

National Capital Region Transportation Planning Board

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Meeting Notes

TRAFFIC SIGNALS SUBCOMMITTEE OF THE MANAGEMENT, OPERATIONS, AND INTELLIGENT TRANSPORTATION SYSTEMS (MOITS) TECHNICAL SUBCOMMITTEE

DATE: Wednesday, March 14, 2012
TIME: 10:00 AM to 12:00 Noon
PLACE: District Department of Transportation
CHAIR: Ling Li, Virginia Department of Transportation

Attendees:

Harvey Alexander, DDOT
James Cheeks, DDOT
Edwin Daniel, Montgomery County Police
Maha Gilini, City of Alexandria (called in)
Ed Jones, Prince George's County ATMS Section
Curt McCullough, City of Fairfax (called in)
Bob Souza, VDOT
Selby Thannikary, Fairfax County

COG Staff:
Andrew Meese
Huijing Qiang

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Actions:

1. Welcome & Introductions

Mr. Meese began introductions and welcomed participants. Meeting notes from the February 9, 2012 Traffic Signals Subcommittee meeting were reviewed and approved.

2. Review of the Traffic Signal Power Backup System Survey

a. Review and Discussion of the Summarized Results of Traffic Signal Power Backup System Survey

Mr. Meese briefed the committee on the background of the traffic signal power backup system survey. COG formed Incident Management and Response (IMR) Steering Committee in the wake of the January 26, 2011 storm. The IMR Steering Committee met 6 times over 8 months and a successor IMR Steering Committee had started holding quarterly follow-up meetings since February 22, 2012. The IMR Report, which is available on COG's website, contains findings and recommendations on several areas including transportation. One of the recommendations related to transportation was to conduct an assessment of and expeditiously install backup power for major traffic signals. As a result, COG/TPB staff has been tasked to conduct such a survey to gather relevant information.

The survey results, which had been reviewed by the traffic signals subcommittee since last December, had been revised according to the feedback received since the February 9, 2012 meeting. The survey results had also been presented to the meetings of the Emergency Preparedness Council, Transportation Planning Board, Incident Management and Response (IMR) Steering Committee, and MOITS.

The traffic signals subcommittee reviewed the latest survey results and made some comments at the meeting. In order to get timely information of this region, the committee agreed to have COG/TPB staff follow up with each individual jurisdiction/agency and update the survey results every six months.

b. Traffic Signal Subcommittee Follow-Up to Survey

The committee discussed jurisdiction-specific cost estimates for installation, maintenance, and operations of battery-based power backup systems. Mr. Souza reported that the installation cost for VDOT signals is about \$5,600 per cabinet and there are no estimates for annual operations and maintenance cost because those UPSs are still new and under warranties. Mr. Alexander reported that their installation cost is about \$8,500 per cabinet and there is currently no information for operations and maintenance cost. Mr. Jones reported that their installation cost is about \$5,700 per cabinet and he will provide operations and maintenance cost estimates later. In response to Mr. Meese's question as if there is a default cost range for annual operations and maintenance, Mr. Alexander suggested using the standard cost from NEMA.

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The committee also discussed if traditional incandescent traffic signals need to be upgraded into LED signals before they can be equipped with battery-based power backup systems. Mr. Jones noted that traditional traffic signals can be backed up by batteries. From the daily operations point of view, it is just more efficient to use batteries on LED signals. Mr. Souza added that the duration of backup power which a UPS can supply really depends on the load and mode of operations of a signalized intersection.

Ms. Gilini noted that the City of Alexandria has started looking for battery-based power backup systems and they would like COG to provide them with some relevant information for this region in the future.

COG/TPB staff will reach out to each individual jurisdiction/agency to get jurisdiction-specific cost estimates for installation, maintenance, and operations of battery-based power backup systems.

c. Review of Evacuation Transportation Operations Plan Information in Relationship to Traffic Signals Back-Up Power

The committee reviewed the information in the Evacuation Transportation Operations Plan in relationship to traffic signals power backup systems. COG/TPB staff have compiled a list of Traffic Control Points (TCPs) broken down by jurisdictions with priority level information. The TCPs were originally identified in the Evacuation Transportation Operations Plan for Virginia and Maryland. There are two priority levels, which are priority 1 and 2. Priority 1 means those TCPs with this level of priority should be set up as soon as possible while priority 2 TCPs should be set up as resources are available or condition changes. The committee discussed whether TCPs should be used as important signalized intersections which should be backed up in each individual jurisdiction/agency.

Mr. Cheeks noted that the Evacuation Transportation Operations Plan for DC was developed several years ago. Those critical signalized intersections identified in the plan have already been equipped with power backup systems. The signalized intersections with battery backups are only a subset of all signalized intersections along the evacuation routes within the District of Columbia. Due to the limited resources, not all traffic signals on the evacuation routes will be backed up and generators will also be used to supplement battery backups.

After reviewing the list of TCPs, the committee decided to track on both priority 1 and priority 2 TCPs. Four more attributes of each TCP need to be discussed and clarified, which are ownership, maintenance responsibility, if a power backup system is present, and if the TCP is a signalized intersection. COG/TPB staff will add those to the TCP lists and follow up with each individual jurisdiction/agency.

In response to Ms. Gilini's question as what if a local jurisdiction does not agree with this TCP list, Mr. Meese responded that there are several ways to resolve this. First is to track additional signalized intersections provided by local jurisdictions given that the TCPs identified in the State Emergency Transportation Operations Plan are just one of many

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criteria that can be used to determine the criticality of a signalized intersection. The other way is to let a jurisdiction totally supersede the TCP list and come up with their particular list of critical signalized intersections. The committee will keep exploring the alternatives.

3. Discussion of VDOT Adaptive Signal Control System

Mr. Souza reported the status of VDOT Adaptive Signal Control System. Five intersections on Braddock Road in Fairfax County had InSync System from Rhythm Engineering installed. The equipment was removed on Saturday, March 3. They found out that the InSync adaptive system could not handle oversaturated traffic conditions. The system had been constantly tweaked since it was installed from the beginning to adjust to the traffic; however, it is found that the system is only beneficial to a certain degree when traffic is light. The main focus of the InSync system is to move traffic along the arterials while reducing the actual green time for traffic on the side streets. As a result, VDOT had received a large number of complaints since the system was in place. After the equipment was removed, VDOT installed the 2070 controllers running on D4 firmware and is now running multiple Time-based Coordination plans on those locations. It is also noted that the reliability of communications among signals in the adaptive system is critical and they did find out that the communications failed once, thus leaving a signal in the middle of a heavily traveled arterial isolated and not functioning well. He also noted that the maintenance cost of the InSync system is way too high for VDOT.

In response to Ms. Gilini's question as if there are other InSync systems still in place, Mr. Souza reported that there are still some deployments in VDOT Northwestern Region. Mr. Cheeks added that DDOT is currently working with consultants to select signalized intersections within the District that are deployable to adaptive control systems.

4. Jurisdictional Roundtable

Mr. Cheeks briefed on DDOT's update. They are willing to make presentations on DDOT's signal optimization project as well as lessons learned from their UPS deployment at future traffic signals subcommittee meetings. They have been working on ITS Master Plan which they are also willing to present at future meetings. They are also developing new overall transportation comprehensive plan which will take traffic signals as well as other ITS deployment into consideration.

Mr. Jones briefed on Prince George's County's update. It is the construction season of Prince George's County. They are looking into PTZ cameras and portable traffic signals for work zone management.

Ms. Gilini briefed on City of Alexandria's update. The City of Alexandria has launched a program on how to prevent failing traffic signal poles. She suggested discussing how to test the structural integrity of the master poles of traffic signals in different jurisdictions at future traffic signals subcommittee meeting.

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Mr. McCullough briefed on City of Fairfax's update. They have completed an LED project to convert a number of traffic signals into LED-based. They are going to issue a RFP for installing battery backups on 20 signalized intersections, where those are considered most critical in the city.

5. Other Business

The committee agreed to meet every other month. COG/TPB staff will work with the chair to determine the date for the next traffic signals subcommittee meeting.

Next Meeting: May, 2012