OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

ACQUISITION,
TECHNOLOGY
AND LOGISTICS

SEP 1 4 2012

Finding of No Significant Impact
For
Maryland Route 187 (Old Georgetown Road) Intersection Improvement Project
At
West Cedar Lane and Oakmont Avenue

The Department of Defense Office of Economic Adjustment (OEA) has determined that the above-referenced intersection improvement will have no significant impact on the human environment. This Finding of No Significant Impact is based on the following attached documents:

- Maryland State Highway Administration Evaluation of the Environmental Effects of the MD 187 Intersection Improvement Project at West Cedar Lane and Oakmont Avenue, December 3, 2009

- Maryland State Highway Administration Reevaluation of the Environmental Effects of the MD 187 Intersection Improvement Project at West Cedar Lane and Oakmont Avenue, April 4, 2012

- Maryland State Highway Administration Response to OEA Request for Additional Information, August 20, 2012

These documents have been independently evaluated by OEA and determined to adequately and accurately discuss the purpose and need, environmental issues, and potential effects of the proposed intersection improvement project. Considering the significance criteria in 40 CFR §1508.27, I have determined that the information provided in the above-referenced documents provide sufficient evidence and analysis for determining that an Environmental Impact Statement is not required. OEA takes full responsibility for the accuracy, scope, and content of the attached Final Report.

Office of General Counsel
Reviewed as to Legal Sufficiency

Initial 30 Aug 2012
Date

Patrick J. O'Brien
Director
Office of Economic Adjustment

Attachments:
As stated

Martin O'Malley, *Governor*
Anthony G. Brown, *Lt. Governor*

State Highway Administration
Maryland Department of Transportation

Beverley K. Swaim-Staley, *Secretary*
Neil J. Pedersen, *Administrator*

December 3, 2009

Re: Project No. MO593A23
MD 187 @ Oakmont Avenue/W. Cedar Lane
Bethesda BRAC Intersection Improvements
Montgomery County

Mr. Nelson J. Castellanos
Division Administrator- Delmar Division
Federal Highway Administration
City Crescent Building
10 South Howard Street, Suite 2450
Baltimore, MD 21201

Attention: Mr. Jitesh Parikh

Dear Mr. Castellanos:

In accordance with CEQ Regulations, 23 CFR 771 and 23 CFR 774, the Maryland State Highway Administration (SHA) recommends that the proposed intersection improvements at the intersection of MD 187 (Old Georgetown Road) and Oakmont Avenue/West Cedar Lane in Montgomery County be classified as a Categorical Exclusion (CE) and requests your concurrence that the requirements of Section 4(f) do not apply to the temporary use of property within a historic site. We also request that the Federal Highway Administration (FHWA) make a *de minimis* impact finding with respect to minor permanent impacts to a historic site to comply with the requirements of Section 4(f).

Existing Conditions

The project is located at the intersection of MD 187 and Oakmont Avenue/West Cedar Lane in Bethesda, Maryland **(Attachment 1)**. MD 187, a north-south roadway, is classified as an Urban Principal Arterial with a posted speed limit of 40 miles per hour (mph). West Cedar Lane/Oakmont Avenue, an east-west roadway, is classified as an Urban Minor Arterial with a posted speed limit of 25 mph. The average daily traffic (ADT) on MD 187 was 49,950 vehicles per day (VPD) in 2008 and is expected to increase to 53,000 VPD by 2011. Trucks account for five percent of the current and future ADT on MD 187. The ADT on West Cedar Lane/Oakmont Avenue was 12,275 VPD in 2008 and is expected to increase to 14,250 VPD by 2011. Trucks account for four percent of the current and future ADT on West Cedar Lane/Oakmont Avenue.

Land use within the project area consists of a mix of residential, commercial and government/institutional. Besides a small pocket of the southeastern quadrant that houses Station 20 of the Bethesda Fire Department, the southeastern quadrant of the intersection is occupied entirely by National Institute of Health (NIH) property. Commercial properties comprise the corners of the northeast, northwest and southwest quadrants of the intersection. Beyond the immediate intersections, residential properties front both sides of Oakmont Avenue and southbound MD 187.

SHA is evaluating these intersection improvements in order to prepare for the influx of approximately 10,000 jobs that are expected to be added to the National Naval Medical Center (NNMC) and NIH by the year 2020 as a product of the Base Realignment and Closure (BRAC) process.

Proposed Action

The purpose of this project is to reduce congestion and improve traffic flow and safety at the intersection. Work consists of roadway widening, pavement reconstruction and resurfacing, curb and gutter construction, stormwater management, drainage improvements, signing, lighting, marking, signalization, upgrades to pedestrian and bicycle facilities and other associated improvements.

Additional minor right-of-way (ROW) and easements will be required from a total of 11 residential, commercial and government/institutional properties in order to complete the proposed improvements. With the exception of a perpetual easement required from NIH for stormwater management, all ROW and easements consist of strip takes along the frontage of properties. See Table 1 for total ROW and easement requirements.

TABLE 1: ROW and Easement Requirements

Fee-Simple ROW	Perpetual Easements	Temporary Construction Easements
0.064 acre	0.697 acre	0.693 acre

Environmental

On April 2, 2009, an Informal Public Workshop meeting was held at the Bethesda-Chevy Chase High School (4301 East-West Highway) to discuss the purpose and need of the project, explain the proposed schedule, and receive public comments **(Attachment 2).**

Having addressed the public concerns raised at the meeting, SHA has upgraded the Bethesda Trolley Trail from a five-foot sidewalk to a ten-foot shared use path along the east side of MD 187; revised the exclusive through lane on Westbound Cedar Lane to a shared/ through left turn lane to eliminate widening on Oakmont Avenue; provided a median cut through for pedestrians at the crosswalks; removed stormwater management facilities in heavily forested areas, and realigned MD 187 to maintain the Bethesda Fire Department's apron length.

One property within the Area of Potential Effects, the Walter P. Johnson House, is eligible for the National Register of Historic Places (NRHP). Minor impacts consisting of 0.004 acre (164 square feet) fee-simple ROW and 0.014 acre (618 square feet) of temporary construction easements are anticipated at the Walter P. Johnson House. On August 12, 2009, the Maryland Historical Trust (MHT) concurred that the proposed improvements would have no adverse effect on historic properties **(Attachment 3)**.

In accordance with 23 CFR 774, we request that FHWA make a *de minimis* impact finding regarding the minor impacts to the Walter P. Johnson House as a result of minor roadway widening and slope grading. Permanent impacts totaling 0.004 acre (164 square feet) of fee-simple ROW will not alter the characteristics that make the property eligible for the NRHP. This finding would satisfy the requirements of Section 4(f) and is supported by the Maryland State Historic Preservation Officer's concurrence that the project would have no adverse effect on historic properties. MHT has also acknowledged and agreed with SHA's intent to seek a *de minimis* impact finding **(Attachment 3)**.

This project meets the requirements for a *de minimis* impact finding based on the following criteria:

- The SHPO, as part of the Section 106 process, determined that the project would have no adverse effect on historic properties;
- The SHPO has been informed of FHWA's intent to make a *de minimis* impact finding based on their written concurrence in the Section 106 determination;
- The views of consulting parties participating in the Section 106 consultation have been considered.

Additionally, temporary construction easements totaling 0.014 acre (618 square feet) will be required from the Walter P. Johnson House during construction. In accordance with 23 CFR 774.13(d) and given that the improvements would occur by temporary occupancy only, the requirements of Section 4(f) would not apply in this instance based on the following criteria:

- The duration of the impact will be temporary, i.e., less than the time needed for construction of the project;
- There will be no change in ownership of the land;
- The scope of the work will be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) resource are minimal;
- There are no anticipated permanent adverse physical impacts; and
- The land being used will be fully restored, i.e., the resource will be returned to a condition which is at least as good as that which existed prior to the project.

See **Attachment 3** for a copy of MHT's concurrence with the temporary use criteria and that the temporary uses at the Walter P. Johnson House should not be subject to the requirements of Section 4(f).

Coordination with SHA's Environmental Programs Division confirmed that no wetlands, waterways or 100-year floodplains will be impacted by the proposed improvements. The proposed work will not impact fisheries resources, especially if sediment and erosion control methods, and Best Management Practices typically used for the protection of stream resources are utilized. The project is not located within the Chesapeake and Atlantic Coastal Bays Critical Area. The project would not impact any proposed or listed federal or state rare, threatened or endangered plant or animal species (**Attachments 4 & 5**).

Erosion and sediment (E&S) control plans are designed in accordance with MDE's current regulations. Areas disturbed for roadway widening, sidewalk, curb and gutter installation as well as cut slopes will be stabilized daily by using graded aggregate and/or topsoil, seed and mulch. Additional measures may include but will not be limited to silt fence, check dams, stabilized construction entrances, and other Best Management Practices. E&S plans will also be approved by the MDE.

Air and noise analyses are not warranted since the proposed project does not result in any significant capacity improvements. This project is identified as MO593A23 in the current STIP and 09TIP-M5-1 in the current TIP. This project is exempt from the requirement that a conformity determination be made (U.S. EPA Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans, Programs or Projects-Final Rule).

This project will not result in any meaningful changes in traffic volumes, vehicular mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the No-Build Alternative. As such, this project will generate minimal air quality impacts for the Clean Air Act criteria pollutants and has not been linked with any special Mobile Source Air Toxics (MSAT) concern. Consequently, this project is exempt from an analysis for MSATs.

Moreover, the EPA regulations for vehicle engines and fuels will cause overall MSATs to decline significantly over the next 20 years. Even after accounting for a 64 percent increase in vehicle miles traveled (VMT), FHWA predicts MSATs will decline in the range of 57 percent to 87 percent, from 2000 to 2020, based on regulations now in effect, even with a projected 64 percent increase in VMT. This will both reduce the background level of MSATs as well as the possibility of even minor MSAT emissions from this project.

Projects which are exempt from project level conformity are also exempt from the PM2.5 project level conformity determination requirements, in accordance with 40 CFR 93.126.

Exempt projects are listed in 40 CFR 93.126 in Table 2 and the proposed project is an example of Safety—Projects that correct, improve or eliminate a hazardous location or feature projects in that table. This project will eliminate structural deficiencies and will not increase traffic capacity.

No ROW would be required from any publicly-owned public park, recreation area, wildlife or waterfowl refuge. The project is located within a Priority Funding Area, and is therefore consistent with Maryland's Smart Growth Legislation. The proposed project will not provide new access to any new or planned development areas. Therefore, indirect impacts are not anticipated as a result of this project. No disproportionately high or adverse effects on minority or low-income populations will occur as a result of this project. The project is consistent with the Montgomery County General Plan, Adopted 1993.

In summary, the proposed project will not involve any significant environmental impacts to socioeconomic, natural, or cultural resources. It will not induce significant foreseeable alterations in land use or affect planned growth. As such, we request your concurrence in classifying this project as a CE with a *de minimis* impact finding, and that the temporary use of a historic site is not subject to the requirements of Section 4(f). If you agree with this determination, please indicate your approval on the signature line. Additionally, your signature will constitute Location Approval for the proposed project.

Sincerely,

Neil J. Pedersen
Administrator

by: _____
Gregory I. Slater, Director
Office of Planning and
Preliminary Engineering

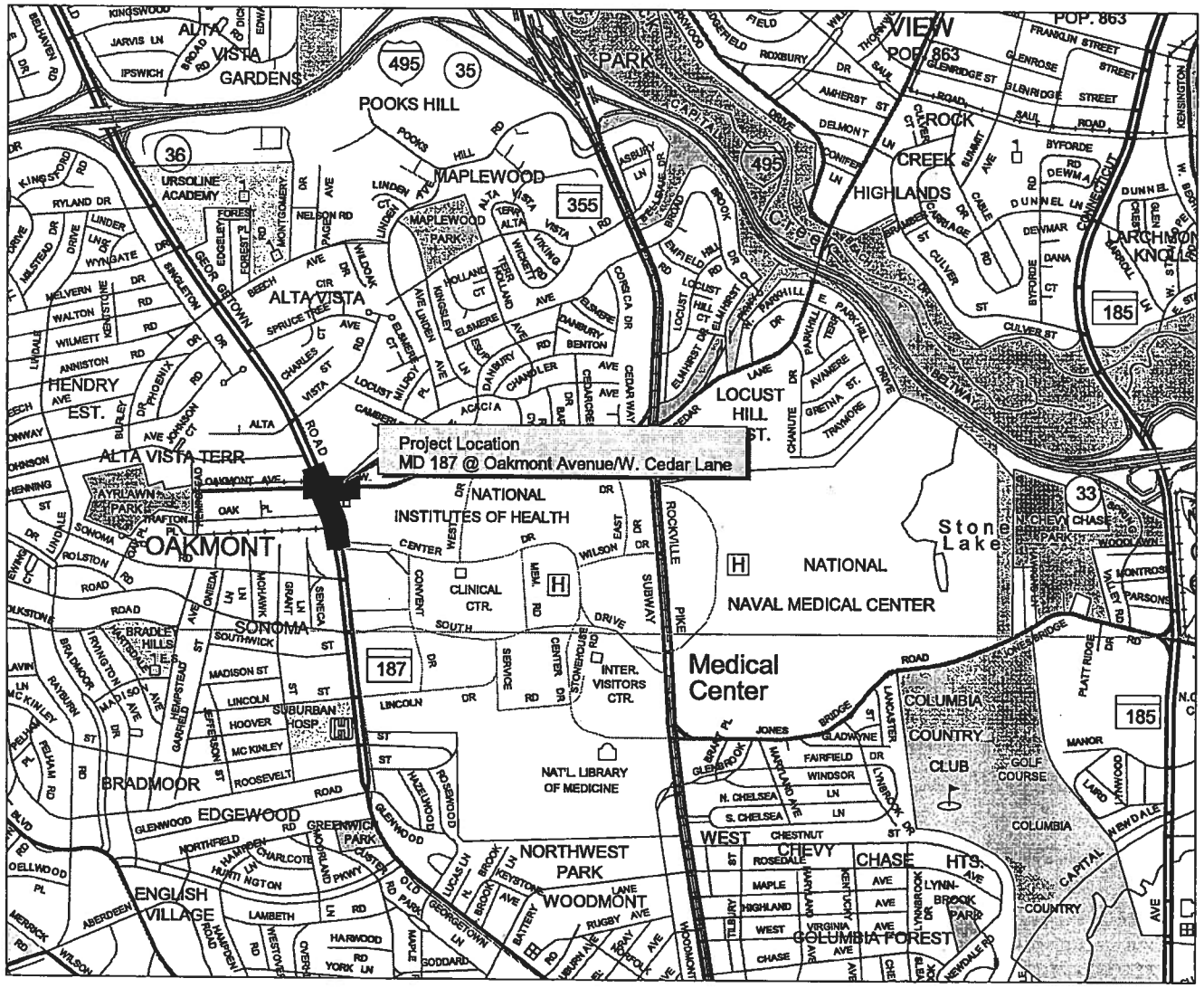
CONCURRENCE:

_____ 12/23/09
Federal Highway Administration Date
for Division Administrator

cc: Mr. Gary Gray, Chief, Federal Aid Programming Section, SHA
Mr. Thomas G. Hinchliffe, Real Property Supervisor, Office of Real Estate, SHA
Ms. Christina Lavoie, Transportation Engineer, Highway Design Division, SHA
Mr. Bradley Smith, Environmental Manager, Environmental Planning Division, SHA

Attachment 1

Project Location Map
MD 187 @ Oakmont Avenue/West Cedar Lane
Montgomery County



USGS Topo Quad Index
Roads
CO
IS
MD
OP
SR
US
MU
GV
County

N
W E
S

Kensington Quad

Attachment 2

Base Realignment and Closure (BRAC) Intersection Improvement Projects Bethesda

PROJECT NEWSLETTER • MARCH 2009

Design Progresses on 4 BRAC- related Intersections

The Maryland State Highway Administration (SHA) has initiated design activities for the four intersections in the vicinity of the National Naval Medical Center (NNMC) most affected by the Base Realignment and Closure (BRAC). Below are the project background, schedule, and information on the upcoming Public Informational Workshop where concept plans for the four intersection projects will be presented to the community.

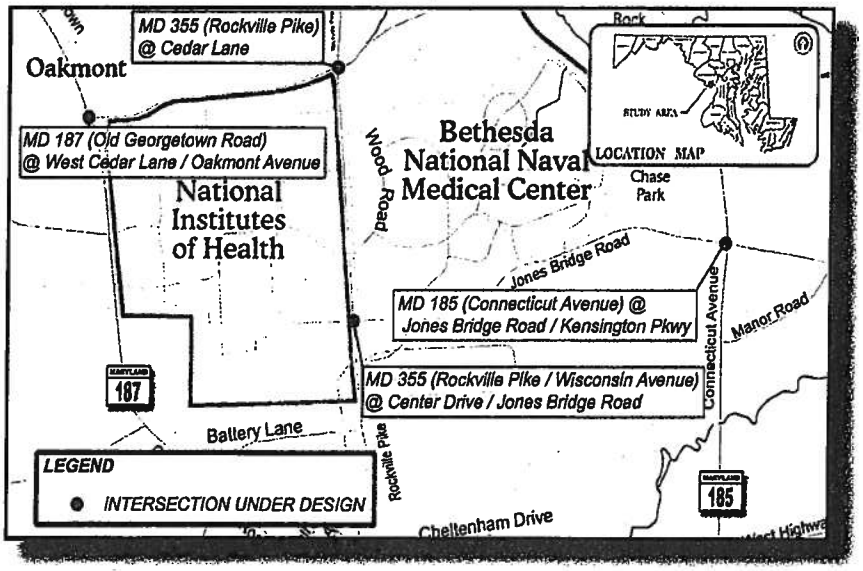
Attend the Public Meeting

SHA invites you to attend an Informational Workshop at which transportation improvements associated with four intersections near NNMC will be presented. This meeting format will allow attendees to review the concepts at their own pace and provide feedback. SHA staff and other agency representatives will be available to discuss the project issues, answer questions, and address any concerns you may have. No formal presentation will be given. Feel free to arrive at any time and walk through at your own convenience.

WHEN:	WHERE:
Thursday, April 2, 2009 5:30 PM to 7:30 PM	**Bethesda - Chevy Chase High School - Gymnasium** 4301 East - West Highway Bethesda, MD 20814

Project Background

Base Realignment and Closure, or "BRAC," is the congressionally authorized process used by the U.S. Department of Defense to reorganize and consolidate its military bases nationwide. In preparation for the 40,000 to 60,000 direct and indirect jobs coming to Maryland over the next six to ten years, SHA is designing short-term intersection improvements at four intersections in the Bethesda area (*see map*).



continued on back

Attachment 3

Martin O'Malley, *Governor*
Anthony G. Brown, *Lt. Governor*

State Highway Administration
MARYLAND DEPARTMENT OF TRANSPORTATION

Beverley K. Swaim-Staley, *Acting Secretary*
Neil J. Pedersen, *Administrator*

June 18, 2009

Re: Project No. MO593A21
BRAC Intersection: MD 187 at Oakmont Avenue/ West Cedar Lane
Montgomery County, MD
USGS *Kensington* 7.5' Quadrangle

Mr. J. Rodney Little
State Historic Preservation Officer
Maryland Historical Trust
100 Community Place
Crownsville MD 21032-2023

Dear Mr. Little:

Introduction and Project Description

This letter serves to inform the Maryland Historical Trust (MHT) of changes to the BRAC Intersection: MD 187 at Oakmont Avenue/West Cedar Lane, which was previously coordinated by letter to MHT dated December 4, 2008. The Maryland State Highway Administration's (SHA) finds that there will be no adverse effect to historic properties by the proposed project MO593A21.

This project is a single intersection breakout project from the BRAC intersection improvements that are planned for five intersections in this section of Montgomery County and that are in coordination with MHT. In the letter dated December 4, 2008, SHA presented the previous iteration of plans for this intersection, defined the APE for the project and identified six properties greater than forty five years of age within the APE, as well as the National Institute of Health, which has components of the campus that are eligible for listing in the National Register of Historic Places, but is not eligible in its entirety. The MHT concurred with submitted negative eligibility determinations for the six properties and agreed that there are no historically signification portions of the National Institute of Health in the APE on February 20, 2009. MHT did not agree that an additional property, the Walter P. Johnson House (M: 35-46), is outside the APE. The MHT requested that SHA prepare a DOE and Effect Assessment for the property.

Since that date, SHA has revised the original project scope. The same improvements are proposed, however the alignment has been shifted east affecting the Walter P. Johnson House at 9100 Old Georgetown Road in order to avoid impacts to the fire station. A total of 164 square feet of fee-simple right-of-way and 618 square feet of temporary construction easement will be required from 9100 Old Georgetown Road.

Revised project plans including right-of-way and easement requirements for MD 187 at Oakmont Avenue/ Cedar Lane are included as Attachment 1. Revised APE is included as Attachment 2.

Funding

Federal funds are anticipated for this project.

Area of Potential Effects

In determining the Area of Potential Effects (APE) for this project, SHA considered possible physical, visual, atmospheric, and audible impacts to historic properties. Though the proposed improvements are relatively minor in scope, the area is densely developed and many structures sit close to the roadway. Therefore, the APE for the historic standing structures has been defined to include the area of direct construction impacts as well as proposed right-of-way and easements, as indicated on the attached SHA quadrangle map for Bethesda. The APE for archaeology is defined as the limits of direct construction impacts.

Identification Methods and Results

Potentially significant architectural and archeological resources were both researched as part of the historic investigation instigated by the proposed intersection improvements at MD 187 at Oakmont Avenue/ West Cedar Lane.

Architecture: SHA Architectural Historian Jennifer Goold consulted the SHA-GIS Cultural Resources Database, the Maryland Inventory of Historic Properties (MIHP), the National Register of Historic Places (NRHP), and conducted research on the Internet and at the Enoch Pratt Free Library. A site visit was conducted on March 30, 2009.

The APE for this project is restricted to the area of direct construction impacts and the area occupied by required rights-of-way and easements. The APE contains seven properties with structure over forty-five years of age in addition to the NIH. Six of these properties and the NIH were coordinated with MHT by letter dated December 4, 2008. One Determination of Eligibility (DOE) is included for the additional property within the revised APE: the Walter P. Johnson House, at 9100 Old Bethesda Road (Attachment 3). SHA recommends that this property does meet Criterion B for listing in the NRHP.

Project plans at the Walter P. Johnson House include acquiring a total of 164 square feet of fee-simple right-of-way and 618 square feet of temporary construction easement will be needed. A narrow triangular strip will be lost from the front of the property and the slope will be graded at the north end of the front yard. Taking this slender slice of the already minimal front yard will not affect the character defining features of the house, which is eligible for its association with Hall of Fame pitcher Walter Johnson. (See views Attachment 4.) This property lost its integrity of setting when it was subdivided after Johnson's period of residency and through previous widening of Old Georgetown Road. Thus, the proposed intersection improvement to MD 187 and Oakmont Avenue/ Cedar Lane will have no adverse effect on historic properties. Upon your agreement that this right-of-way acquisition will not adversely impact the historic property, SHA intends to propose *de minimis* impact finding to the Federal Highway Administration (FHWA) for Section 4(f) use of the Walter P. Johnson House (M: 31-46). The necessary grading at the Walter P. Johnson House will temporarily impact approximately 618 square feet/acres/square meters/hectares of the property. Given that these improvements would occur by temporary occupancy only, the requirements of Section 4(f) would not apply in this instance based on your agreement with the following criteria as the officials with jurisdiction.

- The duration of the impact will be temporary, i.e., less than the time needed for construction of the project;
- There will be no change in the ownership of the land;
- The scope of the work will be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) resource are minimal;
- There are no anticipated permanent adverse physical impacts; and
- The land being used will be fully restored, i.e., the resource will be returned to a condition which is at least as good as that which existed prior to the project.

Archeology: SHA Archeologist Lisa Kraus assessed the potential of the referenced project based on review of previous archeological studies (Comer 1997 and 2001), soil survey data, topographic and historic maps, aerial photographs, and site file data in the SHA-GIS Cultural Resources Database. A site visit was made on May 20, 2009. For archeology, the APE is defined as the limits of proposed construction, where ground disturbance would occur.

Soils are classified as Urban Land-Glenelg-Wheaton Association, and the MD187/West Cedar Lane intersection is mapped as Glenelg-Urban Land complex, with 8-15% slopes. Although terraces are present nearby, the intersection is situated in an area characterized by steep slopes, many of which have clearly been graded to accommodate the modern roadbed. Although the soil classification allows that some soils may be

undisturbed, the MD 187 intersection with Cedar Lane/Oakmont Avenue has been impacted by earlier road and sidewalk construction, landscaping, utility installation, and commercial development. The May 20 site visit confirmed that the APE has been extensively disturbed.

The Griffith (1794) map shows no roads or structures in the APE, but Martenet & Bond's 1865 map of Montgomery County shows road alignments similar to modern MD 187, but no structures, within the APE. No archeological surveys have included the APE. A number of archeological sites have been recorded both west (18MO35, 18MO243, 18MO354, 18MO462 18MO463, 18MO464, 18MO465) and east of MD 355 (18MO555-MO557, 18MO664-MO648) on the National Institute of Health (NIH) property (Attachment 4). Many of the sites contain prehistoric components dating to the Late Archaic, Early Woodland, and Middle Woodland periods. E.A. Comer (1997; 2001) conducted Phase I and II investigations within the NIH property. Several concentrations of prehistoric, historic, and modern artifacts were identified, but the stratigraphy of each site was determined to be so disturbed that none of the sites was eligible for the National Register.

In light of the negative survey coverage in the immediate vicinity of the APE, the extent of prior disturbance in the APE, and the fact that the natural terrain would likely be unsuitable for significant prehistoric or historic use, it is unlikely that any archeological resources will be impacted and no further work is recommended.

Review Request

Please examine the attached maps, plans, photographs, DOE form, and Eligibility and Effects Table (Attachment 5). We request your concurrence by July 12, 2009 that there would be no adverse effects on historic properties by the intersection improvements at MD 187 at Oakmont Avenue/ West Cedar Lane. Based on your concurrence with our determination of no adverse effect and consideration of the views of any consulting parties participating in the Section 106 consultation, SHA intends to request that the FHWA make a de minimis impact finding for the minor Section 4(f) use of the Walter P. Johnson House. By carbon copy, we invite the Montgomery County Historic Preservation Commission to provide comments and participate in the Section 106 process. Pursuant to the requirements of the implementing regulations found at 36 CFR Part 800, SHA seeks their assistance in identifying historic preservation issues as they relate to this specific project (see 36 CFR §800.2(c)(3) and (5), and §800.3(f) for information regarding the identification and participation of consulting parties, and §800.4, and §800.5 regarding the identification of historic properties and assessment of effects). For additional information regarding the Section 106 regulations, see the

Advisory Council on Historic Preservation's website, www.achp.gov, or contact the Maryland State Highway Administration or the Maryland Historical Trust. If no response is received by July 12, 2009, we will assume that this office decline to participate. Please call Jennifer Goold at 410-514-2899 (or via email at jgoold@sha.state.md.us) with questions regarding standing structures for this project. Lisa Kraus may be reached at 410-514-2884 (or via email at lkraus@sha.state.md.us) with concerns regarding archeology.

Very truly yours,

Julie M. Schablitsky
Assistant Division Chief
Environmental Planning Division

Attachments:
1) Project plans
2) Area of Potential Effects map
3) DOE form
4) Project views
5) Eligibility and Effects Table

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cc: Mr. Bradley Smith, SHA- EPLD
Ms. Christina Lavoie, SHA-EPLD
Ms. Lisa Kraus, SHA-EPLD
Ms. Jennifer Goold, SHA-EPLD
Dr. Julie M. Schablitsky, SHA-EPLD
Mr. Scott Whipple, Montgomery County Historic Preservation Commission (w/Attachments)
Ms. Margaret N. Alexander (w/Attachments)

Concurrence with the MD State Highway Administration's Determination(s) of Eligibility and/or Effects

Project Number: MO593A21 **MHT Log No.** 200902445
Project Name: BRAC Intersections: MD 187 @ Oakmont Ave./ Cedar Lane
County: Montgomery
Letter Date: June 18, 2009

The Maryland Historical Trust has reviewed the documentation attached to the referenced letter and concurs with the MD State Highway Administration's determinations as follows:

Eligibility (as noted in the Eligibility Table [Attachment 5]):

[X] Concur
[ ] Do Not Concur

Effect (as noted in the Effects Table [Attachment 5]):

[ ] No Properties Affected
[X] No Adverse Effect
[ ] Conditioned upon the following action(s) (see comments below)
[ ] Adverse Effect

Agreement with FHWA's Section 4(f) criteria of temporary use (as detailed in the referenced letter, if applicable):

[X] Agree

Agreement with FHWA's de minimis impact finding (as detailed in the referenced letter, if applicable):

[X] Agree

Comments:

WE CONCUR WITH SHA THAT THE WALTER P. JOHNSON HOUSE (MIHP No. M: 35-46) IS ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES.

By: _____ 8-12-09
MD State Historic Preservation Office/ Date
Maryland Historical Trust

Return by U.S. Mail or Facsimile to:
Dr. Julie M. Schablitsky, Assistant Division Chief, Environmental Planning Division,
MD State Highway Administration, P.O. Box 717, Baltimore, MD 21203-0717
Telephone: 410-545-8870 and Facsimile: 410-209-5046

Attachment 4

MARYLAND
DEPARTMENT OF
NATURAL RESOURCES

Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor
John R. Griffin, Secretary
Eric Schwaab, Deputy Secretary

January 13, 2009

Mr. Bruce M. Grey
Maryland Department of Transportation
State Highway Administration
707 North Calvert Street
Baltimore, MD 21202

RE: Environmental Review for Project No. MO593A21, Bethesda BRAC Intersections Improvements, Montgomery County, Maryland.

Dear Mr. Grey:

For the intersections of MD 355 at West Cedar Lane, MD 355 at Jones Bridge Road, MD 187 at West Cedar Lane and MD 185 at Jones Bridge Road, the Wildlife and Heritage Service has determined that there are no State or Federal records for rare, threatened or endangered species within the boundaries of the project site as delineated. As a result, we have no specific comments or requirements pertaining to protection measures at this time. This statement should not be interpreted however as meaning that rare, threatened or endangered species are not in fact present. If appropriate habitat is available, certain species could be present without documentation because adequate surveys have not been conducted.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at (410) 260-8573.

Sincerely,

Lori A. Byrne

Lori A. Byrne,
Environmental Review Coordinator
Wildlife and Heritage Service
MD Dept. of Natural Resources

ER# 2008.2492.mo
Cc: G. Golden, DNR

Attachment 5

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401
410/573-4575

2 '09 JAN 12 PM 1:23

January 7, 2009

State Highway Administration
Maryland Department of Transportation
707 North Calvert Street
Baltimore, MD 21202

RE: Project No. MO593A21 Bethesda BRAC Intersections Improvements Montgomery County

Dear: Bruce M. Grey

This responds to your letter, received December 10, 2008, requesting information on the presence of species which are federally listed or proposed for listing as endangered or threatened within the vicinity of the above reference project area. We have reviewed the information you enclosed and are providing comments in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

Except for occasional transient individuals, no federally proposed or listed endangered or threatened species are known to exist within the project impact area. Therefore, no Biological Assessment or further section 7 Consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For information on the presence of other rare species, you should contact Lori Byrne of the Maryland Wildlife and Heritage Division at (410) 260-8573.

Effective August 8, 2007, under the authority of the Endangered Species Act of 1973, as amended, the U.S. Fish and Wildlife Service (Service) removed (delist) the bald eagle in the lower 48 States of the United States from the Federal List of Endangered and Threatened Wildlife. However, the bald eagle will still be protected by the Bald and Golden Eagle Protection Act, Lacey Act and the Migratory Bird Treaty Act. As a result, starting on August 8, 2007, if your project may cause "disturbance" to the bald eagle, please consult the "National Bald Eagle Management Guidelines" dated May 2007.

If any planned or ongoing activities cannot be conducted in compliance with the National Bald Eagle Management Guidelines (Eagle Management Guidelines), please contact the Chesapeake Bay Ecological Services Field Office at 410-573-4573 for technical assistance. The Eagle Management Guidelines can be found at:
http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf.

In the future, if your project can not avoid disturbance to the bald eagle by complying with the Eagle Management Guidelines, you will be able to apply for a permit that authorizes the take of bald and golden eagles under the Bald and Golden Eagle Protection Act, generally where the take to be authorized is associated with otherwise lawful activities. This proposed permit process will not be available until the Service issues a final rule for the issuance of these take permits under the Bald and Golden Eagle Protection Act.
An additional concern of the Service is wetlands protection. Federal and state partners of the Chesapeake Bay Program have adopted an interim goal of no overall net loss of the Basin's remaining wetlands, and the long term goal of increasing the quality and quantity of the Basin's wetlands resource base. Because of this policy and the functions and values wetlands perform, the Service recommends avoiding wetland impacts. All wetlands within the project area should be identified, and if construction in wetlands is proposed, the U.S. Army Corps of Engineers, Baltimore District, should be contacted for permit requirements. They can be reached at (410) 962-3670.

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interests in these resources. If you have any questions or need further assistance, please contact Devin Ray at (410) 573-4531.

Sincerely,

Leopoldo Miranda Castro
Field Supervisor

Martin O'Malley, *Governor*
Anthony G. Brown, *Lt. Governor*

State Highway Administration
Maryland Department of Transportation

Beverley K. Swaim-Staley, *Secretary*
Melinda B. Peters, *Administrator*

MEMORANDUM

TO: Ms. Barb Solberg, Chief
Highway Design Division
Office of Highway Development

FROM: Donald H. Sparklin
Division Chief
Environmental Planning Division

DATE: 04/04/2012

SUBJECT: Project No. MO593B21: MD 187 at Oakmont Avenue/West Cedar Lane
Bethesda BRAC Project
Project ID. 10-12-071
REEVALUATION

The following information indicates that the current design plan, when compared to that for which a CE was approved will not result in significantly different environmental impacts for this project.

A. Date Categorical Exclusion (CE) approved: 12/23/2009

B. **Are the proposed improvements different than those approved for the CE ?**

☑ Yes ☐ No

A reevalution was approved on December 15, 2010 for tree impacts within the National Institute of Health (NIH) Forest Conservation Plan easement area. This current reevaluation covers a realignment of the baseline of northbound MD 187 so the Bethesda Fire Department's driveway apron is not compromised. The realignment of the baseline requires a shifting of the curb line and sidewalk closer towards the Walter P. Johnson House (M:35-46). To avoid direct impacts, a 50 ft. long concrete landscape wall will be placed along the sidewalk in front of the Walter P. Johnson House. The work will also include conversion of a concrete channel to a dry swale (approximately 350 linear feet) between the downstream end of the existing grass channel and the upstream end of the NIH's NW Child Care Center swale.

Click the paperclip icon in the lower left corner or click Document>Attach a File... to attach additional comments.

My telephone number/toll-free number is 410.545.8564
Maryland Relay Service for Impaired Hearing or Speech 1.800.735.2258 Statewide Toll Free
Street Address: 707 North Calvert Street • Baltimore, Maryland 21202 • Phone 410.545.0300 • www.roads.maryland.gov

C. **Are the environmental impacts different?** ☑ Yes ☐ No

The initial direct impacts to the Walter P. Johnson House property included 164 square feet of fee simple and 618 square feet of temporary easement and now include 270 square feet of fee simple and 458 square feet of temporary easement. MHT re-concurred on their original determination of "no adverse effect" with a Section 4(f) "de minimis" finding on March 19, 2012. (see attached). In addition, removal of the concrete channel will not require any permits.

D. **Are there changes in the project surroundings (new development, etc.)?** ☐ Yes ☑ No

E. **Is the CE classification still valid?** ☑ Yes ☐ No

If no, what additional or supplemental documentation is required?

MHT concurrence on "no adverse effect" determination and Section 4(f) "de minimis" finding was received on March 19, 2012 (see attached). FHWA also re-concurred via email in the de minimis determination for the slightly additional impacts to the historic property.

F. **Are the commitments shown on the plans?** ☑ Yes ☐ No ☐ N/A

Identify any prior commitments (including those related to engineering). Discuss how commitments are/will be addressed.

Concur: Donald Sparklin Digitally signed by donald sparklin DN: cn=donald sparklin, o=sha, ou=epld, email=dsparklin@sha.state.md.us, c=US Date: 2012.04.04 11:35:02 -04'00'

Date: 04/04/2012

Donald H. Sparklin
Division Chief
Environmental Planning Division

Attachments

cc:
Ms. Caryn G. Brookman, SHA-EPLD (w/Attachments)
Ms. Keilyn Perez, FHWA-DelMar Division "
Ms. Natacha Valentin, SHA-HDD "
Mr. Guy Talerico, SHA-FAPS "

Click the paperclip icon in the lower left corner or click Document>Attach a File... to attach additional comments.

From: Keilyn.Perez@dot.gov
To: Caryn Brookman
Cc: Elizabeth Habic
Subject: RE: MD 187 at Oakmont/Cedar Lane-BRAC; Reevaluation
Date: Wednesday, March 21, 2012 1:59:59 PM

Caryn,

A re-evaluation of the document with updates and supporting documentation will be ok with me.

Thanks,

Keilyn Pérez
Area Engineer [District 3 & 6]
FHWA, DelMar Division

From: Caryn Brookman [mailto:CBrookman@sha.state.md.us]
Sent: Tuesday, March 20, 2012 11:57 AM
To: Perez, Keilyn (FHWA)
Cc: Elizabeth Habic
Subject: MD 187 at Oakmont/Cedar Lane-BRAC; Reevaluation

Hi Keilyn,

I have a BRAC project that needs a reevaluation of the CE due to the addition of a landscape wall in front of an historic property. The original CE/de minimis that you approved on 12/23/2009 included impacts to this property and, at the time, the direct impacts included 164 sq. ft of fee simple and 618 sq. ft of temporary easement. The impacts now stand at 270 sq ft. fee simple and 458 sq ft. of temporary easement. MHT re-concurred on the de minimis/temporary occupancy criteria yesterday.

Do you want a separate, new de minimis letter/temporary occupancy letter or should I simply define the change in a reevaluation with all supporting documentation?

Please advise. Thanks,

Caryn G. Brookman

Environmental Manager

Office of Planning and Prelminiary Engineering

Environmental Planning Division

410-545-8698 (SHA)

cbrookman@sha.state.md.us

443-520-8516 (Blackwater)

caryn@blackwaterenvironmentalgroup.com

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Concurrence with the MD State Highway Administration's Determination(s) of Eligibility and/or Effects

Project Number: MO593A21 **MHT Log No.** 201201186
Project Name: BRAC Intersections: MD 187 @ Oakmont Ave./ Cedar Lane
County: Montgomery
Letter Date: March 7, 2012

The Maryland Historical Trust has reviewed the documentation attached to the referenced letter and concurs with the MD State Highway Administration's determinations as follows:

Eligibility (as noted in the Eligibility Table [Attachment N/A]):

[ ] Concur
[ ] Do Not Concur

Effect (as noted in the Effects Table [Attachment 5]):

[ ] No Properties Affected
[X] No Adverse Effect
[ ] Conditioned upon the following action(s) (see comments below)
[ ] Adverse Effect

Agreement with FHWA's de minimis impact finding (as detailed in the referenced letter, if applicable):

[X] Agree

Comments:

By: Jim Zaknoid
MD State Historic Preservation Office/
Maryland Historical Trust

3/19/2012
Date

Return by U.S. Mail or Facsimile to:
Dr. Julie M. Schablitsky, Assistant Division Chief, Environmental Planning Division,
MD State Highway Administration, P.O. Box 717, Baltimore, MD 21203-0717
Telephone: 410-545-8870 and Facsimile: 410-209-5046

Martin O'Malley, *Governor*
Anthony G. Brown, Lt. *Governor*

State Highway Administration
MARYLAND DEPARTMENT OF TRANSPORTATION

Darrell B. Mobley, *Acting Secretary*
Melinda B. Peters, *Administrator*

August 20, 2012

RE: OEA Request for Additional Information
MD 187 at Oakmont Avenue/W. Cedar Lane
Montgomery County, Maryland

Mr. David F. Witschi, P.E.
Associate Director
Office of Economic Adjustment
Department of Defense
2231 Crystal Drive, Suite 520
Arlington, VA 22202

Dear Mr. Witschi:

The Maryland State Highway Administration (SHA) is hereby providing a response to the Office of Economic Adjustment's (OEA) request for additional information on the Bethesda Base Realignment and Closure Act (BRAC) projects. At this time, the response is related to the MD 187at Oakmont Avenue/W. Cedar Lane intersection project in Montgomery County.

Independent Utility:

The intersection improvements proposed for the Base Realignment and Closure (BRAC) in Bethesda at the MD 187 (Old Georgetown Road) and W. Cedar Lane/Oakmont Avenue project are designed to complement three other BRAC intersection projects [MD 185 (Connecticut Avenue) and Jones Bridge Road/Kensington Parkway; MD 355 (Rockville Pike) and West Cedar Lane/Cedar Lane; and MD 355 (Rockville Pike) and Jones Bridge Road/Center Drive] to provide overall improvement to traffic operations and safety in the immediate vicinity of the Walter Reed National Military Medical Center, Bethesda, Maryland. However, based on extensive traffic studies, each of the Bethesda BRAC intersection projects connects logical termini, will have independent utility and benefit to the area even if the other BRAC associated projects are never constructed, and will not restrict consideration of alternatives studied for each BRAC project or for other reasonably foreseeable transportation projects.

During development of the BRAC intersection improvement concepts, SHA used operational analysis tools that assessed the isolated intersection operations (Level of Service calculations based on the Highway Capacity Manual methodologies and the Critical Lane Volume methodology) as well as tools that assessed the network-wide benefits (travel time studies and delay studies using Synchro/SimTraffic software) (**Attachment 1**). The results of these analyses indicated that the proposed improvements at each intersection would be expected to provide tangible operational benefits to the transportation system whether they were constructed individually or as part of the overall BRAC intersection improvement program (**Attachment 2**).

Alternatives Evaluation:

During Preliminary Engineering Design, SHA studied alternatives and design modification at the MD 187 at W. Cedar Lane / Oakmont Avenue intersection to help reduce environmental and right-of-way impacts while still providing operational benefits to the intersection. The following alternatives were studied:

- A split-phased signal for the W. Cedar Lane and Oakmont Avenue approaches was analyzed; the results indicate that the split-phasing solution provides operations as-good or better than our previously preferred alternative, while avoiding impacts on Oakmont Avenue, which is currently a 20-foot, two-lane undivided local street. This alternative was accepted into the current design. The previously preferred option included providing concurrent protected left turn phasing on the cross streets at this intersection which would have required construction of an exclusive left turn lane on Oakmont Avenue. By changing to split phasing, SHA was able to keep the existing shared lane on the Oakmont Avenue approach.
- Placement of the stormwater management facility on private property versus National Institute of Health (NIH) property and the type of facility to be constructed was studied. A linear facility on NIH property was chosen to minimize impacts to existing trees.
- A study to reduce grading impacts due to widening and sidewalk reconstruction in front of the historical Walter Johnson House was conducted. A landscape retaining wall has been included in the project to prevent undermining of the porch, which could lead to structural instability.
- In order to avoid relocating the Bethesda Fire Department, a study was conducted to allow them to maintain continued operation during and after construction of the widening. This study led to a decision to widen the roadway on both sides in order to hold the curb line at the fire house, allowing them full use of their parking lot for vehicle maintenance and testing.

- For safety reasons, a study was conducted to evaluate access to the NIH building in the south west quadrant of the intersection. The study led to the decision to construct a right-out-only driveway onto Oakmont Avenue and a right-in/right-out driveway onto MD 187 to improve intersection functionality, capacity, and safety.

Additional design modifications have been taken into consideration and accepted into the current design to reduce environmental and right-of-way impacts:

- Reducing the lane widths from 11 feet to 10 feet
- Tightening the intersection geometrics
- Varying the buffer width between the roadway and sidewalk/shared use path for residential versus institutional properties to reduce right-of-way impacts.

2012 Categorical Exclusion Reevaluation:

As per SHA's reevaluation process which has been accepted by FHWA, for documents classified as a Categorical Exclusion only scope changes and the environmental impacts associated with the scope changes are evaluated and documented in the reevaluation. The environmental impacts associated with the scope changes for MD 187 only included historic resource impacts. The addition of the retaining wall at the Johnson P. Walter House reduced the potential for an "adverse effect" to the historic property. The scope change associated with the conversion of the existing concrete channel to a dry swale did not induce environmental impacts or require the need for a permit. This was noted in the reevaluation. No further documentation is warranted.

2011 Traffic Counts

SHA has used a consistent volume data set throughout the design process to assess existing and projected traffic operations at each of the BRAC study intersections. The traffic data was developed using base-year 2007 traffic counts (pre-BRAC), and year 2011 traffic forecasts were developed that accounted for the number of additional vehicle trips projected to be generated by new employees and extra visitors to NMMC following BRAC implementation. All analyses results presented in the OEA applications were based on these 2011 forecasts. To supplement the 2011 forecasts, SHA performed additional traffic counts in March 2012 following BRAC implementation. These counts confirmed that the traffic volumes entering and exiting the NMMC gates have increased at a rate consistent with SHA projections. However, the

2012 traffic counts appeared to be under-reporting the peak hour demand through the study area intersections, because severe congestion throughout the study area constrains the amount of traffic that can actually pass through the intersections during the peak hours. Therefore, SHA has continued to design the intersection improvements based on the 2011 forecast volumes, rather than the raw 2012 traffic count volumes, because the 2011 forecasts provide a better reflection of the actual demand that needs to be served by the intersection improvements.

If you have any questions or need additional information, please feel free to contact Ms. Caryn G. Brookman, Environmental Manager, at 410-545-8698 or via email cbrookman@sha.state.md.us, Mr. Matt Snare, Traffic Engineer, at 410-545-5646 or via email msnare@sha.state.md.us, or Ms. Rebecca Lichtenstein, Project Manager, at 410-545-8911 or via email rlichtenstein@sha.state.md.us. They will be happy to assist you.

Sincerely,

Kirk G. McClelland
Director
Office of Highway Development

Enclosures

cc: Mr. Dennis M. Atkins, SHA, Environmental Planning Division
Mr. Phillip Bobitz, Federal Highway Administration
Ms. Caryn G. Brookman, SHA, Environmental Planning Division
Ms. Rebecca Lichtenstein, SHA, Highway Design Division
Ms. Jeanette Mar, Federal Highway Administration
Ms. Jeannette Musill, Office of Economic Adjustment
Mr. Jitesh Parikh, Federal Highway Administration
Ms. Anna Price, Federal Highway Administration
Ms. Shannon Slick, SHA, Highway Design Division
Ms. Barb Solberg, SHA, Highway Design Division
Mr. Don Sparklin, SHA Environmental Planning Division

Attachment 1

MEMORANDUM

Prepared by: Matt Snare, SHA Travel Forecasting & Analysis Division

Date: September 23, 2009

Subject: SHA Intersection Improvement Program for NNMC in Bethesda, Maryland

Re: List of Quantitative Benefits of Proposed Intersection Improvements

---

This brief memorandum presents the anticipated benefits of the proposed improvements at the SHA BRAC priority intersections near National Naval Medical Center in Bethesda, Maryland, including MD 355 at Cedar Lane, MD 355 at Jones Bridge Road, MD 185 at Jones Bridge Road/Kensington Parkway, and MD 187 at Cedar Lane. The purpose of this memorandum is to provide a list of specific quantitative improvements that can be presented to the general public and/or elected officials to demonstrate the benefits of the projects. These benefits reflect the package of improvements discussed at the September 10, 2009 meeting between SHA and Montgomery County, including the improvements proposed given the potential funds from the TIGER grant application.

Intersection Improvements:

MD 355 at Cedar Lane

In the year 2011, the proposed modifications at this intersection (Phases 1, 2, 2A, 2B) are projected to...

- Reduce vehicle delay by 36% during the AM peak period from 136 sec/veh to 87 sec/veh
- Reduce vehicle delay by 46% during the PM peak period from 168 sec/veh to 90 sec/veh
- Improve the volume-to-capacity ratio during the AM peak period by 17% from 1.35 to 1.12
- Improve the volume-to-capacity ratio during the PM peak period by 16% from 1.43 to 1.20
- Save motorists approximately $2.3 million per year in delay costs*
- The proposed improvements at MD 355 and Cedar Lane would be expected to provide operations as-good or better than pre-BRAC conditions through the year **2022**, despite the additional traffic generated from the BRAC action and other local developments.

MD 355 at Jones Bridge Road

In the year 2011, the proposed modifications at this intersection (Full Build) are projected to...

- Reduce vehicle delay by 36% during the AM peak period from 57 sec/veh to 37 sec/veh
- Reduce vehicle delay by 53% during the PM peak period from 105 sec/veh to 49 sec/veh
- Improve the volume-to-capacity ratio during the AM peak period by 17% from 0.95 to 0.79
- Improve the volume-to-capacity ratio during the PM peak period by 18% from 1.18 to 0.97
- Save motorists approximately $1.1 million per year in delay costs*
- The proposed improvements at MD 355 and Jones Bridge Road would be expected to provide operations as-good or better than pre-BRAC conditions through the year **2024**, despite the additional traffic generated from the BRAC action and other local developments.

MD 185 at Jones Bridge Road / Kensington Parkway

In the year 2011, the proposed modifications at this intersection (Phases 1, 1A) are projected to...

- Reduce vehicle delay by 42% during the AM peak period from 146 sec/veh to 85 sec/veh
- Reduce vehicle delay by 24% during the PM peak period from 194 sec/veh to 148 sec/veh
- Improve the volume-to-capacity ratio during the AM peak period by 19% from 1.29 to 1.05
- Improve the volume-to-capacity ratio during the PM peak period by 13% from 1.40 to 1.22
- Save motorists approximately $1.9 million per year in delay costs*
- The proposed improvements at MD 185 and Jones Bridge Road would be expected to provide operations as-good or better than pre-BRAC conditions through the year **2018**, despite the additional traffic generated from the BRAC action and other local developments.

MD 187 at Cedar Lane

In the year 2011, the proposed modifications at this intersection (Full Build) are projected to...

- Reduce vehicle delay by 12% during the AM peak period from 31 sec/veh to 27 sec/veh
- Reduce vehicle delay by 53% during the PM peak period from 83 sec/veh to 39 sec/veh
- Improve the volume-to-capacity ratio during the AM peak period by 9% from 0.87 to 0.79
- Improve the volume-to-capacity ratio during the PM peak period by 26% from 1.15 to 0.85
- Save motorists approximately $600,000 per year in delay costs*
- The proposed improvements at MD 187 and Cedar Lane would be expected to provide LOS E or better operations through the year **2027**, despite the additional traffic generated from the BRAC action and other local developments.

Network Improvements:

Fuel Consumption

In the year 2011, the proposed modifications to the network are projected to...

- Reduce fuel consumption in the study area by over 1,000 gallons each day during the peak hours
- At $2.50 per gallon, this reduction in fuel consumption equates to a total user cost savings of approximately $1.6 million per year

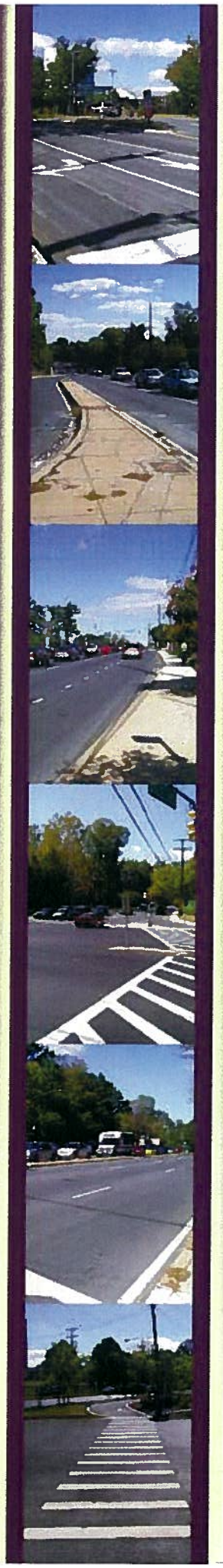
Greenhouse Emissions

In the year 2011, the proposed modifications to the network are projected to...

- Reduce emissions of carbon monoxide (CO), nitrogen oxides (NO_x), and volatile oxygen compounds (VOC) by 38% during the AM peak hour
- Reduce emissions of carbon monoxide (CO), nitrogen oxides (NO_x), and volatile oxygen compounds (VOC) by 18% during the PM peak hour

*Note: Delay costs based on a user value of time of $24.64 per hour, as assumed in the TIGER Grant application

BRAC Base Realignment and Closure



Traffic and Intersection Improvement Studies for Base Realignment and Closure

Bethesda National Naval Medical Center

Montgomery County, Maryland

Summary Report

February 2009

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Maryland Department of Transportation
State Highway Administration

Regional and Intermodal Planning Division

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BRAC Executive Summary

National Naval Medical Center

Base Realignment and Closure or "BRAC" is the congressionally authorized process the U.S. Department of Defense has used to reorganize and consolidate its base structure to more efficiently and effectively support the military. In November 2005, Congress voted to approve the final recommendations of the BRAC Commission and Maryland benefited by gaining additional military and civilian positions. Direct and indirect jobs coming to Maryland over the next six to ten years are estimated at 40,000 to 60,000. Fort George Meade in Anne Arundel County, Aberdeen Proving Ground (APG, in Harford County) and the National Naval Medical Center at Bethesda (NNMC, in Montgomery County) are three of five locations that will be gaining most of these positions.

Walter Reed Army Medical Center and the National Naval Medical Center will merge by September 2011 into one military medical center located on the Bethesda campus. The combined facility will be called the Walter Reed National Military Medical Center, and will expand the current facility by adding approximately 2,200 to 2,500 jobs staffed by Air Force, Army and Navy military personnel. In preparation for this action, Maryland State Highway Administration (SHA) initiated a study of the short-term highway transportation needs associated with BRAC at this installation.

The focus of the study was on arterial and collector roadways. The results of SHA's traffic studies indicate that the highly-urbanized roadway network surrounding the NNMC is already experiencing regular congestion, which will increase as development continues in the region. Under existing conditions, four of the 27 intersections analyzed are already operating at LOS F during at least one peak hour of each weekday, and seven others are currently operating at LOS E. Under 2011 "With BRAC" conditions, seven intersections are expected to operate at LOS F during one or both peak hours each weekday, with three others operating at LOS E.

The study process involved four components:

- Identifying the study area and conducting traffic studies
- Developing short-term (2011) intersection improvement concepts and determining the costs and impacts associated with each concept
- Selecting priority short-term intersection improvements for inclusion in the Maryland Department of Transportation's Consolidated Transportation Program (CTP)
- Reviewing the technical and environmental issues associated with the potential construction of a new access point from I-495 (the Capital Beltway) between MD 355 (Rockville Pike) and MD 185 (Connecticut Avenue) to the NNMC campus.

To prepare for this anticipated increase in traffic volumes, SHA is recommending improvements at these seven failing locations. However, the level of available State funding is not sufficient to program all of the needed short-term improvements identified in this study. Therefore SHA, in coordination with the Montgomery County BRAC Committee and

the NNMC, developed a list of priority intersections that were desired to be implemented, should funding become available. The seven failing intersections are shown below, with the priority intersections (which are currently in design) highlighted in bold:

- Intersection 3: MD 355 (Rockville Pike) @ Grosvenor Lane
- **Intersection 5: MD 355 (Rockville Pike) @ Cedar Lane**
- **Intersection 6: MD 187 (Old Georgetown Road) @ West Cedar Lane/Oakmont Avenue**
- Intersection 8: MD 355 (Rockville Pike) @ North Drive
- Intersection 9: MD 355 (Rockville Pike) @ North Wood Road
- **Intersection 12: MD 355 (Rockville Pike/Wisconsin Avenue) @ Center Drive/Jones Bridge Road**
- **Intersection 16: MD 185 (Connecticut Avenue) @ Jones Bridge Road/ Kensington Parkway**

In addition to developing short-term intersection improvements, SHA investigated the feasibility of a new dedicated entrance/exit or "slip ramp" to the campus from the Capital Beltway to provide more direct access and to decrease the amount of traffic on arterial roadways surrounding the campus. The study showed that, due to spacing, the existing complexity of the Capital Beltway between MD 355 (Rockville Pike) and MD 185 (Connecticut Avenue), volume of traffic and geometrics, adding a new access point at this location would further complicate traffic flow and create additional safety concerns due to weaving conflicts. The traffic analyses conducted by the Navy, as part of its Environmental Impact Statement, and SHA show that the operational effectiveness of a direct access ramp on local traffic congestion would be limited, at best, and the environmental constraints associated with a new access point could be significant. Therefore, SHA does not consider an additional interstate access point from the Capital Beltway to the NNMC to be a viable option for further consideration.

Intersection 3 - MD 355 at Grosvenor Lane

Intersection 6 - MD 187 @ West Cedar Lane

Intersection 12 - MD 355 at Jones Bridge Road

BRAC Introduction

National Naval Medical Center

Base Realignment and Closure or "BRAC" is the congressionally authorized process the U.S. Department of Defense has used to reorganize and consolidate its base structure to more efficiently and effectively support the military. In November 2005, Congress voted to approve the final recommendations of the BRAC Commission and Maryland benefited by gaining additional military and civilian positions. Direct and indirect jobs coming to Maryland over the next six to ten years are estimated at 40,000 to 60,000. Fort George Meade in Anne Arundel County, Aberdeen Proving Ground (APG, in Harford County) and the National Naval Medical Center at Bethesda (NNMC, in Montgomery County) are three of five locations that will be gaining most of these positions.

Walter Reed Army Medical Center and the National Naval Medical Center will merge by September 2011 into one military medical center located on the Bethesda campus. The combined facility will be called the Walter Reed National Military Medical Center, and will expand the current facility by 2,200 to 2,500 jobs staffed by Air Force, Army and Navy military personnel. In preparation for this action, Maryland State Highway Administration (SHA) initiated a study of the short-term highway transportation needs associated with BRAC at this installation.

The State Highway Administration's (SHA) Regional and Intermodal Planning Division (RIPD) is coordinating the transportation needs assessments associated with the five major military installations affected by the BRAC initiative in Maryland. RIPD created an Action Plan that outlines the steps for developing improvement concepts for intersections or short roadway segments that are projected to have a failing Level of Service (LOS) in the most immediate years of the BRAC planning process and can be improved with relatively low cost and minimal environmental impacts. As a first step, SHA determined which intersections were expected to be most affected by BRAC in 2011 (the year that Congress mandated the completion of BRAC in Maryland). Once the intersections were identified, the team worked with decision-makers and local government officials to develop a list of priority intersections that could be funded in the Maryland Department of Transportation's Consolidated Transportation Program (CTP), based on available funding. The purpose of this report is to present the results of the travel forecasting, traffic studies and short-term intersection needs at the NNMC. The studies included analysis of the impacts to traffic operations that are anticipated based upon the effects of BRAC on the roadway network that serves the NNMC, and recommendations for transportation system improvements that would allow operation at an acceptable LOS in 2011.

The study process involved four components:

- Identifying the study area and conducting traffic studies
- Developing short-term (2011) intersection improvement concepts and determining the costs and impacts associated with each concept
- Selecting priority short-term intersection improvements for inclusion in the Maryland Department of Transportation's Consolidated Transportation Program (CTP)
- Reviewing the technical and environmental issues associated with the potential construction of a new access point from I-495 (the Capital Beltway) between MD 355 (Rockville Pike) and MD 185 (Connecticut Avenue) to the NNMC campus.

BRAC

National Naval Medical Center

Identification of the Study Area

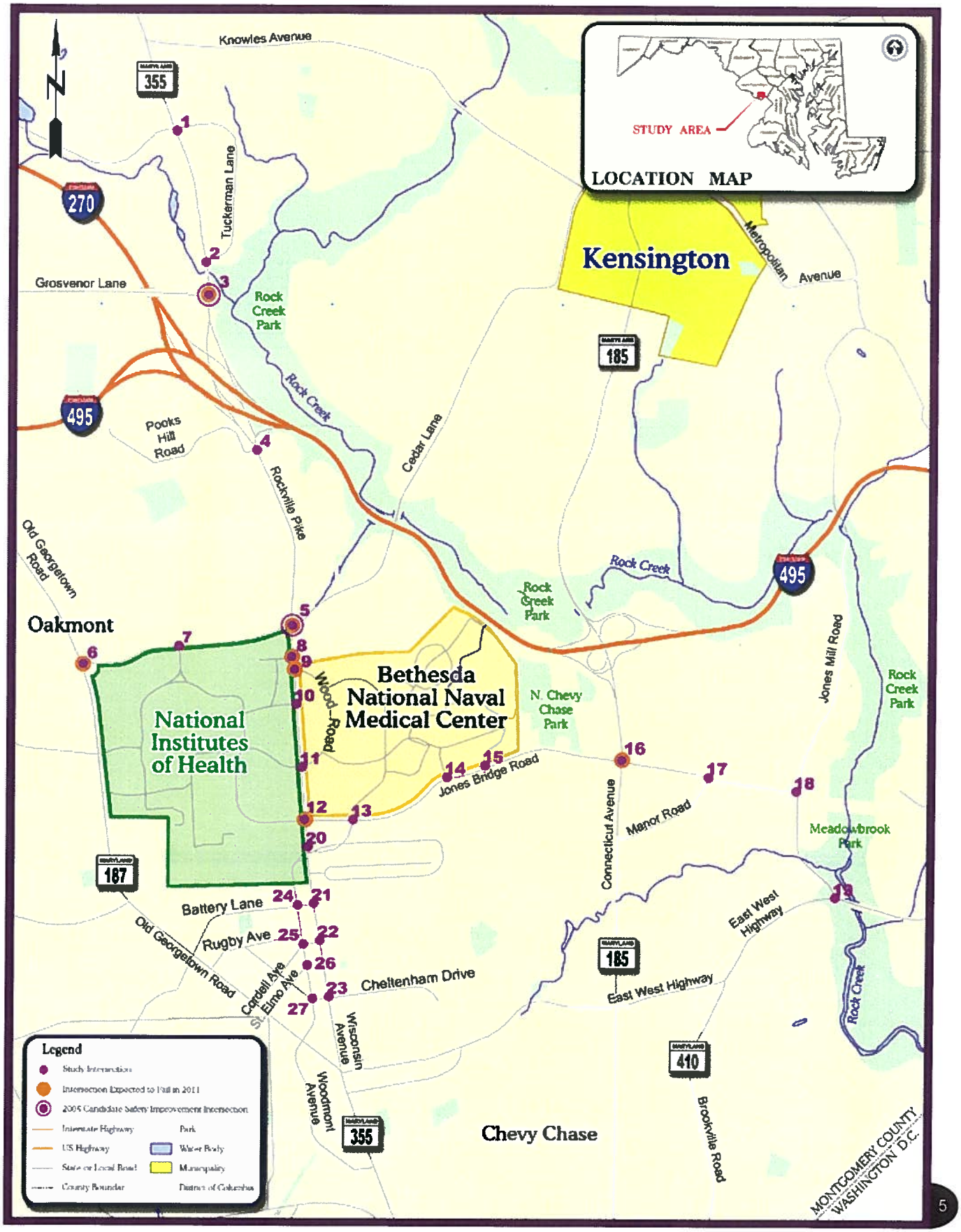
The NNMC is located just south of the Capital Beltway (I-495), in Bethesda, Montgomery County, Maryland. In preparation for the BRAC action, the Navy conducted a traffic study in the area surrounding the NNMC campus as a part of its March 2008 Final Environmental Impact Statement (NNMC FEIS, 2.2, p. 7-8). The intersections listed to the right and shown in **Figure 1** were included as a part of this study.

Seven of these intersections are expected to operate at a failing LOS by 2011, as shown in **Figure 1**. Two of these locations, Intersection 3: MD 355 (Rockville Pike) @ Grosvenor Lane and Intersection 5: MD 355 (Rockville Pike) @ Cedar Lane, were identified as Candidate Safety Improvement Intersections for 2005, which are locations where the crash rate exceeds the statewide average for similarly designed roadways.

Travel Forecasting

SHA conducted a traffic study based on the findings in the Navy's traffic study to evaluate several future short-term scenarios. The purpose of the traffic study was to analyze the impacts to traffic operations that are anticipated due to the effects of BRAC and expected background growth at the NNMC and to develop recommendations for transportation system improvements.

- Intersection 1: MD 355 (Rockville Pike) @ Tuckerman Lane North
- Intersection 2: MD 355 (Rockville Pike) @ Tuckerman Lane South
- Intersection 3: MD 355 (Rockville Pike) @ Grosvenor Lane
- Intersection 4: MD 355 (Rockville Pike) @ Pooks Hill Road
- Intersection 5: MD 355 (Rockville Pike) @ Cedar Lane
- Intersection 6: MD 187 (Old Georgetown Road) @ West Cedar Lane / Oakmont Avenue
- Intersection 7: West Cedar Lane @ West Drive
- Intersection 8: MD 355 (Rockville Pike) @ North Drive
- Intersection 9: MD 355 (Rockville Pike) @ North Wood Road
- Intersection 10: MD 355 (Rockville Pike) @ Wilson Drive
- Intersection 11: MD 355 (Rockville Pike) @ South Drive
- Intersection 12: MD 355 (Rockville Pike / Wisconsin Avenue) @ Center Drive / Jones Bridge Road
- Intersection 13: Jones Bridge Road @ Gunnell Road
- Intersection 14: Jones Bridge Road @ Grier Road
- Intersection 15: Jones Bridge Road @ University Road
- Intersection 16: MD 185 (Connecticut Avenue) @ Jones Bridge Road / Kensington Pkwy
- Intersection 17: Jones Bridge Road @ Manor Road
- Intersection 18: Jones Mill Road @ Jones Bridge Road
- Intersection 19: East - West Highway @ Jones Mill Road
- Intersection 20: MD 355 (Wisconsin Avenue) @ Woodmont Avenue
- Intersection 21: MD 355 (Wisconsin Avenue) @ Battery Lane
- Intersection 22: MD 355 (Wisconsin Avenue) @ Cordell Avenue
- Intersection 23: MD 355 (Wisconsin Avenue) @ Cheltenham Drive
- Intersection 24: Woodmont Avenue @ Battery Lane
- Intersection 25: Woodmont Avenue @ Cordell Avenue
- Intersection 26: Woodmont Avenue @ St. Elmo Avenue
- Intersection 27: Woodmont Avenue @ Cheltenham Drive

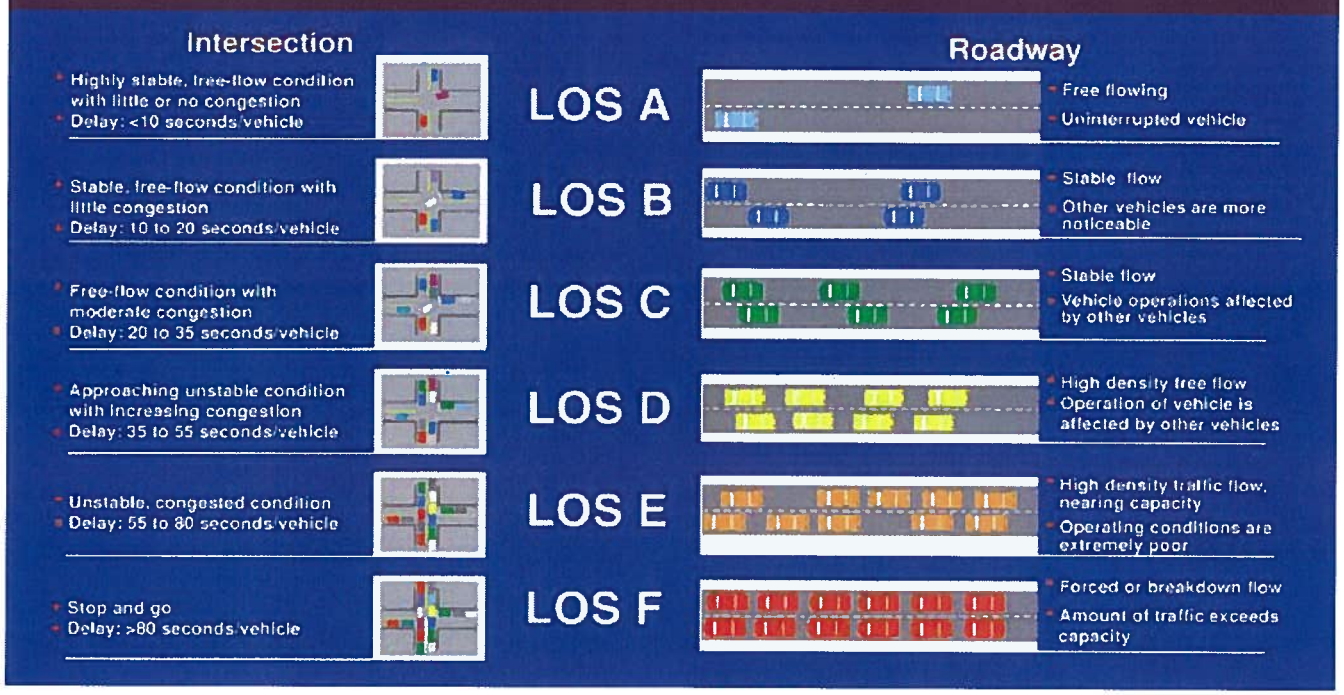


Traffic and Intersection Improvement Studies for BRAC
Bethesda National Naval Medical Center

Figure 1
Study Area Map

Summary Report
February 2009

Figure 2: Level of Service (LOS)



The following scenarios were evaluated as part of the traffic studies:

- Existing Conditions
- Future Conditions
  - 2011 No-BRAC
  - 2011 With BRAC

Traffic Operational Analysis

To understand the operations at the key intersections in the study area, a capacity analysis was conducted to determine the volume to capacity (v/c) ratio and LOS at these intersections for both the existing and future conditions. The v/c ratio is the ratio of current or projected traffic volume to the theoretical capacity of the intersection. For example, a v/c of 1.00 indicates that an intersection is operating at its theoretical capacity. The LOS is a quantitative measure of traffic operations. On most arterials with signalized intersections, LOS is also a measure of the intersection delays. Intersection operations are quantified by applying an LOS letter grade as noted in **Figure 2**.

Traffic distribution analysis is based on the morning peak period and the evening peak period of the day with the highest hourly traffic volumes, commonly known as the AM and PM peak hours. Roadways are often designed to adequately serve the peak hour traffic volume in the peak direction of flow. Since traffic going one way during the morning peak is typically going the opposite way during the evening peak, both sides of a facility must generally be designed to accommodate the peak directional flow during the peak hour.

Critical Lane Volume (CLV) analysis is the standard SHA tool for the preliminary analysis of intersection improvements, and is used to determine the volume to v/c ratio of an intersection. CLV analyses were performed on the 27 intersections identified for the study. If an intersection had functioned at LOS F during a particular peak hour, then the improvements were designed to allow the intersection to function at a minimum of LOS E during that peak hour.

SHA verified the traffic volume and travel forecasting information presented in the Navy's traffic study, and used this data as a basis for developing improvements for intersections that are expected to fail in 2011. These volumes include existing traffic plus background growth based on planned developments and additional traffic due to the BRAC action, and were used to determine the improvements that would be required to accommodate the new trips.

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Short-Term Intersection Development

In analyzing the 27 study area intersections, SHA focused on the short-term, immediate effects on traffic operations due to the BRAC initiative and background growth through 2011. The seven intersections listed below (and shown in **Figure 1** on page 5) were forwarded for more detailed study because they were projected to operate at LOS F for either the AM or PM peak hour in 2011:

- Intersection 3: MD 355 (Rockville Pike) @ Grosvenor Lane
- Intersection 5: MD 355 (Rockville Pike) @ Cedar Lane
- Intersection 6: MD 187 (Old Georgetown Road) @ West Cedar Lane/Oakmont Avenue
- Intersection 8: MD 355 (Rockville Pike) @ North Drive
- Intersection 9: MD 355 (Rockville Pike) @ North Wood Road
- Intersection 12: MD 355 (Rockville Pike/ Wisconsin Avenue) @ Center Drive/Jones Bridge Road
- Intersection 16: MD 185 (Connecticut Avenue) @ Jones Bridge Road/ Kensington Parkway

Table 1 on page 8 shows the LOS and v/c for each intersection under Existing, 2011 No-Build (with BRAC) and 2011 Build (with BRAC) conditions.

Methodology

Once it was determined which intersections were recommended for improvement, field reviews were conducted to gather additional data. SHA took photos and documented information about the topography and environmental features found at each location, and noted anything unusual that could influence the intersection design process. Photographs were also used to verify the features shown on aerial mapping of the study area. Traffic operations were also observed during the field reviews, to help confirm the CLV analyses.

Information collected during field reviews was used in conjunction with aerial photography to develop sketch-level intersection improvement design concepts. Improvement concepts were developed using AASHTO 2001 and SHA design standards, assuming that new lanes would be 10-12 feet wide.

Once the initial concepts were created using aerial photography as a base map, the limits of disturbance were determined for each location. Using aerial photography and GIS data, SHA calculated the area of impact within the limits of disturbance for wetlands, streams, floodplains, parks and forests, as well as right-of-way impacts and displacements to residential and commercial properties. No detailed planning or engineering was completed at this stage of the study.

SHA developed cost estimates for each intersection improvement concept using COST-EST, SHA's Excel-based spreadsheet. For cost estimating purposes, the pavement overlay was assumed to be a two-inch hot mix asphalt (HMA) surface, and full depth pavement was assumed to consist of two-inch HMA surface, six-inch HMA base, and eight-inch graded aggregate base. Sidewalks were included in the improvement concepts for intersections with existing sidewalks, and were assumed to be five inches thick and five to eight feet wide. For reconstruction and/or widening, it was assumed that existing traffic signals

Table 1: LOS and v/c for Intersections Expected to Fail in 2011

		AM V/C	AM LOS	PM V/C	PM LOS
Intersection 3 MD 355 (Rockville Pike) @ Grosvenor Lane	Existing	0.99	E	0.74	C
	2011 No-Build	1.04	F	0.80	C
	2011 Build	0.90	D	0.80	C
		AM V/C	AM LOS	PM V/C	PM LOS
Intersection 5 MD 355 (Rockville Pike) @ Cedar Lane	Existing	1.27	F	1.35	F
	2011 No-Build	1.35	F	1.43	F
	2011 Build	0.99	E	0.97	E
		AM V/C	AM LOS	PM V/C	PM LOS
Intersection 6 MD 187 (Old Georgetown Road) @ W. Cedar Lane / Oakmont Avenue	Existing	0.79	C	0.98	E
	2011 No-Build	0.87	D	1.15	F
	2011 Build	0.85	D	0.99	E
		AM V/C	AM LOS	PM V/C	PM LOS
Intersection 8 MD 355 (Rockville Pike) @ North Drive	Existing	1.00	F	0.87	D
	2011 No-Build	1.05	F	0.92	E
	2011 Build	0.95	E	0.92	E
		AM V/C	AM LOS	PM V/C	PM LOS
Intersection 9 MD 355 (Rockville Pike) @ North Wood Road	Existing	0.77	C	0.91	E
	2011 No-Build	0.81	C	1.04	F
	2011 Build	0.81	C	0.97	E
		AM V/C	AM LOS	PM V/C	PM LOS
Intersection 12 MD 355 (Rockville Pike / Wisconsin Avenue) @ Center Drive / Jones Bridge Road	Existing	0.94	E	1.10	F
	2011 No-Build	0.95	E	1.18	F
	2011 Build	0.93	E	0.97	E
		AM V/C	AM LOS	PM V/C	PM LOS
Intersection 16 MD 185 (Connecticut Avenue) @ Jones Bridge Road / Kensington Parkway	Existing	1.21	F	1.28	F
	2011 No-Build	1.29	F	1.37	F
	2011 Build	0.99	E	0.99	E

would be entirely replaced. Quantities were estimated using design concept drawings, information from field reviews and aerial photography. SHA's 2007 Highway Construction Cost Estimating Manual was used to obtain unit costs.

For intersection concepts that initially had an unusually high cost or a large number of right-of-way or environmental impacts, SHA sought less impactive ways to improve the intersection's LOS, while still achieving a LOS E or better. Below is a summary of the recommended improvements, cost estimates, and environmental impacts associated with each intersection.

These intersection concepts represent the lane capacity needed to attain LOS E in 2011. SHA recognizes that funding constraints, schedule constraints, and other unforseen impacts could make these improvements difficult or impossible to construct by 2011. The next stage of design will allow SHA to refine the intersection concepts using detailed survey and utility information, and to better understand the costs and impacts. Therefore, some modification to these concepts may be necessary as they move through the highway design process.

Description of Short-Term Intersection Concepts

Five intersection improvement concepts are described below, and are depicted on aerial mapping, which can be found in **Appendix A**. While seven intersections are expected to operate at LOS F in 2011, making the recommended intersection improvements for Intersection 5: MD 355 (Rockville Pike) @ Cedar Lane allow Intersection 8: MD 355 (Rockville Pike) @ North Drive and Intersection 9: MD 355 (Rockville Pike) @ North Wood Road to operate at an acceptable LOS. Intersection 8: MD 355 (Rockville Pike) @ North Drive is an entrance to the National Institutes of Health that was included the traffic analysis. Intersection 9: MD 355 (Rockville Pike) @ North Wood Road is an entrance to the NNMC. The Navy is currently studying ways to improve traffic operations at this intersection for vehicles entering the NNMC campus, and SHA will continue to coordinate with the Navy on any improvements they choose to implement. **Table 2** on page 13 summarizes the traffic data, cost estimates, and impacts for each intersection. It should be noted that these concepts are preliminary and subject to modification as they are refined during detailed design.

Intersection 3: MD 355 (Rockville Pike) @ Grosvenor Lane

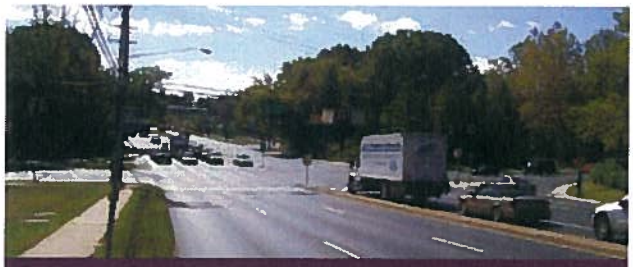
This intersection was identified in 2005 as a Candidate Safety Improvement Intersection, and currently operates at LOS E during the AM peak with a v/c of 0.99, and LOS C during the PM peak with a v/c of 0.74. Without improvements, in 2011 with BRAC traffic this intersection is forecasted to operate at LOS F during the AM peak, with a v/c of 1.04, and at LOS C during the PM peak, with a v/c of 0.80. Making the recommended improvements will allow the intersection to function at LOS D during the AM peak hour, with a v/c of 0.90, and LOS C during the PM peak hour, with a v/c of 0.80. The proposed improvement is to add one lane to southbound MD 355 to create a free right turn condition from eastbound Grosvenor Lane onto SB MD 355.

Intersection 3

These proposed improvements would impact three properties with no displacements, totaling 0.17 acres. No environmental features would be impacted. The total cost is estimated at approximately $4.0 - $8.0 million.

Intersection 5: MD 355 (Rockville Pike) @ Cedar Lane

This intersection was identified in 2005 as a Candidate Safety Improvement Intersection, and currently operates at LOS F during both peak hours, with a v/c during the AM of 1.27 and 1.35 during the PM. Without improvements, in 2011 with BRAC traffic this intersection is forecasted to operate at LOS F during both peak hours, with an AM peak v/c ratio of 1.35 and a PM peak v/c ratio of 1.43. Making the recommended improvements will allow the intersection to function at LOS E during the AM peak hour, with a v/c ratio of 0.99, and LOS E during the PM peak hour, with a v/c ratio of 0.97. The recommended improvements include:


Intersection 5

- Adding one through lane to MD 355 in the southbound direction
- Adding one left turn lane, one through lane and separate combined through and right turn movements on MD 355 in the northbound direction
- Converting shared through/left lane to a through-only lane and separate through and right turn movements on Cedar Lane in the eastbound direction
- Converting shared though/left lane to one through lane and a second left lane on Cedar Lane in the westbound direction.

These proposed improvements would impact 21 properties with no displacements, totaling 2.86 acres, as well as 305 linear feet of streams, 0.4 acres of parks, and 0.7 acres of forests. More detailed information about the construction and right-of-way costs of this intersection are currently being developed as part of the 30 percent design efforts. Based on the current level of design, the cost is estimated to range between $68.0 and $75.0 million. Making these improvements also improves the LOS at Intersection 8: MD 355 (Rockville Pike) @ North Drive and Intersection 9: MD 355 (Rockville Pike) @ North Wood Road to LOS E or better during both peak hours. If the improvement concept is revised so that the through lane is not added in the northbound direction, the cost could be reduced by approximately $2.5 million and right-of-way impacts could be reduced to approximately 2.70 acres, but the intersection would be forecasted to operate at LOS E during the AM peak hour, with a v/c ratio of 0.99, and LOS F during the PM peak hour, with a v/c ratio of 1.15. If the concept is further revised so that through lanes are not added in either the northbound or southbound directions, the cost could be reduced by approximately $15.0 million and right-of-way impacts could be reduced to approximately 1.21 acres, but under these conditions, the intersection is forecasted to operate at LOS F during both peak hours, with a v/c ratio of 1.20 during the AM peak hour, and 1.15 during the PM peak hour.

Intersection 6: MD 187 (Old Georgetown Road) @ West Cedar Lane/Oakmont Avenue

This intersection currently operates at LOS C during the AM peak hour with a v/c of 0.79, and LOS E during the PM peak hour with a v/c of 0.98. Without improvements, in 2011 with BRAC traffic this intersection is forecasted to operate at LOS D during the AM peak hour with a v/c ratio of 0.87 and LOS F during the PM peak hour with a v/c ratio of 1.15. Making the recommended improvements will allow the intersection to function at LOS D during the AM peak hour, with a v/c ratio of 0.85, and LOS E during the PM peak hour, with a v/c ratio of 0.99. The recommended improvements include:

- Converting the shared through/right lane to one through and one right turn lane on MD 187 in the northbound direction
- Converting the present shared left/through/right lane into one left turn lane and one shared through/right lane on Oakmont Avenue in the eastbound direction
- Converting the shared through/right lane to one through and one right turn lane on West Cedar Lane in the westbound direction.

Intersection 6

These proposed improvements would impact 11 properties with no displacements, totaling 0.36 acres. No environmental features are expected to be impacted. The total cost is estimated at approximately $5.0 - $10.0 million.

Intersection 8: MD 355 (Rockville Pike) @ North Drive

This intersection functions as a gated entrance to the National Institutes of Health. It currently operates at LOS F during the AM peak hour, with a v/c of 1.00, and LOS D during the PM peak hour, with a v/c of 0.87. Without improvements, in 2011 with BRAC traffic this intersection is forecasted to operate at LOS F during the AM peak hour with a v/c ratio of 1.05 and LOS E during the PM peak hour with a v/c ratio of 0.92.

If this were the only intersection being improved in the immediate area, adding a turn lane from southbound MD 355 to westbound North Drive would allow the intersection to function at LOS E during both peak hours, with a v/c ratio of 0.95 during the AM peak hour and 0.92 during the PM peak hour. However, the recommended improvements for Intersection 5:

Intersection 8

MD 355 @ Cedar Lane include adding one through lane to MD 355 in the northbound direction and one through lane to MD 355 in the southbound direction. These Intersection 5 improvements carry through the North Drive intersection, and would allow MD 355 @ North Drive to operate at LOS C during the AM peak hour with a v/c ratio of 0.79, and LOS B during the PM peak hour with a v/c ratio of 0.70. Because these improvements would already be in place as a result of modifications to Intersection 5, no additional improvements are being recommended for Intersection 8, and any associated costs and environmental impacts for improvements at this location have been included in the estimate for Intersection 5.

Intersection 9: MD 355 (Rockville Pike) @ North Wood Road

This intersection currently operates at LOS C during the AM peak hour, with a v/c of 0.77, and LOS E during the PM peak hour, with a v/c of 0.91. Without improvements, in 2011 with BRAC traffic this intersection is forecasted to operate at LOS C during the AM peak hour with a v/c ratio of 0.81 and LOS F during the PM peak hour with a v/c ratio of 1.04. If this were the only intersection being improved in the immediate area, adding a turn lane from westbound North Wood Road to MD 355 would allow the intersection to function at LOS C during the AM peak hour with a v/c ratio of 0.81, and LOS E during the PM peak hour with a v/c ratio of 0.97. However, the recommended improvements for Intersection 5: MD 355 @ Cedar Lane include adding one through

Intersection 9

lane to MD 355 in the northbound direction and one through lane to MD 355 in the southbound direction. These Intersection 5 improvements carry through this intersection, and would cause MD 355 (Rockville Pike) @ North Wood Road to operate at LOS B during the AM peak hour with a v/c ratio of 0.72, and LOS D during the PM peak hour with a v/c ratio of 0.84. Because these improvements would already be in place as a result of modifications to Intersection 5, no additional improvements are being recommended for Intersection 9, and any associated costs and environmental impacts for improvements at this location have been included in the estimate for Intersection 5. Because MD 355 (Rockville Pike) @ North Wood Road is on of the two main entrances to the NNMC campus, the Department of Defense has agreed to contribute $1.0 million in improvements to this section of MD 355 ("Defense Department Will Pay for Turn Lanes as Naval Hospital Expands", Washington Post, 7/17/08). The Navy is studying additional improvements that could improve traffic operations for vehicles entering the NNMC campus, and SHA and NNMC will continue to work together to develop appropriate improvements at this location.

Intersection 12: MD 355 (Rockville Pike / Wisconsin Avenue) @ Center Drive / Jones Bridge Road

This intersection currently operates at LOS E during the AM peak hour, with a v/c of 0.94, and LOS F during the PM peak hour, with a v/c of 1.10. Without improvements, in 2011 with BRAC traffic this intersection is forecasted to operate at LOS E during the AM peak hour with a v/c ratio of 0.95 and LOS F during the PM peak hour with a v/c ratio of 1.18. Making the recommended improvements will allow the intersection to function at LOS E during the AM peak hour, with a v/c ratio of 0.93, and LOS E during the PM peak hour, with a v/c ratio of 0.97. The recommended improvements include:

Intersection 12

- Adding one left turn lane to MD 355 in the southbound direction
- Converting the shared through/left lane to one through and one left lane on Center Drive in the eastbound direction

- Converting the shared through/left lane to a left-only lane on Jones Bridge Road in the westbound direction.

These proposed improvements would impact two properties with no displacements, totaling 1.15 acres. No environmental features are expected to be impacted. More detailed information about the construction and right-of-way costs of this intersection are currently being developed as part of the 30 percent design efforts. Based on the current level of design, the cost is estimated to range between $5.0 and $10.0 million. If the improvement concept is revised so that there is only one through lane provided in the eastbound direction (instead of the two that would be created by the improvements listed above), the cost could be reduced by approximately $2.5 million, and right-of-way impacts could be reduced to approximately 0.64 acres. However, this revision would cause the intersection to operate at LOS E during the AM peak hour, with a v/c ratio of 0.94, and LOS F during the PM peak hour, with a v/c ratio of 1.05.

Intersection 16: MD 185 (Connecticut Avenue) @ Jones Bridge Road/Kensington Parkway

This intersection currently operates at LOS F during both peak hours, with a v/c during the AM of 1.21, and a v/c of 1.28 during the PM. Without improvements, in 2011 with BRAC traffic this intersection is forecasted to operate at LOS F during the AM peak hour with a v/c ratio of 1.29 and LOS F during the PM peak hour with a v/c ratio of 1.37. Making the recommended improvements will allow the intersection to function at LOS E during both peak hours, with a v/c ratio of 0.99 during both the AM and PM peaks. The recommended improvements include:

Intersection 16

- Creating separate through and right turn lanes on southbound MD 185
- Adding two lanes to northbound MD 185 resulting in four through lanes and one shared hard right/gradual right lane
- Adding one left turn lane and separate the shared through/right lane into one through and one right turn lane on eastbound Jones Bridge Road
- Converting the shared through/right lane on westbound Jones Bridge Road to one separate through lane and one right turn lane

These proposed improvements would impact 22 properties with no displacements, totaling 1.76 acres. No environmental features are expected to be impacted. More detailed information about the construction and right-of-way costs of this intersection are currently being developed as part of the 30 percent design efforts. Based on the current level of design, the cost is estimated to range between $39.0 and $45.0 million.

A number of alternate improvement concepts were also considered for this intersection that may be further evaluated during the design phase. If one of the northbound through lanes along MD 185 was eliminated, the cost could be reduced by approximately $2.5 million and right-of-way impacts could be reduced to approximately 1.64 acres, but the intersection would be expected to operate at LOS E during the AM peak hour with a v/c ratio of 0.99, and LOS F during the PM peak hour with a v/c ratio of 1.16.

If the existing conditions of having combined through/right lanes on eastbound Jones Bridge Road and northbound MD 185 are retained and one northbound through lane is eliminated from the proposed improvement, the cost could be reduced by approximately $3.0 million and right-of-way impact could be reduced to approximately 1.38 acres. However, under these conditions, the intersection is expected to operate at LOS F during both peak hours, with a v/c during the AM peak hour of 1.01, and a v/c during the PM peak hour of 1.19.

Finally, if one left turn lane is eliminated from the proposed improvement to eastbound Jones Bridge Road, the cost could be reduced by approximately $4.0 million and right-of-way impacts could be reduced to approximately 1.20 acres, but this would cause the intersection to operate at LOS F during both peak hours, with a v/c ratio of 1.02 during the AM peak hour and a v/c ratio of 1.10 during the PM peak hour.

Table 2: Summary of Short Term Intersection Improvement Concepts

Intersection		Traffic Data (2011)				Right-of-Way			Environmental Features					
Number	Name	No-Build AM LOS (v/c)	No-Build PM LOS (v/c)	Build AM LOS (v/c)	Build PM LOS (v/c)	Displacements	Properties Impacted	Total Right-of-Way (acres)	Wetlands (acres)	Streams (linear feet)	Floodplains (acres)	Parks (acres)	Forests (acres)	Total Cost (millions)
3	MD 355 (Rockville Pike) @ Grosvenor Lane	F (1.04)	C (0.80)	D (0.90)	C (0.80)	0	3	0.17	0	0	0	0	0	$4 - $8
5*	MD 355 (Rockville Pike) @ Cedar Lane	F (1.35)	F (1.43)	E (0.99)	E (0.97)	0	21	2.86	0	305	0	0.40	0.70	$68 - $75
6	MD 187 (Old Georgetown Road) @ West Cedar Lane/ Oakmont Avenue	D (0.87)	F (1.15)	D (0.85)	E (0.99)	0	11	0.36	0	0	0	0	0	$5 - $10
12	MD 355 (Rockville Pike/Wisconsin Avenue) @ Center Drive/Jones Bridge Road	E (0.95)	F (1.18)	E (0.93)	E (0.97)	0	2	1.15	0	0	0	0	0	$5 - $10
16	MD 185 (Connecticut Avenue) @ Jones Bridge Road/Kens-ington Parkway	F (1.29)	F (1.37)	E (0.99)	E (0.99)	0	22	1.76	0	0	0	0	0	$39 - $45

* Includes MD 355 @ North Road and MD 355 @ North Wood Road

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Synchro Analyses

To understand the operational characteristics of this highly urbanized segment of MD 355 in the study area, Synchro analyses were also performed on the 2011 BRAC volumes to validate the findings of the CLV analysis. The CLV analysis used to evaluate the intersections, as discussed in the previous section, is the most common tool for planning-level preliminary assessments of traffic conditions. These analyses focus only on the volume for each movement during each peak hour and capacity of the intersection. Aspects of operation such as signal timing, travel speed, precise signal phasing, the effects of queuing with regard to turn lane lengths, and the potential effect of one intersection on the operation of an adjacent intersection cannot be assessed using CLV.

Synchro is a software program that, when used with its companion simulation software, SimTraffic, can produce results that better incorporate potential effects of geometric features, travel speeds, and signal operation, as well as, to some extent, anticipated driver behavior. Synchro and SimTraffic provide a means to assess corridor-level benefits of improvements and well as intersection-level benefits.

A Synchro model was developed for MD 355 between Pooks Hill Road and Woodmont Avenue and calibrated for existing conditions, for both the AM and PM peak hours, using existing traffic counts, signal timings, lane configurations and geometry, and speed data acquired from travel time runs. The 2011 forecasted volumes were then added to the model to evaluate the 2011 No Build condition. Following that evaluation, the improvements developed during the CLV process were incorporated into the model. At each stage the simulations were observed to see if the traffic operation appeared to be reasonable.

With the improvements predicted by the CLV process, the simulations showed that the intersection operations performed as expected. Queues formed in the vicinity of intersections predicted to operate at close to LOS F. The Synchro simulations developed for this effort, as well as some additional intersections, will continue to be used as the intersection concepts move through the design phase.

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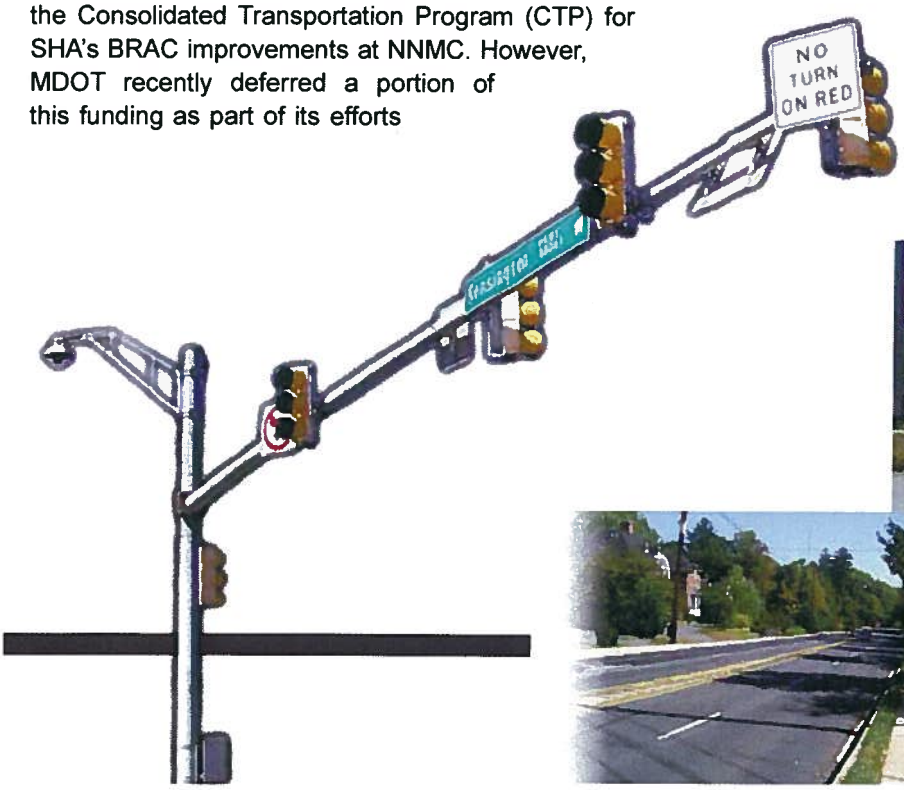
Implementation of Short-Term Improvements

Once SHA determined the full range of needs and intersection improvements described in the previous section, the next step in the process was to determine the priority of intersection improvements to be implemented. Based on the cost estimates developed for all five intersection improvement concepts, the total cost of the short term improvements near the NNMC would be approximately $121 - $148 million, including the design, construction, and ROW acquisition phases. The level of available funding is not sufficient to program all of the needed improvements. In 2007 MDOT added $45.3 million to the Consolidated Transportation Program (CTP) for SHA's BRAC improvements at NNMC. However, MDOT recently deferred a portion of this funding as part of its efforts to reduce its total statewide budget by $1.1 billion in new project funding in the draft CTP for the FY 2009-2014 six-year program period. Therefore SHA, in coordination with the Montgomery County BRAC Committee and the NNMC, developed a list of priority intersections that were desired to be implemented, should funding become available. **Table 3** on page 16 denotes the priority; the intersections indicated with a "P1" are the top priorities, and are currently programmed in the CTP.



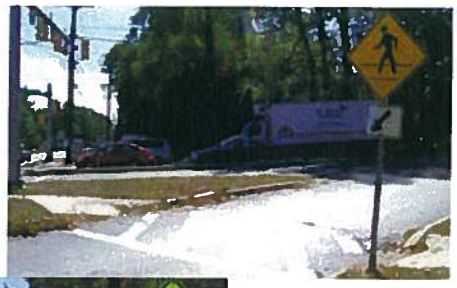


Table 3: Summary of Intersection Priorities

Priority	Location
P1	Intersection 5: MD 355 (Rockville Pike) @ Cedar Lane
P1	Intersection 6: MD 187 (Old Georgetown Road) @ West Cedar Lane/Oakmont Avenue
P1	Intersection 12: MD 355 (Rockville Pike/Wisconsin Avenue) @ Center Drive/Jones Bridge Road
P1	Intersection 16: MD 185 (Connecticut Avenue) @ Jones Bridge Road/Kensington Parkway
P2	Intersection 8: MD 355 (Rockville Pike) @ North Drive
P2	Intersection 9: MD 355 (Rockville Pike) @ North Wood Road
P2	Intersection 3: MD 355 (Rockville Pike) @ Grosvenor Lane

Under limited circumstances, the Department of Defense (DoD) can provide funding for road improvements outside its property if the projects meet the criteria for Defense Access Road (DAR) program certification. The DAR program provides a methodology to determine whether the military can legally pay their fair share of the cost of public highway improvements necessary to mitigate an unusual impact of a defense activity. The DAR program itself does not have funds for such improvements. As with other construction programs, the funding for such improvements (if found eligible) would come through the annual federal DoD appropriations process. Under the DAR program, an unusual impact could be a significant increase in personnel at a military installation (currently defined as one that doubles existing traffic at the year of implementation), or one that requires relocation of an access gate, or the deployment of an oversized or overweight military vehicle or transporter unit. On June 10, 2008, the DOD's Transportation Engineering Agency determined that the proposed improvements to Intersection 9: MD 355 (Rockville Pike) @ North Wood Road do not appear to be eligible for the DAR program, and recommended that the intersection improvements be incorporated into the larger on-base improvements at the North Wood Road Gate. With this notice, the DoD approved the search for funds within the existing Navy budget, and the Navy is currently examining its budget. If and when the Navy identifies these funds, the Maryland Department of Transportation and the Navy will continue to coordinate on defining the project within the State's current intersection improvement efforts.

Beltway Ramp Access

In addition to developing short-term improvements to address the most critical intersections near NNMC, at the request of local government and citizens' advisory groups SHA also investigated a new access point on I-495 (the Capital Beltway) between the existing MD 355 (Rockville Pike) and MD 185 (Connecticut Avenue) interchanges with I-495. SHA reviewed the technical and environmental issues associated with the potential construction of a new access point, and a discussion of the major issues associated with this concept are presented below.

The National Naval Medical Center (NNMC) Campus in Bethesda borders the Capital Beltway (I-495) between MD 355 (Rockville Pike) and MD 185 (Connecticut Avenue). Local officials, citizens, and stakeholder groups have expressed interest in a new dedicated entrance/exit or "slip ramp" to the campus from the eastbound (inner loop) Capital Beltway to provide more direct access and to decrease the amount of traffic on arterial roadways surrounding the campus. It should be noted that a new access point in this location is not currently included in any of the region's master plans.

In its December 14, 2007 Draft Environmental Impact Statement (DEIS), the Navy evaluated and presented results on the potential impact of a new access point with a slip ramp from the Capital Beltway. 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 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 MDOT, the Navy has expressed concern about the security measures it would be required to implement to accommodate vehicles using a new access point directly from the Beltway. The logistics and capital and operating costs to implement a new security check point on its grounds would be significant challenges for the Navy.

Interstate Access Point Approval and Traffic Safety Issues

23 U.S.C. § 111 provides that States will not add any points of access to, or exit from, the interstate highway system without the prior approval of the United States Secretary of Transportation. The Secretary has delegated the authority to administer 23 U.S.C. § 111 to the Federal Highway Administrator. Therefore, provision of any new or revised access to an interstate highway (Interstate Access Point Approval, or IAPA) requires approval from the Federal Highway Administration (FHWA) and constitutes a federal action. FHWA approval is a two-step process that consists of concept approval and final approval. Concept approval is requested from FHWA with an Access Justification Report (AJR). Following concept approval and fulfillment of National Environmental Policy Act (NEPA) requirements, final approval is contemplated, assuming no significant changes have been made to the original access concept. Final approval is necessary regardless of whether the project(s) that will create the new or revised interstate access receive federal funding. The fundamental tenet underlying the IAPA process is the protection

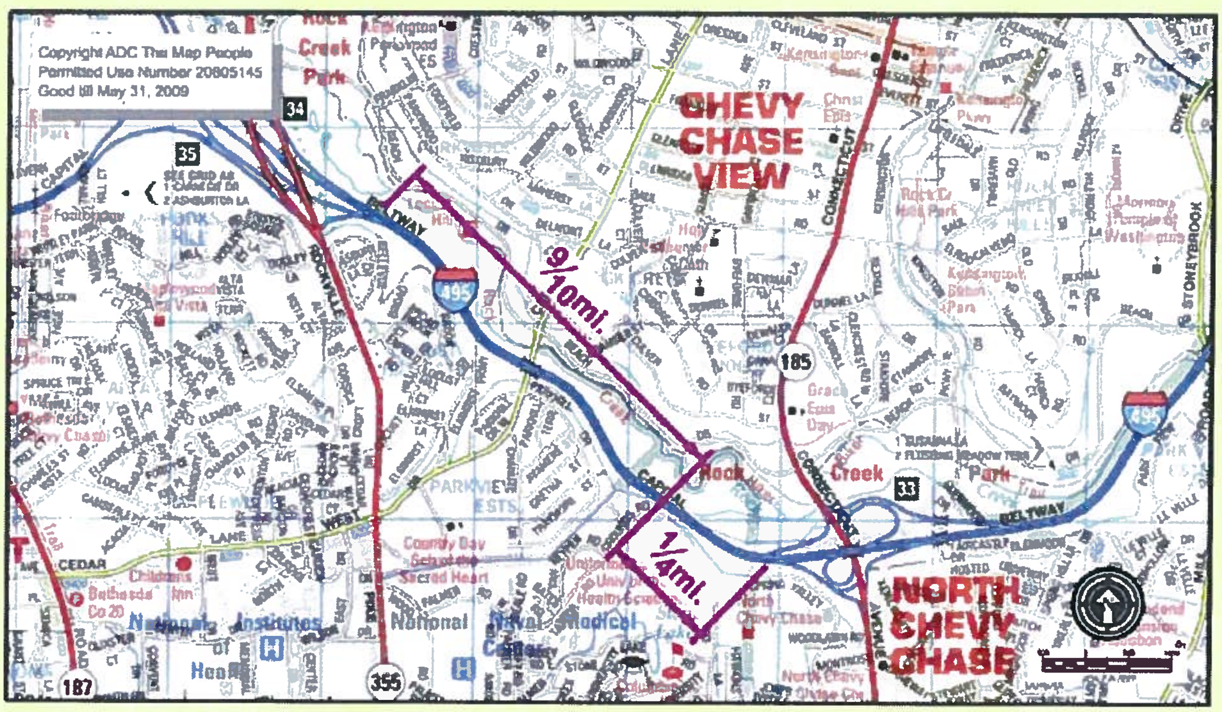
of the integrity, operation, and safety of the interstate system by ensuring proper spacing and safe weaving distances.

Interstate interchanges and access modifications are considered when conflicting high traffic volumes exceed those that can be handled efficiently and safely with at-grade intersections. They are also used to control access to a primary highway. Slip ramps typically consist of diagonal ramps connecting the principal highway with a parallel frontage road.

23 C.F.R. § 625 provides that the design standards contained in A Policy on Geometric Design of Highways and Streets, AASHTO 2001 be used for roadway projects. Under AASHTO standards, the minimum interchange spacing is one mile in urban areas and two miles in rural areas. Currently, there are two separate entrances to the Capital Beltway from I-270 and MD 355, in close proximity to one another, located on the Inner Loop (eastbound), as shown below in **Figure 3**. With 1.15 miles in between the two existing access points at I-270 and MD 185, a new access point would decrease interchange spacing so that it would fall below the one-mile AASHTO standard. In addition, while spacing of less than one mile may be permissible in urban areas with the provision of grade-separated ramps or by adding collector-distributor (C-D) roads to accommodate weaving traffic flows, providing these design elements typically adds significantly to the complexity and cost of an interchange project.

The I-270/MD 355/Capital Beltway interchange is a complex system with successive left-entering merge conditions and significant weaving movements in a highly congested area. Based on traffic count data collected in September 2005, the eastbound I-495 AM peak hour vehicle volume is approximately 7,000 vehicles, which equates to a level of service (LOS) E for the segment between I-270/MD 355 and MD 185. Adding a new access point in the short segment between this interchange and the MD 185/ Capital Beltway interchange (approximately 9/10 mile from the I-270/MD 355 beltway access point and ¼ mile from the MD 185 access point) would further complicate the traffic conditions in this area, and present significant operational and safety concerns.

Figure 3: Distances Between Existing I-495 Interchanges and Possible Location of Proposed New Access Point



Traffic entering the Capital Beltway from the I-270 and MD 355 ramps would be required to merge into traffic traveling eastbound from the west and then quickly weave across up to four travel lanes to exit at a new NNMC access ramp. Although the amount of traffic that would choose to make this weaving movement is not accurately known, the Navy's traffic study indicates that approximately 68% of the traffic volume that would use the new access point would originate on I-270. Thus, it is very likely that the amount of new traffic that would be added to the mix of traffic traveling eastbound and from I-270/MD 355 to the new access point would degrade the operations of the interstate.

The situation described above is similar to the maneuver that is currently needed to exit at MD 185 from the I-270/MD 355 access point, within approximately one mile after entering the Capital Beltway from I-270/MD 355 on the west. Aside from the potential traffic safety concern, as explained above, this new traffic movement would also pose additional Beltway traffic flow problems. A new slip ramp access to NNMC would not only disturb traffic flow from traffic weaving and merging across multiple lanes in such a short distance; it would also be further complicated by the curving horizontal alignment of the Beltway between the I-270 East Spur entrance and the MD 185 interchange. Having three or four interstate access points so close to one another would likely degrade the integrity of the interstate system by increasing the complexity of the roadway system and presenting both safety and flow concerns due to multiple weaving conflicts. For these reasons, SHA concurs with the Navy and does not recommend that Interstate Access Point Approval (IAPA) from FHWA be pursued.

Travel Demand and Traffic Relief Issues

The SHA evaluated the potential traffic demand for a slip ramp and the diversion of traffic to a proposed ramp from other roadways in the network, based on the findings in the Navy's DEIS traffic study. The traffic study was conducted using both Critical Lane Analysis (CLA) and LOS approach to determine the capacity of intersections in the study area with a Beltway slip ramp in place.

CLA was used to generate intersection Critical Lane Volume (CLV) for the intersections surrounding NNMC. The CLV was then compared to the CLV standard for Montgomery County, where 1,600 vehicles is the maximum lane capacity per hour. The LOS approach defines intersection capacity through the use of a rating system. Ratings range from LOS A to F, where LOS A represents intersections with minimal delays and LOS F represents intersections that are over capacity with excessive delays and long queues. Generally LOS ratings of A through D are acceptable, while E, which is approaching capacity, is also acceptable in some jurisdictions, including Montgomery County.

Table 4 on page 20 shows the results of the Navy's traffic study for the AM and PM CLVs and Levels of Service (LOS) for intersections surrounding the NNMC, for both the No-Build and Slip Ramp scenarios, as presented in its March 2008 FEIS. It also presents the

Table 4: AM and PM CLV and LOS for the 2011 No-Build and Slip Ramp Scenarios

Intersection	No-Build AM CLV/LOS	AM CLV/ LOS with Slip Ramps	Percent Decrease in CLV	No-Build PM CLV/LOS	PM CLV/ LOS with Slip Ramps	Percent Decrease in CLV
Grosvenor Lane & Rockville Pike	1331/C/D	1320/C/D	0.83%	1097/B	1085/B	1.09%
West Cedar Lane & Rockville Pike	2100/F	2079/F	1.00%	1822/F	1841/F	1.04% increase in CLV
Jones Bridge Road & Rockville Pike	1365/D	1365/D	0.00%	1722/F	1722/F	0.00%
Jones Bridge Road & Connecticut Avenue	1559/E	1543/E	1.03%	2078/F	2038/F	1.92%

Source: Final Environmental Impact Statement For Activities to Implement 2005 Base Realignment and Closure Actions At National Naval Medical Center Bethesda, Maryland, March 2008

percent decrease in CLV from No-Build to Slip Ramp conditions.

Adding a new access point to the NNMC campus would not significantly decrease traffic volumes at the intersections shown above in **Table 4**. Failing intersections still fail, and improvements in traffic operations are incremental at best with or without a slip ramp available. At most, there would be a 1.9 percent decrease in PM CLV at the Jones Bridge Road and Connecticut Avenue intersection, which still results in a failing level of service with a mere 40-vehicle per hour decrease in traffic.

Contrary to the assumption that providing direct access from the Capital Beltway to the NNMC campus would divert traffic from other major access roads and thereby allow intersections on these roads to operate at a better level of service, the original Navy traffic study provided data showing that estimated 2011 traffic volumes that would be diverted from existing gates due to a new access point would not be significant. As this original Navy traffic study only took into account the BRAC-related eastbound traffic that may use the slip ramp, SHA traffic engineers assumed that 50 percent of all of the traffic destined to NNMC, including both existing traffic and BRAC traffic, would use this ramp to access NNMC from the Capital Beltway. Assuming that vehicles entering NNMC via this route would exit via the reverse route, the estimated total amount of traffic that would be diverted from the existing gates along MD 355 and Jones Bridge Road is shown in **Table 5** on page 21.

It is estimated that approximately 11,000 vehicles enter the grounds daily at NNMC presently with its current population of 1,900 civilians, 2,700 military personnel, 497,000 annual outpatient visits, and 7,700 annual admissions ("BRAC Growth – Facts and Figures," Maryland Department of Business and Economic Development, May 16, 2008). The Navy's DEIS traffic analysis used a conservative assumption of growth that examined the potential transportation impacts of accommodating 2,500 new employees at NNMC by 2011 (NNMC DEIS, 4.7, p. 4-36). The 2011 projected traffic volume on southbound MD 355 just south of the MD 355 and Cedar Lane intersection (approaching the main entrances to NNMC) is expected to be approximately 4,055 vehicles during the AM peak hour with 1,275 of those vehicles entering the NNMC gates. If, in accordance with **Table 5**, approximately 600 vehicles divert from the existing gates during the peak hour with the addition of a new interstate access to the NNMC campus, the effects of the diversion on the critical lane volumes shown in **Table 4** would not be significant. This would hardly be a cost-effective solution to the traffic problems posed by BRAC. In addition, because these vehicles may be coming from

Table 5: Estimated 2011 Volumes Diverted from Existing Gates with a New Access Point

	AM Peak Hour (vehicles)	PM Peak Hour (vehicles)
Entering Volume	630	230
Exiting Volume	195	600

a variety of locations using a variety of routes, the diversion of these vehicles to the new access point would not result in a reduction of 600 vehicles at any one location. Instead, it could be a reduction of 150 vehicles at one location, 75 at another, and so on.

Therefore, it is unlikely that a new access point would provide significant relief to surrounding roadways because the effect of the diversion is diluted throughout the system due to the multitude of routes to and from the NNMC campus. While more detailed studies would need to be conducted to determine what impacts this concept may have on the existing I-495/MD 185 interchange and other nearby locations, it is anticipated that the intersections included in the study would continue to operate at similar levels of service, with or without slip ramps that provide a direct connection to the NNMC. It is also important to note that while the vast majority of new traffic resulting from the BRAC action will be in the system by 2011, it would not be possible to construct a slip ramp(s) until much later than that.

Environmental Issues

Section 4(f) of the U.S. Department of Transportation (U.S. DOT) Act stipulates that the FHWA and other U.S. DOT agencies cannot approve the use of land from a significant publicly-owned public 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 the use of that land, and the action includes all possible planning to minimize harm to the property resulting from the transportation use. Two parks are located in the area adjacent to NNMC, Rock Creek Park and North Chevy Chase Park, both of which would likely be impacted by a potential new access ramp. Some portions of the area between the MD 355 and MD 185 interchanges feature steep topography (up to an approximate 2:1 slope), which may require regrading for slip ramp construction to meet AASHTO requirements. A tributary to the Rock Creek is also present, which would result in stream impacts and could require the construction of a structure for a proposed ramp. County and private property, including established residences, may also be impacted. Given the fact that other feasible roadway improvement alternatives exist, and that the traffic studies have shown a limited amount of traffic relief from a potential new access ramp, it is even more unlikely that FHWA would approve the use of this parkland for a new interstate access point.

Summary of Beltway Ramp Access Investigation

Due to the existing complexity of the Capital Beltway between I-270 and MD 185, adding a new access point at this location would further complicate traffic flow and create additional safety concerns due to weaving conflicts. In addition, the environmental constraints associated with a new access point could be significant. The traffic analyses conducted by the Navy and SHA show that the operational effectiveness of a direct access ramp on local traffic congestion would be limited, at best, due to several identified traffic flow and safety concerns. Given the current traffic operations and volumes associated with the MD 355 and MD 185 Beltway Inner Loop ramps and the issues presented in this discussion paper, SHA does not consider an additional interstate access point from the Capital Beltway to the NNMC to be a viable option for consideration and will not pursue an IAPA from FHWA.

Summary & Conclusions

The results of the study indicate that the existing roadway capacity will be exceeded by the influx of new traffic due to the BRAC action and other related growth at the NNMC. Under existing conditions, four intersections, MD 355 (Rockville Pike) @ Cedar Lane, MD 355 (Rockville Pike) @ North Drive, MD 355 (Rockville Pike/Wisconsin Avenue) @ Center Drive/Jones Bridge Road, and MD 185 (Connecticut Avenue) @ Jones Bridge Road/Kensington Parkway, were already failing during the AM or PM peak hour, with a LOS F. Travel forecasts show that a total of seven of 27 intersections are projected to operate at LOS F for either the AM or PM peak hour in 2011.

To prepare for this anticipated increase in traffic volumes, SHA is recommending five intersection improvement concepts covering these seven locations. However, the level of available funding is not sufficient to program all of the needed improvements. Therefore SHA, in coordination with the Montgomery County BRAC Committee and the NNMC, developed a list of priority intersections that were desired to be implemented, should funding become available.

In addition, the possibility of adding a new access point from the Capital Beltway to the NNMC campus was also examined to provide more direct access and to decrease the amount of traffic on arterial roadways surrounding the campus. However, due to the existing complexity of the Capital Beltway between I-270 and MD 185 and weaving conflicts, adding a new access point at this location would further worsen traffic flow and safety concerns. The traffic analyses conducted by the Navy and SHA show that the operational effectiveness of a direct access ramp on local traffic congestion would be limited, at best, and the environmental constraints associated with a new access point could be significant. Therefore, SHA does not consider an additional interstate access point from the Capital Beltway to the NNMC to be a viable option for consideration and will not pursue an IAPA from FHWA.

BRAC

Base Realignment and Closure