

Discussion Paper
Bethesda National Naval Medical Center Beltway Access
Maryland State Highway Administration
September 2009

This discussion paper presents the results of the Maryland State Highway Administration's (SHA) review of new proposals, presented by Clark/ Dewberry, Maryland National Park and Planning and suggestions from the public, for a direct access ramp to the National Naval Medical Center Campus (NNMC). In July 2008, SHA released a discussion paper in response to local citizen requests for a "slip ramp" directly from the inner loop of the Capital Beltway to the NNMC campus to reduce the traffic on the local arterials (http://www.e-mdot.com/Planning/brac/Whats_New). This original concept was determined to be not feasible due in part to environmental impacts, safety concerns, failing traffic operations, interchange spacing, security issues, and the inability of the project to be completed in the near term to accommodate BRAC traffic in 2011. Since the release of the original discussion paper, new concepts have been proposed in an attempt to address some of the previous concerns. As a result, the SHA conducted a second environmental and technical review.

The original concept provided a "slip ramp" from Capital Beltway (I-495) between Wisconsin Avenue/ Rockville Pike (MD 355) and Connecticut Avenue (MD 185). The new concepts provide a flyover ramp from southbound I-270 to the inner loop of the Capital Beltway (I-495) and a new interchange that accommodates all movements from I-495 to the National Naval Medical Center Campus. These new concepts address a couple of issues identified in the original discussion paper, mainly the dangerous weave from traffic heading from southbound I-270 to the NNMC and the interchange accommodating all of the movements at NNMC. Despite these improvements, there are still a number of concerns that have not been addressed, and likely cannot be resolved in a cost effective way, given the complex geometric and travel conditions and the environmental resources that exist in the study area.

Local Coordination:

An interchange is currently not included in any of the region's master plans, the SHA's Highway Needs Inventory, the County's priority list for projects for inclusion in the Consolidated Transportation Program (CTP), or in the Navy's Draft Environmental Impact Statement (DEIS). Montgomery County currently has identified billions of dollars in transportation priorities to move forward to planning, design, or construction over the next six years. The SHA would request that the County determine where these interchange improvements fall within the other priorities.

The Navy evaluated and presented results of the potential impact of a new access point with a "slip ramp" from the Capital Beltway in its 2007 DEIS. The Navy identified the potential construction of a new access point as a long-term regional issue rather than an improvement related to BRAC mitigation, and further did not recommend the installation of the beltway slip ramps to or from the NNMC Campus (NNMC DEIS, 4.7.4.2, P. 4-52) for security and traffic operations reasons (NNMC DEIS, App. C, 4.5.2, p.68). In subsequent discussions with the Maryland Department of Transportation (MDOT), the Navy further expressed concerns over the

operating and capital costs, logistics and security issues related to constructing a new access point directly from the Capital Beltway. Currently the Navy is beginning a process to upgrade all of its gates at NNMC and a new access point from the beltway is not included in the plans.

To maximize the efficiency of the interchange and to potentially reduce traffic on the local arterials, the Navy and the National Institutes of Health (NIH) would be required to share security operations and provide a new direct connection between the two campuses. Today, the security requirements are different for the two campuses, which would make joint security operations difficult. The internal road network surrounding the hospital is already congested and adding significant through traffic destined for NIH would only make this situation worse.

Interstate Access Point Approval:

It is a requirement that the Federal Highway Administration (FHWA) must approve any modifications to access to, or from, the interstate highway system. This is accomplished by submitting an Interstate Access Point Approval (IAPA) request which is considered a federal action. This is a two-step process that consists of concept approval and final approval. Concept approval is requested from the FHWA with an Access Justification Report. Following concept approval and fulfillment of the National Environmental Policy Act requirements, final approval is contemplated. The fundamental tenet underlying the IAPA process is the protection of the integrity, operation, and safety of the interstate system by ensuring proper spacing and safe weaving distances.

The standards for design of interstates are detailed in *A Policy on Geometric Design of Highways and Streets, AASHTO 2001*. AASHTO standards recommend that interchanges be spaced a minimum of one mile in urban areas and two miles in rural areas. Today there are two access points to I-495 at MD 355 and I-270. The interchange to MD 185 is located 1.15 miles east of the MD 185 interchange. The new concept proposes a fly-over ramp branching off from the southbound I-270 off-ramp to MD 355 southbound to I-495. The new ramp to NNMC, which when combined with the interchange at MD 185, would decrease the interchange spacing to approximately ½ mile. The proposed spacing between the new ramps at NNMC /MD 185 and the ramps to I-270 northbound on westbound I-495 will now be approximately ¾ mile, which falls short of the AASHTO one mile minimum standard. The concept would also result in three entry points to the outer loop within a ½ mile near MD 185.

The I-270/MD 355/I-495 interchange is a complex system of successive left entering merge conditions and significant weaving movements in a highly congested area. Adding a new ramp to this interchange and the proposed collector-distributor (C-D) system at the MD 185 interchange will further complicate the traffic conditions through this area, presenting operational and safety concerns. A situation would be created where vehicles would be merging onto the I-495 on the left and the right side resulting in an additional operational and safety concerns.

Travel Demand and Traffic Relief:

The Capital Beltway was constructed with a curvilinear alignment through this stretch in order to reduce impacts to Rock Creek Park. This alignment provides challenges to the efficient traffic flows today and in the future. Under existing conditions, the freeway segments of I-495 between MD 355 and MD 185 operate at LOS E or F during the peak hours, and operations are projected to deteriorate in the future. The I-495 inner and outer loops between MD 355 and MD 185 are projected to operate at a LOS F in both the AM and PM peak periods in 2030. Providing additional access points within this segment would further exasperate this situation. The merge from northbound MD 185 to the I-495 inner loop is projected to operate at LOS F during the PM peak period in 2030. Additional traffic on this ramp would make this merge operate worse. The freeway segment of the I-495 outer loop between MD 185 and MD 355 is also projected to operate at LOS F in the AM and PM peak periods in 2030, and providing an additional entry point within this segment would make this segment operate worse. Finally, the diverge from the I-495 outer loop to MD 185 is projected to operate at LOS F in the AM peak period in 2030 and would operate even worse if additional traffic were added to the ramp. It is unlikely that FHWA approval could be obtained for an interchange project that would worsen operations on the interstate.

The SHA projections show that approximately 3,000 vehicles are projected to enter both the NNMC and National Institutes of Health campuses (from all directions) during the AM peak hour following the implementation of BRAC. In order for the proposed direct-access ramps to have a significant impact on the operations of the four intersections SHA is currently designing (MD 355 at Cedar Lane, MD 355 at Jones Bridge Road, MD 187 at Cedar Lane, MD 185 and Jones Bridge Road), the ramps would need to server well-over 1,000 cars in the AM peak period (or one-third of all vehicle trips into NNMC and NIH during the AM peak hour), including removing 1,000 vehicles from southbound MD 355 alone. This can only be achieved if workers from both NNMC and NIH could use the ramps. Therefore, the Navy and NIH would have to share security and construct a new road that would allow the NIH workers to cut through the Navy property directly into the NIH campus in order for the proposed ramps to provide a reasonable benefit to the local road network. It is unlikely that the Navy would support neither construction of this new roadway or the sharing of security measures.

Additionally, further geometric design would have to be conducted to ensure that the vertical alignment of the ramps and structures proposed are achievable. This is especially true for the flyover ramp that would cross over the Metro Red Line and the structures that would cross over the existing ramps at the MD 185 interchange.

Environmental Issues:

Section 4(f) of the United States Department of Transportation (U.S. DOT) Act states that the FHWA or other U.S. DOT agencies cannot approve the use of land from a significant publicly-owned park, recreation area, wildlife or waterfowl refuge, or any significant historic site for a transportation purpose unless there is no feasible and prudent alternative to use of that land, and the action includes all possible planning to minimize harm to the property resulting from the

transportation use. The proposed interchange would potentially impact Rock Creek Park and North Chevy Chase Park which border I-495 in the area. The intersection improvements provide a viable alternative to the proposed interchange making it unlikely that FHWA would approve the interchange.

In addition to the impacts to the two public parks, the proposal would also impact a tributary to Rock Creek. Steep slopes exist where the new ramp would tie into the NNMC campus. This would result in the need for significant retaining walls and grading to meet AASHTO standards, adding significant cost to the project.

The new Maryland Department of Environment stormwater management regulations require stormwater to be mitigated in linear facilities adjacent to the road. This would require additional Right-of-Way, resulting in further impacts to the two parks, sound walls, and residential properties.

Further analysis, including a full-scale Project Planning NEPA Study, will be necessary to determine the extent of the total environmental impact. However, due to planned intersection improvements that are currently being funded to accommodate BRAC impacts, it is unlikely that the FHWA will consider the interchange concept a viable alternative to the intersection improvements.

Cost:

The entire proposed concept includes the new flyover ramp that would be required to cross over MD 355, I-495, and the Metro Red line before merging onto eastbound I-495 and a collector-distributor system along eastbound and westbound I-495 connecting a new interchange to the NNMC and the interchange at MD 185. The cost would have to include replacement and expansion of sound walls, environmental mitigation, potential additional Right-of-Way, numerous new structures, and significant Maintenance of Traffic (MOT) measures. Therefore, the SHA does not believe that the benefits of the interchange warrant the cost.

Timing Issues:

The Walter Reed Army Hospital will be merging with the National Naval Medical Center by 2011. On a fast track, it would take at least five years to get the concept ready for construction. This includes planning, engineering, and right-of-way acquisition. Due to the current economic conditions, even if we were to invest all available funds that are being used on the intersections, we would not be able to fund the construction of the proposed improvements. Additionally, the schedule for the intersection improvements will allow for all or some of the improvements to be in place by September 2011, the federally mandated timeframe for BRAC implementation.

Summary:

The new concepts proposed are an improvement over the slip ramp previously studied and does address the dangerous weave associated with the “slip ramp.” However, serious traffic, safety, environmental, cost, coordination and timing issues remain. In addition, because the intersection improvements noted above are more cost efficient and have fewer impacts to parks and residents, they represent a viable alternative to the interchange. Additionally, the schedule for the intersection improvements will allow for all or some of the improvements to be in place by September 2011, the federally mandated timeframe for BRAC implementation. This would make federal approvals unlikely and therefore the SHA does not believe that further study of the interchange is warranted at this time.

Filename: 2009_9_22 BRAC Slip Ramp White PaperV5
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Creation Date: 12/17/2009 4:00:00 PM
Change Number: 2
Last Saved On: 12/17/2009 4:00:00 PM
Last Saved By: ebeckett
Total Editing Time: 7 Minutes
Last Printed On: 12/21/2009 11:12:00 AM
As of Last Complete Printing
Number of Pages: 5
Number of Words: 1,992 (approx.)
Number of Characters: 11,361 (approx.)