Highlights from the
TPB Bus On Shoulders (BOS) Task Force – Meeting #2
January 23, 2013
Place: COG Meeting Rooms 4&5
Ms. Carol Krimm and Mr. Chris Zimmerman (Co-Chairs)

ATTENDEES:

Bob Brown, Loudoun County
Ron Burns, Frederick County
Eulois Cleckley, District DOT
Tim Davis, City of Frederick
Gary Erenrich, Montgomery County
Lyn Erickson, Maryland DOT
Claire Gron, NVTC
Jason Groth, Charles County
Renée Hamilton, Virginia DOT
Jim Hamre, WMATA
Barry Kiedrowski, Maryland SHA
Mike Lake, Fairfax County
Kenya Lucas, Maryland SHA
Dan Malouff, Arlington County
Mark Rawlings, District DOT
Tina Slater, TPB Citizens Advisory Committee
Kanti Srikanth, Virginia DOT
Michael Tagliaferri, Maryland State Police
Rahul Trivedi, Virginia DOT
Randall White, Fairfax County

TPB Staff:

Ron Kirby
Eric Randall
Wenjing Pu
Jerry Miller
Andy Meese
John Kent

All meeting and other task force documents are available at: http://www.mwcog.org//bostf

1. Welcome and Introductions

Ms. Krimm welcomed the participants and asked them to introduce themselves.

2. Review of task force work plan, overview of Tech Memo #1, and initial data for select corridors in Maryland.

Mr. Randall reviewed the progress of the task force to date. This included a review of the task force's objectives and work plan. He then provided a summary of findings from draft Technical Memo #1, which compiled information on local and national experience with BOS. Mr. Randall then spoke to the ongoing work to analyze potential corridors for BOS operation on the region's highway network, against the three criteria of current bus service, existing traffic conditions, and existing shoulders that could potentially be used for bus operations. The selected corridors for preliminary analysis included the MD 5/US 301 corridor in Prince George's and Charles Counties and the I-270 corridor from City of Frederick to the Capital Beltway, both in Maryland; and the I-66 Inside the Beltway Pilot Project taking place in Virginia. Mr. Randall presented data on transit ridership and on traffic conditions for the two Maryland locations. He closed with

a list of next steps, including the technical memoranda to be published and the third meeting of the task force scheduled for April 2013.

Mr. Erenrich suggested that any analysis of MD-5/US-301 would be improved if it looked at LOS traffic conditions, particularly those hot spots which are LOS D or E, as more accurate than travel speed data, which is influenced by traffic signals on the corridor. Mr. Groth responded that most of the corridor south of Surratts Road has traffic signals that impact traffic, but the more likely opportunity for BOS is north of this heading into the Beltway, which is not signalized. There was further discussion that BOS at this level becomes comparable to a series of queue jumps at intersections.

Mr. Zimmerman proposed that a measure of the potential gain from BOS be used instead, comparing the prevailing speed of traffic to the potential travel time savings. Mr. Srikanth noted that there are different thresholds for different arteries, to which Mr. Zimmerman responded that a type of bus lane classification would be possible.

Mr. Erenrich noted that there is a range of strategies or alternatives to speed buses, including HOV lanes. Auto occupancy data would also be useful to know.

Mr. Zimmerman noted that this task force is focusing on transit vehicles, but that the erosion of restrictions, for instance on US-50 in Virginia, was negatively impacting transit time and reliability. There are several cases where restricted lanes have been taken over by general car traffic for political reasons. He noted that the state of California won't permit the City of Los Angeles to go to HOV-3 restrictions, which is a factor in LA choosing to implement HOT lanes.

Mr. Zimmerman went on to say that other locations for BOS in the region would include US-50 (VA) and I-95/I-395. In addition, any analysis should be more comprehensive, to include the end-to-end segments of bus routes and the overall patterns of travel between origin-destination pairs. The region's greatest success is when approaches like HOT lanes, teleworking, and BOS can be combined as a package.

Ms. Erickson agreed, but stated that the intention of the task force is to take the first steps into the water rather then head out swimming. The sharing of information in the task force will provide lessons learned that can applied to other frameworks for improving regional connections.

Mr. Srikanth agreed that the task force cannot look at all possible corridors, but can focus on promising locations and develop analysis tools for the future. He noted further that the TPB doesn't have much of the needed data. The scope for further regional cooperation could be to look at eight to ten corridors as a follow on study, which would further refine ideas for such a regional framework.

3. Update on the Virginia Department of Transportation's I-66 (Inside the Beltway) BOS Pilot Program Evaluation

Mr. Srikanth opened his remarks by thanking TPB staff for their technical support of the I-66 Inside the Beltway study, which is focused on helping exiting transit service. He then gave a

presentation to review the objectives of the pilot program, the work tasks, data on the corridor, and the proposed preliminary locations for BOS operations. One specific issue was estimates of the material strength of the shoulders, which VDOT assesses as sufficient for two years of operation. The next steps will include development of a preliminary protocol for BOS operations.

Mr. Erenrich asked for further information on pilot location 2, in the eastbound direction, as general travel speeds appear to be reasonably good in this location.

Mr. Zimmerman asked for more information on the benefits possible form the long term locations proposed. What engineering would be required to make these locations work, vis-à-vis the potential benefits to buses and transit customers?

Mr. Cleckley asked what travel benefits would be realized compared to the overall end-to-end trips of the buses.

Mr. Erenrich asked if inside or outside shoulders would be used. Mr. Srikanth responded that outside shoulders would be used. The locations were also being evaluated to ensure that buses could safely transition back-in to the general lanes when the usable shoulders terminated.

Mr. Hamre asked if there were other ways to mitigate the re-merge, including yield signs on shoulders and buses. He noted that District law requires yielding to buses, but there is no enforcement of this law.

Mr. Erenrich asked for more information on how bus drivers know when they need to leave the shoulders. Mr. Srikanth stated that the road geometry would guide the drivers to exit. He noted that some transit agencies and drivers would be unlikely to use shoulders in any case; BOS operations are merely an option.

Mr. Brown asked if general traffic speeds were great than 35 mph, by policy buses would not then use the shoulders. What data is available on highways being blocked by accidents? Mr. Trivedi responded that on I-66, there are approximately five incidents per year per mile which lead to traffic being shutdown.

Officer Tagliaferri asked if these incidents included unattended vehicles. Mr. Srikanth responded that this data should include such vehicles. He noted that such vehicles are more likely on the outside shoulders of I-66, as the inside shoulders are only four to eight feet wide.

Mr. Srikanth then spoke to next steps in the pilot project, including plans for post-implementation data collection, most especially data on shoulder use. He also noted that FHWA and FTA representatives are involved in the planning.

4. Maryland State Highway Administration's evaluation of BOS feasibility on select corridors in Maryland

Mr. Kiedrowski spoke to SHA's contribution to the task force's work. While TPB staff provided some general context and transit data, SHA is focusing on highway conditions and data availability. The critical need is for data on shoulder conditions, for which there is no ongoing process or resource. He began his presentation with an overview of the several ways of collecting the data, at least to 0.5 foot accuracy. However, some data dates back to the Sixties when the roads were first built, and so accuracy may be questionable. Other data is more recent and available in modern resources, such as planimetrics in CAD files or topographic 3-D files. However, the scale of these resources is not always useful for the level of detail required to assess shoulder conditions. He did note that much of SHA's recent work on shoulder conditions is due to recent efforts for indentifying shoulders usable by bicycle users, which could be at cross-purposes with proposed bus on shoulders operations.

Mr. Lucas then continued the presentation, assessing the feasibility for BOS of sections of MD-5 from Surratts Road to Brandywine Road. These segments of the corridor have urban-level development, which poses a challenge. Some sections have no shoulders, while other segments are grade-separated. He noted that shoulders are supposed to be built to a minimum of ten feet, but wider would be preferred for BOS.

Mr. Zimmerman noted that while current shoulder width is useful, it is also important to look at overall right-of-way available and if shoulders could be expanded to facilitate BOS operations.

General discussion took place on the feasibility of BOS on I-270, given the collector/distributor lanes on the outside of the roadway. Inside or median lane BOS operations would offer benefits versus outside use given the many transitions between the through-lanes and the C/D lanes. Outside lanes could then be used once the C/D lanes terminate.

Mr. Burns asked if HOV lanes are normally used for short trips or for long trips. How would general traffic use of these lanes affect bus operations? Ms. Erickson responded that MDOT and SHA are currently conducting an evaluation of this very issue.

Mr. Erenrich noted that Ride-On's great need is for dedicated bus right-of-way from Germantown on South. Montgomery County is in of favor extending the southbound HOV lanes.

Mr. Zimmerman stated that a regional approach to traffic and BOS feasibility is necessary. If travel options were more reliable and predictable for all types of managed lane operation and transit, there would be more users and riders and travel would improve. He went on to commend the staff for their work on specific corridors, but envisions a need for an overall appraisal for the region, including long-term options. Data should be used to extrapolate the potential of BOS, and set the stage for further evaluations across the region.

Ms. Erickson noted that there is a huge amount of work ongoing across many levels of the highway network, including the new environmental requirements recent adopted in Maryland.

Mr. Zimmerman noted that recommendations to policy-makers should include the assessment of the work required to apply such requirements.

5. Roundtable / General Discussion

Officer Tagliaferri opened the general discussion period with an assessment of what expanded BOS would mean for law enforcement. Greater use of BOS would require more resources and would increase the work load for patrols. He noted that one issue is that of unattended vehicles, which Maryland law currently allows to be left for 24 hours on the shoulder. More incident data, from the CHART Office, would need to be evaluated to collect number, type, and duration of incidents, as well as incident response times. Virginia State Police data should also be examined, as well as other incident data sources.

Mr. Zimmerman noted that bus drivers are a potential source of information to improve incident reporting, which would mitigate some of the demands on police and other agency resources.

Mr. Erenrich suggested that future capital programs should include consideration of BOS feasibility. Resurfacing and restriping should pay attention to shoulder width, with a room to expanding useful widths. Bottlenecks should be identified in advance. An integrated approach to highway work and upgrades should take into account these opportunities, which can be factored in at a relatively minor cost.

General discussion then concluded with thanks for staff work expressed by Mr. Zimmerman and Ms. Krimm. This work is not free or easy, but holds potential for possible low-cost solutions to improving travel across the region.

The final announcement was that the third meeting of the task force is scheduled for the morning of the April 17 TPB meeting.

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