



TEO Signal Committee Meeting Minutes
Meeting Date: 02/04/2016
Water's Edge Conference Rm 176
Meeting Time: 9:00am – Noon

**** Amended 10/05/2016 ****

Meeting Attendees:

Jerry Kotzenmacher	Sue Zarling	Mike Posch	Robin Delage
Peter Skweres	Nicole Flint	Mike Schroeder	Roger Peterson
Jim Deans	Mike Gerbensky	Mike Fairbanks	Ben Osemenam
Clint McCullough	Kile Holm	Mark Korwin-Kuczynski (phone)	
Jeff Knofczynski	Greg Wagner	Cindy Dittberner (phone)	
Alex Govrik	Greg Kern		

Old Business-

Flashing Yellow Arrow – A number of flashing yellows arrows have been installed and operating for several years. District should be looking back on historic accident records to assure appropriate and safe FYA operations. Typically, looking back one year can give operators an idea on if FYA (protected/permissive) operations is safe throughout the day. If a high number of FYA related accidents are reported during a specific time period and the signal is operating FYA, operators should consider removing the FYA during this period, running protected only.

Cabinet/Controller Committee – The committee met in December. The old ASC/3 Software Version letter from TCC has been changed to an internal “MnDOT ASC/3 Software Tracking Letter”. This letter provides the latest version software, Operating System and Data Base being sent out of ESS and used on controllers being placed by ESS.

“Basic View” is an option for ASC/3 controllers. It allows only the most used data on the first few screens, then other less used data would be displayed on other screens. Districts have the option to use or not use the Basic View screen.

See Controller/cabinet Committee meeting minutes below.

Pedestrian Station – One of the two ped station base manufacturers presently listed on MnDOT’s APL provides a tether as an option to be used. One end of the tether is connected to an anchor bolt in the foundation and the other end is attached to the breakaway base. The concept of the tether is to prevent the ped station if struck by a vehicle from becoming a flying projectile that may potentially injure a pedestrian or damage personal property. To date, there is no record of the station becoming a flying projectile after being hit. There is also concern that if

the pedestrian station does not move out of the way after being struck that it could become an issue with the 4 inch requirement for breakaway structures. The committee decided the tether would not be part of the standard design.

New Business

7 Amp Fuse in Cabinet Retro – A few years back, the Signals TEO Committee decided that cabinets should be specified with ¾ amp fuses in the signal indication fuse panel, down from a 7 amp fuse. The lower amp fuse can be used due to the lower wattage LED indications now being used on new signals. This change has allowed the circuit to meet the requirements of a class 3 power limited circuit

It was discovered that on older signal systems, where either there are incandescent lamps still being used and/or older LED indications with a higher wattage in place, the fuse may fail. When replacing cabinets on retrofit projects, the ¾ fuses in the replacement cabinet may need to be changed out to 7 amp. There was only one situation noted in the meeting where the fuses were failing on a TS2 Type 1 cabinet replacement into an existing old intersection, therefore an overall change in the ¾ amp fuse to something larger is not warranted. Rather, on retrofit signals where a problem with higher wattage indications is known, the fuses should be changed out to the 7 amp fast blow fuses at signal turn on. There are no reported problems with this ¾ amp fuse with new signals.

UPS Electrical Interface – The uninterruptable power supply must have its interface connected in order to have the signal go to flash when the power fails. MnDOT's operational design and intent is to have the signal operate normally for the first two hours of a power failure, then flash for the remainder of the life of the batteries (typically several hours). Without the electrical interface between the SSB cabinet and the traffic control signals cabinet, the signal will run full operation until the batteries go dead. At that point, the signal will go black and the all red flash that was supposed to happen will not take place. MnDOT wants the signal to flash after two hours of a power failure, thereby bringing awareness to the signal and that it requires attention.

Alarms – the following alarms have been identified in the past and are considered a MnDOT standard for Alarm definitions:

- ~~1) Running on battery backup~~
- ~~2) Battery backup batteries low~~
- ~~3) UPS watchdog (battery backup)~~
- ~~4) Signal Cabinet transient suppressor failed~~
- ~~5) Door open~~
- ~~6) Undefined (possible fan on or over temperature)~~
- ~~7) Undefined (possible humidity level)~~
- ~~8) Undefined~~

***Amended 10/05/2016 ***

- 1) Door Open
- 2) Running on Battery Back Up
- 3) Battery Back Up Batteries Low
- 4) UPS Watch Dog Fail
- 5) Cabinet Transient Suppression Fail
- 6) Undefined (possible fan on or over temperature)
- 7) Undefined (possible humidity level)
- 8) Undefined

Back Ground Shield – On new construction, the background shields are the simple flat panel shields. There are background shield designs that use a “rounded edge”, where the edge of the shield is folded over a quarter inch. This makes the shield more ridged and durable. Maintenance liked the idea of using the rounded edge shields over the flat panel shields on new signals. Additionally, ESS only orders the rounded edge shields. Peter will look into whether all MnDOTs indication/shield providers have the rounded edge option when ordering. If so, the spec will change so MnDOT gets the rounded edge shields on new signals.

Rail Road Priority Calls – The FHWA reported a catastrophic accident where the traffic signal preemption programming was not programmed correctly. The priority level for the rail road preemption call was not a highest priority call. The RR priority level of all new traffic signals for MnDOT is preempt priority 2 (advanced preemption call), and preempt priority call 1 (gate down call). MnDOT TS2 Type 1 signal cabinets have preempt inputs 1 & 2 dedicated to railroad. The cabinets are hard wired so any EVP preemption will start at controller input 3 and above. If a district is uncertain that their signals are set up this way they should be verified. When at a location for other operation or maintenance reasons this could also be verified.

Internally Illuminated Street Signs – MnDOT does not install and maintain internally illuminated street signs, but if requested by a local agency there are new provisions for these types of signs if they are being mounted on traffic signals. The Signing chapter of the Traffic Engineering Manual also changed language to complement the provision changes.

Dark Signals – Per State Statute a dark signal becomes an uncontrolled intersection. Typically power is restored quickly enough that stop signs are not placed at the intersection. If stop signs are requested and placed at the intersection the signal must be placed in flash operation so it does not begin to operate red/yellow/green when the power comes on and stop signs are in place.

The SSB cabinets were designed with an option that can be added for generator hook-up. If this is really desired the cabinet needs to be ordered that way.

EVP – With the patent of the Opticom sensor expiring, Tomar has now come out with a new EVP sensor. The sensor is claimed to be superior over the old style sensor. Mike S. will order

one of the sensors and have it tested. If the test prove the sensor works better, it will be placed on the APL and the old sensor removed.

GPS EVP – OTST may set up a meeting to review a GPS EVP product. Contact Jerry if you are interested in attending.

Sonic EVP – Some outstate districts believed the only EVP systems they could order were the Sonix EVP system. No districts are required to order one system or another. Districts are open to order any EVP system a city desires and is on the MnDOT Approved Products List.

Extended Life LEDs – A manufacturer has come out with a 15 year warranty on LED traffic signal indications. The maker suggested that a 20 year life could be expected. Currently, MnDOT has a 7 year replacement plan with the local agencies reasonable for indication replacement. Many signals may be reaching a limited light output. OTST will look into other manufactures warranties and see if we can change the 7 years to something longer.

On a similar note, districts should send notes out to the local agencies still using incandescent lamps expressing the benefits of LED signal indications. The power and maintenance savings will far outweigh the initial costs of the LED replacement.

Cell Modem – Metro has been using cell modems with success on the I2 system. Cell modems may not work well with Aries. Cell modems could be an option for some outstate districts with a central server system.

Signal Design Changes – The Equipment Pad Detail has been changed. The cabinets have been switched around. The controller cabinet is now on the left side and the SSB Service cabinet is now on the right side. In the previous design, the controller cabinet was on the right and SSB cabinet on the left. This change was made because field staff requested, making it easier to view both the field operations and the controller cabinet at the same time. The SSB cabinet would block field view in old design. The new design is now posted on the OTST web site. Use it for all new signals.

The ADA push button pole mount adaptor (Bosinator) is now to be used for all APS pushbutton mountings on all PA and BA poles. The adaptor should be listed in the pole notes and furnished when called for APS mounting on the pole.

Ped Indications - Maintenance has been replacing, when needed, new style countdown ped indications. The question was can a crossing have two different style ped indications? Additionally, can an intersection have multiple types of Ped indications? OTST will look into the questions. Does The MnMUTCD have a time frame on countdown pedestrian indications must be installed? *After further review, there is no timeframe for ped indications to be replaced as countdown peds in the MnMUTCD. There is no known written statement that ped indications need to be the same for a crossing or an intersection.*

Fault Current – On new construction, the contractor has to label in the SSB cabinet to what the fault current calculations are. This is an NEC requirement and in the spec book (2565.3CC). It has not been getting done. Make sure the calculations are getting placed in the SSB cabinet at signal turn on.

Pole Base Connector – Field assembly of the pole base connector in some cases has not been done correctly. There are three things in the assembly process that must be done to assure years of maintenance free operation:

- 1) Plugs must be used on all open or unused hole slots. (See Pic 1 picture in attachments)
- 2) The wires in the signal indications must be installed with forks down and sprayed to prevent wicking (see Pic 2 picture in attachment)
- 3) Seals or grommets that come with the connector must be used.

Pole base connector requirements and installation requirements are covered in Standard Specifications for Construction 2565.3J.6 and 2565.3J.7

Round Robin –

Sue – MnDOT upper management is finalizing the policy on painting MnDOT public property including signal cabinets. The policy is scheduled to be completed in March. Once completed Sue will send out.

Antennas for cell phone companies - MnDOT has been approached about installing cell antennas on our signal and lighting poles. MnDOT will not allow antennas on signal or lighting poles that we own. Local municipalities can allow the installation of antennas on their non-breakaway light poles that are on state right of way by permit. Installation is not allowed on breakaway poles on MnDOT right of way.

Robin – SSB retrofit CMU issue with inverter. Signal will go into flash, flashing an all green for a split second, then go into an all red flash. CMU or inverter may be causing this to happen. ESS will shop test.

When a combination scenario between the AWF, FYA and Preempt call, the signal can go into a fault. Problem appears to be in the lagging overlap. Econolite is aware of the problem and working on a solution to be released in ASC/3 software version 2.67.

Jim, In a previous meeting, it was discussed that ESS would supply the ADA push buttons, then be replenish by the contractors. Jim needs to know about how many of these systems he needs to order. OTST will look into the number of cabinets needed for 2016.

Next meeting: Wednesday, May 18th, 2016

Waters Edge **Conference Room A**

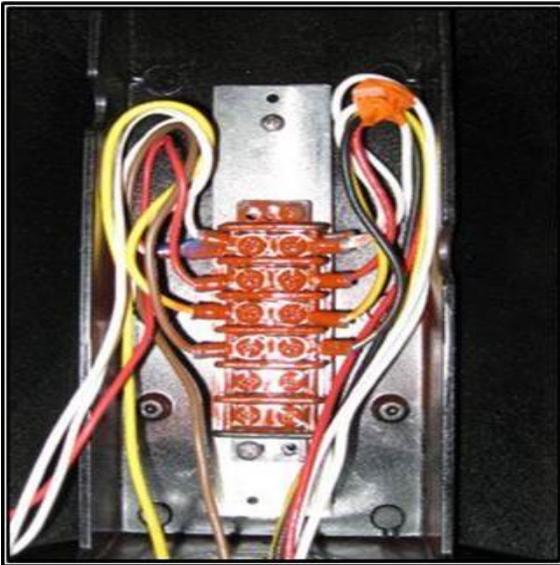
9:00am – 12:00noon

Send agenda items to Jerry K.

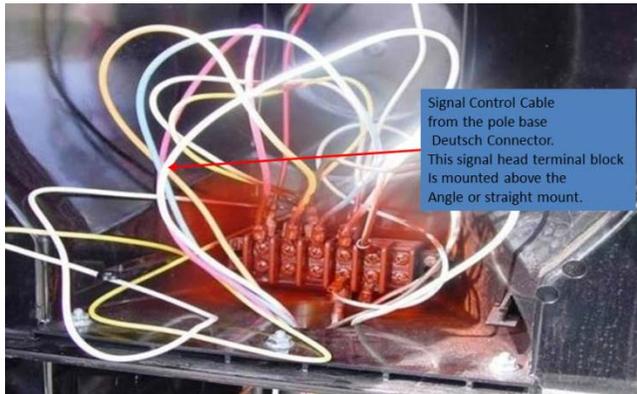
Attachments to Signal TEO Committee Meeting:



Pic 1: White plug on left



Pic 2: Wiring to prevent water wicking



Controller/Cabinet Committee Meeting Minutes 12/11/2015

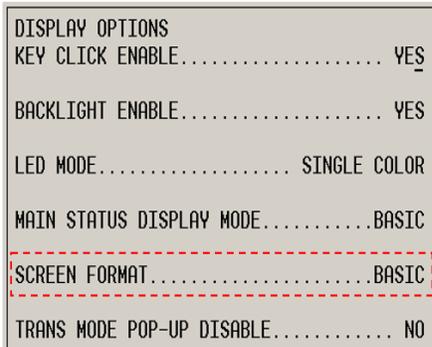
Attendees:

<i>Jerry Kotzenmacher</i>	<i>Sue Zarling</i>	<i>John Fahrendorf</i>
<i>Peter Skweres</i>	<i>Robin Delage</i>	<i>Kevin Schwartz</i>
<i>Marty Carlson</i>	<i>Tony Kasper</i>	<i>Mike Fairbanks</i>
<i>Nicole Flint</i>	<i>Brenda Byrne</i>	<i>Jim Deans (phone)</i>

ASC/3 –

- *The “version letter” will now be called the “MnDOT ASC/3 Software Tracking Letter”. The letter will no longer come from TCC, but rather OTST. The MnDOT ASC/3 Software Tracking Letter will state what the current software version should be sent out for all new controller’s, going out from ESS and going into service in the field. The letter will be for the entire state, not just Metro.*
- *The MnDOT ASC/3 Software Tracking Letter is now version 2.63. See attached.*
- *Current software for ASC/3 is being sent from TCC to ESS is SW 2.63. No problems found in field yet.*

- *In ASC/3 controllers, Metro should have SW 2.58 or higher; outstate most controllers should be 2.58 but some may be older.*
- *Any ideas for Data base changes should be suggested at the next meeting. Data base changes are “default” programming, making it easier to program a controller for a new signal. Series 50 action plans are a good example. Current version is DB N3883*
- *“Basic view” in controller. Basic view allows a simplified version of on screen programming options, pushing less used information lower on the screen. The committee suggested that if it was optional, meaning the operator could choose between basic view and the standard, we would use it. After further review, it was found that basic view is already an option in newer versions of software. If changing in the field, the controller would need to be rebooted, which would require putting the intersection into flash to make the change work. May need further discussion.*



- **How do I enable the ASC3 "Basic View" screen format?**

To enable the "Basic View" screen format go to Main Menu 1,7,2 and change the setting "SCREEN FORMAT" to "BASIC" and cursor off of the setting. Then simply reboot the controller and your ASC3 will now be in the "Basic View" format

CTC Preemption boards –

- *Preemption boards have failed shop tests. CTC has not worked the problems out. No boards have been installed in the field due to shop test failures. No plans to field install until problems are resolved.*
- *After review of the meeting minutes, Ron C. reports that the cards have passed chamber tests and have worked properly in cabinets in the shop. They may be ready for field evaluations. Further discussions needed.*

Controllers for MnDOT –

- *The Advanced Transportation Controller (ATC) Standard Version 6 (ATC 5201 v06.23) should be adopted by ITE as a national standard on January 8, 2016. The committee decided that it would be best to wait until this standard is released before looking into a new controller. Metro is ok with waiting until this new standard has been released.*

Flashing Yellow Arrow –

- *Nicole has been working on a programming guide for the ASC/3. Included is guidance on the flashing yellow arrow programming, action plans and corresponding detector programming. Any comments can be sent to Nicole.*

Cabinet update – *About 2 years left on current Myers cabinet contract.*



MnDOT ASC/3 Software Tracking Letter

Listed below is the approved ASC/3 Controller software, Operating Software and Data Base to be used for new controllers going out to the field from Electrical Services. The version software and data base shall not be changed without approval of the MnDOT cabinet/controller committee.

Date	Software	Operating System	Data Base
Sept – 2009	2.45.00	1.12.05	N3880
Dec – 2009	2.45.00	1.12.05	N3881
July 2010	2.47.20	1.12.05	N3882
Oct – 2011	2.49.30	1.12.05	N3882
Nov – 2011	2.48.30	1.12.05	N3883
Feb – 2012	2.50.00	1.12.05	N3883
May 2012	2.51.00	1.12.05	N3883
Sept 2014	2.54.00	1.14.03	N3883
Jan- 22, 2016	2.58.00	1.14.03	N3883
Jan 29, 2016	2.63.00	1.14.03	N3883
Feb – 02, 2016	2.64.00	1.14.03	N3883