

# **HANSCOM AIR FORCE BASE**

MASSACHUSETTS

## **MENTAL HEALTH CLINIC**

**FINAL**

**ENVIRONMENTAL ASSESSMENT**

**19 AUGUST 2010**

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Hanscom, AFB

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# ENVIRONMENTAL ASSESSMENT

## Mental Health Clinic

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## **FINDING OF NO SIGNIFICANT IMPACT**

Name of Action: Construct New Mental Health Clinic as an Addition to the Main Clinic, Building 1900.

Hanscom Air Force Base (AFB) proposes to design and construct a single story 4,000 SF Mental Health Clinic Addition to existing Building 1900. The existing Mental Health Clinic is located in Building 1217 and shares the building with several other Base functions. The space available to Mental Health is significantly less than the identified requirement, and the quality of space is not acceptable. The facility was constructed in 1955 and is beyond its economic life. In addition to designing and constructing the addition, the proposed action includes site specific activities related to; environmental protection, utilities, pavements, restriping/reconfiguration of existing parking lot, vehicular and pedestrian access from the existing parking lot, demolition of existing drives as required and landscaping.

The Environmental Assessment (EA) prepared for the proposed action addresses the site specific construction of the Mental Health Clinic Addition to Building 1900. The EA evaluates the consequences of the proposed action on both the natural and man-made environments. The proposed action can have a positive and cohesive impact on Hanscom's medical activities. Once the addition is fully operational, the area will continue to be designated as Medical Use. The new Mental Health Clinic Addition will maintain a clean looking Clinic facility appearance by utilizing elements from the adjacent Clinic and other structures within the base.

The alternatives to the proposed action that were evaluated include: a) taking no action, and b) constructing a stand-alone Mental Health Clinic. None of these alternatives were determined to meet the needs of Hanscom AFB. The no-action alternative would not be in accordance with current DOD space criteria and the deteriorating building has several building design, utility, and building envelope deficiencies. These deficiencies hinder patient access, privacy, quality of care, and staff productivity. In addition, the no-action alternative will not reduce energy use inefficiencies or improve resource conservation such as electricity, water and heating fuel. The Stand-Alone Mental Health Clinic Alternative would require a significantly larger amount of



non-renewable resources and construction materials when compared to the proposed action. It would have a significant impact on the site and create disruptions to the surrounding facilities. It would not result in positive impacts to the natural or the man-made environment.

If the proposed action was to occur, no significant impacts associated with the land use, socioeconomics, transportation, noise, air quality, geology/soils, surface water and ground water, biological resources, or cultural resources would be anticipated. However, minor impacts may occur in the short-term. The construction, demolition and site restoration activities have potential to affect adjacent land uses due to elevated noise levels, increased dust, minor interferences with roadway access, and visual effects. The construction of the Mental Health Clinic Addition and the associated reconfiguration of the parking lot would create construction and demolition debris, and may cause minor soil and groundwater disturbance. Preliminary concept drawings have suggested the potential for approximately six (6) mature trees to be removed from the property. They will be replaced with six suitable trees in other locations on the site. Smaller trees and shrubs may be cleared incidental to other demolition activities; and existing grassy vegetation is likely to be disturbed by track-mounted construction equipment. The short-term loss of some vegetation is not anticipated to substantially impact the biological community on, or in the vicinity of, the proposed action's site.

While some environmental impacts would result from this project, they are expected to be minor. The anticipated short-term construction impacts are not atypical compared with other routine construction projects. Additionally, Hanscom AFB has undertaken, or will employ, a number of pro-active measures to reduce the project's potential impact to the environment. The new facility will qualify for certification under the Leadership in Energy and Environmental Design (LEED) Green Building System, reflecting Hanscom AFB's commitment to being environmentally responsible and providing a healthy place to work. With the incorporation of LEED technologies in the building, and the continued emphasis by Hanscom AFB on "reduce, reuse, recycle", it is expected that the new Mental Health Clinic Addition will operate more efficiently and use fewer resources than the building it replaces. In addition, all impacts are insignificant and can be minimized further by using the best management practices described in this EA.

There are positive impacts that would occur as a result of the preferred action. First, construction of the Mental Health Clinic Addition would result in a positive and cohesive impact on Hanscom's medical activities. The Mental Health Clinic will be located on land designated for Medical Use. Another positive impact of the proposed action is related to the removal of the existing drive. This will result in decreased impervious surface and higher infiltration rates, and thus the total volume of storm water runoff from the site will be reduced.

It is anticipated that the following best management practices would be followed during the construction of the Mental Health Clinic Addition and the associated reconfiguration of the parking lot. To minimize noise impacts, mufflers would be used on construction equipment and vehicles. In addition, all equipment and vehicles used during the proposed action would be maintained in good operating condition so exhaust emissions are minimized, thus reducing the potential for air quality impacts. Dust would be controlled onsite by using water to wet down disturbed areas. Sedimentation controls would be installed to minimize offsite runoff that may contain suspended solids. Disturbed areas will be seeded and stabilized as soon as possible to reduce erosion of disturbed soil. Controls will be left in place until vegetation is established. The remaining mature trees will have protective barriers placed around them to minimize the potential for damage. Most of the landscape plants/trees will remain in-place, and damage to plants would be minimized during the demolition stage. During demolition, all activities will be conducted in accordance with Hanscom AFB's Best Management Practices (BMPs) to prevent adverse effects to receiving waters. Also, all hazardous materials used during construction would be handled and disposed of in accordance with Hanscom AFB policies and protocols and all applicable state and federal regulations.

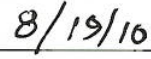
Copies of the Draft EA/FONSI were made available for public review at the main public libraries in Bedford, Concord, Lexington, and Lincoln, and at the Hanscom AFB Environmental Office, Building 1825, beginning on 25 June, 2010. Over thirty days were allowed for the public to comment on the Draft EA/FONSI. The public comment period ended on 31 July, 2010 and no comments were received.

Based on the detailed description of effects described in the Environmental Assessment for this proposed action, I have determined that the proposed action to construct the Mental Health Clinic Addition and the associated reconfiguration of the parking lot would not have a significant impact on the natural or human environment.



CHRIS L. PERKINS, P.E.

Base Civil Engineer



Date

## **1.0 PURPOSE AND NEED FOR ACTION**

### **1.1 INTRODUCTION**

Hanscom AFB serves primarily as the Headquarters of the U. S. Air Force Electronic Systems Center (ESC), which manages the development and acquisition of electronic command and control systems. Hanscom's host unit is the 66th Air Base Wing, and is also the home of several associated units, to include Directorates of the Air Force Research Laboratory. The total workforce on Hanscom is approximately 7,800 personnel.

The Mental Health Clinic serving personnel at Hanscom Air Force Base is located in Building 1217 and shares the building with several other Base functions. The area available to Mental Health is only 2,900 SF and significantly less than the identified requirement of 3,873 SF. In addition, the quality of space is not acceptable. The facility was constructed in 1955 and is beyond its economic life and the Base plans to demolish it once all of the occupants can be relocated.

66MDG/CC would like to have the Mental Health Service within the Medical Facility, but there is not adequate space in the main clinic, Building 1900. There is space, however, on the medical campus for either an addition to Building 1900 or a stand-alone Mental Health Clinic.

An analysis of the options determined that there is adequate capacity of the boilers and chillers from the new HVAC upgrade to support the proposed addition. Power and communications can also be tied to the existing clinic, saving utility site efforts. A stand alone facility would need additional site support to tie into existing utility lines. Additionally, it would require a fully independent HVAC system and power connection from the Base lines.

The recommendation is to construct a 3,873 GSF addition to the west side of Building 1900 to accommodate the Mental Health Clinic.

This Environmental Assessment (EA) addresses the Proposed Action, the No-Action Alternative, and a Stand-Alone Mental Health Clinic Alternative in accordance with the National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321-4347), Council on Environmental Quality (CEQ, 1978) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] §§ 1500-1508), and 32 CFR 989 et seq., *Environmental Impact Analysis Process* (formerly known as Air Force Instruction [AFI] 32-7061). NEPA procedures were established to ensure environmental information is available to public officials and citizens before decisions are made and before actions are taken.

According to these instructions, the environmental assessment is a written analysis which serves to (1) provide analysis sufficient to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI); and (2) aid federal agencies in complying with NEPA when no EIS is required. If this EA were to determine the proposed action would significantly degrade the environment, significantly threaten public health or safety, or generate significant public controversy, then an EIS would be completed. An EIS involves a comprehensive assessment of project impacts and alternatives and a high degree of public input. Alternatively, if this EA results in a FONSI, then the action would not be the subject of an EIS. The EA is not intended to be a scientific document. The level and extent of detail and analysis in the EA is commensurate with the importance of the environmental issues involved and with the information needs of both the decision-makers and the general public.

This EA addresses the site-specific impacts of the construction of the Mental Health Clinic Addition and the associated reconfiguration of the parking lot, and evaluates the consequences of the proposed action and alternatives on the natural and man-made environments.

## **1.2 PURPOSE AND NEED OF THE PROPOSED ACTION**

The purpose of the proposed action is to construct a 3,873 GSF addition to the west side of Building 1900 to accommodate the Mental Health Clinic. The need of the proposed action is because the existing mental health clinic is located in Building 1217, a deteriorating 50-year-old wood frame structure, with non-medical installation activities. Deficiencies with building

design, antiquated utility systems, and degraded building envelope are sufficiently severe to suggest evidence of “sick building syndrome.” The space in the current location is less than the space identified by current DOD space criteria and lacks standard security requirements for mental health facilities.

## **2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES**

### **2.1 PROPOSED ACTION: CONSTRUCT NEW MENTAL HEALTH CLINIC AS AN ADDITION TO THE MAIN CLINIC, BUILDING 1900**

The proposed action includes the design and construction of a single story 4,000 SF (371.6 SM) Mental Health Clinic Addition to existing Building 1900. The addition shall be located on the north/west corner of existing Building 1900. This addition is intended to become a fully operational Mental Health Clinic. This addition will provide an exterior covered patient entry while also providing an internal connection back to the existing building. Design of the new facility shall be in accordance with Unified Facilities Criteria (UFC) 4-510-01 design Medical Military Facilities (18 February 2009/Change 2-8 July 2009), the Unified Facilities Criteria, and the NFPA Life Safety Code. All utilities, communications, fire protection and alarms, Anti Terrorism and Force Protection, and storm drainage requirements must be fulfilled.

Site Work associated with this project will include; environmental protection, utilities, pavements, restriping/reconfiguration of existing parking lot, vehicular and pedestrian access, demolition of existing drives as required and landscaping. In accordance with Executive Order 13423 integrated sustainable design strategies and features to minimize the energy consumption of the facilities; conserve resources; minimize adverse effects to the environment; and improve occupant productivity, health, and comfort will be required. The facility and all site features shall be designed and constructed with a goal of obtaining a minimum of “Silver” in the US Green Building Councils (USGBC) “Leadership in Energy and Environmental Design (LEED) Rating System version 2.2 (dated October 2005).

The Addition will maintain a clean looking Clinic facility appearance by utilizing elements from the adjacent Clinic and other structures within the base. In addition to matching the general character and design features of the adjoining building, a canopy will be provided at the exterior patient entrance. The addition will match the height of the existing building. The new building should be aesthetically and functionally compatible with the overall character and design features

of the Base and blend with the adjoining Clinic. Exterior fenestration shall coordinate with the design of the existing facility balanced with the function of the new interior.

## **2.2 ALTERNATIVES**

Hanscom AFB is evaluating three options to support the Mental Health Clinic on base: 1) Construct a new Mental Health Clinic as an addition to the main clinic, Building 1900 or 2) take no further action and thereby continuing operating the Mental Health Clinic at Building 1217 or 3) construct a stand-alone Mental Health Clinic in open space near the main clinic, Building 1900.

- Option 1 is the Preferred Alternative, and thus the Proposed Action evaluated in this EA.
- Option 2 is the No Action Alternative, and is described in more detail below.
- Option 3 is the Stand-Alone Mental Health Clinic Alternative, and is described in more detail below.

### **2.2.1 No Action**

With the No-Action alternative, conditions will remain as they are today. The No-Action alternative consists of the continuation of operating the Mental Health Clinic in Building 1217. Building 1217 has a deteriorating 50-year-old wood frame structure. Base Civil Engineering has determined that Building 1217 cannot be cost effectively renovated. Deficiencies with building design, antiquated utility systems, and a badly degraded building envelope are sufficiently severe to suggest evidence of "sick building syndrome". In addition to overall building deterioration, the Mental Health Clinic operates out of less than the space identified by current DOD space criteria and lacks the essential security features now standard in mental health facilities. The space constraints and building quality impede patient access, privacy, quality of care, and staff productivity.

In addition, the no-action alternative will not reduce energy use inefficiencies or improve resource conservation such as electricity, water and heating fuel. The no-action alternative would



not result in positive impacts to the natural or the man-made environment. For these reasons, the no-action alternative will not be considered any further.

### **2.2.2 Stand-Alone Mental Health Clinic Alternative**

A stand alone facility would require a significantly larger amount of resources to be used for the physical construction. These resources include construction materials such as: concrete, metals, plastics, wood and gravel. A stand alone facility would require a significantly larger amount of site support work that will consume larger amounts of resources such as fuel, gravel, concrete, metal/plastic pipe and asphalt.

Also, it would require a fully independent HVAC system and power connection from the Base lines. Water service to the stand-alone site would be provided by an existing 6 inch water main located within 80 feet from the site. Storm sewer improvements will be required within the proposed stand-alone site. This location would require the rerouting of approximately 250 linear feet of storm sewer and adding three (3) storm water inlets. Storm water detention should be evaluated based on the amount of increase in impervious area and the proximity of the playground where the discharge is located. The stand-alone clinic's electricity would be fed by an underground feeder to a new pad-mounted transformer. In addition, the stand-alone alternative would require a new underground communications duct bank from an existing communications manhole. Also, a tie in to the existing gas line will be required.

The Stand-Alone Mental Health Clinic Alternative would result in more environmental impacts compared to the Preferred Alternative. It will consume more resources in both the construction and operation of the facility. This alternative will have a greater impact on the site and create disruptions to the surrounding facilities. It would not result in positive impacts to the natural or the man-made environment. For these reasons the Stand-Alone Mental Health Clinic Alternative is not being considered any further.

### **3.0 AFFECTED ENVIRONMENT**

The existing environmental conditions evaluated in this EA are described to provide a baseline against which potential impacts related to the design and construction of a single story Mental Health Clinic Addition to existing Building 1900 can be determined. General conditions on the property are presented for each of the parameters and site-specific detail is included, as available. Environmental justice concerns the disproportionate effect of a federal action on low-income or minority populations. If the implementation of the Proposed Action were to have the potential to significantly affect people, those effects would have to be evaluated for how they adversely or disproportionately affect low-income or minority communities. No significant effects would occur as a result of the Proposed Action, thus neither minority nor low-income groups would be affected disproportionately. For these reasons environmental justice was eliminated from further analysis.

#### **3.1 LAND USE**

Hanscom AFB is located approximately 18 miles northwest of Boston, Massachusetts, just outside the Route 128/I-95 circumferential expressway. The base is located just west of a major light industrial and office park corridor along the expressway. Hanscom AFB, which occupies approximately 846 acres, is situated in the Towns of Bedford, Lexington, and Lincoln, all of which are primarily suburban residential communities. Adjacent to the base is the Hanscom Field airport of the Massachusetts Port Authority (MassPort) as well as the Minute Man National Historic Park.

The 2003 Hanscom General Plan Update designates the existing land use surrounding the Mental Health Clinic as Medical Land Use. The adjacent land use is primarily open space and Acquisition Management Areas. The proposed project is compatible with the Existing and Future Land Use Plan and is consistent with the functional relationship between facilities and land use. The project is identified in the Hanscom AFB Capital Improvement Program as a proposed project.

## **3.2 UTILITIES**

### **3.2.1 Water Supply**

Nearly the entire potable water supply to Hanscom AFB is provided by the Town of Lexington, through a 10-inch main along Hartwell Avenue and a 12-inch main along Wood Street. Lexington receives its water from the Massachusetts Water Resources Authority (MWRA), for which the Quabbin Reservoir serves as the primary source of water. Water demand at Hanscom AFB has generally shown a decreasing trend since the late 1980s, attributable both to personnel decreases and the implementation of conservation measures. The quantity of water that Hanscom AFB can draw from Lexington is limited by contractual agreement to 2 million gallons per day (mgd). However, Hanscom AFB's annual water demand rarely exceeds one-third of the permitted allocation (HAFB, 2003).

### **3.2.2 Wastewater**

Hanscom AFB discharges sanitary sewage into the MWRA system via two pumping stations. The wastewater is conveyed via a 12-inch force-main down Hartwell Avenue and connects to a 20-inch force main from the Town of Bedford. The capacity of the wastewater line is limited to 1,500 gallons per minute (gpm) or 2.16 million gallons per day, by an agreement with the Town of Bedford and the MWRA, in part because of limitations at Bedford's Great Road Pumping Station. Wastewater flows from Hanscom AFB generally have averaged slightly more than half this maximum permitted capacity (HAFB, 2003).

### **3.2.3 Solid Waste**

Approximately 83 tons of solid wastes are generated each week by Hanscom AFB. Some of this material is reused on base, but the majority is removed from Hanscom AFB by private contractors and disposed of by incineration or directly hauled to materials recovery facilities for recycling. The major sources of waste include community operations, offices, and industrial areas. The types of solid waste generated include food, various grades of office paper, newspaper, cardboard, cans, glass and plastic containers, scrap metals, as well as significant

quantities of yard waste and construction & demolition debris. On an annual basis, Hanscom AFB generates approximately 1,555 tons of municipal solid waste and 318 tons of construction and demolition wastes, both of which are incinerated off-base with heat recovery or recycled (HAFB, 2010e). Additional materials diverted from the waste stream on an annual basis include: 160 tons of wood waste (pallets, packaging), 1,995 tons of compost/organic materials (tree trunks), 77 tons of metals, 179 tons of general recyclables, and 15 tons of computers/electronics (HAFB, 2010e).

### **3.2.4 Electricity**

Hanscom AFB obtains its power from NStar (formerly Boston Edison). Nearly all transmission lines within Hanscom AFB are underground. The annual capacity is approximately 151 million kilowatt hours (kWh) (HAFB, 2003). Hanscom AFB has implemented a basewide Energy Management Control System (EMCS), which includes monitoring and control of energy use. For example, the heat temperature is turned down when buildings are vacant (e.g. overnight) and is turned up approximately one hour before the building becomes occupied (e.g. during regular daytime working hours). More than 85% of the office building space on Hanscom AFB is connected to the EMCS; smart local controls have been implemented in a portion of the remaining facilities. Backup and emergency power is supplied by approximately 34 stationary emergency generators and 9 mobile generators located throughout the base.

Hanscom AFB currently receives power commodity from HESS. The transmission and distribution provider is NSTAR. FY08 annual electric power consumption at Hanscom AFB was approximately 54,800,000 kilo-watt (kW). Hanscom AFB's electrical service is provided at 14.4-kilovolts (kV) through three sets of 500-thousand-circular-mil (kcmil or MCM) EPR cables to the Base substation. At the Base perimeter, near the Small Business Office (Building 1101) and the AFRL (Gate 2), a manhole is located where responsibility for the electrical system shifts from NSTAR, the transmission and distribution (T&D) provider, and HESS, the commodity provider, to Hanscom AFB. All primary feeds are contained within a concrete encased conduit, 75% of which is under pavement. (HAFB, 2010c)

### **3.2.5 Telecommunications**

In addition to standard dial-up telephone service, Hanscom AFB has a fiber optic backbone that services much of the developed portion of the base. Most telecommunication lines are belowground. All Inter-Building communications cable on base are either installed via Direct Buried or placed in a Manhole/Conduit system, there is no 'Aerial' system located on base. All mission facilities have an appropriate number of phone lines and fiber optic cabling installed to meet the needs of the users within that facility, this also applies to the Base Clinic (Bldg 1900). (Ken Lampman, 2010)

### **3.2.6 Steam**

The Hanscom AFB central heating plant provides process steam to MIT Lincoln Labs and steam heat to more than 80 percent of the base facilities (excluding the privatized housing) through 39,000 linear feet of steam lines. The central heating plant, which was constructed in 1951, has four water tube type boilers. Originally rated at approximately 53,000 pph steam output each, these boilers were rebuilt and de-rated to 40,000 pph each in 1987. Based on recent testing, in their current condition the actual output of these boilers is between 31,000 and 35,000 pph each. All four boilers have dual fuel capability and utilize #6 fuel oil as the primary fuel and natural gas as a backup fuel source in accordance with the facility's Clean Air Act Title V air permit. High demand heating in severe winter conditions occasionally requires operation of all four boilers at or near maximum capacity. U.S. Air Force policy is to have N+1 capacity, or the ability to meet peak demand with one boiler offline. Currently, the central heating plant cannot meet this requirement; however, several rehabilitation projects are currently being planned which will restore system capacity. For those buildings on Hanscom AFB which are not connected to the central heat plant, their source of heat includes small oil-fired steam and hot water boilers, electric rooftop units, heat pumps, and a number of small gas, propane, waste oil, or fuel oil-fired unit heaters in mechanical rooms and garages. Building 1900 is not connected to the central heat plant and its source of heat is from three interconnected hot water boilers that are rated at 2MBTHU (2,000,000) each.

### **3.2.7 Natural Gas**

Hanscom AFB is provided natural gas through an 8-inch high pressure main. Interruptible natural gas is provided to the central heating plant as a fuel for the production of steam and chilled water. Firm-supply natural gas is provided to base housing for domestic hot water heaters, gas ranges and dryers. Additionally, natural gas is consumed by various other facilities on base including the child care center, the Officer's Club, swimming pool, clinic (Building 1900), and elementary school. For CY2009, the total natural gas usage at Hanscom AFB was 827,905.57 million cubic feet (MCF). Annual natural gas capacity is 884,040 MCF. (Ian, 2010)

### **3.3 SOCIOECONOMIC CONDITIONS**

Hanscom AFB serves primarily as the Headquarters of the U.S. Air Force Electronics Systems Center (ESC), which manages the development and acquisition of electronic command and control systems. The host unit on Hanscom AFB is the 66th Air Base Wing (ABW), which is part of ESC. The 66<sup>th</sup> ABW provides services to all the active-duty, Reserve, and National Guard military personnel, as well as DoD civilians and contractors who work and live at Hanscom AFB. Additionally, the 66<sup>th</sup> ABW supports over 100,000 retired military personnel, annuitants, and spouses living in the seven-state area of New England and New York. Hanscom AFB is also home to a number of "associate" units separate from ESC; the largest of these are the Sensors and Space Vehicles directorates of the Air Force Research Laboratory, which perform research and development services (HAFB, 2005). The workforce at Hanscom AFB includes military (active-duty), government civilian, and contractors, representing a combined total of approximately 7,800 jobs. Hanscom AFB's annual budget approaches \$3.3 billion. The government (military, civilian) payroll is approximately \$265 million, with an additional \$795 million to contractors. The total regional economic impact of Hanscom AFB is estimated to be \$3 billion. (source: Hanscom Air Force Base 66 Air Base Wing /Public Affairs Office, May 2009).

This project will relocate the current on base Mental Health Facility to a new on base facility. No change in current staffing or patient load is expected. This project will not have any impact or make any changes to the socioeconomic situation.

### 3.4 TRANSPORTATION

Traffic congestion in the vicinity of the base primarily occurs in the peak morning period as workers arrive from the local and regional highway system. Hanscom AFB commuters primarily use Route 2A and Route 4/225 to access Hanscom Drive and Hartwell Avenue to enter the base; both of these state routes interchange with the Route 128/I-95 beltway that rings the Boston area and connects to other radial expressways. These routes are also used by commuters from the area towns, as well as others accessing the many industrial and office parks in the area.

Vehicular traffic enters Hanscom AFB via one of three control points (a fourth gate is closed):

- Wood Street – direct access to MIT Lincoln Laboratory (on-base) as well as the rest of the base; connects to Hartwell Avenue on the north and to Massachusetts Avenue on the south.
- Barksdale – accessed via Hartwell Avenue, which provides direct access to Routes 4/225 and Route 128/I-95.
- Vandenberg – the main gate for visitors, commercial vehicles, and many DoD personnel; access is from Route 2A, Hanscom Drive, and a segment of Old Bedford Road

Over 70% of the morning traffic entering the base uses the two eastern gates (Wood Street and Barksdale). Despite having the lowest traffic counts, Vandenberg Gate still experiences traffic queuing, because visitors and trucks must stop at the gate or the adjacent visitors' center for pass clearances to enter the base.

The road network on Hanscom AFB consists of arterials, collectors, and local streets. The major arterials include:

- Barksdale Street from the Vandenberg Gate to Eglin Street,
- Eglin Street from Barksdale Street to Vandenberg Drive,
- Vandenberg Drive from Vandenberg Gate to Marrett Street,
- Marrett Street from Vandenberg Drive to Barksdale Street.

Building 1900 is located near the Vandenberg Gate and most commuters would use the Vandenberg Gate to enter the base.

### **3.5 NOISE**

The Massachusetts Port Authority (Massport) administers the L.G. Hanscom Field airport adjacent to Hanscom AFB. According to Massport, less than 1% of the flights are military. There were 1,215 military flights in Fiscal Year 2009, according to the March 2010 State of Hanscom, prepared by Massport. Total flight operations at Hanscom Field in 2009 were approximately 149,911.

Automobile traffic along the expressway (Route 128/I-95) and various local roads also contribute to the background noise. Ground-based vehicle operations at Hanscom AFB consist mainly of privately-owned vehicles and government vehicles. The privately-owned cars are used by regular daily employees and contractors. Government-owned vehicles include on-road maintenance and utility vehicles and off-road equipment, such as sweeper vacuums, cranes, lawn mowers, and forklifts. Once completed this facility will not generate or contribute as an additional noise source.

### **3.6 AIR QUALITY**

Hanscom AFB is located in an attainment area for the following criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), and particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>). However, the entire state of Massachusetts is designated by the US EPA as non-attainment for ozone (MassDEP, 2007). Ozone results from photochemical reactions in the atmosphere involving precursor pollutants such as Volatile Organic Compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>). In 1997, US EPA established a stricter ozone standard of 0.08 ppm averaged over an 8-hour period, but implementation was delayed due to legal challenges to the standard. US EPA designated Massachusetts as “moderate non-attainment” for the 8-hour standard effective June 2004. The Massachusetts Department of Environmental Protection



(MassDEP) is developing an 8-hour Ozone State Implementation Plan (SIP) which includes strategies for achieving an attainment status for the 8-hour ozone standard by 2010.

The primary stationary emission sources at Hanscom AFB are the boilers at the central heating plant. Emissions from these boilers are regulated under Title V of the Clean Air Act Amendments. Because of the ozone non-attainment status, Hanscom AFB utilizes low NO<sub>x</sub> burners and performs annual NO<sub>x</sub> RACT testing of these boilers. The base's Title V permit also imposes monitoring and record keeping requirements for various "emission units", such as the heat plant, but also for large emergency generators, gas-driven chillers, aboveground and underground storage tanks, and fuel dispensing equipment. Future activities that would generate additional VOC or NO<sub>x</sub> emissions will be subject to stringent permit limits and associated emission reduction strategies. The current Title V Permit for Hanscom AFB is effective from 9 October 2008 to 9 October 2013. Of the approximately 43 emergency generators located on-base, 5 exceed the 300 kW threshold and are listed as individual emission units in the Title V permit; the remainder of the generators are considered insignificant sources and bundled together for purposes of estimating emissions. (HAFB, 2010b)

The primary mobile sources of emissions in the vicinity include aircraft operation at MassPort's Hanscom Field, along with ground vehicles on local and/or base roadways and small combustion engines (e.g. lawn mowers, leaf blowers).

### **3.7 GEOLOGY AND SOILS**

#### **3.7.1 Geology**

Hanscom AFB is located in an area that was occupied by a Pleistocene-age lake known as Glacial Lake Concord. The series of rounded hills and valleys that exist in the area are the result of bedrock structure and glacial erosion. Exposed areas of bedrock are found in the highly elevated outlying areas. Most of Hanscom AFB is underlain by the Andover granite, with a portion of the northeast part of the Base underlain by the Assabet quartz diorite and the Shawsheen gneiss. The present extent of Glacial Lake Concord deposits outlines the lower elevated area in which Hanscom AFB is situated. The glaciolacustrine (lake bed sediments) that

formed the bottomed of Glacial Lake Concord were evenly distributed over thousands of years, creating little topographic relief. Buildings and facilities located along Barksdale Street and Vandenberg Drive are built on these lake bed deposits.

### **3.7.2 Soils**

The soils at Hanscom AFB have been substantially disrupted by construction and earth-moving activities. The Soil Conservation Service Interim Report for Middlesex County (March 1991) identifies most of the soils on the base as a combination of Udorthents (soils altered by earth-moving activities) and/or Urban Lane (soils mostly covered by impervious surfaces). The majority of the remaining soils on base (outside the housing area) are loamy sands or fine sandy loams associated with glaciofluvial deposits.

Samples conducted in the preferred alternative's location encountered topsoil overlying fill, overlying organic peat deposits, overlying sand and silt. The top soil included a grass mat, root fibers, and organic material. Below the topsoil is a layer of granular fill, medium to very dense, with a thickness ranging from approximately 4.5 to 7 feet. Below the granular fill is a layer of black fibrous peat containing matter, ranging between 1 and 3.5 feet in thickness. A stratum of natural gray sand, medium dense to very dense, with up to 50 percent silt and trace gravel was observed below the fill material, ranging 3 to 6 feet thick. A stratum of clayey silt to clay with silt with trace fine sand was encountered below the natural sand, at least 12 feet thick. (COE, 2010)

## **3.8 SURFACE WATER AND GROUNDWATER**

### **3.8.1 Surface Water**

The headwaters of the Shawsheen River, a tributary to the Merrimack River, are located on Hanscom AFB. Runoff flows north through a culvert near the intersection of Marrett Street and Vandenberg Drive, and flows along the eastern edge of MassPort's airfield. The river is confined by steep slopes, ranging from 7 to 15 feet high. The Shawsheen River has been designated by MassDEP as a Class B water body and, as such, is protected as habitat for fish, other aquatic life

and wildlife, and for primary and secondary contact recreation. The majority of the surface runoff from Hanscom AFB enters a subterranean system of culverts and drains into the Shawsheen River. Surface runoff from the eastern portion of the base drains eastward into Kiln Brook, which also drains into the Shawsheen River.

The Merrimack River watershed is rated by US EPA as having high vulnerability to water quality problems. In highly vulnerable watersheds, aquatic conditions exist well below state water quality goals. Watershed data suggests significant pollution or other stressors are present; therefore, the watershed has a high vulnerability to decline in aquatic health. Ten-year mean water balance calculations indicate that the surface runoff contribution to the stream flow at the Hanscom sub-watershed is the highest (67 percent of stream flow from surface runoff) among all sub-watersheds in the Shawsheen watershed (MRWC, 2001). Watershed concerns identified by the Merrimack River Watershed Council include seasonally low baseflow, flash flooding, and water quality impairment (HAFB, 2007).

### **3.8.2 Groundwater**

Groundwater at Hanscom AFB is fairly shallow, averaging 10 to 20 feet below ground surface (bgs), and is commonly encountered from 3 to 7 feet bgs near wetlands, in the lower elevations of the base, or during periods of seasonally high groundwater elevation. Flow in the upper aquifer is mostly controlled by surface drainage features and storm drainage systems. Groundwater flow in the lower and bedrock aquifers typically follow the topography of the area. In many places, the groundwater contains naturally occurring dissolved iron and manganese that exceed limits for drinking water (HAFB, 1998).

A study of the preferred alternative's area observed groundwater within 1 foot of the fill/peat or fill/natural sand strata interface. In June, 2009, groundwater was measured at approximately 5 feet below the ground surface. This reading was taken after a period of heavy rain, and groundwater levels will vary depending on seasonal variations in temperature and precipitation, and may also be influenced by nearby utilities and other preferential flow paths. (COE, 2010)

### **3.9 FLOODPLAINS**

The Shawsheen River and Kiln Brook each possess 100-year floodplain along some portion of their length. Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) for Bedford, Lexington, and Lincoln depict two areas of Hanscom AFB that are in the 100-year or 500-year flood zones. One area is along the north boundary of the base; the other is along the abandoned Boston & Maine Railroad tracks.

### **3.10 BIOLOGICAL RESOURCES**

#### **3.10.1 Vegetation**

Most of the land area at Hanscom AFB, along with its native vegetation cover, has been altered by the development of base structures, streets, and recreational areas. The Building 1900 parcel has been maintained as a lawn and landscaped area for over 30 years. Vegetation within the Building 1900 parcel consists of lawn and a mix of mature evergreen and deciduous landscaping trees and shrubs. (Ref: Hanscom AFB General Plan Update 2003 & Hanscom AFB GEOBASE Mapping System)

#### **3.10.2 Wetlands**

Hanscom AFB contains a diverse network of interconnected wetland systems, occupying approximately 5% of the base. Many of these wetland systems have been subject to the same reconfiguration by human activities which has had a significant impact on the vegetative communities. The remaining wetlands are in various stages of succession, ranging from wet meadows to mature forested swamps.

There are no wetland resources on the B1900 project site; however, there are wetland resources located on the south boundary of the west parking area. (ref: Hanscom AFB GEOBASE Mapping System)

### **3.10.3 Wildlife**

Hanscom AFB lacks continuity of undisturbed areas, such as is provided at the Great Meadows National Wildlife Refuge, two miles northwest of Hanscom AFB. While the fragmented nature of the base habitat has created a favorable environment for avian and small mammal species well adapted to humans and development, wildlife abundance and species diversity are relatively low at Hanscom AFB, principally due to extensively developed areas and/or degraded natural habitats.

### **3.10.4 Threatened and Endangered Species**

The Natural Heritage and Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries & Wildlife have identified portions of Hanscom AFB as within *Priority Habitat* and *Estimated Habitat* of the Grasshopper Sparrow, *Charadrius melodus* and the Upland Sandpiper, *Bartramia longicauda* (Appendix 10.4). There are no federally listed or proposed threatened or endangered species at Hanscom AFB (Appendix 10.3). The Bldg 1900 parcel is located within a developed/disturbed portion of the base that is not known to provide suitable habitat for rare species. (Ref: Integrated Natural Resources Management Plan, Hanscom AFB, Feb 2010)

## **3.11 CULTURAL RESOURCES**

### **Archaeological**

All of Hanscom AFB has undergone an intensive archaeological resources survey whose purpose is “locating and identifying sites which exist” in an area. While each survey has determined that there are no significant prehistoric sites within Hanscom AFB, a sensitivity map for the Main Base identifies 13 areas of moderate/high sensitivity. Further surveys to modern standards of these areas will be reviewed and programmed if appropriate. The B1900 area is not located near any of the 13 archaeological sensitivity areas. (Ref: Integrated Cultural Resources Management Plan, Hanscom AFB, Mar. 2010)

## **Historic**

B1900 was constructed in 1983. The building is not historically significant based on age or past activities and is not eligible for listing in the National Register of Historic Places. (Ref: Architectural Building and Inventory Survey Hanscom AFB, Vol. I, Public Archaeology Laboratory, June 2003)

### **3.12 ENVIRONMENTAL RESTORATION PROGRAM/HAZARDOUS WASTE**

#### **3.12.1 Environmental Restoration Program (also called Installation Restoration Program)**

Historical operations at DoD Installations involved generation, use, and disposal of numerous hazardous substances. As a result of past (pre-CERCLA) waste and resource management practices the groundwater and soil in some areas of DoD Installations became contaminated. In response DoD established an Installation Restoration Program (IRP) with the overall goal of cleaning up contamination on DoD Installations. In addition to the restoration efforts, ongoing compliance, conservation, and pollution prevention efforts ensure that present waste and resource management practices are carried out in a manner that protects human health and the environment and are in compliance with applicable laws and regulations. (HAFB, 2010d)

Hanscom AFB has historically used, generated, and disposed of numerous hazardous substances, including fuel, aromatic solvents, PCBs, and chlorinated solvents. The U.S. Air Force began implementing an IRP at L.G. Hanscom Field and Hanscom AFB during the 1980s with initial surveys and records reviews to identify potentially contaminated sites. This effort identified thirteen specific sites with known or suspected contamination to be included in the IRP. Subsequent discoveries have increased the number of IRP Sites to twenty two. Fourteen (14) of these sites have been closed with regulatory USEPA and/or MassDEP concurrence and eight (8) have remedial actions in-place/on-going. (HAFB, 2010d)

Throughout the IRP investigation and remediation phases at Hanscom AFB no evidence has been found to show that the area of the proposed addition to Building 1900 has been environmentally impacted by historical or current operations and there are no IRP Sites immediately adjacent to the proposed site for the Mental Health Clinic Addition at Building 1900. The closest IRP Site is Site 8, Scott Circle Landfill, which is south of Building 1900. After the placement of a pervious cap in 1991 Site 8 was closed-out (no further response action required) with regulatory approval. (HAFB, 2010d)

### **3.12.2 Hazardous Waste**

Hazardous waste generated on the base comes from the normal operation and maintenance activities of the 66<sup>th</sup> ABW organizations, as well as from the research and development operations at the MIT Lincoln Laboratory and the Air Force Research Library (AFRL). Hazardous wastes, including adhesives, sealants, greases, waste paint and thinners, solvents, and corrosive cleaning compounds, are accumulated at initial accumulation points (IAPs), transferred to the 90-day accumulation site, with final disposal off-base. Hanscom AFB has both a Hazardous Waste Management Plan, and a Pollution Prevention Plan, targeted at reducing the purchases of industrial toxic substances, eliminating the purchase of ozone depleting chemicals, and reducing the amount of hazardous waste disposed. There is an IAP located in the Dental Clinic at Building 1900. Amalgam waste is generated from dental operations and transferred to the 90-day accumulation site, when storage containers are considered full. (HAFB, 2009)

Due to age of facilities at Hanscom AFB, asbestos-containing materials (ACM) are commonly encountered, and estimated to be present in 80% of the buildings. Many surveys for ACM have been conducted in Building 1900 in the past 20 years. ACMs were documented as joint compound, floor tiles and flashing materials.

## **4.0 SUMMARY OF ANTICIPATED ENVIRONMENTAL IMPACTS**

The preferred alternative includes the design and construction of a single story 4,000 SF (371.6 SM) Mental Health Clinic Addition to existing Building 1900. The addition shall be located on the north/west corner of existing Building 1900. This addition is intended to become a fully operational stand-alone Mental Health Clinic. This addition will provide an exterior covered patient entry while also providing an internal connection back to the existing building.

Potential impacts associated with the preferred alternative may result from construction (short-term) and/or operation (long-term) of the new facility, as described in this section.

### **4.1 LAND USE**

#### **4.1.1 Short-Term Impacts**

Short-term impacts associated with the construction of the addition would include temporary minor disruption of adjacent land uses due to elevated noise levels, increased dust, interference with roadway access, and visual effects. During the construction phase, where portions of the parcel will be used to store equipment (i.e. lay down area) there would be a temporary displacement of open space within the medical campus on base.

#### **4.1.2 Long-Term Impacts**

Implementation of the preferred alternative can be expected to have a positive and cohesive impact on Hanscom's medical activities. Once the addition is fully operational there will be no long term impacts to land use. The area will continue to be designated as Medical Use.

### **4.2 SOCIOECONOMIC CONDITIONS**

#### **4.2.1 Short-Term Impacts**

Positive short term employment benefits will accrue to the construction industry during the construction period. Other positive benefits will result to suppliers of equipment and office furniture that will be needed in the new addition. A short-term increase in the revenue generated



in the surrounding area may occur due to construction employees utilizing local businesses for supplies and personal use. However, the scale of the Mental Health Clinic project is relatively small. An economic benefit may not be perceptible, but there would be no adverse impacts to the socioeconomic conditions that characterize the Mental Health Clinic and its immediate surroundings.

#### **4.2.2 Long-Term Impacts**

There are no long-term socioeconomic impacts from construction of the Mental Health Clinic Addition. The personnel that work at the current Mental Health Clinic, B1217, will relocate to Building 1900 so the number of employees will not change. No long term economic impacts are anticipated.

### **4.3 UTILITIES**

Construction of the new Mental Health Clinic Addition will require access to the base utility systems. There may be brief interruptions in service during utility tie-in. The location of all existing utility lines in the vicinity of the proposed facility would be confirmed prior to construction or demolition activities. This project will not result in demand for any utility.

#### **4.3.1 Short-Term Impacts**

##### **4.3.1.1 Water Supply**

Construction and demolition activities may utilize the local water supply for dust control, although this function may alternatively be provided by mobile water tanks filled off-site. The potential use of the local water supply for dust control is not anticipated to have an adverse effect to the water supply at Hanscom AFB.

#### **4.3.1.2 Wastewater**

No short-term impacts on wastewater facilities are anticipated as a result of the new mental health clinic. Portable toilets may be available for the demolition/construction workers, and waste would be transported to an off base treatment facility.

#### **4.3.1.3 Solid Waste**

The Preferred Alternative would generate solid waste, primarily associated with construction materials. Waste material that is not suitable for reuse or recycling would be disposed of appropriately. All solid waste would be handled in accordance with standard Hansom AFB procedures. Any hazardous materials would be disposed in accordance with state and federal regulations.

#### **4.3.1.4 Electricity**

Short-term disruption of power to the immediate area around Building 1900 may occur while electrical connections are made to the new Mental Health Clinic.

#### **4.3.1.5 Telecommunications**

The new Mental Health Clinic will be attached to the west side of the existing building. It will require additional phone lines, data network lines and some Life Safety cabling installed. It is estimated that all new communication requirements will be met by expanding the existing cabling within the facility and should not impact any of the base network in the short term.

#### **4.3.1.6 Natural Gas**

No impacts are expected to occur with regard to natural gas on Hanscom AFB. The construction and demolition activities will not require the use of natural gas. Existing natural gas distribution lines will be identified and properly marked, to minimize accident potential. In addition, the boilers in Building 1900 fueled by natural gas have adequate capacity to accommodate the addition to the existing building after the addition a new air handling unit (AHU).

## **4.3.2 Long-Term Impacts**

### **4.3.2.1 Water Supply**

The Preferred Alternative will not result in an increase in the demand for water. There is no long-term impact to the water supply system of the Base.

### **4.3.2.2 Wastewater**

The Preferred Alternative will not result in an increase in the volume of wastewater pumped from the Base into the connection with the Town of Bedford's sewerage system for treatment by the Massachusetts Water Resources Authority.

### **4.3.2.3 Solid Waste**

The Preferred Alternative will not result in an increase in solid waste generation in the long term.

### **4.3.2.4 Electricity**

The Preferred Alternative will not have any impact on the Base electrical system in the long term.

### **4.3.2.5 Telecommunications**

Telephone and communication lines would be extended to the proposed addition. No disruption of telephone/communication service in the immediate area of Building 1900 is expected. It is estimated that all new communication requirements will be met by expanding the existing cabling within the facility and should not impact any of the base network.

### **4.3.2.6 Natural Gas**

The Preferred Alternative will result in a slight increase in natural gas usage on base but will not have a significant impact on natural gas in the long term.

## **4.4 TRANSPORTATION**

### **4.4.1 Short-Term Impacts**

Increase use of the Vandenberg Gate during construction activities is anticipated to be minor. While there would be a short-term increase in heavy truck traffic on Vandenberg Road and other connecting roadways, it will be minimal. Personal and commercial vehicles operated by the contractor and subcontractors would be on-site or at an area designated by Hanscom AFB. Personal and commercial vehicles operated by the contractors and subcontractors are not expected to have an adverse impact on the roadways.

### **4.4.2 Long-Term Impacts**

After the completion of the Preferred Alternative, no change in the amount of commuters on base would be anticipated. Personnel that currently work in Building 1217 would ultimately shift to working in the new facility upon completion and the total volume of base traffic would be similar to the existing volume. There may be a slight increase in traffic at the Vandenberg Gate on the base, but overall no long-term impact.

## **4.5 NOISE**

### **4.5.1 Short-Term Impacts**

The construction phase of the Preferred Alternative will create a temporary increase in noise due to construction activities and equipment. Temporary noise generation during the construction will be coordinated with any existing, “noise sensitive,” activities in Building 1900 to reduce or eliminate negative noise impacts.

### **4.5.2 Long-Term Impacts**

The new activities that will occupy the Preferred Alternative will not generate significant levels of noise. The noise generated by vehicles arriving and departing from this facility is likely to be lost in the background noise associated with the operation of the Air Force Base.

## **4.6 AIR QUALITY**

The Clean Air Act requires that actions of federal agencies or federally supported activities should not: 1) cause or contribute to any new air quality standard violation; or 2) increase the frequency or severity of any existing standard violation; or 3) delay the timely attainment of any standard or any required interim emission reductions or other milestones.

### **4.6.1 Short-Term Impacts**

The Preferred Alternative may result in short-term localized air quality impacts. All construction vehicles and some equipment would produce emissions that could temporarily affect air quality. The construction activities have the potential to generate fugitive dust. Material loading and transfer (gravel and topsoil), and grading also have the potential to generate fugitive dust. Dust would be controlled onsite by using water to wet down disturbed areas. Moreover, the number of vehicles and the duration of construction required to perform the work is limited. Emissions are therefore not anticipated to cause an adverse impact to regional air quality.

### **4.6.2 Long-Term Impacts**

Following the Preferred Alternative, mobile air emissions sources from automobiles will be unchanged because there will be no change in the number of commuters. Building 1900 recently completed a major renovation of its HVAC systems. There are three new boilers that are rated at 2MBTHU (2,000,000) each. The boilers will be staged as needed to maintain the set loop temperature. The third one is for backup only. There is adequate capacity in the new boilers to accommodate the addition. The chiller also has adequate capacity for the addition. A new air handling unit (AHU) will be required. There are no anticipated Long-Term Air Quality Impacts related to the Preferred Alternative.

## **4.7 GEOLOGY AND SOILS**

### **4.7.1 Short-Term Impacts**

Construction of a new Mental Health Clinic Addition, including modifications to the existing adjacent parking lot require soil disturbance. Construction of the new facility will require excavation of existing topsoil, fill, and peat. Excavation of these materials will extend 7 to 9 feet below the existing ground surface. The materials will be replaced with compacted structural backfill. Sedimentation controls would be installed to minimize the erosion of disturbed soils and all activities would follow base BMPs regarding minimizing sedimentation and erosion during storm events.

### **4.7.2 Long-Term Impacts**

While there may be areas where substantial fill is required, the overall resultant changes to surface topography and geology are generally minimal, because the proposed site has been previously disturbed. The preferred alternative would require excavation and grading of soils for the addition's footprint and the removal of the existing drive. Controls and mitigation activities would be left in place until vegetation has become established on disturbed soil near the addition and the removed drive, minimizing the impacts on soils.

## **4.8 SURFACE WATER AND GROUNDWATER**

### **4.8.1 Short-Term Impacts**

Since there are no surface water features within Preferred Alternative's area, it is not anticipated that potential construction activities would directly affect surface water resources. However, since the project will require surface disturbance and there will be periods when bare soil is exposed, the potential exists for the ground to erode and be carried into the stormwater system during heavy rainfall. During construction, all activities would be conducted in accordance with base best management practices (BMPs) to prevent adverse effects to the receiving water (i.e. Shawsheen River) into which the stormwater system empties.

Given the shallow nature of the groundwater at Hanscom AFB, there is a strong likelihood that subsurface excavations will encounter groundwater. The construction contractor will be required to include provisions for dewatering. At a minimum, treatment to reduce suspended solids will be required prior to discharge of construction dewatering.

#### **4.8.2 Long-Term Impacts**

The increase in impervious surface related to the construction of the Mental Health Clinic Addition will be offset by the reconfiguration of the existing parking lot and the removal of the existing drive. The removal of the existing drive will result in a net decrease of the overall impervious area. However, the Contractor would be required to design and implement a drainage management system that will reduce runoff during a storm and retain water for an orderly discharge, in accordance with Hanscom AFB's drainage requirements. While the specific BMPs have not yet been determined, an overall positive impact on surface water and groundwater is expected. The decrease in impervious area will allow for increased groundwater infiltration, which is expected to support base flow in the river during prolonged periods without substantial precipitation.

### **4.9 FLOODPLAINS**

#### **4.9.1 Short-Term Impacts**

As the project is not located within the floodplain, and would not result in the storage/stockpiling of any demolition or construction materials within a floodplain, no adverse impacts are expected.

#### **4.9.2 Long-Term Impacts**

The Preferred Alternative will not result in the alteration of any floodplain. Given the project's reduction of impervious surfaces and the associated reduction in stormwater runoff rates, no adverse flooding impact is anticipated.

## **4.10 BIOLOGICAL RESOURCES**

### **4.10.1 Vegetation**

#### **4.10.1.1 Short-term Impacts**

Work activities will be limited to developed portions of the property. Six mature trees will have to be removed under the Preferred Alternative. They will be replaced with six suitable trees in other locations on the site. The remaining mature trees will have protective barriers placed around them to minimize the potential for damage. Smaller trees and shrubs may be cleared incidental to other demolition activities; and existing grassy vegetation is likely to be disturbed by track-mounted construction equipment. Given the limited size of the project area, and the planned restoration activities (noted in Section 4.10.1.2), the short-term loss of some vegetation is not anticipated to substantially impact the biological community on, or in the vicinity of, the Preferred Alternative site.

#### **4.10.1.2 Long-term Impacts**

Once the Preferred Alternative is completed the soil will be stabilized using perennial lawn seed. The replacement trees and shrubs will be planted.

### **4.10.2 Wetlands**

#### **4.10.2.1 Short-term Impacts**

As indicated in Section 3.10.2, there are no wetlands within the Building 1900 project site. During construction activities, as well as during the loam/seed restoration work, erosion and sedimentation controls will be installed around catch basins or near drainage swales to further minimize the potential for adverse impact to wetland resources.



#### **4.10.2.2 Long-term Impacts**

There are no wetland resources on the Building 1900 project site; however, there are wetland resources located on the south boundary of the west parking area, which will be protected during the construction period. There will be no loss of or long term adverse impacts to wetlands resources. (ref: Hanscom AFB GEOBASE Mapping System)

#### **4.10.3 Wildlife**

##### **4.10.3.1 Short-term Impacts**

As stated in Section 3.10.3, the Building 1900 site does not provide significant habitat for wildlife due to its developed condition, routine maintenance/landscaping activities, and human traffic. While some brief displacement of small individual mammals, reptiles, and birds may occur, construction activities are not expected to substantially affect any extant wildlife populations, which likely are accustomed to periodic intrusions because of the developed nature of the area and adjacent airfield operations.

##### **4.10.3.2 Long-term Impacts**

Following project completion same wildlife habitat conditions will remain. Due to the limited existing habitat surrounding the site, no long term changes in wildlife population dynamics would be expected.

#### **4.10.4 Threatened and Endangered Species**

##### **4.10.4.1 Short-Term Impacts**

The Natural Heritage and Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries & Wildlife have identified portions of Hanscom AFB as within *Priority Habitat* and *Estimated Habitat* of the Grasshopper Sparrow, *Charadrius melodus* and the Upland Sandpiper, *Bartramia longicauda* (INRMP Appendix 10.4). There are no federally listed or proposed threatened or endangered species at Hanscom AFB (INRMP Appendix 10.3). The Building 1900

parcel is located within a developed/disturbed portion of the base that is not known to provide suitable habitat for rare species.

(Ref: Integrated Natural Resources Management Plan (INRMP), Hanscom AFB, Feb 2010)

No threatened or endangered species are expected to be encountered within or adjacent to the Building 1900 site, as discussed in Section 3.10.4. Based on this analysis, no short term impacts are anticipated to result from the construction of the Mental Health Clinic Addition.

#### **4.10.4.2 Long-Term Impacts**

No threatened or endangered species are expected to be encountered within or adjacent to the Building 1900 site, as discussed in Section 3.10.4. Based on this analysis, no long term impacts are anticipated to result from the construction of the Mental Health Clinic Addition.

### **4.11 CULTURAL RESOURCES**

#### **4.11.1 Short-Term Impacts**

No known archaeological or cultural resources are known or suspected to be located on the Building 1900 addition project site. There are no short term impacts anticipated.

#### **4.11.2 Long-Term Impacts**

No long term impacts are anticipated to archaeological or cultural resources. However, if resources are inadvertently discovered during the project duration the site Project Manager will immediately notify the Hanscom AFB Cultural Resources Manager and cease work in the area of the discovery.

## **4.12 ENVIRONMENTAL RESTORATION PROGRAM**

### **4.12.1 Short-Term Impacts**

The Preferred Alternative is not expected to have an adverse effect on ongoing Environmental Restoration Program activities. Since the Building 1900 parcel is north to a closed IRP site, it is unlikely that contaminated groundwater could be encountered during excavation. In the event that groundwater is observed to have an odor or sheen, it would be tested for the presence of petroleum hydrocarbons and treated, as necessary, prior to dewatering discharge.

### **4.12.2 Long-Term Impacts**

The operation of the Preferred Alternative is not anticipated to have any adverse effect on the base's Environmental Restoration Program, as it will not directly impact nor impede monitoring of any active ERP sites.

## **4.13 HAZARDOUS WASTE**

### **4.13.1 Short-Term Impacts**

During construction, hazardous materials and waste would likely be used and generated, including: equipment fuel, engine oil, hydraulic oil, grease, and other equipment operation and maintenance material. Refueling of equipment may also take place within the Building 1900 parcel. Any hazardous materials used during construction would be used, stored, transported, and disposed in accordance with base, military, state, and federal regulations.

Prior to any alteration of the existing Building 1900 to connect the preferred alternative addition, a licensed Asbestos Inspector will complete an asbestos inspection and identify the quantities and locations of all suspect asbestos containing materials that are to be disturbed or removed, so that these materials can be properly disposed. Any construction and demolition debris will be segregated from hazardous materials requiring special disposal in accordance with federal and

state regulation, as well as Hanscom AFB policies. No adverse impacts resulting from construction or demolition are anticipated.

#### **4.13.2 Long-Term Impacts**

While routine office operations may occasionally require the use of toxic solvents or paints, and operation of HVAC equipment would result in periodic generation of waste petroleum, substantial quantities of hazardous waste are not anticipated. No long-term impacts resulting from the operation of the Preferred Alternative are anticipated.

## 5.0 MEASURES TO REDUCE POTENTIAL FOR IMPACT

While some impacts to the natural and human environment may occur during construction of the Preferred Alternative, and/or daily operations within the new clinic addition, these impacts are minor and are not atypical compared with other routine construction projects. Commonly applied Best Management Practices and other measures, identified below, further reduce the likelihood that these activities would have a significant impact on the environment.

<b>Parameter:</b>	<b>BMP or Other Measure to Reduce Impact:</b>
Land Use	A phased construction schedule will be implemented to reduce peak traffic/noise levels and thus minimize disruption to nearby land uses.
Transportation	Transportation of heavy trucks would only be allowed during normal business hours to avoid the disturbance of surrounding residential areas.
Utilities	Existing utility alignments will be identified through markings (similar to “Dig Safe”) prior to any excavation to prevent damage to existing infrastructure. Implementation of LEED technologies is expected to reduce consumption of water and electricity, and the modern efficient building design is expected to reduce heating/cooling requirements.
Solid Waste	Solid waste management would be in compliance with Hanscom AFB recycling policies to minimize the amount of solid waste disposed without beneficial reuse, during both decommissioning and restoration.
Noise	Noise levels generated by typical construction equipment used during construction may be reduced by installing mufflers and engine jackets.
Air Quality	All equipment and vehicles used during construction would be maintained in good operating condition so that exhaust emissions are minimized. Dust will be controlled on-site by using water to wet down disturbed areas.
Surface Water	During construction, silt fence and/or haybales will be placed around catchbasins to reduce potential for sediment/eroded materials to be transported to the Shawsheen River via the storm sewers. The facility’s stormwater management will reduce peak flow rates from the parcel to the Shawsheen River.

<b>Parameter:</b>	<b>BMP or Other Measure to Reduce Impact:</b>
Ground Water	If dewatering is necessary during construction, the water will be treated for total suspended solids (TSS) removal prior to discharge to a receiving water. Upon completion, the facility's stormwater management system will retain stormwater allowing for a greater rate of infiltration to groundwater.
Vegetation	Existing vegetation has to be protected during the construction period by the erection of a barrier or fence that extends out to drip line. No storage of materials or vehicles is allowed within this protected area.
Cultural Resources	If resources are inadvertently discovered during the project duration the site Project Manager will immediately notify the Hanscom AFB Cultural Resources Manager and cease work in the area of the discovery.
Hazardous Waste	All hazardous materials used or encountered during construction, demolition, or operation would be handled and disposed in accordance with Hanscom AFB policies and protocols and all applicable state and federal regulations.

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## **7.0 LIST OF PREPARERS**

The Environmental Office (66MSG/CEV) prepared this document to fulfill the requirements of the National Environmental Policy Act (NEPA) for the proposed action of the construction of the Mental Health Clinic Addition and the associated reconfiguration of the parking lot. The following persons authored and provided direct oversight for the preparation of this environmental assessment:

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