



MONTGOMERY COUNTY PLANNING DEPARTMENT

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

MCPB

ITEM NO. 6

7-22-10

July 15, 2010

MEMORANDUM

TO: Montgomery County Planning Board

VIA: Dan Hardy, Chief *DKH*
Move/Transportation Planning Division

HJ Nkosi Yearwood, Senior Planner
Vision/Community-Based Planning

FROM: Larry Cole: 301-495-4528, for Transportation Planning *LC*

PROJECTS: Old Georgetown Road (MD187)/West Cedar Lane/Oakmont Avenue
SHA Contract No. MO5935370
Mandatory Referral No. MR2010805

Rockville Pike (MD355)/Cedar Lane/West Cedar Lane Intersection
SHA Contract No. MO5935270
Mandatory Referral No. MR2010806

Rockville Pike (MD355)/Center Drive/ Jones Bridge Road Intersection
SHA Contract No. MO5935470
Mandatory Referral No. MR2010807

Connecticut Avenue (MD185)/Jones Bridge Road/Kensington Parkway
Intersection
SHA Contract No. MO5935570
Mandatory Referral No. MR2010808

REVIEW TYPE: Mandatory Referral

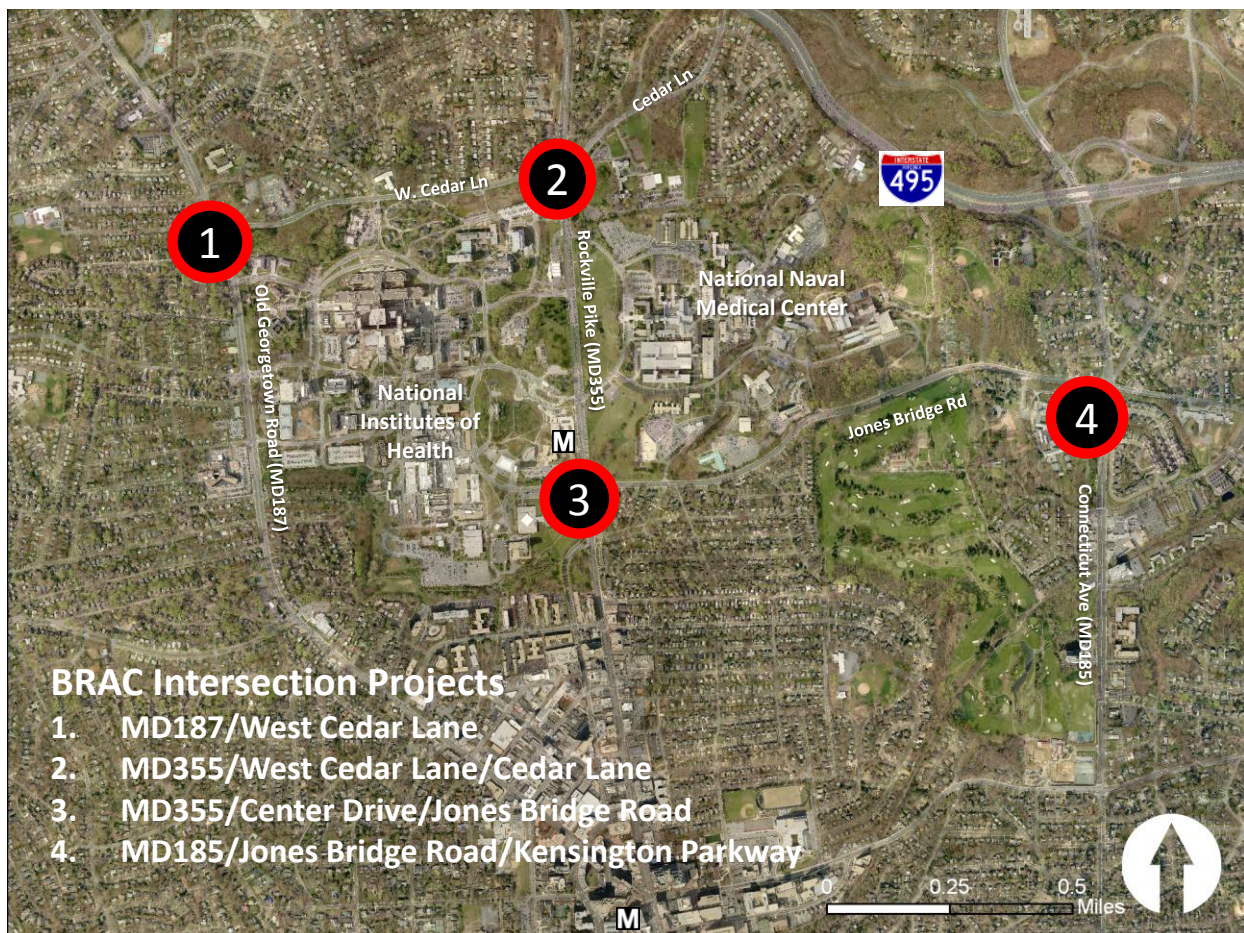
APPLICANT: Maryland State Highway Administration (SHA)

APPLYING FOR: Plan Approval

COMMUNITY-BASED PLANNING TEAM AREA: South Central Transit Corridor

EXECUTIVE SUMMARY

As part of the State's response to the transportation challenges posed by the Base Relocation and Closure (BRAC) move of Walter Reed Army Medical Center from Washington, DC to the National Naval Medical Center (NNMC) by September 2011, SHA proposes to make improvements to four adjacent and nearby intersections. The goal of these projects is to maintain the existing level of service with the influx of BRAC-related traffic as well as the growth in background traffic. Our goal in this memo is to balance the need to address the short-term traffic impacts of the BRAC move with the broader long-term vision of the Bethesda-Chevy Chase Master Plan. These projects should address the needs of pedestrians and bicyclists on an equal footing with other users of the public right-of-way and provide facilities that achieve the Master Plan vision of well-landscaped roads that are compatible with the communities through which they pass.



RECOMMENDATION: Approval of the four subject Mandatory Referral projects with the following comments

General

1. Make additional area bicycle and pedestrian improvements needed to provide safe and convenient access to the NIH and NNMC campuses within the overall BRAC traffic impact area rather than the limits of the individual intersection projects within that area.
2. Revise the proposed handicap ramp designs to meet ADA Best Practices wherever possible, including locating sidewalks and paths behind handicap ramps at intersections to avoid unnecessary grade changes for handicapped persons.
3. Widen proposed sidewalks and shared use paths by two feet where they are located adjacent to the curb.
4. At intersections where SHA believes that a safe ADA-accessible crossing cannot be provided, we recommend that the intersections be signed to prohibit the crossing and to direct pedestrians to the safest crossing.
5. Provide supporting documentation of any final decision not to provide crosswalks on all legs of signalized intersections.
6. Evaluate the lighting along the roads covered by these projects for their adherence to current AASHTO lighting standards and upgrade and augment these facilities where needed.
7. Continue to coordinate with MCDOT on their Countywide Bus Rapid Transit Study and consider the designation of additional through travel lanes as “diamond lanes” for restricted use by buses and high-occupancy vehicles during peak periods along the State highways covered by these projects.
8. Consider providing a four-foot-wide smooth concrete panel as part of the proposed decorative crosswalks to accommodate persons with disabilities.
9. Where large volumes of pedestrians and bikes are expected, consider making the crosswalks wider than ten feet.
10. Provide shade trees between the curb and sidewalk wherever possible. Major deciduous trees are recommended over flowering trees in the ROW to provide a better sense of scale on these wide roads. Utilize species of trees that can accommodate the pruning needed to accommodate overhead utilities.
11. Impervious surfaces in the median should be avoided wherever possible in favor of landscaping. Four-foot-wide medians should be planted with lirioppe.

12. Landscaping and streetscaping should be provided that ensures community compatibility; reflects the national importance of the National Institutes of Health, the National Naval Medical Center, and the Howard Hughes Medical Institute; and is compatible with the landscaping plans of those institutions.
13. Work with our staff to achieve mutually acceptable revisions to landscaping plans for all four intersections within 60 days or prior to submission of Phase 3 for the MD185/Jones Bridge Road project.
14. Provide responses to all other comments within 60 days.

A. Old Georgetown Road (MD 187)/West Cedar Lane/Oakmont Avenue

1. Complete the North Bethesda Trail by replacing the existing sidewalk along the east side of MD187 with a eight-foot-wide minimum shared use path from Charles Street to Alta Vista Road and by extending the proposed path from Center Drive to Lincoln Street.
2. Provide shade trees on both sides of the North Bethesda Trail extension along NIH's frontage and provide additional planting materials to enhance this facility. Provide shade trees between the curb and sidewalk/path elsewhere on this project.
3. Construct the proposed sidewalk on the west side of MD187 five feet from the curb, except in the immediate vicinity of the northeast corner of the Walter Johnson House.
4. Reconsider providing a six-foot-wide pedestrian refuge on the south leg of MD187 at West Cedar Lane/Oakmont Avenue.
5. Provide a design treatment for the proposed sidewalk at the Walter Johnson House that ensures the structural stability of the house and is attractive.
6. At the proposed MD187 median cut-through for the fire station, use the same gray color for the concrete as the rest of the ashlar slate median treatment.

B. Rockville Pike (MD355)/Cedar Lane/West Cedar Lane

1. Permit the PM peak operation of the proposed half-signal at North Wood Road only if there are no significant additional delays to MD 355 traffic.
2. Provide a crosswalk on the south leg of MD355 at Cedar Lane/West Cedar Lane or provide a pedestrian-actuated signal to stop traffic in both directions at the proposed half-signal at North Wood Road. The bus stops on either side of MD355 at North Wood Road should be eliminated if no safe crossing is provided.
3. Offset the proposed shared use path in the northeast and southwest quadrants of the MD355/ Cedar Lane/West Cedar Lane intersection, as well as the sidewalk in the southeast quadrant, so that they are outside the handicap ramp area. Provide a direct

sidewalk connection between the sidewalks in the northwest quadrant so that the users do not have to traverse ramps to travel around the corner.

4. Provide a continuous ten-foot-wide shared use path along the west side of MD355 between the West Cedar Lane and Jones Bridge Road intersections.
5. Widen the landscape buffer adjacent to the proposed shared use path to eight to eleven feet along the west side of MD355 between Wilson Drive and the NIH Commercial Vehicle Inspection Facility. This can be accomplished by using a 4:1 slope between the path and curb without increasing impacts on NIH property.
6. Develop a landscaping plan in conjunction with NIH and NNMC staff that includes provision of shade trees between the shared use path/sidewalk and curb along both sides of MD355 between the West Cedar Lane and Jones Bridge Road intersections.
7. Provide a replacement for the monumental entrance to the Stone Ridge School that is acceptable to the school.
8. Provide mitigation for the impacts to the park property in the northeast quadrant of the MD355/Cedar Lane intersection as follows:
 - a. Design and construct the proposed stormwater facility as a well-landscaped amenity.
 - b. Remove non-native invasive plants from the forested area downstream of the proposed pond site to improve the health and appearance of the streamside forest.
 - c. Relocate the sanitary sewer line as close to the pond site as feasible to minimize the loss of quality forest.
 - d. Reconstruct the shared use path along Cedar Lane from MD355 to Elmhirst Parkway to be offset from the roadway by a five-foot-wide (min.) landscape panel with street trees, outside the immediate area of the culvert under Cedar Lane, where possible while minimizing stream impacts. Where this cannot be accomplished, reconstruct the path to ten feet wide where adjacent to the curb and twelve feet wide where adjacent to both the curb and the culvert parapet.
 - e. Obtain a signed Memorandum of Understanding from the Montgomery County Department of Parks prior to commencement of any construction related activities on parkland.
 - f. Design and construct a hiker-biker trail bridge over Sligo Creek just downstream of Piney Branch Road by June 30, 2012. As a follow-up to our earlier agreement on SHA's Piney Branch Road (MD320) project.

C. Rockville Pike (MD355)/ Center Drive/Jones Bridge Road Intersection

1. Provide a crosswalk on the north leg of MD355 at Jones Bridge Road.
2. Offset the proposed shared use path in the northwest quadrant of the MD355/Center Drive intersection so that it is outside the handicap ramp area.
3. Provide shade trees between the shared use path/sidewalk and curb along both sides of MD355.
4. Continue to coordinate with MCDOT on the MD355 Crossing Study and any resulting project. If large-scale utility relocation is required for a subsequent project, particularly if the NNMC fence is to be moved, we recommend that the undergrounding of utilities be considered. If the utilities are not undergrounded, the poles should be moved back to provide an eight-foot-wide landscape buffer between the curb and sidewalk.
5. Offset the sidewalk on the traffic island at Glenbrook Parkway at MD355 as well as the ramps on either side of the island by about 12-15 feet from the curb to improve pedestrian safety.

D. Connecticut Avenue (MD185)/Jones Bridge Road/Kensington Parkway

1. Provide a continuous line of street trees between the curb and sidewalk for the length of this project to the extent possible.
2. Signalize the ramp from the Inner Loop of the Capital Beltway to southbound Connecticut Avenue, and consider providing a crosswalk on MD185 at this intersection to link to the sidewalk connection at Inverness Drive in North Chevy Chase.
3. Consider deleting the signal phasing for Kensington Parkway at MD185/Jones Bridge Road during PM peak hours and accommodating southbound parkway traffic at a new signal on MD185 at Montrose Driveway, which should include a marked crosswalk on MD185.
4. If a safe crossing cannot be provided at MD185/Montrose Driveway, the bus stops at this intersection should be moved or eliminated.
5. Provide six-foot-wide median refuges on both legs of Jones Bridge Road at MD185.
6. Construct dual directional ramps at the southeast corner of MD185/Jones Bridge Road and construct the proposed sidewalk behind the ramps, in conformance with ADA Best Practices.
7. Consider widening the proposed sidewalk on the east side of MD185 between Jones Bridge Road and Manor Road to an eight-foot-wide shared use path.

8. Include the construction of a shared use path on the north side of Jones Bridge Road within the limits of work of Phase 3 when that project is submitted for Mandatory Referral, and coordinate the limits of work with MCDOT whose project would extend that path to MD355.

INTRODUCTION

The Planning Board reviewed the BRAC Draft Environmental Impact Statement (EIS) on 1/10/08 and the Final EIS on 5/1/08. The transportation impacts to the Bethesda area caused by this move are minimized in part in the Transportation Management Plan (TMP) for NNMC (reviewed by the Board on 1/15/09), which set forth their goals for encouraging non-SOV commutes for their employees, whose numbers would increase by about 2,500. There will still be a significant impact however from the increase of almost a half-million visitors per year, approximately 1,860 per day. Appendix C-3 provides links to the DEIS, FEIS, and related Planning Board staff packets.

Lt. Governor Anthony Brown, Chair of the Governor's BRAC Subcabinet, has correctly stated that the Bethesda BRAC is unusual in that it is in a highly urban area. As such, it needs a greater attention to detail than other BRAC locations. These intersections along MD355 in particular should reflect an overall design concept that addresses the relationship of the Medical Center "precinct" to the Bethesda CBD and to nearby neighborhoods, from large-scale to pedestrian-scale details.

ORGANIZATION OF STAFF PACKET AND RELATED MATERIALS

The BRAC transportation projects reflect the integration of many federal, state, and local agency plans and policies and the project development process has benefited from extensive stakeholder coordination. The staff packet for the Mandatory Referral reviews for these four SHA intersection projects comprises the following materials:

- This memorandum contains the **staff recommendations** and a summary of concerns common to all four intersections
- Attachments A through D, provided under separate cover, contain **intersection-specific descriptions and staff analyses**.
- Appendices A through J provide additional background material for the BRAC project recommendations. These appendices are available on the Department's BRAC website: http://www.montgomeryplanning.org/transportation/brac/supporting_documents.shtm

MANDATORY REFERRAL OVERVIEW

The four SHA intersection projects are part of a suite of mobility projects contemplated to mitigate the adverse effects of BRAC actions on the area's transportation system. Appendix C-2 summarizes the status of these projects as of June 2010, ranging from the NNMC Transportation Management Plan already underway to both on-campus and off-campus initiatives for transit, bicycle, pedestrian, and roadway improvements.

The following sections of this report summarize staff interests and concerns that informed our recommendations on all four intersection projects:

- The relationship of these projects to other BRAC mobility projects
- The 1990 Bethesda/Chevy Chase Master Plan guidance on multimodal solutions
- The purpose and need for increased roadway mobility
- The synergy between these projects and the Countywide BRT study
- Bicyclist accommodation
- Pedestrian accommodation
- Lighting
- Landscaping
- Community Involvement

Relationship to Other Mobility Projects

The focus of SHA's projects has been primarily to address the needs of drivers, with lesser attention paid to the needs of other users. This is most clearly the case in regard to the limits of each project, which have been set according to the program of improvements needed for the roadway; pedestrian and bike improvements were proposed only within those limits. As indicated in Appendix C-2, the objective of the suite of mobility projects is to provide a complementary and multimodal network. **The linkages among the multiple BRAC mobility projects require continual monitoring and adjustment to ensure that multimodal network concept is retained.** The staff recommendations provide some of those adjustments.

Two particular characteristics stand out. SHA proposes no pedestrian or bicyclist improvements in a 950-foot-long gap between SHA's Cedar Lane and Jones Bridge Road intersection projects on Wisconsin Avenue/Rockville Pike simply because the proposed roadway improvements do not extend this far. MD355 is the main thoroughfare in this area and the gateway to the two federal campuses and the need for a well-designed roadway has been repeatedly stressed by the public. MCDOT has proposed reconstructing the east side sidewalk in this gap. At one point during the planning process, improvements to widen the west side shared use path from eight feet to ten feet in width were considered. This improvement is no longer included in any agency's current implementation plans. This characteristic of the BRAC mitigation projects demonstrates the degree to which all government agencies need to continue their coordination in implementing the County's master plan as well as the federal facility master plans.

A more serious deficiency is the lack of completion of the North Bethesda Trail. This trail is a regional transportation facility intended to connect White Flint and Bethesda. Millions of dollars in County and Federal funds have been spent to construct bridges over I-495 and I-270 for this trail. However, these projects provide the logical opportunity to close two gaps in the trail along Old Georgetown Road. In a May 2009 meeting with SHA, NIH, and MNCPPC staff and with bike advocates from NIH and WABA, SHA agreed that they would build the trail along NIH's frontage to connect with the trail segment along the south side of the campus that leads to the Woodmont Triangle, but the completion is not shown on the plans. The trail improvements have been confined to only what is adjacent to the needed roadway improvements. We recommend the missing trail segments be completed.

Master Plan Guidance

The 1990 Bethesda-Chevy Chase Master Plan is replete with recommendations to minimize roadway widening and to focus our efforts toward improving transit service and pedestrian and bicyclist accommodation as the way to satisfy the transportation needs in this area. Appendix A-2 summarizes this guidance and Appendix A-3 provides site-specific recommendations for the roadways that form the subject intersections.

The demand for vehicular travel to and through Bethesda continues to grow and access to both the federal campuses and the Bethesda CBD is an important consideration for area residents, employees, and visitors. Accommodation of travel demand must be balanced with environmental and design elements that retain the area's desirability as a place to live. The Bethesda/Chevy Chase Master Plan was written with a thorough understanding of that balance. If the Master Plan vision of a true multi-modal transportation system is to be achieved, good facilities providing continuity and connectivity for pedestrians, bicyclists, and transit users must be considered on their own merits and provided where needed.

MDOT/SHA has the primary responsibility for ensuring that the State highways in the area of NNMC can safely accommodate all modes of travel. Good pedestrian and bicyclist accommodation, including accommodation for transit patrons, is essential to ensure the success of the NNMC's Transportation Management Plan for the BRAC.

With the exception of the planned interchange at MD355/Cedar Lane, the master planned roadway network is essentially complete. We believe that the other facilities recommended in the Master Plan for the public right-of-way – pedestrian and bicyclist accommodation, improved transit and streetscaping – should be accomplished as part of ensuring a multimodal approach to access and mobility needs.

Purpose and Need for Increased Roadway Mobility

The BRAC FEIS identified the need for intersection improvements at four locations external to the BRAC campus, each at the junction of a State highway and a County arterial road, where current and proposed mobility conditions are substandard from the perspectives of federal, state, and local policies:

- Old Georgetown Road (MD 187) and Cedar Lane
- Rockville Pike (MD 355) and Cedar Lane
- Rockville Pike (MD 355) and Jones Bridge Road
- Connecticut Avenue (MD 185) and Jones Bridge Road / Kensington Boulevard

While the BRAC move is the genesis of these improvements, NNMC is not the major traffic generator in this area. During the AM peak hour, 18% of vehicles traveling on Rockville Pike in the southbound direction just south of Cedar Lane are headed to the National Naval Medical Center. The mobility improvements will provide benefits that go beyond mere mitigation of the BRAC traffic impacts and provide capacity that will serve planned but unbuilt development in the Bethesda CBD and vicinity.

Given the context of the 1990 Bethesda / Chevy Chase Master Plan recommendations to promote non-SOV travel, the provision of traditional roadway capacity such as intersection widening projects requires substantial concurrence on the need and value for such improvements. This coordination is particularly important in an urban environment where local policies accept greater levels of congestion (the 1600 CLV standard in the Bethesda/Chevy Chase Policy Area reflects LOS E traffic conditions) than is typical of statewide or national guidance. The analysis also requires demonstration of mobility improvement levels beyond the standard letter-grade metrics typically used. Appendix I-1 contains 2009 correspondence between Chairman Hanson and MDOT Secretary Swaim-Staley confirming a mutual desire to focus on and document a comprehensive, multimodal approach to the needs identified in the BRAC EIS process.

One early critique of the intersection projects was that congestion would be at LOS E or LOS F regardless of the intersection design, so why bother? Appendix C-6 summarizes the benefits of the proposed improvements using both critical lane volume (CLV) and vehicular delay metrics. While it remains true that all of the intersections will operate at LOS E or LOS F even with improvements, **the effect of the improvements will be to reduce total peak hour delays by about 45%**, to a level of delay substantially lower than currently experienced.

A second concern can be summarized by the phrase that solving traffic congestion by intersection widening is like solving obesity by loosening one's belt. In an area promoting transit and nonmotorized solutions, will easing roadway congestion create additional travel demand? Such latent demand will be a result of additional transit-oriented development already master-planned for the Bethesda CBD and vicinity. Even the most transit-oriented development generates additional vehicle trips, so planning for this traffic growth is actually a desirable outcome.

A third concern is that the intersection improvements contribute to the promotion of progressive Transportation Demand Management (TDM) actions for both the Bethesda CBD and the federal campuses. The staff recommendations note that additional capacity provided along the state highways can facilitate future transit or HOV priority treatments and the project implementation should be further coordinated with ongoing studies of such treatments.

Finally, while the prevailing traffic flows are heavily influenced by single-occupant vehicles on home-to-work journeys, the mission of the NNMC includes the provision of access to health care. The development and review of the SHA proposals by interagency staff and interested stakeholders considers the fact that not all NNMC clientele have multiple choices of travel mode or time of day.

Bus Rapid Transit (BRT) Study

MCDOT is currently undertaking a countywide BRT study as summarized in Appendix F-1. The current routes under consideration in the area of the proposed projects include all three north-south routes: MD187, MD355, and MD185. Appendix F-2 describes the Priority Corridor Network plan that WMATA created in 2008 to promote faster bus service on the major routes; it includes the following roads in the area of the proposed projects: MD187 north of West Cedar

Lane, West Cedar Lane from MD187 to MD355, and MD355 south of West Cedar Lane. The most significant common element between the two studies is the segment of MD355 fronting the NIH and NNMC campuses.

The Bethesda/Chevy Chase Plan recommends that we consider a widening of MD355 in this segment from six lanes to eight lanes for HOV use beyond the life of the Master Plan. MCDOT's BRT study is not yet complete and there is currently no proposal to implement BRT on any of the above-mentioned roadway segments. However, the proposed roadway widening on MD355 could make it easier to implement dedicated bus lanes in the future and these projects do not appear to create any major impediment to accommodating BRT in the future. The SHA concepts include additional travel lanes (less than one-half mile in length) to carry traffic on the state highways through the two most congested intersections in the study area; MD 355 at Cedar Lane and MD 185 at Jones Bridge Road/Kensington Boulevard. **These additional lanes are on roadway segments that are too short to be useful stand-alone elements of an HOV or BRT network, yet they could be incorporated into a network of priority "diamond lane" (HOV and/or BRT) treatments.**

In early 2010, Department staff facilitated a visioning exercise with the BRAC Implementation Committee, which is discussed in greater detail in Community Involvement below. As part of this visioning exercise (presentation materials in Appendix H-2), we prepared some conceptual diagrams showing the typical cross section that could accommodate different BRT options along MD355 between the two federal campuses, ranging from an operational change to the SHA proposal to a more robust 150-foot-wide boulevard with a center transitway.

The greatest constraints limiting a wider MD355 appear to be the existing Medical Center Metro Station and NIH garage on the west side and the NNMC guard houses (particularly the South Wood Drive gate) on the east side. SHA's subject intersection projects along MD355 would impact NIH property more than that of NNMC, but it is likely that implementation of BRT in this corridor in the future would require more impacts on NNMC's property.

Bicyclist Accommodation

The BRAC mitigation effort has provided the means for both state and county projects to complete a substantial portion of the off-road bicycle network serving the federal campuses. Appendix C-8 summarizes the bike-ped projects as presented by MCDOT to the BIC in March 2010.

In May 2009, we hosted a meeting attended by SHA, MCDOT, NIH, a representative of the NIH bike club, and a Washington Area Bicyclists Association representative. The meeting was prompted by early designs of the four intersection projects that did not include adequate accommodation for pedestrians and bicyclists. **The result of the meeting was that we achieved a consensus that the Master Plan off-road bike accommodation was a higher priority than the on-road bike lanes recommended in SHA's Bicycle Pedestrian Design Guidelines.** A slightly wider curb lane would be provided but the emphasis would be on providing a wider shared use path with a wider landscaped offset from the roadway.

SHA has followed this agreement but with two exceptions. The completion of the North Bethesda Trail is currently not part of these projects, nor is the orphan segment of shared use path between the MD355/Cedar and MD355/Jones Bridge intersections.

The Master Plan shared use paths in this area, plus the construction of a shared use path on Jones Bridge Road that is scheduled to be reviewed by the Board on 7/15/10, would contribute to the robust network of paths described above. It is important that the two links noted above be completed as part of SHA's BRAC projects.

Pedestrian Accommodation

The four intersection projects propose continuous pedestrian access along both sides of all roadways throughout these projects, but the sidewalks or paths are often be too close to, or at, the curb. This location would place pedestrians in close proximity to large volumes of fast-moving vehicles as well as subject them to the annoyance of grit and stormwater runoff being splashed up from the roadway. Also, the seasonal safety hazard of curb-attached sidewalks being blocked by plowed snow was amply demonstrated this year. For two to three weeks after the early February snowstorms, pedestrians were forced to walk in the travel lanes of State highways, most of which serve as transit routes in our urban areas. Placing sidewalks directly adjacent to multi-lane roadways makes clearing the sidewalks by abutting property owners a next-to-impossible task because the snow from three or four travel lanes is piled on top of the normal snowfall. This is a serious safety hazard that must be avoided wherever possible.

In addition to providing safe access for pedestrians along our roads, we also need safe convenient pedestrian access across those roads, particularly with respect to transit stops. In the past, there have been pedestrian fatalities associated with bus patrons headed to or from bus stops. In response over the last several years, MCDOT has relocated many bus stops as well as making other improvements to increase safety. The design of these intersection projects reflects agreement between MNCPPC, SHA, MCDOT and WMATA staff on revisions to improve the connections between bus stops and pedestrian crossings to avoid these problems.

Pedestrians have the right-of-way at unsignalized intersections except where they are legally prohibited from crossing. All locations where pedestrian crossings are allowed are required to be ADA-accessible. But ADA accessibility is sometimes missing on these projects, because a designer doesn't want to encourage people to cross there. Encouragement may be useful for those pedestrians with multiple routes and choices but not for those who need to cross the street at that location (to get to or from their bus stop, for instance).

We have previously commented to SHA that where they believe a safe ADA-accessible crossing cannot be provided, they should sign the intersections to prohibit the crossing and to direct pedestrians to the safest crossing. The SHA policy is to not post such signs at unsignalized intersections and that the lack of a ramp implies a prohibition of the crossing. A legal unmarked crossing remains however, and it's unclear to us how the pedestrian is supposed to know that it's unsafe to cross rather than thinking the agency just hasn't gotten around to putting the ramp in. Users of the public right-of-way depend on guidance from the operating agencies as to the safety of their facilities.

The other major issue in regard to pedestrian accommodation is the ability to take the most direct route across an intersection. When crosswalks are not provided on all legs of a signalized intersection, the pedestrian is often faced with the choice of the increased exposure of crossing the other three legs (as well as the time it take to do so) or by taking a chance and walking across the unmarked leg without any guidance. The latter can be particularly hazardous where split-phase signals are used (where opposing legs of an intersection get a green signal at different times.) Yet, only the smallest of the four subject intersections – MD187/West Cedar Lane – has the full complement of crosswalks included in the design. There may be a benefit of additional throughput for vehicles when crosswalks are eliminated, but it comes at a potential cost to pedestrian accessibility and possibly safety. We recommend that written waivers for the non-provision of these crosswalks be provided so that the trade-offs are known.

The staff focus on pedestrian accommodation for these projects is influenced by the high volume of travelers using all modes along these roads. State highways in Montgomery County have a pedestrian collision rate that is seven times that of County roads on a centerline-mile basis. Pedestrian collisions on State highways are more than twice as likely to result in fatalities as those on County roads. From the perspective of assessing safety problems and countermeasures, a standard measure of exposure is in incidents per vehicle-mile of travel (VMT). State highways have more collisions per mile and more fatalities per collision simply because they have higher traffic volumes and speeds. So high volume, high speed roads are often considered safe as they have lower collision rates when weighted by VMT.

However, from the perspective of a pedestrian, bicyclist, or transit user, the perception of safety on an adjacent roadway doesn't improve simply because there's more traffic on it. In general, the opposite is true; the greater the volume and speed, the greater the perceived safety problem. Wider roads with higher traffic volumes are typically more difficult to cross because there are more potential conflicts during a longer exposure time and fewer safe gaps in traffic to cross at unsignalized intersections. Because of the higher number of collisions on high volume roads and the greater likelihood of a pedestrian fatality on higher speed roads, it is even more important to use best engineering practices when we are making changes to these State roads.

Lighting

Lighting affects the safety of users of the public right-of-way, particularly in more urbanized areas. While signalized intersections on State highways in urban or densely developed suburban areas usually have some lighting, they are most often not designed to achieve a particular lighting level or consistency. Unsignalized intersections often have no lighting, creating potentially hazardous conditions for pedestrians who cross there, even though pedestrians have the right-of-way at such intersections and even though there are many bus stops at such intersections, as noted above. SHA's lighting policy is different from Montgomery County's, which is to provide continuous lighting on such roadways. It also differs from that of the American Association of State Highway and Transportation Officials (AASHTO), which also recommends continuous lighting as well as specific lighting levels at intersections.

Section 2-602 of the Annotated Code of Maryland requires that *“Access to and use of transportation facilities by pedestrians and bicycle riders shall be considered and **best***

engineering practices regarding the needs of bicycle riders and pedestrians shall be employed in all phases of transportation planning, including highway design, construction, reconstruction, and repair as well as expansion and improvement of other transportation facilities.” (emphasis added)

We are concerned that the variance from AASHTO and from SHA’s own Bicycle and Pedestrian Design Guidelines may put SHA’s lighting policy at odds with State law. Lighting plans have not yet been submitted for these projects but our experience on other recent projects provides some cause for concern. For example, the MD355/Montrose Parkway interchange project was designed with no lighting for a 900-foot length between the ends of the ramps, which were considered the only “intersections”. Because most of this length was on an elevated bridge in a wide right-of-way, the County found that the only lighting sources (vehicle headlights and the moon) were insufficient and spent \$1M to provide lighting for pedestrians as an addition to this project. Similarly, the County provided lighting for the state’s MD124 widening project now under construction. Lighting should have been considered a basic component of these projects.

During the day, both the pedestrian and the driver can act to avoid a potential collision. At night without adequate lighting, the faster moving party - the driver – is left without the advance information needed to avoid a collision. Even where we have “continuous lighting”, the spacing of fixtures is often inadequate to provide the desired level of lighting.

As we widen roads to accommodate more vehicular traffic, we must ensure that we provide adequate, safe facilities for other users of the public right-of-way and ensure that each crossing is as safe as it can be. Lighting along the roads covered by these projects should be evaluated for their adherence to current AASHTO lighting standards and upgraded where needed.

Landscaping

The Master Plan endorses a policy of maintenance and enhancement of Green Corridors along the major highways of the B-CC Master Plan area, intended to stabilize the residential character of the area along major highways:

“Maintain and enhance planting of vegetation along roadsides and in medians of major highway corridors. Much of the green character is already in place in Bethesda-Chevy Chase. Design guidelines include: placing a landscaped buffer between the curb and relocated sidewalks, placing trees in medians and along curbs, screening of front yard parking, and relocating utility poles to allow for optimum tree planting and sidewalks. Visibility for highway safety must also be considered. Protection and enhancement projects will require coordination between the Maryland State Highway Administration and the Montgomery County Department of Transportation, as well as local property owners, municipalities, and civic associations....”

All four proposed intersection projects are deficient in providing adequate landscaping. Taken as a whole, they would move us further away from the recommendation that the State highways be maintained as Green Corridors. They would not provide trees between the curb and sidewalk or shared use path, would remove many existing median trees, and they would make any future

landscaping projects in the right-of-way more difficult because what little space there is would be taken up with additional pavement.

We recommend that street trees be planted between the curb and sidewalks/shared use paths at a minimum. This would still fall short of the goal of getting trees in the median also, but trees along the sides of the road would at least frame the roadway and would provide a more pleasant environment for pedestrians and well as establishing a visual buffer for residents along these major roads.

The section of MD 355 between the NIH and NNMC campuses forms one possible exception to the general rule that street trees should consistently be located between the curb and the sidewalk. In this section, MD 355 is the public access between two federal facilities that each have their own master plans. These campus master plans reflect their facility needs for development and their landscaping components incorporate historic resource, environmental resource, viewshed, and security issues. While staff does not believe that a continuous, tree-lined MD 355 is necessarily inconsistent with the campus plans, we recognize that in this segment, the front lawns of the two federal facilities are a greater contributor to the Green Corridor concept than whatever SHA could accomplish in a limited right-of-way. We therefore urge SHA to work with both federal agencies to develop a landscaping plan for this roadway segment.

There are some additional locations where overhead utilities are an issue in the determination of whether shade trees can be accommodated. The first choice should be to choose species that can accommodate the pruning required to accommodate overhead wires, such as the London plane trees that have been used along East West Highway in Silver Spring. The second choice would be to provide ornamental trees that have a shorter mature height, as long as they do not interfere with sight distance. The third choice would be to provide shrubs and other plant materials between the curb and sidewalk to provide a psychological buffer for pedestrians and improve the appearance of the road. The proposed medians are generally too narrow to support the planting of shade trees, but there are also several locations where the proposed median is only four feet wide, for which SHA has proposed to provide an ashlar slate textured concrete. Because of the general lack of adequate landscaping on these projects, we believe that extraordinary measures should be taken to provide landscaping on these narrow medians. Normally, medians six feet or greater are planted with grass and those less than six feet wide are paved. The median of Connecticut Avenue (MD185) in Chevy Chase south of East West Highway (MD410) provides a good example of where the high-quality of this residential area prompted SHA to plant a very narrow median with liriopé. This fairly tough plant has survived well over the years and helps to break up visually what would be a large expanse of pavement in a fine neighborhood. We recommend that a similar treatment be provided on these projects where the median width is at least four feet wide.

SHA has proposed to provide decorative crosswalks on MD187 and MD355, reflecting their recognition of the need for a good streetscape treatment around the two federal campuses. We appreciate the inclusion of decorative crosswalks, but have two comments on the design. First, consideration should be given to the needs of the handicapped and the desire to have a bump-free path. Last year, the County Council took action to restrict the use of brick sidewalks because of

concerns raised by the Commission of People with Disabilities. To address this issue, we recommend that SHA consider providing a four-foot-wide smooth concrete panel in the middle or on the stop bar side of the proposed crosswalk to accommodate those who are more sensitive to the vibrations. Where large volumes of pedestrians are expected, SHA should consider making the crosswalks wider than ten feet.

In general, the staff comments on landscaping reflect the fact that in the need to focus on engineering and property/resource impacts, less attention has yet been directed toward landscaping details. Landscaped buffers with trees are needed on these wide roadways and a greater than usual effort is needed on the part of SHA to maximize opportunities to plant trees in constrained rights-of-way. We recommend that SHA continue to work with us to develop a mutually acceptable landscaping plan for each of the intersections.

Community Involvement

SHA has worked extensively with the community. They've made four presentations to the BRAC Implementation Committee and had more than forty other meetings with citizen groups and stakeholders. During the past year they have also presented these projects to the County Council, held a public workshop at Bethesda/Chevy Chase High School, made a presentation to the Washington Council of Governments on January 14, 2010, and discussed the projects with the Board during their roundtable discussion on January 21, 2010.

The BRAC Implementation Committee (BIC) is comprised of almost three dozen stakeholders that have met monthly over the last three-and-a-half years to provide feedback to the agencies implementing the BRAC and the transportation response. SHA and MDOT have regularly participated in these meetings.

On February 16, 2010, M-NCPPC staff led a visioning exercise with the BRAC Implementation Committee (BIC) in order to develop a vision for the BRAC planning area. The vision agreed upon by the BIC was that **"BRAC is a catalyst to build, create, and focus a world class center of medical excellence that preserves, enhances and respects the existing communities."** In addition, the committee created a list of 35 attributes that they believed embodied a successful community. Members of the committee were then asked to vote on these attributes. The top three attributes were:

1. Brand community as world class medical center where community can live, work, play, innovate, learn and heal
2. Ensure safe and reasonable access to existing communities
3. Ensure connections beyond BRAC projects

During a second exercise on April 27, 2010, members created a list of attributes that they would like to see included in the BRAC projects. The top attributes were:

1. Safe access
2. Systemwide interconnectedness
3. Sustainable vision for CBD and environs
4. Doesn't preclude long term objectives

Similar interests have been expressed by correspondence from the Coalition of Military Medical Center Neighbors, representing several area civic associations, in Appendix I-3. **We have benefited from the information and guidance obtained through these exercises in the review of this project and the preparation of our recommendations.**

Conclusion

We have worked extensively with SHA, MCDOT, NNMC, and NIH to continue to refine the design of these intersections and the other transportation projects in the State and County's response to the BRAC move. We have also met regularly with the members of the BRAC Implementation Committee, who have provided valued insight on their community's qualities and challenges, and the potential benefits and impacts of the proposed projects.

The physical constraints affecting these projects are extremely high, as reflected in the Appendix C-2 project cost estimate of \$110M. SHA has addressed both the short-term impact of the BRAC move as well as some of the chronic traffic congestion in this area.

We cannot accommodate all the people that would choose to travel to and through this area in single-occupant vehicles. To try to do so would reduce the desirability of this area by dividing neighborhoods with wide roadways that are devoid of landscaping and pedestrian facilities; such non-auto facilities would then only be used by those with no other choice. The Bethesda/Chevy Chase Master Plan takes the view that we should essentially stay with the road system we now have, but improve other modes of travel – pedestrian, bicycle, and transit – so that alternatives to the congested roadways exist, and that our public rights-of-way be well-landscaped to enhance the communities through which these major roads pass. **The key is to find the right balance between demand management, multimodal mobility, and community compatibility and insist on design excellence for projects that fit that balance.**

While the focus of these four projects is on vehicular mobility, we find that they do, within the context of the suite of other mobility projects and with the consideration of our staff recommendations, fulfill the priorities of the BRAC Implementation Committee to ensure safe access and connectivity to a world class center of medical excellence while promoting sustainable, long-range goals for the vitality of the communities that they serve.