



---

## **Response to MTA's White Paper Entitled "Visitor Trips to the Walter Reed National Military Medical Center"**

### **Introduction**

On January 27, 2008, the Maryland Transit Administration (MTA) released to the Town of Chevy Chase a document entitled "An Assessment of the Base Realignment and Closure Activities on AA/DEIS Travel Assumptions for the Purple Line." This document was released as a result of questions raised by Sam Schwartz Engineering (SSE) about the apparent lack of transit ridership being generated to and from the Medical Center area after the Base Realignment and Closure (BRAC) action to be completed in 2011. The BRAC action will merge the functions of the Walter Reed Army Medical Center (WRAMC) in Washington, DC with the National Naval Medical Center (NNMC) in Bethesda, Maryland to create the new Walter Reed National Military Medical Center (WRNMMC) in Bethesda. Only one Purple Line alternative on Jones Bridge Road would provide direct access to the new facility. All other Purple Line alternatives use the Capital Crescent Trail, requiring passengers destined for the Medical Center to transfer to the Metro Red Line in downtown Bethesda to reach their destination.

The MTA document released in January entitled "An Assessment of the Base Realignment and Closure Activities on AA/DEIS Travel Assumptions for the Purple Line," which quantified only ridership derived from WRAMC employees who already live within the Purple Line service area and will be transferred to the new facility. The document neglected analysis of visitors, new employees, or the tendency of people over time to make residential location decisions based on access to their place of employment. The document also overestimated the willingness of riders to transfer in downtown Bethesda to the Metro Red Line to complete their journey, ignoring both the perceived inconvenience of transferring and the additional fare—both of which would discourage transit use for passengers en route to the Medical Center area. SSE outlined these criticisms in a response to MTA on March 28<sup>th</sup>, 2008.

As a result of SSE criticism, MTA has released an addendum to their first analysis document, which quantifies potential Purple Line ridership from visitors to the newly created Walter Reed facility. Together, the two MTA analyses predict that a maximum of 209 people (visitors and transfer employees) going to the new Walter Reed facility will use the Purple Line each day. While, taken together, these MTA documents present an improved analysis over the original MTA report, SSE still finds MTA's analysis of BRAC to be lacking in several important ways.

While MTA's analysis now considers both WRAMC transfer employees and visitors, it still has not addressed SSE's criticisms of their original WRNMMC employee analysis, including the expectation that commuting employees will be equally willing to transfer to the Metro to complete their journey as to travel to WRNMMC via a one-seat ride. In standard transportation planning, there is a penalty assigned in the ridership formula for such transfers. MTA appears to not be giving these penalties proper weight and refuses to share details with the public. In addition, MTA has not further defined what they call the Purple Line service area, has still not included any analysis of the 450 new employees expected at the WRNMMC facility, and has not taken into account feeder service to the Purple Line as a potential source of ridership.



Beyond these specific criticisms, however, the biggest deficiency in MTA's analysis is that by so narrowly focusing the discussion of BRAC ridership, MTA manages to downplay the larger role of the Medical Center area as a major employment center. By focusing the impact of BRAC on 60 new riders from transfer employees and 149 new riders from additional visitors, MTA is still not acknowledging that in the year 2030 the Medical Center and north Woodmont area will be home to 40,619 jobs, more than the projected 32,944 for downtown Bethesda.

Finally, MTA's piecemeal analysis suggests that these numbers were calculated separately from the ridership model that has generated all of MTA's running times and that BRAC ridership has never been factored into the official ridership numbers for the Jones Bridge Road (JBR) alignment.

### **Transfer in Bethesda**

The original MTA BRAC analysis dealing with transfer employees included a discussion of travel times for the two proposed Purple Line alignments. The MTA determined that the JBR alignment will be so much slower than any of the Capital Crescent Trail (CCT) alternatives that people destined for the Medical Center area will arrive more quickly by taking the CCT alignment of the Purple Line and transferring to the Metro Red Line for one stop (MTA, 2008). SSE has independently reviewed MTA's JBR Low-Investment running times using existing J-1 bus running times, accepted industry practice, and MTA's own analyses and has concluded that they have been significantly overestimated.

It is an accepted fact that the inconvenience of transferring from one transit line to another may act as a deterrent to many potential riders. In other words, for travel between Points A & B (say, Silver Spring and Medical Center), more people will use transit that is direct than will use transit where they have to change vehicles (transfer). This is recognized in the industry-standard *Transit Capacity and Quality of Service Manual* (2004). Based on extensive studies, it presents average formulas for quantifying the difference. One formula multiplies by 2.5 the time a passenger has to wait for the next connection. Another multiplies by 2.2 the actual walking time between vehicles. Using these multipliers more accurately represents the perceived total travel time to potential transit riders. They demonstrate the inconvenience of transferring and the willingness of a passenger to choose a "one-seat" ride *even if* this direct route is slightly longer than a trip involving a transfer.

MTA is underestimating the effect this will have the willingness of passengers to transfer. As a result, MTA minimizes the impact of the significant walking and waiting time at a Bethesda Metro connection and concludes that few riders will be deterred. At the same time, they impose (unrealistically) long running times along Jones Bridge Road to conclude that few people will want direct, one-vehicle service.

The additional cost involved in a transfer to the Metro Red Line will also discourage passengers from making the transfer. Because the JBR alignment offers a one-seat ride to the Medical Center, the Metro Red Line or Downtown Bethesda, passengers will pay the same fare, regardless of their destination. The CCT alignment, on the other hand, requires a transfer for those passengers traveling to the Medical Center. Under the current WMATA fare policy, those CCT passengers would pay \$5.10 for a round trip fare to the Medical Center, as opposed to

New York  
611 Broadway, Suite 415  
New York, NY 10012  
T: 212.598.9010 F: 212.598.9148

New Jersey  
24 Commerce Street, Suite 1425  
Newark, NJ 07102  
T: 973.639.9629 F: 973.639.9191

Windsor-Detroit  
374 Ouellette Avenue, Suite 501  
Windsor, ON N9A 1A8  
T: 519.560.3500 F: 519.560.3600



\$2.70 for Bethesda- and Red Line-bound passengers. The more expensive the trip, the fewer people will use transit. But MTA has not figured in fares, so they overestimate how many people will use a CCT alternative to reach Medical Center.

DESTINATION	FARE	
	CCT	JBR
Silver Spring - Medical Center	\$5.10	\$2.70
Silver Spring - Bethesda	\$2.70	\$2.70
Silver Spring - Red Line	\$2.70	\$2.70

Table 1: Round Trip fare on the CCT and JBR Alignments

These passenger perception-of-time calculations and the additional fare are used to make more realistic and accurate ridership projections. MTA has not accepted or included these factors in their work or in public outreach, despite their being based on standard transportation planning standards. Because of this, it is likely that MTA has overestimated the number of Medical Center employees who would commute to work via the five CCT alternatives, and underestimated the number who would do so via CCT.

### Purple Line Service Area

In the original MTA BRAC analysis, MTA derived ridership estimates from the number of current WRAMC employees that currently live in the “Purple Line Service Area,” but never defined this term. Nowhere does the MTA ever state which Purple Line alignment is being used to define the service area (JBR or CCT alignment), whether this takes into account distance from station locations or only distance from the Purple Line itself, or what is considered walking distance to the Purple Line. These factors all directly affect the number of people the MTA considers to be living within the Purple Line service area. MTA should clarify its methodology.

As stated earlier, standard transportation planning practice holds that under typical conditions, a transfer is always less desirable than a one-seat ride. And a trip requiring two transfers is unacceptable to most people. Because the JBR routing (alone) serves the Medical Center area *directly*, people who live along transit routes that connect to Purple Line at any of its 21 other stations can have a one-transfer ride to the Medical Center. Because the Medical Center is only accessible by the CCT alignment with a Metro transfer, anyone who takes a feeder bus to the Purple Line anywhere else along the route would have two transfers en route to Medical Center. Very few people would make this journey via transit—most would drive. This greatly increases the transit reach to BRAC with a JBR alignment and decreases it with the CCT alignment. With the JBR alignment, many more people will be able to take transit to BRAC via JBR than the smaller numbers MTA has projected for the CCT alternatives.

### New Employees

In response to the first MTA BRAC analysis, SSE highlighted the fact that while MTA did a very detailed analysis of employees being transferred from the existing WRAMC facility, there was no mention of the predicted 450 new employees who will be hired to work at the new Bethesda facility. In MTA’s recently released BRAC analysis addendum, the new employees are mentioned and described as “additional staff that may locate to the base because of ongoing or



future on-base projects.” There is no further explanation as to why MTA has chosen not to include them. However, the BRAC Draft Environmental Impact Statement (DEIS) includes them in their transportation analysis and SSE maintains that MTA is methodologically negligent to exclude them.

### **Long-Term Residential Location Decisions**

SSE faulted MTA in its first BRAC analysis for taking into account only those WRAMC employees who currently live near the Purple Line. MTA concluded that out of the roughly 6,000 WRAMC employees, only about 650 lived in the Purple Line service area. Based on the percentage of employees that will be transferred to the new Bethesda facility, MTA assumed that about 200 WRAMC employees who lived in the Purple Line service area would be transferred to the new facility. If transit enjoyed a mode share of one-third, then about 60 (out of the 200) WRNNMC employees in the Purple Line service area would use transit—some of them the Purple Line.

By using only a snapshot of current residential locations to predict future Purple Line ridership, MTA’s methodology was incompatible with the remainder of the study, which applied growth factors to reach a 2030 horizon. This has particular impact on the data in this case. First, many of the current WRAMC employees and future WRNNMC employees are military personnel who are transferred every 2-3 years. This means that within 2-3 years of the opening of the Bethesda facility, virtually all the WRNNMC military employees will have made their housing location decisions based on the location of the new facility and the Purple Line will play a significant role in those decisions. Employees who are not members of the military will also, over time, make residential location decisions based on their place of employment, though perhaps not as quickly. The essence of MTA’s assumptions is that, because only 10% of Walter Reed employees currently live within the service area of a transit line that does not exist but could transport them to a facility where they do not yet work, that this situation will persist after the Purple Line and the new Walter Reed facility are built. This is a serious flaw. MTA should adjust its ridership expectations from BRAC to reflect these considerations.

### **Medical Center Employment**

By issuing two separate reports on Purple Line ridership due specifically to BRAC, one with an estimation of 60 riders and the other estimating an additional 149 riders, MTA has focused the discussion very narrowly. This detracts from the larger point—that the Medical Center and North Woodmont areas will be home to 40,619 jobs in the year 2030 and will be directly served by only the Jones Bridge alignment. For comparison, the portion of Downtown Bethesda within walking distance (1/2 mile) of the Bethesda Purple Line Station will be home to 32,944 jobs. MTA has never issued a report about the larger ridership implications of such a major employment center, including the potential for the JBR alignment to create a more convenient and faster link between the two centers. Such a link could increase economic activity in Bethesda and generate additional Purple Line trips. MTA repeatedly concludes that “Downtown Bethesda remains a much larger travel market for a direct Purple Line transit service than the NNMC area” in lieu of studying and quantifying the potential of the Medical Center area.

The NNMC area has potential for much higher ridership numbers than the MTA is currently projecting. MTA has said that Medical Center will be adequately served by all five CCT

New York  
611 Broadway, Suite 415  
New York, NY 10012  
T: 212.598.9010 F: 212.598.9148

New Jersey  
24 Commerce Street, Suite 1425  
Newark, NJ 07102  
T: 973.639.9629 F: 973.639.9191

Windsor-Detroit  
374 Ouellette Avenue, Suite 501  
Windsor, ON N9A 1A8  
T: 519.560.3500 F: 519.560.3600



alternatives by means of a transfer at Bethesda to the Red Line. It then defines the number of Walter Reed employees who are potential users of the Purple Line as the very low number who live within walking distance of other Purple Line stations. It then mistakenly applies this same model to JBR. But this is not correct.

Since the JBR alternative serves the medical centers directly -- without need for transfer -- the Purple Line catchment area for this alignment ONLY, can include a transfer to/from any of the three other Metro Line connections or intersecting bus routes along the 16-mile-length of the Purple Line. In other words, the one-transfer trip to the medical centers has a much larger reach for BRAC (and all medical center) employees on the JBR alternative than on the five CCT alignments. That reach will include all BRAC employees who live within walking distance (1/2 mile) of other Orange, Green, and Red Line stations that feed into the Purple Line JBR alternative. MTA has not allowed for this. They have improperly limited the reach of the JBR alternative, and in so doing undercounted the potential of JBR to attract a greater number of BRAC employees to transit than is possible under the other five CCT alternatives.

### **Traffic Reduction**

MTA has adopted contradictory stances on the ability of the Purple Line to reduce traffic. Traffic reduction has never been a stated goal of MTA's Purple Line planning process and MTA has downplayed the ability of Bus Rapid Transit (BRT) on JBR to reduce the number of cars on the road. MTA has, however, publicized an estimated number of cars that could be taken off the road by each alternative. MTA also maintains that the number of cars taken off the road will be higher for the CCT alternatives. This, however, will do little to mitigate the increase in traffic due to BRAC as trips to the Medical Center will require a Metro transfer, discouraging transit trips to this destination. With a projected increase in traffic of 15% on Jones Bridge Road by 2011, a direct east-west rapid transit connection to the Medical Center will be necessary to mitigate congestion.

### **MTA Ridership Model**

MTA has released piecemeal studies of ridership due to BRAC without including many factors that would be automatically considered in its ridership model. These models are designed to consider such factors as feeder service and long-term population trends that MTA has excluded from its BRAC analysis. The regional transit ridership model is supplied by the Metropolitan Washington Council of Governments (MWCOC). Round 7.0 of the MWCOC forecast was released before the advent of BRAC and Round 7.1 was released to include population and employment changes due to the BRAC action. In the original MTA BRAC analysis in January, 2008, MTA states that "The Purple Line AA/DEIS used the MWCOC Round 7.0 forecasts and later updates will use the Round 7.1 forecasts." MTA is using outdated numbers when more current ones are available and there is no indication of when they will begin using these new numbers.

For this reason, MTA has released microanalyses with BRAC ridership projections in place of updating its ridership model to reflect the most recent population and employment data and there is no indication that MTA has even added its BRAC-specific ridership projections to its public ridership estimates. This not only places a major handicap on the JBR alignment but is professionally poor work.

New York  
611 Broadway, Suite 415  
New York, NY 10012  
T: 212.598.9010 F: 212.598.9148

New Jersey  
24 Commerce Street, Suite 1425  
Newark, NJ 07102  
T: 973.639.9629 F: 973.639.9191

Windsor-Detroit  
374 Ouellette Avenue, Suite 501  
Windsor, ON N9A 1A8  
T: 519.560.3500 F: 519.560.3600



## **Conclusion**

By issuing an addendum to their original report on the Purple Line ridership impacts of BRAC employees, MTA has made an effort to address shortcomings in its BRAC analysis. However, MTA's analysis still has major deficiencies. Specifically, MTA has still failed to consider new employees at the new Walter Reed facility, long-term residential location decisions, Purple Line feeder service catchment areas, or the ability of JBR BRT to reduce Medical Center-bound traffic. More importantly, however, MTA is narrowly focusing on only visitors due to BRAC and WRAMC employees who already live within the Purple Line Service area, and omitting the larger role that the Medical Center plays as a trip generator. Rather than downplaying the importance of the Medical Center area, MTA should be using the BRAC action, latest MWCOG data, and thoughtful analysis to accurately dimension Medical Center ridership and incorporate that into its Alternatives Analysis.

## **BIBLIOGRAPHY**

Maryland Transit Administration (MTA) (February, 2008). An Assessment of the Base Realignment and Closure Activities on AA/DEIS Travel Assumptions for the Purple Line.

Transportation Research Board (TRB) (2004). Transit Capacity and Quality of Service Manual. Available online at: [http://www.trb.org/news/blurb\\_detail.asp?id=2326](http://www.trb.org/news/blurb_detail.asp?id=2326)