

NCSITE Signal Systems Users Group
Meeting Minutes
Crown Coliseum, Fayetteville, NC
May 9, 2007

Buddy Murr with NCDOT opened the meeting. Buddy thanked the attendees and welcomed them to Fayetteville.

Buddy went over items covered at the last Signal Systems Users Group meeting which was held in Cary on May 23, 2006. Those topics included Historic Preservation concerns, discussions regarding possible signal system upgrade projects for Winston-Salem, Chapel Hill, Rocky Mount, Salisbury, and Wilmington and a new system for Goldsboro; Signal System Designs across the southeast; NC One-Call and the 811 system for locates; polycarbonate signal heads; wireless communication systems for traffic signals; LED modules; and a presentation on travel time improvement being realized by the essentially completed Cary Signal System. At the conclusion of the 2006 Cary Meeting, Dale Privette organized a tour of the Cary Traffic Operations Center. Buddy thanked Dale for hosting and facilitating the Cary Meeting. No one brought forth any questions or comments from the minutes.

Editorial Comment: Subsequent to the 2006 meeting, signal system upgrades have been programmed into the 2007-2013 TIP for Chapel Hill, Goldsboro, and Wilmington. Salisbury and Winston-Salem were able to program in some interim improvements until full upgrades can be funded.

Greg Fuller with NCDOT gave a presentation on backplate usage for signal heads. Greg asked the attendees to look at the presentation from two perspectives, that of a driver and that of an attorney representing a motorist who has had an accident at a signalized intersection. A power point presentation followed that detailed the MUTCD's guidelines for backplate usage (there are none) and NCDOT guidelines for backplate usage (there are none) as well as photographs of intersections that showed the inconsistent usage of backplates. Greg asked the municipalities and the divisions to make sure that backplates were installed, or not installed as called for on the signal plans. He requested that Signals and Geometrics be contacted to request a Plan of Record for locations where backplates were added or deleted.

Greg Fuller went over the Standard Practice for Compliance with Traffic Signal and Electrical/Programming Detail Plans (refer to [Traffic Engineering Policies, Practices and Legal Authority Resources - TEPPL](#) - T-67). This document was sent to the Division Traffic Engineers on March 1, 2007. Greg pointed out that at this time, only three municipalities were approved to prepare Signal and Electrical Plans for state owned signals. These municipalities are Charlotte, Greensboro, and Winston-Salem. Greg asked the municipalities and Divisions to contact Signals and Geometrics if they receive a plan for an installation that is older than two years to make sure the plan meets all current standards.

Greg Fuller discussed the Standard Practice for generators used on state owned signals (TEPPL T-68). Municipalities must enter into an agreement with NCDOT and follow the guidelines for the installation of transfer switches or panel for generator connection. He urged those municipalities who are now using generators on state owned signals to make sure they enter into an agreement and are in compliance with standard practices.

Greg Fuller gave an update of the flashing yellow arrow being tested in the state: 11 have been installed and 19 will be installed within the next several months. Four intersections running the FYA head have been installed on NC58 in Emerald Isle. Don Bennett with the City of Wilmington gave a report on the flashing yellow arrow at College Rd. and K-Mart in Wilmington. This has been in operation since November 2005. There has not only been a 54% decrease in the overall number of target crashes, but the

severity of crashes as well. The FYA signal at Wake Medical Center in Raleigh saw a 47% reduction in target crashes. Based on a request from the City of Boulder, Colorado Signal Operations Engineer, Buddy Murr asked that anyone operating the FYA for lead-lag operation during coordination email him any crash data they might have. Boulder is getting ready to implement several locations with FYA and had some concerns with safety along progressed corridors when using lead-lag phasing.

Tony Wyatt with NCDOT addressed the attendees on Pedestrian Signal Issues. He stated that Pedestrian safety was an area of key emphasis for the State Highway Safety Program (two-thirds of pedestrian related crashes occur in urban areas of the State). In 2006, there was an 11% increase in pedestrian related crashes from the same period in 2004 and 2005. He stated that the Department of Transportation did not have rigorous guidelines for the installation or removal of pedestrian signals and that this issue has been handled on a case-by-case basis with primarily Division Traffic Engineers and municipality traffic engineers. He supplied material on The North Carolina Executive Committee for Highway Safety (ECHS), the NCDOT policies on pedestrians and bicycles, and crash data involving pedestrians and bicycles. Don Bennett said he wants numerical guidance concerning when to install or remove pedestrian signals at existing signalized locations (i.e., criteria and quantitative warrants). He stated that there are pedestrians involved in crashes where no pedestrian signals exist and that pedestrians are involved in crashes with turning vehicles where they do exist. Tony invited anyone with ideas for pedestrian signal guidelines to become part of a statewide effort aimed at addressing pedestrian issues. Tony mentioned that Cliff Braam of the Traffic Engineering Branch is the contact person for any questions related to the Executive Committee for Highway Safety and that Regional Traffic Engineer Vickie Embry is working with SubCommittee Chairman Tom Norman on the Bicycle/Pedestrian Working Group as part of the ECHS. Bucky Galloway is heading up a committee to develop guidelines for recommending pedestrian signals and crosswalks.

Rusty Thompson with the City of Fayetteville gave a report for the Signal Evaluation Sub-Group. He presented a form to be used for Schedule C & D. Lori Elliot asked if there were any guidelines for a developer project addressing re-timing and re-evaluation of signals placed in a system. Dean Harris said that the group did not address that issue.

Editorial Comment: The FHWA Traffic Signal Timing Manual is scheduled for completion in August 2007. The Manual is intended to provide a concise, practical, user friendly guide focused on the fundamentals and the prevailing best practices for traffic signal timing. Please follow this link to learn more: http://ops.fhwa.dot.gov/arterial_mgmt/tstmanual.htm

Alf Badgett with PBS&J gave a power point presentation on the procurement of ITS and signal related items in Florida. He stated that the Florida DOT was seeing great savings by having a statewide contract for the purchase of the item and paying separately for the installation.

Mark Dunzo with Kimley Horn and Associates discussed the Software Procurement Method being used for the Greensboro Signal System. Based on previous experience with metropolitan signal system deployments across North Carolina (having the prime contractor provide the local/central operating software), it was decided to pursue different methods using guidance from FHWA and the NCDOT Alternative Delivery Systems Unit. Basically, a four-step process was used:

1 - The Project Steering Committee invited several software vendors to showcase their products in a formal presentation. The vendors were ranked using an established set of criteria and four vendors were short-listed for site visits.

2 - Representatives of the committee visited four locations around the South/Southeastern United States to view the operations of signal systems running the top four vendor's software.

3 - The four vendors provided their software for "bench testing" in Greensboro.

4 - At the conclusion of bench testing, the committee will make a recommendation on how to proceed: narrow the list down to one or two vendors; have the City of Greensboro purchase one software package

prior to the Letting and write special provisions around that particular vendor's software; or write special provisions which name the top 2 or 3 software vendors and have the prime contractor choose which local/central software package they wish to provide for implementation on the Greensboro project. This final decision will be contingent on final approval by FHWA and NCDOT. Mark also explained other approved methods of procurement.

Stephanie Privette with Kimley Horn and Associates discussed the placement of System Detectors. She would like to start a dialogue on the pro and cons of placing system detectors upstream from a signal, downstream from a signal and at midstream between two signals. Stephanie stated she agreed with the practice of using local loops upstream for dual purpose because of the cost savings.

The meeting was adjourned at 12:00 for lunch and reconvened at 1:00.

Dale Privette with the Town of Cary thanked Buddy for his leadership of the Signal Systems Users Group and stated that Buddy was ready to turn the responsibility over to someone else and asked anyone who was interested to contact either him or Buddy. Dale then gave a power point presentation on ITS and Signal Installations in Urban Areas. He discussed some of the issues that had come up during the Cary Signal System Project. The Town Council had concerns about aesthetics. These concerns included the size of metal poles, size and appearance of signal cabinets, appearance of wood poles, DMS signs, and meter bases. The Town council has approved funds to replace meter bases and disconnects with a more aesthetically pleasing unit.

Buddy Murr ran through a brief slideshow of municipal traffic signal installations which incorporated different aspects of context sensitive solutions to address aesthetic concerns in other parts of the state.

Rusty Thompson gave an update on the City of Fayetteville Signal System Project. He stated that the system utilizes Econolite's Pyramids central system software and Oasis local software (which is currently under license for Statewide use by NCDOT until 2015). He then showed some of the graphics that are used to operate the system. Rusty stated that the system was 99.9% complete. He stated that the project was to be completed in July 2005. Greg Fuller added that the project would have been complete 12-18 months earlier had it not been for the development and acceptance of the Statewide Software.

Buddy Murr informed the municipalities that the radio communication systems were now on state contract and were available for them to purchase. For those systems using twisted pair copper cable, the radios come equipped with FSK ports (as well as RS232). The radios are proving very reliable and can save much expense on smaller systems as well as when adding new signals to an existing communications system. Because the majority of systems have now migrated to fiber optic cables, the FSK feature will be removed from NCDOT requirements when the current contract terminates in 2008.

Buddy Murr reported that NCDOT specifications now require that all components in a non-traffic signal cabinet be UL or 3rd party certified. NCDOT has experienced some problems with the Department of Insurance inspectors on some projects. Buddy advised that issues may arise even when all of the individual components in a cabinet are 3rd party certified. When all the individual components are combined into a single device housed within the equipment cabinet, the cabinet and its contents are then viewed as a single component. Dale Privette added that the Town of Cary electrical inspector was hesitant to give approval on the 11 DMS signs installed on the Town's signal system project because the sign housing was not 3rd party certified, even though all of the individual components were.

Buddy Murr spoke briefly about the Draft "ITS Toolbox" that was being developed by Cheryl Evans' Group within the ITS Section. The Toolbox provides a variety of ITS solutions or strategies that may be

implemented for smaller type projects in the \$250k or less price range. These mitigation strategies may be used by Division and Regional Traffic Engineers who are experiencing certain types of safety problems in their particular areas of the State. Examples mentioned include advanced queue detection, low visibility detection systems, and overheight warning systems.

Buddy Murr stated minutes and presentations from this meeting would be posted on the NCSITE website.

Meeting Adjourned to tour Fayetteville Traffic operations Center.

Meeting Summary

94 Total Attendees

31 representatives from 17 Municipalities

19 representatives from 13 Private Engineering Firms

1 SCDOT representative

43 NCDOT representatives (9 Highway Divisions and 2 TESSB Units)

Topics tabled for future SSUG Meeting(s):

Alternate means of Communication for Video (fiber, wireless, DSL, etc.)

Use of third party agencies or private ventures for real-time traffic information