUTCD.

NEXT MEETING

The next meeting will be:

November 6, 2002

8:00 – 10:00 am

Mn/DOT Golden Valley Office

2055 N. Lilac Drive

Golden Valley, MN

Directions

<http://www.mapquest.com/maps/map.adp?country=US&address=2055+N.+Lilac+Drive&city=golden+valley&state=MN&zipcode=&homesubmit.x=0&homesubmit.y=0>

Topic for discussion:

- NCITE Sponsored Training
- TEO Traffic Signal Committee meeting –Ray Starr

ATTACHMENT A

Technical Note: Grounding of Traffic Signal Masts

Traffic signal plans produced by SRF Consulting Group, Inc. call for a ground rod at signal poles. This is in addition to the equipment grounding conductor and bonded conduit.

Grounding Procedure: Grounding of traffic signal equipment shall be in accordance with MnDOT 2565.3.H Bonding and Grounding. In addition, at signal mast locations, the contractor shall install a ground rod where shown on plans. The ground rod shall be installed in the foundation extending 5 feet below it into the soil and bonded to the signal mast per MnDOT 2565.3.H.

Ground rods installed at signal masts accomplishes a few different things:

- It provides a tertiary ground path in the event that the conduit or equipment ground paths fail.
- It facilitates a less destructive path for lightning.
- It enhances the electrical connection to the Ufer ground available in the foundation thus improving personal safety.
- It enhances the likelihood that the signal pole will be at a safe voltage to ground in the event of a fault to ground in the pole.
- It reduces the likelihood of hazardous pole to ground potential differences due to stray ground currents.
- It reduces the likelihood of hazardous pole to ground potential differences due to voltage drop in the ground circuit or bonded conduit system.

With properly installed equipment grounding conductors and bonded rigid conduit the system would be NEC compliant. It's my personal professional opinion that the addition of ground rods at signal masts improves the grounding system and is a cost effective safety enhancement. I understand that the electrical engineering community is not unified in this opinion. I have read arguments pro and con from a number of angles. For me, I come back to the following conclusions:

- Even if it doesn't help, for whatever reason, no one has suggested that it's harmful.
- It doesn't cost much to do it, it's cheap insurance.
- There have been a number of fatalities in other states due to poorly grounded traffic signal apparatuses. In this light, I consider it obvious that installing cost effective redundant ground paths are a prudent public safety measure.

If you have any questions regarding grounding of signal mast or lighting poles, please call Brian Holt at 763-475-0010.

Brian D. Holt, PE
Senior Associate
SRF Consulting Group, Inc.