

**TEO Signal Committee Meeting Minutes**  
**Meeting Date: 1/28/2015**  
**Water's Edge Conference Rm 176**  
**Meeting Time: 9:00am – Noon**

**Meeting Attendees:**

Jerry Kotzenmacher	Sue Zarling	Linda Heath	Robin Delage
Peter Skweres	Kile Holm	Tim Bangsund	Mike Schroeder
Jim Deans	Steve Misgen	Mike Gerbensky	Nicole Flint
Clint McCullough	Alex Govrik	Mark Kowin (phone)	John Adamek
Cindy Dittberner	Ben Osemenam	Tod Becker	Roger Peterson
Chris Bosak	Greg Kern	Jeff Knofczynski	

**Old Business-**

**ADA Pedestrian Accommodations –**

- New ped Station Design – No recommended changes to the current ped station design. After knockdowns that have occurred the anchors and conduit has been able to be reused and the button is also often salvageable. Another base was added to the APL (TIP Indications)
- APS Ped Station Detail as Standard Plate – A suggestion was made to make the current detail a standard plate. Although past experience has pushed a new plate out as much as a year, the current detail may continue to be the best option for field implementation. The detail is always in the plan, and therefore always with the construction/electrical contractor as they construct it in the field. A plate has less of a chance being in the hands of the contractor when they actually construct it. With the design still being relatively new, the committee decided until further notice that the detail continues to be a better option than converting to a standard plate at this time. This detail will be considered for conversion to a standard plate in the future.
- Replacing speakers within the APS continues to be a problem. Cost of the speakers is around \$25.
- APS systems continue to cost around \$400 per pushbutton and \$2200 for the control unit and configurator
- Ped station knockdowns – replacement costs average around \$1000/knockdown for materials and labor.
- APS voice files from construction projects need to be sent to CESU.
- APS sign warranty issues should be sent to Peter.
- Polara issues a manufacturers defect on the buttons. If anyone is having any problems with the buttons send the issue to John Adamek.

**Flashing Yellow Arrow** – Detector cross switching may be lacking in some of the field programming. There are multiple ways for making sure the left turn receives calls while switching from protected to FYA permissive. The operation of left turns should be monitored in the field when new signals are turned on. Both peak and non-peak operation should be observed when turning on a new signal with FYA. Jerry will help districts review detector programming as needed.

Jerry will work with both controller manufacturers to set up training on the FYA operation for those interested.

**Cabinet/Controller Committee** – based on the rising costs on MnDOT's primary traffic signal controller, we will begin looking at other controllers that fit our needs. A new specification will be written to include our current and future needs. We may take the approach of having 2 levels of controllers since many of the features are not needed at many intersections. An ATC controller was mentioned as a possible direction for the specification.

**Signal Agreement** – In the Special Provisions, it states that if doing a signal project, “an agreement must be completed”. It was decided that this statement is no longer needed or serves a purpose in the Special Provisions. It will be removed from the Special Provisions.

**New Business** –

**Paint/ Decorations on Signal Cabinet** – requests have recently come in to paint or decorate the traffic signal cabinets (controller, SSB, lighting). City of Minneapolis currently allows this to happen with permit. The permit specifies “no advertisement” or “no cause” such as non-profit funding. The City of Minneapolis may be a good example of how this could be implemented. The committee suggested no paint allowed, rather use a heated on “shrink wrap” type cover. These wraps are advertised to be graffiti resistant. Other issues raised were who will determine what is considered art? Who will be responsible for maintenance of the wrap? Who will be responsible for removing the wrap? Other cities across the nation suggest that graffiti on cabinets has been reduced by allowing art work on the cabinets. Sue will bring to Executive TEO and mention that this committee is “not opposed” to the idea. In the meantime, OTST will come up with guidelines. Cost of these wraps in other cities has been around \$1500 for the wrap, \$1000 for installations. MnDOT would not be responsible for any costs if this is allowed. NOTE: When this was discussed at the TEO Lighting Committee there was more opposition and it was commented that we need to be sure that all of the warning labels/stickers and the ESS contact information remains clearly visible.

**Second Conduit System** – NEC Code requires that class 1 circuits cannot be run in the same raceway as coax cable. Mike Posch was not able to attend the meeting so Jerry will schedule a meeting with a small group to determine best practices for this issue and bring it back to the full committee. Some districts had concerns about adding additional costs to projects that they feel they will never utilize.

**Hand Hole** - A new designation on the signal layout for hand holes placed in the sidewalk will be “HHS”. This new designation is shown on the example plan and has added text in the notes section of the sample wiring diagram. As a reminder, it’s good to keep all hand holes out of the Pedestrian Access Route (PAR). It was mentioned that placing handholes behind the sidewalk is an issue if loops need to be replaced in the future.

For the 2015 construction season the Quazite handhold should continue to be used for handholes not in sidewalks and the PVC handhole with polymer concrete ring and cover should be used in the public access route (PAR) and maintenance access route (MAR).

**Loop detector designs** – with ADA requirements and the crosswalk getting pushed farther up the lanes of travel, our standard detection designs may not accommodate traffic as well as in the past. On new signal designs, loops may need to be placed further forward than they have been in the past. When doing modifications for existing signals, the number of replacement loops must be open on the contract, allowing additional replacement loops as needed. Experience has shown that it is very difficult to predict how many replacement loops will be needed on a signal modification to meet ADA standards. MESU has had to replace loops when contracts fail to replace loops adequately, costing \$\$ to the district. Districts should consider having the in place loops located prior to doing the final design and layout for retro fits so loop detector impact can be considered. They should also be sure the loops are working 100% prior to the project being complete.

**PVC Coated RSC** – Bridge conduit will now use PVC coated RSC. In the past, bridge conduit being all RSC has rusted away well before the life of the bridge. This new type of conduit will last longer than just RSC.

**Public Interest Finding** - A new public interest finding (PIF) to continue to State furnish traffic control signal equipment to projects was approved by the FHWA. The intent of the PIF is the same as it has been in the past to include cabinets, controllers, video cameras among other items to better assure compatibility. The approval date of the new PIF is September 8, 2014. See the attachments below for more details.

The last PIF was approved in 1982.

**Supplemental ground rods** – To meet NEC code, we now need a supplemental ground rod at least 8’ from the equipment pad. It was suggested that designers show a ground rod coming out of the equipment pad in the direction of where the rod is leaving the pad. This would assist locators in knowing that a ground rod should be located. Since the pad area of the layout is very detailed and there is a low risk of a damaged ground rod, the committee recommended that only a note such as “supplemental ground rod” is written into the pad notes on the layout.

**AFMS** – All systems, including ITS, should have a system ID assigned and be entered in to AFMS. Out state maintenance is having a hard time recording work being done to these systems since many of them currently do not exist in AFMS. District personnel should also be entering a

work order into AFMS when they enter a cabinet. This is critical in regards to receiving potential future funding and Asset Management, which is one of the Departments WIGs.

**APS Extension on PA/BA poles** – Todd Grugel gave a presentation on the difficulties of someone with limited reach abilities. The APS pole mounting adaptor is currently used only when needed. Todd suggested that MnDOT should use the pole mounting adaptor anytime an APS button is called for on a PA or BA pole. The majority of the committee concurred. The extension should now be used anytime an APS is called for on a PA or BA type pole. A note should be added to the pole note, calling for the extension.

APS push button extensions should also be used when installing APS buttons on pedestal shafts, as shown on the details.

### **Round Robin –**

Jerry - Outstate design for a “continuous green” signal. Currently there are two in the Metro: TH 110 at 35E west ramp and TH 280 at Broadway. Both signals use a 1 indication green up arrow that always stays on. The new signal in question is similar to the two existing locations. Short discussion on options for the free flow continuous green phase were: 3 section red, yellow green ball; flashing yellow up arrow (when merging traffic) with a green up arrow; just a green arrow; no indications. Committee suggested that the green up arrow was the preferred indication. All designs should be using a single green up arrow to reinforce a standard uniform design across the state for similar designs.

Peter S- Handholes now require locator balls be installed. Details for installation are in special provisions. Both orange and red locator balls will state supplied. Contact the stock room at CESU/MESU when you need locator balls for projects.

Mark K – Needs locator device to detect ball locators. Jim D. Will send a form to each district to determine what equipment they may need to locate the balls. He will work on finding funding to purchase the needed equipment.

Next meeting:           Thursday, May 7th, 2015  
                                  Waters Edge Conference Room 176  
                                  9:00am – 12:00noon  
                                  Send Agenda items to Jerry K.



Minnesota Department of Transportation

Office of Traffic, Safety and Technology
1500 W. County Road B2, Mail Stop 725
Roseville, MN 55113

Phone: (651) 234-7055
Fax: (651) 234-7006

March 5, 2014

Mr. Derrell Turner
Division Administrator
Federal Highway Administration
Galtier Plaza, 380 Jackson St, Suite 500
St. Paul, Minnesota 55101

Attn: Kevin Kliethermes

SUBJECT: Public Interest Finding
Traffic Control Signal Equipment
Request for approval

Dear Mr. Turner,

The Minnesota Department of Transportation (MnDOT) is requesting an updated approval of the Public Interest statement for State furnished Traffic Control Signal equipment for MnDOT signal projects including signal cabinets, controllers, video cameras for roadway monitoring and vehicle detection, Ethernet switches, fiber distribution panels, necessary components to provide a functional signal control cabinet, and infrequently furnishing pedestal shafts, bases, mast arms and poles, signal heads and cable for the construction of a complete and workable traffic control signal system.

State furnishing Traffic Control Signal equipment ensures compatibility, efficient operation and, maintenance, reduced cost of purchase, and good quality control, of our signal systems. In addition Minnesota Administration Rule (3801.3620) requires all electrical equipment to be listed and labeled by a testing laboratory. The traffic control signal does not enforce these requirements nationally; however, MnDOT has developed cabinet specifications and requirements that bring our traffic control signal cabinets into compliance with State law and the National Electrical Code (NEC).

As with all of our State Furnished Materials, acquisitions are managed through State of Minnesota contract and purchasing standards to assure fair and open competition. Over the last 25 years, MnDOT has been purchasing signal cabinets and components in large quantities, under contract, from the manufacturers at a reduced cost. These cabinets are customized and fitted with necessary components to serve the intended purpose and they are then tested at our MnDOT Facility for quality control before deployment in the field. The technicians involved in the customization and testing of these cabinets are also involved in the field maintenance of these systems. Having cabinets that are constructed the same way with the same internal layout allows for more simplified and efficient trouble shooting when a malfunction occurs and reduces maintenance time and signal down time for the traveling public.

If contractor supplied cabinets were required on construction projects meeting Minnesota Rule 3801.3620 would be very difficult, if not impossible, as the traffic industry as a whole does not manufacture cabinets that meet this requirement.

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We believe it is in the public's best interest to have these traffic control signal components State furnished to provide the most reliable, efficient, and safe system for travel that we can.

It is requested that you approve this Public Interest finding, to continue uninterrupted traffic control signal systems delivery for our traveling public.

Please contact Sue Zarling at 651- 234-7052 or by e-mail at [susan.zarling@state.mn.us](mailto:susan.zarling@state.mn.us), , if you have any questions.

Sincerely,

Enc. 1982 Signal PIF

cc: Paul Merchiewicz  
Ben Osemenam  
Susan Zarling  
Ray Starr

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U.S. Department  
of Transportation  
**Federal Highway  
Administration**

**Minnesota Division**

September 8, 2014

380 Jackson Street  
Cray Plaza, Suite 500  
St. Paul, MN 55101-4802  
651.291.6100

Charles A. Zelle  
Commissioner of Transportation  
Department of Transportation  
MS 120, 395 John Ireland Blvd.  
Saint Paul, MN 55155

Attn: Susan Zarling

RE: Public Interest Finding (State Furnished Material)  
Traffic Control Signal Equipment  
Request for Concurrence

Dear Mr. Zelle,

The FHWA has reviewed the March 2014 request and concurs that it remains in the public interest to require the use of traffic control signal (TCS) equipment furnished by the State. This determination is made in compliance with 23 CFR 635.407, and in conformity with the 2014 Stewardship and Oversight Agreement between the FHWA and the State of Minnesota's Department of Transportation.

Federal funds may participate in the cost of the TCS equipment only when it is incorporated into accepted items of work on a Federal-aid highway project. To be eligible for Federal participation the TCS equipment must continue to be acquired by the State through competitive bidding, unless there is an additional public interest finding justifying the use of another acquisition method. The availability of the equipment shall be stated in the special provisions for the benefit of all prospective bidders, and the unit cost eligible for Federal participation shall be limited to the unit cost of the TCS equipment to the State transportation department. Note that the installation of TCS equipment on a project by MnDOT forces is still subject to a separate public interest determination.

Please also see the attached December 2012 Clarification of Manufactured Products under Buy America as this request provides for *infrequently furnishing pedestal shafts, bases, mast arms and poles, signal heads and cable for the construction of a complete and workable traffic control signal system.*

It is our intention that this public interest finding remain in force until modified or superseded during the next update to the Stewardship and Oversight Agreement. Good management procedure would dictate that this policy be jointly reviewed periodically (three to five years) by our agencies to establish its continuing validity.

Please contact Bill Lohr at 651-291-6119 or by e-mail at [william.lohr@dot.gov](mailto:william.lohr@dot.gov) if you have any questions.

Sincerely,

David Scott  
Acting Division Administrator

Enclosures: 1982 Signal Public Interest Finding  
2012 Clarification of Manufactured Products under Buy America