

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: Tuesday, May 15, 2012
TIME: 10:00 AM to 12:00 Noon
PLACE: The City of Alexandria Transportation Division
CHAIR: Ling Li, Virginia Department of Transportation

Attendees:

Shahid Abbas, Arlington County
Harvey Alexander, DDOT
Maha Gilini, City of Alexandria
Ed Jones, Prince George's County ATMS Section
Ling Li, VDOT
Glen Martin, City of Manassas Park
Curt McCullough, City of Fairfax (called in)
Ben Myrick, MD SHA
Mark Skinger, City of Alexandria
Bob Souza, VDOT
Pat Timbrook, T3 Design
Conglong Yu, T3 Design

COG Staff:

Andrew Meese
Huijing Qiang

Traffic Signals Subcommittee

Notes from the May 15, 2012 Meeting

Page 2 of 5

Actions:

1. Welcome & Introductions

Ms. Li began introductions and welcomed participants. Meeting notes from the March 14, 2012 Traffic Signals Subcommittee meeting were reviewed and approved.

2. Review of the Traffic Signal Power Backup System Survey

a. Review of the Use of the Traffic Control Points as Major Intersections and the Status of Back-Up Power

Mr. Meese briefed the committee on the background of the traffic signal power backup system survey. COG formed the 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 next meeting would be held on Thursday, May 31, 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 March 14, 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.

In order to focus on major intersections, the committee decided to use Traffic Control Points (TCPs), which were originally identified in the transportation evacuation plans of Virginia and Maryland, as a base on which it will track backup power. The committee had reviewed the TCPs and provided COG/TPB staff with their comments since the last traffic signals subcommittee meeting.

The committee discussed potential funding opportunities for the installations of power backup systems on those identified locations. Mr. Meese noted that there might be funding opportunities, particularly UASI funds, for battery backups. In response to a question as if one proposal for all three states or separate proposals will be submitted for UASI funds, Mr. Meese responded that this is going to be an open question given that COG is discouraged from taking the lead to submit proposals on behalf of the entire region. If the committee decided to submit one proposal for the entire region, State DOTs or other big agencies would need to take the responsibility. In response to Mr. Jones's suggestion as having some regional committees, such as MATOC taking the lead, Mr. Meese stated that it is probably not a good solution

Traffic Signals Subcommittee

Notes from the May 15, 2012 Meeting

Page 3 of 5

given that preparing UASI funding proposals is a task with which MATOC has not been tasked. Ms. Li noted that extensive coordination effort among agencies would be required if we decided to go with one regional proposal. Mr. Abbas added that generators should also be included in the funding application in addition to battery backups given that they are critical during prolonged power outages. Ms. Gilini suggested tracking and reporting power backup systems status on those TCPs based on corridors or locations in lieu of percentages. Some participants expressed the concerns that local jurisdictions may not always agree with State agencies on the technical details of the power backup systems. In response, Mr. Meese noted that it is going to be an open question again and the committee needs to address these discrepancies. In the future, COG/TPB staff would follow up with different jurisdictions/agencies on developing cost estimates for the installation and maintenance of power backup systems as well as gathering information and exploring possibilities to submit proposals for UASI funding.

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. COG/TPB staff will start the next round of update to reflect changes as of June 30, 2012.

3. Briefing on the Traffic Responsive System Project in the City of Alexandria

Ms. Gilini, Mr. Skinger, and Ms. Timbrook briefed on the traffic responsive system project in the City of Alexandria. Duke Street corridor runs in east-west direction. The project bounds Roberts Lane/Dove Street to S. Walker Street having about 3.5 miles of roadways, 19 signalized intersections and a posted speed limit of 35 mph. The existing traffic signal timing along Duke Street is achieved through fixed coordination timing plans on a time of day schedule. The level of recurring congestion can change from day to day based on residual impacts of incidents and nearby roadways congestions such as the I-495. There has been a need for an expandable adaptive or responsive system to support the 19 existing signalized intersections within the project limit as well as a new signalized intersection which is currently under construction. The purposes of this project are to implement Traffic Responsive Signal Controls with optimized coordination timing plans for the signalized intersections along Duke Street; to install improved vehicle detection; and to install accessible pedestrian signals. Ms. Gilini noted that City staff had looked into and planned for an adaptive system but later decided that it was not feasible at that time. The tasks of this project include data collection and analysis for the existing condition; linking intersection geometry information and measured travel time between intersections and queue length; locating key locations for system detector installations; determining the optimum placement of accessible pedestrian buttons; developing multiple optimized traffic signal coordination timing plans; modeling and simulation of the optimized timing plans; implementing and testing the traffic responsive system control; and training on Eagle/Siemens. The thresholds of the system will be based on a combination of roadway volume, occupancy, queue length, and speed. System detectors at key locations will measure the occupancy to determine the

Traffic Signals Subcommittee

Notes from the May 15, 2012 Meeting

Page 4 of 5

suitable timing plans with the desirable cycle lengths. Mr. Skinger explained the details of the system communications to the committee. Rugged Com RS930L was selected based on a few considerations.

Ms. Gilini explained the procedures to implement the system in the near future. They envision several series of traffic responsive plans to accommodate different times of day. The cycle length will increase if the traffic increases and will decrease if the traffic decreases while maintaining certain offsets. She also stated several challenges of the prospective system such as getting the system to implement the right plan at the proper time. In the end, she added that four types of analysis, which are before and after travel runs, changes in the traffic flow efficiency analysis, MOE comparisons, and benefit cost analysis will be used to evaluate the system.

4. Discussions of the Structural Integrity of Traffic Signal Poles

Tabled for next meeting.

5. Jurisdictional Roundtable

Mr. Alexander briefed on DDOT's update. DDOT has finished installing 100 UPS battery backups and is going to install another 30 due to the TIGER Grant. In addition, Transit Signal Priority (TSP) will also be implemented at some key signalized intersections.

Mr. Jones briefed on Prince George's County's update. There have been many signal maintenance activities as well as CCTV camera installations in the county. They are also doing roadway striping and resurfacing works in the county. They have started the process of updating existing communication networks to fiber optic networks because they had received funds from the Inter-County Broadband Network program.

Mr. Myrick briefed on SHA's update. They are currently working on system communications for the adaptive signal control and will continue the hardware update.

Mr. Skinger briefed on the City of Alexandria's update. They have just finished the engineering design of an ITS integration project, which includes installing 11 CCTV cameras in the city. There is also a bus priority project on Jefferson Davis Highway.

Mr. Souza briefed on VDOT's update. They are in the process of replacing the traffic controllers from 170 to 2070, which requires significant effort on timing sheet D4 conversions on 2070 controllers. VDOT will install additional UPS backups focusing on TCPs. The Signal Operation Center, which is located in PSTOC, was opened on Monday, May 14, as the soft launch of the center and they are working on their processes and staffing

Mr. McCullough briefed on the City of Fairfax's update. They are currently in the process of switching their traffic signal communications to fiber optics. They are also getting proposals for traffic signal battery backups. Due to a major car accident happened in the city, they are

Traffic Signals Subcommittee

Notes from the May 15, 2012 Meeting

Page 5 of 5

currently repairing traffic signal control cabinets as well as communication links of their CCTV cameras.

Mr. Meese announced that this year's Regional Traffic Signals Forum will be held on Wednesday, November 7, 2012 at the Maritime Institute. He welcomed the signal subcommittee's attendance.

6. Other Business

The next Traffic Signals Subcommittee meeting will be held on Tuesday, July 10 at COG at 10 am. It will be a back-to-back meeting with MOITS.

Next Meeting: July 10, 2012