



**JOINT SYSTEMS PERFORMANCE, OPERATIONS, AND TECHNOLOGY SUBCOMMITTEE
(SPOTS) AND
TRAFFIC SIGNALS SUBCOMMITTEE MEETING NOTES**

Thursday, December 7, 2017
1:00 - 3:00 P.M.

ATTENDANCE:

Yeshiva Argo – MDOT/SHA/OOTS
Andrew Burke – COG/TPB
Nick Davis (by phone)
Bob LeSueur – Sensys Networks (by phone)
James Li – COG/TPB
Andrew Meese – COG/TPB
Ben Myrick – MDOT/SHA/OOTS
Piotr Rachtan – MDOT/SHA
Kelli Raboy – DDOT
Eric Randall – COG/TPB
Kevin Rermisohn - WSP
Daivamani Sivasailam – COG/TPB
Amy Tang – VDOT
Lauren Wiesche (by phone)
Patrick Zilliacus – COG/TPB
McDise – VDOT

PRELIMINARY DRAFT MEETING NOTES

1. WELCOME AND REVIEW OF NOTES FROM PREVIOUS MEETINGS

Piotr Rachtan, Traffic Signals Subcommittee Chair

Andrew Meese, TPB Systems Performance Planning Director and Acting SPOTS Technical Subcommittee Chair

James Li was introduced to the committee.

Andrew Burke with longtime experience with COG/TPB, was introduced to the group

Patrick Zilliacus was introduced to the committee.

**2. MARYLAND DEPARTMENT OF TRANSPORTATION/STATE HIGHWAY ADMINISTRATION'S
ADAPTIVE TRAFFIC SIGNAL SYSTEMS**

Ben Myrick and Piotr Rachtan, MDOT/SHA

Staff from SHA presented new adaptive signal systems that will be installed and activated at several intersections along congested arterial corridors in Maryland.

Adaptive signal controls are intended to improve intersection performance and to reduce the

number of signal-related complaints that staff must respond do.

Corridors with upgraded signal systems that were completed or to be installed in 2018 include:

U.S. 1 and MD-175 in Howard County
U.S. 1 Business and MD-24 in Harford County
U.S. 301 in the Bowie area of Prince George's County
MD-2 in the Brooklyn Park area of Anne Arundel County
MD-2 south of Annapolis also in Anne Arundel County
MD-3 in the Crofton and Gambrills area of Anne Arundel County
MD-5 Business in Waldorf, Charles County
MD-202 in the Landover area of Prince George's County

The Smart Signals presentation can be found at the link below:

<https://www.mwcog.org/file.aspx?&A=uHFkKmZUqt601c4cFcY7jNmexrTvGJi7jB77gcOmy0A%3d>

A few observations from the presentation:

- Adaptive signal systems require good detection
- Maryland has used Centracs Adaptive and SynchroGreen; and
- Studies show that adaptive signal technologies are working.

Mr. Meese asked if there were any insights about traffic volumes and unusual intersection geometrics. Mr. Myrick said that a very high-volume road would be MD-3 in Anne Arundel County which has some unconventional geometric configurations.

Intersections are generally interconnected with copper cable which was installed years ago with one cell phone connection back to a central server, where adaptive calculations are done and returned to the systems in the field.

Dedicated Short Range Communications (DSRC) is something that SHA is moving toward.

Ms. Raboy asked how the weighting scheme (physical page 6 of the presentation) was developed. It was developed from a list of possible considerations and places that produce and attract many trips and host special events at certain times.

Mr. Sivasailam mentioned that COG/TPB will doing a survey of signal optimization and asked about how the evaluation of the performance of the adaptive systems were done and do they need to be re-optimized. These signals have a performance monitoring capability built-in, but an independent monitoring program might be appropriate. Inrix (probe) data can be used on high-volume corridors, but there are limitations such as limited data on low-volume roads, TMC network configurations and slow-moving traffic (less than 15 MPH) all looks the same. Mr. Sivasailam asked if vehicle movement data are archived. Most are not, except for the split monitor. Bluetooth data collection can be captured as part of these systems at relatively low cost.

Mr. Meese asked Ms. Raboy if the DDOT has any similar system, and she responded that there is an adaptive system project under way for New York Avenue, N.E. (U.S. 50) corridor.

A question regarding adaptive detection was asked. Mr. Myrick replied that stop bar detection and back detection along the mainline are needed.

3. UPDATE ON BIENNIAL TRAFFIC SIGNAL SURVEY

Daivamani Sivasailam, TPB Systems Performance Analysis Program Manager

TPB staff has been performing a biennial survey on Traffic Signal Power Back-up systems and other metrics as requested by the Policy Boards. Since 2010, there has been a push to get survey information on power backups at signals. The TPB has also expressed interest in signal timing optimization. A survey will be conducted in 2018 (status as of December 2017) asking about status of power backups and optimization of traffic signals. Copies of the survey will also be posted on the Web site, and feedback from the group will be appreciated. A member of the TPB asked staff about this topic as recently as November 2017. Added stories and narratives about signal-related projects are also welcome. It also appears that power companies in the region are doing a more-aggressive effort at tree pruning. The survey will be sent to the signal managers in the region by Andrew Burke TPB staff. Generator-ready control boxes have become more common (over 50% of signals) than they once were (allowing a gas-powered backup generator to power the signal). Replacement of backup batteries (were they to be installed systemwide) would be a significant increase in maintenance expense. Work of this nature has been the subject of requests for federal Homeland Security funding, so having current information is helpful to inform the process for setting priorities and making such requests.

Mr. Meese mentioned that the Fairfax County Police Department now has a significant number of gasoline-fueled portable generators and a training program to show officers how to hook-up the generators to signal control boxes to keep the signal running through a power outage.

4. UPDATE ON TPB CONGESTION MANAGEMENT PROCESS AND PERFORMANCE-BASED PLANNING ACTIVITIES

Daivamani Sivasailam, TPB Systems Performance Analysis Program Manager

James Li, TPB Transportation Engineer

Staff briefed the group on the congestion management process and performance-based planning and Programming (PBPP) activities. PBPP is mandated by the federal MAP-21 law. The presentation was originally developed by Eric Randall to the TPB Technical Committee. PBPP analyses includes the following:

- For the National Highway System, travel time reliability, percentage of person miles of travel on the Interstate system that are classed as reliable;
- for the non-Interstate NHS (mostly arterial highways), the same analyses;
- associated greenhouse gas emissions (this rule has been implemented but this may be eliminated through the rulemaking process by the current administration); and
- for the freight system, travel time reliability for trucks.

State Departments of Transportation are responsible for setting targets. The states have a deadline of May 20, 2018. After that deadline, the MPOs have 6 months to set their own targets. Process is just getting under way now. *For the Congestion Mitigation Air Quality (CMAQ)*

program, peak-hours of excessive delay per capita. Target setting discussions will be with Subrat Mahapatra of MDOT/SHA; Mena Lockwood of VDOT's Traffic Engineering Division (Central Office); and Stephanie Dock of DDOT.

5. ANTICIPATED FOCUS ON TRAFFIC INCIDENT MANAGEMENT FOR 2018

Andrew Meese, TPB Systems Performance Planning Director

Daivamani Sivasailam, TPB Systems Performance Analysis Program Manager

The committee was briefed on the idea for an anticipated COG 2018 focus on Traffic Incident Management. This is anticipated to be a cross-disciplinary effort using many subject-matter experts. Mr. Meese described the institutional relationships between the COG Board of Directors and the TPB, and possible products from such an effort. The MATOC Steering Committee has been briefed on this subject. A member mentioned that first responders need to be trained in TIM, who generally do not work for state departments of transportation. Ms. Amy Tang said that there is a NoVa Incident Management Committee chaired by Mike Wood which meets quarterly.

6. MEETING SCHEDULES FOR 2018

Andrew Meese, TPB Systems Performance Planning Director

Andrew Burke, TPB Transportation Engineer

Staff will review proposed meeting dates for 2018 for SPOTS and for the Traffic Signals Subcommittee. A memo describing the proposed meeting dates for SPOTS, which are first Thursdays of even-numbered months. Some possible meeting dates for the Signals Subcommittee were discussed, potentially on a quarterly basis the same days as SPOTS.

7. OTHER BUSINESS

Andrew Meese, TPB Systems Performance Planning Director

Mr. Sivasailam mentioned that CMP Technical Report is in process to be completed in Spring 2018, managed by Mr. Li. Staff has resumed preparation of the Congestion Management Dashboard with a highlighted topic on a quarterly basis.

Ms. Raboy mentioned that DDOT has procured new freeway service patrol vehicles which are now being deployed with DSRC on-board units, pothole sensors and weather detection systems.

DDOT is working with a vendor to provide signal data to connected vehicles.

8. ADJOURN

Next meetings:

SPOTS: ~~Thursday, February 1, 2018, 1:00 PM~~, in COG Room 1

Traffic Signals Subcommittee: TBD

The February 1, 2018 SPOTS meeting was canceled.