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## **Rebuttal to MTA’s White Paper Entitled “Medium Investment BRT Variations Serving Medical Center Purple Line AA/DEIS”**

### **Executive Summary**

The Maryland Transit Administration (MTA) has detailed two new Medium Investment Bus Rapid Transit (BRT) variations in a recently released white paper, stating that it has created these new variations with input from Sam Schwartz Engineering (SSE). This statement, however, implies that there was some type of direct consultation with SSE on the development of these variations, which was not the case. Indeed the Jones Bridge Road (JBR) Medium Investment BRT variation incorporates several of SSE’s suggestions, such as Medium Investment treatments east of Jones Mill Road, a new station entrance to link the Purple Line with the Metro Red Line at Medical Center, and an additional BRT station at North Woodmont. Yet, MTA has failed to include some of the most important elements of a BRT system, such as Transit Signal Priority and dedicated BRT lanes on Jones Bridge Road. In addition, MTA has made this variation less effective through poor placement of the Medical Center Station.

MTA has also created a second Medium Investment BRT variation that follows the Capital Crescent Trail to downtown Bethesda before turning north to access the Medical Center area. MTA attributes the inspiration for this variation to SSE; however, SSE has not recommended this as an alternative due to several flaws in its alignment. First, an exit ramp from the Capital Crescent Trail onto Pearl Street would be complicated and costly and its winding path through downtown Bethesda would add excess time and inconvenience to the route. Second, BRT vehicles would have to be routed through Woodmont Plaza because the Pearl Street right of way is too narrow to accommodate BRT vehicles in both directions. Woodmont Plaza is currently an active public space with near-term designs for further improvements. Even with the extensive public safety precautions that would be necessary, this routing would seriously degrade the quality of this public space. Finally, this alignment forces eastbound and westbound buses to stop in completely different locations in downtown Bethesda, a poor design which generally results in decreased ridership.

MTA has estimated ridership for each of these variations but many questions are still outstanding. MTA estimates, for example, attribute 2,000 fewer riders for the JBR Medium Investment BRT variation than for the original Medium Investment BRT alternative that terminates in Bethesda and does not even serve the Medical Center. Also, MTA attributes roughly 8,000 more riders to the second variation even though there should be little difference in running times between the two variations. These logical incongruities need be clarified by MTA.

MTA’s assessment of SSE’s routing suffers similarly to its evaluation of the original JBR alternative—i.e., its travel times are unrealistically long and unwarranted penalties are imposed. As a result, even though MTA acknowledges an increase of 10,000 riders, JBR BRT is still undervalued. That can and should be corrected.

A larger question remains, now that MTA has affirmed SSE’s contention that JBR BRT has greater potential, will the Alternatives Analysis be changed to include the better version of JBR BRT so the public has the opportunity to weigh in on this analysis?



## Introduction

On August 14, 2008, the Maryland Transit Administration (MTA) released a white paper to the Town of Chevy Chase (“the Town”) entitled “Medium Investment BRT variations Serving Medical Center Purple Line AA/DEIS.” This was in response to continuous calls by the Town, Sam Schwartz Engineering (SSE), and several elected officials to re-evaluate the Jones Bridge Road BRT alignment.

By considering SSE’s input in their analysis, the MTA has taken a step towards improving the effectiveness of their alternatives. However, MTA’s claim that “the variations tested for the Medium BRT options were developed through input from Sam Schwartz Engineering” suggests a process which did not actually occur—no working meetings were held to exchange specific information. The alternatives created out of this new analysis still disregard several of SSE’s concerns to date. Thus we know that these alternatives have not been optimized.

It is unclear whether these analyses have been included in any form in the Alternatives Analysis MTA submitted to the Federal Transit Administration or included in the Draft Environmental Impact Statement (DEIS). If these improved alternatives were not incorporated into the DEIS, then MTA has failed to optimize all DEIS alternatives. The FTA cost effectiveness ratings for these two alternatives are better than their predecessors. Further, if they are not in the DEIS, then the FTA, the public, and the area legislators will be denied the best information in making their decisions on a preferred alternative and its funding.

## Medium BRT – Jones Bridge Road Variation (Variation 1)

For this alternative, the MTA has addressed SSE’s concern that all but the Jones Bridge Road (JBR) alternative follow private right of way east of Jones Mill Road. They have now provided equity in routing among alternatives from Jones Mill Road to New Carrollton resulting in a ridership increase of 10,000. However, standard transit planning practice dictates that BRT at any level of investment will receive priority and private right of way, *wherever possible*. This was not done for the MTA’s Low Investment BRT alternative and nowhere in the white paper does the MTA claim that they have done it for the new Medium BRT – JBR variation west of Jones Mill Road. While the MTA contends that most portions of Jones Bridge Road would preclude BRT from receiving priority treatments, no true analysis has been released as evidence of this claim. In fact, SSE has created a series of conceptual designs for bus lanes on Jones Bridge Road, all of which have been dismissed by the MTA. In their place, MTA has released cross section drawings detailing unreasonable lane width standards and a 31-foot expansion of the roadway, indicating that BRT lanes on Jones Bridge Road are impossible.

SSE has proposed treatments for Jones Bridge Road that require no widening, as well as some that require only a seven-foot expansion of the roadway (3½ feet on each side). The latter would accommodate the four existing 10-foot-wide car travel lanes, plus two 12-foot-wide bus lanes, and maintain the current sidewalk conditions. This would allow medium-investment BRT to be implemented on an exclusive runningway along Jones Bridge Road with minimal impacts. While MTA’s cross section drawings of Jones Bridge Road conform to suggested standards for new construction, these are known within the industry to be guidelines for ideal conditions, such as where cost is no object or through undeveloped land. Where these conditions do not exist, it is still the responsibility of the project engineer to determine if any design could be implemented safely and still yield positive results. SSE believes that its designs for Jones Bridge Road would be effective even if they do not meet the ideal standards for new construction, as they are consistent with the designs of



many roadways that are currently operating safely throughout the United States. But MTA has chosen to consider only total reconstruction of JBR, and then applied an all-or-nothing approach to standards, leading to a quick dismissal of bus priority treatments based on the impact their designs would have on surrounding properties.

Further, while MTA argues that Transit Signal Priority (TSP) cannot be implemented at some of the more congested intersections along Jones Bridge Road, SSE notes that TSP has, in fact, been successfully implemented at many intersections around the United States in which cross-street delay was significant and for which post-implementation delay was minimal and unnoticeable to drivers. In Los Angeles, BRT vehicles are able to “borrow” up to 6-9 seconds of green time from the opposing direction of traffic. This does not happen on every cycle. Sometimes there is no bus present and other times bus priority is less. This and other BRT features resulted in a decrease in passenger travel time of 24-29 percent with an average delay to car drivers of only 1 second per traffic signal. MTA maintains that the State of Maryland does not support TSP, even though it has never been fully studied along this segment. It is SSE’s understanding that all traffic signals in Montgomery County are exclusively controlled by the County. But MTA has never approached Montgomery County with a proposal to implement TSP and the County has not weighed-in on the concept. MTA statements that there is no support for TSP or that TSP would be too difficult to implement on Jones Bridge Road are not supported by the experience of other cities or by formal analysis and conclusion of Montgomery County.

In their white paper, the MTA states that “estimates for the Medium BRT – JBR variation have been determined based on the assumption that a \$60 million dollar investment would be required to provide the connection from the proposed station area at Jones Mill Road and Rockville Pike to the Medical Center Metro platform.” This station connection would indeed enhance the attractiveness of this alternative. There is also a \$55 million cost associated with a Bethesda Metro connection for any Purple Line alternative that uses the Capital Crescent Trail but MTA has not included the cost in their cost analysis. They state that this is unnecessary as Montgomery County has already committed to it. There are two problems with that: first, if the County is planning on counting this expense as part of their local match, the cost needs to be added to MTA’s cost projections; second, while the County has included this station connection in their capital planning, funding is subject to change. MTA either needs to include the cost of this station connection in their capital cost estimates for Capital Crescent Trail (CCT) alternatives or they need to re-evaluate boardings and alightings at Bethesda Station based on a transfer between Purple Line and Red Line that does not include this direct connection.

The MTA then goes on to state that “for the purposes of this analysis an estimate of user benefit hours has also been presented which assumes that this cost [a Medical Center Metro connection] is not part of this variation for the purposes of providing a point of comparison.” However, it is unclear whether this means that only the cost was not included or whether the connection itself was not included. The former would provide a more equitable comparison between the two variations while the latter would cause an unnecessary decrease in ridership, thus skewing the analysis away from a JBR alignment.

MTA’s analysis of the Medical Center BRT station stop included in the Medium BRT – JBR variation was based on their speculation of where SSE would locate it. They determined that location to be approximately 800 feet east of Rockville Pike on Jones Bridge Road in the right-hand curb lane, near

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a different entrance to NNMC. They were wrong. This was not the location envisioned by SSE and more open communication would likely have resulted in a more effective placement.

SSE asserts that it may be possible to locate the new station on an island on Jones Bridge Road near Rockville Pike. This location would allow passengers to board and alight near the main entrances to the National Institutes of Health (NIH) and the National Naval Medical Center (NNMC) and still allow BRT vehicles to easily make the left turn onto Rockville Pike. It would also allow for easy connections between the Metro Red Line and Purple Line at Medical Center with new Red Line entrances on the northeast and northwest corners of Rockville Pike and Jones Bridge Road. This is one concept that we believe will create favorable BRT, pedestrian and traffic conditions. SSE has not done an in-depth study of the feasibility of locating the station in this location; however MTA should consider SSE's suggested location as it may positively affect ridership forecasts for this variation.

By contrast, MTA's station location provides direct access to one entrance for the Walter Reed National Military Medical Center but this entrance is one of the most lightly used entrances in the complex and would not optimize access to the densest part of the Medical Center area. Likewise, it is unnecessarily distant from NIH. Also MTA locates the station on the northern curb of Jones Bridge Road, rather than on an island in the center of the road (as outlined in SSE's suggestion above). This means BRT vehicles are forced to travel across three lanes of traffic in just 800 feet in order to turn left onto Woodmont Avenue. Thus, by placing the Medical Center station at this location, the MTA has created a less effective alternative.

### **Medium BRT – Medical Center Access (Variation 2)**

The white paper states that this alternative was developed “through input from SSE.” This is a misleading statement. There was no communication between the parties. SSE has never offered this as an option. And because of serious shortcomings, it would not do so.

While this MTA alignment directly serves the Medical Center area, it does so in a way that includes many drawbacks. First, this option retains the defects of all the other CCT alignments, such as noise and other impacts to the trail, clearing of 15 acres of forest, burial of the north-side stream, and rerouting of the trail onto city streets through Bethesda. Additionally, as in the other CCT BRT alternatives, the right turn of westbound buses from the Capital Crescent Trail onto Pearl Street is extremely sharp. Additional structure will likely be required in order to achieve this turn and the MTA has not acknowledged that this structure has been included in this variation's cost estimates. Structure will also be required to address the approximately 7-foot grade change from the Capital Crescent Trail onto Pearl Street. Further, as vehicles would be forced to cross the trail in order to reach Pearl Street, the MTA needs to provide information to SSE and to the public regarding how the trail will be affected. This transition segment will slow down the services, create substantial new costs, and impact both the trail and surrounding properties.

Continuing in the direction of the Medical Center, the MTA has routed this particular option through a series of turns on city streets and across Wisconsin Avenue. This convoluted routing is considered poor practice in bus operations and subtracts from any benefits gained by routing BRT vehicles along private right of way. Buses will confront congestion without dedicated lanes, traffic signals without priority, and turns that add delay. Average speeds through this area may be as low as 3 mph, far



worse than the conditions on Jones Bridge Road that MTA is trying to avoid. Reliability and passenger perception will suffer.

In the eastbound direction, MTA routes New Carrollton-bound buses through Woodmont Plaza in order to access the Capital Crescent Trail eastbound. This routing is depicted in Figure 2 of the white paper and shown below. The vision of Woodmont Plaza as a pedestrian oasis—depicted in MTA’s own renderings—will be severely impacts by BRT vehicles. As a center of urban activity in Downtown Bethesda slated for further development, the impact of buses traveling through its midst every six minutes raises safety, community, and development issues that have not been detailed by MTA. It is thus imperative that the community be apprised of the plans and impacts of this routing.



**Figure 1: Medium BRT - Medical Center Access - Routing through Woodmont Plaza**

Another result of the MTA’s Medium BRT – Medical Center Access routing is the need for two stops in Downtown Bethesda: one at the Bethesda Station North Entrance for buses headed in the direction of Medical Center, and one at the Bethesda Station South Entrance for buses headed in the direction of New Carrollton (see figure above). This places the two stops approximately .4 miles apart. Such a split stop configuration is known to decrease ridership as it creates confusion and causes inconvenience to passengers.

### **Analysis Results**

By providing equity in routing between Jones Mill Road and New Carrollton, the Medium Investment BRT – JBR variation has picked up 10,000 riders above the Low Investment BRT alternative from the DEIS. However, in the MTA’s analysis results, the Medium Investment BRT from the DEIS which does not serve the Medical Center area draws 2,000 more riders than the new Medium Investment BRT which runs along Jones Bridge Road and serves the Medical Center area. Even without priority treatments along Jones Bridge Road, the small portion of the route which does run along Jones Bridge Road (approx. 1.76 miles) will certainly not decrease the overall running time enough to result in an estimated ridership *below* that of an alternative that does not serve the Medical Center at all. And if this were the case, then priority treatments would undoubtedly solve the problem.

Another anomaly is the 8,000 fewer trips that MTA’s white paper generates for Variation 1 versus Variation 2. Both variations serve the same population with what should be little difference in running time. While the MTA has argued that Bethesda riders will be less likely to use the Purple Line if they must first pass the Medical Center en-route to Bethesda (Variation 1), the same argument could be



made for Medical Center riders first passing through Bethesda under Variation 2. In addition, Red Line-bound passengers in Variation 1 could transfer at the Medical Center instead of remaining on board until Downtown Bethesda. And the new North Woodmont Station, common to both, is better served by Variation 1. It is questionable that this minor inconvenience to Bethesda passengers would drive 8,000 riders from Variation 1. Without access to the model inputs used by MTA, we can only question the methodology until supporting data is provided. This 8,000 is likely due to a combination of the issues discussed above, including station location for Variation 1, lack of a connection to the Red Line if indeed this was not included in the Variation 1 analysis, and lack of priority treatments in Variation 1.

### **Conclusion**

While the MTA has taken some steps to create new alternatives, adequate communication with SSE and the general public was lacking in the development of these alternatives. Many critical issues were missed, resulting in ridership projections that were drastically underestimated. Further, a major inequity among the alternatives has been introduced by either including the cost of a station connection at the Medical Center but not at Bethesda, or by not including a station connection at the Medical Center at all. Finally, while it is encouraging that the MTA is beginning to improve their alternatives, this is only effective if the new alternatives are to be included in the alternatives analysis and/or the public process.