

# 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, December 20, 2011  
**TIME:** 10:00 AM to 12:00 Noon  
**PLACE:** COG, First Floor, Meeting Rooms 4/5  
**CHAIR:** Ling Li, Virginia Department of Transportation

#### Attendees:

Shahid Abbas, Arlington County  
Michael Gallagher, Town of Vienna (called in)  
Edward Jones, PG County ATMS Section  
Sean Kennedy, WMATA  
Ling Li, VDOT  
Curt McCullough, City of Fairfax (called in)  
Ben Myrick, MD SHA  
Cyrus Salehi, City of Falls Church  
Bob Souza, VDOT (called in)

#### COG Staff:

Andrew Meese  
Huijing Qiang  
Daivamani Sivasailam

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### **Actions:**

#### **1. Welcome & Introductions**

##### **a. Announcement of Ms. Ling Li's Chairmanship of MOITS Traffic Signals Subcommittee**

Mr. Meese announced Ms. Ling Li's Chairmanship of MOITS Traffic Signals Subcommittee. Ms. Li works for Virginia Department of Transportation Northern Region Operations. Ms. Li expressed her excitement for her new role as the signals subcommittee chair and thanked everyone for their support. Mr. Meese also acknowledged Mr. Edward Jones, the Immediate Past Chair, for his dedicated service during his term.

#### **2. Jurisdictional Roundtable**

Participants introduced themselves. Ms. Li began the jurisdictional roundtable update.

VDOT has a centralized signal system located at PSTOC in Fairfax County. VDOT Northern Region Operations (NRO) is responsible for about 1,300 traffic signals in Fairfax, Prince William, and Loudoun Counties. This number has been growing from 800 to the current 1,300 since 2001. VDOT NRO also works closely with Northern Virginia Localities on traffic signals. There is a bimonthly signal managers meeting held at VDOT, which serves as a venue for all Northern Virginia Signal Managers and VDOT traffic signal engineers to discuss traffic signal operations and coordination in this region. In response to a question as whether VDOT sets specific cycle lengths for its traffic signals, Ms. Li answered that VDOT uses state-of-the-art simulation approaches to operate its traffic signals, thus not setting any specific cycle lengths. Ms. Li invited participants to the VDOT Signal Control Room for a future traffic signals subcommittee meeting.

Mr. Abbas briefed on Arlington County's update. There are two Traffic Management Centers (TMCs) in Arlington County which are capable of operating independently and serve as a failover for each other. This month they just opened a new state-of-the-art TMC, which is the only one-of-its-kind in the nation. This latest TMC is capable of providing various data in speed, vehicle classification by lane, 3-D detection on pedestrians and non-motorists, etc. Mr. Abbas stated that Arlington County is the only agency in the world now using 3-D technology for detecting pedestrians and other non-motorists. Real-time travel information is also available on major corridors based on Bluetooth technology. Currently that TMC controls 53 CCTV cameras. By next year it will have more than 200 CCTV cameras, with an aim to provide 100 percent coverage on all county traffic signals. Mr. Abbas noted that they do not staff the TMC, and it can be fully controlled remotely. Real-time travel information is disseminated to general public using Dynamic Message Signs placed on evacuation routes.

Mr. Abbas noted that their TMC is also capable of controlling the Intelligent Street Light System in Arlington County and guiding public to certain routes under emergencies. He

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noted that the capital cost for the TMC was about \$0.5 million. There are additional costs to install different modules for different functionalities and capabilities. Currently the county has 20 traffic count stations but they are looking to have 200 stations in the future. He emphasized that the leadership in Arlington County is very supportive of their work and has assigned resources to them. Mr. Abbas welcomed participants to visit their new TMC in the future.

Mr. Jones briefed on the Prince George's County's update. They are currently working on improving communications of their traffic signals. The legacy system was a dial-up based system and they are trying to install a fiber-based communication network. They are also working on street sign replacement, incident management, traffic video data sharing and operations coordination. They have also started testing LED-based street lights since last year and their focus is on intersections. Mr. Jones suggested having more ITS topics discussed at future traffic signals subcommittee meetings.

Mr. Kennedy briefed on WMATA's update. Metro currently has Transit Signal Priority (TSP) projects on several different corridors, including one in VA, two in MD and four in DC. COG is the grantee and manages these projects.

Mr. Myrick briefed on MDSHA's update. Statewide, SHA operates about 1,500 coordinated traffic signals, 1,000 uncoordinated traffic signals and about 250 different systems. There is a lack of a centralized system. They've done signal timing optimization for some locations. They are looking at a centralized TMC-like system as well as other new technologies such as adaptive control. They are also considering potential impact of the proposed purple line. He noted that the senior management of SHA is changing as well as the organization itself. Currently SHA is going through a major reorganization and will be different starting from July 1, 2012.

Mr. Salehi briefed on the City of Falls Church's update. The city has 28 traffic signals placed on major arterials. They are planning to have a closed loop system as well as Transit Signal Priority. Currently they are working on an inventory of their devices with GIS capabilities. They are willing to work with Arlington County on traffic signal coordination.

Mr. McCullough briefed on the City of Fairfax's update. The city has about 60 signals, most of which use TS1 cabinet. They are currently doing some projects to change signal heads to LED-based.

Mr. Gallagher from Town of Vienna noted that the town has 14 traffic signals.

### **3. Report of the COG Steering Committee on Incident Management and Response**

Mr. Meese reviewed the COG IMR Report with the committee. The full report is available on COG website. The IMR Steering Committee proposed a Regional Incident Coordination (RIC) Program. Under this program, highly trained staff will monitor this region with existing tools; analyze and share information with officials; and initiate regional conference

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calls. The RIC Program will be housed and staffed by DC HSEMA and funded by U.S. Department of Homeland Security funding for this region. There will be an oversight group to measure the progress of the RIC Program. Other recommendations include revising OPM's snow policy, using new Virtual Joint Information Center established by Fairfax County, and expanding MATOC to 24/7 operations and continue efforts to make its real-time information available to public, conducting exercises to test evacuation coordination and communications plan, assessing and installing backup power to major traffic signals to maintain road capacity and help prevent gridlock during widespread power outages.

### **4. Review of the Traffic Signal Power Backup System Survey**

#### **a. Review and Discussion of the Preliminary Results of Traffic Signal Power Backup System Survey**

COG TPB Staff had been tasked to conduct a regional survey on the status of traffic signal power backup system in the NCR. The committee reviewed and discussed the preliminary results of traffic signal power backup system survey.

Different jurisdictions have different ways to provide backup power to their traffic signals. In Prince George's County, sometimes they use light towers to power traffic signals under emergencies. By doing this, they not only provide power to traffic signals, but also the whole intersection. Some stakeholders noted that the biggest challenge of using battery-based power backup system is the great annual operating and maintenance cost. Mr. Abbas noted that smart batteries used in Arlington County provide real-time battery level information back to TMC. In Arlington and Prince George's Counties, battery-based power backup comes as a standard module of their newly installed traffic signals. It usually takes 4 hours to recharge those batteries in Prince George's County. While in Arlington County, their TMC can monitor real-time battery level so that their batteries are always fully charged and can last between 12 to 18 hours during power outages. In City of Fairfax, 40 out of total 60 signals are planned to have battery backups within the next three years.

Participants also discussed capital cost and annual operating and maintenance cost of installing backup power. Estimates were given for the capital costs of installing battery-based power backup systems per intersection for the City of Fairfax (\$5,000), SHA (\$20,000), Arlington (\$20,000) and Prince George's Counties (\$6,000). The annual operating and maintenance costs for these jurisdictions range from \$1,000 to \$3,000. Generators in Arlington County cost about \$4,000 each.

Mr. Meese reviewed the draft memo of the survey results with the committee. Due to the incomplete response COG had received to date, the current memo only contained some of the information anticipated. COG Staff will keep working with other stakeholders in the region to get more accurate and comprehensive information, thus providing an accurate overview for the region.

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### **b. Discussion of Potential Liability Issues on Maintaining Backup Power for Traffic Signals under Power Outages**

The committee also discussed potential liability issues on maintaining backup power for traffic signals during power outages. Some stakeholders expressed the concern that utility companies would skip restoring power back to a traffic signal if the utility field crews saw a signal running and assumed it still had utility power even though it was actually runs backup power. As a result, a scenario could be created as signals run out of backup power while regular power has still not been restored. Mr. Jones suggested creating an inventory of smart utility meters associated with traffic signal control cabinets at individual intersections and contacting utility companies directly to restore power back to those dark intersections by simply providing relevant smart meter information during outages. However, representatives from jurisdictions in Northern Virginia noted that this recommendation would not work for them because most of their signals are charged by a flat rate in electricity and do not usually have meters.

Ms. Li noted that VDOT has no way of knowing if a signal is out of power or communication. Mr. Abbas noted that liability issues may also come from maintenance side due to the lack of maintenance on battery-based power backup system.

### **c. Discussion of Other Related Issues**

The committee also discussed the definition of how traffic signals would be characterized as "major". There are various interpretations on major traffic signals due to the lack of an official definition from MUTCD. Participants agreed to keep exploring this issue to best structure the survey in the future.

## **5. 2011 Traffic Signal Operations Self Assessment from the National Transportation Operations Coalition**

VDOT and MDSHA have already responded the 2011 Traffic Signal Operations Self Assessment from the National Transportation Operations Coalition.

## **6. Other Business**

The committee decided to hold the next traffic signals subcommittee meeting at Arlington County's TMC on February 9, 2012.

**Next Meeting: 10 am to 12 noon on Feb. 9, 2012 at Arlington County TMC**