

National Capital Region Transportation Planning Board

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M E M O R A N D U M

TO: TPB Technical Committee

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SUBJECT: Briefing on the Results of the *Multimodal Coordination for Bus Priority Hot Spots Study*

DATE: June 29, 2012

The *Multimodal Coordination for Bus Priority Hot Spots Study* was jointly funded under the FY 2011 UPWP Technical Assistance programs, with \$126,000 from the Washington Metropolitan Area Transit Authority (WMATA), and \$30,000 each from the Maryland Department of Transportation (MDOT), the District of Columbia Department of Transportation (DDOT), and the Virginia Department of Transportation (VDOT).

The study was conducted to identify a set of implementable bus priority improvements across the region. Fifteen critical “hot spot” locations were identified in each state through an analysis of speed and trip data from regional bus systems. Following field review, six locations were identified for conceptual design of bus priority treatments, two in each major jurisdiction. Analysis also quantified the anticipated capital costs and operating cost savings the recommended bus priority treatments would provide.

This study also aimed at continuing to build and enhance regional coordination in implementing surface transit improvements as one tool in managing existing transportation infrastructure more effectively. To that end, the study engaged modal stakeholders in the process. Hot spot identification, prioritization, mitigation and operating subsidy savings calculations were coordinated through the TPB’s Management, Operations and Intelligent Transportation Systems (MOITS) Technical Subcommittee with assistance from the TPB’s Regional Bus Subcommittee (RBS).

Scope of Work of the Study

Development of the Regional Top 15 “Hot Spot” Lists

Previously, WMATA developed internally a Top 10 hot spot list for each major jurisdiction (DC, MD, and VA) based on segment level Metrobus speed and bus trip information. A GIS program calculated average speeds based on the recorded time elapsed between WMATA timepoints, demonstrating that there are numerous roadway segments within the WMATA system with average operating speeds of less than 10 miles per hour (mph), and several with speeds of under 5 mph. Most segments are within DC, but also occur in Maryland and Virginia suburban areas (particularly around Silver Spring and several Arlington County locations). The analysis also showed that PM peak speeds are generally lower than AM peak speeds, though the differences are small in most cases. For instance, the bridges over the Anacostia River in DC all show a noticeable decline in travel speed during the afternoon peak.

For the regional study, this analysis was expanded to include data from all of the local transit operators in order to develop a comprehensive regional hot spot list. Available bus speed and bus trip data from local

transit agencies (including DASH, ART, The Bus, Ride-On, the Circulator, Fairfax Connector, PRTC and CUE) was used, either from AVL data or based on scheduled running times. A priority index was then applied based on two primary evaluation factors - average bus speed and bus frequency - to rank the data and identify the top fifteen hot spot locations in each major jurisdiction, in the AM peak, mid-day, and PM peak.

Field Verification of Data

Following identification of the hot spot locations, field visit verification was conducted in order to confirm the data analysis. In some cases, hot spots that scored highly in the database were removed from consideration due to parallel study efforts, planned improvements, or known operational conditions in the area. The field visits included collection of information on the presence and condition of sidewalks, crosswalks, pedestrian signals, curb ramps, bicycle lanes, bus stop amenities, parking restrictions, roadway and bus stop lighting, posted speed limits, and overall roadway width and specific lane widths. Each field visit was video-taped for visual presentation and review.

At each hot spot location evaluated, the potential for improvements was evaluated in four areas:

- Physical Improvements included any changes to dedicate portions of the right of way to transit vehicles, including bus lanes, bus-only roadways, or queue-jumps.
- Operational Changes encompassed any improvements solely in the realm of the transit operators, including relocation of stops, adjustments to headways or re-routing of bus lines.
- Signal Timing improvements included adjustments to signal phasing or transit signal prioritization implementation.
- Long-term Planning considerations were captured for those locations where known coming changes to the vicinity will have a notable impact on all transit services.

Hot Spot Bus Treatment Preliminary Design

Six hot spot locations were identified for preliminary design, which included the development of individual site improvement layout plans, as well as assessment of bus operations savings and general traffic impacts associated with the physical and operational improvements identified.

- District of Columbia: 14th Street between Corcoran Street and Otis Place; North Capitol Street at New York Avenue.
- Maryland: Wheaton Metrorail Station Area, including Reddie Drive, Veirs Mill Road, and Georgia Avenue; Piney Branch Road between Sligo Avenue and University Drive.
- Virginia: Van Dorn Street between Franconia Road and Eisenhower Avenue; Glebe Road at Arlington Road.

The draft results of the design analysis were presented in a webinar on June 14, to attendees from throughout the region. Comments on the deliverable memos for each part of the study have been collected and will be summarized in a final deliverable to regional participants, for use as a resource in coordinating future surface transit improvements.

Links to Deliverables (*posted on the TPB MOITS and/or RBS websites*)

Memo: *Development of the Regional Top 15 “Hot Spot” Lists*

<http://www.mwcog.org/uploads/committee-documents/bF1dW1lb20120628120324.pdf>

Memo: *Field Verification of Data*

<http://www.mwcog.org/uploads/committee-documents/bF1eV1hf20120404170016.docx>

Memo: *Hot Spot Bus Treatment Preliminary Design*

<http://www.mwcog.org/uploads/committee-documents/a11dW1la20120628120914.pdf>