
COVER SHEET

Action Proponent:

U.S. Navy, Bureau of Medicine and Surgery, Washington DC

Proposed Action:

The Navy's Proposed Action is to provide necessary facilities to implement BRAC 2005 actions at National Naval Medical Center.

The specific BRAC actions are to:

"Realign Walter Reed Army Medical Center (WRAMC), Washington, DC, as follows: relocate all tertiary (sub-specialty and complex care) medical services to National Naval Medical Center, Bethesda, Maryland, establishing it as the Walter Reed National Military Medical Center Bethesda, Maryland; relocate Legal Medicine to the new Walter Reed National Military Medical Center Bethesda, Maryland; relocate sufficient personnel to the new Walter Reed National Military Medical Center Bethesda, Maryland, to establish a Program Management Office that will coordinate pathology results, contract administration, and quality assurance and control of Department of Defense (DoD) second opinion consults worldwide; relocate all non-tertiary (primary and specialty) patient care functions to a new community hospital at Fort Belvoir, VA."

Designation:

Draft Environmental Impact Statement (DEIS).

Abstract:

This DEIS evaluates the potential environmental effects of construction and operation of new facilities at the National Naval Medical Center (NNMC), Bethesda, Maryland. Alternative One would add approximately 1,144,000 square feet (SF) of new building construction, provide approximately 508,000 SF of renovation to existing building space at NNMC, and provide approximately 824,000 SF of new parking facilities. It would accommodate approximately 2,500 additional staff and an estimated 1,862 patients and visitors each weekday. The new construction or improvements to existing facilities would provide medical care and administration additions and alterations, a Traumatic Brain Injury/Post Traumatic Stress Disorder Intrepid Center of Excellence, permanent and temporary lodging facilities (Bachelor Enlisted Quarters and Fisher Houses™), a new physical fitness center, additional parking, and road and utility improvements on the installation as needed to support the new facilities. Under Alternative Two, the same facilities are proposed; some facility sites change and the choice of new construction versus renovation of some facilities differs from Alternative One. Alternative Two would add to NNMC approximately 1,230,000 SF feet of new building construction, approximately

423,000 SF of building renovation, and approximately 824,000 SF of new parking facilities. The estimated staffing increase would also be approximately 2,500 personnel and 1,862 patients and visitors each weekday under Alternative Two.

For additional information concerning this document or to send comments, please contact:

By Mail: Officer in Charge - BRAC
NNMC
8901 Wisconsin Avenue
Bethesda, Maryland 20889

By E-Mail: NNMCEIS@med.navy.mil

By Telephone: (301) 295-2722

Visit Website:

<http://www.bethesda.med.navy.mil/Professional/PublicAffairs/BRAC/>

EXECUTIVE SUMMARY

General

This Environmental Impact Statement (EIS) will examine the potential environmental impacts of the relocation of Walter Reed Army Medical Center (WRAMC) activities from the District of Columbia to the National Naval Medical Center (NNMC) in Bethesda, Maryland per Public Law 101-510, the Defense Base Closure and Realignment Act of 1990 (BRAC Law) as amended in 2005. The specific BRAC recommendation is to:

"Realign Walter Reed Army Medical Center, Washington, DC, as follows: relocate all tertiary (sub-specialty and complex care) medical services to National Naval Medical Center, Bethesda, Maryland, establishing it as the Walter Reed National Military Medical Center Bethesda, Maryland; relocate Legal Medicine to the new Walter Reed National Military Medical Center Bethesda, Maryland; relocate sufficient personnel to the new Walter Reed National Military Medical Center Bethesda, Maryland, to establish a Program Management Office that will coordinate pathology results, contract administration, and quality assurance and control of Department of Defense (DoD) second opinion consults worldwide; relocate all non-tertiary (primary and specialty) patient care functions to a new community hospital at Fort Belvoir, VA."

In accordance with BRAC law, all closures and realignments must be completed by 15 September 2011 and require additional facilities and infrastructure to accommodate an increase of both inpatient and outpatient health care services provided at the NNMC campus.

The EIS is prepared pursuant to Section (102)(2)(c) of the National Environmental Policy Act (NEPA) of 1969, the regulations implemented by the Council on Environmental Quality (CEQ) (40 CFR Parts 1500 - 1508), Department of the Navy NEPA implementing regulations at 32 C.F.R. Part 775, OPNAVINST 5090.1C, the Navy's Environmental Readiness Program Manual, and the Supplemental Environmental Planning Policy, 23 September 2004.

The Navy published a Notice of Intent (NOI) to prepare an EIS in the Federal Register on Tuesday, 21 November 2006, which initiated a 45-day scoping period beginning on 21 November 2006 and ending on 4 January 2007. Official public notice of the four public scoping meetings held at the Bethesda Marriott Hotel between the 12th and 20th of December 2006 was publicized in leading local newspapers, to include the Washington Post, Washington Times, and Bethesda Gazette. The Navy also directly contacted key federal, state, and local officials and their representatives with a scoping notification letter and sent the official notice of public scoping meetings by letter to

21 key local government agencies and 293 local community associations. The Navy also made the scoping meeting notification widely available to the public at-large via an official announcement on the publicly accessible NNMC website. In response to the Navy's intensive communication effort, Montgomery County in turn distributed the official notice of the public scoping meetings to 2,000 individuals and organizations via the County's email distribution list and also posted the notice on the Montgomery County website. The notices invited comments pertaining to environmental issues that should be considered in development and analysis of alternatives during the 45-day scoping period and comments were accepted at the public scoping meetings or by mail, email, or telephone.

The Scoping Period ended on 4 January 2007. In response to the request from elected state and local officials, NNMC continued to accept comments until 3 February 2007 and held two public information meetings on 30 January and 01 February 2007. Comments were accepted at the public information meetings or by mail, email, or telephone. The comments were considered in the preparation of the Draft EIS (DEIS).

The DEIS will be made available for public review and comment. The U.S. Environmental Protection Agency will publish a Notice of Availability (NOA) and Notice of Public Hearing (NOPH) for the DEIS in the Federal Register and the Navy will publish an NOA and NOPH in the local newspapers. These will advise the public that the DEIS is available, where it can be obtained for review, and will advise of the public meetings. Public meetings will occur for the DEIS during a 45-day public review period that commences on the date of publication in the Federal Register. Comments provided by members of the interested public and federal, state, and local agencies on the DEIS will be reviewed and addressed before the Final EIS (FEIS) is released. An NOA will be published in the Federal Register and in the newspapers of record to inform the public that the FEIS has been released, starting a 30-day Wait Period (no action period). Comments received during the FEIS 30-day Wait Period (no action period) will be considered in reaching the final decision on the proposed action. Following the 30-day Wait Period (no action period), a Record of Decision (ROD) will be prepared and published in the Federal Register. The ROD is a concise summary of the decision made by the Secretary of the Navy or his/her designee from the alternatives presented in an FEIS. The ROD will state the decision, identify alternatives considered (including that which was environmentally preferable), and discuss other considerations (non-environmental) that influenced the decision identified. The ROD will also describe the intended implementation of all practical means to avoid impacts resulting from the chosen alternatives, and explain any decision behind the non-implementation of any of these means. Additionally, the ROD will address any monitoring associated with mitigation.

Throughout this process, the public will be able to obtain information on the status and progress of the Proposed Action and the EIS through the NNMC Public Affairs Office.

Background

NNMC in Bethesda, Maryland was founded in 1940, and was originally composed of the Naval Hospital, the Naval Medical School, the Naval Dental School, and the Naval Medical Research Institute. It has undergone many expansion and renovation projects over the years, to become one of the largest medical facilities in the country. NNMC has a campus that is surrounded by the National Institutes of Health (NIH) main campus to the west; Stone Ridge School of the Sacred Heart (Pre-K to 12 girls school) and residential housing to the north; North Chevy Chase Recreation Center, residential housing, and Rock Creek Park to the east, and Columbia Country Club, residential housing, parks, and a golf course to the south. Interstate 495 (I-495) is adjacent to the northeastern corner of the installation. Jones Bridge Road and Rockville Pike form the southern and western boundaries of the installation, respectively.

Under the BRAC law, the Army's flagship Medical Center at WRAMC will relocate all tertiary (sub-specialty and complex care) medical services to the NNMC campus in Bethesda from WRAMC. Tertiary care is treatment provided in a health center that includes highly trained specialists and often advanced technology. The term tertiary care is most often associated with inpatient services of a complex nature involving very specialized fields of medicine, such as cardiology and neurology. In the military health care system, a tertiary care facility such as NNMC Bethesda also provides primary care services such as family health care services. The transfer and integration of these services with existing functions at NNMC will result by law in creation of a new premier military health care command to be named the Walter Reed National Military Medical Center (WRNMMC) at Bethesda. The BRAC law calls for completion of the merger, establishment of the WRNMMC, and closure of WRAMC to be accomplished by 15 September 2011.

WRNMMC will serve as the premier DoD medical center with the full range of intensive and complex specialty and subspecialty medical services, including specialized facilities for the most seriously injured service members. This facility will serve as the U. S. military's worldwide tertiary referral center for casualty and beneficiary care. As the U.S. military's premier teaching hospital, WRNMMC will continue to provide assigned medical staff with world class graduate and post-graduate medical education programs and training while also improving the health of DoD health care beneficiaries and patients through robust basic and applied medical research programs.

Executive oversight for the BRAC-mandated consolidation and integration of the tertiary care and related medical support activities currently performed at WRAMC to the NNMC campus is managed by the Commander Joint Task Force National Capital Area (JTF CapMed). Reporting directly to the Secretary of Defense, the Commander JTF CapMed is chartered to oversee, manage, and direct all inter-Service actions between the Navy, Army, and Air Force to accomplish the BRAC

actions in the National Capital Area and implement an efficient, integrated, world-class health care delivery system bringing the 'best of the best' together to work in concert on behalf of warriors, retirees and their families.

The role of JTF CapMed in aligning the different Service resources is projected to optimize the availability of military health care in the National Capital Area, permitting the Services to efficiently consolidate and utilize available health care resources and personnel to eliminate redundancies, enhance clinical care, promote graduate education and joint training, and enhance research opportunities associated with the future WRNMMC at Bethesda. JTF CapMed was established on 14 September 2007 and the Commanders at the existing NNMCMC and WRAMC report to the JTF for all matters concerning BRAC implementation and establishment of the WRNMMC at Bethesda.

Purpose and Need for the Proposed Action

The purpose for the actions being evaluated is to establish a single premier military medical center at the NNMCMC Bethesda site in accordance with the BRAC legislation.

The need for the Proposed Action is to implement the BRAC law, which requires development of both new and improved facilities to accommodate the projected influx of patients and staff on account of the known shortfall of facility space and associated infrastructure to support them at the existing NNMCMC campus. The projected increase in staff is approximately 2,200 and additional visitors and patients entering NNMCMC could average approximately 1,862 on a typical weekday. The BRAC-directed relocations from WRAMC will result in movement of medical and medical support services to NNMCMC. Needed facilities would support additional inpatient and outpatient care; provide Traumatic Brain Injury (TBI) and Post Traumatic Stress Disorder (PTSD) care; provide additional medical administration space; provide transitional health care spaces for patients requiring aftercare following successful inpatient treatment to include appropriate lodging accommodations on campus for these patients and their supporting aftercare staff; provide a fitness center for patients and staff; and provide parking for the additional patients, staff, and visitors.

The BRAC-mandated movement of tertiary care requires the improvement of existing facilities and available treatment modalities supporting patients experiencing Traumatic Brain Injury (TBI) and Post-Traumatic Stress Disorders (PTSD). Delivery of appropriate tertiary care services for the TBI/PTSD patients will require provision of Intrepid Center for Excellence (ICE) facilities to include new spaces for advanced diagnostics and short-term clinical rehabilitative care and patient training programs. Space requirements account for the need for family member participation and education as a vital element in the support and advocacy for TBI/PTSD patients. The ICE facilities will also include two Fisher Houses™ to provide TBI/PTSD patients with

transitional home-like lodging to aid these patients and their families to functional reintegration as a vital ICE element of care.

Proposed Action and Alternatives

The Navy's Proposed Action is to provide necessary facilities to implement the BRAC 2005 realignment actions.

To implement the actions directed by the 2005 BRAC 2005 law, the Navy proposes to provide:

- Additional space for inpatient and outpatient medical care as well as necessary renovation of existing medical care space to accommodate the increase in patients
- An Intrepid Center of Excellence (ICE) to meet an urgent need for Traumatic Brain Injury (TBI) and Post Traumatic Stress Disorder (PTSD) care
- Medical administration space
- Clinical and administrative space for the Warrior Transition Unit to deliver transitional aftercare and associated patient education programs
- Bachelor Enlisted Quarters to accommodate the projected increase in permanent party enlisted medical and support staff as well as provide transitional lodging required to support aftercare patients receiving treatment on an extended basis
- A fitness center for staff as well as the rehabilitation of patients
- Parking for the additional patients, staff, and visitors
- Two Fisher Houses™ that would support short-term lodging and a home-like reintegration experience for the service members and their family member/care taker while they participate in education and treatment programs in the ICE. Fisher Houses™ are "family-style lodging" to address short-term lodging needs of patients and their families in hospital or requiring extended aftercare treatment.

To implement the Proposed Action, the Navy has identified two action alternatives that differ in their siting of the required facilities within the installation and in their use of new construction versus renovation of existing buildings to obtain some of the needed administrative space.

Under both action alternatives, the proposed action would provide the new WRNMMC approximately 1,652,000 square feet (SF) or 153,476 square

meters (m²) of building construction and renovation, as well as approximately 824,000 SF (76,552 m²) of parking facilities. The alternatives add approximately 2,500 parking spaces and demolish approximately 700 spaces for a net gain of approximately 1,800 spaces.

An additional 484,000 patients and visitors are estimated each year at WRNMMC. Assuming these are predominantly on weekdays, an average of 1,862 patients and visitors would enter and depart NNMC daily. The current estimate of additional staff is 2,200; however, the EIS assumes approximately 2,500 additional employees as a conservative estimate to insure any additional staff determined necessary have been evaluated in the EIS, as well as to account for possible increases in staff at NNMC under other ongoing or future projects on Base being addressed under cumulative impacts. Other off-Base projects, also discussed under cumulative impacts, do not add staff to NNMC.

Ongoing and foreseeable future projects at NNMC include an expansion to the Navy Lodge, an expansion to the Navy Exchange, additional Senior Non-Commissioned Officers Quarters, two day care centers, improvements to Morale Welfare and Recreation Athletics Fields, a truck inspection facility at Grier Road gate, access gate improvements at NNMC for all gates, an Academic Program Center for the Uniformed Services University of the Health Sciences (USUHS) Nursing School, a Metrorail link in the southwest corner of NNMC, and a pedestrian connection between NNMC and the NIH campus to NNMC. The EIS also addresses off-Base projects. The expansion of NIH under its master plan and approved area development projects, which could contribute to traffic, are evaluated for cumulative impacts. These are discussed in Section 4.12 Cumulative Impacts.

Tables 2-3 and 2-4 in the final section of Chapter 2 compare the requirements and impacts of the two action alternatives, listed below:

- Alternative One would add to NNMC approximately 1,144,000 SF (106,000 m²) of building construction, provide approximately 508,000 SF (47,193 m²) of renovation to existing building space, provide approximately 824,000 SF (76,552 m²) of new parking facilities, accommodate approximately 2,500 additional staff, and accommodate approximately 1,862 patients and visitors per weekday. The new construction or improvements to existing facilities would provide medical care and administration additions and alterations, a TBI/PTSD ICE facility, permanent and temporary lodging facilities (BEQs and Fisher Houses™), a new physical fitness center, additional parking, and road and utility improvements on the installation to support the new facilities. Figure 2-2 in this document shows proposed facility sites under Alternative One.
- Under Alternative Two, the same facilities as under Alternative One are proposed. However, the location and the choice of new construction versus renovation of some facilities would differ

from Alternative One. Alternative Two would add to NNMC approximately 1,230,000 SF (114,271 m²) of new building construction, provide approximately 423,000 SF (39,298 m²) of renovation to existing building space, and provide approximately 824,000 SF (76,552 m²) of new parking facilities. The number of staff, patients, and visitors would be the same as under Alternative One. Figure 2-3 in this document identifies the location of the proposed facilities.

The third alternative is the No Action Alternative, which is required by statute and will evaluate the impacts at NNMC in the event that additional growth from BRAC actions does not occur. NNMC would continue to maintain and repair facilities in response to requirements from Congressional action or revisions to building codes. Implementation of the No Action Alternative would require the Congress to change the existing BRAC Law. Figure 2-4 in this document shows the location of existing NNMC facilities under the No Action Alternative.

Environmental Consequences by Resource Area

Major issues and impacts associated with Alternatives One and Two are discussed below. The No Action Alternative would not implement the realignment; neither BRAC construction nor renovation would occur and staffing, patients, and visitors at NNMC would not change. The No Action Alternative, therefore, would not cause impacts to the environment.

Geology, Topography and Soils: Implementation of either of the action alternatives would not be expected to impact local geology. Site preparation under Alternatives One and Two would require excavation and grading and potential soil improvement as necessary to accommodate the proposed level of development. Approximately 13.2 acres (9.8 acres of construction on existing impermeable surfaces requiring demolition and 3.4 acres of new construction on open space) under Alternative One and up to 13.3 acres (8.5 acres of construction on existing impermeable surfaces requiring demolition and 4.8 acres of new construction on open space) under Alternative Two would be disturbed by the new facilities. Current impermeable surface area at NNMC is estimated as approximately 98 acres; Alternatives One and Two would increase impermeable surface area at NNMC by approximately 3.5 percent and 4.9 percent respectively. Construction projects with this amount of disturbance require an approved erosion and sediment control plan. This plan must comply with Maryland's environmental laws, including Environment Article, Title 4, Subtitle 1 and 2 for erosion and sediment control and stormwater management (COMAR 26.17.01 and 26.17.02). Prior to construction at any site, a General Permit for Construction Activity would be obtained, which would include an approved sediment and erosion control plan. Planning would develop appropriate site-specific best management practices (BMPs) for controlling runoff, erosion, and sedimentation during construction and demolition activities. With soil erosion and sediment control measures, the actions proposed under this alternative would likely

result in minor adverse impacts to soils from construction occurring on those previously open areas. No new impacts to soils are considered on those sites covered by existing manmade structures such as pavement.

Water Resources: Under Alternative One approximately 3.4 acres of existing pervious soil surfaces would be converted to impervious development. Under Alternative Two approximately 4.8 acres of existing pervious soil surfaces would be converted to impervious development. Implementation of erosion and sediment control plans would be required and would reduce erosion of exposed soils, slow the rate at which water leaves the site, and capture eroded soils and concentrated nutrients before they enter downstream water flow. The new construction would also require a stormwater management plan that adheres to the 2000 Maryland Stormwater Design Manual and Maryland's Stormwater Management Act of 2007, which requires that environmental site design, through the use of nonstructural best management practices and other better site design techniques, be implemented to the maximum extent practicable (see Section 4.2 for details). Increases in surface stormwater runoff during construction and operation would be controlled by stormwater BMPs as well as the erosion and sediment controls to reduce potential impacts to surface and ground waters. Low Impact Development (LID) measures would be among those considered and implemented when practical. Runoff from already impermeable surfaces that are being affected by the proposed construction would be reduced by the controls implemented. Erosion and sediment control measures would also be required for the construction storage site to the west of Building 1 and the property would be restored to original conditions after construction is completed.

The construction is expected to avoid all floodplains. The only structure proposed under Alternatives One and Two in the vicinity of potential wetlands is the Southern Parking facility, which as currently proposed would be at least 75 feet from the stream and would not encroach on either the potential wetland or within the 25-foot buffer afforded to non-tidal wetlands by the State of Maryland.

Biological Resources: All the proposed projects under either alternative would convert lands with either existing development or landscaped areas into developed facilities and associated landscape vegetation. Impacts to vegetation could be adverse but not significant because areas considered for the projects are located in areas with existing structures or pavement, or in areas of grassy meadow and lawn with thinly scattered trees and shrubs commonly found within the region. No effects to rare, threatened, and endangered species would be expected under either of the action alternatives as there are no special-status species inhabiting the proposed project sites.

Air Quality: NNMCM is in an air quality control region that is in moderate nonattainment for ozone and in nonattainment for particulate matter with diameter less than or equal to 2.5 micrometers (PM_{2.5}), and is in maintenance for carbon monoxide. It is also in an ozone

transport region. Federal actions located in nonattainment and maintenance areas are required to demonstrate compliance with the general conformity guidelines. The DEIS has completed a General Conformity Rule applicability analysis for the ozone precursor pollutants nitrogen oxides (NO_x) and volatile organic compounds (VOCs), for PM_{2.5}, and the PM_{2.5} precursor pollutant sulfur dioxide (SO₂), and for carbon monoxide (CO) to analyze impacts to air quality. If annual project emissions are below *de minimis* values, a conformity determination is not required. The *de minimis* values for moderate nonattainment ozone areas in an ozone transport region, areas in nonattainment for PM_{2.5}, and CO maintenance areas are 100 tons per year (TPY) for NO_x, PM_{2.5}, SO₂, and CO and 50 TPY for VOCs.

Sources of CO, NO_x, VOCs, PM_{2.5}, and SO₂ associated with the proposed project would include emissions from construction equipment, fugitive dust (PM_{2.5}), painting of interior building surfaces and parking spaces (VOCs only), and emissions from stationary units (boilers and generators). The analysis indicates that estimated peak year emissions under Alternative One would be the second year of construction, 2010, for all pollutants except CO. The year 2010 would result in emissions of approximately 45.78, 22.16, 18.23, and 5.79 TPY for NO_x, VOCs, PM_{2.5}, and SO₂ respectively. Year 2011, with combined construction and operations, would be the peak year for CO with 20.33 TPY. Under Alternative Two, the analysis indicates that the estimated peak year is also 2010 for all pollutants except CO as for Alternative One, but with a slight decrease below Alternative One emissions to 43.93, 21.99, 16.71, and 5.51 TPY for NO_x, VOCs, PM_{2.5}, and SO₂ respectively. Year 2011, with combined construction and operations, would be the peak year for CO with 19.21 TPY. One reason that the emissions for Alternative Two are slightly less than Alternative One emissions is that the amount of demolition and resultant disposal is lower, resulting in lower construction emissions. These emissions do not exceed the *de minimis* levels for moderate ozone nonattainment, PM_{2.5} nonattainment, or CO maintenance levels. Therefore, a full conformity determination is not required for Alternatives One and Two. A Record of Non-Applicability will be provided in the Final EIS.

An evaluation of mobile source (vehicle) CO emissions was also performed to determine CO concentrations caused by vehicles under the alternatives both in the parking garages and at the five intersections adjacent to NNMC. The analysis determined that CO concentrations remain below allowable ambient standards under both alternatives. Minor modifications to NNMC's Title V permit are expected.

Noise: Demolition, construction, and renovation noise would occur at NNMC under either Alternative One or Two. The noise would be short-term, typical of construction activities, and would be managed to meet State and Montgomery County criteria. Construction noise near sensitive receptors would require careful planning and potential implementation of noise reduction measures listed in the section on Potential Improvement Measures at the end of this Executive Summary. Sensitive receptors within the NNMC installation include the existing

medical facilities, which would be adjacent to construction for the medical care additions under both alternatives. On-base residential facilities, also sensitive, include the new BEQ(s) and two Fisher Houses, which would also be constructed near existing residential facilities under both alternatives. Sensitive receptors outside NNMC include the Stone Ridge School of the Sacred Heart and the residential housing, both adjacent to the northern property boundary. Alternative One would construct two BEQ structures: the BEQ to the west of Building 61 would be in the area of NNMC bordered by the school and the BEQ to the east of Building 60 would be in the area of NNMC bordered by the residential area. Under Alternative Two, only one large BEQ would be constructed; it would be located in the area east of Building 60 and in the area of NNMC bordered by the residential area. Residential areas on the east side of NNMC and across Jones Bridge Road are far enough from the construction sites that they are unlikely to be impacted by the noise from construction activities.

Noise caused by additional traffic under either alternative would be primarily from passenger cars and would not be expected to change existing noise levels noticeably to receptors along roadways. The potential increase in helicopter activities, primarily for medical emergencies, is expected to increase flights into NNMC by one to two flights per month, an increase of 8 percent to 16 percent. This noise, which is short-term and not predictable, is not considered a significant increase from existing conditions.

Infrastructure: Based on initial estimates of utility demands and provider capacity, no major issues are anticipated. As designs are finalized, additional utility studies will be conducted to identify whether improvements to any utility lines or pipes within NNMC are appropriate and these improvements would be implemented as part of the construction. The systems have adequate redundancy to assure an ability to provide continued service while any line is shut down. Implementation of controls necessary to comply with State stormwater requirements and the NNMC's stormwater management plans, approved by Maryland, during both construction and operation of these facilities would ensure that any impacts from the increased stormwater runoff would not be significant.

Transportation: The BRAC movement of added staff and patient workload to the existing NNMC campus to create the directed WRNMMC will occur in an already congested urban environment. Both local government and surrounding communities are focusing attention on the traffic in the vicinity of the existing NNMC campus and the mounting broad need for local improvements to key traffic arteries serving the Bethesda community in general. Results from the Traffic Study analysis show that the additional traffic expected during operation of the BRAC facilities would increase overall traffic in the vicinity of the future WRNMMC during peak hours. The analysis of peak hours provides the worst condition to be expected and includes both new employees and the 1,862 projected daily patients and visitors in its estimates of peak traffic. Construction traffic volumes are significantly lower

than the volumes expected during operations; therefore, construction traffic would be expected to have less of an impact on area roadways.

The Traffic Study employs Critical Lane Analysis, which generates an intersection Critical Lane Volume (CLV) that is then compared to the CLV standard for Montgomery County. The Traffic Study indicated that five intersections near the NNMC campus are projected to operate in excess of the Montgomery County (CLV) standards during peak hours. It also determined, however, that four of these five intersections would already operate in excess of County CLV standards under the No Action Alternative background in 2011, independent of any proposed change to the NNMC campus under the BRAC alternatives.

The only intersection projected to exceed County CLV standards specifically because of the additional traffic under either Alternatives One or Two is the intersection of Rockville Pike and North Drive, which increases from 1503 to 1605 in the AM period, where 1600 is maximum capacity.

The primary traffic impacts using critical lane volumes and projected growth in traffic volumes caused by Alternatives One or Two are shown below. Alternatives One and Two, with an equal number of staff, patients, and visitors, would have essentially identical traffic impacts. For all of these intersections, any volumes over 1600 indicate that the intersection is over capacity and conditions are unacceptable. Using the level of service (LOS) definitions in Section 3.7.4 for these intersections, over 1600 is LOS F and unacceptable; 1451-1600 is equivalent to LOS E and marginal; and values below 1450 would be LOS D or better and are acceptable.

- During the AM peak, two intersections would operate above capacity: Rockville Pike and West Cedar Lane (CLV: 2100) and Rockville Pike and North Drive (CLV: 1605).
 - Rockville Pike/West Cedar Lane would already be over capacity under the No Action Alternative; the BRAC Alternatives add 3% to peak No Action Alternative volumes.
 - BRAC Alternatives cause Rockville Pike/North Drive to exceed capacity by a slight margin (1605 versus 1,600); the BRAC Alternatives add 7% to peak No Action Alternative volumes.
- During the PM peak hour, four intersections operate above the County capacity standards under the BRAC Alternatives; all the intersections were already above capacity under the No Action Alternative:
 - Rockville Pike/West Cedar Lane (CLV: 1822); BRAC Alternatives add 2% to peak No Action Alternative volumes.

- West Cedar Lane/Old Georgetown Road (CLV: 1857); BRAC Alternatives add 12% to peak No Action Alternative volumes.
- Rockville Pike/Jones Bridge Road (CLV: 1722); BRAC Alternatives add 3% to peak No Action Alternative volumes.
- Jones Bridge Road/Connecticut Avenue (CLV: 2078); BRAC Alternatives add 4% to peak No Action Alternative volumes.
- During the AM peak, three intersections operate at higher CLVs that approach capacity: Pooks Hill Road and Rockville Pike (CLV: 1562), Rockville Pike and Wilson Drive (CLV: 1446), and Jones Bridge Road and Connecticut Avenue (1559). These three intersections were already above CLV 1400 under the No Action Alternative and the BRAC Alternatives increase peak volumes by no more than 6%.
- During the PM peak, the intersections of Pooks Hill Road and Rockville Pike (CLV: 1430), Rockville Pike and North Wood Road (CLV: 1557), Rockville Pike and Wilson Drive (CLV: 1593) and Jones Mill Road and East-West Highway (CLV: 1535) would operate at a high CLV under the BRAC Alternatives. The BRAC Alternatives raise peak volumes compared to the No Action Alternative by 2%, 14%, 4%, and 3%, respectively.

In addition to the intersection results above, the traffic analysis indicates that several intersections have large percentage increases in peak volumes caused by the BRAC Alternatives that do not cause the intersection to exceed or approach capacity. In the AM, Jones Bridge Road & Gunnell Road peak volumes increase by 35% (CLV: 1093); Rockville Pike & North Wood Road peak volumes increase by 21% (CLV: 1401). In the PM peak hour, three intersections experience significant increases in the CLV: West Cedar Lane & West Drive increases 37% (CLV: 705), Jones Bridge Road & Gunnell Road increases 22% (CLV: 1170), and Jones Bridge Road & Grier Road increases 20% (CLV: 1319).

During construction, additional construction traffic would consist of delivery trucks with materials and equipment, dump trucks carrying any debris away needing off-site disposal, and construction crew commuters. The daily volumes for these construction vehicles carrying material and equipment are significantly smaller than the volumes estimated for commuters during operations in the transportation analysis. Likewise, the construction crew commuting will be constrained by limiting parking spaces (currently 200 spaces). Therefore, the impacts of construction vehicles to area traffic in terms of volumes would be much less than the impacts identified for the NNMCM commuter traffic under the BRAC alternatives. With the area in front of Building 1 being provided for contractor use, contractors will be able to conduct their material staging on the NNMCM campus. It is currently planned that North Gate would provide dedicated access and egress to the construction storage site and security checks in an

adjoining area to the entrance on NNMC would be managed to minimize any potential effects to Rockville Pike from queuing.

Cultural Resources: The construction of new buildings in the NNMC Bethesda Historic District, particularly the two Medical Additions, which impact on the setting of the historic Central Tower Block, its Front Lawn, and protected view shed, will be sensitive and technically qualify as adverse effects under Section 106 of the National Historic Preservation Act. There is considerable precedent, however, in the prior axial expansion of facilities at NNMC out from the Tower Block. Further formal consultation under Section 106 and through other design review processes on the design of these facilities will be conducted to minimize and mitigate as necessary any potential adverse impacts. The renovation of Building 17 has a potential positive impact on this unused historic resource. The demolition of historic Building 12, which takes place under Alternative One if adaptive reuse proves impractical, would have an adverse effect with limited potential for mitigation.

The construction contractors would take measures to control/minimize whatever the visual intrusion of the construction staging area on the viewshed.

The Navy will pursue formal Section 106 consultation with the goal of achieving a ratified agreement document to resolve all adverse effects to historic properties. The agreement document would be appended to the Record of Decision on the Final Environmental Impact Statement.

Land Use: All direct effects to land use are within NNMC. Land use is consistent with plans and precedence; proposed facilities within NNMC are compatible with adjacent facilities. No direct effects or significant indirect effects outside the NNMC boundaries to land use are expected.

Socioeconomics: Major beneficial economic effects to the surrounding economy would be expected under each action alternative resulting from the large investment in construction and renovation of facilities. Construction costs for Alternatives One and Two are estimated at \$839 million and \$856 million respectively. Alternative One would generate an increase in local sales volume of an estimated \$1.32 billion, of which approximately 39 percent would result directly from the proposed action. Furthermore, an increase in local employment of approximately 5,500 would be expected to result from Alternative One construction, 39 percent of which would be the direct result of the proposed action. No relocation of off-base personnel is expected as a result of the proposed action since staff would be coming from WRAMC, located 6 miles away, within the Region of Influence (ROI). Therefore no significant effects on demographics resulting from Alternative One are expected.

Under Alternative Two there would be a prospective increase in sales volume in the ROI of an estimated \$1.34 billion, 39 percent of which

would be a direct result from Alternative Two. The prospective increase in employment in the ROI from construction would be approximately 5,600, with approximately 39 percent of those jobs resulting directly from Alternative Two. No relocation of off-base personnel is expected as a result of the proposed action since staff would be coming from WRAMC, located 6 miles away, within the ROI. Therefore no significant effects on demographics resulting from Alternative Two are expected.

The increase in patients and visitors will increase the need for services within NNNMC, but the patients and visitors are likely predominantly to go to and from NNNMC for appointments directly from their place of residence without affecting the immediate local area off Base economically except indirectly as additional traffic. The additional patients and visitors have been incorporated into the analysis of peak hour traffic, which provides the most severe impact on area intersections and roadways. However, the patients and visitors are spread through the day and night, as well as on weekends, and would add a general increase to traffic levels experienced in non-peak hours. Local residents may notice the increased traffic during non-rush hours, although conditions will be within the capacity of the roadways.

Implementing either alternative is not expected to produce disproportionately high and adverse human health or environmental effects on minority, low-income or younger segments of the local population in the vicinity of NNNMC.

Human Health and Safety: Hazardous material storage and use would have a minimal increase under both alternatives. The increases are not anticipated to have significant impacts, as adherence to the NNNMC Hazardous Material Program, which includes standard operating procedures (SOPs) for proper control and management of hazardous material, would assure impacts are avoided. Likewise, hazardous waste would increase under both alternatives. The increases are not anticipated to have impacts, as hazardous waste at NNNMC is regulated under the Resource Conservation and Recovery Act (RCRA) and Maryland Department of Environment (MDE). NNNMC has a Controlled Hazardous Substances (CHS) permit from MDE. In addition, NNNMC complies with the Navy and NNNMC policies for handling hazardous waste.

Under Alternative One several buildings or areas proposed for construction, demolition, or renovation activities are designated as Solid Waste Management Units (SWMU) and Areas of Concern (AOC) under the RCRA Corrective Action Program (CAP). Renovation activities in Building 17 and demolition activities in Buildings 18 and 21 for a new parking structure would occur in an area designated as AOC 1 under the RCRA corrective action plan. The area has been remediated but has not been closed administratively by the EPA Region III Office. SWMU 18 and AOC 4 are located in Building 21, AOC 8 is located in Building 150, and SWMU 9 is located in an area immediately southeast of Building 150. SWMU 31 is located in Building 59. SWMU 5 is located in the area

along Taylor Road in the vicinity of Building 141. SWMU 13 and 14 are located in Buildings 2 and 8 respectively.

Similarly, under Alternative Two, SWMU 31 is located in Building 59 and SWMU 5 is located in the area along Taylor Road in the vicinity of Building 141. SWMU 13 and 14 are located in Buildings 2 and 8 respectively.

NNMC is a site where there are no unacceptable human exposures to contamination that can reasonably be expected under current land and groundwater use conditions (USEPA, 2004b). Development in or around AOCs or SWMUs under the RCRA CAP would occur only with concurrence from EPA.

There is known asbestos and lead based paint in many of the older buildings. It is standard practice to check for asbestos and lead based paint prior to demolition or renovation in any building. Under both alternative One and Two, if the presence of the contaminants is confirmed, proper procedures, practices and regulations would be followed to ensure public safety.

Regulated Medical Waste (RMW) could double the current NNMC output; the capacity of the Sterile Processing Department (SPD) would be adequate for this increase, but additional storage requirements could require a reconfiguration of existing space to support the increase in RMW. The additional RMW at NNMC would increase the amount of RMW shipped to the incinerating facility in Baltimore, which has an extended amount of capacity. It is currently operating at only 50 to 65 percent of its permitted capacity.

Cumulative Impacts: The conservative use of an estimated 2,500 new employees under the action alternatives versus 2,200 currently estimated is expected to address potential cumulative impacts for additional employees (currently estimated as 136) for other ongoing and foreseeable future on Base projects not associated with BRAC.

One ongoing project on Base is considered: the Academic Program Center for the USUHS Nursing School will add needed space at USUHS, but is not expected to add staff, students, visitors or other potential commuters. The foreseeable on-Base future projects not associated with BRAC include an expansion to the Navy Lodge, an expansion to the Navy Exchange (NEX), additional Senior Non-Commissioned Officers Quarters, two day care centers, improvements to Morale Welfare and Recreation Athletics Fields, access gate improvements at NNMC for all gates, the Grier Road Commercial Vehicle Inspection Facility, a planned Metrorail link in the southwest corner of the installation near the southern Rockville Pike security gate, and a pedestrian connection between the NIH campus and NNMC just south of the South Wood Road security gate.

Only three of these future projects would add staff; the child care centers and expansions of the NEX and Navy Lodge would add staff estimated as 136 (this will require verification/update when project

planning is conducted). Only the NEX expansion would add visitors; however, these would primarily access NNMC during non-peak hours.

The cumulative impacts analysis of this EIS also includes off Base projects in the vicinity of NNMC during the time period of the Proposed Action. These include implementation of the 2003 NIH Master Plan and the transportation analysis includes approved background development off-base. The actions of either action alternative are not expected to result in a significantly greater incremental impact when added to the actions of other projects than what has been estimated for the alternatives in Chapter 4.0.

Potential Improvement Measures

The EIS analysis has identified potential improvement measures to reduce impacts to surface waters from potential soil erosion and runoff, for control of fugitive emissions to air, for construction noise, for traffic impacts that will be generated by the action alternatives, and for potential impacts to cultural resources.

Sediment and Erosion Control Measures: Recommended measures to be considered include but are not limited to:

- Using erosion containment controls such as silt fencing and sediment traps to contain sediment onsite where necessary
- Covering disturbed soil or soil stockpiles with plastic sheeting, jute matting, erosion netting, straw, or other suitable cover material, where applicable
- Inspecting erosion and sediment control BMPs on a regular basis and after each measurable rainfall to ensure that they are functioning properly, and maintain BMPs (repair, clean, etc.) as necessary to ensure that they continue to function properly
- Sequencing BMP installation and removal in relation to the scheduling of earth disturbance activities, prior to, during and after earth disturbance activities
- Phasing clearing to coincide with construction at a given location to minimize the amount of area exposed to erosion at a given time.

Stormwater Management Measures: The following nonstructural stormwater management practices would be considered and applied according to the Maryland Stormwater Design Manual (MDE, 2000) to minimize increases in new development runoff: 1) natural area conservation, 2) disconnection of rooftop runoff, 3) disconnection of non-rooftop runoff, 4) sheet flow to buffers, 5) grass channels, and 6) environmentally sensitive development. Low Impact Development (LID) measures would be among those considered and implemented when practical.

The following structural stormwater management practices would be considered and designed according to the Design Manual (MDE, 2000) to

satisfy the applicable minimum control requirements established in Section 4.1 of the Guidelines: 1) stormwater management ponds, 2) stormwater management wetlands, 3) stormwater management infiltration, 4) stormwater management filtering systems, and 5) stormwater management open channel systems.

Areas disturbed outside of the footprints of the new construction would be aerated and reseeded, replanted, and/or re-sodded following construction activities, which would decrease the overall erosion potential of the site and improve soil productivity.

Air Quality Construction Measures: The NNMCM air permit requires all reasonable precautions be taken to prevent particulate matter emissions during construction or demolition. During construction and demolition, fugitive dust would be kept to a minimum by using control methods. These precautions could include, but are not limited to, the following:

- 1) Use, where possible, of water or chemicals for dust control
- 2) Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials
- 3) Covering of open equipment for conveying materials
- 4) Prompt removal of spilled or tracked dirt or other materials from paved streets and removal of dried sediments resulting from soil erosion
- 5) Employment of a vehicle wash rack to wet loads and wash tires prior to leaving the site.

Noise Reduction during Construction: Construction and demolition contractors would be expected to adhere to State of Maryland and Montgomery County requirements listed in Section 3.5. Potential measures to control airborne noise impacts that would be considered and implemented as appropriate include:

- Source Limits and Performance Standards to meet noise level thresholds for daytime, evening, and nighttime hours at sensitive land uses (Montgomery County Standards)
- Designated Truck Routes
- Establishment of noise monitoring stations for measuring noise prior to and during construction
- Design considerations and project layout approaches including measures such as construction of temporary noise barriers, placing construction equipment farther from noise-sensitive receptors, and constructing walled enclosures/sheds around especially noisy activities such as pavement breaking

- Sequencing operations to combine especially noisy operations to occur in the same time period
- Alternative construction methods, using special low noise emission level equipment, and selecting and specifying quieter demolition or deconstruction methods

Control measures for sensitive receptors include: sequencing operations, use of alternative construction equipment and methods and instituting other special control measures to reduce the transmission of high noise levels to noise-sensitive areas. A construction phasing plan would be coordinated with patient moves to avoid impacts to patients.

Compliance with the Occupational Safety and Health Administration (OSHA) standards for occupational noise exposure associated with construction (29 CFR 1926.52) would address the construction workers hearing protection.

Potential Measures to Address Traffic Impacts from NNMC Actions: The EIS identifies potential traffic improvement measures for the 2011 implementation of the alternatives. The first set of potential improvements below is within the purview of NNMC for implementation. Gate and other improvements would be expected to speed vehicle entry and egress, improve Base circulation, and reduce queuing at the gate.

North Wood Road Gate:

- 1) Expand the number of lanes from two lanes to three lanes, with two inbound lanes in the morning peak period and two outbound lanes in the evening peak period.
- 2) Conduct a study at North Wood Road and Rockville Pike to determine if a traffic signal is warranted and suitable for submission of a request to state and local transportation authorities for funding and implementation.
- 3) A safety and security analysis is being conducted by DOD to improve security, safety, improve queuing on-site and reduce Rockville Pike queuing, and reduce damage to gates and guard houses.

South Wood Road Gate: A safety and security analysis is being conducted by DOD to improve security, safety, improve queuing on-site and reduce Rockville Pike queuing, and reduce damage to gates and guard houses.

Gunnell Road Gate (Navy Exchange Gate): A safety and security analysis is being conducted by DOD to improve security, safety, allow egress of fire engines that cannot use this gate, and improve queuing.

Grier Road Gate (Navy Lodge Gate):

- 1) It is recommended that this gate serve inbound and outbound traffic throughout the day.

2) Provide for separate outbound right and left turn lanes. This approach would need to be widened to include a single receiving/inbound lane.

3) A safety and security analysis is being conducted by DOD to improve security, safety, improve queuing on-site and reduce Jones Bridge Road queuing, and reduce damage to gates and guard houses.

University Road Gate (USUHS Gate): A safety and security analysis is being conducted by DOD to improve security, safety, improve queuing on-site and reduce Jones Bridge Road queuing, and reduce damage to gates and guard houses.

Perimeter Road: Widen and improve Perimeter Road on NNMC.

NIH Commercial Vehicle Inspection Station: Conduct a study at the NIH commercial Vehicle Inspection Station on Rockville Pike to determine if a traffic signal is warranted and suitable for submission of a request to state and local transportation authorities for funding and implementation.

Each of the following projects is under the jurisdiction of either Montgomery County or the State of Maryland. As part of the BRAC law, the U.S. Navy cannot provide funding or management of road improvements outside its property, except under the Defense Access Roads (DAR) Program. The Defense Access Road (DAR) Program provides a means for the military to pay their fair share of the cost of public highway improvements necessary to mitigate an unusual impact of a defense activity. 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. However, none of the off-base improvements meet the criteria for inclusion in the DAR Program.

As a consequence, each of the following projects would have to be funded and implemented through the appropriate Montgomery County or State of Maryland Transportation Organizations. This funding may include federal grants administered through these organizations. The Navy has coordinated the traffic analysis and potential improvements with these agencies. NNMC Bethesda has committed to cooperate fully with local agencies in the implementation of any or all of the proposed improvement measures. Refer to Tables 4-15, 4-16, 4-17, and 4-18 in Section 4.7.5 of the DEIS for roadway performance with the implementation of the improvements. Note: it is anticipated that pedestrian walkways would be improved as needed to meet code for any roadways that are widened.

Rockville Pike (MD 355) at Cedar Lane operates above capacity in both AM and PM peak hours:

- 1) Add a left-turn lane on the westbound and eastbound approach of the intersection.
- 2) Add an additional lane in each direction along Rockville Pike between Jones Bridge Road and Cedar Lane, per recommendation of the 1990 Bethesda Chevy Chase Master Plan. NNMC Bethesda will cooperate by providing frontage along MD 355 to accommodate the implementation of this measure if the State of Maryland and Montgomery County determine it appropriate to implement. Appropriate real estate easements would be coordinated and implemented to permit widening of Rockville Pike.

Old Georgetown Road (MD 187) at Cedar Lane operates above capacity in the PM peak hour:

- 1) Add another left-turn lane to the southbound approach of the intersection and eliminate parking along Cedar Lane eastbound to provide an additional receiving lane.
- 2) Provide an additional through lane in each direction along the Old Georgetown Road approaches to Cedar Lane, per recommendation of the 1990 Bethesda Chevy Chase Master Plan.

Rockville Pike (MD 355) at Jones Bridge Road operates above capacity in the PM peak hour.

- 1) Stripe the inner lane as a left-turn only lane and the right lane as shared through and right lane on the eastbound approach of the intersection.
- 2) Add an additional lane in each direction along Rockville Pike, per recommendation of the 1990 Bethesda Chevy Chase Master Plan. NNMC Bethesda will cooperate by providing frontage along MD 355 to accommodate the implementation of this measure if the State of Maryland and Montgomery County determine it appropriate to implement. Appropriate real estate easements would be coordinated and implemented to permit widening of Rockville Pike.

Connecticut Avenue (MD 185) at Jones Bridge Road operates near capacity in the AM peak hour and above capacity in the PM peak hour:

- 1) Provide an additional left-turn lane to the eastbound approach of the intersection.
- 2) Provide a separate right-turn lane along the southbound approach of the intersection.

Beltway Slip Ramps into NNMC Campus: No improvements recommended; capacity analysis shows that for both Alternatives One and Two, with and without Slip Ramps, the same intersections would operate near or above the County congestion standards.

To improve pedestrian safety at the Rockville Pike pedestrian crossing from NIH and the metro station to NNMC, a pedestrian connection and a Metrorail link are under consideration by the Suburban Hospital, NIH,

NNMC Consortium and WMATA, respectively. In addition, the pedestrian connection would allow transfer of casualties and emergency personnel during a mass casualty event. These off-base projects would enhance public safety. The projects would require easements and changes to fencing and security. They would require close cooperation with local and state agencies as well as with NIH and the Department of Homeland Security (DHS).

In addition to the measures listed above, other potential improvement measures outside the jurisdiction of the Navy that address existing and future regional transportation issues are discussed in Appendix C, Transportation Study. A Transportation Management Plan, also discussed in Appendix C, which is being prepared in conjunction with a master plan update, will include recommendations for such physical or operational changes as telecommuting, transit subsidies, shuttle bus services, pedestrian improvements, and bicyclist improvements.

Cultural Resources Measures: Further consultation under Section 106 and through other design review processes on the design of these facilities are ongoing to minimize and mitigate as necessary any potential adverse impacts. Due to the potential impacts on the historic and cultural resources around Building 1, the historic tower, the Navy has developed a concept plan of the proposed inpatient and outpatient facilities as well as the two proposed parking structures. These concept plans were coordinated with Maryland-National Capital Parks and Planning Commission (M-NCPPC) and Maryland State Historic Preservation Office (SHPO). After consultations, the Navy received approval to submit the concept plan to the National Capital Planning Commission (NCPC) meeting on 04 October 2007. The Commission adopted the Executive Director's Recommendation (EDR), which noted that "The Maryland Historical Trust (i.e. the Maryland SHPO) accepted the concept design with regard to location, footprint, and massing; and requested Section 106 consultation to move forward with fenestration design, materials selection, and other design and planning details." A copy of the Commission Action is included in Appendix A.

The Navy will pursue formal Section 106 consultation with the goal of achieving a ratified agreement document to resolve all adverse effects to historic properties. The agreement document would be appended to the Record of Decision on the Final Environmental Impact Statement.

Human Health and Safety Measures: By following NNMC SOPs and applicable regulations, no impacts are expected and no additional mitigation measures or improvement measures are required for human health and safety.