Final Environmental Assessment

Replacement Joint Force Headquarters Building

Hanscom Air Force Base

Massachusetts

prepared for:

HANSCOM AFB 66MSG/CE
120 GRENIER STREET
HANSCOM AFB, MA 01731

&

MASSACHUSETTS ARMY NATIONAL GUARD
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22 January 2010

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE MATERIEL COMMAND
WRIGHT-PATTERSON AIR FORCE BASE OHIO

FEB 11 2010

MEMORANDUM FOR 66 MSG/CEV
ATTN: MR. DON MORRIS

FROM: HQ AFMC/A7PX
4225 Logistics Ave
Wright-Patterson AFB OH 45433-5772

SUBJECT: Approval Request – Final Environmental Assessment (EA), Massachusetts Army National Guard Joint Force HQ Building (Your Memo, 26 Jan 10)

Attached is the signed Finding of No Significant Impact for the subject project at Hanscom AFB. It has been determined the proposed action will not have a significant impact on the quality of the human environment. If you have any questions concerning the Air Force's Environmental Impact Analysis process (32 CFR 989), please contact Ms. Shari Kilbourne, HQ AFMC/A7PX, DSN 986-2926, (937) 656-2926, shari.kilbourne@wpafb.af.mil.

STEPHEN L. ROBINSON, R.A.
Chief, Planning Branch
Installations and Mission Support

Attachment:
FONSI, 9 Feb 10

FINDING OF NO SIGNIFICANT IMPACT
REPLACEMENT JOINT FORCE HEADQUARTERS BUILDING
HANSCOM AIR FORCE BASE, MASSACHUSETTS

Pursuant to the Council on Environmental Quality regulations for implementing procedural provisions of the National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR] 1500-1508), the Air Force Regulation 32 CFR Part 989, and Department of Defense Directive 6050.1, the Massachusetts National Guard (MANG) with support from the Air Force has prepared an Environmental Assessment (EA) to identify and evaluate potential impacts associated with constructing a replacement Joint Force Headquarters (JFHQ) Building at Hanscom Air Force Base (AFB), Massachusetts. This EA is incorporated by reference into this finding.

Purpose of and Need for the Proposed Action (EA Section 1.4, pages 1-1 to 1-2)

The MANG proposes to construct a new replacement JFHQ at Hanscom AFB to enhance the command, control, supervision, and administration of the MANG and to provide sufficient administrative, training, assembly, family readiness, library, learning center, arms vault, physical fitness, and storage areas necessary to achieve proficiency in all required tasks. It would include a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency; house the U.S. Property & Fiscal Office administrative functions; and be configured to conduct soldier readiness processing during pre- and post-mobilizations.

The existing JFHQ is located on 106 acres in a mixed use residential and industrial area in Milford, Massachusetts. Originally this facility, constructed in the early 1980s, was used for manufacturing. During MANG occupation only minor renovations could be made to the facility since 70% of the site is located within a wetland area and all available land had been developed. Because these renovations did not adhere to a master planning concept, it has created operational inefficiencies that have the potential to degrade the MANG's ability to respond to civil and federal emergencies. The building's exterior envelope (roof, exterior panels, and windows) has exceeded its useful lifespan, is deteriorating, and the existing building systems (HVAC, plumbing, electrical, and telecommunications) are insufficient to support an addition and would require major upgrades.

Description of the Proposed Action and Alternatives (EA Section 2, pages 2-1 to 2-9)

A screening process was developed to determine the range of reasonable alternatives to carry forward for further analyses within the EA. Screening was based on meeting the MANG purpose and need and included:

- Sufficient developable land (~ 5 acres)
- Robust anti-terrorism/force protection program with controlled access and perimeter
- Access to major highway network & fixed and rotary flight lines
- Access to soldier/airmen support services (i.e., medical facilities, dining/billeting, base exchange/military supplies)
- Site flexibility to facilitate effective MANG response

- Enhance/redundant communications capabilities
- Redundant utility infrastructure
- Ability to operate for sustained periods of time during a civil military emergency

Five locations around the state were screened using the above criteria to determine which locations met the purpose and need. These locations included Camp Edwards, Fort Devens, Hanscom AFB, and state-owned parcels in Milford and Natick, Massachusetts. Only the Hanscom AFB location met all of the criteria set forth by MANG. The other four locations fell off because they did not have a robust anti-terrorism/force protection program in place, did not have ready access to major road networks or fixed and rotary flight lines, or did not have redundant communication and utility infrastructure. This screening process has been summarized on page 2-7 in Table 2-1 of the EA.

Under the proposed action a new JFHQ facility would be constructed. This new facility would be a multi-story building of permanent masonry type construction with appropriate parking and circulation areas. The project would be designed to secure a Leadership in Energy and Environmental Design (LEED) "Silver" rating, at a minimum, from the U.S. Green Building Council (USGBC) and would be constructed in two phases. Phase I would contain approximately 114,000 square feet (sf) and Phase II would contain approximately 79,000 sf. A "link" segment, constructed in Phase I, would connect the two phases of the JFHQ and house the elevators, main stair, lobbies, and security desk. The development of the link design approach would enable Phase II to be built in the future with minimal impact on Phase I. Approximately 400 personnel would be relocated from the existing site in Milford to Hanscom AFB. This EA evaluates the impacts associated with both phases of the project and the planned minor interior renovation to an adjacent three-story office building to accommodate approximately 40 of the relocated personnel.

No-Action Alternative (EA Section 2.3.1, page 2-6): Under the No-Action Alternative the JFHQ would remain in its current location in Milford, Massachusetts with no modifications to either the facility or its current use profile. The No-Action Alternative is the baseline for the rest of the analyses and helps determine the level of impact of each of the alternatives to the environment.

Alternative 1 – Preferred Alternative (Figure 2, page 2-3 and EA Section 2.3.2, page 2-8): Under Alternative 1, the Preferred Alternative, the JFHQ would be constructed in the northwest quadrant of Grenier Street and Randolph Road intersection at Hanscom AFB. The 16.9 acre site provides an adequately sized area and is close to two major parking lots, one located on the northern portion of the parcel and a second lot (3.09 acres) located just to the east, across Grenier Street. A drainage swale is located near the southwestern edge of the parcel and the site slopes approximately 5% (approx. 80 ft. elevation difference) from a high point in the southeast corner to a low point along the western edge of the parcel. Since this site meets all of the strategic site screening criteria, it is analyzed in detail in this EA.

Alternative 2 (Figure 2, page 2-3 and EA Section 2.3.3, page 2-8): Under Alternative 2, the JFHQ would be constructed at a 4.77 acre parcel immediately south of Randolph Road at Hanscom AFB. This site provides a usable and adequate parcel of cleared and flat land. As with the prior alternative, this site would also utilize the parking lot (3.09 acres) located just to the

east, across Grenier Street. Since this site meets all of the strategic site screening criteria, it is also analyzed in detail in this EA.

Environmental Impacts and Consequences

Resource areas unaffected by both alternatives were navigable waterways, geological resources, prime and unique farmlands, wild and scenic rivers, and conservation land (EA Section 1.5, pages 1-2 to 1-3).

Based on the analyses presented in this EA, no long-term, adverse, or significant impacts were identified to the following resources: aerospace (EA Section 4.1, page 4-1); socioeconomics/environmental justice (EA Section 4.3, page 4-3); noise (EA Section 4.6, pages 4-10 to 4-11); climate change (EA Section 4.8, page 4-12), geology and soils (EA Section 4.9, page 4-13); floodplains (EA Section 4.11, page 4-16); and environmental restoration program/hazardous waste (EA Section 4.14, page 4-19).

Land Use (EA Section 4.2, pages 4-1 to 4-2): The current land use for both alternatives is categorized as outdoor recreation and consists of native wooded vegetation and open grass areas. Implementation of the proposed action would require land use resignation to administrative, which is not inconsistent with the surrounding areas. Under the Preferred Alternative approximately 4.9 acres of the 16.9 would be disturbed (3.7 acres of vegetation would be cleared and 0.58 acres of vegetation would be preserved), with the remaining wooded areas being maintained. Because Alternative 2 is adjacent to the Air Force Research Laboratory (AFRL), building design concessions would be required to accommodate AFRL's optical line of sight and buffer zone restrictions to conduct their research and development mission. These clearances must be kept free from obstruction, and land development can only occur as long as there is no interference. This would necessitate a less economical and less efficient two-story building with a larger footprint.

Utilities (EA Section 4.4, pages 4-4 to 4-7): Under the proposed action, the number of individuals relocating to Hanscom AFB would increase the base population by approximately 5%, so increased demands on the water supply, wastewater, electrical, telecommunications, and natural gas systems would be minimal. While there would be short-term, temporary impacts to solid waste during construction, the amount of waste generated would not impact the local landfill long-term. Because the new facility would be designed to obtain a LEED Silver rating from the USGBC at a minimum, reusable/recycled material would be utilized and the latest water conservation and energy efficient building technologies would be incorporated into the design, making it a high performance green building.

Transportation (EA Section 4.5, pages 4-7 to 4-10): A traffic impact study was commissioned as part of this EA, and identified the existing year (2009) and projected year (2014) transportation conditions. The existing traffic conditions at key intersections were analyzed, assigned a growth rate to estimate no-build future volumes, and finally build volumes were calculated and assigned throughout the roadway network. The study found traffic congestion is anticipated to increase at key study area intersections with or without the relocation of the JFHQ and associated 400 personnel from the existing location in Milford, by year 2014. However,

implementing the proposed action would have a negligible impact at key study area intersections as the operating condition (i.e., delay and volume/capacity ratio) at each intersection is forecasted to increase by an incremental amount in response to the additional traffic. The overall intersection Level of Service (LOS), and the LOS for each approach, are forecasted to remain constant between the 2014 No-Action, Preferred Alternative and Alternative 2. In order to reduce the number of single-occupancy vehicles and their associated traffic impact, Traffic Demand Management (TDM) strategies such as car/van pooling, bike/walk programs and TDM promotional activities would be implemented.

Air Quality (Section 4.7, pages 4-11 to 4-12): To confirm the project would not trigger either a Prevention of Significant Deterioration (PSD) or non-attainment New Source Review (NSR), an applicability analysis was performed by calculating the Potential to Emit (PTE) from all proposed stationary sources. It was found the project was below the applicable major modification thresholds for all criteria pollutants. The proposed natural gas emergency generator would meet the permit exemption requirements. Hanscom AFB would include specific specifications in its contract language for the equipment purchase. Due to the fuel type of the emergency generator, it would be subject to 40 CFR Part 60 Subpart JJJJ New Source Performance Standard (NSPS) requirements, and be incorporated into the Hanscom's Title V Operating Permit. Based on size, the other fuel burning equipment would be considered insignificant sources under the facility's Title V permit and together, all exempt sources would be reported as a group in the annual emissions statement. Actual emissions were calculated for direct and indirect emissions associated with both alternatives. As this project would be implemented in a non-attainment area for ozone, a General Conformity Applicability Analysis was required. Construction-related impacts would be expected to be short-term, limited to the duration (28 months) of the construction activities. Five natural-gas fired heating units and one natural gas-fired emergency generator would be installed. Based on the construction activities from all estimated mobile sources, the first year of the JFHQ's operation, and the relocation of approximately 400 personnel driving POVs to and from JFHQ, the total project nitrogen oxide (NO_x) and volatile organic compounds (VOC) emissions would be 35.06 tons and 7.88 tons, respectively. The calculation estimates demonstrate this project would conform to the SIP as the emission rates are below the regulatory thresholds (i.e., 100 tons per year for NO_x and 50 tons per year for VOC). This project is not considered regionally significant as the project emissions are less than 10 percent of the regional emissions (Appendix F, Air Conformity Analysis) and would not impact the area's air quality.

Surface Water, Groundwater, and Drainage (EA Section 4.10, pages 4-13 to 4.11): No surface waters are located on the site, although a drainage swale is located to the west of the site. Construction activities would be conducted in accordance with applicable best management practices (BMPs) to avoid impacts to the nearby Shawsheen River. As part of construction, a stormwater management plan would be implemented and include extensive use of pervious landscape, vegetative filtration, sediment removal, infiltration via bioswales in the parking lot, sediment removal via deep sump catch basins, and a detention basin designed to hold and infiltrate a 100-year rainfall event. A 4-inch outlet pipe would be raised allowing the first 1-inch of rainfall to remain within the basin. This first inch, or first flush, typically carries the majority of pollutants (metals and bacteria). By incorporating this small outlet into the design, it would allow the basin to discharge over a period of three days during large storm events. Roof runoff

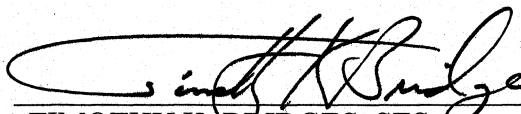
new building and the demolition of an existing building. This project would not impact socio-economics, transportation, noise, cultural resources, or the environmental restoration program at the base, as the personnel for this activity already exist at the base. New construction additions have the potential to increase air emissions and impact utilities on the base, but the commissioning of the new AMF building in combination with demolition of the existing building, which would increase the overall efficiency of building, would result in no net impact. The AMF building was designed with LEED principles and the proposed drainage system was designed in accordance with Hanscom AFB's drainage requirements.

Public Review and Interagency Coordination

This EA was prepared jointly between the MANG and the Air Force. A public notice was published in the Boston Globe and the local papers for Lincoln, Concord, Bedford, and Lexington on December 10, 2009. Copies of the Final EA and Draft Finding of No Significant Impact were made available for review and public comment at the Cary Memorial Library in Lexington, Concord Free Public Library in Concord, Bedford Free Library in Bedford, and Lincoln Public Library in Lincoln. Three public comments were received at the conclusion of the public comment period (see Appendix G). The first letter, from Mr. John Stella, was generally supportive of the project and solicited more information in the future. The second letter, from the Bedford Planning Board suggested the MANG coordinate with the Town of Lexington on a nearby traffic study. The third letter, from the Lexington Planning Department, requested additional coordination with the town and a designated on-site coordinator for TDM measures. The MANG officially met with the town of Lexington January 13, 2010 (meeting notes in Appendix G), and discussed the conceptual recommendations of the Hartwell Avenue Traffic Study, which will be incorporated into the proposed action.

FINDING OF NO SIGNIFICANT IMPACT

Based upon my review of the facts and analyses contained in the attached EA and as summarized above, I find the Preferred Alternative to construct the new JFHQ at Hanscom AFB will not have a significant impact on the natural or human environment; therefore, an environmental impact statement is not required. This analysis fulfills the requirements of NEPA, the President's Council on Environmental Quality, and 32 CFR Part 989.



TIMOTHY K. BRIDGES, SES
Command Civil Engineer
Communications, Installations, and Mission Support

9 Feb 10
Date

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LIST OF ACRONYMS

ABW	Air Base Wing
AFB	Air Force Base
AFI	Air Force Instruction
AFRL	Air Force Research Lab
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
Cfs	Cubic feet per second
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DoD	Department of Defense
EA	Environmental Assessment
EMCS	Energy Management Control System
ESC	Electronic Systems Center
FEMA	Federal Emergency Management Agency
FAA	Federal Aviation Administration
FIRM	Federal Insurance Rate Map
GHG	Greenhouse Gas
GWSA	Global Warming Solutions Act
gpm	Gallons per minute
HARM	Hazard Assessment Rating Methodology
HAPs	hazardous air pollutants
ICP	Integrated Contingency Plan
IRP	Installation Restoration Program
ISSA	Interservice Support Agreement
JFHQ	Joint Force Headquarters
kV	Kilovolt
kWh	Kilowatt-hour
LEED	Leadership in Energy and Environmental Design
LOS	Level of Service
MANG	Massachusetts National Guard
MAARNG	Massachusetts Army National Guard
MAANG	Massachusetts Air National Guard
MassDEP	Massachusetts Department of Environmental Protection
MassPort	Massachusetts Port Authority
MCF	Million cubic feet
MCP	Massachusetts Contingency Plan
mgd	Million gallons per day
MHC	Massachusetts Historic Commission
MIT	Massachusetts Institute of Technology
MMBTU	million British thermal units
MWRA	Massachusetts Water Resource Authority
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NSR	New Source Review
NHESP	Natural Heritage and Endangered Species Program
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
N_2O	Nitrous oxide
NO_x	Nitrogen oxide
ODS	Ozone depleting substances
Pb	Lead
PCB	Polychlorinated Biphenyl
PM	Particulate matter
PM_{10}	PM with an aerodynamic diameter of 10 micrometers or less
$PM_{2.5}$	PM with an aerodynamic diameter of 2.5 micrometers or less
PTE	Potential to emit
POV	Privately Owned Vehicle

PSD	Prevention of Significant Deterioration
RFTA	Reserve Forces Training Area
SAPs	Satellite Accumulation Points
sf	Square feet
SIP	State Implementation Plan
SO_2	Sulfur dioxide
TMDL	Total Daily Maximum Load
tpy	Tons per year
USEPA	United States Environmental Protection Agency
USGBC	United States Green Building Council
VOC	Volatile organic compound

Section 1. Purpose of and Need for the Proposed Action

1.1. Introduction

This Environmental Assessment (EA) was developed to assess and present the potential environmental consequences associated with construction of a replacement Massachusetts National Guard Joint Force Headquarters (JFHQ) facility. The EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and Air Force Instruction (AFI) 32-7061 Environmental Impact Analysis Process, which incorporates by reference Title 32 of the Code of Federal Regulations, Part 989 (32 CFR 989).

1.2. Background

The JFHQ is the Massachusetts National Guard (MANG) headquarters for both the Massachusetts Air National Guard (MAANG) and Massachusetts Army National Guard (MAARNG), and is an Armed Forces Reserve Readiness Center utilized for the command, control, supervision and administration of the Guard and assigned units for all of Massachusetts.

The MANG[1] is a Citizen-Soldier force that is ready, reliable, robust and essential to the safety and security of the Commonwealth of Massachusetts and the Nation. They have a unique dual mission: first, to maintain properly trained and equipped units available to support the Department of Defense under the direction of the President of the United States; and to provide trained and disciplined forces for emergencies within the state under the direction of the Governor of Massachusetts.

There are 8,200 Soldiers and Airmen in the Massachusetts National Guard, serving in Air and Army units, in both combat and support roles. More than 6,500 Massachusetts National Guard Soldiers and Airmen have been mobilized into federal service since 11 September 2001, and more than 5,000 of those served overseas. Guard units have been in continuous federal service in Iraq, Afghanistan, Kuwait, Kosovo and other countries in support of Overseas Contingency Operations.

1.3. Summary of Proposed Action

The MANG proposes to construct a new JFHQ to enhance the command, control and response of the MANG and assigned units for all of Massachusetts. The proposed action would include the construction of a new JFHQ to provide properly organized, sized and located facility with appropriate supporting infrastructure to fully sustain the Homeland Defense and Homeland Security missions of the MANG. Approximately 400 personnel would be relocated.

1.4. Purpose of and Need for the Proposed Action

The purpose of the proposed action is to enhance the command, control and response of the MANG and assigned units for all of Massachusetts.

The MANG proposes to construct a new JFHQ to enhance the command, control, supervision and administration of the MANG and to provide sufficient administrative, training, assembly, family readiness, library, learning center, arms vault, physical fitness, and storage areas necessary to achieve proficiency in all required tasks. It would include: a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency; house the US Property & Fiscal Office (USPF&O) administrative functions; and be configured to conduct Soldier Readiness Processing during pre- and post-mobilizations.

[1] MANG is used hereafter in this document to refer to the collective entity comprised of the Massachusetts National Guard, Massachusetts Air National Guard and the Massachusetts Army National Guard.

The existing JFHQ, USPF&O and the Department of Corrections, are all co-located at a former Data General manufacturing facility owned by the Commonwealth of Massachusetts in Milford, Massachusetts. The facility consists of a 99,000 SF three story office building with a 98,000 SF admin/warehouse building attached to the office building. The facility is situated on 106 acres in a mixed use residential and industrial area of Milford. The manufacturing facility was constructed in the early 1980's, over 70% of the site is wetlands and the majority of available land on the site has been fully developed. Funding constraints required the MANG to move into the facility without making any major modifications to the existing mechanical and HVAC systems. Several minor projects have taken place without any adherence to a master planning concept that identified a preferred end state. This has created operational inefficiencies that have the potential to degrade the MANG's ability to respond to civil and federal emergencies. Additional building/site deficiencies include:

- The existing Milford site is over 70% wetlands, thereby greatly limiting locations on the parcel where a new JFHQ could be sited. A proposed relocation on site would impinge upon on a jurisdictional riverfront boundary.
- A majority of the readily buildable land on the site has been fully developed. Site topographical features and the proximity of the existing building to the site boundary, limits the location of a new addition to the northern side of the existing building, adjacent to a warehouse. This arrangement creates an inefficient interior layout and design, separating the command staff with the remainder of the building offices and services.
- Renovating the existing JFHQ building up to current Anti-Terrorism/Force Protection Standards would entail extensive structural upgrades to the building's exterior envelope to meet blast resistance criteria. Exterior walls, doors and windows, and interior walls and partitions would have to be upgraded to battlement standards.
- The building exterior envelope (roof, exterior panels and windows) has exceeded its useful lifespan, is deteriorating and the existing building systems (HVAC, plumbing, electrical and telecommunications) are insufficient to support an addition and would necessitate a major upgrade.

Failure to complete the proposed action would hinder the MANG's ability to meet mission, readiness, recruiting, retention, and training objectives and results in a degraded operational efficiency and increased energy and sustainment costs.

The new location for the proposed JFHQ must have superior access to major road networks with the ability to commute easily to the Governor's office and the Executive Office of Public Safety in Boston. Access to soldier/airman support services such as base exchange/military clothing sales, medical facilities, transient dinning/ billeting facilities, as well as access to an air head or helipad is critical to successful operation. The facility must be able to operate for sustained periods of time in a civil military emergency which may involve loss of critical civil infrastructure (electrical, telecommunications, water, sanitary sewer etc.).

1.5. Impact Topics Eliminated

The following impact topics were discussed by the NEPA team and were eliminated from further evaluation because the impacts were identified as either non-existent, or so low as to be otherwise negligible.

- Navigable waterways
- Geologic resources

- Prime and unique farmland
- Wild and Scenic Rivers
- Conservation land
- Operations

1.6. Impact Topics Retained

Several impact topics were developed to focus the discussion of impacts and to allow for comparison of the environmental consequences of each alternative. These impact topics were identified based on federal laws, regulations, and executive orders and MANG knowledge of limited or easily impacted resources. Impact topics listed here are described in and analyzed in Sections 3 and 4.

- Aerospace
- Land Use
- Socioeconomic Conditions
- Utilities
- Transportation
- Noise
- Air Quality
- Geology and Soils
- Climate Change
- Surface Water, Groundwater, and Drainage
- Floodplains
- Biological Resources
- Cultural Resources
- Environmental Restoration Program/Hazardous Waste

1.7. List of Required Permits and Consultations

One permit would be required prior to construction of the project, a National Pollution Discharge Elimination System General Permit (NPDES) to be obtained by the contractor, and one permit would need to be modified for the project, the Massachusetts Title V Air Permit, to be obtained by Hanscom AFB. Responsibility for securing the permits for the projects would be negotiated as part of the Interservice Support Agreement (ISSA). Consultations with relevant stakeholders and government agencies have been completed, and are attached as an appendix to this document. For purposes of this planning effort's compliance with the National Historic Preservation Act (NHPA), Section 106, the MANG represented Hanscom AFB.

Permits

US Environmental Protection Agency (NPDES General Permit)

Massachusetts Title V Air Permit (Modification)

Consultations

Massachusetts Historical Commission (*cultural resources*)

National Park Service (NPS) Minute Man National Historical Park (*cultural resources*)

Mashpee Wampanoag Tribal Council (per MANG established procedures for *cultural resources*)

Stockbridge-Munsee Community of Wisconsin (per MANG established procedures for *cultural resources*)

Massachusetts Division of Fisheries and Wildlife (*biological resources*)

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Section 2. Description of the Proposed Action and Alternatives

A series of potential locations for the proposed JFHQ facility were identified in Massachusetts by the MANG beginning in 2006. Several alternative geographical locations where the JFHQ facility could be stationed were identified, including: Camp Edwards, Fort Devens, Hanscom AFB, and existing MAARNG sites in the towns of Milford and Natick.

2.1. Proposed Action

The MAARNG proposes to construct a new JFHQ on a site at Hanscom AFB, as shown in Figure 1. Locating the new facility at Hanscom offers the benefits of an attractive, appropriately sized property with zero acquisition cost, a secure perimeter, and excellent transportation connections to Routes 128, 2, and I-90. The facility consists of the JFHQ building, as well as Privately Owned Vehicle (POV) and military vehicle parking based on the requirements of the project's Form 1391 (narrative justification for guard and reserve military construction projects) and National Guard Pamphlet 415.12 (design criteria).

A JFHQ located at Hanscom AFB would enhance the command, control, and response of the MANG. By utilizing this centralized location, which is convenient to the major road networks of the state, the MANG would have the flexibility to respond in time of crisis in a timely manner. Additionally there would be utility gained from the synergy of being located within an air force base, for example: enhanced and redundant communication capabilities, fixed and rotary flight lines, and a robust force protection program.

The project proposes the phased new construction of a specially designed JFHQ multi-story building of permanent masonry type construction with appropriate parking and circulation areas. The new facility is designed to be constructed in two phases. Phase I would contain approximately 114,000 square feet (sf) and Phase II would contain approximately 79,000 sf. A "link" segment, constructed in Phase I, would connect the two phases of the JFHQ and house the elevators, main stair, lobbies and security desk. The development of the link design approach would enable Phase II to be built in the future with minimal impact on Phase I. This EA evaluates the impacts associated with both phases of the project and the planned minor interior renovation to an adjacent three story office building to accommodate approximately 40 of the relocated personnel.

The project would be designed to secure a Leadership in Energy and Environmental Design (LEED) "Silver" rating, at a minimum, from the US Green Building Council (USGBC). LEED is a third-party certification program for the design, construction, and operation of high performance green buildings. Buildings can qualify for four levels of certification: Certified (lowest rating), Silver, Gold, or Platinum (highest rating). The rating system addresses six major areas: sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, and innovation and design process.

A site location map and conceptual site plan are shown in Figures 2 and 3, while proposed JFHQ building renderings are shown in Figures 4 and 5.

Insert Figure 1 – Vicinity Map

Insert Figure 2 – Site Location Map

Insert Figure 3 – Conceptual Site Layout Plan

Insert Figures 4 and 5 – Northern and Southern Perspectives

2.2. Strategic Site Screening Criteria

Recognizing the wide geographic array of locations and strategic site characteristics that are essential to meeting the purpose and need for the proposed facility, a screening of the potential locations was conducted so a refined list of alternatives could be evaluated in this EA. Strategic site screening criteria include:

- Sufficient developable land to accommodate JFHQ (approximately 5 acres);
- Robust Anti-Terrorism/Force Protection program;
- Site with controlled access and perimeter;
- Superior access to major highway network;
- Ready access to state leadership in Boston;
- Ready access to soldier/airmen support services including medical facilities, transient dining/billeting, base exchange/military supplies;
- Site flexibility to facilitate effective MANG response in the event the JFHQ building is damaged;
- Enhanced and redundant communications capabilities;
- Redundant utilities infrastructure;
- Ability to operate for sustained periods of time during a civil military emergency which may involve loss of critical civil infrastructure (electrical, water, gas, sanitary sewer, etc); and
- Access to fixed and rotary flight lines

State owned sites were given serious consideration as first choices. For a joint organization of this size and its mission responsibilities it became clear that co-locating on an active military base provided the best opportunities for the MANG to meet and exceed its mission.

As presented in Table 2-1, Hanscom AFB was identified as the location of the highest rated alternatives based on the above criteria and it was subsequently determined that the placement of the JFHQ at this installation would best meet the stated purpose and need for the project. The following paragraphs describe the characteristics of alternatives that were screened; advanced for analysis in this EA; or eliminated from further analysis.

2.3. Alternatives Advanced

2.3.1. No-Action Alternative

The Council on Environmental Quality's (CEQ) regulations implementing NEPA requires that a No-Action alternative be evaluated. The No-Action alternative maintains the status quo. Under the no-action alternative the JFHQ would remain in its current location in Milford, Massachusetts with no modifications to either the facility or its current use profile. The no-action alternative was determined to be not reasonable because the Massachusetts National Guard has determined that the existing JFHQ facility is no longer sufficient to support its mission, readiness and training requirements, and therefore does not meet the purpose and need of the project. The no-action alternative is the baseline for the rest of the analysis, and helps determine the level of impact of each of the alternatives to the environment.

Table 2-1

Alternatives Matrix

Strategic Site Screening Criteria

	Action Alternatives		**Alternatives Eliminated**			
Sites	**Alternative 1 Hanscom**	**Alternative 2 Hanscom**	**Camp Edwards**	**Milford**	**Fort Devens**	**Natick**
Sufficient developable land to accommodate JFHQ	Yes	Yes	Yes	Yes	Yes	Yes
Robust Anti-Terrorism/Force Protection program	Yes	Yes	Yes	Yes	Yes	No
Site with controlled access and perimeter	Yes	Yes	Yes	No	No	No
Superior access to major highway network	Yes	Yes	No	No	No	Yes
Ready access to state leadership in Boston	Yes	Yes	No	No	No	Yes
Ready access to soldier/airmen support services	Yes	Yes	No	No	Yes	No
Site flexibility to facilitate effective MANG response	Yes	Yes	Yes	No	Yes	No
Enhanced and redundant communications capabilities	Yes	Yes	Yes	No	Yes	No
Enhanced utilities infrastructure	Yes	Yes	Yes	No	Yes	No
Ability to operate for sustained periods	Yes	Yes	Yes	No	No	No
Access to fixed and rotary flight lines	Yes	Yes	Yes	No	No	No
Avoidance of new construction within wetland/floodplain	Yes	Yes	Yes	No	Yes	Yes

2.3.2. Alternative 1 - Preferred Alternative – Hanscom North Site

Under Alternative 1, the preferred alternative, the JFHQ would be constructed in the northwest quadrant of the Grenier Street and Randolph Road intersection at Hanscom AFB. The 16.9 acre site provides an adequately sized area and is close to two major parking lots, one located on the northern portion of the parcel and a second lot (3.09 acres) located just to the east, across Grenier Street. A drainage swale is located near the southwestern edge of the parcel and the site slopes approximately 5% (approx. 80 ft. elevation difference) from a high point in the southeast corner to a low point along the western edge of the parcel. This site meets all of the strategic site screening criteria, and as such, it is analyzed in detail in this EA.

2.3.3. Alternative 2 - Hanscom South Site

Under Alternative 2, the JFHQ would be constructed at a 4.77 acre parcel immediately south of Randolph Road at Hanscom AFB. This site provides a usable and adequate parcel of cleared and flat land. As with the prior alternative, this site would also utilize the parking lot (3.09 acres) located just to the east, across Grenier Street. This site meets all of the strategic site screening criteria, and as such, it is analyzed in detail in this EA.

2.4. Alternatives Eliminated from Detailed Analysis

The following alternative locations for the proposed JFHQ were identified and underwent a preliminary evaluation, however they were eliminated from further detailed evaluation because they do not meet the strategic site screening criteria previously identified, and do not fully meet the project's purpose and need.

2.4.1. Camp Edwards

At this installation, a JFHQ meeting the functional requirements as identified in the purpose and need section of this EA, would be constructed and operated in the approx. 5,000 acre Cantonment area of Camp Edwards on Cape Cod, located 65 miles southeast of Boston.

Camp Edwards was deemed unsuitable as a site for the JFHQ for two main reasons: the driving distance from Boston, and access to a major highway network. Camp Edwards is located on Cape Cod, on the eastern side of the Cape Cod Canal, which can only be accessed via two bridges. The access points create a bottleneck for local traffic, which could hinder the MANG's ability to respond effectively to a civil or national emergency. Since this site did not meet all of the strategic site screening criteria as shown in Table 2-1, it was eliminated from further detailed analysis in this EA.

2.4.2. Fort Devens

Fort Devens is an Army Reserve Forces Training Area (RFTA) that provides training facilities and training support to all military services, reserve and active. Located in North Central Massachusetts, about 42 miles northwest of Boston, Fort Devens is funded by the Army Reserves and is operated under the Army Installation Management Command Northeast Region. As a subordinate installation of Fort Dix, the mission of Fort Devens is to support all military services in addition to supporting local, state, and other federal agencies when possible.

At this installation, a JFHQ meeting the functional requirements as identified in the purpose and need section of this EA, was considered. Fort Devens is located approximately 25 miles west of Hanscom AFB, making access to leadership in Boston less convenient than other sites, and it lacks a perimeter with controlled access. Additionally, it lacks access to fixed and rotary flight lines. Since this site did not meet a majority of the strategic site screening criteria as shown in Table 2-1, it was eliminated from further detailed analysis in this EA.

2.4.3. Milford

Under this alternative, the existing JFHQ facility in Milford, MA, located 40 miles southwest of Boston in a mixed use residential and industrial area, would be either modified or replaced at the same site. The existing JFHQ operations has occupied 99,000 sf of a three story building here since 1994, in a building that was originally constructed in the early 1980's as a Data General computer manufacturing facility. The facility also contains a 98,000 sf USPF&O administrative and warehouse attached to the office building. The facility also houses the administrative offices of the Massachusetts Department of Corrections and is located on a 106 acre Commonwealth of Massachusetts owned parcel that is over 70% wetlands and a majority of the readily buildable land on the site has been fully developed.

At this installation, a JFHQ meeting the functional requirements as identified in the purpose and need section of this EA, was considered. The site at Milford satisfied the least number of criteria used in the strategic site screening. The site is not a military instillation, thereby lacking access to fixed and rotary flight lines, ready access to soldier/airmen services, site flexibility, a controlled perimeter, enhanced and redundant communication capabilities, and enhanced utilities infrastructure. Since this site did not meet a majority of the strategic site screening criteria as shown in Table 2-1, it was eliminated from further detailed analysis in this EA.

2.4.4. Natick

Natick is a state owned site which is situated about 20 miles west of Boston and is located on Speen Street in Natick, MA. This location in a developed suburban area primarily features a level parcel and currently contains a controlled humidity storage building, which provides for the specialized storage of select military equipment. Over the past decade, a series of unused and deteriorating buildings on the site have been razed.

At this installation, a JFHQ meeting the functional requirements as identified in the purpose and need section of this EA, was considered. The site is not a military instillation, thereby lacking access to fixed and rotary flight lines, ready access to soldier/airmen services, site flexibility, a controlled perimeter, enhanced and redundant communication capabilities, and enhanced utilities infrastructure. Since this site did not meet a majority of the strategic site screening criteria as shown in Table 2-1, it was eliminated from further detailed analysis in this EA.

A summary of the environmental impacts evaluated in the EA is presented in Table 2-2 below. The detailed evaluation of each potential impact topic is located in Section 4 of this report.

Table 2-2
Environmental Impact Summary

Alts.	Aero-space	Land Use	Socio Econ.	Util.	Trans.	Noise	Air	Soil	Biological	Cult.	Haz Mat	Water
No-Action	No	No	No	No	No	No	No	No	No	No	No	No
Alt. 1	No	No	No	No	No	No	No	No	No	No	No	No
Alt. 2	No	Yes	No	No	No	No	No	No	No	No	No	No

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Section 3. Affected Environment

3.1. Aerospace

Hanscom AFB is adjacent to Hanscom Field, an airport owned and operated by the Massachusetts Port Authority (Massport). Hanscom Field is a regional general aviation airport, which accommodates commuter, business, charter, cargo, personal aircraft, air taxi, and flight school activity. The airport primarily serves the regions high tech corporations, educational institutions, and military operations at the base. In order to promote air safety and efficient use of navigable airspace, the Federal Aviation Administration (FAA) regulates new construction or alterations located on or adjacent to an airport. Requirements vary based on the height of the structure, proximity to the airport, and location in relation to the runways.

3.2. Land Use

Hanscom AFB is located approximately 18 miles northwest of Boston, Massachusetts, just outside the Route 128/I-95 circumferential limited-access highway. The base is located just west of a major light industrial and office park corridor which extends along Hartwell Avenue. 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, an airport owned and operated by the Massport, part of which is located in the town of Concord to the west, as well as the Minute Man National Historical Park which is located to the south.

As previously shown in Figure 2, the size of the Alternative 1 parcel is approximately 16.9 acres. It has two existing buildings, 1503 and 1507 constructed in 1955, and three smaller storage facilities. The MANG currently occupies building 1503 with the State Medical Command (Med Com). Med Com plans, programs, provides, and sustains health force protection and medical/dental support to meet operational, training and mobilization medical readiness requirements of guard units and soldiers. An existing parking lot associated with these buildings lies in the northeast corner of the parcel, with an additional parking lot within the 3.09 acre parcel located to the west across Grenier Street. The parcel slopes from the southeast corner to the northwest corner with an elevation difference of approximately 80' (5% grade). The parcel consists of open space and a stand of mixed native hard and soft wood trees consistent with upland. Located outside of the southwest and northwest boundary are streams.

As previously shown in Figure 2, the size of Alternative 2 parcel is 4.77 acres and is primarily open grass space. A tower once stood on this parcel and it now accommodates a soccer field.

Antenna Look Angle and Buffer Zone

The Air Force Research Laboratory programs require adjacent outdoor space for equipment, test facilities and optical line of sight requirements necessary to conduct their research and development mission. These clearances must be kept free from obstruction, and development in these areas can only occur as long as there is no interference, or if other accommodations are made for the equipment. Construction activities that interfere with or limit required clearance in these areas could have an overall adverse impact on current and future laboratory programs (2003a). The Alternative 1 parcel avoids conflicts with these clearances, and the Alternative 2 parcel would require design concessions to accommodate the line of sight clearances. Both sites are viable in regard to this topic.

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 (66 ABW), which is part of ESC. The 66 ABW provides services to all the active-duty, Reserve, and National Guard military personnel, Department of Defense (DoD) civilians and contractors who work and live at Hanscom AFB. Additionally, the 66 ABW supports over 100,000 retired military personnel, annuitants, and spouses living in the seven-state area of New England and New York. Hansom 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. ESC's acquisition function represents approximately half of the 5,700-strong workforce. Hanscom AFB's annual budget approaches $4 billion, with nearly $3.9 million allocated to Acquisition objectives. The government (military, civilian) payroll is approximately $252 million, with an additional $795 million to contractors. The total regional economic impact of Hanscom AFB is estimated to be $2.9 billion (HAFB, 2005).

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, directs federal agencies to address environmental and human health conditions in minority and low-income communities. Environmental Justice Areas are defined as census block groups that represent neighborhoods of high minority, low-income, non-English speaking and foreign-born populations. The nearest area is directly east and adjacent to Hanscom AFB.

3.4. Utilities

3.4.1. 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), from 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 (Don Morris, pers. comm. 11/13/09).

3.4.2. 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 (Don Morris, pers. comm. 11/13/09).

3.4.3. Solid Waste

Approximately 51 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 base housing, 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 major quantities of yard waste and construction and demolition debris. On an annual basis, Hanscom AFB generates approximately 1,759 tons of municipal solid waste and 185 tons of construction and demolition waste, both of which are incinerated off-base with heat recovery (HAFB, 2008). Additional materials diverted from the waste stream on an annual basis include: 516 tons of wood waste (pallets, packaging), 67 tons of compost/organic materials, 76 tons of metals, 56 tons of general recyclables, and 7 tons of computers/electronics (HAFB, 2008).

3.4.4. Electricity

Hanscom AFB obtains its power from NStar (formerly Boston Edison). Service is provided at 14.4 kilivolts (kV) through three sets of cables to the base substation. Nearly all transmission lines within Hanscom AFB are underground. The annual capacity is approximately 151 million kilowatt hours (kwh), roughly twice the annual demand (Don Morris, pers. comm. 11/13/09). 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 is 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 small, stand-alone facilities. Backup and emergency power is supplied by approximately 34 stationary emergency generators and 9 mobile generators located throughout the base.

3.4.5. 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.

3.4.6. 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, and elementary school. For FY2007, the total natural gas usage at Hanscom AFB was 288,059 million cubic feet (MCF). Annual natural gas capacity is 884,040 MCF.

3.5. Transportation

Traffic congestion in the vicinity of the base primarily occurs during the morning and evening periods as workers arrive via the local and regional highway network and then depart via the same network in the evening. Hanscom AFB commuters primarily use Route 4/225 and Route 2A to access Hartwell Avenue and Hanscom Drive to enter the base; both of these state routes have interchanges with the Route 128/I-95, a limited-access highway that provides a circumferential route around the Boston area and connects to other radial limited-access highways in the region. The local routes are also used by commuters from the area towns, as well as others accessing the many industrial and office parks in the area. While Hanscom AFB is perhaps the largest concentration of employment in the area, it is not the only contributor to traffic congestion in this highly automobile dependent, low density suburban employment and residential area (Hanscom General Plan Update, 2003a). Transit service is limited to the Route 62 bus, which travels along Route 4/225 in the northern end of the study area and the Route 76 bus, which operates on a 30 minute rush hour frequency, and serves MIT Lincoln Laboratories located on Wood Street on the western side of the Base.

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

- Hartwell Gate – accessed via Hartwell Avenue, which provides direct access to Routes 4/225 and Route 128/I-95.
- Schilling Gate - 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.
- Vandenberg Gate - the main gate for visitors, commercial vehicles, and some DoD personnel; access is from Route 2A, Hanscom Drive, and a segment of Old Bedford Road

Almost two-thirds of the morning traffic entering the base uses the two eastern gates (Hartwell and Schilling). Despite having a lower 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 interior road network at Hanscom AFB consists of arterials, collectors, and local streets. The major arterials include segments of Barksdale Street, Vandenberg Drive, and Marrett Street.

The existing condition Level of Service (LOS) analysis for the study area indicated that all the key intersections experienced significant traffic delays. Each key intersection has one or more approaches operating at a LOS E or LOS F during the AM and PM peak hour. The LOS for signalized intersections is defined in terms of the average stopped delay per vehicle for 15-minutes. LOS is ranked from A through F, with A representing shorter stopped delays per vehicle, and F representing longer stopped delays per vehicle.

By 2014, background traffic volumes are forecasted to increase at the key study area intersections, with the overall LOS for the Route 4/225/Hartwell Avenue declining from a LOS D in 2009 to a LOS E in 2014 for both AM and PM peak hours. Individual LOS is shown in Table 3-1 and 3-2 for the respective AM and PM peak hour. Intersections where the LOS has declined relative to the 2009 existing condition are highlighted.

Table 3-1

No-Build Conditions (2014) Level of Service Summary, AM Peak Hour

Intersection	LOS	Delay (Seconds)	V/C Ratio	95th Percentile Queue (Feet)
Signalized Intersections				
Route 4/225 / Hartwell Avenue	**E**	**57.7**	**1.11**	
Bedford EB thru/right	F	94.3	1.11	#863
Bedford WB thru	C	31.9	0.51	288
Hartwell NB left	C	28.0	0.56	62
Hartwell NB right	B	14.9	0.35	170
Hartwell SB left/thru (jug-handle)	D	44.2	0.93	#760
Unsignalized Intersections				
Route 2A/Concord Turnpike Bypass Road/Brooks Road				
Route 2A EB thru/right	A	0.6	0.02	2
Route 2A WB left/thru/right	A	0.3	0.01	1
Brooks Road NB left/thru/right	C	18.9	0.07	6
Concord Tpk Bypass Road EB left/thru/right	F	>50.0	>1.20	1,202
Route 2A/Bedford Road				
Route 2A EB thru/right	A	0.0	0.56	0
Route 2A WB left/thru	A	5.9	0.24	24
Bedford Road NB left/right	F	>50.0	0.91	201
Route 2A/Hanscom Drive				
Route 2A EB left	A	9.4	0.21	20
Route 2A EB thru	A	0.0	0.45	0
Route 2A WB thru/right	A	0.0	0.59	0
Hanscom Drive SB left	F	>50.0	>1.20	373
Hanscom Drive SB right	C	18.4	0.33	35
Hartwell Avenue/Wood Street				
Hartwell EB thru/right	A	0.0	0.08	0
Hartwell WB left	A	9.6	0.46	63
Hartwell WB thru	A	0.0	0.60	0
Wood NB left/right	F	>50.0	>1.20	663
Hartwell Avenue/Maguire Road/Municipal Facility				
Maguire EB left/thru	F	>50.0	>1.20	217
Maguire EB right	F	>50.0	>1.20	1,200
Facility WB left/thru/right	F	>50.0	>1.20	N/A
Hartwell NB left	B	11.9	0.17	16
Hartwell NB thru/right	A	0.0	0.13	0
Hartwell SB left/thru/right	A	1.7	0.04	3

V/C = Volume to capacity ratio

95th Percentile Queue = Queue length that has a 5% probability of being exceeded during the time period

N/A indicates that queue cannot be calculated

# indicates that the volume for the 95th percentile cycle exceeds capacity

Highlighted cell indicates that LOS has deteriorated from 2009 Existing Conditions LOS

Table 3-2

No-Build Conditions (2014) Level of Service Summary, PM Peak Hour

Intersection	LOS	Delay (Seconds)	V/C Ratio	95th Percentile Queue (Feet)
Signalized Intersections				
Route 4/225 / Hartwell Avenue	**E**	**65.8**	**1.17**	
Bedford EB thru/right	D	38.8	0.71	400
Bedford WB thru	D	38.8	0.69	397
Hartwell NB left	F	83.8	1.08	#640
Hartwell NB right	F	115.8	1.17	#1214
Hartwell SB left/thru (jug-handle)	C	24.7	0.31	153
Unsignalized Intersections				
Route 2A/Concord Turnpike Bypass Road/Brooks Road				
Route 2A EB thru/right	A	0.5	0.01	1
Route 2A WB left/thru/right	A	0.6	0.02	1
Brooks Road NB left/thru/right	C	19.8	0.12	10
Concord Tpk Bypass Road EB left/thru/right	F	>50.0	>1.20	546
Route 2A/Bedford Road				
Route 2A EB thru/right	A	0.0	0.24	0
Route 2A WB left/thru	A	6.7	0.27	28
Bedford Road NB left/right	F	>50.0	>1.20	N/A
Route 2A/Hanscom Drive				
Route 2A EB left	B	10.5	0.13	11
Route 2A EB thru	A	0.0	0.24	0
Route 2A WB thru/right	A	0.0	0.60	0
Hanscom Drive SB left	F	>50.0	>1.20	N/A
Hanscom Drive SB right	F	>50.0	>1.20	461
Hartwell Avenue/Wood Street				
Hartwell EB thru/right	A	0.0	0.73	0
Hartwell WB left	C	17.0	0.48	64
Hartwell WB thru	A	0.0	0.09	0
Wood NB left/right	F	>50.0	>1.20	N/A
Hartwell Avenue/Maguire Road/Municipal Facility				
Maguire EB left/thru	F	>50.0	>1.20	N/A
Maguire EB right	B	12.2	0.28	29
Facility WB left/thru/right	C	15.5	0.01	1
Hartwell NB left	B	10.4	0.50	72
Hartwell NB thru/right	A	0.0	0.52	0
Hartwell SB left/thru/right	A	0.0	0.00	0

V/C = Volume to capacity ratio

95th Percentile Queue = Queue length that has a 5% probability of being exceeded during the time period

N/A indicates that queue cannot be calculated

# indicates that the volume for the 95th percentile cycle exceeds capacity

Highlighted cell indicates that LOS has deteriorated from 2009 Existing Conditions LOS

3.6. Noise

The primary sources of noise in the vicinity of Hanscom AFB result from normal operation of Massport's Hanscom Field airport, military flight operations at Hanscom AFB, and automobile traffic along the limited-access highway (Route 128/I-95) and various local roads. Even though military flight operations constitute approximately 1% of the total aircraft operations in the vicinity, military flight operations tend to be noisier aircraft, and Massport calculates that military flight operations represent 28% of the aircraft-generated noise (Massport, 2008).

Ground-based vehicle operations at Hanscom AFB consist mainly of privately-owned vehicles and government vehicles. The privately-owned vehicles 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 (HAFB, 2003a). Noise generated independent of aircraft flight and noise on Hanscom AFB, such as maintenance and shop operations, ground traffic, and construction, is generally comparable to the noise generated in the surrounding community; therefore, noise generated during aircraft flight operations represents the most substantial noise source on the base.

3.7. Air Quality

The federal Clean Air Act, as amended, requires the United State Environmental Protection Agency (USEPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. Airsheds that cannot attain compliance with the NAAQS are designated as non-attainment areas, while those areas that meet the NAAQS are designated as attainment areas. Hanscom AFB is located in an attainment area for the following criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen oxides (NO_x), sulfur dioxide (SO_2), and particulate matter (PM_{10} and $PM_{2.5}$). However, the Commonwealth of Massachusetts is situated within an ozone transport region and designated as a moderate non-attainment area for ground-level ozone (O_3). Ground level ozone results from a chemical reaction of sunlight, volatile organic compounds (VOCs) and NO_x, which are the two primary ozone precursors (and to a lesser extent CO). In January 2008, the MassDEP submitted to USEPA a final State Implementation Plan (SIP) for demonstrating attainment of the federal 8-hour NAAQS for ozone by the end of the 2009 ozone season (MassDEP, 2008).

As Hanscom AFB is located in a non-attainment area, General Conformity is always applicable. Therefore, prior to physically implementing any part of a federal activity (e.g., land disturbance, grading) the facility must demonstrate that the federal action will not contribute to any NAAQS violations in the area, increase the frequency or severity of any existing NAAQS violations, or delay attainment of any NAAQS or interim emission reductions.

The MassDEP issued Hanscom AFB a Title V Operating Permit (Transmittal No. W117284) as the facility is considered a major stationary source due to its potential to emit (PTE) (i.e., equipment operating at its maximum rate on a 24/7/365 basis) of NO_x emissions exceeding 100 tons per year (tpy). The permit was most recently re-issued on October 9, 2008. Hanscom AFB must submit a permit application for renewal every five years, no later than six months prior to its expiration date (October 9, 2013). As the facility's mission does not involving flying, major maintenance, industrial or manufacturing type activity, most of the emission sources on base are considered insignificant. The primary emission sources on base are fuel combustion for heating purposes or standby electrical power. Fuel dispensing is also a notable source of emissions, but to a lesser degree. Most of the regulatory requirements (i.e., monitoring/testing, record keeping and reporting) fall upon these few larger sources. However, Hanscom AFB is well below the major source thresholds for hazardous air

pollutants (HAPs), which are 10 tpy PTE for a single HAP and 25 tpy PTE for all combined HAPs emitted from sources on base (Geomet, 2005).

New or modified sources of emissions at Hanscom AFB may be subject to pre-construction review and plan approval through permit issuance. Smaller size/capacity emission units may be exempt from the minor New Source Review (NSR) process if their design and use meet specific documented criteria. If necessary, a plan must be obtained prior to installing the applicable emission sources. Hanscom AFB also complies with the major NSR source pre-construction review process by analyzing each project's pollutants for rule applicability prior to project initiation. Hanscom AFB is considered a major stationary source under the non-attainment NSR and Prevention of Significant Deterioration (PSD) rules as its facility-wide PTE for NO_x is greater than 100 tpy and 250 tpy, respectively. However, Hanscom AFB boilers and hot water heaters are not considered a major PSD listed source category as their aggregate maximum heat input does not exceed more than 250 million British thermal units [MMBTU] per hour maximum heat input.

Hanscom AFB has a draft Refrigerant Management Plan that outlines how the base complies with Section 608 of the Clean Air Act Amendments that govern ozone depleting substances (ODS) (Hanscom AFB, 2009). The USEPA approved non-ODS substitutes (e.g., R-134a, R-404A) are still a concern as they have a global warming potential.

3.8. Climate Change

There is scientific consensus that the chemical composition of the Earth's atmosphere is being changed by human activities, such as fossil fuel combustion, deforestation, and other land use changes, resulting in the accumulation of trace greenhouse gases (GHGs) in the atmosphere. GHGs (e.g., water vapor, CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons) absorb the radiative energy from the Sun and Earth. Water vapor occurs naturally and accounts for the largest percentage of GHGs, while CO_2 is the second-most abundant GHG. It is thought that GHGs may be contributing to an increase in the Earth's average surface temperature, which in turn is expected to affect weather patterns, average sea levels and increased intrusion of seawater into estuaries. Other effects are changes in precipitation rates, an increase in ozone levels due in part to changes in atmospheric photochemistry, and decreased water availability and quality (Jones & Stokes 2007).

There are a multitude of state and regional regulatory programs requiring GHG emissions reductions. In particular, Massachusetts' mandatory reporting of GHGs requires, among other sources, that Title V facilities report their 2009 CO_2 emissions by April 15, 2010. In addition, USEPA promulgated recently the Federal GHG Reporting Rule on October 30, 2009 that will also require Hanscom AFB to report to USEPA.

Using approved USEPA emission factors and Hanscom AFB 2008 consumption rates, preliminary GHG emissions were calculated for stationary emission sources only. GHG emissions were converted into one value known as a CO_2 equivalent (CO_2e) using approved factors to weight each pollutant. 2008 CO_2e emissions for stationary sources at the base are estimated at 41,215 metric tonnes per year.

3.9. Geology and Soils

3.9.1. 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.

3.9.2. 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 earthmoving 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.

3.10. Surface Water, Groundwater, and Drainage

3.10.1. 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, including the project sites, 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 USEPA as having high vulnerability to water quality problems. In highly vulnerable watersheds, actual aquatic conditions are well below state water quality goals. Watershed data suggests considerable 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). Major watershed concerns identified by the Merrimack River Watershed Council include seasonally low baseflow, flash flooding, and water quality impairment.

3.10.2. 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, 1998a).

3.10.3. Drainage

Hanscom AFB is located in the headwaters of the Shawsheen River, which is designated as an impaired water body for "Other Habitat Alterations" under Section 303(d) of the Clean Water Act

(HAFB 2003b). A total maximum daily load (TMDL) evaluation has been completed by Hanscom AFB, which identifies the condition of the headwaters and specifies reduction in storm water pollutant loads. The watershed that includes the Shawsheen River is highly developed, which has led to contaminants associated with runoff, excessive storm water flow rates, and insufficient stream flow rates. New development projects at Hanscom AFB are required to meet state stormwater management standards, as well as improve site drainage characteristics, such as recharge and infiltration, to comply with the Clean Water Act.

The base has coverage under the NPDES Phase II Municipal Separate Storm Sewer System (MS4) general permit for federal facilities in Massachusetts. The base has a list of common municipal system BMPs that are performed and documented in the annual report to the DEP and USEPA. The base also has a Multi-Sector NPDES permit that governs industrial operations.

3.11. 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. However, no portions of the proposed sites are located within the 100-year or 500-year floodplains.

3.12. Biological Resources

3.12.1. 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 preferred alternative site consists of open space and a stand of mixed native hard and soft wood trees consistent with uplands. At the proposed location of Alternative 2, the area is an open grassy space field that is routinely mowed and maintained.

3.12.2. 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 major 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 delineated wetland resources within the vicinity of the proposed sites.

3.12.3. Wildlife

Hanscom AFB lacks continuity of undisturbed areas. 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. The proposed sites do not provide noteworthy habitat for wildlife due to its developed condition, mowing/maintenance activities, and human traffic.

3.12.4. Threatened or Endangered Species

There are no records of federally listed endangered or threatened species on Hanscom AFB. The Massachusetts Natural Heritage and Endangered Species Program (NHESP) include portions of Hanscom AFB within "priority sites of rare species habitat and exemplary natural communities". While habitat for state-listed animal and plant species has been identified within portions of

Hanscom AFB, the proposed sites are located within a developed/disturbed portion of the base that is not known to provide suitable habitat for rare species. There are no federally listed species or NHESP listed species at the existing site in Milford.

3.13. Cultural Resources

The Hanscom AFB region contains areas of prominent prehistoric and historic importance. There are hundreds of properties listed in the records of the Massachusetts Historic Commission (MHC) for the four surrounding towns alone. Hanscom AFB is adjacent to the Minute Man National Historical Park (listed on the National Register of Historic Places [NRHP]) and to the Great Meadows National Wildlife Refuge. In addition, there are other noteworthy places, which served as naturally fortified positions from which the colonial militia fired on British soldiers within Hanscom AFB. Four prehistoric archaeological sites are located adjacent to the base, and several small prehistoric sites (temporary camps, chipping stations, and lithic workshops) have been reported in the vicinity of the base. However, the 1997 Phase I Archaeological Survey, concentrating on 34 areas previously identified as having moderate to high potential for archaeological resources, concluded that there are no areas of Hanscom AFB that contain noteworthy prehistoric or archeological resources. As such, there are no known areas at the proposed sites containing noteworthy prehistoric or archeological resources.

The Area of Potential Effect (APE) for the proposed site is the parcel lines identified in Figure 2. An east-west trending stone wall is located in the northwest portion of the Alternative 1 site, and the site also has two buildings greater than 50 years old, Building 1503 and Building 1507. The SHPO concurs that these two buildings are not NRHP eligible. NHPA Section 106 consultation was considered complete as of April 22, 2009 (see signed concurrence letter from SHPO in Appendix B). The MAARNG has an Integrated Cultural Resource Management Plan (ICRMP) in place and actions by the MAARNG conform to this plan (HAFB 2008).

3.14. Environmental Restoration Program / Hazardous Waste

3.14.1. Environmental Restoration Program

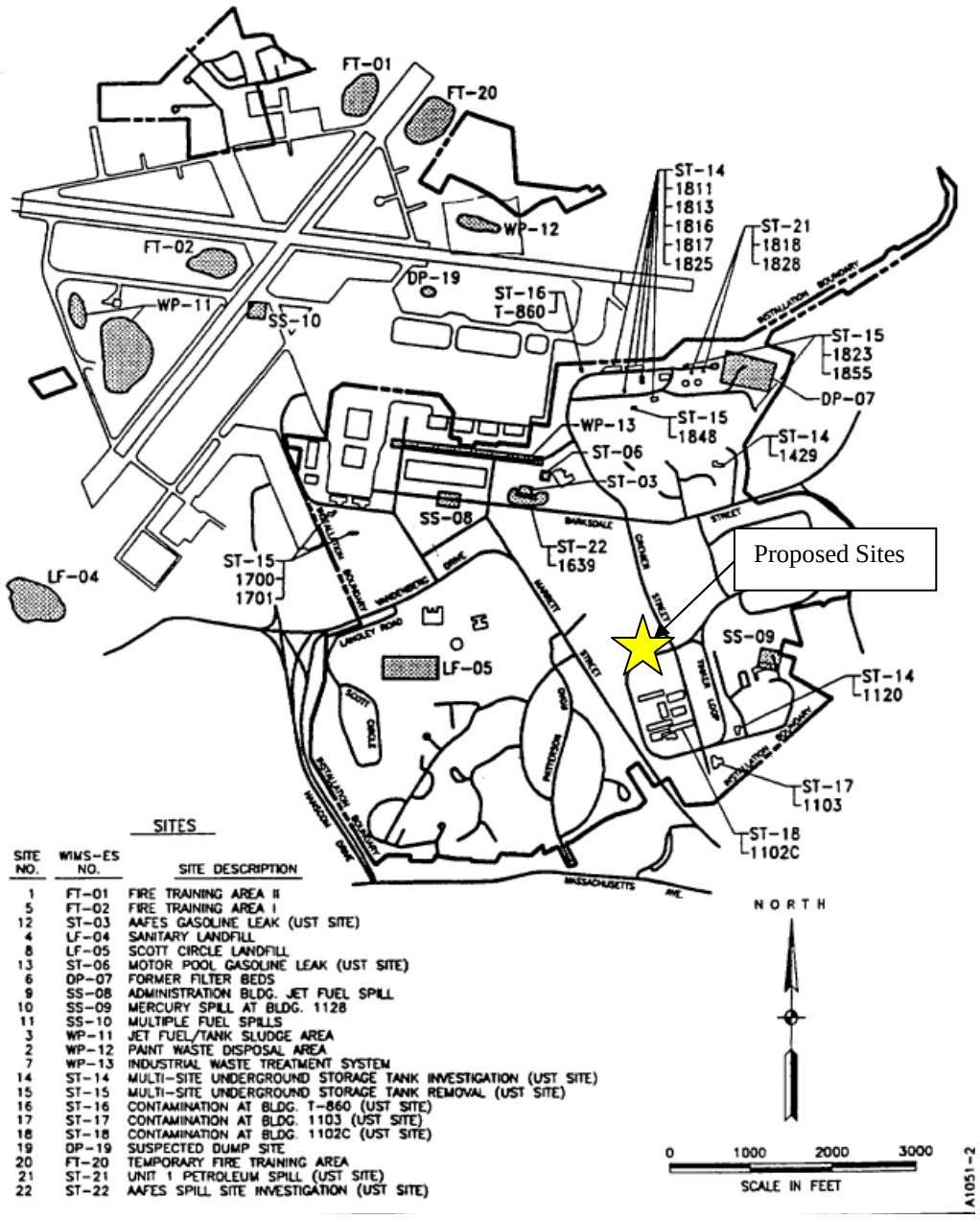
Hanscom AFB has historically used, generated, and disposed of numerous hazardous substances, including fuel, aromatic solvents, PCBs, and chlorinated solvents. In 1984, environmental studies identified 13 sites, related to past practices at Hanscom AFB, warranting further investigation and potential cleanup through the Installation Restoration Program (IRP). Subsequent discoveries increased the number of sites to 22. Each site was evaluated using the Air Force Hazard Assessment Rating Methodology (HARM), which evaluates potential receptors, waste characteristics, and migration pathways in order to determine the relative potential of uncontrolled hazardous waste disposal facilities to cause health or environmental damage. HARM scores ranged from 86 (high hazard potential) to 6 (small hazard potential). Of the 22 identified potentially contaminated sites, 8 are still active and are either regulated by the USUSEPA under CERCLA or by the Commonwealth of Massachusetts and are shown below in Figure 6. The other 14 sites are closed, and all IRP sites have a final remedy in place.

None of the 8 active sites exist in the vicinity of the proposed sites; however, three non-CERCLA, closed-out sites are located to the southeast. IRP Site 14 is a multi-site underground storage tank investigation, IRP Site 17 is contamination at building 1103, and IRP Site 18 is contamination at building 1102-C. These sites are regulated under the Massachusetts Contingency Plan (MCP) with regulatory oversight by Massachusetts Department of Environmental Protection (MassDEP). MassDEP online records show that reportable release sites in the vicinity of the proposed sites have been closed.

3.14.2. Hazardous Waste

Hazardous waste generated on the base comes from the normal operation and maintenance activities of the 66 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 satellite accumulation points (SAPs), 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 chemical, and reducing the amount of hazardous waste disposed.

Figure 6: IRP Sites at Hanscom AFB (EPA, 1997)



SITES

SITE NO.	WIMS-ES NO.	SITE DESCRIPTION
1	FT-01	FIRE TRAINING AREA II
5	FT-02	FIRE TRAINING AREA I
12	ST-03	AAFES GASOLINE LEAK (UST SITE)
4	LF-04	SANITARY LANDFILL
8	LF-05	SCOTT CIRCLE LANDFILL
13	ST-06	MOTOR POOL GASOLINE LEAK (UST SITE)
6	DP-07	FORMER FILTER BEDS
9	SS-08	ADMINISTRATION BLDG. JET FUEL SPILL
10	SS-09	MERCURY SPILL AT BLDG. 1128
11	SS-10	MULTIPLE FUEL SPILLS
3	WP-11	JET FUEL/TANK SLUDGE AREA
2	WP-12	PAINT WASTE DISPOSAL AREA
7	WP-13	INDUSTRIAL WASTE TREATMENT SYSTEM
14	ST-14	MULTI-SITE UNDERGROUND STORAGE TANK INVESTIGATION (UST SITE)
15	ST-15	MULTI-SITE UNDERGROUND STORAGE TANK REMOVAL (UST SITE)
16	ST-16	CONTAMINATION AT BLDG. T-860 (UST SITE)
17	ST-17	CONTAMINATION AT BLDG. 1103 (UST SITE)
18	ST-18	CONTAMINATION AT BLDG. 1102C (UST SITE)
19	DP-19	SUSPECTED DUMP SITE
20	FT-20	TEMPORARY FIRE TRAINING AREA
21	ST-21	UNIT 1 PETROLEUM SPILL (UST SITE)
22	ST-22	AAFES SPILL SITE INVESTIGATION (UST SITE)

Section 4. Environmental Consequences

4.1. Aerospace

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. No construction would occur near or adjacent to an existing airfield. Aerospace would not be impacted as a result of implementation of the no-action alternative.

Alternative 1: Preferred Alternative

There are three-story buildings located nearby down gradient from the proposed site and a four-story building located uphill and south of the proposed site. The ground floor - main entry level of the proposed three-story JFHQ building would be at an elevation of 194 feet above sea level, the highest point on the building parapet is at an elevation of 274 feet, and the elevation of the nearby uphill Grenier Street and Randolph Road intersection is 220.3 ft. It is likely that lifting equipment, such as cranes, would extend beyond the top of the parapet during construction.

A nearby Hanscom heat plant and associated smoke stacks are located approximately 700 feet northeast and uphill of the proposed JFHQ project. This facility has a site elevation of approximately 216 feet. Based upon information provided by the Hanscom AFB Engineering Department, the stacks have a height of 150 ft, resulting in a top of stack elevation of approx. 366 feet, 92 feet higher than the highest point of the proposed JFHQ building. Additionally, southeast of the proposed building site is a hill with a top elevation of 305 feet.

Implementation of the preferred alternative would not result in impacts to flight operations because the building is shielded by the surrounding landscape and the smoke stacks associated with the heat plant.

Alternative 2

There is a four-story building located immediately south of the proposed site. The site is approximately elevation 220 ft. and the highest point on the building parapet would be approximately elevation 300 feet. It is likely that lifting equipment, such as cranes, would extend beyond the top of the parapet during construction.

A nearby Hanscom heat plant and associated smoke stacks are located approximately 800 feet north-northeast and uphill of the proposed JFHQ project. This facility has a site elevation of approximately 216 feet. Based upon information provided by the Hanscom AFB Engineering Department, the stacks have a height of 150 ft, resulting in a top of stack elevation of approximately 366 feet, 66 feet higher than the highest point of the proposed JFHQ building. Additionally, southeast of the proposed building site is a hill with a top elevation of 305 feet.

Implementation of alternative 2 would not result in impacts to flight operations because it is located adjacent to the preferred alternative, and hence, would also be shielded by the surrounding landscape and the smoke stacks associated with the heat plant.

4.2. Land Use

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, Massachusetts. The existing site would not be altered, nor would additional personnel be expected at

the existing site in the near future. Land use would not be impacted during the implementation of the no-action alternative.

Alternative 1: Preferred Alternative

The current land use on the preferred alternative site is categorized as open space in the 2003 Hanscom AFB General Plan Update, and includes a small stand of native wooded vegetation with several walking trails and grassed vehicle path. Implementation of the preferred alternative would change the designation of the site from open space to administrative, which is not inconsistent with the generally developed nature of the base and the surrounding sites. The site across Grenier Street is designated industrial, and the site across Randolph Road is designated research and development. The preferred alternative site is part of a larger tract of land designated as open space, and the majority of that tract would remain open space; only the 16.9 acres site at the corner of Grenier Street and Randolph Road would be changed to administrative. Of the 16.9 acres associated with the site, the limits of disturbance for the building are approximately 4.9 acres. Of the 4.9 acre, 3.7 acres of vegetation would be cleared, and 0.58 acres of vegetation would be preserved.

While the development of the preferred site is not identified in the future building projects section of the General Plan Update from 2003, the new building is consistent with goals presented in the General Plan (i.e. achieve the Air Force Mission in a manner that is energy efficient, sensitive to the environment, compatible with community development, and cost effective, while providing a setting for a high quality of life) and compatible with land use at Hanscom AFB. Additionally, existing wooded areas at the site would be maintained during construction, which would help the new building to fit into the existing landscape. A negligible impact to land use would result due to the change in designation from open space to administrative. It would be a negligible impact because the change provides beneficial impacts that are consistent with the above noted goals of the General Plan and would outweigh impacts to land use.

Development of the preferred site would not be constrained by the antenna look angle and associated buffer zones for AFRL programs. Use of this site would allow for an economical and efficient 3 to 4 story building with the ability to create a “Massachusetts National Guard Campus” setting by locating in close proximity to MANG Building 1503 and 1507. Supplemental parking lots are located approximately 300 and 400 feet away

Alternative 2

The current land use of alternative 2 is categorized as outdoor recreation in the 2003 General Plan Update, and consists of a small, open grass area with a soccer field located on it. Implementation of alternative 2 would change the designation of the site from outdoor recreation to administrative, which is not inconsistent with the generally developed nature of the base and the surrounding sites. The sites abutting and surrounding the proposed site for alternative 2 are designated as research and development.

While the development of this site is not identified in the future building projects section of the General Plan Update from 2003, the new building is consistent with goals presented in the General Plan (i.e. achieve the Air Force Mission in a manner that is energy efficient, sensitive to the environment, compatible with community development, and cost effective, while providing a setting for a high quality of life) and compatible with land use at Hanscom AFB. A negligible impact to land use would result due to the change in designation from outdoor recreation to administrative. It would be a negligible impact because the change provides beneficial impacts that would outweigh impacts to land use.

Construction of Alternative 2 would be constrained by the antenna look angle and associated buffer zones for AFRL programs. Use of this site would necessitate a less economical and less efficient two story building with a larger footprint to accommodate the antenna look angle and buffer zone restrictions for AFRL programs. In addition, Alternative 2 reduces the ability to create a "Massachusetts National Guard Campus" setting due to the longer distance to adjacent MANG Buildings 1503 and 1507. Supplemental parking lots are located 700 and 800 feet away.

4.3. Socioeconomic Conditions

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. No change to the current socioeconomic condition would occur in the Town of Milford and the surrounding region. Employment at the facility would remain constant, environmental justice populations would not be impacted, and there would be no increase in economic activity in the region due to facility construction.

Alternative 1: Preferred Alternative

The preferred alternative would relocate approximately 400 individuals from the current JFHQ in Milford, MA, to Hanscom AFB, which is 30 miles to the northeast. It is expected that Hanscom AFB would see long-term beneficial socio-economic impacts from the preferred alternative due to the increase in sales to local merchants. The existing site in Milford is unlikely to see negative long-term socio-economic impacts from the preferred alternative because the existing JFHQ is located in a state owned building, which would likely be filled by another state tenant. Short-term impacts associated with the move would be negligible due to the relatively small number of individuals being moved in relation to the developed nature of the area.

Short-term beneficial employment impacts would be associated with the construction of the new building.

Executive Order's 12898 and 13045 mandate that federal agencies identify Environmental Justice issues where disproportionately high and adverse human health or environmental effects on minority and low-income populations and children may occur. No disproportional impacts to minority or low-income populations were identified. Additionally, no disproportionate environmental health or safety risks to children would occur as a result of the implementation of the proposed action.

The implementation of the preferred alternative would have both short and long-term beneficial impacts to socio-economics at Hanscom AFB, and no long-term impacts to socio-economics at the Milford site.

Alternative 2

Alternative 2 would also relocate approximately 400 individuals from the current JFHQ in Milford, MA, 30 miles to the northeast. It is expected that Hanscom AFB would see long-term beneficial socio-economic impacts from alternative 2 due to the increase in sales to local merchants. The existing site in Milford is unlikely to see negative long-term socio-economic impacts from alternative 2 because the existing JFHQ is located in a state owned building, which would likely be filled by another state tenant. Short-term impacts associated with the move would be negligible due to the amount of individuals being moved in relation to the developed nature of the area.

Short-term beneficial employment impacts would be associated with the construction of the new building, which would occur in two phases.

Executive Order's 12898 and 13045 mandate that federal agencies identify Environmental Justice issues where disproportionately high and adverse human health or environmental effects on minority and low-income populations and children may occur. No disproportional impacts to minority or low-income populations were identified. Additionally, no disproportionate environmental health or safety risks to children would occur as a result of the implementation of the proposed action.

The implementation of alternative 2 would have both short and long-term beneficial impacts to socio-economics at Hanscom AFB, and no long-term impacts to socio-economics at the Milford site.

4.4. Utilities

4.4.1. Water Supply

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. Implementation of the no-action alternative would result in no change to the usage level of existing site utilities, as additional personnel would not be manageable at the existing site.

Alternative 1: Preferred Alternative

The preferred alternative would connect to the existing water main on Randolph Road, just to the south of the proposed building. Hanscom AFB is provided potable water by the Town of Lexington, which receives its water from the MWRA. The base is limited by contractual agreement, but the annual water demand by the base rarely exceeds one-third that allotment. The number of individuals relocating to the base would increase the base population by approximately 5%, so a major increase in potable water use is not expected. Additionally, the designers would build to LEED Silver rating, at a minimum, from the USGBC, which would require implementation of water saving and water conservation technologies. Implementation of the preferred alternative would not increase demand for potable water supply at Hanscom AFB beyond the available supply.

Alternative 2

Alternative 2 would connect to the existing water main on Randolph Road, just to the north of the proposed site. Hanscom AFB is provided potable water by the Town of Lexington, which receives its water from the MWRA. The base is limited by contractual agreement, but the annual water demand by the base rarely exceeds one-third that allotment. The number of individuals relocating to the base would increase the base population by approximately 5%, so a major increase in potable water use is not expected. Additionally, the designers would build to LEED Silver rating, at a minimum, from the USGBC, which would require implementation of water saving and water conservation technologies. Implementation of alternative 2 would not increase demand for potable water supply at Hanscom AFB beyond the available supply.

4.4.2. Wastewater

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. Implementation of the no-action alternative would result in no change to the usage level of existing site utilities, as additional personnel would not be manageable at the existing.

Alternative 1: Preferred Alternative

All wastewater generated at Hanscom is pumped off-site via two pumping stations, the Upper Lift Station and the Lower Lift Station. Wastewater generated at the proposed building would flow via gravity to the Upper Lift Station which ultimately discharges to the MWRA's gravity system in

Lexington. Specific site connections from the proposed building would be made to an existing manhole located north of the building. Sewerage from this manhole drains to an existing 8-inch line that flows via gravity to the north. The number of individuals relocating to the base would only increase the base population by approximately 5%, so a major increase in wastewater is not expected. The current sewer system is adequate and can accommodate moderate growth, so the preferred alternative would not impact wastewater.

Alternative 2

All wastewater generated on the Base is pumped off-site via two pumping stations, the Upper Lift Station and the Lower Lift Station. Wastewater generated at the proposed building would flow via gravity to the Upper Lift Station which ultimately discharges to the MWRA's gravity system in Lexington. Specific site connections from the proposed building would be made to an existing connection in the vicinity of the site. The number of individuals relocating to the base would only increase the base population by approximately 5%, so a major increase in wastewater is not expected. The current sewer system is adequate and can accommodate moderate growth, so alternative 2 would not impact wastewater.

4.4.3. Solid Waste

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. Implementation of the no-action alternative would result in no change to the usage level of existing site solid waste generation rates, as additional personnel would not be manageable at the existing site.

Alternative 1: Preferred Alternative

The preferred alternative would generate solid waste during construction of the new building, primarily associated with packaging and excess construction materials. The designer would build to LEED Silver rating, at a minimum, from the USGBC, which requires the use of reused or recycled materials in the construction process. The preferred alternative would potentially have short-term adverse impacts to solid waste during the construction process when compared to the no-action alternative, however, mitigation through the diversion of reusable or recycled materials in the building construction would lessen the negative impact associated with construction.

Alternative 2

Alternative 2 would generate solid waste during construction of the new building, primarily associated with packaging and excess construction materials. The designer would build to LEED Silver rating, at a minimum, from the USGBC, which requires the use of reused or recycled materials in the construction process. Alternative 2 could potentially have short-term adverse impacts to solid waste during the construction process when compared to the no-action alternative, however, mitigation through the diversion of reusable or recycled materials in the building construction would lessen the negative impact associated with construction.

4.4.4. Electricity

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. Implementation of the no-action alternative would result in no change to the usage level of existing site utilities, as additional personnel would not be expected at the existing site in the near future.

Alternative 1: Preferred Alternative

A 15KV service is fed underground along Grenier Street and a 13.8 KV service runs along the southern edge of site in a 4-inch underground conduit. Service for the new building would be made from circuit 2A, located in the duct banks at the site. Electricity consumption at Hanscom AFB would increase due to operation of the building, but the base is well below the annual capacity of the transmission lines on the base. A base wide EMCS has been implemented in approximately 85% of the buildings, and the consumption at Hanscom has only increased slightly since 1988. The designer would build to LEED Silver rating, at a minimum, from the USGBC, which generally requires the use energy efficient building construction and technologies. More specifically, an energy modeler would be utilized to target at least a 14% improvement compared with baseline building energy use. The improvement would be accomplished through lighting and daylighting controls. Based on the overall trend of consumption at the base, the overall capacity, and the energy efficiency technologies implemented in the design, the preferred alternative would have negligible impact on electricity consumption at Hanscom AFB.

Alternative 2

A 15KV service is fed underground along Grenier Street and a 13.8 KV service runs along the northern edge of site near Randolph Road in a 4-inch underground conduit. Service for the new building would be made from circuit 2A, located in the duct banks near the site. Electricity use at Hanscom AFB would increase due to operation of the building, but the base is well below the annual capacity of the transmission lines on the base. A base wide EMCS has been implemented in approximately 85% of the buildings, and the consumption at Hanscom has only increased slightly since 1988. The designer would build to LEED Silver rating, at a minimum, from the USGBC, which generally requires the use energy efficient building construction and technologies. More specifically, an energy modeler would be utilized to target at least a 14% improvement compared with baseline building energy use. The improvement would be accomplished through lighting and daylighting controls. Based on the overall trend of consumption at the base, the overall capacity, and the energy efficiency technologies implemented in the design, alternative 2 would have negligible impact on electricity consumption at Hanscom AFB.

4.4.5. Telecommunications

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. Implementation of the no-action alternative would result in no change to the usage level of existing site utilities, as additional personnel would not be manageable at the existing site.

Alternative 1: Preferred Alternative

New telephone and data underground ductbanks would be installed from an existing vault on the east side of Grenier Street to the building. The implementation of the preferred alternative would not impact telecommunications at Hanscom AFB.

Alternative 2

New telephone and data underground ductbanks would be installed from an existing vault on the east side of Grenier Street to the building. The implementation of alternative 2 would not impact telecommunications at Hanscom AFB.

4.4.6. Natural Gas

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. Implementation of the no-action alternative would result in no change to the usage level of existing site utilities, as additional personnel would not be manageable at the existing site.

Alternative 1: Preferred Alternative

Gas is present on the site via a 6-inch main on the southern edge of the site. A new service lateral would be installed off of the existing line to provide service to the building. A section of the 6-inch main would require replacement and relocation to make way for the new building. The relocation of the existing line and new service location would be coordinated with the Base and the gas utility owner. The implementation of the preferred alternative would not impact increase demand for natural gas at Hanscom AFB beyond the available supply.

Alternative 2

Gas is present to the north of the site via a 6-inch main at the site for alternative 1. A new service lateral would be installed off of the existing line at the site for alternative 1 to provide service to the building. The new service location would be coordinated with the Base and the gas utility owner. The implementation of alternative 2 would not impact increase demand for natural gas at Hanscom AFB beyond the available supply.

4.5. Transportation

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. Implementation of the no-action alternative would result in no change to the transportation patterns at the existing site, as no additional personnel would be traveling to/from the existing site.

Alternative 1: Preferred Alternative

A traffic impact study was commissioned as part of this EA, and is located in Appendix C. The study identified the existing year (2009) and projected year (2014) transportation conditions. The existing traffic conditions at key intersections were analyzed, assigned a growth rate to estimate no-build future volumes, and finally build volumes were calculated and assigned throughout the roadway network. The study found that traffic congestion is anticipated to increase at key study area intersections with or without the relocation of the JFHQ and associated 400 personnel, by year 2014. TDM strategies such as: educate employees about transportation alternatives (ridesharing, transit and bicycle); establish preferential parking for carpool/vanpool participants; start a carpool program and establish a database to identify/target rideshare opportunities; host TDM worksite events; explore vanpool formation opportunities; start a transit program; offer a bike/walk program; offer MassRIDES Emergency Ride Home Program for carpool/rideshare participants; sponsor promotional activities and establish a TDM coordinator, would be implemented at the JFHQ, in order to reduce the number of single-occupancy vehicles and their associated impact.

Implementation of this alternative would have a negligible impact at key study area intersections as the operating condition (i.e. delay and volume/capacity ratio) at each intersection is forecasted to increase by an incremental amount in response to the additional traffic, however the overall intersection Level of Service (LOS), and the LOS for each approach, are forecasted to remain constant between the 2014 No-Action and Build (with the alternative) condition, as shown in Tables 4-1 and 4-2 for the respective AM and PM peak hour.

Table 4-1

Build Conditions (2014) Level of Service Summary, AM Peak Hour

Intersection	LOS	Delay (Seconds)	V/C Ratio	95th Percentile Queue (Feet)
Signalized Intersections				
Route 4/225 / Hartwell Avenue	**E**	**63.3**	**1.14**	
Bedford EB thru/right	F	105.3	1.14	#882
Bedford WB thru	C	32.5	0.52	289
Hartwell NB left	C	29.6	0.58	65
Hartwell NB right	B	14.8	0.35	172
Hartwell SB left/thru (jug-handle)	D	48.3	0.96	#819
Unsignalized Intersections				
Route 2A/Concord Turnpike Bypass Road/Brooks Road				
Route 2A EB thru/right	A	0.60	0.02	2
Route 2A WB left/thru/right	A	0.30	0.01	1
Brooks Road NB left/thru/right	C	19.2	0.07	6
Concord Tpk Bypass Road EB left/thru/right	F	>50.0	>1.20	N/A
Route 2A/Bedford Road				
Route 2A EB thru/right	A	0.0	0.58	0
Route 2A WB left/thru	A	6.1	0.25	25
Bedford Road NB left/right	F	>50.0	0.95	216
Route 2A/Hanscom Drive				
Route 2A EB left	A	9.6	0.24	24
Route 2A EB thru	A	0.0	0.45	0
Route 2A WB thru/right	A	0.0	0.61	0
Hanscom Drive SB left	F	>50.0	>1.20	N/A
Hanscom Drive SB right	C	18.9	0.4	37
Hartwell Avenue/Wood Street				
Hartwell EB thru/right	A	0.0	0.09	0
Hartwell WB left	A	9.7	0.47	65
Hartwell WB thru	A	0.0	0.65	0
Wood NB left/right	F	>50.0	>1.20	N/A
Hartwell Avenue/Maguire Road/Municipal Facility				
Maguire EB left/thru	F	>50.0	>1.20	233
Maguire EB right	F	>50.0	>1.20	N/A
Facility WB left/thru/right	F	>50.0	>1.20	N/A
Hartwell NB left	B	12.6	0.19	17
Hartwell NB thru/right	A	0.0	0.14	0
Hartwell SB left/thru/right	A	2.3	0.04	3

V/C = Volume to capacity ratio

95th Percentile Queue = Queue length that has a 5% probability of being exceeded during the time period

N/A indicates that queue cannot be calculated

# indicates that the volume for the 95th percentile cycle exceeds capacity

Highlighted cell indicates that LOS has deteriorated from 2014 No-Build Conditions LOS

Table 4-2

Build Conditions (2014) Level of Service Summary, PM Peak Hour

Intersection	LOS	Delay (Seconds)	V/C Ratio	95th Percentile Queue (Feet)
Signalized Intersections				
Route 4/225 / Hartwell Avenue	**E**	**78.6**	**1.24**	
Bedford EB thru/right	D	38.9	0.71	402
Bedford WB thru	D	38.8	0.69	397
Hartwell NB left	F	107.5	1.15	#729
Hartwell NB right	F	144.1	>1.20	#1321
Hartwell SB left/thru (jug-handle)	C	24.8	0.32	155
Unsignalized Intersections				
Route 2A/Concord Turnpike Bypass Road/Brooks Road				
Route 2A EB thru/right	A	0.5	0.01	1
Route 2A WB left/thru/right	A	0.6	0.02	1
Brooks Road NB left/thru/right	C	20.4	0.12	10
Concord Tpk Bypass Road EB left/thru/right	F	>50.0	>1.20	571
Route 2A/Bedford Road				
Route 2A EB thru/right	A	0.0	0.24	0
Route 2A WB left/thru	A	6.9	0.27	28
Bedford Road NB left/right	F	>50.0	>1.20	N/A
Route 2A/Hanscom Drive				
Route 2A EB left	B	10.5	0.14	12
Route 2A EB thru	A	0.0	0.24	0
Route 2A WB thru/right	A	0.0	0.61	0
Hanscom Drive SB left	F	>50.0	>1.20	N/A
Hanscom Drive SB right	F	>50.0	>1.20	552
Hartwell Avenue/Wood Street				
Hartwell EB thru/right	A	0.0	0.78	0
Hartwell WB left	C	19.0	0.52	74
Hartwell WB thru	A	0.0	0.10	0
Wood NB left/right	F	>50.0	>1.20	N/A
Hartwell Avenue/Maguire Road/Municipal Facility				
Maguire EB left/thru	F	>50.0	>1.20	N/A
Maguire EB right	B	12.4	0.29	30
Facility WB left/thru/right	C	16.8	0.01	1
Hartwell NB left	B	10.6	0.51	74
Hartwell NB thru/right	A	0.0	0.57	0
Hartwell SB left/thru/right	A	0.0	0.00	0

V/C = Volume to capacity ratio

95th Percentile Queue = Queue length that has a 5% probability of being exceeded during the time period

N/A indicates that queue cannot be calculated

# indicates that the volume for the 95th percentile cycle exceeds capacity

Highlighted cell indicates that LOS has deteriorated from 2014 No-Build Conditions LOS

Alternative 2

A traffic impact study was commissioned as part of this EA, and is located in Appendix C. The study identified the existing year (2009) and projected year (2014) transportation conditions. The existing traffic conditions at key intersections were analyzed, assigned a growth rate to estimate no-build future volumes, and finally build volumes were calculated and assigned throughout the roadway network. The study found that traffic congestion is anticipated to increase at key study area intersections with or without the relocation of the JFHQ and associated 400 personnel, by year 2014. TDM strategies such as: educate employees about transportation alternatives (ridesharing, transit and bicycle); establish preferential parking for carpool/vanpool participants; start a carpool program and establish a database to identify/target rideshare opportunities; host TDM worksite events; explore vanpool formation opportunities; start a transit program; offer a bike/walk program; offer MassRIDES Emergency Ride Home Program for carpool/rideshare participants; sponsor promotional activities and establish a TDM coordinator, would be implemented at the JFHQ, in order to reduce the number of single-occupancy vehicles and their associated impact.

Implementation of this alternative would have a negligible impact at key study area intersections as the operating condition (i.e. delay and volume/capacity ratio) at each intersection is forecasted to increase by an incremental amount in response to the additional traffic, however the overall intersection Level of Service (LOS), and the LOS for each approach, are forecasted to remain constant between the 2014 No-Action and Build (with the alternative) condition, as previously shown in Tables 4-1 and 4-2 for the respective AM and PM peak hour..

4.6. Noise

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. Noise levels at the facility would remain constant and there would be no increase in noise levels in the vicinity of the existing site due to facility construction. Noise levels would not be impacted during implementation of the no-action alternative.

Alternative 1: Preferred Alternative

The preferred alternative would have short-term, negative noise impacts as a result of construction, which includes excavation, grading, paving, boring, and other associated activities with equipment such as bulldozers, pavers, graders, generators, cranes, and other noise generating heavy equipment. Land use around the site, detailed in a previous section, consists of open space, industrial, and research and development. Hanscom AFB also operates as a commercial airport run by Massport, which is the largest generator of noise in the surrounding environment. Since the surrounding sites are owned and operated by the Air Force, there would be no effect on the general public due to noise generating activities. Long-term operation of the facility would have no impact on noise, as the building is consistent with surrounding uses on the base, and the mission would not station aircraft at the base for MAARNG use. Flight operations through Hanscom that are associated with the Guard are transient and would not increase as a function of the relocation of personnel to Hanscom.

Alternative 2

Alternative 2 would have short-term, negative noise impacts as a result of construction, but would likely generate less noise than alternative 1 due to the characteristics of the site. This site is an open field with mowed grass, compared to the wooded lot in alternative 1. Less upfront work would be required to prepare the site for building, although grading, paving, and landscaping activities would still occur on the site. Since the surrounding sites are owned and operated by the Air Force, there

would be no effect on the general public due to noise generating activities. Long-term operation of the facility would have no impact on noise, as the building is consistent with surrounding uses on the base, and the mission would not station aircraft at the base for MAARNG use. Flight operations through Hanscom that are associated with the Guard are transient and would not increase as a function of the relocation of personnel to Hanscom.

4.7. Air Quality

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. Air Quality at the existing facility would remain constant as those associated with vehicular traffic and the minimal stationary source emissions from the building. There would also be no air quality impacts in the vicinity of the proposed sites due to facility construction. Air quality would not be impacted during implementation of the no-action alternative.

Alternative 1: Preferred Alternative

To confirm that the project would not trigger either an PSD or non-attainment NSR, an applicability analysis was performed by calculating the PTE from all proposed stationary sources. It was found that the project (i.e., proposed stationary emission sources) was below the applicable major modification thresholds for all criteria pollutants (see Appendix F for additional details).

In accordance with 310 CMR 7.02 and 7.26, based on the size and design of the proposed stationary sources, they would be considered permit exempt. To confirm the proposed natural gas emergency generator would meet the permit exemption requirements, Hanscom AFB would include specific specifications in its contract language for the equipment purchase. Due to the fuel type of the emergency generator, it would be subject to 40 CFR Part 60 Subpart JJJJ New Source Performance Standard (NSPS) requirements, and be incorporated into the facility's Title V Operating Permit (under a minor modification). Based on size, the other fuel burning equipment would be considered insignificant sources under the facility's Title V permit and together, all exempt sources would be reported as a group in the annual emissions statement.

Construction activities (e.g., clearing, grading, stockpiling of dirt) would generate localized fugitive dust and combustion emissions (e.g., NO_x) from diesel-fueled earthmoving construction equipment and construction crew POVs (assume to be light-duty trucks). In addition, paving activities would produce VOC emissions. Efforts would be made during the construction phase to minimize fugitive dust as the construction contract would incorporate specific language pertaining to employing dust suppression methods. Additionally, nonroad diesel engines are required by federal law to utilize ultra low-sulfur fuel. In accordance with 310 CMR 7.11, vehicles would be prohibited from idling, unless it engine power was necessary for operations.

Actual emissions were calculated for direct and indirect emissions (i.e., proposed stationary and mobile sources) associated with Alternative 1. As this project would be implemented in a non-attainment area for ozone, a General Conformity Applicability Analysis was required. Construction-related impacts would be expected to be short-term, limited to the duration (28 months) of the construction activities. Five natural-gas fired heating units (e.g., domestic hot water heaters, boilers, and make-up units) and one natural gas-fired emergency generator would be installed. Based on the construction activities from all estimated mobile sources, the first year of the JFHQ's operation, and the relocation of approximately 400 personnel driving POVs to and from JFHQ, the total project NO_x and VOC emissions would be 35.06 tons and 7.88 tons, respectively. The calculation estimates demonstrate that this project would conform with the SIP as the emission rates are below the regulatory thresholds (i.e., 100 tons per year for NO_x and 50 tons per year for VOC). As well, this

project is not considered regionally significant as the project emissions are less than 10 percent of the regional emissions (see Appendix F). Therefore, it is also unlikely that these emissions would have an impact on the area's compliance with the NAAQS.

Alternative 2

Although the area under Alternative 2 is smaller, emissions would be assumed to be similar to Alternative 1 as there is no change in the building size or proposed quantity or size of stationary emission units. Therefore, the PTE for the proposed stationary emission sources would be the same for both alternatives. Although a General Conformity evaluation is only required to be performed on the preferred alternative, it also would be reasonable to assume that the actual emissions would be similar for both alternatives. Therefore, it is also unlikely that these emissions would have an impact on the area's compliance with the NAAQS.

4.8. Climate Change

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. The existing site would not be altered, nor would additional personnel be expected at the existing site in the near future. Climate change would not be impacted during the implementation of the no-action alternative.

Alternative 1: Preferred Alternative

As GHGs are relatively stable in the atmosphere and are essentially uniformly mixed throughout the troposphere and stratosphere, the climatic impact of GHG emissions does not depend upon the source location. Therefore, regional climate impacts are likely a function of global emissions.

Under Alternative 1, CO_2e emissions were calculated from mobile sources during the construction phase, as well as from the proposed stationary and mobile sources during the first year of operation of the new facility and renovated building. The total CO_2e emissions from these associated activities would be 5,326 tonnes and represent less than a 13 percent increase from all stationary source 2008 GHG emissions. When compared to global emissions, the amounts associated with this project are small.

The proposed refrigerant for the new building would be R-134a or some other EPA-approved non-ODS substitute. Regardless of who would service and maintain the equipment, the technicians are prohibited by federal law to knowingly vent these substitutes due to their global warming potential.

As stated in Section 3.8, there is a lack of regulatory guidance for determining the significance of potential impacts from GHG emissions, and therefore no significance conclusion can be made. However, Hanscom AFB is committed to complying with federal and state policies that address climate change. Furthermore, on a facility-wide basis, Hanscom AFB would pro-actively implement measures to reduce or mitigate GHG emissions by investing in alternative fueled vehicles. The base would also promote sustainable energy and resource use practices (e.g., carpooling, flextime, shuttle services as described in the installation's Transportation Demand Management Plan (USAF 2000)), wherever practical, reasonable, economically, and technologically feasible.

Alternative 2

All construction activities and proposed stationary sources were considered to be the same for both alternatives, and consequently, the same amount of GHG emissions would be emitted under Alternative 2.

4.9. Geology and Soils

4.9.1. Geology

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. There would also be no geologic impacts in the vicinity of the proposed sites due to facility construction. Geology would not be impacted by implementing the no-action alternative.

Alternative 1: Preferred Alternative

The preferred alternative would not impact the geology of the site because the proposed foundation system for the JFHQ building is designed to be supported on footings. There would also be no geologic impacts in the vicinity of the proposed site due to facility construction. Geology would not be impacted by implementing the preferred alternative. .

Alternative 2

Alternative 2 would not impact the geology of the site because the proposed foundation system for the JFHQ building is designed to be supported on footings. There would also be no geologic impacts in the vicinity of the proposed site due to facility construction. Geology would not be impacted by implementing alternative 2.

4.9.2. Soils

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. There would be no soil impacts in the vicinity of the proposed sites due to facility construction. Soil would not be impacted during implementation of the no-action alternative.

Alternative 1: Preferred Alternative

The preferred alternative would require the excavation and grading of soils for the building footprint, parking lot, large detention basin and surrounding landscape plans. Construction activities would follow base BMPs regarding minimizing sedimentation and erosion during storm events. Building construction would have unavoidable impacts on soils, but mitigation activities would minimize impacts on soils.

Alternative 2

Alternative 2 would require the excavation and grading of soils for the building footprint, parking lot, large detention basin and surrounding landscape plans. Construction activities would follow base BMPs regarding minimizing sedimentation and erosion during storm events. Building construction would have unavoidable impacts on soils, but mitigation activities would minimize impacts on soils.

4.10. Surface Water, Groundwater, and Drainage

4.10.1. Surface Water

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. There would be no surface water impacts in the vicinity of the proposed sites due to facility construction. Surface water would not be impacted during implementation of the no-action alternative.

Alternative 1: Preferred Alternative

No surface waters are located on the site, although a drainage swale is located to the west of the site. During construction, activities would be conducted in accordance with construction BMPs to avoid impacts to the nearby Shawsheen River. It is anticipated that the drainage design would meet both Massachusetts stormwater management standards, as well as comply with Clean Water Act, which would help protect the headwaters of the Shawsheen River. Stormwater would be managed on site through a number of BMPs: deep sump catch basins, filtration via vegetation swales, and infiltration via a large detention basin. Additional BMPs were evaluated, including infiltration galleries and sediment forebays, but were not implemented due to cost effectiveness. The post construction stormwater flows would be less than the pre-construction flows with the implementation of these BMPs. The existing stormwater runoff rate for the site is estimated at 19 cubic feet per second (cfs) and the post-construction stormwater runoff rate is estimated at approximately 12 cfs, a decrease in the peak rate of 7 cfs. Stormwater recharge would be more than existing as a greater volume of water is being captured, detained and infiltrated on site than the current condition (SEA Consultants, 2009). Implementation of the preferred alternative would have a small positive impact on groundwater because the drainage plan and stormwater management system would require stormwater to continue to infiltrate on the existing property.

Alternative 2

No surface waters are located on the site, although a drainage swale is located to the northwest of the site. During construction, activities would be conducted in accordance with construction BMPs to avoid impacts to the nearby Shawsheen River. It is anticipated that the drainage design would meet both state stormwater management standards, as well as comply with Clean Water Act, which would help protect the headwaters of the Shawsheen River. To accommodate a larger building footprint under Alternative 2, a larger stormwater management system would be necessary. Stormwater would be managed on site through a number of BMPs: deep sump catch basins, filtration via vegetation swales, and infiltration. The design intent would be to limit post construction stormwater flows to be less than the pre-construction flows. The implementation of this alternative would have a small positive impact on groundwater because the drainage plan and stormwater management system would require stormwater to continue to infiltrate on the existing property.

4.10.2. Groundwater

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, Massachusetts. There would be no groundwater impacts in the vicinity of the proposed sites due to facility construction. Groundwater would not be impacted during implementation of the no-action alternative.

Alternative 1: Preferred Alternative

Implementation of the preferred alternative would have no impact on groundwater because the drainage plan and stormwater management system would require stormwater to continue to infiltrate on the existing property. Infiltration rates would be met using a series of BMPs: deep sump catch basins, filtration via vegetation swales, and infiltration via a large detention basin.

Alternative 2

Implementation of alternative 2 would have no impact on groundwater because the drainage plan and stormwater management system would require stormwater to continue to infiltrate on the existing property.

4.10.3. Drainage

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. Implementation of the no-action alternative would result in no change to the existing drainage at the Milford site, as additional personnel would not be expected at the existing site in the near future.

Alternative 1: Preferred Alternative

The design incorporates stormwater best management practices (BMPs) in the construction and operational phases of the project to avoid impacts to the eventual headwaters of the Shawsheen River. The stormwater management system is designed to meet both the draft Massachusetts stormwater management standards, as well as comply with the draft TMDL requirements under the Draft Storm Water Pollutant TMDL for the Headwaters of the Shawsheen River to help protect the headwaters of the Shawsheen River. Specific features of the stormwater management system includes extensive use of pervious landscape, filtration, sediment removal and infiltration via bioswales in the parking lot , sediment removal via deep sump catchbasins and a detention basin designed to hold and infiltrate the 100-year rainfall event. Additionally, the basin outlet (4-inch pipe) has been raised such that the first 1-inch of rainfall would remain in the basin. This first inch, or first flush, typically carries the majority of TMDL pollutants (metals and bacteria). Filtration, via infiltration, is recommended by MassDEP as the BMP of choice to remove the TMDLs established for the Shawsheen River watershed. The small 4-inch outlet has been incorporated into the detention (above the 1-inch rainfall level) to allow the basin to discharge over a period of three days during the larger storm events. Roof runoff would be directed to the detention basin.

Per the draft Stormwater Management Regulations, the designer would develop a Stormwater Management Maintenance and Operations Plan for the stormwater system. The implementation of this alternative would not impact drainage, because the post-construction drainage system would have stormwater flows less than current stormwater flows and infiltration would continue to occur on-site.

Alternative 2

The design would incorporate stormwater best management practices (BMPs) in the construction and operational phases of the project to avoid impacts to the eventual headwaters of the Shawsheen River. The stormwater management system would be designed to meet both the draft Massachusetts stormwater management standards, as well as comply with the draft TMDL requirements under the Draft Storm Water Pollutant TMDL for the Headwaters of the Shawsheen River to help protect the headwaters of the Shawsheen River. Specific features of the stormwater management system could include extensive use of pervious landscape, filtration, sediment removal and infiltration via bioswales in the parking lot, sediment removal via deep sump catchbasins and a detention basin designed to hold and infiltrate rainfall events. This first inch, or first flush, typically carries the majority of TMDL pollutants (metals and bacteria). Filtration, via infiltration, is recommended by MassDEP as the BMP of choice to remove the TMDLs established for the Shawsheen River watershed. Roof runoff would be directed to the detention basin.

Per the draft Stormwater Management Regulations, the designer would develop a Stormwater Management Maintenance and Operations Plan for the stormwater system. The implementation of this alternative would not impact drainage, because the post-construction drainage system would have stormwater flows less than current stormwater flows to the extent practicable and infiltration would continue to occur on-site

4.11. Floodplains

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. The existing site doesn't sit in the FEMA delineated 100 year flood zone, and as such, current operations at the existing site have no impact within floodplains. Floodplains would not be impacted during implementation of the no-action alternative.

Alternative 1: Preferred Alternative

This site is not located within the 100-year floodplain. Implementation of the preferred alternative would not impact the 100-year floodplain.

Alternative 2

This site is not located within the 100-year floodplain. Implementation of this alternative would not impact the 100-year floodplain.

4.12. Biological Resources

4.12.1. Vegetation

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. There would be no modification to the building or surrounding forest at the existing site, so vegetation would not be impacted during implementation of the no-action alternative.

Alternative 1: Preferred Alternative

The preferred alternative would have both a short and long-term negative impact on vegetation at the proposed site. Of the 16.9 acres associated with the site, the limits of disturbance for the building are approximately 4.9 acres. Of the 4.9 acre, 3.7 acres of vegetation would be cleared, and 0.58 acres of vegetation would be preserved. The majority of that wooded area would be cleared and graded to provide for the footprint of the building, the parking lot, drainage basin and a walkway to the north parking lot. A baseline survey of abundance and diversity of vegetation has not been completed for the site, but it is assumed, based on local knowledge of the site, that it consists of young, second growth softwood trees with a high abundance of shrubs at the ecotone.

Aerial photos presented in the 2008 Environmental Baseline Study show that the site had been previously cleared as recently as 1955, and that the vegetation at the current wooded lot is relatively young. To mitigate the impact to the vegetation community during and after construction, landscape plans would provide native trees and shrubs around the managed landscape of the building. Additionally, large portions of existing vegetation to the west and northwest of the building would be left intact during construction, as well as the stand of trees to the southeast on the corner of Grenier Street and Randolph Road. The designer would build to LEED Silver rating, at a minimum, from the USGBC, which generally emphasizes the incorporation of naturally vegetated landscapes and the visual appearance of the building in the landscape. More specifically, the proposed development maximizes open space, protects habitat, and restores habitat. The implementation of this alternative

would have a minor adverse impact on vegetated communities. The impact is minor due to the mitigation activities being proposed as part of the LEED rating for the proposed building.

Alternative 2

The dominant vegetation community at this alternatives site is lawn grasses, which are mowed regularly as the site is used as a recreational soccer field. Disturbed areas would be replanted with grasses and other native vegetation as part of the landscape plan for the site. The change in use from outdoor recreation to administrative would negate the need for a mowed lawn around the site and allow for replanting with native trees and shrubs consistent with other sites around the base. The lack of abundance and diversity of vegetation at the site leads to a negligible impact to vegetation at this site. In the long-term, due to landscaping activities associates with construction, the project would have a positive impact on vegetated communities by replanting native trees and shrubs at the site.

4.12.2. Wetlands

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. The existing site is surrounded by a network of wetlands; however, there would be no modification to the building or surrounding forest at the existing site, so wetlands would not be impacted during implementation of the no-action alternative.

Alternative 1: Preferred Alternative

The preferred alternative is not located within a wetland or wetland buffer area. The implementation of the preferred alternative would have no impact to wetlands.

Alternative 2

Alternative 2 is not located within a wetland or wetland buffer area. The implementation of alternative 2 would have no impact to wetlands.

4.12.3. Wildlife

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. There would be no modification to the building or surrounding forest at the existing site, so wildlife would not be impacted during implementation of the no-action alternative.

Alternative 1: Preferred Alternative

The preferred alternative would have both a short and long-term negative impact on wildlife at the proposed site. Of the 16.9 acres associated with the site, the limits of disturbance for the building are approximately 4.9 acres. Of the 4.9 acre, 3.7 acres of vegetation would be cleared, and 0.58 acres of vegetation would be preserved. The majority of that wooded area would be cleared and graded to provide for the footprint of the building, the parking lot, drainage basin and a walkway to the north parking lot. According to the Integrated Natural Resource Management Plan for the base, the habitat areas available for wildlife have been largely subject to reconfiguration activities by humans. As such, management programs for fish and wildlife are limited to population control and monitoring. The conversion of this wooded area for the building would permanently decrease the amount of wildlife habitat at the site, however birds, mammals, amphibians, fish, and macroinvertibrates are limited in diversity and abundance on the base due to the fragmented nature and small size of the undeveloped portions.

Alternative 2

Construction of the proposed facility at this location would not impact wildlife in the area because the proposed site consists of a mowed lawn and soccer field, which does not provide noteworthy habitat for wildlife in its managed condition. The implementation of this alternative would have no impact on wildlife or wildlife habitat.

4.12.4. Threatened or Endangered Species

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. There would be no modification to the building or surrounding forest at the existing site, and there are no threatened or endangered species identified at the site, so threatened or endangered species would not be impacted during implementation of the no-action alternative.

Alternative 1: Preferred Alternative

Coordination with the Massachusetts Natural Heritage and Endangered Species program and US Fish and Wildlife has shown that no threatened, endangered, or species of special concern are located in the vicinity of the project. Implementation of the preferred alternative would not impact threatened or endangered species.

Alternative 2

Coordination with the Massachusetts Natural Heritage and Endangered Species program and US Fish and Wildlife has shown that no threatened, endangered, or species of special concern are located in the vicinity of the project. Implementation of this alternative would not impact threatened or endangered species.

4.13. Cultural Resources

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. The existing building was built in the early 1980's, and it is assumed that the building is not eligible for listing in the Natural Register of Historic Places. Implementation of the no-action alternative would not impact cultural resources.

Alternative 1: Preferred Alternative

The Phase I Archeology Survey from 1998 excavated 71 shovel test pits in the project area and identified a number of historic artifacts. The report concluded that despite finding a number of artifacts in the project area, none were noteworthy and were attributed to "field trash." An east-west trending stone wall is located in the northwest portion of the site and is not anticipated to be impacted by construction activities. The site also has two buildings greater than 50 years old, Building 1503 and Building 1507. The SHPO concurs that these two buildings are not NRHP eligible. NHPA Section 106 consultation was considered complete as of April 22, 2009 (see signed concurrence letter from SHPO in Appendix B). In the event of inadvertent discoveries, then the MANG would consult with Hanscom AFB and treat it in accordance with the ICRMP, Section 4.2.2, *Inadvertent Discovery of Archeological Remains* (HAFB 2008). The implementation of the preferred alternative would not impact cultural resources.

Alternative 2

The Phase I Archeology Survey from 1998 did not identify any resources on this site. The implementation of this alternative would not impact cultural resources.

4.14. Environmental Restoration Program / Hazardous Waste

4.14.1. Environmental Restoration Program

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. Implementation of the no-action alternative would not impact ERP sites at Hanscom.

Alternative 1: Preferred Alternative

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

Alternative 2

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

4.14.2. Hazardous Waste

No-Action

The no-action alternative would continue operations for the MANG at the existing facility in Milford, MA. Implementation of the no-action alternative would not impact hazardous waste.

Alternative 1: Preferred Alternative

The preferred alternative is not located in the vicinity or down gradient from any known hazardous waste sites. During construction, if any hazardous materials are used they would be subject to base, military, state, and federal regulations associated with usage, storage, transport, and disposal. The construction contractor would follow OSHA standards at the work site.

While routine office operations may occasionally require the use of toxic solvents or paints, and operation of emergency generator and HVAC equipment would result in periodic generation of waste petroleum, substantial quantities of hazardous waste are not anticipated. Hanscom AFB has a pollution prevention plan which prohibits the use of all Class I ozone-depleting chemicals, and directs organizations to minimize the use of Class II ozone-depleting chemicals and toxic substances. Consequently, hazardous waste generation is anticipated to be reduced to the maximum extent possible during operation of the new facility. It is not anticipated that soil or groundwater contamination would occur as a result of operating the new facility.

Alternative 2

This alternative is not located in the vicinity or down gradient from any known hazardous waste sites. During construction, if any hazardous materials are used they would be subject to base, military, state, and federal regulations associated with usage, storage, transport, and disposal. The construction contractor would follow OSHA standards at the work site.

While routine office operations may occasionally require the use of toxic solvents or paints, and operation of emergency generator and HVAC equipment would result in periodic generation of waste petroleum, substantial quantities of hazardous waste are not anticipated. Hanscom AFB has a pollution prevention plan which prohibits the use of all Class I ozone-depleting chemicals, and directs organizations to minimize the use of Class II ozone-depleting chemicals and toxic substances. Consequently, hazardous waste generation is anticipated to be reduced to the maximum extent

possible during operation of the new facility. It is not anticipated that soil or groundwater contamination would occur as a result of operating the new facility.

4.15. Cumulative Impacts

Cumulative impacts are those changes to the physical, biological, and socioeconomic environments that would result from the combination of construction, operation, and associated impacts of the proposed action when added to other past, present, and reasonably foreseeable actions. Hanscom AFB developed an EA in April 2008 for a new Acquisition Management Facility (AMF) (Building 1600). This AMF project has the potential to result in additive or multiplicative impacts to resources when evaluated together with the proposed action.

The construction of the AMF building includes a new building and the demolition of an existing building (not eligible for inclusion in the National Register). This project would not impact socio-economics, transportation, noise, cultural resources, or the environmental restoration program at the base, as the personnel for this activity already exist at the base. New construction additions have the potential to increase air emissions and impact utilities on the base, but the commissioning of the new AMF building in combination with demolition of the existing building, which would increase the overall efficiency of building, would result in no net impact. The AMF building was designed with LEED principles and the proposed drainage system was designed in accordance with Hanscom AFB's drainage requirements.

4.16. Energy Requirements and Conservation Potential

Electricity and natural gas use at Hanscom AFB would increase due to operation of the building, but the base is well below the annual capacity of these utilities at the base. The designer would build to LEED Silver rating, at a minimum, which generally requires the use of energy efficient building construction and technologies. Construction activities would have short-term impact on use of fossil fuels.

4.17. Unavoidable adverse impacts

Short-term impacts associated with construction related activities of the preferred alternative include: soil disturbance, vegetation clearing, wildlife degradation, stormwater flows, increased air emissions, and noise. Long-term impacts associated with the operation and maintenance of the building for the preferred alternative includes: permanent vegetation and wildlife habitat loss and minor increases in utility use. Alternative 2 would have fewer short and long-term adverse environmental impacts due to the nature of the vegetation on the site. However, the antenna look angle and buffer zone line of sight constraint identified in the Hanscom General Plan Update (2003a) would necessitate a less economical and less efficient two story building featuring a larger footprint to accommodate the testing requirements of the equipment. A more desirable 3 story building could be accommodated at the preferred alternative site, with the ability to create a "Massachusetts National Guard Campus" setting by locating in close proximity to MANG Building 1503 and 1507.

4.18. Means to Mitigate Adverse Impacts

Some impacts to the natural and human environment may occur during construction of the proposed JFHQ and/or daily operations within the new office building. Although the anticipated impacts are relatively minor, they will occur primarily during the construction period and will drop off considerably during the daily operation of the new building. Commonly applied Best Management Practices and other measures, identified below, further reduce the likelihood that these activities would have a major impact on the environment.

- Land Use: A portion of the existing woods at the site would be undisturbed by construction activities
- Utilities: The designers would be pursuing a LEED Silver rating, at a minimum, for the building at the completion of construction
- Transportation: The implementation of TDM strategies would help reduce traffic impacts associated with the new facility
- Solid Waste: A large percentage of construction waste would be diverted from landfill under the qualifications for a LEED Silver rating
- Air Quality: New boilers for the proposed facility would fall under the threshold for modification of the existing Title V permit and the emergency generator would be conditioned to meet Title V permit modification requirements.
- Surface Water: During construction, silt fence and/or haybales would be placed around the toe of slope and at catchbasins within the site to reduce the potential of sediment to be transported to the Shawsheen River via storm sewers. BMPs implemented as part of the drainage design to manage stormwater include: deep sump catch basins, filtration via vegetation swales, and infiltration via a large detention basin
- Vegetation: The landscape plan for the new building would emphasize native shrub/tree species, and large areas of existing vegetation on the site would be left intact during construction
- Hazardous Waste: Hazardous materials used or encountered during construction, demolition, or operation would be handled and disposed in accordance with Hanscom AFB policies and protocols and applicable state and federal regulations
- Cultural Resources: In the event that cultural resources are discovered and could be impacted during construction, then the MANG would consult with Hanscom AFB and treat it in accordance with the ICRMP.

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Section 5. List of Preparers

URS Corp. prepared this document to fulfill the requirements under NEPA for the proposed action of constructing a new JFHQ building at Hanscom AFB. The following people authored and provided oversight over the EA preparation.

Hanscom AFB

Donald C. Morris, P.E., 66 MSG/CE. B.S. in Civil Engineering; As the Environmental Director, provided technical review and oversight for preparation of the environmental assessment.

Massachusetts Army National Guard

Keith Driscoll, NEPA/Cultural Resource Manager; Provided technical review and oversight for the preparation of the environmental assessment.

URS Corporation

Brian Vaillancourt, AICP; Project Manager responsible for oversight of the preparation of this Environmental Assessment. Mr. Vaillancourt is a planner with over 20 years of experience in performing similar studies and evaluations.

Samuel Moffett, AICP; Senior Environmental Planner responsible for the preparation of this Environmental Assessment. Mr. Moffett has more than ten years of experience in performing environmental studies and evaluations.

Jared Hite; Civil Engineer, responsible for performing traffic analysis.

Sally Atkins, REM; Senior Environmental Scientist, responsible for performing air quality analysis.

Laurie Huber; Senior Regulatory Specialist, Independent Technical Review. Ms. Huber has more than 25 years of experience with the implementation of environmental regulatory programs, including NEPA.

Carl Chamberlin; Environmental Planner responsible for preparation of this Environmental Assessment.

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Section 6. References

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J:\10160456_EA_ENF_JFHQ\Tasks\Reports\EA\Revised FEA\Copy of Draft JFHQ EA 01_22_10.doc

Appendix A

EA Distribution List

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Appendix B

Agency Correspondence

-Massachusetts Division of Fisheries and Wildlife

-US Fish and Wildlife Service

-Massachusetts Historical Commission

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Appendix C

Traffic Impact Study

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Appendix D

Site Survey Report

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Appendix E

Massachusetts National Guard NEPA

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Appendix F

Air Conformity Applicability Analysis

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Appendix G

Public Comments and Response

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Appendix A

EA Distribution List

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EA for Replacement Joint Force Headquarters Building
Distribution List
December 3, 2009

Note: All copies are circulated via letter and cd unless otherwise noted.

Executive Office of Energy and Environmental Affairs
ATTN: Secretary Ian A. Bowles
MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114
* 2 Hardcopies 2 CDs

US Environmental Protection Agency
ATTN: Environmental Reviewer
One Congress Street, Suite 1100
Boston, MA 02114

Massachusetts Dept. of Environmental Protection
Commissioner's Office
One Winter Street
Boston, MA 02108

Massachusetts Dept. of Environmental Protection
Northeast Regional Office
ATTN: MEPA Coordinator
205B Lowell Street
Wilmington, MA 01887

Massachusetts Dept. of Environmental Protection
Division of Wetlands and Waterways
205B Lowell Street
Wilmington, MA 01887

Massachusetts Dept. of Environmental Protection
Division of Water Pollution and Control
205B Lowell Street
Wilmington, MA 01887

Massachusetts Highway Department
Public/Private Development Unit
10 Park Plaza
Boston, MA 02166

Massachusetts Highway Department
District #4
ATTN: MEPA Coordinator
519 Appleton Street
Arlington, MA 02476

Massachusetts Division of Fisheries and Wildlife
Natural Heritage and Endangered Species Program
One Rabbit Hill Road
Westborough, MA 01581

Massachusetts Historical Commission
ATTN: Project Reviewer
220 Morrissey Boulevard
Boston, MA 02125

U.S. Fish and Wildlife Service
ATTN: Project Reviewer
300 Westgate Center Drive
Hadley, MA 01035

Town of Bedford
Board of Selectmen
10 Mudge Way
Bedford, MA 01730

Town of Concord
Board of Selectmen
P.O. Box 535
Concord, MA 01742

Town of Lexington
Board of Selectmen
1625 Massachusetts Ave.
Lexington, MA 02420

Town of Lincoln
Board of Selectmen
16 Lincoln Road # 1
Lincoln, MA 01773

Town of Bedford
Planning Board
ATTN: Chairperson
10 Mudge Way
Bedford, MA 01730

Town of Concord
Planning Board
ATTN: Director
141 Keyes Road, Floor 1
Concord, MA 01742

Town of Lexington
Planning Board
ATTN: Chairperson
1625 Massachusetts Ave.
Lexington, MA 02420

Town of Lincoln
Planning Board
ATTN: Chairperson
16 Lincoln Road # 2
Lincoln, MA 01773

Massachusetts National Guard
ATTN: Keith Driscoll
50 Maple Street
Milford, MA 01757-3604
* 2 Hardcopies, 2 CD

USAF MC
ATTN: Shari Kilborune
AFMC/A7PX
4225 Logistic Ave., Bldg. 266
Wright Patterson, AFB, OH 45433
* 3 Hardcopies, 3 CD

Hanscom AFB
ATTN: Don Morris
120 Grenier St.
Hanscom, AFB, MA 01731
* 4 Hardcopies, 10 CDs

Federal Aviation Administration
800 Independence Ave., SW
Washinghton, D.C. 20591

MA Water Resources Authority
ATTN: MEPA Coordinator
100 First Avenue
Charlestown Navy Yard, Boston, MA 02129

MBTA
ATTN: MEPA Coordinator
10 Park Plaza, 6th Floor
Boston, MA 02216

Massachusetts Port Authority
One Harborside Drive, Suite 200S
East Boston, MA 02129

Metropolitan Area Planning Council
60 Temple Place, 6th Floor
Boston, MA 02111

Concord Free Public Library
129 Main Street
Concord, MA 01742
* 1 Hardcopy, 1 CD

Cary Memorial Library
1874 Massachusetts Ave.
Lexington, MA 02420
*1 Hardcopy, 1 CD

Bedford Free Library
7 Mudge Way
Bedford, MA 01730
*1 Hardcopy, 1 CD

Lincoln Public Library
Bedford Road
Lincoln, MA 01773
* 1 Hardcopy, 1 CD

HATS Environmental Committee
1625 Massachusetts Ave.
Lexington, MA 02420

Minuteman High School
758 Marrett Rd.
Lexington, MA 02421

US Army Corps of Engineers
New England District (CENAE-PA)
696 Virginia Road
Concord, MA 01742

Ms. Sherry White, THPO
Stockbridge—Munsee Tribal Historic Preservation Office
W13447 Camp 14 Road
P.O. Box 70
Bowler, WI 54416
Certified Mail, Return Receipt Requested

George Chuckie Green THPO
Mashpee Wampanoag Tribe
483 Great Neck Road
P.O. Box 1048
Mashpee, MA 02649
Certified Mail, Return Receipt Requested

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Sherry White
Stockbridge-Munsee Tribe
W13447 Camp 14 Road
P.O. Box 70
Bowler WI 54416

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Simone Parker ☒ Agent ☐ Addressee

B. Received by (*Printed Name*) Simone Parker
C. Date of Delivery 12-14-09

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☑ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (*Extra Fee*) ☐ Yes

2. Article Number (*Transfer from ser*) 7001 0360 0001 8881 1129

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

UNITED STATES POSTAL SERVICE

First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

URS Corp.
260 Franklin St, Suite 300
Boston MA 02110-3112

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

George Chuckie Green
Mashpee Wampanoag Tribe
483 Great Neck Rd
PO Box 1048
Mashpee MA 02649

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Nancy Martin ☐ Agent ☐ Addressee

B. Received by (Printed Name) NANCY MARTIN C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☑ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from service label)* 7001 0360 0001 8874 0696

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

UNITED STATES POSTAL SERVICE

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Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

URS Corp
260 Franklin St, Suite 300
Boston, MA 02110-3112

attn: Carl Chamberlin

3112

Appendix B

Agency Correspondence

-Massachusetts Division of Fisheries and Wildlife

-US Fish and Wildlife Service

-Massachusetts Historical Commission

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October 5, 2009

Natural Heritage & Endangered Species Program
Attention: Project Reviewer
Massachusetts Division of Fisheries & Wildlife
One Rabbit Run Road
Westborough, MA 01581

Re: Project Review Request – Proposed Joint Force Headquarters

Dear Reviewer:

URS Corporation is preparing and Environmental Assessment (EA) for the proposed Joint Force Headquarters (JFHQ) project in Methuen, Massachusetts, on behalf of the U.S. Air Force. With this letter, we request that the Natural Heritage and Endangered Species Program review this proposed project and comment on potential issues and impacts to resources under its jurisdiction.

The JFHQ is the National Guard Headquarters for both the Army and Air Force Massachusetts operations. It is an Armed Force Reserve Readiness Center Utilized for the command, control, supervision, and administration of the Guard assigned units.

The MAARNG plans to construct a new Joint Force Headquarters (JFHQ) on a site at Hanscom Air Force Base (AFB). Locating the new facility at Hanscom offers the benefits of an attractive, adequately sized property with zero acquisition cost, a secure perimeter, and excellent transportation connections to Routes 128, 2, and 90. The facility consists of the JFHQ building and parking based on the requirements of the project's Form 1391. The new facility is planned to be designed and constructed in two phases. Phase 1 will contain approximately 114,000 gsf for a construction cost just under $26 million.

A "link" building will connect the two phases of the JFHQ and contains the elevators, main stair, lobbies and security desk. It is conceived as a dynamic multi-story space which will serve to display historic military artifacts currently housed at the Worcester Armory. The development of the link design approach will enable Phase 2 to be built in the future with minimal impact on the Phase 1.

A USGS site locus map (Figure 1) is included with this letter to expedite your review of this important project.

If you have any questions about this request, or require additional information, please do not hesitate to contact me at 857-383-3805.

Sincerely,
URS Corporation

Carl Chamberlin
Environmental Planner

atts.: locus map

URS Corporation
260 Franklin Street, Suite 300
Boston, MA 02110
Tel: 617.542.4244
Fax: 617.542.3301



Source: MassGIS

File: J:\10160456_EA_ENF_JFHQ\CADD\GIS\Hanscom USGS.mxd

FIGURE 1
VICINITY MAP

JOINT FORCE HEADQUARTERS
HANSCOM AFB

URS
260 FRANKLIN STREET, SUITE 300
BOSTON, MASSACHUSETTS
(617) 542-4244

Project No. 10160453 | **OCTOBER 2009**

Commonwealth of Massachusetts

Division of Fisheries & Wildlife

MassWildlife

Wayne F. MacCallum, *Director*

October 13, 2009

RECEIVED

OCT 16 2009

URS BOSTON

Carl Chamberlin
URS Corporation
260 Franklin Street
Boston MA 02110

RE: Project Description: Proposed Joint Force Headquarters at Hanscom AFB
NHESP Tracking No.: 09-27274

Dear Mr. Chamberlin:

Thank you for submitting information regarding your project to the Natural Heritage & Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries & Wildlife.

Based on a review of the information that was provided and the information that is currently contained in our database, the NHESP has determined that this project, as currently proposed, **does not occur within Estimated Habitat of Rare Wildlife or Priority Habitat** as indicated in the *Massachusetts Natural Heritage Atlas* (13th Edition). Therefore, the project is not required to be reviewed for compliance with the rare wildlife species section of the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.37, 10.59 & 10.58(4)(b)) or the MA Endangered Species Act Regulations (321 CMR 10.18). Any additional work beyond that shown on the site plans may require a filing with the NHESP.

Please note that this determination addresses only the matter of **rare** wildlife habitat and does not pertain to other wildlife habitat issues that may be pertinent to the proposed project. If you have any questions regarding this letter please contact Emily Holt, Endangered Species Review Assistant, at (508) 389-6361.

Sincerely,

Thomas W. French

Thomas W. French, Ph.D.
Assistant Director

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Field Office
70 Commercial Street, Suite 300
Concord, New Hampshire 03301-5087
http://www.fws.gov/northeast/newenglandfieldoffice

January 2, 2009

To Whom It May Concern:

This project was reviewed for the presence of federally-listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website:

(http://www.fws.gov/northeast/newenglandfieldoffice/EndangeredSpec-Consultation.htm)

Based on the information currently available, no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service (Service) are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under Section 7 of the Endangered Species Act is not required.

This concludes the review of listed species and critical habitat in the project location(s) and environs referenced above. No further Endangered Species Act coordination of this type is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact Mr. Anthony Tur at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN MASSACHUSETTS

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Barnstable	Piping Plover	Threatened	Coastal Beaches	All Towns
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Chatham
	Sandplain gerardia	Endangered	Open areas with sandy soils.	Sandwich and Falmouth.
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Bourne (north of the Cape Cod Canal)
Berkshire	Bog Turtle	Threatened	Wetlands	Egremont and Sheffield
Bristol	Piping Plover	Threatened	Coastal Beaches	Fairhaven, Dartmouth, Westport
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Fairhaven, New Bedford, Dartmouth, Westport
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Taunton
Dukes	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	All Towns
	Piping Plover	Threatened	Coastal Beaches	All Towns
	Northeastern beach tiger beetle	Threatened	Coastal Beaches	Aquinnah and Chilmark
	Sandplain gerardia	Endangered	Open areas with sandy soils.	West Tisbury
Essex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Gloucester, Essex and Manchester
	Piping Plover	Threatened	Coastal Beaches	Gloucester, Essex, Ipswich, Rowley, Revere, Newbury, Newburyport and Salisbury
Franklin	Northeastern bulrush	Endangered	Wetlands	Montague
	Dwarf wedgemussel	Endangered	Mill River	Whately
Hampshire	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Hadley
	Puritan tiger beetle	Threatened	Sandy beaches along the Connecticut River	Northampton and Hadley
	Dwarf wedgemussel	Endangered	Rivers and Streams.	Hadley, Hatfield, Amherst and Northampton
Hampden	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Southwick
Middlesex	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Groton
Nantucket	Piping Plover	Threatened	Coastal Beaches	Nantucket
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Nantucket
	American burying beetle	Endangered	Upland grassy meadows	Nantucket
Plymouth	Piping Plover	Threatened	Coastal Beaches	Scituate, Marshfield, Duxbury, Plymouth, Wareham and Mattapoisett
	Northern Red-bellied Cooter	Endangered	Inland Ponds and Rivers	Kingston, Middleborough, Carver, Plymouth, Bourne, Wareham, Halifax, and Pembroke
	Roseate Tern	Endangered	Coastal beaches and the Atlantic Ocean	Plymouth, Marion, Wareham, and Mattapoisett.
Suffolk	Piping Plover	Threatened	Coastal Beaches	Winthrop
Worcester	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Leominster

-Eastern cougar and gray wolf are considered extirpated in Massachusetts.
-Endangered gray wolves are not known to be present in Massachusetts, but dispersing individuals from source populations in Canada may occur statewide.
-Critical habitat for the Northern Red-bellied Cooter is present in Plymouth County.

Revised 06/22/2009

The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

August 15, 2008

Keith J. Driscoll
NEPA/Cultural Resource Manager
MAARNG, JFHQ-ENV
50 Maple Street
Milford, MA 02757

RE: Joint Force Headquarters, Hanscom Air Force Base (Bedford, Concord, Lexington, and Lincoln). MHC #RC.44905.

Dear Mr. Driscoll:

Thank you for submitting a Project Notification Form for the project referenced above. Staff of the Massachusetts Historical Commission have reviewed the information that you submitted and MHC's files.

Please seek the comments of consulting parties for the proposed project from Minute Man National Historic Park and the local historical commissions (see 36 CFR 800.2(c)(3) and 800.2(c)(5); see also 36 CFR 800.2(d) for seeking the views of the public).

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 as amended (36 CFR 800), MGL c. 9, ss. 26-27C (950 CMR 71), and the Nationwide Programmatic Agreement with the National Park Service. Please contact Edward L. Bell if you have any questions.

Sincerely,

Brona Simon
State Historic Preservation Officer
Executive Director
Massachusetts Historical Commission

xc:
Nancy Nelson, Minute Man National Historic Park
Bedford, Concord, Lexington, and Lincoln Historical Commissions

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
JOINT FORCE HEADQUARTERS
MASSACHUSETTS NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
50 MAPLE STREET
MILFORD, MA 01757-3604

REPLY TO
ATTENTION OF:

September 10, 2008

Ms. Nancy Nelson
National Park Service
Minute Man National Historical Park
174 Liberty Street
Concord, MA 01742

RE: Proposed New Joint Force Headquarters, Hanscom Air Force Base, MHC #RC.44905.

Dear Ms. Nelson:

The Massachusetts Army National Guard ("the Guard") has recently submitted a Project Notification Form (PNF) to the Massachusetts Historical Commission for the above referenced project. The Guard is proposing to relocate the Joint Force Headquarters (JFHQ) from Milford, Massachusetts to a site at Hanscom Air Force Base (Town of Lincoln portion). The JFHQ is the National Guard Headquarters for both the Army and Air Force Massachusetts operations, and is an Armed Forces Reserve Readiness Center utilized for the command, control, supervision, and administration of the Guard and assigned units.

As noted in the PNF (enclosed), a review of state/federal sites determined that locating the new JFHQ at Hanscom Air Force Base, an active military facility, would enhance the command and response of the Massachusetts National Guard. The new JFHQ will be located in an area with superior access to the major road networks of the state and with ready access to Boston, the flexibility to respond in time of crisis in an expeditious manner, redundant communications and utility infrastructure, fixed and rotary flight lines, and a robust Anti Terrorism/Force Protection program. The new JFHQ will provide the administrative, classroom training, assembly areas, library, learning center, vault, physical fitness, and storage areas necessary to achieve proficiency in required administrative and training tasks. The project will also include a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency, and a USPFO Warehouse.

As explained in the PNF, there are no archaeological properties on the previously disturbed project site, no cultural resource impacts and the existing viewshed from Minute Man National Historic Park is preserved.

The attached PNF provides you with informational and location details for the project. By copy of this letter, we are requesting your comments, if any, on this project by October 10, 2008. If you have any comments or questions regarding the PNF, please contact me at keith.driscoll@us.army.mil or 508.233.6512.

Sincerely,

Keith Driscoll
NEPA/Cultural Resource Manager

Enclosure – PNF, Proposed New Joint Force Headquarters, July 29, 2008.
cc: Brona Simon, State Historic Preservation Officer/MHC w/o enclosure
Bedford, Concord, Lexington and Lincoln Historical Commissions w/enclosure

Driscoll, Keith Mr. NGMA
From: Driscoll, Keith Mr. NGMA
Sent: Wednesday, November 12, 2008 1:41 PM
To: 'nancy_nelson@nps.gov'
Subject: Massachusetts Army National Guard proposed construction on Hanscom AFB (UNCLASSIFIED)

Attachments: NPS Packet.PDF

Classification: **UNCLASSIFIED**
Caveats: NONE

Hello Ms. Nelson-

As a result of our phone conversation on 10 November 2008, I am resending to you the packet which describes location and description of the proposed construction of a new Joint Force Headquarters Building within the boundaries of Hanscom Air Force Base. Could you provide comment (if any) on the intended project via a written letter?

If you have any questions regarding this project I can be reached at (508) 233-6512.

Thank you very much for your time.

Keith J Driscoll
National Environmental Policy Act/Cultural Resource Manager
Massachusetts Army National Guard



NPS
ket.PDF (544

Classification: **UNCLASSIFIED**
Caveats: NONE

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
MASSACHUSETTS NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
50 MAPLE STREET
MILFORD, MA 01757-3604

REPLY TO
ATTENTION OF:

MAAR-CFMO-ENV

12 January 2009

MEMORANDUM FOR RECORD

SUBJECT: Local Historic Commissions communication for the proposed Joint Force Headquarters construction project located on Hanscom Air Force Base, Bedford Massachusetts

1. In accordance with 36 CFR 800.2(c)(3), on September 10, 2008, the Massachusetts Army National Guard sent a letter and a project notification form describing the proposed construction of the Joint Force Headquarters building on Hanscom Air Force Base in Bedford Massachusetts to the towns of Lexington, Bedford, Concord and Lincoln historic commissions. This letter requested comment on the proposed project by October 10, 2008.

2. As of 12 January 2009, there has been no response from either town in regards to the above mentioned request.

Keith J. Driscoll
NEPA/Cultural Resource Manager
MA Army National Guard

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
JOINT FORCE HEADQUARTERS
MASSACHUSETTS NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
50 MAPLE STREET
MILFORD, MA 01757-3604

REPLY TO
ATTENTION OF:

September 10, 2008

Ms. ~~Lee~~ Yates
Bedford Historic District Commission
Town Hall, Mudge Way
Bedford, MA 01730

RE: Proposed New Joint Force Headquarters, Hanscom Air Force Base, MHC #RC.44905.

Dear Ms. Yates:

The Massachusetts Army National Guard ("the Guard") has recently submitted a Project Notification Form (PNF) to the Massachusetts Historical Commission for the above referenced project. The Guard is proposing to relocate the Joint Force Headquarters (JFHQ) from Milford, Massachusetts to a site at Hanscom Air Force Base (Town of Lincoln portion). The JFHQ is the National Guard Headquarters for both the Army and Air Force Massachusetts operations, and is an Armed Forces Reserve Readiness Center utilized for the command, control, supervision, and administration of the Guard and assigned units.

As noted in the PNF (enclosed), a review of state/federal sites determined that locating the new JFHQ at Hanscom Air Force Base, an active military facility, would enhance the command and response of the Massachusetts National Guard. The new JFHQ will be located in an area with superior access to the major road networks of the state and with ready access to Boston, the flexibility to respond in time of crisis in an expeditious manner, redundant communications and utility infrastructure, fixed and rotary flight lines, and a robust Anti Terrorism/Force Protection program. The new JFHQ will provide the administrative, classroom training, assembly areas, library, learning center, vault, physical fitness, and storage areas necessary to achieve proficiency in required administrative and training tasks. The project will also include a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency, and a USPFO Warehouse.

As explained in the PNF, there are no archaeological properties on the previously disturbed project site, no cultural resource impacts and the existing viewshed from Minute Man National Historic Park is preserved.

The attached PNF provides you with informational and location details for the project. By copy of this letter, we are requesting your comments, if any, on this project by October 10, 2008. If you have any comments or questions regarding the PNF, please contact me at keith.driscoll@us.army.mil or 508.233.6512.

Sincerely,

Keith Driscoll
NEPA/Cultural Resource Manager

Enclosure – PNF, Proposed New Joint Force Headquarters, July 29, 2008.
cc: Brona Simon, State Historic Preservation Officer/MHC w/o enclosure
Bedford, Concord, Lexington and Lincoln Historical Commissions w/enclosure



Source: MassGIS

File: J:\10160456_EA_ENF_JFHQ\CADD\GIS\Hanscom USGS.mxd

FIGURE 1
VICINITY MAP

JOINT FORCE HEADQUARTERS
HANSCOM AFB

URS
260 FRANKLIN STREET, SUITE 300
BOSTON, MASSACHUSETTS
(617) 542-4244

Project No. 10160453 | **OCTOBER 2009**

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
JOINT FORCE HEADQUARTERS
MASSACHUSETTS NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
50 MAPLE STREET
MILFORD, MA 01757-3604

REPLY TO
ATTENTION OF:

September 10, 2008

Ms. Marcia Rasmussen, Director
Concord Historical Commission
141 Keyes Road, 1st Floor
Concord, MA 01742

RE: Proposed New Joint Force Headquarters, Hanscom Air Force Base, MHC #RC.44905.

Dear Ms. Rasmussen:

The Massachusetts Army National Guard ("the Guard") has recently submitted a Project Notification Form (PNF) to the Massachusetts Historical Commission for the above referenced project. The Guard is proposing to relocate the Joint Force Headquarters (JFHQ) from Milford, Massachusetts to a site at Hanscom Air Force Base (Town of Lincoln portion). The JFHQ is the National Guard Headquarters for both the Army and Air Force Massachusetts operations, and is an Armed Forces Reserve Readiness Center utilized for the command, control, supervision, and administration of the Guard and assigned units.

As noted in the PNF (enclosed), a review of state/federal sites determined that locating the new JFHQ at Hanscom Air Force Base, an active military facility, would enhance the command and response of the Massachusetts National Guard. The new JFHQ will be located in an area with superior access to the major road networks of the state and with ready access to Boston, the flexibility to respond in time of crisis in an expeditious manner, redundant communications and utility infrastructure, fixed and rotary flight lines, and a robust Anti Terrorism/Force Protection program. The new JFHQ will provide the administrative, classroom training, assembly areas, library, learning center, vault, physical fitness, and storage areas necessary to achieve proficiency in required administrative and training tasks. The project will also include a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency, and a USPFO Warehouse.

As explained in the PNF, there are no archaeological properties on the previously disturbed project site, no cultural resource impacts and the existing viewshed from Minute Man National Historic Park is preserved.

The attached PNF provides you with informational and location details for the project. By copy of this letter, we are requesting your comments, if any, on this project by October 10, 2008. If you have any comments or questions regarding the PNF, please contact me at keith.driscoll@us.army.mil or 508.233.6512.

Sincerely,

Keith Driscoll
NEPA/Cultural Resource Manager

Enclosure – PNF, Proposed New Joint Force Headquarters, July 29, 2008.
cc: Brona Simon, State Historic Preservation Officer/MHC w/o enclosure
Bedford, Concord, Lexington and Lincoln Historical Commissions w/enclosure



Source: MassGIS

File: J:\10160456_EA_ENF_JFHQ\CADD\GIS\Hanscom USGS.mxd

FIGURE 1
VICINITY MAP

JOINT FORCE HEADQUARTERS
HANSCOM AFB

URS
260 FRANKLIN STREET, SUITE 300
BOSTON, MASSACHUSETTS
(617) 542-4244

Project No. 10160453 | **OCTOBER 2009**

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
JOINT FORCE HEADQUARTERS
MASSACHUSETTS NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
50 MAPLE STREET
MILFORD, MA 01757-3604

REPLY TO
ATTENTION OF:

September 10, 2008

Ms. Lucretia Giese, Chairman
Lincoln Historical Commission
Lincoln Town Office Building, 2nd Floor
Lincoln, MA 01773

RE: Proposed New Joint Force Headquarters, Hanscom Air Force Base, MHC #RC.44905.

Dear Ms. Giese:

The Massachusetts Army National Guard ("the Guard") has recently submitted a Project Notification Form (PNF) to the Massachusetts Historical Commission for the above referenced project. The Guard is proposing to relocate the Joint Force Headquarters (JFHQ) from Milford, Massachusetts to a site at Hanscom Air Force Base (Town of Lincoln portion). The JFHQ is the National Guard Headquarters for both the Army and Air Force Massachusetts operations, and is an Armed Forces Reserve Readiness Center utilized for the command, control, supervision, and administration of the Guard and assigned units.

As noted in the PNF (enclosed), a review of state/federal sites determined that locating the new JFHQ at Hanscom Air Force Base, an active military facility, would enhance the command and response of the Massachusetts National Guard. The new JFHQ will be located in an area with superior access to the major road networks of the state and with ready access to Boston, the flexibility to respond in time of crisis in an expeditious manner, redundant communications and utility infrastructure, fixed and rotary flight lines, and a robust Anti Terrorism/Force Protection program. The new JFHQ will provide the administrative, classroom training, assembly areas, library, learning center, vault, physical fitness, and storage areas necessary to achieve proficiency in required administrative and training tasks. The project will also include a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency, and a USPFO Warehouse.

As explained in the PNF, there are no archaeological properties on the previously disturbed project site, no cultural resource impacts and the existing viewshed from Minute Man National Historic Park is preserved.

The attached PNF provides you with informational and location details for the project. By copy of this letter, we are requesting your comments, if any, on this project by October 10, 2008. If you have any comments or questions regarding the PNF, please contact me at keith.driscoll@us.army.mil or 508.233.6512.

Sincerely,

Keith Driscoll
NEPA/Cultural Resource Manager

Enclosure – PNF, Proposed New Joint Force Headquarters, July 29, 2008.
cc: Brona Simon, State Historic Preservation Officer/MHC w/o enclosure
Bedford, Concord, Lexington and Lincoln Historical Commissions w/enclosure



Source: MassGIS

File: J:\10160456_EA_ENF_JFHQ\CADD\GIS\Hanscom USGS.mxd

FIGURE 1
VICINITY MAP

JOINT FORCE HEADQUARTERS
HANSCOM AFB

URS
260 FRANKLIN STREET, SUITE 300
BOSTON, MASSACHUSETTS
(617) 542-4244

Project No. 10160453 | **OCTOBER 2009**

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
JOINT FORCE HEADQUARTERS
MASSACHUSETTS NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
50 MAPLE STREET
MILFORD, MA 01757-3604

REPLY TO
ATTENTION OF:

September 10, 2008

Mr. David Kelland, Chair
Lexington Historical Commission
1625 Massachusetts Avenue
Lexington, MA 02420

RE: Proposed New Joint Force Headquarters, Hanscom Air Force Base, MHC #RC.44905.

Dear Mr. Kelland:

The Massachusetts Army National Guard ("the Guard") has recently submitted a Project Notification Form (PNF) to the Massachusetts Historical Commission for the above referenced project. The Guard is proposing to relocate the Joint Force Headquarters (JFHQ) from Milford, Massachusetts to a site at Hanscom Air Force Base (Town of Lincoln portion). The JFHQ is the National Guard Headquarters for both the Army and Air Force Massachusetts operations, and is an Armed Forces Reserve Readiness Center utilized for the command, control, supervision, and administration of the Guard and assigned units.

As noted in the PNF (enclosed), a review of state/federal sites determined that locating the new JFHQ at Hanscom Air Force Base, an active military facility, would enhance the command and response of the Massachusetts National Guard. The new JFHQ will be located in an area with superior access to the major road networks of the state and with ready access to Boston, the flexibility to respond in time of crisis in an expeditious manner, redundant communications and utility infrastructure, fixed and rotary flight lines, and a robust Anti Terrorism/Force Protection program. The new JFHQ will provide the administrative, classroom training, assembly areas, library, learning center, vault, physical fitness, and storage areas necessary to achieve proficiency in required administrative and training tasks. The project will also include a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency, and a USPFO Warehouse.

As explained in the PNF, there are no archaeological properties on the previously disturbed project site, no cultural resource impacts and the existing viewshed from Minute Man National Historic Park is preserved.

The attached PNF provides you with informational and location details for the project. By copy of this letter, we are requesting your comments, if any, on this project by October 10, 2008. If you have any comments or questions regarding the PNF, please contact me at keith.driscoll@us.army.mil or 508.233.6512.

Sincerely,

Keith Driscoll
NEPA/Cultural Resource Manager

Enclosure – PNF, Proposed New Joint Force Headquarters, July 29, 2008.
cc: Brona Simon, State Historic Preservation Officer/MHC w/o enclosure
Bedford, Concord, Lexington and Lincoln Historical Commissions w/enclosure



Source: MassGIS

File: J:\10160456_EA_ENF_JFHQ\CADD\GIS\Hanscom USGS.mxd

FIGURE 1
VICINITY MAP

JOINT FORCE HEADQUARTERS
HANSCOM AFB

URS
260 FRANKLIN STREET, SUITE 300
BOSTON, MASSACHUSETTS
(617) 542-4244

Project No. 10160453 | **OCTOBER 2009**

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
JOINT FORCE HEADQUARTERS
MASSACHUSETTS NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
50 MAPLE STREET
MILFORD, MA 01757-3604

REPLY TO
ATTENTION OF:

September 10, 2008 Sent to Mashpee and St. Regis Mohawk

Ms. Sherry White, THPO
Stockbridge-Munsee Tribal Historic Preservation Office
W13447 Camp 14 Road
P.O. Box 70
Bowler, WI 54416

Dear Ms. White,

The Massachusetts Army National Guard (MAARNG) is in the process of relocating the Joint Force Headquarters (JFHQ) of the Massachusetts National Guard. The JFHQ is the National Guard Headquarters for both the Army and Air Force Massachusetts operations. It is an Armed Forces Reserve Readiness Center utilized for the command, control, supervision, and administration of the Guard and assigned units.

The current Massachusetts JFHQ is located in Milford MA and the main facility consists of a 99,000 SF three story office building with a 98,000 SF administrative/warehouse attached to it, as part of a larger state complex. The majority of available land on the site has been fully developed and is situated in a mixed-use residential and industrial area. The complex was originally constructed in the 1980's as a manufacturing facility before being acquired by the Massachusetts National Guard and it is currently in need of major modifications to the mechanical and HVAC systems, and the exterior envelope. In addition, the facility has several major operational inefficiencies including lack of: robust anti-terrorism/force protection (AT/FP) features; superior access to the regional highway network and Boston; access to soldier/airmen support services; access to adequate airhead or helipad facilities; and, must be able to operate for sustained periods of time in a civilian military emergency which may involve loss of critical civilian utility infrastructure (electrical, water, sewer, communications, etc.).

A review of state/federal sites in conjunction with the above criteria determined that co-locating the new JFHQ at Hanscom Air Force Base, an active military facility, would enhance the command and response of the Massachusetts National Guard. The new JFHQ will be located in an area with superior access to the major road networks of the state and with ready access to Boston, the flexibility to respond in time of crisis in an expeditious manner, redundant communications and utility infrastructure, fixed and rotary flight lines, and a robust AT/FP program.

The new JFHQ will provide the administrative, classroom training, assembly areas, library, learning center, vault, physical fitness, and storage areas necessary to achieve proficiency in required administrative and training tasks. It will include a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency.

Please find the attached Massachusetts Historical Commission Project Notification Form and the National Environmental Policy Act Record of Environmental Consideration (REC) for your review. The attached PNF and REC provides you with informational and location details for the project. By copy of this letter, we are requesting your comments, if any, on this project by October 10, 2008. If you have any comments or questions regarding the PNF, REC or the project in general, please contact me at keith.driscoll@us.army.mil or 508.233.6512.

I understand that your office receives numerous requests for document reviews over the course of the year. To help facilitate your response, we have included a stamped and addressed envelope is included with this letter. Please send comments to Mr. Keith Driscoll, Cultural Resources and NEPA Manager, MAARNG, at Headquarters, MAARNG, 50 Maple Street, Milford, MA 01757.

Regards,

Keith J. Driscoll
NEPA/Cultural Resource Manager

Enclosure – PNF, Proposed New Joint Force Headquarters, July 29, 2008.
REC, August 4, 2008

Mashpee Wampanoag Tribe
483 Great Neck Rd. P.O. Box 1048 Mashpee, MA 02649
Phone (508) 477-0208 Fax (508) 477-1218

September 19, 2008

Mr Keith Driscoll
Cultural Resource/NEPA Manager
MAARNG Headquarters
50 Maple Street
Milford Ma 01757

Dear Mr. Driscoll,

I have reviewed your project and considering past disturbance and the phase 1 archaeological survey I see no risk of effects on historic properties of concern to the Mashpee Wampanoag Tribe, but in the event of a discovery of native remains or artifacts I am notified.

Yours Truly
George Chuckie Green

George Chuckie Green THPO
Mashpee Wampanoag Tribe

REPLY TO
ATTENTION OF:

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
MASSACHUSETTS NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
50 MAPLE STREET
MILFORD, MA 01757-3604

MAAR-CFMO-ENV

10 December 2008

MEMORANDUM FOR RECORD

SUBJECT: Tribal Communication for the proposed Joint Force Headquarters construction project located on Hanscom Air Force Base, Bedford Massachusetts

1. In accordance with the National Environmental Policy Act (32 CFR Part 651) on September 10, 2008, the Massachusetts Army National Guard sent a letter and a project notification form describing the proposed construction of the Joint Force Headquarters building on Hanscom Air Force Base in Bedford Massachusetts to the Tribal Historic Preservation Officer (THPO) of the Wampanoag Tribe of Gay Head (Aquinnah). This letter requested comment on the proposed project by October 10, 2008. There was no response.

2. On October 29, 2008 a follow up phone call was made to the THPO. Contact was not made but a message was left on the answering machine asking that if the THPO had any questions to call the number provided.

3. As of 10 December 2008, there has been no effort by the THPO to contact the MAARNG in regards to the above mentioned project.

Keith J. Driscoll
NEPA/Cultural Resource Manager
MA Army National Guard

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
MASSACHUSETTS NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
50 MAPLE STREET
MILFORD, MA 01757-3604

REPLY TO
ATTENTION OF:

27 January 2009

NEPA/Cultural Resource Manager

Ms. Brona Simon
State Historic Preservation Officer
Executive Director
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

RE: Proposed New Joint Force Headquarters, Hanscom Air Force Base, MHC #RC.44905.

Dear Ms. Simon:

A copy of the PNF and a request for comments concerning the above referenced project were sent out on September 10, 2008 to the following consulting parties: National Park Service-Minute Man National Historical Park, the Stockbridge-Munsee Tribal Historic Preservation Office, the Wampanoag Tribe of Gay Head (Aquinnah) Tribal Historic Preservation Office, Mashpee Wampanoag Tribal Historic Preservation Office and the historic commissions of Bedford, Lexington, Concord, and Lincoln. The letter requested comment by October 10, 2008. As previously noted in the PNF, there are no archaeological properties on the previously disturbed project site and no cultural resource impacts were identified.

To date, only the Mashpee Wampanoag Tribe, the Stockbridge-Munsee Tribe and the National Park Service have responded with comments (enclosed). Mr. George Chuckie Green, Mashpee Wampanoag THPO stated that based on past disturbance and the results of the Phase I archeological survey the tribe did not foresee a risk of effects on historic properties of concern to the Tribe. However, he requested to be notified in the event of any discovery of native remains and artifacts. Ms. Sherry White, Stockbridge Munsee THPO, stated that the proposed ground disturbing activity does not appear to endanger archaeological sites of interest to the Stockbridge-Munsee Tribe. However, she requested that if further archaeological surveys are needed or if anything is found that is determined to be Native American, she would like to be informed. Ms. Nancy Nelson, Park Superintendent-Minute Man National Historical Park, indicated her concern regarding potential traffic impacts the project might have on Battle Road/Route 2A and the resulting park experience to visitors of the park. A letter was sent in response to Ms. Nelson's concerns on 23 January 2009 (enclosed).

On September 25, 2008 the Guard presented the proposed construction project to the Hanscom Area Towns Committee (HATS). HATS consists of selectman, planning board and independent members-at-large from the four surrounding towns. The Guard anticipates conducting additional public briefings on the status of the project as the design process advances.

Sincerely,

Keith J. Driscoll
NEPA/Cultural Resource Manager
Massachusetts Army National Guard

Enclosures
Copy Furnish: Historic Commissions (Bedford, Lexington, Concord, and Lincoln)
THPO (Mashpee Wampanoag, Aquinnah Wampanoag, Stockbridge Munsee)
National Park Service, Minute Man National Historical Park (Ms. Nancy Nelson)

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
JOINT FORCE HEADQUARTERS
MASSACHUSETTS NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
50 MAPLE STREET
MILFORD, MA 01757-3604

REPLY TO
ATTENTION OF:

RECEIVED
MAR 24 2009
MASS. HIST. COMM
44905

March 23, 2009

Ms. Brona Simon
State Historic Preservation Officer
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

RE: Proposed Construction of a Joint Force Headquarters, Hanscom Air Force Base (Bedford, Concord, Lexington, and Lincoln). MHC #RC.44905.

Dear Ms. Simon:

The Massachusetts Army National Guard (MAARNG) is planning to construct a new Joint Force Headquarters (JFHQ) building at Hanscom Air Force Base (AFB) located in Bedford Massachusetts. The JFHQ is the National Guard Headquarters for both the Army and Air Force Massachusetts operations and is an Armed Forces Reserve Readiness Center utilized for the command, control, supervision, and administration of the Guard and assigned units.

A review of state/federal sites determined that co-locating the new JFHQ at Hanscom Air Force Base, an active military facility, would enhance the command and response of the Massachusetts National Guard. The new JFHQ will be located in an area with superior access to the major road networks of the state and with ready access to Boston, the flexibility to respond in time of crisis in an expeditious manner, redundant communications and utility infrastructure, fixed and rotary flight lines, and a robust Anti-Terrorism/Force Protection program. The new JFHQ will provide the administrative, classroom training, assembly areas, library, learning center, vault, physical fitness, and storage areas necessary to achieve proficiency in required administrative and training tasks. It will include a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency. The proposed sites for this project are identified as Parcel A, B and C on the attached reference map. The proposed construction ground disturbance would be less than 5 cumulative acres.

A Project Notification Form (PNF) for this project was previously sent to you on August 1, 2009. It provided you with informational and location details on the project. You responded on August 15, 2008 asking us to seek comments of consulting parties for the propose project from Minute Man National Historic Park and the local historical commissions (36 CFR 800.2(c)(3), 800.2(c)(5) and 36 CFR 800.2(d) for seeking the views of the public).

In a letter dated January 27, 2009, we informed you that a copy of the PNF and a request for comments concerning the project were sent out on September 10, 2008 to the following consulting parties: National Park Service-Minute Man National Historical Park, the Stockbridge-Munsee Tribal Historic Preservation Office, the Wampanoag Tribe of Gay Head (Aquinnah) Tribal Historic Preservation Office and the historic commissions of Bedford, Lexington, Concord, and Lincoln. The letter requested comment by October 10, 2008. Only the Mashpee Wampanoag Tribe, the Stockbridge-Munsee Tribe and the National Park Service responded with comments.

Mr. George Chuckie Green (THPO, Wampanoag Tribe of Gay Head (Aquinnah) stated that based on past disturbance and the results of the Phase I archeological survey the tribe did not foresee any risk of effects on historic properties that were of concern to the Tribe. However, he wanted to be notified in the event of any discovery of native remains and artifacts. Sherry White (THPO, Stockbridge-Munsee

Tribe) stated that the proposed project does not appear to endanger archaeological sites of interest to the Stockbridge-Munsee tribe. She requested that if anything is found that is determined to be Native American, she asked if she could be informed. Nancy Nelson, Park Superintendent indicated her concern over potential impacts the project might have on Battle Road/Route 2A from possible traffic issues that could affect such an historic property. A letter was sent in response to Ms. Nelson's concerns on January 23, 2009 which explained to her that a preliminary traffic review indicated that with the proposed new JFHQ, vehicular traffic levels to/from the base from the project are estimated to moderately increase to levels well below those historically experienced at Hanscom AFB during the past decade. As part of the process, the MAARNG will be conducting a more detailed traffic study, the findings of which will be shared with the NPS.

The MAARNG presented the project at a public meeting of Hanscom Area Towns Selectmen committee on September 25, 2008 and anticipates conducting additional public briefings on the status of the project as the design process advances.

As explained in the PNF, there are no archaeological properties on the previously disturbed project site, no cultural resource impacts and the existing viewshed from Minute Man National Historic Park is preserved. However, there are two standing structures (Buildings #1503 and #1507) and their associated storage facilities within the main parcel A slated for rehabilitation. Rehabilitation consists of interior reconfiguring. Unknown at the time of PNF submittal, an architectural building and inventory survey of Hanscom AFB was conducted by Public Archaeological Laboratories of Pawtucket Rhode Island in 2003. The survey indicated that both buildings, constructed in 1955, were not eligible for listing on the National Register. Therefore, we are attaching a revised PNF (dated March 23, 2009) to reflect this new information.

The MAARNG believes that it has, at the request of MHC, complied with Section 36 CFR 800.2(a), (c)(1) and (2), and (d). Therefore, we are requesting your concurrence that the proposed project as outlined in the revised PNF will not have an "adverse" impact on the subject property.

If you have any comments or questions regarding the PNF, please contact me at keith.driscoll@us.army.mil or 508.232.6512.

CONCURRENCE: Brona Simon
4/22/09 BRONA SIMON
STATE HISTORIC
PRESERVATION OFFICER
MASSACHUSETTS
HISTORICAL COMMISSION
RC.44905

Sincerely,

Keith J. Driscoll
NEPA/Cultural Resource Manager
Massachusetts Army National Guard

Cf: LTC Thomas Harrop, Facilities Management Officer, MAARNG
Mr. Shawn Cody, Director of Environmental Affairs, MAARNG
Mr. Don Morris, Environmental Director, Civil Engineering, Hanscom Air Force Base

Enclosures

PNF, Proposed Joint Force Headquarters, Rev. March 23, 2009

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
JOINT FORCE HEADQUARTERS
MASSACHUSETTS NATIONAL GUARD
OFFICE OF THE ADJUTANT GENERAL
50 MAPLE STREET
MILFORD, MA 01757-3604

REPLY TO
ATTENTION OF:

March 23, 2009

Ms. Brona Simon
State Historic Preservation Officer
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, Massachusetts 02125

RE: Proposed Construction of a Joint Force Headquarters, Hanscom Air Force Base (Bedford, Concord, Lexington, and Lincoln). MHC #RC.44905.

Dear Ms. Simon:

The Massachusetts Army National Guard (MAARNG) is planning to construct a new Joint Force Headquarters (JFHQ) building at Hanscom Air Force Base (AFB) located in Bedford Massachusetts. The JFHQ is the National Guard Headquarters for both the Army and Air Force Massachusetts operations and is an Armed Forces Reserve Readiness Center utilized for the command, control, supervision, and administration of the Guard and assigned units.

A review of state/federal sites determined that co-locating the new JFHQ at Hanscom Air Force Base, an active military facility, would enhance the command and response of the Massachusetts National Guard. The new JFHQ will be located in an area with superior access to the major road networks of the state and with ready access to Boston, the flexibility to respond in time of crisis in an expeditious manner, redundant communications and utility infrastructure, fixed and rotary flight lines, and a robust Anti-Terrorism/Force Protection program. The new JFHQ will provide the administrative, classroom training, assembly areas, library, learning center, vault, physical fitness, and storage areas necessary to achieve proficiency in required administrative and training tasks. It will include a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency. The proposed sites for this project are identified as Parcel A, B and C on the attached reference map. The proposed construction ground disturbance would be less than 5 cumulative acres.

A Project Notification Form (PNF) for this project was previously sent to you on August 1, 2009. It provided you with informational and location details on the project. You responded on August 15, 2008 asking us to seek comments of consulting parties for the propose project from Minute Man National Historic Park and the local historical commissions (36 CFR 800.2(c)(3), 800.2(c)(5) and 36 CFR 800.2(d) for seeking the views of the public).

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Mr. George Chuckie Green (THPO, Wampanoag Tribe of Gay Head (Aquinnah) stated that based on past disturbance and the results of the Phase I archeological survey the tribe did not foresee any risk of effects on historic properties that were of concern to the Tribe. However, he wanted to be notified in the event of any discovery of native remains and artifacts. Sherry White (THPO, Stockbridge-Munsee

Tribe) stated that the proposed project does not appear to endanger archaeological sites of interest to the Stockbridge-Munsee tribe. She requested that if anything is found that is determined to be Native American, she asked if she could be informed. Nancy Nelson, Park Superintendent indicated her concern over potential impacts the project might have on Battle Road/Route 2A from possible traffic issues that could affect such an historic property. A letter was sent in response to Ms. Nelson's concerns on January 23, 2009 which explained to her that a preliminary traffic review indicated that with the proposed new JFHQ, vehicular traffic levels to/from the base from the project are estimated to moderately increase to levels well below those historically experienced at Hanscom AFB during the past decade. As part of the process, the MAARNG will be conducting a more detailed traffic study, the findings of which will be shared with the NPS.

The MAARNG presented the project at a public meeting of Hanscom Area Towns Selectmen committee on September 25, 2008 and anticipates conducting additional public briefings on the status of the project as the design process advances.

As explained in the PNF, there are no archaeological properties on the previously disturbed project site, no cultural resource impacts and the existing viewshed from Minute Man National Historic Park is preserved. However, there are two standing structures (Buildings #1503 and #1507) and their associated storage facilities within the main parcel A slated for rehabilitation. Rehabilitation consists of interior reconfiguring. Unknown at the time of PNF submittal, an architectural building and inventory survey of Hanscom AFB was conducted by Public Archaeological Laboratories of Pawtucket Rhode Island in 2003. The survey indicated that both buildings, constructed in 1955, were not eligible for listing on the National Register. Therefore, we are attaching a revised PNF (dated March 23, 2009) to reflect this new information.

The MAARNG believes that it has, at the request of MHC, complied with Section 36 CFR 800.2(a), (c)(1) and (2), and (d). Therefore, we are requesting your concurrence that the proposed project as outlined in the revised PNF will not have an "adverse" impact on the subject property.

If you have any comments or questions regarding the PNF, please contact me at keith.driscoll@us.army.mil or 508.232.6512.

Sincerely,

Keith J. Driscoll
NEPA/Cultural Resource Manager
Massachusetts Army National Guard

Cf: LTC Thomas Harrop, Facilities Management Officer, MAARNG
Mr. Shawn Cody, Director of Environmental Affairs, MAARNG
Mr. Don Morris, Environmental Director, Civil Engineering, Hanscom Air Force Base

Enclosures

PNF, Proposed Joint Force Headquarters, Rev. March 23, 2009

APPENDIX A
MASSACHUSETTS HISTORICAL COMMISSION
220 MORRISSEY BOULEVARD
BOSTON, MASS. 02125
617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM (revised March 23, 2009)

Project Name: Proposed New Joint Force Headquarters
Location / Address: Greiner/Randolph Road
City / Town: Hanscom Air Force Base (Bedford, Concord, Lexington and Lincoln MA)
Project Proponent Name: Massachusetts Army National Guard
Address: JFHQ-ENV, 50 Maple St.
City/Town/Zip/Telephone: Milford, MA 01757 508.233.6512

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name	**Type of License or funding (specify)**
National Guard Bureau	Federal funding (Department of Defense)
Department of Defense	Property Lease

Project Description (narrative):
The Joint Force Headquarters (JFHQ) is the National Guard Headquarters for both the Army and Air Force Massachusetts operations. It is an Armed Forces Reserve Readiness Center utilized for the command, control, supervision, and administration of the Guard and assigned units.

The current Massachusetts JFHQ is located in Milford MA and the main facility consists of a 99,000 SF three story office building with a 98,000 SF administrative/warehouse attached to it, as part of a larger state complex. The majority of available land on the site has been fully developed and is situated in a mixed-use residential and industrial area. The complex was originally constructed in the 1980's as a manufacturing facility before being acquired by the Massachusetts National Guard and it is currently in need of major modifications to the mechanical and HVAC systems, and the exterior envelope. In addition, the facility has several major operational inefficiencies including lack of: robust anti-terrorism/force protection (AT/FP) features; superior access to the regional highway network and Boston; access to soldier/airmen support services; access to adequate airhead or helipad facilities; and, must be able to operate for sustained periods of time in a civilian military emergency which may involve loss of critical civilian utility infrastructure (electrical, water, sewer, communications, etc.)

A review of state/federal sites in conjunction with the above criteria determined that co-locating the new JFHQ at Hanscom Air Force Base, an active military facility, would enhance the command and response of the Massachusetts National Guard. The new JFHQ will be located in an area with superior access to the major road networks of the state and with ready access to Boston, the flexibility to respond in time of crisis in an expeditious manner, redundant communications and utility infrastructure, fixed and rotary flight lines, and a robust AT/FP program.

The new JFHQ will provide the administrative, classroom training, assembly areas, library, learning center, vault, physical fitness, and storage areas necessary to achieve proficiency in required

administrative and training tasks. It will include a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency.

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.
No demolition is currently planned.

Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation.

There are two standing structures (Buildings #1503 and #1507, Photo 2) within the main parcel A slated for interior rehabilitation. No exterior renovations are currently planned.

Does the project include new construction? If so, describe (attach plans and elevations if necessary).
The project proposes the phased new construction of a specially designed JFHQ (approximately 200,000 SF multi-story building) of permanent masonry type construction with appropriate parking and circulation areas and associated appurtenances.

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.
There are no known archaeological properties within the three parcels (A, B and C) contemplated for development as shown in Figures 1 and 2. As part of cultural resources management work at Hanscom Air Force Base, a Phase I archaeological survey was conducted of previously identified areas on the base determined to have a moderate to high potential for archaeological resources (Abell, et. al. 1998). One of the areas tested (fig 6.16 Area 18) encompasses Parcel A, the planned location of the new Massachusetts National Guard JHFQ. A total of 71 shovel test pits (STPs) were excavated in the area. Five of the STPs with intact soils contained historic artifacts that dated to the second half of the nineteenth century or the first half of the twentieth century. The report concluded that "the artifacts from Area 18 are not significant or diagnostic, were not found in concentrated numbers, are not temporally similar to one another, nor were found in association with archaeological features such as foundations, cellar holes, or wells"(Abell, et al 1998:6-28). In addition, the surrounding STPs were negative for cultural resources. The recovered artifacts from the intact soil horizons were attributed to field trash.

Buildings 1503 and 1507 (Photo 2) and its associated storage facilities, constructed in 1955, are located within Parcel A. An architectural building and inventory survey of Hanscom AFB was conducted by PAL in 2003. The survey indicated that both buildings were not eligible for listing on the National Register Historic Places.

The remaining two parcels planned for development, Parcel B and Parcel C, were not tested as part of the Phase I survey. Currently, Parcel B primarily consists of a parking lot and Parcel C contains a soccer field and the remnants of a tower and associated parking area. The presence of these modern intrusions likely preclude the possibility that intact archaeological resources would be present within these two parcels.

Abell, Julie, Sean Fitzwell and Petar Glumac, 1998, Phase I Archaeological Survey, Hanscom Air Force Base, Massachusetts. Prepared for the Air Force Center for Environmental Excellence/ECR, Brooks, AFB, Texas and Hanscom Air Force Base, Hanscom, AFB, Massachusetts. Prepared by Parsons Engineering Science, Inc., Fairfax, Virginia.

Doherty, Joanna M., Matthew A. Kierstead, Christine M. Longiaru, Jeffrey D. Emidy, and Virginia H. Adams, 2003, *Architectural Building and Inventory Survey, Hanscom Air Force Base, Volume I, Bedford,*

APPENDIX A (continued)

Concord, Lexington, Lincoln and various off site locations, Massachusetts, Contract No. DACW33-97-D-0003. PAL Report No. 1209. Submitted to U.S. Army Corps of Engineers, New England District, Concord, MA.

Doherty, Joanna M., Matthew A. Kierstead, Christine M. Longiaru, Jeffrey D. Emidy, and Virginia H. Adams, 2003, *Architectural Building and Inventory Survey, Hanscom Air Force Base, Volume II, Bedford, Concord, Lexington, Lincoln and various off site locations, Massachusetts, Contract No. DACW33-97-D-0003.* PAL Report No. 1209. Submitted to U.S. Army Corps of Engineers, New England District, Concord, MA.

What is the total acreage of the project area?

Woodland	less than 5 acres	Productive Resources:	
Wetland	_____ acres	Agriculture	_____ acres
Floodplain	_____ acres	Forestry	_____ acres
Open space	_____ acres	Mining/Extraction	_____ acres
Developed	_____ acres	Total Project Acreage	less than 5 acres

What is the acreage of the proposed new construction? less than 5 acres

What is the present land use of the project area?
The present land use of the proposed project area is an active military base. The proposed project site is currently a wooded lot (Photograph 1). Adjacent facilities include military (Photograph 2) and civilian buildings, storage facilities, parking and circulation areas.

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.
A site locus map (Figure 1) and parcel location plan (Figure 2) are included to expedite project review.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of Person submitting this form: _____ Date: 3.23.09

Name: Keith J. Driscoll, NEPA/Cultural Resources Manager

Address: MAARNG, JFHQ-ENV, 50 Maple Street

City/Town/Zip: Milford, MA, 01757

Telephone: 508.233.6512

REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.



Figure 1. Site Locus

Date: July 2008

No warranty is made by the Massachusetts National Guard as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data. This map is a "living document," in that it is intended to change as new data become available and are incorporated into the Enterprise GIS database.

Source: USGS

URS
260 FRANKLIN ST., STE 300
BOSTON, MASSACHUSETTS
(617) 542-4244

J:\10160456_EA_ENF_JFHQ\CADD\GIS\USGS Topo Fig1a.mxd RPowell

HANSCOM AFB
MAARNG LAND ACQUISITION

MASSACHUSETTS ARMY NATIONAL GUARD
JOINT FORCE HEADQUARTERS
CONSTRUCTION AND FACILITIES MAINTENANCE OFFICE

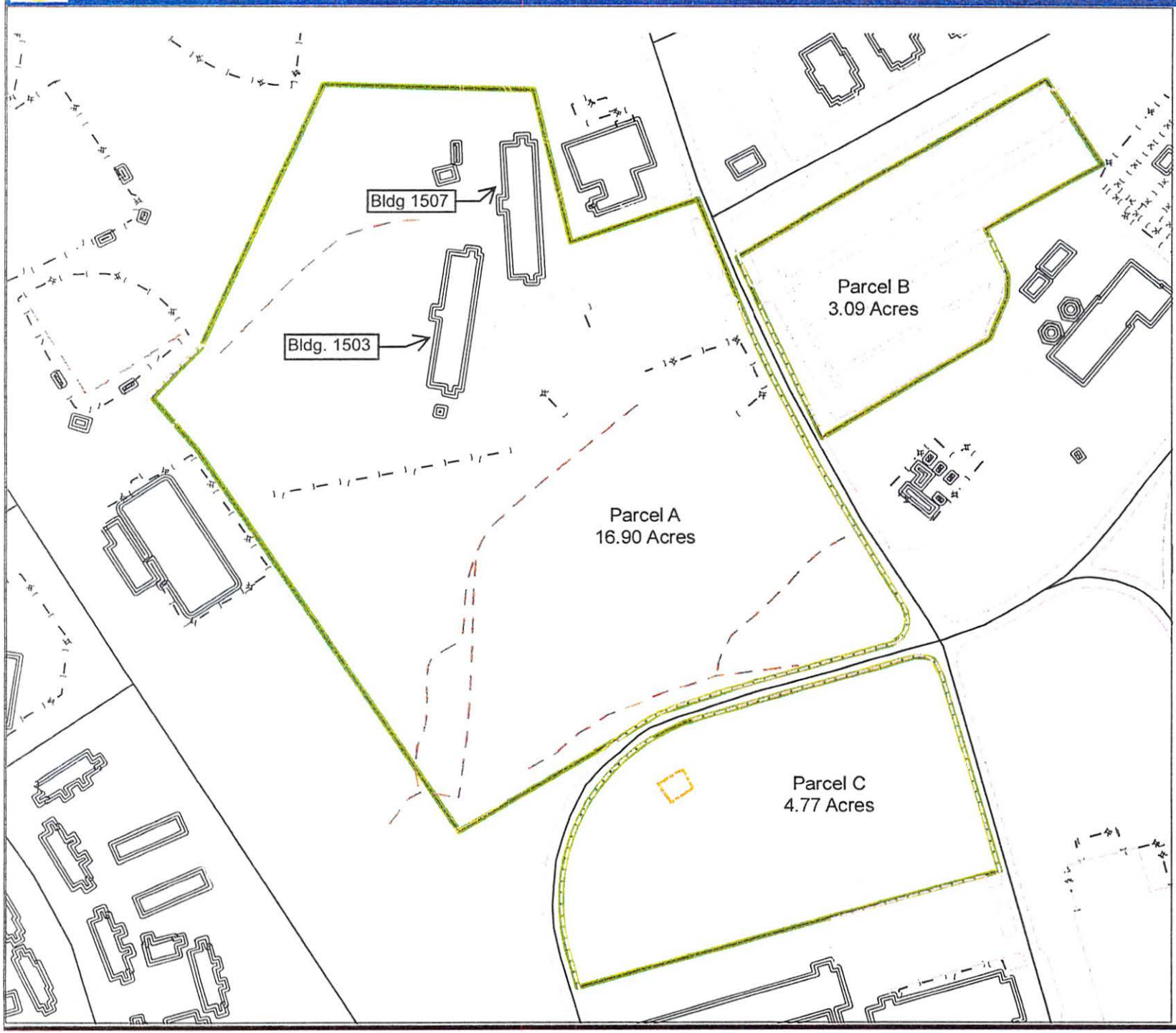


Figure 2.
Parcel Locations

MAARNG Land Acquisition
Buildings/Structures
Road
Demolished & Abandoned Buildings
Parking Areas
Bridges
Sidewalk
Trails
Fence

0 25 50 100 150 200 250
Feet

0 10 20 40 60 80 100
Meters

Massachusetts Mainland State Plane NAD 83
1:2500

The information on this map is for planning purposes only. This information is not adequate for legal boundary definition, regulatory interpretation, or post-deed analysis.

William A. Cooney
GIS Specialist
Commonwealth of Massachusetts
Military Division, Office of the State Quartermaster

13 May 2008

URS

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
MAARNG	Hanscom AFB, MA	10160456

Photo No:	Date:
1	24 Jul 08

Location:

Parcel A

Description:

Existing wooded portion of Parcel A, site of proposed JFHQ (facing northwest).



Photo No.	Date:
2	24 Jul 08

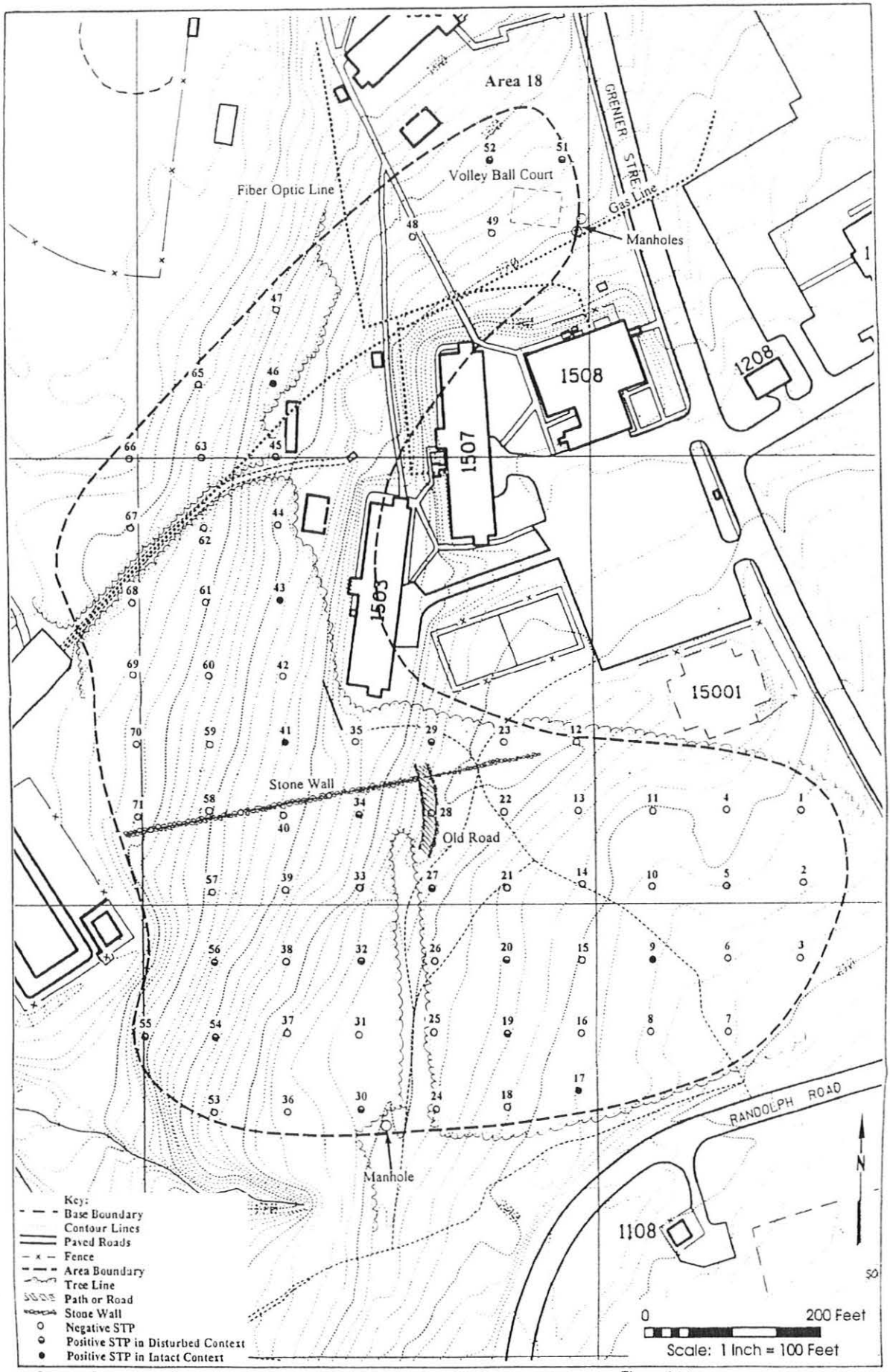
Location:

Parcel A, Building 1503 and 1507

Description:

Existing parking area (foreground) and Building 1503 (left) and Building 1507 (right)





Source: Parsons Engineering Science

Figure 6.16
Area 18

Hanscom Air Force Base

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Appendix C

Traffic Impact Study

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Traffic Impact Study

Replacement Joint Force Headquarters

Hanscom Air Force Base, Massachusetts

prepared for:

Massachusetts Army National Guard

50 Maple Street

Milford, MA 01757

19 November 2009

prepared by:

URS Corporation
260 Franklin Street, Suite 300
Boston, MA 02110

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EXECUTIVE SUMMARY

URS Corporation prepared this Traffic Impact Study to identify the potential traffic impacts associated with the proposed relocation of the Joint Forces Headquarters (JFHQ) from the existing location in Milford, Massachusetts to Hanscom Air Force Base (AFB), Massachusetts. The JFHQ is the Massachusetts National Guard (MANG) headquarters for both the Massachusetts Air National Guard (MAANG) and Massachusetts Army National Guard (MAARNG), and is an Armed Forces Reserve Readiness Center utilized for the command, control supervision and administration of the Guard and assigned units for all of Massachusetts.

The proposed JFHQ will provide the administrative, classroom training, assembly areas, library, learning center, vault, physical fitness, and storage areas necessary to achieve proficiency in required administrative and training tasks. It will include a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency, and house the US Property & Fiscal Office (USPF&O) administrative functions. The project proposes the phased new construction of a specially designed JFHQ (approximately 200,000 SF multi-story building) of permanent masonry type construction with appropriate parking and circulation areas and associated appurtenances. The project will include relocation of approximately 400 personnel and the building constructed in two phases. The entire facility is scheduled to be operational and open by the start of 2014.

The Institute of Transportation Engineers (ITE) Trip Generation Manual estimates that land use code 710 (general office building) will typically generate 3.32 vehicle trips for each personnel during an average weekday. Based upon a series of actual traffic counts and personnel data collected at the existing JFHQ, the proposed facility is forecasted to generate 3.25 vehicle trips for each personnel during an average weekday, 9% lower than the comparable ITE rates.

Discussions with representatives of Hanscom AFB and the towns of Bedford, Concord, Lexington and Lincoln identified six key intersections in the vicinity of the proposed relocation site to analyze the potential traffic impacts the project may have on the adjacent roadway network. The six key intersections studied are:

A. Route 2A (Lexington Rd.)/Brooks Rd.
B. Route 2A (Lexington Rd.)/Bedford Rd.
C. Route 2A (Lexington Rd.)/Hanscom Dr.
D. Hartwell Ave./Route 4/225
E. Hartwell Ave./Maguire Rd.
F. Hartwell Ave./Wood St.

The MANG is coordinating with MassRIDES to implement a series of travel demand management (TDM) measures; therefore a 2% trip reduction was applied to the site generated trips.

The evaluation indicates that the proposed JFHQ relocation can operate without adverse impacts on existing traffic operating conditions on the adjacent roadway network. The six key intersections identified above will maintain operating conditions relative to the 2014 No-Build operating condition, therefore, no mitigation measures are recommended beyond TDM measures noted herein.

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IV. Intersection Capacity Analysis 8

V. Methodology and Analysis 10

VI. Summary and Conclusions 24

APPENDIX

MassRIDES Report

Count Data

- Automatic Traffic Recorder
- Turning Movement Counts

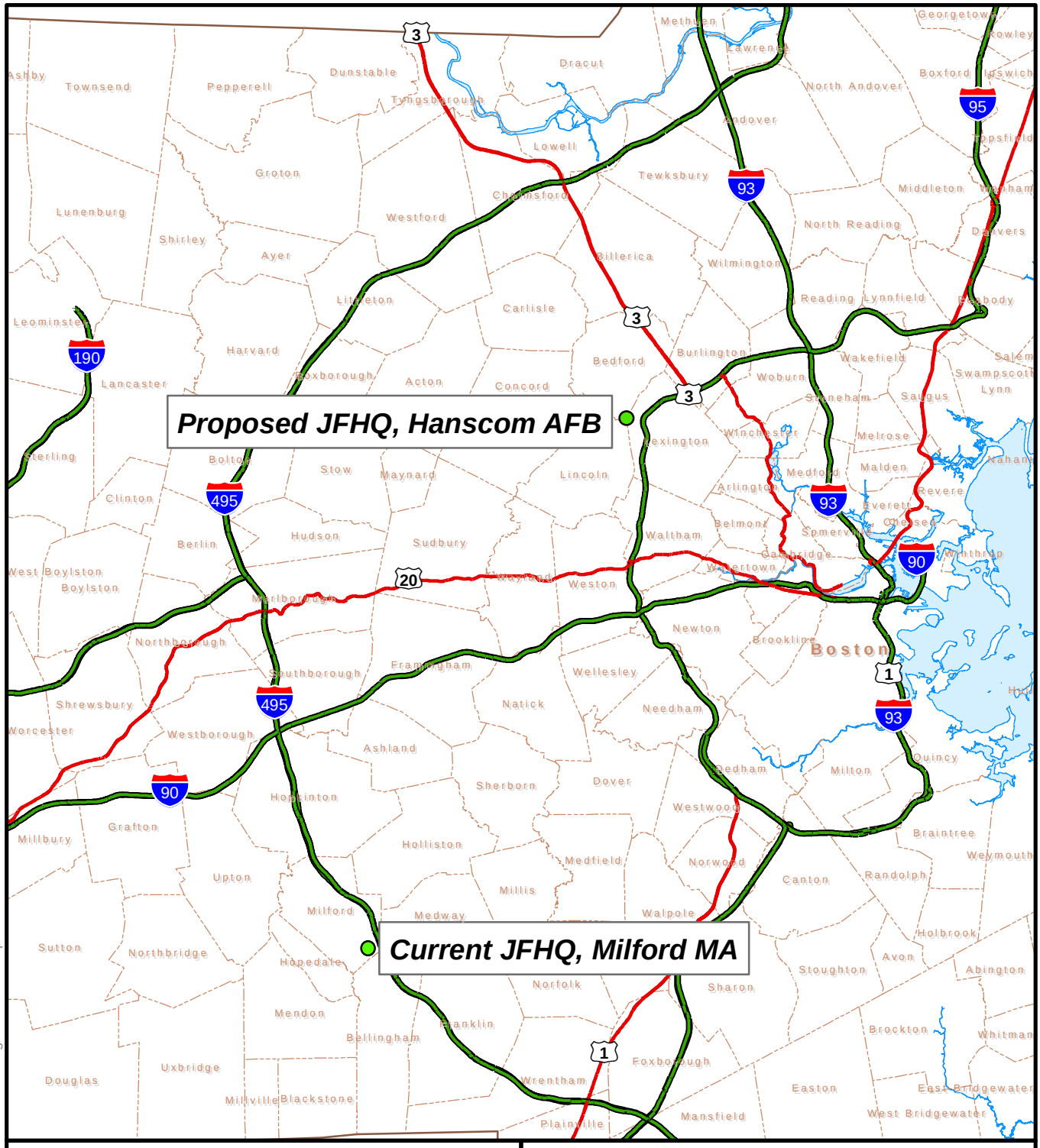
I. INTRODUCTION

URS Corporation (URS) was retained by the Massachusetts National Guard (MANG), in accordance with contract SQM #06-29 to evaluate the potential traffic impacts associated with the proposed relocation of the existing Joint Force Headquarters (JFHQ) in Milford, Massachusetts to Hanscom Air Force Base (AFB), Massachusetts. The JFHQ is the MANG[1] headquarters for both the Massachusetts Air National Guard (MAANG) and Massachusetts Army National Guard (MAARNG), and is an Armed Forces Reserve Readiness Center utilized for the command, control supervision and administration of the Guard and assigned units for all of Massachusetts. As shown in Figure 1, Location Map, the proposed JFHQ relocation site is approximately 40 miles northeast of the existing site (50 Maple Street, Milford) via public streets and highways.

The proposed JFHQ will provide the administrative, classroom training, assembly areas, library, learning center, vault, physical fitness, and storage areas necessary to achieve proficiency in required administrative and training tasks. It will include a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency, and house the US Property & Fiscal Office (USPF&O) administrative functions. The project proposes the phased new construction of a specially designed JFHQ (approximately 200,000 SF multi-story building) of permanent masonry type construction with appropriate parking and circulation areas and associated appurtenances. The project will include relocation of approximately 400 personnel and the building constructed in two phases.

The MANG plans for the relocation to be completed in sequential phases by the year 2014 and this study identifies the existing year (2009) and projected year (2014) transportation conditions and impacts. The existing JFHQ, USPF&O and the Department of Corrections, are all co-located at a former Data General manufacturing parcel owned by the Commonwealth of Massachusetts. This study only examines the traffic impacts associated with the relocation of the JFHQ and USPF&O administrative functions at Hanscom AFB. It is understood that the Commonwealth will consider relocating other state functions to the Milford site after it is vacated.

[1] MANG is used hereafter in this document to refer to the collective entity comprised of the Massachusetts National Guard, Massachusetts Air National Guard and the Massachusetts Army National Guard.



Source: MassGIS

FIGURE 1
SITE LOCATION MAP

PROPOSED JFHQ
HANSCOM AFB

URS
260 FRANKLIN STREET, SUITE 300
BOSTON, MASSACHUSETTS
(617) 542-4244

Project No.	NOVEMBER 2009

File: J:\10160456_EA_ENF_JFHQ\CADD\GIS\Traffic\Fig 1 Location Map.mxd

II. INSTALLATION ACCESS AND STUDY LOCATIONS

The proposed JFHQ site is located on Hanscom AFB ("the Base") and access by personnel, visitors, vendors and deliveries to the installation is restricted to three primary access gates (the fourth access gate is currently closed). Personnel with the appropriate identification can use any open access gate; while visitors, vendors and deliveries must prearrange admittance and are restricted to the Vandenburg Gate. As will be described in Section III of this report, the primary routes to the access gates are via I-95/Route 128 and Hartwell Ave., and Route 2A (Lexington Rd.). The access gates are listed below and shown in Figure 2, Traffic Count Locations.

Access Gates:
Gate 1. Hartwell (via Hartwell Ave./Wood St.)
Gate 2. Schilling Circle (via Wood St.)
Gate 3. Marrett (via Route 2A) – currently closed
Gate 4. Vandenburg (via Hanscom Dr./Route 2A)

Discussions with representatives of Hanscom AFB and the towns of Bedford, Concord, Lexington and Lincoln, identified six key intersections in the vicinity of the proposed relocation site to analyze the potential traffic impacts the project may have on the adjacent roadway network. These key intersections are listed below and also shown in Figure 2. Intersection turning movement counts for the Hanscom AFB area were conducted on a Wednesday in July 2009.

Key Intersections:
A. Route 2A (Lexington Rd.)/Brooks Rd.
B. Route 2A (Lexington Rd.)/Bedford Rd.
C. Route 2A (Lexington Rd.)/Hanscom Dr.
D. Hartwell Ave./Route 4/225
E. Hartwell Ave./Maguire Rd.
F. Hartwell Ave./Wood St.

Automatic Traffic Recorders (ATR) were located on the roadway network at key locations identified based upon discussions with Hanscom AFB and the four surrounding towns. The ATR counts for the Hanscom AFB area were conducted on a Wednesday in July 2009 and the Milford counts were conducted on a Thursday in October 2009.

ATR Locations:
1. Route 2A (Lexington Rd.) – between Old Massachusetts Ave. and Massachusetts Ave.
2. Concord Turnpike Bypass Rd. – between Route 2 and Route 2A (Lexington Rd.)
3. Route 2A (Lexington Rd.). – Old Bedford Rd. and Concord Turnpike Bypass Rd.
4. Route 4/225 – west of Hartwell Ave.
5. Hanscom Drive – north of Route 2A
6. Vandenburg Gate – immediately west of access gate
7. Hartwell Gate - east of Hamilton St (immediately west of access gate)
8. Schilling Circle Gate - east of Bestic St (immediately west of access gate)
9. Hartwell Ave. – north of Maguire Rd.
10. Virginia Road – south of Fuller St
11. JFHQ main access driveway (Milford)

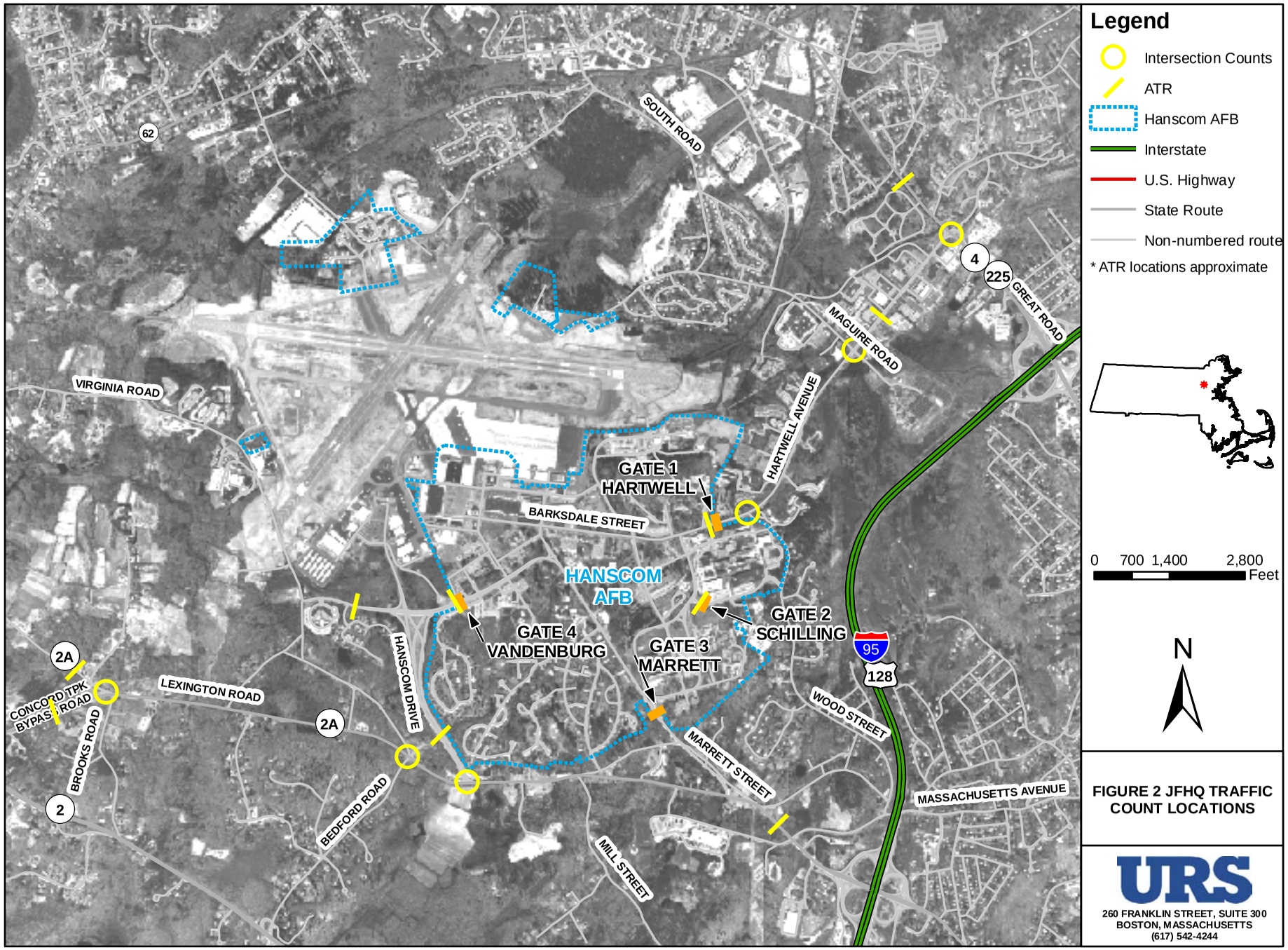


FIGURE 2 JFHQ TRAFFIC COUNT LOCATIONS

URS
260 FRANKLIN STREET, SUITE 300
BOSTON, MASSACHUSETTS
(617) 542-4244

File: J:\10160456_EA_ENF_JFHQ\CADD\GIS\Traffic\Traffic Map Basic.mxd

12. JFHQ Air Force maintenance shop access driveway (Milford)
13. JFHQ USPF&O warehouse access driveway (Milford)

The study evaluates the peak-hour traffic impacts on the above listed intersections and the area roadway network.

III. EXISTING CONDITIONS

The existing roadway network in the study area includes portions of the Towns of Bedford, Concord, Lexington, and Lincoln, as well as Hanscom AFB. I-95 in combination with Route 4/225 and Hartwell Ave. in the north, and Route 2A and Hanscom Dr. in the south, function as collector roadways and are important transportation links for travel between the state highways in the study area and Hanscom AFB. The information contained in this report was collected through a visual review of the study area, intersections, roadways and a review of prior studies[2].

Setting

Hanscom AFB is located approximately 20 miles northwest of Boston just outside the I-95/Route 128 circumferential expressway, just west of a major light industrial and office park corridor along Hartwell Avenue. The Base also is located in portions of three suburban residential areas, Bedford, Lexington and Lincoln. Adjacent to the Base is the Hanscom Field airport of the Massachusetts Port Authority (Massport) as well as the Minute Man National Historical Park to the south.

Vehicular congestion at the Base occurs primarily in the peak morning period as workers arrive at three operating gates (a fourth gate is closed) from the local and regional highway system and during the peak afternoon period when workers depart. Traffic congestion has abated somewhat from the peak 1998 condition, as Base population and number of commuters have reduced by a third since then[3]. 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 I-95/Route 128 circumferential highway that rings the Boston area and connects to other radial expressways. These routes also are used by commuters from the four area towns and others accessing the many industrial and office parks in the area. While Hanscom AFB is perhaps the largest concentration of employment in the area, it is not the only contributor to traffic congestion in this highly automobile dependent, low density suburban employment and residential area[4].

Highway Network

I-95 (Route 128) - typically an 8-lane limited access interstate highway in the vicinity of Hanscom AFB, provides regional circumferential access to Route 3 and I-93 to the north and Route 2, I-90, Route 9, Route 24 and Route 3 to the south. Nearby interchanges serving Hanscom AFB include Interchange 31 (State Routes 4/225) to the north and Interchange 30 (State Route 2A) to the south. Both provide access from the limited access interstate highway to the arterial roadways in the study area that serve Hanscom AFB and both are un-signalized full cloverleaf interchanges. It presently experiences significant traffic congestion during the weekday AM and PM and weekend peak periods.

[2] Environmental Assessment prepared for the Relocation Acquisition Management Personnel and Renovate Acquisition Management Facility (Building 1614) prepared by Fay, Spofford & Thorndike, Inc., July 2000.
[3] General Plan Update, Hanscom Air Force Base, MA, prepared by Parsons Brinckerhoff Quade & Douglas, Inc. November 2003.
[4] Ibid.

Route 62 - in the northern portion of the study area, is an arterial roadway used for east-west travel between Middlesex Turnpike in Burlington, Route 4/225 in the vicinity of Hanscom AFB, Route 2 in Concord and points west.

Routes 4/225 – in the northern portion of the study area, is known as Bedford Street in Lexington and Great Road in Bedford. Route 4/225 is an arterial highway used for east-west travel in the study area through the Bedford to the I-95 Interchange 31 in Lexington and features a posted speed limit of 40 MPH. A mix of residential (generally to the north) and industrial land uses (generally to the south) are found adjacent to the portion of Route 4/225 within the study area. Route 4/225 provides two undivided travel lanes in each direction between its interchanges with I-95 and Hartwell Avenue and Yield signs control all ramp merges to Routes 4/225 at its interchange with I-95. Route 4/225 is on a viaduct over I-95 and median–divided only at the interchange. West of Hartwell Avenue, Route 4/225 transitions back to a typical cross-section with one lane in each direction.

Route 4/225 provides access to and from Hanscom AFB through a signalized intersection with Hartwell Ave. in Lexington. At the signalized intersection of Hartwell Ave. and Route 4/225, westbound traffic turning left to southbound Hartwell Ave. uses a two-lane "jug-handle" located on the north side of the intersection. Two approach lanes are provided on Routes 4/225 in each direction, while the Hartwell Ave. approach has an exclusive left-turn lane and a channelized right-turn lane. This intersection experiences significant congestion during the peak hours and has been the subject of a series of studies exploring alternative signal and roadway geometric improvements, including a flyover ramp from Route 4/225 to Hartwell Avenue[5].

Hartwell Ave. - travels south from Route 4/225 in Lexington to Barksdale Street on Hanscom AFB, is wide enough to allow vehicles to bypass left or right turning vehicles, but is generally striped as a single lane in each direction. Hartwell Ave. also provides access to industrial and commercial sites located in this portion of the study area and the areas of Lexington served by Wood Street. The posted speed limit on Hartwell Ave. is 40 MPH. and a signalized pedestrian crosswalk for the Minuteman Bikeway, which crosses Hartwell Ave. is located immediately north of the Hartwell Ave./Maguire Rd. intersection

Hartwell Ave./Maguire Rd. – is an un-signalized intersection that was also analyzed. Presently, it has a high volume of southbound right turns and Hartwell Ave. northbound left turns during the weekday AM and PM peak hours. This intersection is police-controlled during the morning and evening peak periods. This intersection experiences significant congestion during the peak hours and has been the subject of a series of studies exploring alternative signal and roadway geometric improvements.

Hartwell Ave/Wood St – is an un-signalized intersection that was also analyzed. The Wood Street northbound approach is controlled by a stop sign. The westbound Hartwell Avenue approach has one through travel lane and an exclusive left-turn lane onto Wood Street. The eastbound approach operates as two through travel lanes. The Wood Street approach is marked as one travel lane but is wide enough to allow separate queuing for left- and right-turning vehicles. The posted speed limit on Wood St. is 35 MPH. This intersection also experiences

[5] Hartwell Avenue Traffic Study Technical Memorandum, Howard/Stein-Hudson Associates, December 2008.

significant congestion during the peak hours and has been the subject of a series of studies exploring alternative signal and roadway geometric improvements.

Route 2A (Lexington Rd.) - in the southern portion of the study area, provides east-west access through the study area, from Route 2 in the western portion of Lincoln to I-95 Interchange 30 in Lexington, where it is known as Marrett Street. The posted speed limit is generally 40 MPH. At its interchange with I-95, Route 2A is median divided and has two lanes in each direction. Immediately west of I-95, Route 2A narrows to a single lane westbound, and because of significant traffic demand volumes during the weekday AM peak hour, congestion is experienced in this area.

Route 2A, via Hanscom Dr., serves as the southern access to the civil aviation area (Massport/Shuttle America) of Hanscom Field, Hanscom AFB, and office developments on Old Virginia Road in Concord. Land use adjacent to Route 2A in this area includes residential, parklands, and commercial development. Of particular importance is the fact that Route 2A provides access to and bisects Minute Man Historic National Park and other areas of historic significance. Because it traverses an historical area, traffic-related modifications to Route 2A's physical characteristics are highly scrutinized. The National Park Service is updating the park's General Management Plan and envisions that Route 2A be recognized first and foremost as an historic resource, sacred ground and scenic by-way, and secondarily as a transportation corridor[6].

Route 2A/Cambridge Turnpike Bypass Rd. – this intersection just west of Brooks Road is controlled by flashing warning signals. Route 2A traffic has the right-of-way, while the Cambridge Turnpike Bypass Rd. southbound approach to the intersection is stop-controlled with a flashing red signal and Brooks Rd. approach is controlled by a stop sign. Except for the eastbound Lexington Road right turn movement to westbound Cambridge Turnpike Bypass Rd. which is separated by a channelized island, each approach to the intersection has one travel lane.

Route 2A/Hanscom Dr. – this intersection features police control during the weekday PM peak period. Hanscom Dr. has two approach lanes to Route 2A, a channelized right-turn lane controlled by a stop-sign and a left-turn only lane. The Route 2A eastbound approach has an exclusive left to Hanscom Drive and a through lane. This intersection is also controlled by flashing beacons; flashing red (stop control) for the Hanscom Dr. approach and flashing yellow for the Route 2A approaches. The westbound Route 2A approach is marked as one through travel lane with a channelized right-turn lane.

Route 2A/Bedford Rd. – is an un-signalized intersection with one lane provided on each leg of the Route 2A approaches and the northbound Bedford Road approach is stop sign controlled.

Hanscom Dr. provides access from Route 2A to Hanscom AFB and Hanscom Field via Old Bedford Road to Vandenberg Drive and Eglin Street. At the un-signalized Hanscom Dr./Old Bedford Road intersection, northbound right-turn movements from Hanscom Dr. to Old Bedford Rd. are made through a channelized turning bay. This represents a major movement during the weekday AM peak hour as traffic travels to the Base. As it extends into Hanscom AFB, Old Bedford Rd. becomes Vandenberg Dr. During the weekday PM peak hour, westbound left-turn

[6] Transportation Planning for General Management Plan, Minute Man National Historical Park, January 11, 2009.

movements to southbound Hanscom Dr. are made at an exclusive left-turn lane at the Hansom Dr./Old Bedford Rd. intersection.

Existing Transit Service

Hartwell Avenue is a typical suburban light industrial/office park corridor where parking is plentiful and nearly all travel is by private automobile. No transit services directly serve the corridor, although two MBTA bus routes travel near the corridor. The Route 62 bus travels along Route 4/225 in the northern end of the study area and the Route 76 bus serves MIT Lincoln Laboratories, located on Wood Street in the southern end of the study area. The relocated JFHQ would be approximately ½ mile from the MBTA Route 76 bus stop at the Schilling Circle/Wood Road intersection. The bus operates on a 30 minute rush hour frequency to Alewife Station (northern terminus of the Red Line) to/from Hanscom field.

Safety Analysis

Crash data for the key intersections was obtained from the MASSHIGHWAY database[7]. The most recent three-year data available covered the period from 2005 to 2007 and the results by intersection are noted below.

Hartwell Ave./Route 4/225 - A total of 2 accidents were reported in 2005, 8 in 2006, and 14 in 2007 for an average of 8 per year. Review of available accident reports indicate 12 rear-end collisions, 9 angle, 2 side-swipe, and 1 not reported.

Hartwell Ave./Wood St. - A total of 3 accidents were reported in 2005, 1 in 2006, and 0 in 2007, for an average of 1 per year. Review of available accident reports indicates that the majority of these accidents involved angle collisions due to the physical orientation of the intersection.

Hartwell Ave./Maguire Rd. - A total of 9 accidents were reported in 2005, 3 in 2006 and 0 in 2007 for an average of 4 per year. Review of available accident reports indicates that the majority of these accidents involved angle collisions at the right-turn lanes.

Route 2A/Hanscom Dr. - A total of 5 accidents were reported in 2005, 0 in 2006, and 3 in 2007, for an average of 3 per year. Review of available accident reports indicates that the majority of these accidents involved rear-end collisions and angle collisions. The most common collision involved vehicles entering and exiting Hanscom Drive where vehicles use the right-turn lanes.

Route 2A/Bedford Rd. - A total of 5 accidents were reported to have occurred in 2005, 1 in 2006 and 3 in 2007, for an average of 3 per year. Review of available accident reports indicates that the majority of these accidents involved rear-end collisions.

Route 2A/Cambridge Turnpike Bypass Rd./Brooks Rd. - 1 accident was reported to have occurred in 2005, 2 in 2006 and 3 in 2007, for an average of 1 per year. Review of available accident reports indicates that the majority of these accidents involved side-swipe and angle impact from the right-turn lane.

[7] MASSHIGHWAY Support_Information_1-09, Crash Data Database.

IV. INTERSECTION CAPACITY ANALYSIS

To determine the operational conditions of the area roadway network, the controlling features of the study intersections were analyzed and determined the existing, No-build, and build peak hour operating conditions by using methodologies in the Highway Capacity Manual (HCM) 2000, published by the Transportation Research Board (TRB). To facilitate computer calculation, Highway Capacity Software for the intersections and site driveways was used.

The methodology used for signalized intersections determines the capacity and Level of Service (LOS) of intersection approaches and the LOS of the intersection as a whole. Together, the capacity and LOS represent the operating conditions of the intersection.

The HCM states that capacity for a signalized intersection, defined for each approach, is the maximum rate of vehicle flow through the intersection given specific operating and geometric conditions. The number of vehicles passing through the intersection is divided by the capacity of the movement to determine the volume to capacity ratio (V/C). A V/C ratio of less than 1.0 indicates that the movement is operating at less than capacity. A composite V/C ratio for the sum of the critical movements provides an overall capacity ratio for the intersection.

The LOS for signalized intersections is defined in terms of the average stopped delay per vehicle for 15-minutes. Levels of service and their associated delays are summarized below:

LOS	Stopped Delay Per Vehicle (Seconds)
A	≤ 10.0
B	> 10 to 20
C	> 20 to 35
D	> 35 to 55
E	> 55 to 80
F	> 80

Levels of service A through D are generally considered desirable for the peak traffic hours. LOS E and LOS F roadway or intersection operations are typically regarded as ‘undesirable’ peak hour levels of service. Thus, LOS D has typically become a nationally accepted threshold between desirable and undesirable peak hour traffic operations.

The capacity analysis of an un-signalized intersection determines an average total delay. This delay is from the time a vehicle stops at the end of the queue until the vehicle departs from the stop bar. A summary of the level of service criteria for un-signalized intersections is depicted below:

LOS	Stopped Delay Per Vehicle (Seconds)
A	≤ 10.0
B	> 10 to 15
C	> 15 to 25
D	> 25 to 35
E	> 35 to 50
F	> 50

The level of service criteria for un-signalized intersections is not directly comparable to that of a signalized intersection. This is due to different driver expectations for the levels of performance of different types of intersections. The LOS for each intersection should be based on the appropriate above mentioned criteria.

V. METHODOLOGY AND ANALYSIS

URS implemented a five-step methodology outlined below to assess the potential traffic impact of the proposed relocation.

Step One: Determine the existing traffic volumes and traffic operating conditions for key intersections.

Step Two: Project the existing traffic volumes (from Step One) and include any approved or pending developments in the area to create No-build traffic volumes and traffic operating conditions for the key intersections.

Step Three: Determine the traffic volumes to be generated by the proposed relocation and distribute and assign traffic throughout the study area roadway network.

Step Four: Combine the No-build traffic volumes (Step Two) with the assigned proposed traffic (Step Three) to establish Build traffic volumes, determine traffic operating conditions and identify mitigation of potential impacts.

Step Five: Investigate possible safety impacts within the area roadway network.

Existing Traffic Volumes

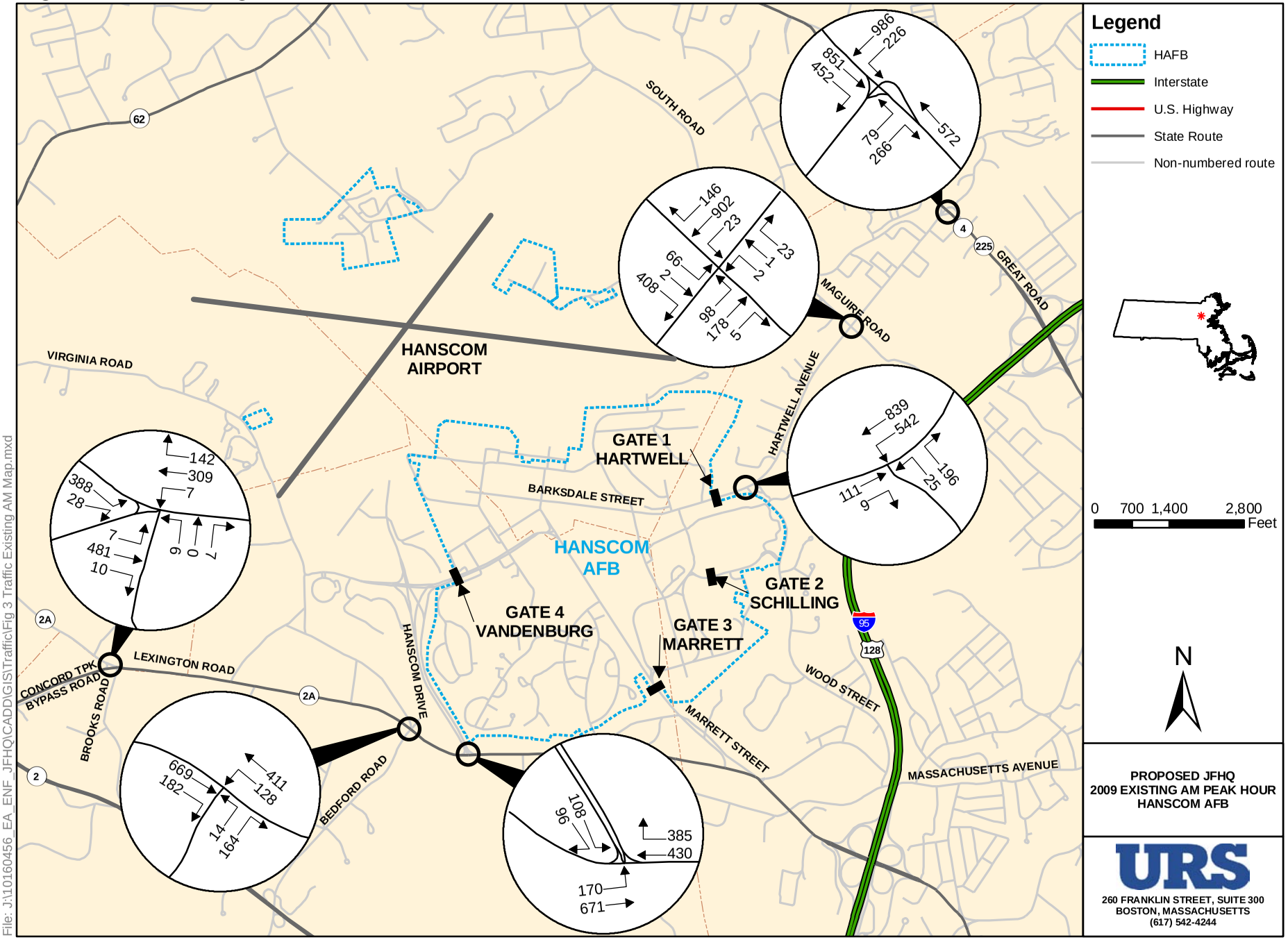
Manual turning-movement and vehicle classification counts were conducted on Wednesday July 1, 2009 to determine the peak-hour traffic volumes, at the intersection locations previously identified in Figure 2. These counts were conducted during the morning (6:00 AM – 9:30 AM) and evening (3:00 PM – 6:00 PM) peak periods, the peak vehicular activity times for the existing JFHQ. In addition, Automatic Traffic Recorders (ATRs) were installed on July 1, 2009 along the adjacent roadway network in and around Hanscom AFB, and on Thursday, October 8, 2009 at the existing JFHQ in Milford, MA to collect hourly vehicle count data for a 24-hour period.

The turning movement counts and ATR data were assembled to develop Peak Hour traffic volumes for the existing 2009 condition for the AM peak hour as shown in Figure 3, and the PM peak hour as shown in Figure 4, for the Hanscom AFB area roadway network.

The count data indicates that Hanscom AFB AM peak hour occurs at 7–8 AM and the PM peak hour at 4-5 PM based on the data collected at the three open access gates. Gate 1, Hartwell, connects to Hartwell Avenue and provides access/egress to Routes 4/225 and Route128/I-95 and is utilized by approximately 55-60% of the total Hanscom AFB vehicular traffic. Gate 2, Schilling Circle, provides access to the MIT Lincoln Laboratories, the southern portion of the base and is used by approximately 10-15% of Hanscom AFB traffic. Gate 3, Marrett, provide access/egress to Marrett Street and is currently closed. Gate 4, Vandenburg, which provides access/egress to Hanscom Drive/Route 2A, is the gate used for all visitors and commercial vehicles and is used by approximately 30-35% of Hanscom AFB traffic.

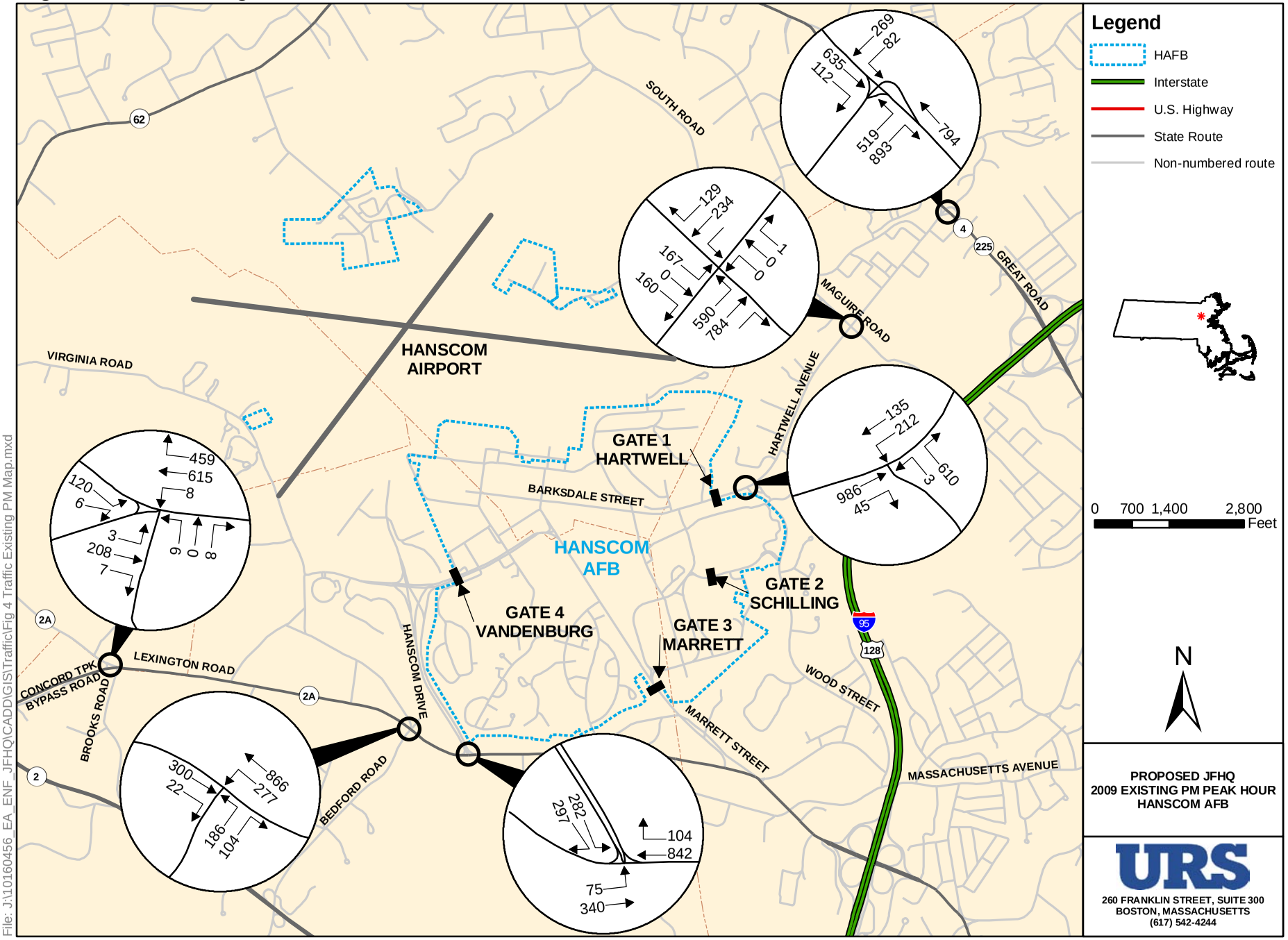
Based on the ATR counts conducted at the main entrance to the Milford facility, the AM peak hour occurs from 7-8 AM and the PM peak hour occurs from 3:30-4:30 PM Approximately 12% of the vehicular traffic access/egress the facility during the morning peak hour and 13% during the evening peak hour. Based upon data provided by the MANG, approximately 20% of the

Figure 3: 2009 Exisiting AM Peak Hour Traffic



File: J:\10160456_EA_ENF_JFHQ\CADD\GIS\Traffic\Fig 3 Traffic Existing AM Map.mxd

Figure 4: 2009 Exisiting PM Peak Hour Traffic



File: J:\10160456_EA_ENF_JFHQ\CADD\GIS\Traffic\Fig 4 Traffic Existing PM Map.mxd

personnel entering the Milford facility are visitors. Due to security restrictions, MANG visitors at Hanscom AFB are limited to only arriving via the Vandenburg gate

Based upon discussions the MANG, it is assumed that current vehicle arrival/departure patterns at the JFHQ in Milford, will remain unchanged with the new JFHQ at Hanscom AFB. Therefore, with the relocation of the JFHQ, personnel are assumed to arrive almost an hour earlier than the start of Hanscom AFB and adjacent roadway network peak hour, and leave a half hour before the corresponding Hanscom AFB and adjacent roadway network PM peak hour.

Based upon the count data, approximately 2% of the total traffic volumes at the existing JFHQ was comprised of semi-tractor trailer trucks, primarily accessing/egressing the USPF&O warehouse located there. Even though only the USPF&O administrative function will be relocating to the JFHQ at Hanscom AFB, for conservatism in this analysis, it was assumed that 2% of the daily traffic will be trucks via the Vandenburg gate.

Typically the first weekend of every month, the MANG conducts training exercises where personnel report to the JFHQ for training, "drill weekend". Personnel typically arrive early each weekend morning and depart each weekend afternoon. Traffic impacts associated with weekend activity was not analyzed due to the lower weekend traffic volumes experienced on the adjacent roadway network and based on discussions with representative of the neighboring towns.

Existing Traffic Operations

The peak-hour traffic operating conditions for the key intersections were developed based upon the existing traffic volumes. The existing AM and PM LOS at the key study intersections are summarized in Table 1 and Table 2 respectively.

The existing conditions LOS analyses indicates that all the key intersections experience significant traffic delays. Each key intersection has one or more approaches operating at a LOS E or LOS F during the AM and PM peak hour.

TABLE 1

Existing Conditions (2009) Level of Service Summary, AM Peak Hour

Intersection	LOS	Delay (Seconds)	V/C Ratio	95th Percentile Queue (Feet)
Signalized Intersections				
Route 4/225 / Hartwell Avenue	**D**	**46.6**	**1.03**	
Bedford EB thru/right	E	67.4	1.03	#793
Bedford WB thru	C	30.3	0.47	271
Hartwell NB left	C	25.6	0.54	53
Hartwell NB right	B	14.4	0.33	156
Hartwell SB left/thru (jug-handle)	D	41.6	0.91	#655
Unsignalized Intersections				
Route 2A/Concord Turnpike Bypass Road/Brooks Road				
Route 2A EB thru/right	A	0.5	0.02	2
Route 2A WB left/thru/right	A	0.3	0.01	1
Brooks Road NB left/thru/right	C	17.5	0.06	5
Concord Tpk Bypass Road EB left/thru/right	F	>50.0	>1.20	1,061
Route 2A/Bedford Road				
Route 2A EB thru/right	A	0.0	0.53	0
Route 2A WB left/thru	A	5.4	0.22	21
Bedford Road NB left/right	F	53.4	0.79	153
Route 2A/Hanscom Drive				
Route 2A EB left	A	9.2	0.19	18
Route 2A EB thru	A	0.0	0.43	0
Route 2A WB thru/right	A	0.0	0.56	0
Hanscom Drive SB left	F	>50.0	2.17	328
Hanscom Drive SB right	C	17.2	0.30	31
Hartwell Avenue/Wood Street				
Hartwell EB thru/right	A	0.0	0.08	0
Hartwell WB left	A	9.4	0.44	57
Hartwell WB thru	A	0.0	0.57	0
Wood NB left/right	F	>50.0	>1.20	556
Hartwell Avenue/Maguire Road/Municipal Facility				
Maguire EB left/thru	F	>50.0	>1.20	190
Maguire EB right	F	>50.0	>1.20	1,065
Facility WB left/thru/right	F	>50.0	>1.20	N/A
Hartwell NB left	B	11.5	0.16	14
Hartwell NB thru/right	A	0.0	0.13	0
Hartwell SB left/thru/right	A	1.4	0.04	3

V/C = Volume to capacity ratio

95th Percentile Queue = Queue length that has a 5% probability of being exceeded during the time period

N/A indicates that queue cannot be calculated

# indicates that the volume for the 95th percentile cycle exceeds capacity

TABLE 2

Existing Conditions (2009) Level of Service Summary, PM Peak Hour

Intersection	LOS	Delay (Seconds)	V/C Ratio	95th Percentile Queue (Feet)
Signalized Intersections				
Route 4/225 / Hartwell Avenue	**D**	**54.8**	**1.11**	
Bedford EB thru/right	D	37.7	0.68	376
Bedford WB thru	D	37.9	0.65	373
Hartwell NB left	E	61.2	1.01	#549
Hartwell NB right	F	91.1	1.11	#1,116
Hartwell SB left/thru (jug-handle)	C	24.5	0.29	145
Unsignalized Intersections				
Route 2A/Concord Turnpike Bypass Road/Brooks Road				
Route 2A EB thru/right	A	0.5	0.01	1
Route 2A WB left/thru/right	A	0.5	0.02	1
Brooks Road NB left/thru/right	C	16.1	0.08	7
Concord Tpk Bypass Road EB left/thru/right	F	>50.0	>1.20	477
Route 2A/Bedford Road				
Route 2A EB thru/right	A	0.0	0.22	0
Route 2A WB left/thru	A	6.1	0.26	26
Bedford Road NB left/right	F	>50.0	>1.20	N/A
Route 2A/Hanscom Drive				
Route 2A EB left	B	10.2	0.12	10
Route 2A EB thru	A	0.0	0.23	0
Route 2A WB thru/right	A	0.0	0.58	0
Hanscom Drive SB left	F	>50.0	>1.20	757
Hanscom Drive SB right	F	>50.0	1.13	374
Hartwell Avenue/Wood Street				
Hartwell EB thru/right	A	0.0	0.69	0
Hartwell WB left	C	15.5	0.43	54
Hartwell WB thru	A	0.0	0.09	0
Wood NB left/right	F	>50.0	>1.20	1,538
Hartwell Avenue/Maguire Road/Municipal Facility				
Maguire EB left/thru	F	>50.0	>1.20	N/A
Maguire EB right	B	11.9	0.26	27
Facility WB left/thru/right	B	14.9	0.01	1
Hartwell NB left	B	10.1	0.47	64
Hartwell NB thru/right	A	0.0	0.50	0
Hartwell SB left/thru/right	A	0.0	0.00	0

V/C = Volume to capacity ratio

95th Percentile Queue = Queue length that has a 5% probability of being exceeded during the time period

N/A indicates that queue cannot be calculated

# indicates that the volume for the 95th percentile cycle exceeds capacity

The signalized intersection of Route 4/225 and Hartwell Avenue operates at an overall LOS D during both the AM and PM peak hour, with individual approaches operating with significant delays. During the AM peak hour the eastbound Route 4/255 approach operates at a LOS E and the southbound jug-handle operates at a LOS D. These two approaches carry primarily commuter traffic to the Hartwell Avenue business corridor.

During the PM peak hour, the northbound Hartwell Avenue right turn approach, carrying traffic primarily exiting the Hartwell Avenue corridor, operates at a LOS F. Both the eastbound and westbound approaches operate at a LOS D, while the jug-handle operates a LOS C.

At the unsignalized intersection of Route 2A/Concord Turnpike Bypass Road/Brooks Road intersection, the northbound Brooks Road approach is stop sign controlled and operates at a LOS C during both the AM and PM peak hours. The southbound Concord Turnpike Bypass Road approach operates at a LOS F during both the AM and PM peak hours, due primarily to the high volume of commuter traffic on Route 2A turning left onto Concord Turnpike Bypass Road.

At the unsignalized intersection of Route 2A/Bedford Road, the northbound Bedford Road approach operates at a LOS F during both the AM and PM peak hours, due primarily to the high volume of commuter traffic traveling east/west on Route 2A

At the signalized (flashing beacons) intersection of Route 2A/Hanscom, the southbound Hanscom Drive approach operates at a LOS F during both the AM and PM peak hours, again due primarily to the high volume of commuter traffic traveling east/west on Route 2A.

At the unsignalized intersection of Hartwell Avenue/Wood Street, the northbound Wood Street approach operates at a LOS F during both the AM and PM peak hours, primarily due to the high number of right-turns from Wood Street onto Hartwell Avenue as motorist experience difficulty finding an adequate gap space to merge into the traffic stream.

At the unsignalized intersection of Hartwell Avenue/Maguire Road, the eastbound Maguire Road approach operates at a LOS F during both the AM and PM peak hours. The westbound Municipal Facility approach operates at a LOS F during the AM peak hour and a LOS B during the PM peak hour. The northbound left-turns from Hartwell Avenue onto Maguire Road operate at a LOS B during both the AM and PM peak hours.

2014 No-Build Traffic Volumes

To appropriately evaluate the impact of the proposed relocation, the year 2009 traffic volumes were increased to year 2014 conditions by applying a 1% annual growth rate to the volumes, a rate typical for suburbs in the Boston area. In addition to applying this growth factor; pending developments in the area were considered in estimating the year 2014 no-build traffic. Based on conversations with the planning officials from the Towns of Bedford, Concord, Lexington, and Lincoln, there are no major proposed developments in the vicinity of the subject site likely to be constructed and operating by that time. Year 2014 no-build AM and PM peak hour traffic volumes for the area roadway network are shown in Figures 5 and 6 respectively.

2014 No-Build Traffic Operations

The year 2014 no-build peak hour traffic operating conditions for the previously identified key intersections were analyzed using the year 2014 no-build traffic volumes. Tables 3 and 4 summarize the year 2014 no-build AM and PM LOS at key study intersections respectively.

Figure 5: 2014 No-Build AM Peak Hour Traffic

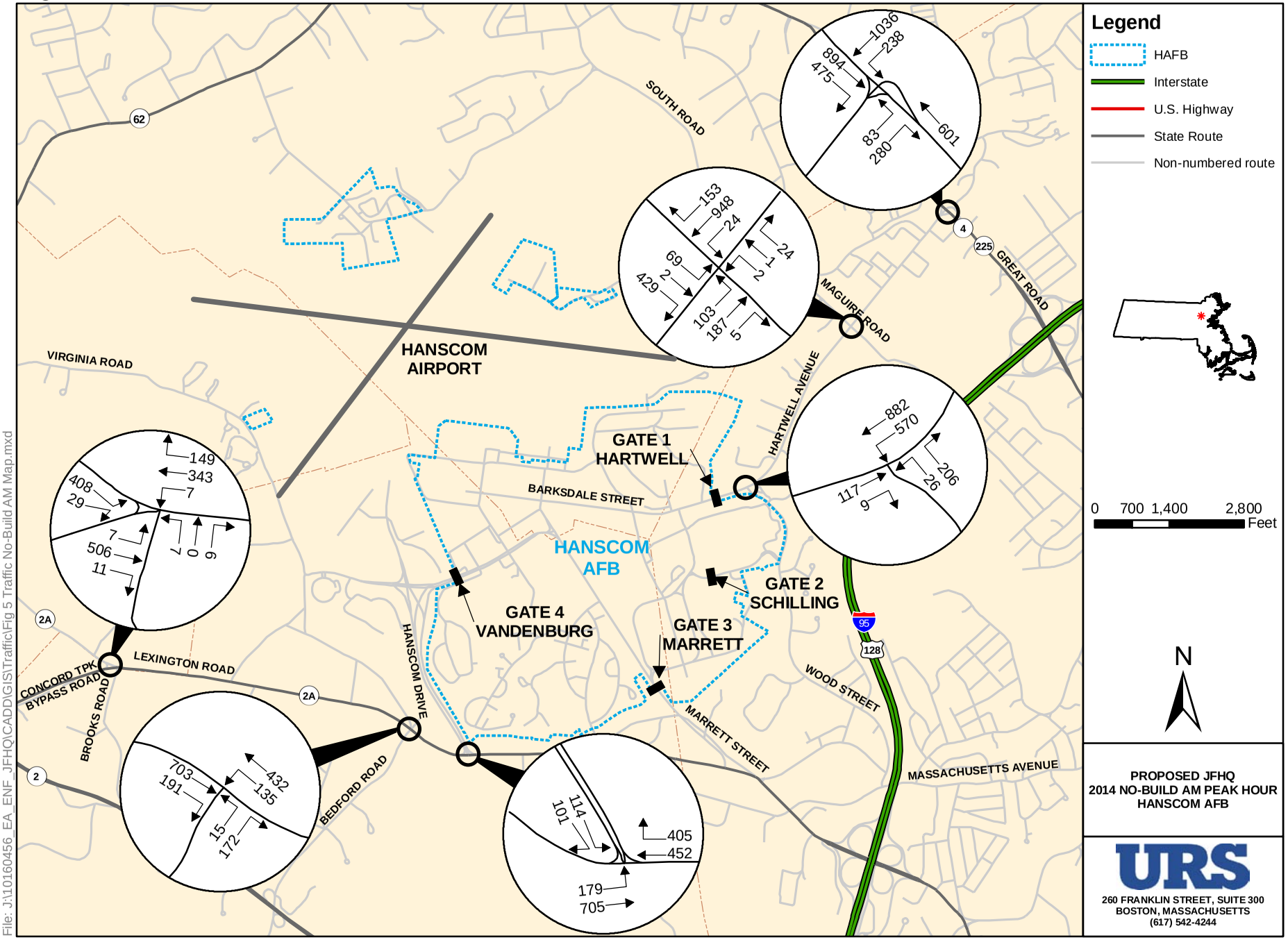


Figure 6: 2014 No-Build PM Peak Hour Traffic

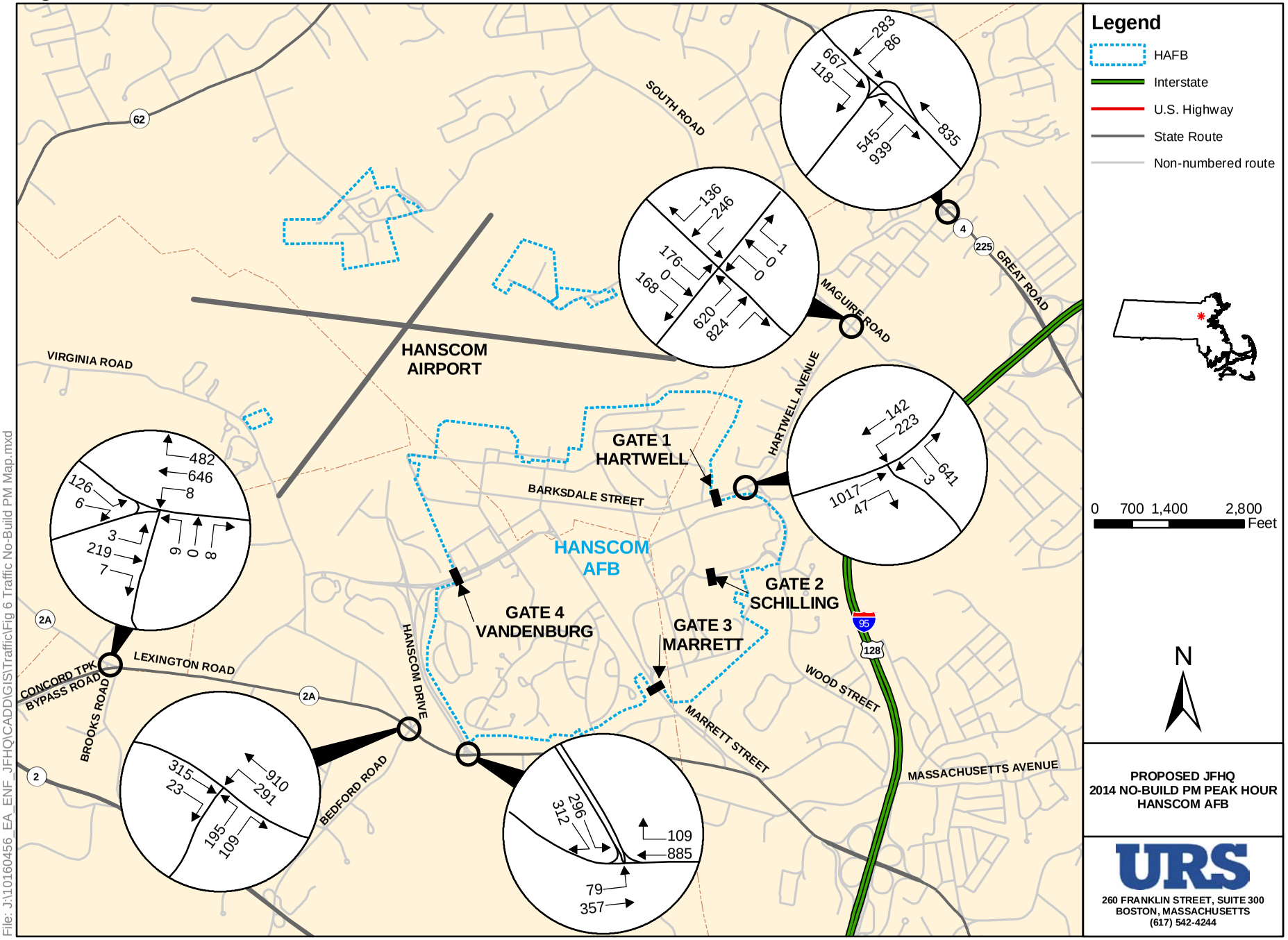


TABLE 3

No-Build Conditions (2014) Level of Service Summary, AM Peak Hour

Intersection	LOS	Delay (Seconds)	V/C Ratio	95th Percentile Queue (Feet)
Signalized Intersections				
Route 4/225 / Hartwell Avenue	**E**	**57.7**	**1.11**	
Bedford EB thru/right	F	94.3	1.11	#863
Bedford WB thru	C	31.9	0.51	288
Hartwell NB left	C	28.0	0.56	62
Hartwell NB right	B	14.9	0.35	170
Hartwell SB left/thru (jug-handle)	D	44.2	0.93	#760
Unsignalized Intersections				
Route 2A/Concord Turnpike Bypass Road/Brooks Road				
Route 2A EB thru/right	A	0.6	0.02	2
Route 2A WB left/thru/right	A	0.3	0.01	1
Brooks Road NB left/thru/right	C	18.9	0.07	6
Concord Tpk Bypass Road EB left/thru/right	F	>50.0	>1.20	1,202
Route 2A/Bedford Road				
Route 2A EB thru/right	A	0.0	0.56	0
Route 2A WB left/thru	A	5.9	0.24	24
Bedford Road NB left/right	F	>50.0	0.91	201
Route 2A/Hanscom Drive				
Route 2A EB left	A	9.4	0.21	20
Route 2A EB thru	A	0.0	0.45	0
Route 2A WB thru/right	A	0.0	0.59	0
Hanscom Drive SB left	F	>50.0	>1.20	373
Hanscom Drive SB right	C	18.4	0.33	35
Hartwell Avenue/Wood Street				
Hartwell EB thru/right	A	0.0	0.08	0
Hartwell WB left	A	9.6	0.46	63
Hartwell WB thru	A	0.0	0.60	0
Wood NB left/right	F	>50.0	>1.20	663
Hartwell Avenue/Maguire Road/Municipal Facility				
Maguire EB left/thru	F	>50.0	>1.20	217
Maguire EB right	F	>50.0	>1.20	1,200
Facility WB left/thru/right	F	>50.0	>1.20	N/A
Hartwell NB left	B	11.9	0.17	16
Hartwell NB thru/right	A	0.0	0.13	0
Hartwell SB left/thru/right	A	1.7	0.04	3

V/C = Volume to capacity ratio

95th Percentile Queue = Queue length that has a 5% probability of being exceeded during the time period

N/A indicates that queue cannot be calculated

# indicates that the volume for the 95th percentile cycle exceeds capacity

Highlighted cell indicates that LOS has deteriorated from 2009 Existing Conditions LOS

TABLE 4

No-Build Conditions (2014) Level of Service Summary, PM Peak Hour

Intersection	LOS	Delay (Seconds)	V/C Ratio	95th Percentile Queue (Feet)
Signalized Intersections				
Route 4/225 / Hartwell Avenue	**E**	**65.8**	**1.17**	
Bedford EB thru/right	D	38.8	0.71	400
Bedford WB thru	D	38.8	0.69	397
Hartwell NB left	F	83.8	1.08	#640
Hartwell NB right	F	115.8	1.17	#1214
Hartwell SB left/thru (jug-handle)	C	24.7	0.31	153
Unsignalized Intersections				
Route 2A/Concord Turnpike Bypass Road/Brooks Road				
Route 2A EB thru/right	A	0.5	0.01	1
Route 2A WB left/thru/right	A	0.6	0.02	1
Brooks Road NB left/thru/right	C	19.8	0.12	10
Concord Tpk Bypass Road EB left/thru/right	F	>50.0	>1.20	546
Route 2A/Bedford Road				
Route 2A EB thru/right	A	0.0	0.24	0
Route 2A WB left/thru	A	6.7	0.27	28
Bedford Road NB left/right	F	>50.0	>1.20	N/A
Route 2A/Hanscom Drive				
Route 2A EB left	B	10.5	0.13	11
Route 2A EB thru	A	0.0	0.24	0
Route 2A WB thru/right	A	0.0	0.60	0
Hanscom Drive SB left	F	>50.0	>1.20	N/A
Hanscom Drive SB right	F	>50.0	>1.20	461
Hartwell Avenue/Wood Street				
Hartwell EB thru/right	A	0.0	0.73	0
Hartwell WB left	C	17.0	0.48	64
Hartwell WB thru	A	0.0	0.09	0
Wood NB left/right	F	>50.0	>1.20	N/A
Hartwell Avenue/Maguire Road/Municipal Facility				
Maguire EB left/thru	F	>50.0	>1.20	N/A
Maguire EB right	B	12.2	0.28	29
Facility WB left/thru/right	C	15.5	0.01	1
Hartwell NB left	B	10.4	0.50	72
Hartwell NB thru/right	A	0.0	0.52	0
Hartwell SB left/thru/right	A	0.0	0.00	0

V/C = Volume to capacity ratio

95th Percentile Queue = Queue length that has a 5% probability of being exceeded during the time period

N/A indicates that queue cannot be calculated

# indicates that the volume for the 95th percentile cycle exceeds capacity

Highlighted cell indicates that LOS has deteriorated from 2009 Existing Conditions LOS

In year 2014, traffic delays are estimated to increase and key study intersections will experience even greater delays than in 2009, just based on the growth in background traffic.

The signalized intersection of Route 4/225 and Hartwell Avenue is forecasted to operate at an overall LOS E during both the AM and PM peak hour, compared to LOS D in year 2009 Existing Conditions. During the AM peak hour the eastbound Route 4/255 approach is forecasted to operate at a LOS F, compared to LOS E in year 2009 Existing Conditions, while the southbound jug-handle is forecasted to remain at LOS D.

In the PM peak hour, the northbound left-turns from Hartwell Avenue onto Route 4/225 carrying traffic primarily exiting the Hartwell Avenue business corridor, is forecasted to operate at LOS F, compared to LOS E in the year 2009 Existing Conditions. Both the eastbound and westbound approaches are forecasted to operate at a LOS D while the jug-handle approach is forecasted to operate at LOS C.

At the unsignalized intersection of Route 2A/Corcord Turnpike Bypass Road/Brooks Road the northbound Brooks Road approach is forecasted to continue to operate at a LOS C during both the AM and PM peak hours. The eastbound Concord Turnpike Bypass Road approach will continue to experience significant delays, at LOS F during both the AM and PM peak hours.

At the unsignalized intersection of Route 2A/Bedford Road, the northbound Bedford Road approach is forecasted to continue to experience significant delays, at LOS F during both the AM and PM peak hours.

At the signalized (flashing beacons) intersection of Route 2A/Hanscom Drive, the southbound Hanscom Drive approach is forecasted to continue to experience significant delays, at LOS F during both the AM and PM peak hours.

At the unsignalized intersection of Hartwell Avenue/Wood Street, the northbound Wood Street approach is forecasted to continue to experience significant delays, at LOS F during both the AM and PM peak hours as motorists experience difficulty finding an adequate gap space to merge into traffic

At the unsignalized intersection of Hartwell Avenue/Maguire Road, the eastbound Maguire Road approach is forecasted continue to experience significant delays, at LOS F during both the AM and PM peak hours. The westbound municipal facility approach will continue to operate at LOS F during the AM peak hour, but will operate at LOS C during the PM peak hour. The northbound left-turns from Hartwell Avenue onto Maguire Road are forecasted to continue to operate at LOS B during both the AM and PM peak hours.

Trip Generation

The Institute of Transportation Engineers's (ITE) Trip Generation Manual 7th Edition ("ITE Manual") provides trip generation rates for numerous land use and building types. ITE procedures estimate the number of trips entering or exiting a site at a given time. ITE trip generation rates are a function of: type of development, square footage, number of dwelling units, or other standard quantifiable metrics.

The ITE Manual suggests that land use code 710 (general office building) will typically generate 3.32 vehicle trips for each office worker during an average weekday. For conservative analysis purposes, based on the average ITE trip generation rate, the relocation of approximately 400 JFHQ personnel is estimated to generate approximately a total of 1,427 vehicle trips (714 in and 713 out) on a daily basis. Therefore on a peak hour basis, the relocation is conservatively forecasted to generate approximately a total of 220 vehicle trips (194 in and 26 out) during the AM peak hour and approximately a total of 208 vehicle trips (173 out and 35 in) during the PM peak hour.

The ITE Manual also recommends using site-specific data, where available. In this particular case, the site-specific data is particularly relevant because the same personnel located at the existing JFHQ location in Milford will be relocated to Hanscom AFB.

The existing JFHQ site also accommodates the Department of Corrections offices, United States Property & Fiscal Office (USPF&O) warehouse and administrative office, and an Air Force maintenance facility. Therefore, in order to determine the number of trips by JFHQ and related personnel, a 24-hour total vehicle count was conducted on Thursday, October 8, 2009 by strategically placed ATRs around the facility.

According to the data collected, the Milford facility generated a total of 1,211 vehicle trips on that weekday from: JFHQ, Department of Corrections, USPF&O warehouse, civilian personnel and related deliveries. Based upon facility staffing levels that day, an estimated 810 total vehicle trips were generated by military related personnel (JFHQ, USPF&O and related personnel). The AM peak hour occurred at 7-8 AM with 94% of the peak hour traffic entering and 6% exiting the site. The PM peak hour occurred at 3:30-4:30 PM with 88% of the peak hour traffic exiting and 12% entering the site.

With the information provided by the MANG regarding site staffing levels, vehicle count data and a assumed vehicle occupancy of 1.0[8], the average vehicle trip rate generated by military personnel is estimated to be **3.25 trips per day**. The MANG currently plans on approximately 400 military personnel to be relocated to the proposed JFHQ at Hanscom AFB by 2014. The total number of vehicle trips during an average weekday to be generated at the proposed location is estimated at approximately 1,300 trips.

Travel Demand Management - Travel demand management (TDM) strategies aim to reduce the number of single-occupant vehicles and their associated environmental impacts by managing existing transportation resources and promoting alternative transportation options. As the JFHQ relocation project has advanced, the MANG coordinated with MassRIDES and evaluated a series of potential TDM measures that could reduce peak-hour vehicle trips and ease some of the traffic impacts. In this suburban environment where transit is limited and parking is plentiful and cheap, not all strategies can be successful. In addition, the MANG, as an entity with Federal and state responsibilities, dual funding mechanisms and financial accounting requirements, is limited in their ability to offer the array the fiscal policy tools that offer the greatest TDM leverage. To reduce peak-hour trips associated with the relocated JFHQ, the MANG has reviewed and is advancing the implementation of the following measures:

[8] Based upon discussion with the MANG it was conservatively estimated less than 1% of the staff currently arrives via carpools due to the lack of any type of organized program at the facility.

- Educate employees about transportation alternatives (ridesharing, transit, bicycle);
- Establish preferential parking for carpool/vanpool participants;
- Start a carpool program to reduce demand for individual spaces and establish a database to identify/target rideshare opportunities;
- Host TDM worksite events;
- Explore vanpool formation opportunities;
- Time management and policy considerations (flex time and telecommuting)
- Start a transit program;
- Offer a bike/walk program;
- Offer MassRIDES Emergency Ride Home Program for carpool/rideshare participants; and
- Sponsor promotional activities.

The implementation of these TDM measures under consideration is estimated to reduce the total of generated trips at the Hanscom AFB site by 2%. Therefore, the total number of trips associated with the relocated JFHQ during the AM and PM peak hour was reduced accordingly and is provided in the Table 5.

TABLE 5
Trip Generation Summary
Replacement JFHQ

USE	AM Peak Hour			AM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
ITE Land Use Code 710 (general office bldg.)	194	26	220	35	173	208
JFHQ[1]	153	10	163	21	160	181
JFHQ w/ TDM[2]	150	10	160	21	157	178

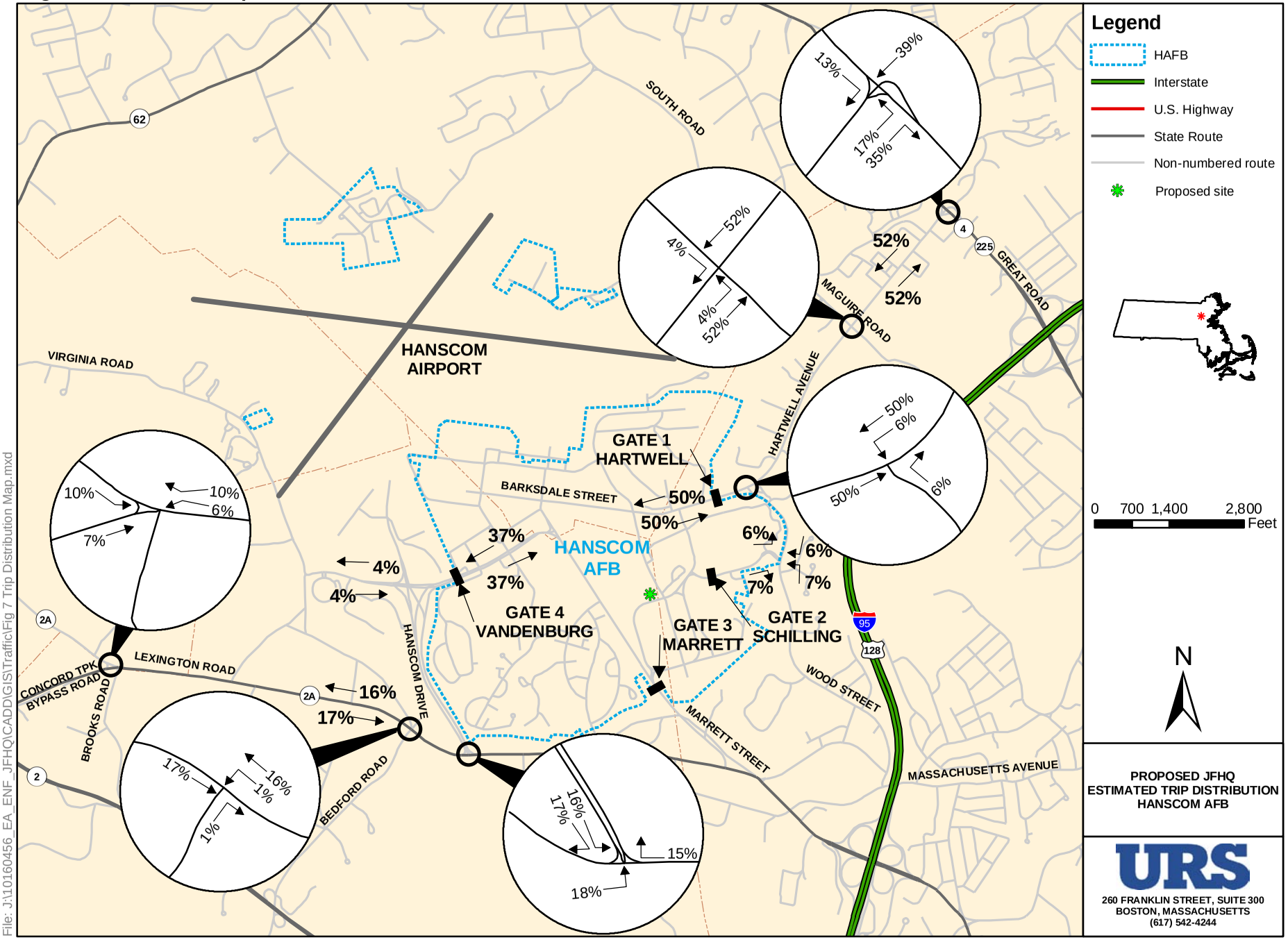
1. Based upon observed site-specific data from the existing JFHQ.
2. A 2% trip reduction based upon the TDM measures considered.

Pass-by Trips - Due to the nature of the activity conducted at the JFHQ, the fact that it is located on a secure military base where all visitors must be scheduled in advance and screened at the access gate, no pass-by trips were incorporated into the trip generation totals.

Trip Distribution

Based on the ATR data gathered from the gates and adjacent roadway network at Hanscom AFB, as previously noted in Section V, URS estimated the existing arrival and departure volumes and resulting percentages at each of the three operating gates. This information was in turn used with zip code (by place of residence) for over 75% of the personnel to be relocated. The data were sorted by community and then superimposed on the local and regional highway network to estimate the likely arrival and departure direction and route for travel to/from the proposed relocation site on Hanscom AFB. The results of this analysis and estimated directional distribution for site generated vehicular trip traffic were graphically summarized in Figure 7, Site Generated Trip Distribution.

Figure 7: Estimated Trip Distribution



File: J:\10160456_EA_ENF_JFHQ\CADD\GIS\Traffic\Fig 7 Trip Distribution Map.mxd

Mode Share

The incorporation of mode shares into the trip generation process accounts for the various available travel options. Hanscom AFB however, is a secure military facility in a typical suburban setting where the primary mode of travel is the private automobile and little travel is done by walking, transit, or bicycling. As such, a 0% walk/transit mode share was incorporated into the trip generation process.

Trip Assignment and Site Generated Traffic Volumes

The previously developed trip generation volumes were assigned to the local and regional highway network to create the year 2014 Site Generated traffic volumes as shown in Figures 8 and 9 respectively, for the am and pm peak hour.

2014 Build Traffic Volumes

To evaluate the impacts of the proposed JFHQ relocation, previously developed year 2014 No-Build traffic volumes were added to the year 2014 Site Generated traffic volumes as distributed on the roadway network, to produce the combined year 2014 Build traffic volumes. This process was undertaken for the AM and PM peak hour and the results are shown in Figures 10 and 11 respectively.

2014 Build Traffic Operating Conditions

The resulting traffic volumes illustrated in Figure 10 and 11 were then evaluated to determine the effective operating conditions of key intersections in the area roadway network. The year 2014 Build operating conditions are displayed below in Tables 6 and 7 for the AM and PM peak hour respectively.

Figure 8: 2014 AM Site Generated Trip Assignment

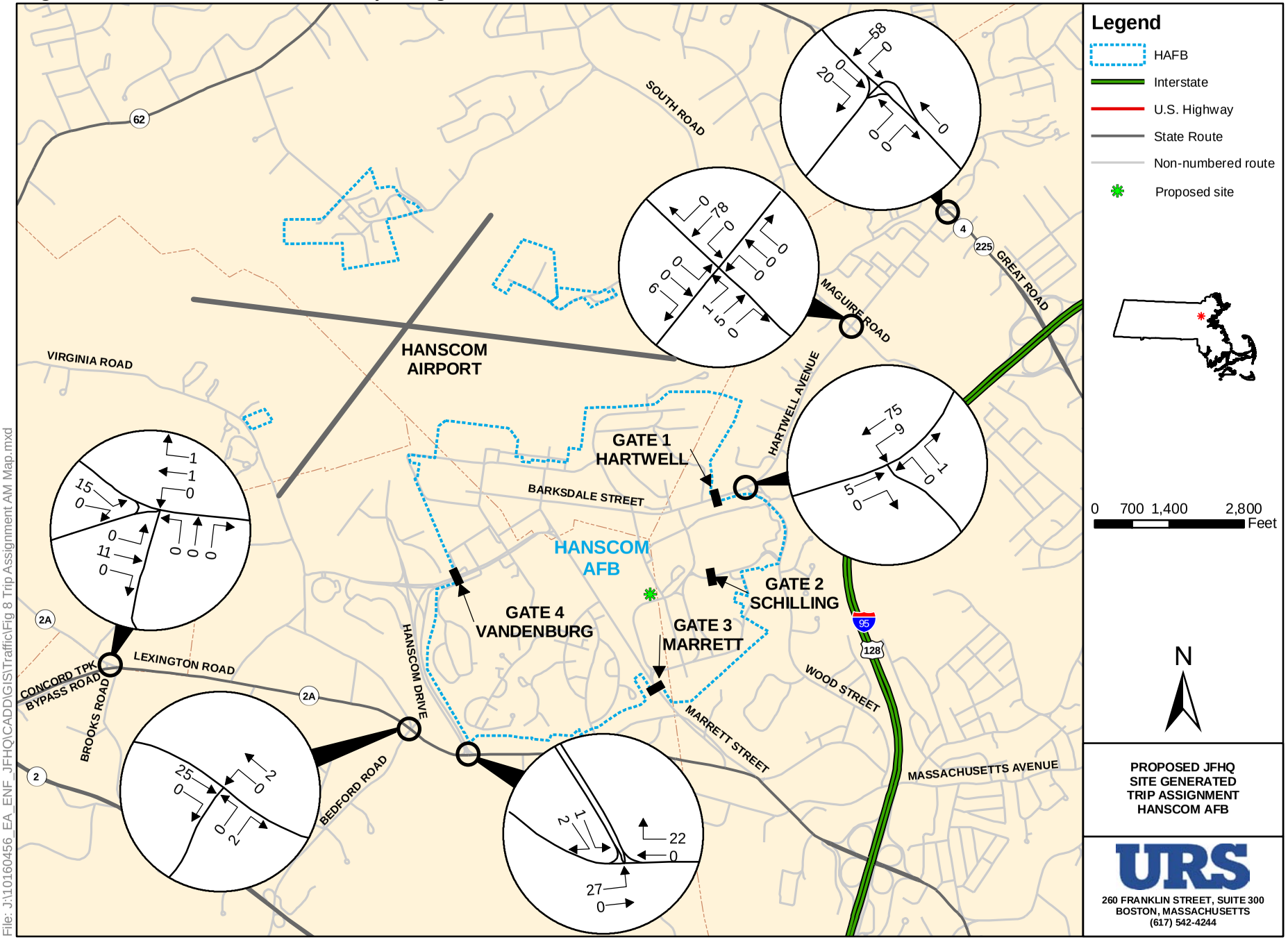


Figure 9: 2014 PM Site Generated Trip Assignment

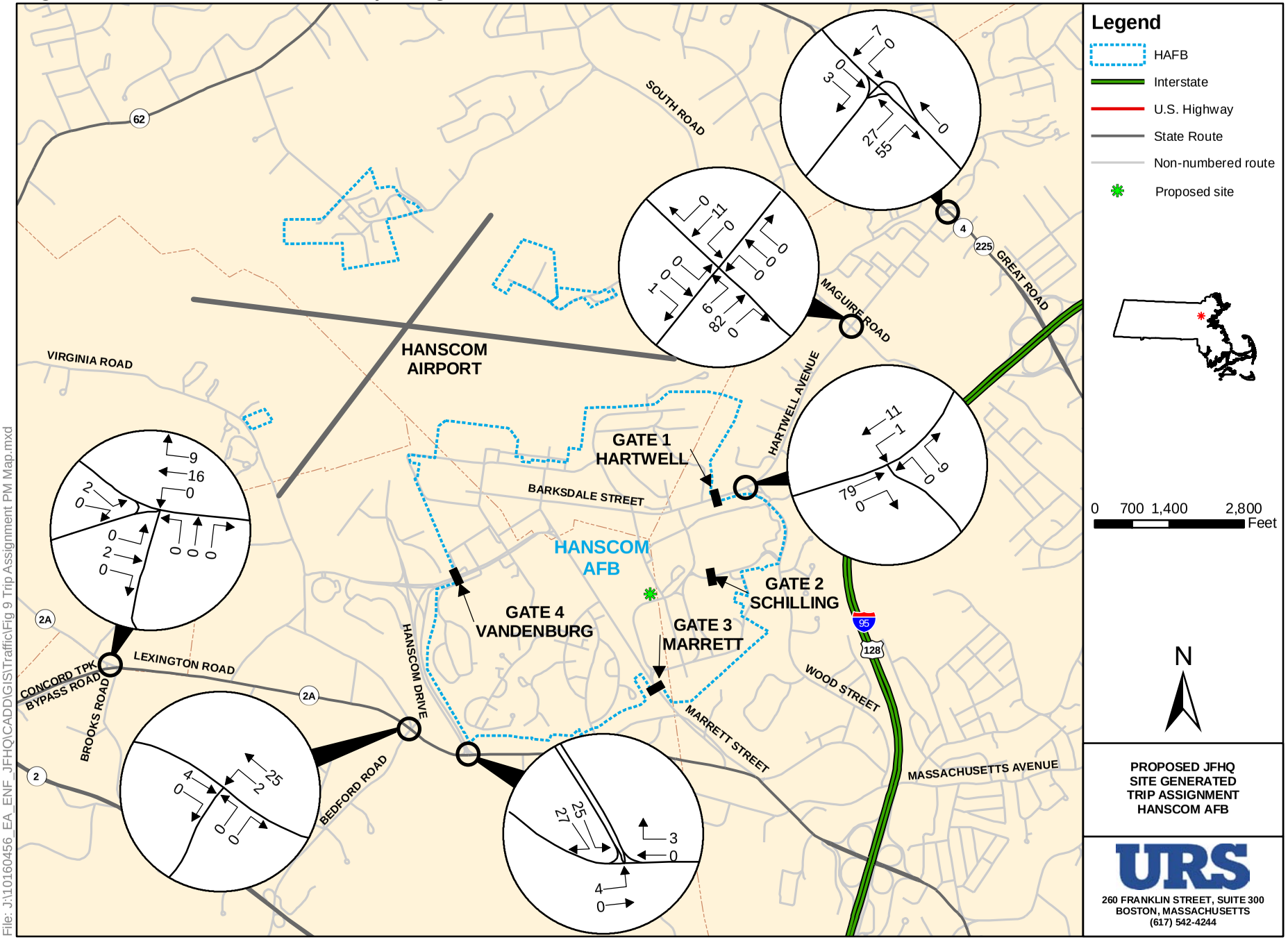


Figure 10: 2014 Build AM Peak Hour Traffic

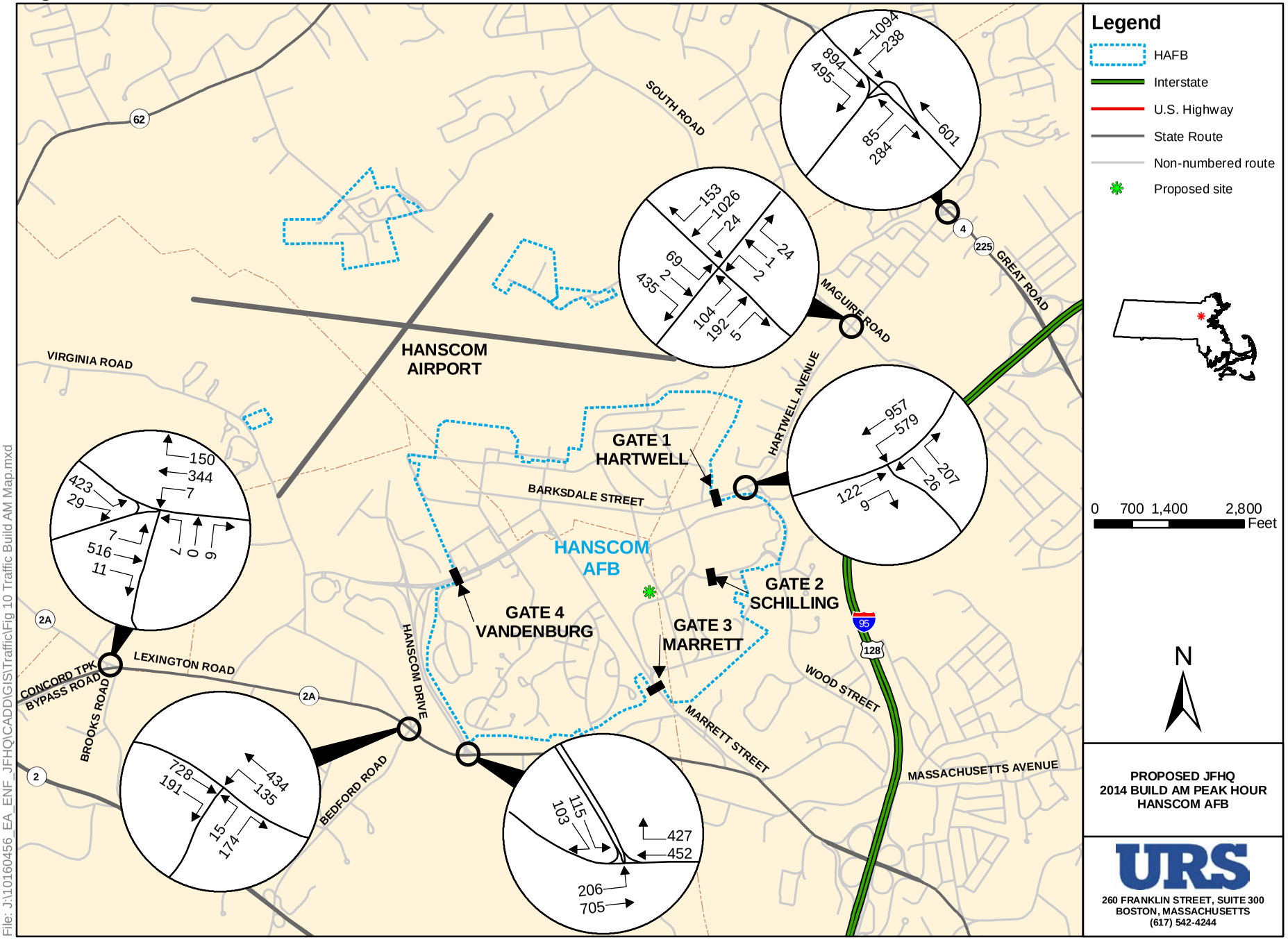
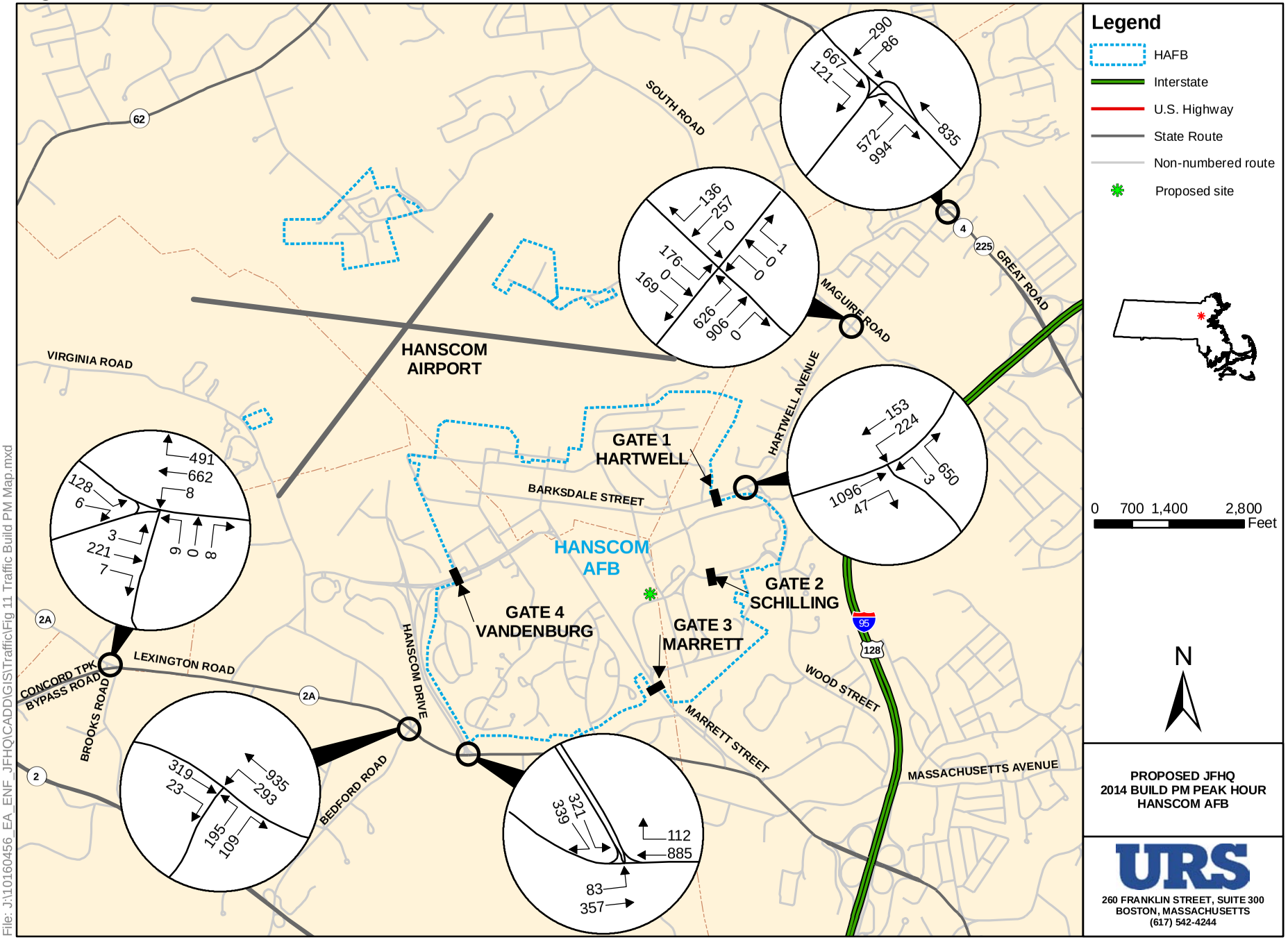


Figure 11: 2014 Build PM Peak Hour Traffic



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TABLE 6

Build Conditions (2014) Level of Service Summary, AM Peak Hour

Intersection	LOS	Delay (Seconds)	V/C Ratio	95th Percentile Queue (Feet)
Signalized Intersections				
Route 4/225 / Hartwell Avenue	**E**	**63.3**	**1.14**	
Bedford EB thru/right	F	105.3	1.14	#882
Bedford WB thru	C	32.5	0.52	289
Hartwell NB left	C	29.6	0.58	65
Hartwell NB right	B	14.8	0.35	172
Hartwell SB left/thru (jug-handle)	D	48.3	0.96	#819
Unsignalized Intersections				
Route 2A/Concord Turnpike Bypass Road/Brooks Road				
Route 2A EB thru/right	A	0.60	0.02	2
Route 2A WB left/thru/right	A	0.30	0.01	1
Brooks Road NB left/thru/right	C	19.2	0.07	6
Concord Tpk Bypass Road EB left/thru/right	F	>50.0	>1.20	N/A
Route 2A/Bedford Road				
Route 2A EB thru/right	A	0.0	0.58	0
Route 2A WB left/thru	A	6.1	0.25	25
Bedford Road NB left/right	F	>50.0	0.95	216
Route 2A/Hanscom Drive				
Route 2A EB left	A	9.6	0.24	24
Route 2A EB thru	A	0.0	0.45	0
Route 2A WB thru/right	A	0.0	0.61	0
Hanscom Drive SB left	F	>50.0	>1.20	N/A
Hanscom Drive SB right	C	18.9	0.4	37
Hartwell Avenue/Wood Street				
Hartwell EB thru/right	A	0.0	0.09	0
Hartwell WB left	A	9.7	0.47	65
Hartwell WB thru	A	0.0	0.65	0
Wood NB left/right	F	>50.0	>1.20	N/A
Hartwell Avenue/Maguire Road/Municipal Facility				
Maguire EB left/thru	F	>50.0	>1.20	233
Maguire EB right	F	>50.0	>1.20	N/A
Facility WB left/thru/right	F	>50.0	>1.20	N/A
Hartwell NB left	B	12.6	0.19	17
Hartwell NB thru/right	A	0.0	0.14	0
Hartwell SB left/thru/right	A	2.3	0.04	3

V/C = Volume to capacity ratio

95th Percentile Queue = Queue length that has a 5% probability of being exceeded during the time period

N/A indicates that queue cannot be calculated

# indicates that the volume for the 95th percentile cycle exceeds capacity

Highlighted cell indicates that LOS has deteriorated from 2014 No-Build Conditions LOS

TABLE 7

Build Conditions (2014) Level of Service Summary, PM Peak Hour

Intersection	LOS	Delay (Seconds)	V/C Ratio	95th Percentile Queue (Feet)
Signalized Intersections				
Route 4/225 / Hartwell Avenue	**E**	**78.6**	**1.24**	
Bedford EB thru/right	D	38.9	0.71	402
Bedford WB thru	D	38.8	0.69	397
Hartwell NB left	F	107.5	1.15	#729
Hartwell NB right	F	144.1	>1.20	#1321
Hartwell SB left/thru (jug-handle)	C	24.8	0.32	155
Unsignalized Intersections				
Route 2A/Concord Turnpike Bypass Road/Brooks Road				
Route 2A EB thru/right	A	0.5	0.01	1
Route 2A WB left/thru/right	A	0.6	0.02	1
Brooks Road NB left/thru/right	C	20.4	0.12	10
Concord Tpk Bypass Road EB left/thru/right	F	>50.0	>1.20	571
Route 2A/Bedford Road				
Route 2A EB thru/right	A	0.0	0.24	0
Route 2A WB left/thru	A	6.9	0.27	28
Bedford Road NB left/right	F	>50.0	>1.20	N/A
Route 2A/Hanscom Drive				
Route 2A EB left	B	10.5	0.14	12
Route 2A EB thru	A	0.0	0.24	0
Route 2A WB thru/right	A	0.0	0.61	0
Hanscom Drive SB left	F	>50.0	>1.20	N/A
Hanscom Drive SB right	F	>50.0	>1.20	552
Hartwell Avenue/Wood Street				
Hartwell EB thru/right	A	0.0	0.78	0
Hartwell WB left	C	19.0	0.52	74
Hartwell WB thru	A	0.0	0.10	0
Wood NB left/right	F	>50.0	>1.20	N/A
Hartwell Avenue/Maguire Road/Municipal Facility				
Maguire EB left/thru	F	>50.0	>1.20	N/A
Maguire EB right	B	12.4	0.29	30
Facility WB left/thru/right	C	16.8	0.01	1
Hartwell NB left	B	10.6	0.51	74
Hartwell NB thru/right	A	0.0	0.57	0
Hartwell SB left/thru/right	A	0.0	0.00	0

V/C = Volume to capacity ratio

95th Percentile Queue = Queue length that has a 5% probability of being exceeded during the time period

N/A indicates that queue cannot be calculated

# indicates that the volume for the 95th percentile cycle exceeds capacity

Highlighted cell indicates that LOS has deteriorated from 2014 No-Build Conditions LOS

The signalized intersection of Route 4/225 and Hartwell Avenue is forecasted to continue to operate at an overall LOS E during both the AM and PM peak hour. During the AM peak hour, the eastbound Route 4/255 approach is forecasted to continue operating at a LOS F and the southbound jug-handle is forecasted to continue to operate a LOS D.

In the PM peak hour the northbound left-turns and right-turns from Hartwell Avenue onto Route 4/225, primarily carrying traffic exiting the Hartwell Avenue businesses and Hanscom AFB, will continue to operate at LOS F. Both the eastbound and westbound approaches will continue to operate at a LOS D. The jug-handle approach will continue to operate at LOS C.

At the unsignalized intersection of Route 2A/Concord Turnpike Bypass Road/Brooks Road the northbound Brooks Road approach will continue to operate at a LOS C during both the AM and PM peak hours. The eastbound Concord Turnpike Bypass Road approach will continue to experience significant delays, at LOS F during both the AM and PM peak hours.

At the unsignalized intersection of Route 2A/Bedford Road the Route 2A the northbound Bedford Road approach will continue to experience significant delays, at LOS F during both the AM and PM peak hours.

At the signalized (flashing beacons) intersection of Route 2A/Hanscom the southbound Hanscom Drive approach will continue to experience significant delays, at LOS F during both the AM and PM peak hours.

At the unsignalized intersection of Hartwell Avenue/Wood Street, the northbound Wood Street approach will continue to experience significant delays, at LOS F during both the AM and PM peak hours.

At the unsignalized intersection of Hartwell Avenue/Maguire Road, the eastbound Maguire Road approach will continue to experience significant delays, at LOS F during both the AM and PM peak hours. The westbound Municipal Facility approach will continue to operate at LOS F during the AM peak hour and continue to operate at LOS C during the PM peak hour. The northbound left-turns from Hartwell Avenue onto Maguire Road will continue to operate at LOS B during both the AM and PM peak hours.

During the year 2014 Build Condition, significant traffic delays will continue at the key study intersections; however the LOS is forecasted to maintain operating conditions relative to the 2014 No-Build operating conditions throughout the roadway network. The site generated trips from the proposed JFHQ will have a negligible impact to the adjacent roadway. Therefore, no additional traffic mitigation actions beyond the TDM measures previously noted are proposed.

VI. SUMMARY AND CONCLUSIONS

The Massachusetts National Guard proposes to relocate of the Joint Forces Headquarters (JFHQ) in Milford, MA to Hanscom Air Force Base (AFB).

The proposed JFHQ will provide the administrative, classroom training, assembly areas, library, learning center, vault, physical fitness, and storage areas necessary to achieve proficiency in required administrative and training tasks. It will include a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency, and house the US Property & Fiscal Office (USPF&O) administrative functions. The project proposes the phased new construction of a specially designed JFHQ (approximately 200,000 SF multi-story building) of permanent masonry type construction with appropriate parking and circulation areas and associated appurtenances. The project will include relocation of approximately 400 personnel and the building constructed in two phases. The entire facility is scheduled to be operational and open by the start of 2014.

The ITE Trip Generation Manual estimates that land use code 710 (general office building) will typically generate 3.32 vehicle trips for each personnel during an average weekday. Based upon a series of actual traffic counts and personnel data collected at the existing JFHQ, the proposed facility is forecasted to generate 3.25 vehicle trips for each personnel during an average weekday, 9% lower than the comparable ITE rates.

The study identified the existing year (2009) and projected year (2014) transportation conditions. The existing traffic conditions at the key intersection were analyzed and the level of service assessed. The existing traffic volumes were assigned a 1% growth rate to create 2014 no-build traffic volumes. The volumes generated by the proposed development were distributed and assigned throughout the roadway network. Travel demand management strategies were implemented, aimed to reduce the number of single-occupant vehicles and their associated environmental impacts. The 2014 no-build volumes were combined with the site generated trips to create the 2014 build volumes.

Traffic congestion is anticipated to increase at key study area intersections **with or without** the relocation of the JFHQ and associated 400 personnel from the existing location in Milford to Hanscom AFB by year 2014, over current year 2009 conditions.

The analysis indicates the proposed development can operate without adverse impact on existing traffic operating conditions of the adjacent roadway network. The six key intersections analyzed in this study will maintain operating conditions relative to the 2014 No-Build operating conditions throughout the roadway network. Therefore, no mitigation measures beyond the TDM measures are proposed.

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Appendix

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MassRIDES Report

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Transportation Demand Management Considerations

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Massachusetts National Guard
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Overview

One of the more effective strategies for reducing single occupancy vehicle travel, is to provide flexible and reasonable alternatives for individuals who currently drive their own automobile to the workplace. An aggressive travel-demand management (TDM) program could shift 25% of the workforce to a commute alternative and reduce parking needs significantly over time. Mass*RIDES* has numerous demand-side services in place to encourage individuals to consider alternatives to driving alone – whether that means accommodating more individuals in their automobile; driving with others in a car or vanpool; taking public transportation to work; bicycling or walking during periods of conducive weather; or changing one's work schedule to reduce the number of trips being taken at all.

The following considerations focus on broad TDM strategies to reduce the number of trips being made to the worksite overall. This is the foundation that will yield a successful TDM program.

Program Foundation Considerations:

Establish Priority Parking for Carpoolers and Vanpoolers: Traditional parking philosophies that promoted ample parking availability for all employees at all times are now being replaced by more progressive thinking – that efficient use of parking facilities means most spaces are filled most of the time. In this light, Mass*RIDES* recommends against assigning parking spaces to individual employees. Restricted spaces would create an underutilized situation when employees are away from the facility, whether they are out sick, on vacation, or at off-site meetings. Instead, we suggest continuing shared parking for all users, with preferential parking spaces dedicated to those who rideshare.

Preferential parking for carpools and vanpools is a low-cost commuter benefit that allows those who ride together to park closest to the building in designated spaces. Setting aside two spaces at each entrance would reward employees who rideshare with premium parking. This is of particular benefit during the cold winter months and during the heat of summer.

Employees who qualify can register to park in the designated spaces, receiving a numbered hangtag for display in the vehicle. Mass*RIDES* can provide these hangtags at no additional cost to the Massachusetts National Guard. As demand for preferential parking increases – and as TDM measures gain popularity, the Massachusetts National Guard can expand the preferential parking

supply by dedicating additional spaces. To delineate these spaces, Mass*RIDES* can provide the Massachusetts National Guard with free “Carpool Parking Only” signs, “Vanpool Parking Only” signs, as well as offer monitoring and tracking techniques.

1. **Enforcement**: Success of this program will require enforcement by the Massachusetts National Guard personnel. A few monitoring techniques include:
   a. **Ticketing**- All vehicles illegally parked in the preferential parking spaces can be ticketed. Tickets can be either a paper warning or the Massachusetts National Guard can impart fines.
   b. **Fines-**- The money collected from fines can go toward incentives for the Massachusetts National Guard TDM program. (Fines can be as small as $5 a ticket or much larger).
   c. **Adjudication**- Warnings coming from the Massachusetts National Guard Administration may promote greater adherence to the rules. On the first and second offense, warnings can be sent to the violating employee’s supervisor. On the third offense, warnings can be put in the employee’s employment file.

2. **Parking Cashout**

   Parking cash out is a commuter benefit in which an employer offers their employees the option of accepting taxable cash income instead of a free parking space at work. This gives the option to employees to park for free or to receive cash instead of a parking space. There are a number of ways a program like this can be implemented and Mass*RIDES* can help design a detailed plan if desired. Some basic ideas include:
   a. Implement a process of requiring stickers to park in employee parking areas. Employees who choose parking cashout do not receive a sticker or essentially “sell back” their sticker to the Massachusetts National Guard
   b. Employees who register to carpool, join a vanpool, or purchase a transit pass receive the determined cash value of a single space which they can split with their carpool partner, put toward the cost of the vanpool or use to help pay for their transit costs.

3. **Start a Carpool Program to Reduce Demand for Individual Spaces:** Carpooling is a wonderfully convenient and flexible travel alternative that will help the Massachusetts National Guard reduce the demand for individual parking spaces for each employee. Any Massachusetts National Guard employee who registers with Mass*RIDES* will receive a list of their potential carpool or vanpool matches, updated quarterly. It is up to the individual to contact their matches and set up a commuting schedule. However, the Massachusetts National Guard can do to several things to encourage carpooling:

a. **Host worksite events**. Mass*RIDES* offers customized commuter events to reach your employees at the worksite. Early morning, lunchtime, or evening events can be arranged to reach different shifts. Our customized promotional materials make it easy for you to get the word out.

b. **Set up an incentive program** for employees who participate in carpooling. There are a number of additional ways to entice commuters to carpool in addition to or in coordination with those explained above. These incentives will help maintain a successful program over time by keeping the carpool program in the forefront and giving employees something to look forward to for their support of the program. Some ideas include:

    1. **Subsidies for car washes, gas, or oil/filter changes.** Offer gift certificates to help offset the cost of maintaining a vehicle to those employees who carpool or vanpool to work.

    2. **Free lunches at the worksite for alternative users.** Offer a free lunch voucher in the cafeteria periodically for employees who use a commute alternative.

    3. **Membership in a car-sharing program or AAA.** Providing employees with access to a shared car for in-town business meetings, personal errands, and emergencies is a great option to help reduce the number of trips vehicles need to take. Also, raffling off a membership to AAA monthly or quarterly might be a great incentive.

    4. **Employee commuting contests.** Challenge employees to not drive alone to work and use other commute options. This can be done by allowing employees to note daily how they got to work on a department calendar. The employee who uses the most alternatives in the month can win a prize or time off.

    5. **Prize drawings or bonus vacation time for commuters who do not drive alone to work.** Reward employees for socially and environmentally responsible commuting.

    6. **Subsidize bus passes or vanpools.** Encourage starting a vanpool or taking the bus to work by funding some or all of the cost of the commute for a week, month, year, etc.

7. **Pay commuters $2 a day to use a commute alternative.** Have employees track how often they carpool, take the bus, vanpool, bike, or walk and give them the cash value of $2 each day they use the alternative in cash, a gift check or gift certificate.

4. **Explore Vanpool Formation Opportunities:** Vanpools can help to reduce the demand for between 7-14 parking spaces to only one space, when multiple employees share the ride in one vehicle. When employees sign up with Mass*RIDES*, each employee's ridematching letter will include available seats in vanpools, if there are any current routes traveling near to their worksite. Our Vanpool Alliance brings together several different vanpool companies to give riders the most competitive and financially attractive vanpool package available. Mass*RIDES* also offers periodic incentives for new vanpool start-ups, including cash toward their first month's lease and free gas cards for new groups. The next steps in spreading the word about vanpool formation are:
    a. **Organize a vanpool informational meeting** for employees who may be interested in vanpooling. *MassRIDES*' vanpool coordinator, Lissette Rodriguez, would be happy to facilitate this meeting and provide answers to commonly asked vanpool questions.
    b. **Promote "Vanpool-Parking Only"** signs and market the availability of preferential parking for those who rideshare, as mentioned above.
    c. **Allow employees to use their pre-tax income** to pay for a seat on a vanpool; this costs them less to commute and can help to lower your payroll taxes as well.

5. **Time Management and Policy Considerations:** While ridesharing and transit may not work for all employees, there are additional policies you can consider that reduce the demand for parking at your facility, and reduce the amount of time individuals spend commuting. Offering a formal or informal telework policy, or starting a compressed work schedule, where employees work longer days, but work fewer days in a two-week period (e.g., 4/10 hour days, or 9/80 – nine days but 80 hours), can free up employee parking spaces for at least one day each week – or one day every two weeks. Consider that eliminating trips just one day per week reduces demand by 20%. Compressed or telework days could be rotated, to allow employees greater flexibility in determining the days they do not have to travel to [and find parking at] the office.

   If a Compressed Work Week isn't viable at the present time, simply allowing employees to make work-hour adjustments – such as staggering their work hours or utilizing flextime – can make it easier for carpoolers and vanpoolers to adjust to their new travel arrangements. Another work-hour strategy is to encourage employees to remain on site for mid-day breaks. Making arrangements

with lunch-delivery vendors to visit the Massachusetts National Guard several days per week will make it easier for employees to choose staying onsite for lunch. Offering lunchtime presentations on interesting and timely issues may also encourage employees to bring their lunch and avoid making additional mid-day automobile trips. Mass*RIDES* staff will be glad to host a lunch & learn at your workplace for such an occasion.

6. **Start a Transit Program:** Public transportation can be a flexible and convenient travel option for the employees at Massachusetts National Guard who live near a bus line. Making MBTA passes available at your worksite can make it easier for employees to purchase a monthly pass. Incentives, such as discounted or free transit passes, could also be offered to employees. Mass*RIDES* can help you set up a program internally, or help coordinate with an outside vendor, such as Commuter Check ©. Letting employees use their pre-tax income to purchase transit passes will not only lower the price of a monthly pass, but it may make this a financially viable option for more employees.

   Additionally, ensuring adequate shelter and access to transit-stops will make it more comfortable for employees to wait for bus service – particularly when employees can be sheltered from wind, rain, snow, and excessive heat. Installing transit benches and/or a covered bus-shelter can greatly enhance employee's willingness to utilize transit for their commutes. Mass*RIDES*' staff can assist with communications to the local transit agency to determine if improvements can be made to existing service, to increase ridership. This could include enhanced stop-times and frequency, or shortening the distance between stop-locations and the employee building-entrance.

7. **Offer a Bike/Walk Program:** Biking and walking are healthy commute choices if employees live close enough to your facility and can reach the workplace safely on foot or on a bicycle. Eliminating the need to travel to the workplace in an automobile will help to lessen the demand for parking, particularly during the late spring, summer, and early fall. Mass*RIDES* is partnered with MassBike, the Commonwealth's bicycle advocacy group, and can help you set up a worksite assessment or lunchtime workshop on bicycle safety. Some additional measures you can consider are to:
   a. **Sponsor a "Bike-to-Work" week** at your worksite. Reward your employees who bike to work during the designated week. Encouragement or incentives could include raffles for bicycle equipment, or free breakfast for individuals who cycle to work.
   b. **Provide lockers and showers**, to make it easier for cyclists and walkers to commute to the building and then freshen up before beginning work.
   c. **Install and provide equipment** to facilitate biking and walking on campus. This could include a bike rack or raingear for bikers/walkers.

d. **Wellness Fairs.** Encourage walking and bicycling to work by promoting the health benefits of "person-powered" commuting.

e. **Subsidies for bicycles and/or sneakers.** Offer gift certificates to local bike shops or shoe stores to employees who ride or walk to work.

8. **Offer Mass*RIDES* Emergency Ride Home Program:** Mass*RIDES*' Partners are eligible to enroll in the ERH program. This "commuter insurance" is our promise to any of your employees who use travel options – whether transit, carpooling, vanpooling, bicycling, or walking – that we'll pay for their ride home if they experience a qualified emergency. It's one of the many free services that Mass*RIDES* provides to our employer partners. An ERH program provides that extra reassurance people need in order to choose an alternative to driving alone, and it's an added benefit for those who already use an alternative commute mode.

9. **Promotional Activities:** Ongoing promotions are necessary to maintain/increase employee participation in commute options programs and to keep employees informed as new programs become available. MassRIDES makes it easy for you to promote transportation options at your worksite, by providing posters, mailbox/paycheck stuffers, incentives and raffles at no cost to you. Massachusetts National Guard can do its part, as follows:
    a. **Schedule annual or biannual Transportation Events** which Mass*RIDES* staff can attend, to promote ridesharing to all employees.
    b. **Make rideshare applications readily available** for your employees; we can customize an electronic registration form to include your logo, to make it easier for all employees to receive a copy, via email.
    c. **Designate bulletin boards** for commute and travel options. Post information regarding the Mass*RIDES* rideshare database, local transit routes, biking, walking and the Emergency Ride Home program.
    d. **Include commute and travel information** in your company newsletter, if available.
    e. **Provide a link to the Mass*RIDES* website** on your employee intranet site; our website is the best place for commuters to learn about new programs and incentives, as well as new vanpool routes that serve their community.

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Count Data

- Automatic Traffic Recorder
- Turning Movement Counts

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Transportation Data Corporation
Mario Perone, mperone1@verizon.net
t. (781) 587-0086 f. (781) 587-0189

Route 2A between Mass. Avenue and Old Massachusetts Avenue
City, State: Lexington, MA
Client: McM/J. Adams

03932Avolume
Site Code: Y09427.11

Start Time	01-Jul-09 Wed	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		6	121			11	135				
12:15		5	132			9	111				
12:30		3	135			6	138				
12:45		7	122	21	510	9	114	35	498	56	1008
01:00		3	102			3	120				
01:15		3	132			8	122				
01:30		1	138			4	118				
01:45		5	121	12	493	3	106	18	466	30	959
02:00		3	128			5	119				
02:15		0	125			3	106				
02:30		4	136			1	128				
02:45		1	151	8	540	3	116	12	469	20	1009
03:00		13	189			2	119				
03:15		1	137			3	155				
03:30		2	162			4	166				
03:45		2	130	18	618	0	146	9	586	27	1204
04:00		8	160			5	166				
04:15		3	147			1	151				
04:30		7	147			6	196				
04:45		16	135	34	589	11	191	23	704	57	1293
05:00		11	122			11	187				
05:15		12	131			19	188				
05:30		23	142			35	190				
05:45		37	129	83	524	56	186	121	751	204	1275
06:00		39	118			77	205				
06:15		69	114			137	179				
06:30		85	100			141	165				
06:45		75	88	268	420	173	116	528	665	796	1085
07:00		117	99			154	110				
07:15		139	60			185	93				
07:30		126	58			180	83				
07:45		171	63	553	280	181	49	700	335	1253	615
08:00		159	52			173	72				
08:15		145	44			190	51				
08:30		177	49			181	64				
08:45		149	47	630	192	140	56	684	243	1314	435
09:00		154	25			133	51				
09:15		137	29			140	59				
09:30		124	32			123	54				
09:45		124	25	539	111	103	36	499	200	1038	311
10:00		105	23			98	45				
10:15		100	26			92	30				
10:30		128	16			97	26				
10:45		121	17	454	82	107	17	394	118	848	200
11:00		103	12			99	23				
11:15		119	24			97	17				
11:30		138	13			104	16				
11:45		112	13	472	62	113	14	413	70	885	132
Total		3092	4421			3436	5105			6528	9526
Percent		41.2%	58.8%			40.2%	59.8%			40.7%	59.3%
Grand Total		3092	4421			3436	5105			6528	9526
Percent		41.2%	58.8%			40.2%	59.8%			40.7%	59.3%

ADT ADT 16,054 AADT 16,054

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
t. (781) 587-0086 f. (781) 587-0189

Lexington Road just north of Route 2A
City, State: Lincoln, MA
Client: McM/J. Adams

03932Cvolume
Site Code: Y09427.11

Start Time	01-Jul-09 Wed	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		4	38			1	48				
12:15		2	32			2	31				
12:30		3	33			0	28				
12:45		1	28	10	131	1	36	4	143	14	274
01:00		0	36			1	34				
01:15		1	42			1	44				
01:30		0	32			0	48				
01:45		0	37	1	147	2	34	4	160	5	307
02:00		0	27			1	48				
02:15		1	37			0	38				
02:30		0	38			1	32				
02:45		0	36	1	138	0	32	2	150	3	288
03:00		0	57			1	45				
03:15		0	58			0	41				
03:30		0	94			0	34				
03:45		0	93	0	302	0	30	1	150	1	452
04:00		1	87			0	46				
04:15		0	85			3	26				
04:30		0	86			4	43				
04:45		2	124	3	382	1	20	8	135	11	517
05:00		0	107			1	41				
05:15		0	126			2	34				
05:30		1	119			8	24				
05:45		6	124	7	476	15	28	26	127	33	603
06:00		12	90			22	26				
06:15		10	96			28	34				
06:30		17	76			43	24				
06:45		18	74	57	336	52	17	145	101	202	437
07:00		24	66			81	15				
07:15		30	54			105	18				
07:30		30	36			78	17				
07:45		32	27	116	183	118	14	382	64	498	247
08:00		34	26			109	16				
08:15		36	20			112	17				
08:30		52	16			102	10				
08:45		47	15	169	77	86	8	409	51	578	128
09:00		28	14			104	10				
09:15		30	15			64	6				
09:30		21	23			63	12				
09:45		25	16	104	68	42	4	273	32	377	100
10:00		19	7			24	6				
10:15		15	15			34	10				
10:30		36	14			48	8				
10:45		31	7	101	43	25	4	131	28	232	71
11:00		29	8			29	3				
11:15		33	2			26	2				
11:30		44	5			30	2				
11:45		32	4	138	19	33	2	118	9	256	28
Total		707	2302			1503	1150			2210	3452
Percent		23.5%	76.5%			56.7%	43.3%			39.0%	61.0%
Grand Total			707	2302			1503	1150			2210	3452
Percent			23.5%	76.5%			56.7%	43.3%			39.0%	61.0%

ADT ADT 5,662 AADT 5,662

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
t. (781) 587-0086 f. (781) 587-0189

Route 2A west of
Lexington Road/Brooks Road
City, State: Lincoln, MA
Client: McM/J. Adams

03932Bvolume
Site Code: Y09427.11

Start	01-Jul-09	EB		Hour Totals		WB		Hour Totals		Combined Totals	
Time	Wed	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		2	55			6	70				
12:15		4	78			6	63				
12:30		4	60			5	67				
12:45		5	65	15	258	8	72	25	272	40	530
01:00		2	55			7	54				
01:15		2	68			7	93				
01:30		2	61			2	73				
01:45		2	56	8	240	3	73	19	293	27	533
02:00		0	54			4	87				
02:15		1	66			2	70				
02:30		1	53			1	80				
02:45		5	70	7	243	1	86	8	323	15	566
03:00		6	60			2	104				
03:15		2	54			3	102				
03:30		2	57			3	125				
03:45		4	54	14	225	0	118	8	449	22	674
04:00		8	55			3	106				
04:15		3	51			2	109				
04:30		14	48			3	104				
04:45		18	42	43	196	5	167	13	486	56	682
05:00		19	44			6	144				
05:15		16	63			6	143				
05:30		28	61			12	180				
05:45		42	55	105	223	9	151	33	618	138	841
06:00		60	70			26	150				
06:15		67	57			33	138				
06:30		97	47			43	117				
06:45		89	54	313	228	55	76	157	481	470	709
07:00		120	45			53	65				
07:15		116	38			52	79				
07:30		109	33			64	57				
07:45		120	29	465	145	67	47	236	248	701	393
08:00		110	19			75	49				
08:15		126	19			89	33				
08:30		130	25			101	47				
08:45		99	19	465	82	53	36	318	165	783	247
09:00		87	21			56	31				
09:15		108	11			61	43				
09:30		87	18			75	36				
09:45		82	14	364	64	40	31	232	141	596	205
10:00		70	19			44	30				
10:15		73	13			55	19				
10:30		74	14			44	19				
10:45		72	9	289	55	53	8	196	76	485	131
11:00		54	8			50	16				
11:15		72	11			46	17				
11:30		60	9			55	11				
11:45		68	8	254	36	67	8	218	52	472	88
Total		2342	1995			1463	3604			3805	5599
Percent		54.0%	46.0%			28.9%	71.1%			40.5%	59.5%
Grand Total			2342	1995			1463	3604			3805	5599
Percent			54.0%	46.0%			28.9%	71.1%			40.5%	59.5%

ADT ADT 9,404 AADT 9,404

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
t. (781) 587-0086 f. (781) 587-0189

Bedford Street (Routes 4/225)
west of Hartwell Avenue
City, State: Lexington, MA
Client: McM/J. Adams

03932Dvolume
Site Code: Y09427.11

Start Time	01-Jul-09 Wed	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		24	222			19	249				
12:15		11	251			18	239				
12:30		12	255			23	207				
12:45		7	238	54	966	10	207	70	902	124	1868
01:00		4	239			6	206				
01:15		5	241			19	192				
01:30		7	239			7	207				
01:45		2	229	18	948	9	196	41	801	59	1749
02:00		3	219			2	210				
02:15		1	210			6	160				
02:30		3	232			2	204				
02:45		2	214	9	875	8	195	18	769	27	1644
03:00		8	224			8	202				
03:15		1	183			3	240				
03:30		7	213			2	264				
03:45		7	190	23	810	9	259	22	965	45	1775
04:00		7	211			8	301				
04:15		12	205			4	291				
04:30		18	183			7	295				
04:45		27	171	64	770	8	300	27	1187	91	1957
05:00		31	202			15	309				
05:15		42	176			22	290				
05:30		76	146			32	277				
05:45		105	178	254	702	46	300	115	1176	369	1878
06:00		131	188			60	272				
06:15		188	161			98	284				
06:30		246	165			104	262				
06:45		307	168	872	682	132	255	394	1073	1266	1755
07:00		345	134			124	268				
07:15		300	138			134	259				
07:30		326	120			151	237				
07:45		329	143	1300	535	186	181	595	945	1895	1480
08:00		314	130			149	127				
08:15		287	126			152	141				
08:30		305	118			145	113				
08:45		251	131	1157	505	145	101	591	482	1748	987
09:00		259	105			165	105				
09:15		267	88			156	98				
09:30		237	73			165	95				
09:45		218	57	981	323	154	64	640	362	1621	685
10:00		203	53			152	78				
10:15		180	38			161	63				
10:30		201	33			170	62				
10:45		187	33	771	157	176	43	659	246	1430	403
11:00		204	45			195	49				
11:15		194	28			210	29				
11:30		180	21			230	29				
11:45		243	21	821	115	215	33	850	140	1671	255
Total		6324	7388			4022	9048			10346	16436
Percent		46.1%	53.9%			30.8%	69.2%			38.6%	61.4%
Grand Total			6324	7388			4022	9048			10346	16436
Percent			46.1%	53.9%			30.8%	69.2%			38.6%	61.4%

ADT ADT 26,782 AADT 26,782

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
t. (781) 587-0086 f. (781) 587-0189

Hanscom Drive (Airport Road)
just north of Route 2A
City, State: Lincoln, MA
Client: McM/J. Adams

03932Evolume
Site Code: Y09427.11

Start Time	01-Jul-09 Wed	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		1	80			0	69				
12:15		1	65			2	80				
12:30		3	62			1	82				
12:45		0	80	5	287	3	55	6	286	11	573
01:00		1	70			4	52				
01:15		1	58			1	87				
01:30		0	72			0	84				
01:45		0	50	2	250	2	64	7	287	9	537
02:00		3	57			1	68				
02:15		1	42			0	64				
02:30		0	39			1	76				
02:45		1	47	5	185	3	102	5	310	10	495
03:00		3	42			7	164				
03:15		0	42			0	102				
03:30		2	33			0	153				
03:45		0	48	5	165	0	106	7	525	12	690
04:00		0	43			1	155				
04:15		2	59			0	131				
04:30		2	51			0	176				
04:45		7	49	11	202	2	142	3	604	14	806
05:00		18	52			2	156				
05:15		25	51			4	137				
05:30		20	45			9	149				
05:45		58	35	121	183	11	114	26	556	147	739
06:00		64	52			14	94				
06:15		112	32			18	86				
06:30		132	50			38	80				
06:45		183	40	491	174	34	64	104	324	595	498
07:00		156	30			41	63				
07:15		172	24			49	37				
07:30		158	30			57	44				
07:45		174	14	660	98	46	38	193	182	853	280
08:00		131	20			60	33				
08:15		144	10			60	26				
08:30		126	19			36	23				
08:45		138	20	539	69	39	32	195	114	734	183
09:00		126	12			38	10				
09:15		124	14			58	18				
09:30		78	9			49	21				
09:45		102	13	430	48	37	23	182	72	612	120
10:00		100	5			34	8				
10:15		74	9			46	9				
10:30		72	7			49	6				
10:45		65	8	311	29	54	3	183	26	494	55
11:00		58	5			50	12				
11:15		67	8			87	18				
11:30		46	4			78	4				
11:45		58	4	229	21	60	4	275	38	504	59
Total		2809	1711			1186	3324			3995	5035
Percent		62.1%	37.9%			26.3%	73.7%			44.2%	55.8%
Grand Total		2809	1711			1186	3324			3995	5035
Percent		62.1%	37.9%			26.3%	73.7%			44.2%	55.8%

ADT ADT 9,030 AADT 9,030

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
t. (781) 587-0086 f. (781) 587-0189

Vandenburg Drive
just west of Main Gate
City, State: Lincoln, MA
Client: McM/J. Adams

03932Fvolume
Site Code: Y09427.11

Start Time	01-Jul-09 Wed	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		0	46			0	48				
12:15		0	46			0	53				
12:30		0	41			0	54				
12:45		0	49	0	182	0	30	0	185	0	367
01:00		0	33			0	33				
01:15		0	44			0	63				
01:30		0	35			0	44				
01:45		0	24	0	136	0	46	0	186	0	322
02:00		1	37			1	45				
02:15		0	26			0	46				
02:30		0	20			0	46				
02:45		0	23	1	106	0	73	1	210	2	316
03:00		0	23			0	98				
03:15		0	22			0	81				
03:30		0	26			0	103				
03:45		0	30	0	101	0	87	0	369	0	470
04:00		0	30			0	142				
04:15		0	35			0	119				
04:30		1	36			0	161				
04:45		3	20	4	121	0	149	0	571	4	692
05:00		12	29			2	114				
05:15		23	29			3	143				
05:30		18	26			5	110				
05:45		39	16	92	100	5	91	15	458	107	558
06:00		62	21			11	72				
06:15		81	16			13	60				
06:30		112	28			26	50				
06:45		141	24	396	89	23	41	73	223	469	312
07:00		83	21			22	30				
07:15		82	13			22	29				
07:30		86	15			25	18				
07:45		146	9	397	58	20	23	89	100	486	158
08:00		130	7			27	19				
08:15		98	3			29	16				
08:30		106	6			23	14				
08:45		110	5	444	21	22	22	101	71	545	92
09:00		93	7			19	7				
09:15		86	3			37	9				
09:30		56	2			27	9				
09:45		74	4	309	16	26	15	109	40	418	56
10:00		62	1			16	3				
10:15		62	1			28	1				
10:30		42	0			31	0				
10:45		49	0	215	2	40	0	115	4	330	6
11:00		49	0			33	0				
11:15		41	0			50	0				
11:30		39	0			58	0				
11:45		35	1	164	1	47	1	188	1	352	2
Total		2022	933			691	2418			2713	3351
Percent		68.4%	31.6%			22.2%	77.8%			44.7%	55.3%
Grand Total			2022	933			691	2418			2713	3351
Percent			68.4%	31.6%			22.2%	77.8%			44.7%	55.3%

ADT ADT 6,064 AADT 6,064

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
t. (781) 587-0086 f. (781) 587-0189

Hartwell Gate just east of
Hamilton Street (Hanscom Field)
City, State: Bedford, MA
Client: McM/J. Adams

03932Gvolume
Site Code: Y09427.11

Start Time	01-Jul-09 Wed	EB Morning	EB Afternoon	Hour Totals Morning	Hour Totals Afternoon	WB Morning	WB Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		10	117			7	97				
12:15		5	115			4	84				
12:30		7	94			5	105				
12:45		10	76	32	402	8	103	24	389	56	791
01:00		3	86			2	93				
01:15		9	74			2	105				
01:30		2	67			1	69				
01:45		5	84	19	311	2	56	7	323	26	634
02:00		4	90			4	38				
02:15		1	85			1	53				
02:30		2	114			2	61				
02:45		3	102	10	391	5	44	12	196	22	587
03:00		1	166			4	35				
03:15		3	167			2	44				
03:30		2	204			1	36				
03:45		1	180	7	717	4	38	11	153	18	870
04:00		5	240			7	44				
04:15		0	242			10	44				
04:30		4	295			14	82				
04:45		8	268	17	1045	19	100	50	270	67	1315
05:00		4	229			14	53				
05:15		7	230			28	116				
05:30		8	212			56	79				
05:45		8	193	27	864	102	67	200	315	227	1179
06:00		10	163			95	27				
06:15		8	136			160	24				
06:30		12	100			188	27				
06:45		17	97	47	496	211	23	654	101	701	597
07:00		27	75			219	21				
07:15		38	68			216	25				
07:30		28	54			233	20				
07:45		29	37	122	234	217	29	885	95	1007	329
08:00		32	41			183	17				
08:15		29	39			170	16				
08:30		33	32			122	26				
08:45		51	31	145	143	127	24	602	83	747	226
09:00		34	25			105	14				
09:15		30	15			89	18				
09:30		36	24			94	28				
09:45		35	18	135	82	91	15	379	75	514	157
10:00		53	18			62	12				
10:15		50	14			61	12				
10:30		49	14			49	15				
10:45		57	6	209	52	58	11	230	50	439	102
11:00		87	17			78	11				
11:15		135	6			56	2				
11:30		150	6			70	4				
11:45		113	3	485	32	95	5	299	22	784	54
Total		1255	4769			3353	2072			4608	6841
Percent		20.8%	79.2%			61.8%	38.2%			40.2%	59.8%
Grand Total			1255	4769			3353	2072			4608	6841
Percent			20.8%	79.2%			61.8%	38.2%			40.2%	59.8%

ADT ADT 11,449 AADT 11,449

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
t. (781) 587-0086 f. (781) 587-0189

Schilling Circle (South)
just east of Bestic Drive
City, State: Lexington, MA
Client: McM/J. Adams

03932Hvolume
Site Code: Y09427.11

Start	01-Jul-09	EB		Hour Totals		WB		Hour Totals		Combined Totals	
Time	Wed	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		0	6			0	11				
12:15		0	5			0	8				
12:30		0	8			0	20				
12:45		0	9	0	28	0	20	0	59	0	87
01:00		0	10			0	13				
01:15		0	14			0	14				
01:30		0	8			0	8				
01:45		1	8	1	40	1	11	1	46	2	86
02:00		0	10			0	8				
02:15		0	7			0	6				
02:30		0	11			0	2				
02:45		0	7	0	35	0	11	0	27	0	62
03:00		0	19			0	6				
03:15		0	18			0	8				
03:30		0	23			0	7				
03:45		0	20	0	80	0	4	0	25	0	105
04:00		0	28			0	10				
04:15		0	25			0	11				
04:30		0	43			0	6				
04:45		0	31	0	127	0	22	0	49	0	176
05:00		0	41			0	24				
05:15		0	51			0	11				
05:30		1	29			1	12				
05:45		0	20	1	141	2	17	3	64	4	205
06:00		2	1			7	2				
06:15		5	0			24	0				
06:30		3	0			39	0				
06:45		9	0	19	1	43	0	113	2	132	3
07:00		6	0			61	0				
07:15		3	0			69	0				
07:30		7	0			78	0				
07:45		7	0	23	0	83	0	291	0	314	0
08:00		9	3			61	1				
08:15		11	0			50	0				
08:30		10	0			53	0				
08:45		8	0	38	3	45	0	209	1	247	4
09:00		3	0			40	0				
09:15		5	0			39	0				
09:30		2	0			29	0				
09:45		8	0	18	0	20	0	128	0	146	0
10:00		4	0			12	0				
10:15		2	0			9	0				
10:30		9	0			10	0				
10:45		6	0	21	0	13	0	44	0	65	0
11:00		13	0			14	0				
11:15		10	0			9	0				
11:30		9	0			15	0				
11:45		18	0	50	0	8	0	46	0	96	0
Total		171	455			835	273			1006	728
Percent		27.3%	72.7%			75.4%	24.6%			58.0%	42.0%
Grand Total			171	455			835	273			1006	728
Percent			27.3%	72.7%			75.4%	24.6%			58.0%	42.0%

ADT ADT 1,734 AADT 1,734

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
t. (781) 587-0086 f. (781) 587-0189

Hartwell Avenue
north of Maguire Road
City, State: Lexington, MA
Client: McM/J. Adams

03932Jvolume
Site Code: Y09427.11

Start	01-Jul-09	SB		Hour Totals		NB		Hour Totals		Combined Totals	
Time	Wed	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		7	141			26	175				
12:15		4	136			9	161				
12:30		10	159			16	135				
12:45		3	160	24	596	12	111	63	582	87	1178
01:00		3	170			4	118				
01:15		3	132			7	122				
01:30		5	119			8	113				
01:45		3	104	14	525	2	118	21	471	35	996
02:00		3	106			4	144				
02:15		3	93			2	119				
02:30		3	113			1	136				
02:45		1	103	10	415	9	144	16	543	26	958
03:00		5	72			0	196				
03:15		2	74			8	183				
03:30		2	72			9	271				
03:45		5	89	14	307	2	212	19	862	33	1169
04:00		6	71			7	267				
04:15		15	75			3	222				
04:30		16	67			6	262				
04:45		27	81	64	294	13	245	29	996	93	1290
05:00		14	94			12	263				
05:15		41	93			8	236				
05:30		81	85			15	224				
05:45		123	65	259	337	21	232	56	955	315	1292
06:00		124	52			20	218				
06:15		201	48			23	202				
06:30		252	58			36	170				
06:45		322	48	899	206	32	168	111	758	1010	964
07:00		262	47			46	136				
07:15		201	51			58	120				
07:30		239	32			54	98				
07:45		249	63	951	193	53	54	211	408	1162	601
08:00		250	33			63	70				
08:15		301	40			60	43				
08:30		244	40			65	52				
08:45		268	43	1063	156	77	42	265	207	1328	363
09:00		193	32			74	41				
09:15		182	30			58	36				
09:30		169	45			69	30				
09:45		164	22	708	129	65	23	266	130	974	259
10:00		109	22			71	27				
10:15		126	27			64	26				
10:30		84	22			70	25				
10:45		95	25	414	96	93	12	298	90	712	186
11:00		115	13			116	26				
11:15		100	3			137	12				
11:30		112	10			180	14				
11:45		139	7	466	33	158	4	591	56	1057	89
Total		4886	3287			1946	6058			6832	9345
Percent		59.8%	40.2%			24.3%	75.7%			42.2%	57.8%
Grand Total			4886	3287			1946	6058			6832	9345
Percent			59.8%	40.2%			24.3%	75.7%			42.2%	57.8%

ADT ADT 16,177 AADT 16,177

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
t. (781) 587-0086 f. (781) 587-0189

Virginia Road
south of Fuller Lane
City, State: Concord, MA
Client: McM/J. Adams

03932Kvolume
Site Code: Y09427.11

Start Time	01-Jul-09 Wed	SB Morning	SB Afternoon	Hour Totals Morning	Hour Totals Afternoon	NB Morning	NB Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		0	26			0	22				
12:15		1	28			0	22				
12:30		1	16			2	16				
12:45		1	15	3	85	0	18	2	78	5	163
01:00		0	11			0	24				
01:15		0	15			0	18				
01:30		0	14			0	21				
01:45		0	14	0	54	0	11	0	74	0	128
02:00		0	16			0	16				
02:15		0	12			1	9				
02:30		1	11			0	9				
02:45		4	12	5	51	0	14	1	48	6	99
03:00		3	12			0	40				
03:15		0	28			0	23				
03:30		0	38			0	20				
03:45		0	26	3	104	0	27	0	110	3	214
04:00		0	31			0	46				
04:15		0	27			0	34				
04:30		0	45			0	60				
04:45		1	28	1	131	1	59	1	199	2	330
05:00		2	33			1	58				
05:15		4	40			4	67				
05:30		7	39			0	54				
05:45		4	13	17	125	6	59	11	238	28	363
06:00		18	24			5	40				
06:15		16	23			17	41				
06:30		22	20			16	18				
06:45		34	14	90	81	28	16	66	115	156	196
07:00		56	12			38	13				
07:15		84	6			22	11				
07:30		62	12			38	11				
07:45		77	16	279	46	40	8	138	43	417	89
08:00		72	11			30	8				
08:15		82	3			35	2				
08:30		49	4			35	4				
08:45		41	6	244	24	40	7	140	21	384	45
09:00		46	3			24	8				
09:15		36	3			28	3				
09:30		24	7			27	3				
09:45		17	4	123	17	20	4	99	18	222	35
10:00		12	1			16	1				
10:15		6	1			14	3				
10:30		11	4			19	4				
10:45		9	2	38	8	9	5	58	13	96	21
11:00		19	1			14	3				
11:15		13	2			14	2				
11:30		29	0			14	2				
11:45		15	0	76	3	20	0	62	7	138	10
Total		879	729			578	964			1457	1693
Percent		54.7%	45.3%			37.5%	62.5%			46.3%	53.7%
Grand Total		879	729			578	964			1457	1693
Percent		54.7%	45.3%			37.5%	62.5%			46.3%	53.7%

ADT ADT 3,150 AADT 3,150

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
t. (781) 587-0086 f. (781) 587-0189

50 Maple Street Location #1
JFHQ Main Driveway
City, State: Milford, MA
Client: McM/J. Adams

03938Avolume
Site Code: Y-09427.11

Start Time	08-Oct-09 Thu	Enter Morning	Enter Afternoon	Hour Totals Morning	Hour Totals Afternoon	Exit Morning	Exit Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		0	7			0	11				
12:15		0	9			0	7				
12:30		0	13			0	11				
12:45		0	13	0	42	0	6	0	35	0	77
01:00		0	10			0	7				
01:15		0	9			0	7				
01:30		0	8			0	6				
01:45		0	4	0	31	0	10	0	30	0	61
02:00		0	9			0	16				
02:15		0	5			0	10				
02:30		0	7			0	17				
02:45		0	5	0	26	0	13	0	56	0	82
03:00		0	4			0	36				
03:15		1	5			0	21				
03:30		0	7			0	25				
03:45		0	3	1	19	0	34	0	116	1	135
04:00		0	5			0	49				
04:15		0	4			0	24				
04:30		1	2			0	19				
04:45		1	3	2	14	0	7	0	99	2	113
05:00		1	3			0	19				
05:15		2	6			0	15				
05:30		3	4			3	18				
05:45		3	7	9	20	8	20	11	72	20	92
06:00		7	2			13	26				
06:15		9	1			1	10				
06:30		28	2			4	2				
06:45		20	1	64	6	2	5	20	43	84	49
07:00		41	2			4	3				
07:15		27	0			3	0				
07:30		29	1			1	2				
07:45		35	0	132	3	3	0	11	5	143	8
08:00		41	1			4	1				
08:15		22	3			2	5				
08:30		24	3			0	3				
08:45		21	7	108	14	2	4	8	13	116	27
09:00		20	18			2	4				
09:15		6	2			2	0				
09:30		16	1			8	1				
09:45		7	1	49	22	3	0	15	5	64	27
10:00		7	0			8	0				
10:15		4	0			8	0				
10:30		5	0			3	0				
10:45		5	0	21	0	4	0	23	0	44	0
11:00		8	0			13	0				
11:15		4	0			9	0				
11:30		3	0			9	1				
11:45		6	1	21	1	12	0	43	1	64	2
Total		407	198			131	475			538	673
Percent		67.3%	32.7%			21.6%	78.4%			44.4%	55.6%
Grand Total		407	198			131	475			538	673
Percent		67.3%	32.7%			21.6%	78.4%			44.4%	55.6%

ADT ADT 1,211 AADT 1,211

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
t. (781) 587-0086 f. (781) 587-0189

50 Maple Street Location #2
Heavy Truck Gated Garage Access
City, State: Milford, MA
Client: McM/J. Adams

03938Bvolume
Site Code: Y009427.11

Start Time	08-Oct-09 Thu	Enter Morning	Enter Afternoon	Hour Totals Morning	Hour Totals Afternoon	Exit Morning	Exit Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		0	1			0	0				
12:15		0	1			0	0				
12:30		0	0			0	0				
12:45		0	0	0	2	0	0	0	0	0	2
01:00		0	1			0	0				
01:15		0	0			0	0				
01:30		0	0			0	1				
01:45		0	0	0	1	0	1	0	2	0	3
02:00		0	1			0	0				
02:15		0	0			0	0				
02:30		0	0			0	0				
02:45		0	0	0	1	0	0	0	0	0	1
03:00		0	0			0	0				
03:15		0	0			0	0				
03:30		0	0			0	0				
03:45		0	0	0	0	0	0	0	0	0	0
04:00		0	0			0	0				
04:15		0	0			0	1				
04:30		0	1			0	1				
04:45		0	0	0	1	0	0	0	2	0	3
05:00		0	0			0	0				
05:15		0	2			0	1				
05:30		0	0			0	0				
05:45		1	0	1	2	0	0	0	1	1	3
06:00		0	0			0	0				
06:15		0	0			0	0				
06:30		0	0			0	0				
06:45		1	0	1	0	0	0	0	0	1	0
07:00		1	0			1	0				
07:15		0	0			0	0				
07:30		0	0			2	0				
07:45		0	0	1	0	0	0	3	0	4	0
08:00		0	0			0	0				
08:15		0	0			0	0				
08:30		0	0			0	0				
08:45		0	0	0	0	0	0	0	0	0	0
09:00		1	0			1	0				
09:15		1	0			1	0				
09:30		0	0			0	0				
09:45		0	0	2	0	0	0	2	0	4	0
10:00		0	0			0	0				
10:15		0	0			1	0				
10:30		0	0			0	0				
10:45		0	0	0	0	0	0	1	0	1	0
11:00		0	0			1	0				
11:15		0	0			0	0				
11:30		0	0			0	0				
11:45		0	0	0	0	1	0	2	0	2	0
Total		5	7			8	5			13	12
Percent		41.7%	58.3%			61.5%	38.5%			52.0%	48.0%
Grand Total			5	7			8	5			13	12
Percent			41.7%	58.3%			61.5%	38.5%			52.0%	48.0%

ADT ADT 25 AADT 25

Transportation Data Corporation
Mario Perone, mperone1@verizon.net
t. (781) 587-0086 f. (781) 587-0189

50 Maple Street Location #3
Rear Loading Dock Access
City, State: Milford, MA
Client: McM/J. Adams

03938Cvolume
Site Code: Y-09427.11

Start Time	08-Oct-09 Thu	Enter Morning	Enter Afternoon	Hour Totals Morning	Hour Totals Afternoon	Exit Morning	Exit Afternoon	Hour Totals Morning	Hour Totals Afternoon	Combined Totals Morning	Combined Totals Afternoon
12:00		0	2			0	1				
12:15		0	1			0	0				
12:30		0	0			0	1				
12:45		0	1	0	4	0	2	0	4	0	8
01:00		0	0			0	2				
01:15		0	0			0	0				
01:30		0	0			0	0				
01:45		0	0	0	0	0	0	0	2	0	2
02:00		0	0			0	0				
02:15		0	0			0	1				
02:30		0	0			0	0				
02:45		0	1	0	1	0	0	0	1	0	2
03:00		0	0			0	0				
03:15		0	0			0	0				
03:30		0	0			0	0				
03:45		0	1	0	1	0	1	0	1	0	2
04:00		0	0			0	0				
04:15		0	0			0	0				
04:30		0	0			0	0				
04:45		0	0	0	0	0	0	0	0	0	0
05:00		0	0			0	0				
05:15		0	1			0	1				
05:30		0	1			0	0				
05:45		0	2	0	4	0	0	0	1	0	5
06:00		1	0			1	0				
06:15		0	0			0	0				
06:30		0	0			0	0				
06:45		0	0	1	0	0	0	1	0	2	0
07:00		1	0			0	0				
07:15		1	0			0	0				
07:30		0	0			0	0				
07:45		0	0	2	0	0	0	0	0	2	0
08:00		0	0			0	0				
08:15		1	0			0	1				
08:30		0	0			2	1				
08:45		0	0	1	0	0	0	2	2	3	2
09:00		1	0			0	0				
09:15		0	0			0	0				
09:30		0	0			0	0				
09:45		0	0	1	0	0	0	0	0	1	0
10:00		0	0			2	0				
10:15		0	0			0	1				
10:30		0	0			0	0				
10:45		0	0	0	0	0	0	2	1	2	1
11:00		2	0			2	0				
11:15		0	0			2	0				
11:30		2	0			2	0				
11:45		2	0	6	0	0	0	6	0	12	0
Total		11	10			11	12			22	22
Percent		52.4%	47.6%			47.8%	52.2%			50.0%	50.0%
Grand Total			11	10			11	12			22	22
Percent			52.4%	47.6%			47.8%	52.2%			50.0%	50.0%

ADT ADT 44 AADT 44

Transporataion Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f (781) 587-0089

N/S: Lexington Road/Brooks Road
E/W: Route 2A/Bypass Road
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932B
Site Code : Y0942711
Start Date : 7/1/2009

Groups Printed- Cars - Trucks

	Lexington Road (Route 2A) From North			North Great Road (Route 2A) From East			Brooks Road From South			Cutoff Bypass Road From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
06:00 AM	1	0	19	10	28	1	1	0	0	0	58	0	118
06:15 AM	0	0	30	11	36	0	1	0	0	0	67	0	145
06:30 AM	1	0	44	17	43	0	0	0	2	0	93	1	201
06:45 AM	0	0	56	18	54	0	2	0	0	0	98	1	229
Total	2	0	149	56	161	1	4	0	2	0	316	2	693
07:00 AM	2	0	85	20	54	0	0	0	0	0	117	3	281
07:15 AM	1	0	104	29	53	0	1	0	0	4	120	1	313
07:30 AM	2	0	89	27	56	4	1	0	2	1	107	2	291
07:45 AM	4	0	115	30	67	1	1	0	2	1	117	1	339
Total	9	0	393	106	230	5	3	0	4	6	461	7	1224
08:00 AM	6	0	91	29	68	3	2	0	2	3	110	1	315
08:15 AM	11	0	87	33	82	2	3	0	1	3	123	5	350
08:30 AM	7	0	95	50	92	1	0	0	2	3	131	0	381
08:45 AM	2	0	83	48	56	0	3	0	0	0	96	1	289
Total	26	0	356	160	298	6	8	0	5	9	460	7	1335
09:00 AM	4	0	97	26	56	3	2	0	2	2	82	1	275
09:15 AM	1	0	69	30	51	7	0	1	3	2	105	0	269
Grand Total	42	0	1064	378	796	22	17	1	16	19	1424	17	3796
Apprch %	3.8	0	96.2	31.6	66.6	1.8	50	2.9	47.1	1.3	97.5	1.2	
Total %	1.1	0	28	10	21	0.6	0.4	0	0.4	0.5	37.5	0.4	
Cars	42	0	1059	375	770	22	17	1	16	18	1393	17	3730
% Cars	100	0	99.5	99.2	96.7	100	100	100	100	94.7	97.8	100	98.3
Trucks	0	0	5	3	26	0	0	0	0	1	31	0	66
% Trucks	0	0	0.5	0.8	3.3	0	0	0	0	5.3	2.2	0	1.7

	Lexington Road (Route 2A) From North				North Great Road (Route 2A) From East				Brooks Road From South				Cutoff Bypass Road From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	4	0	**115**	**119**	30	67	1	98	1	0	**2**	3	1	117	1	119	339
08:00 AM	6	0	91	97	29	68	**3**	100	2	0	2	**4**	**3**	110	1	114	315
08:15 AM	**11**	0	87	98	33	82	2	117	**3**	0	1	4	3	123	**5**	131	350
08:30 AM	7	0	95	102	**50**	**92**	1	**143**	0	0	2	2	3	**131**	0	**134**	**381**
Total Volume	28	0	388	416	142	309	7	458	6	0	7	13	10	481	7	498	1385
% App. Total	6.7	0	93.3		31	67.5	1.5		46.2	0	53.8		2	96.6	1.4		
PHF	.636	.000	.843	.874	.710	.840	.583	.801	.500	.000	.875	.813	.833	.918	.350	.929	.909
Cars	28	0	385	413	142	301	7	450	6	0	7	13	9	470	7	486	1362
% Cars	100	0	99.2	99.3	100	97.4	100	98.3	100	0	100	100	90.0	97.7	100	97.6	98.3
Trucks	0	0	3	3	0	8	0	8	0	0	0	0	1	11	0	12	23
% Trucks	0	0	0.8	0.7	0	2.6	0	1.7	0	0	0	0	10.0	2.3	0	2.4	1.7

Transporataion Data Corporation

Mario Perone, mperone1@verizon.net
t (781) 587-0086 f (781) 587-0089

N/S: Lexington Road/Brooks Road
E/W: Route 2A/Bypass Road
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932B
Site Code : Y0942711
Start Date : 7/1/2009

Groups Printed- Trucks

	Lexington Road (Route 2A) From North			North Great Road (Route 2A) From East			Brooks Road From South			Cutoff Bypass Road From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	2	0	0	0	0	0	2	0	4
06:45 AM	0	0	0	2	3	0	0	0	0	0	7	0	12
Total	0	0	0	2	5	0	0	0	0	0	10	0	17
07:00 AM	0	0	1	0	1	0	0	0	0	0	2	0	4
07:15 AM	0	0	0	1	0	0	0	0	0	0	3	0	4
07:30 AM	0	0	0	0	2	0	0	0	0	0	2	0	4
07:45 AM	0	0	3	0	3	0	0	0	0	0	4	0	10
Total	0	0	4	1	6	0	0	0	0	0	11	0	22
08:00 AM	0	0	0	0	2	0	0	0	0	0	3	0	5
08:15 AM	0	0	0	0	2	0	0	0	0	1	1	0	4
08:30 AM	0	0	0	0	1	0	0	0	0	0	3	0	4
08:45 AM	0	0	0	0	4	0	0	0	0	0	0	0	4
Total	0	0	0	0	9	0	0	0	0	1	7	0	17
09:00 AM	0	0	0	0	2	0	0	0	0	0	2	0	4
09:15 AM	0	0	1	0	4	0	0	0	0	0	1	0	6
Grand Total	0	0	5	3	26	0	0	0	0	1	31	0	66
Apprch %	0	0	100	10.3	89.7	0	0	0	0	3.1	96.9	0	
Total %	0	0	7.6	4.5	39.4	0	0	0	0	1.5	47	0	

	Lexington Road (Route 2A) From North				North Great Road (Route 2A) From East				Brooks Road From South				Cutoff Bypass Road From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 06:30 AM																	
06:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
06:45 AM	0	0	0	0	**2**	**3**	0	**5**	0	0	0	0	0	**7**	0	**7**	**12**
07:00 AM	0	0	**1**	**1**	0	1	0	1	0	0	0	0	0	2	0	2	4
07:15 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	3	0	3	4
Total Volume	0	0	1	1	3	6	0	9	0	0	0	0	0	14	0	14	24
% App. Total	0	0	100		33.3	66.7	0		0	0	0		0	100	0		
PHF	.000	.000	.250	.250	.375	.500	.000	.450	.000	.000	.000	.000	.000	.500	.000	.500	.500

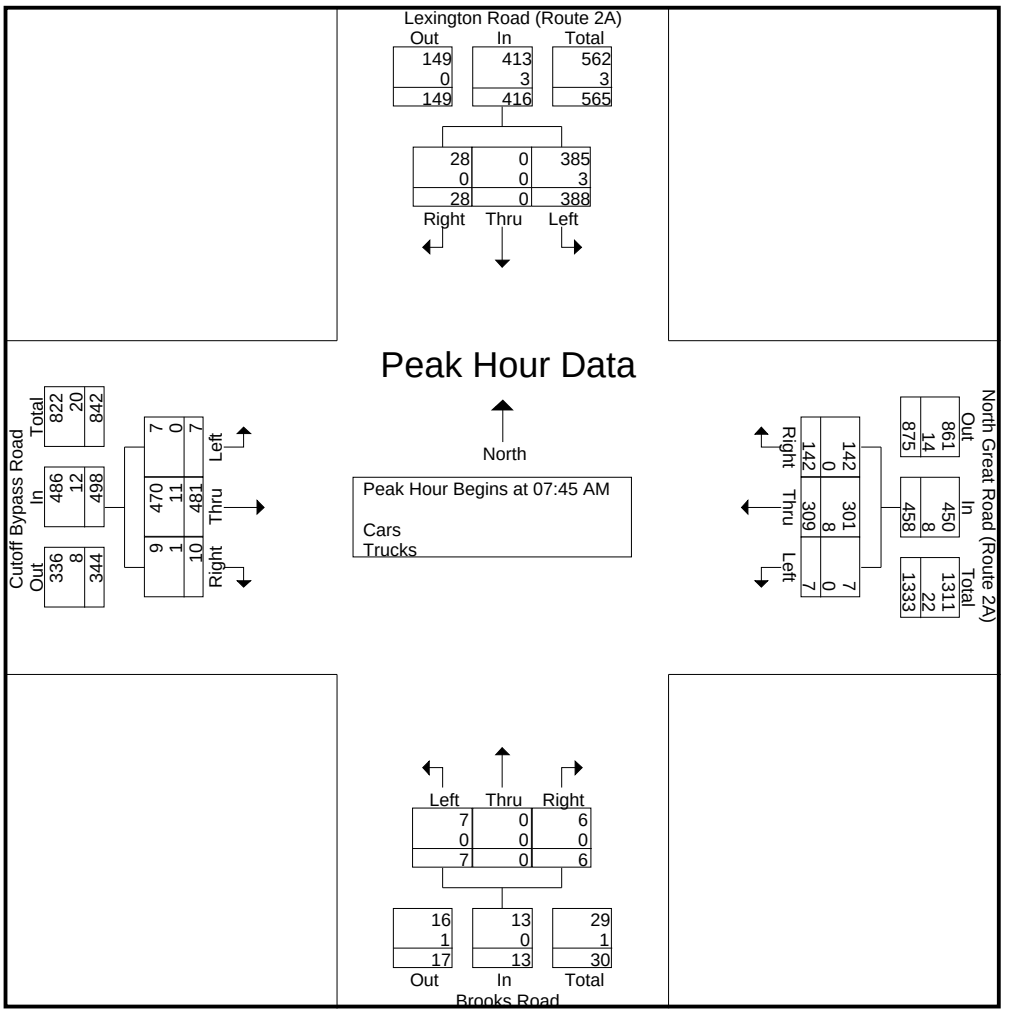
Transporataion Data Corporation

Mario Perone, mperone1@verizon.net
t (781) 587-0086 f (781) 587-0089

N/S: Lexington Road/Brooks Road
E/W: Route 2A/Bypass Road
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932B
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

	Lexington Road (Route 2A) From North				North Great Road (Route 2A) From East				Brooks Road From South				Cutoff Bypass Road From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	4	0	**115**	**119**	30	67	1	98	1	0	**2**	3	1	117	1	119	339
08:00 AM	6	0	91	97	29	68	**3**	100	2	0	2	**4**	**3**	110	1	114	315
08:15 AM	**11**	0	87	98	33	82	2	117	**3**	0	1	4	3	123	**5**	131	350
08:30 AM	7	0	95	102	**50**	**92**	1	**143**	0	0	2	2	3	**131**	0	**134**	**381**
Total Volume	28	0	388	416	142	309	7	458	6	0	7	13	10	481	7	498	1385
% App. Total	6.7	0	93.3		31	67.5	1.5		46.2	0	53.8		2	96.6	1.4		
PHF	.636	.000	.843	.874	.710	.840	.583	.801	.500	.000	.875	.813	.833	.918	.350	.929	.909
Cars	28	0	385	413	142	301	7	450	6	0	7	13	9	470	7	486	1362
% Cars	100	0	99.2	99.3	100	97.4	100	98.3	100	0	100	100	90.0	97.7	100	97.6	98.3
Trucks	0	0	3	3	0	8	0	8	0	0	0	0	1	11	0	12	23
% Trucks	0	0	0.8	0.7	0	2.6	0	1.7	0	0	0	0	10.0	2.3	0	2.4	1.7



Transporataion Data Corporation

Mario Perone, mperone1@verizon.net

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N/S: Lexington Road/Brooks Road
E/W: Route 2A/Bypass Road
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932BB
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

Groups Printed- Cars - Trucks

	Lexington Road (Route 2A) From North			North Great Road (Route 2A) From East			Brooks Road From South			Cutoff Bypass Road From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
03:00 PM	2	1	40	56	110	0	3	0	0	2	56	0	270
03:15 PM	1	0	32	60	101	1	0	0	7	0	57	1	260
03:30 PM	0	1	33	97	120	0	0	0	2	1	52	2	308
03:45 PM	1	0	29	85	122	3	1	0	1	1	52	1	296
Total	4	2	134	298	453	4	4	0	10	4	217	4	1134
04:00 PM	3	0	39	92	111	3	1	0	3	3	48	0	303
04:15 PM	0	0	34	90	105	2	0	0	0	1	44	0	276
04:30 PM	5	0	40	93	104	1	0	0	0	0	54	0	297
04:45 PM	1	0	23	112	165	3	0	1	0	3	36	2	346
Total	9	0	136	387	485	9	1	1	3	7	182	2	1222
05:00 PM	1	0	37	123	136	5	2	0	2	2	41	0	349
05:15 PM	0	0	33	115	149	1	4	0	0	2	52	0	356
05:30 PM	4	0	21	108	175	2	0	0	1	2	66	2	381
05:45 PM	1	0	29	113	155	0	2	0	3	1	49	1	354
Total	6	0	120	459	615	8	8	0	6	7	208	3	1440
Grand Total	19	2	390	1144	1553	21	13	1	19	18	607	9	3796
Apprch %	4.6	0.5	94.9	42.1	57.1	0.8	39.4	3	57.6	2.8	95.7	1.4	
Total %	0.5	0.1	10.3	30.1	40.9	0.6	0.3	0	0.5	0.5	16	0.2	
Cars	19	2	390	1144	1544	20	13	1	19	18	605	8	3783
% Cars	100	100	100	100	99.4	95.2	100	100	100	100	99.7	88.9	99.7
Trucks	0	0	0	0	9	1	0	0	0	0	2	1	13
% Trucks	0	0	0	0	0.6	4.8	0	0	0	0	0.3	11.1	0.3

	Lexington Road (Route 2A) From North				North Great Road (Route 2A) From East				Brooks Road From South				Cutoff Bypass Road From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	0	**37**	**38**	**123**	136	**5**	264	2	0	2	4	**2**	41	0	43	349
05:15 PM	0	0	33	33	115	149	1	265	**4**	0	0	4	2	52	0	54	356
05:30 PM	**4**	0	21	25	108	**175**	2	**285**	0	0	1	1	2	**66**	**2**	**70**	**381**
05:45 PM	1	0	29	30	113	155	0	268	2	0	**3**	**5**	1	49	1	51	354
Total Volume	6	0	120	126	459	615	8	1082	8	0	6	14	7	208	3	218	1440
% App. Total	4.8	0	95.2		42.4	56.8	0.7		57.1	0	42.9		3.2	95.4	1.4		
PHF	.375	.000	.811	.829	.933	.879	.400	.949	.500	.000	.500	.700	.875	.788	.375	.779	.945
Cars	6	0	120	126	459	613	8	1080	8	0	6	14	7	208	3	218	1438
% Cars	100	0	100	100	100	99.7	100	99.8	100	0	100	100	100	100	100	100	99.9
Trucks	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
% Trucks	0	0	0	0	0	0.3	0	0.2	0	0	0	0	0	0	0	0	0.1

Transporataion Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f (781) 587-0089

N/S: Lexington Road/Brooks Road
E/W: Route 2A/Bypass Road
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932BB
Site Code : Y0942711
Start Date : 7/1/2009

Groups Printed- Trucks

	Lexington Road (Route 2A) From North			North Great Road (Route 2A) From East			Brooks Road From South			Cutoff Bypass Road From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
03:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
03:15 PM	0	0	0	0	3	0	0	0	0	0	0	0	3
03:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
03:45 PM	0	0	0	0	1	0	0	0	0	0	0	1	2
Total	0	0	0	0	5	0	0	0	0	0	1	1	7
04:00 PM	0	0	0	0	2	1	0	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	2	1	0	0	0	0	1	0	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	2	0	0	0	0	0	0	0	2
Grand Total	0	0	0	0	9	1	0	0	0	0	2	1	13
Apprch %	0	0	0	0	90	10	0	0	0	0	66.7	33.3	
Total %	0	0	0	0	69.2	7.7	0	0	0	0	15.4	7.7	

	Lexington Road (Route 2A) From North				North Great Road (Route 2A) From East				Brooks Road From South				Cutoff Bypass Road From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:15 PM																	
03:15 PM	0	0	0	0	0	**3**	0	**3**	0	0	0	0	0	0	0	0	**3**
03:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
03:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	**1**	**1**	2
04:00 PM	0	0	0	0	0	2	**1**	3	0	0	0	0	0	0	0	0	3
Total Volume	0	0	0	0	0	7	1	8	0	0	0	0	0	0	1	1	9
% App. Total	0	0	0		0	87.5	12.5		0	0	0		0	0	100		
PHF	.000	.000	.000	.000	.000	.583	.250	.667	.000	.000	.000	.000	.000	.000	.250	.250	.750

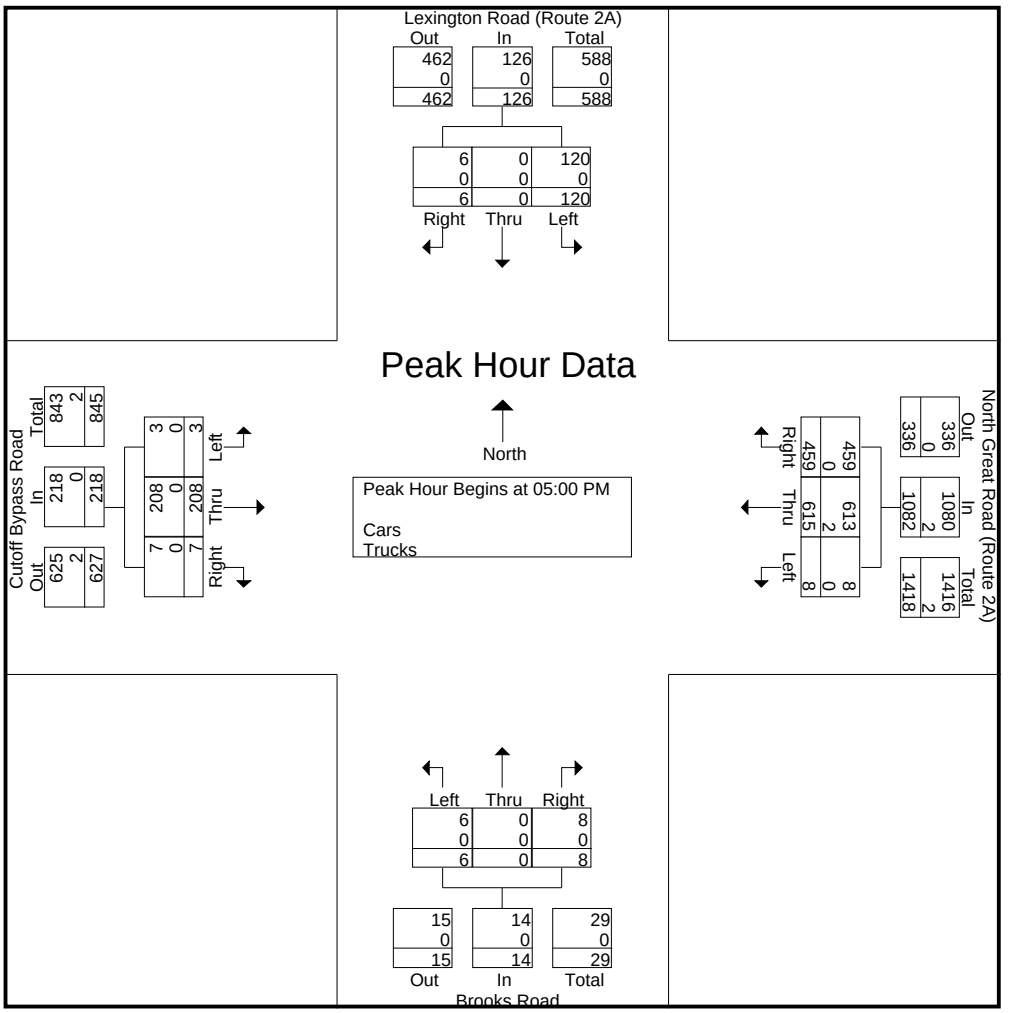
Transporataion Data Corporation

Mario Perone, mperone1@verizon.net
t (781) 587-0086 f (781) 587-0089

N/S: Lexington Road/Brooks Road
E/W: Route 2A/Bypass Road
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932BB
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

	Lexington Road (Route 2A) From North				North Great Road (Route 2A) From East				Brooks Road From South				Cutoff Bypass Road From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	1	0	**37**	**38**	**123**	136	**5**	264	2	0	2	4	**2**	41	0	43	349
05:15 PM	0	0	33	33	115	149	1	265	**4**	0	0	4	2	52	0	54	356
05:30 PM	**4**	0	21	25	108	**175**	2	**285**	0	0	1	1	2	**66**	**2**	**70**	**381**
05:45 PM	1	0	29	30	113	155	0	268	2	0	**3**	**5**	1	49	1	51	354
Total Volume	6	0	120	126	459	615	8	1082	8	0	6	14	7	208	3	218	1440
% App. Total	4.8	0	95.2		42.4	56.8	0.7		57.1	0	42.9		3.2	95.4	1.4		
PHF	.375	.000	.811	.829	.933	.879	.400	.949	.500	.000	.500	.700	.875	.788	.375	.779	.945
Cars	6	0	120	126	459	613	8	1080	8	0	6	14	7	208	3	218	1438
% Cars	100	0	100	100	100	99.7	100	99.8	100	0	100	100	100	100	100	100	99.9
Trucks	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
% Trucks	0	0	0	0	0	0.3	0	0.2	0	0	0	0	0	0	0	0	0.1



Transporataion Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f (781) 587-0089

S: Bedford Road
E/W: North Great Road (Route 2A)
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932A
Site Code : Y0942711
Start Date : 7/1/2009

Groups Printed- Cars - Trucks

	North Great Road (Route 2A) From East		Bedford Road From South		North Great Road (Route 2A) From West		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
06:00 AM	38	6	5	0	7	68	124
06:15 AM	45	4	8	0	10	93	160
06:30 AM	60	6	9	3	17	117	212
06:45 AM	68	15	23	0	24	123	253
Total	211	31	45	3	58	401	749
07:00 AM	73	13	16	1	28	148	279
07:15 AM	69	11	31	6	36	183	336
07:30 AM	79	37	38	2	37	147	340
07:45 AM	83	28	36	2	40	176	365
Total	304	89	121	11	141	654	1320
08:00 AM	92	34	36	2	44	154	362
08:15 AM	108	42	43	6	48	165	412
08:30 AM	128	24	49	4	50	174	429
08:45 AM	94	15	39	0	35	152	335
Total	422	115	167	12	177	645	1538
09:00 AM	80	14	48	3	32	154	331
09:15 AM	66	19	42	1	23	141	292
Grand Total	1083	268	423	30	431	1995	4230
Apprch %	80.2	19.8	93.4	6.6	17.8	82.2	
Total %	25.6	6.3	10	0.7	10.2	47.2	
Cars	1064	266	423	30	431	1969	4183
% Cars	98.2	99.3	100	100	100	98.7	98.9
Trucks	19	2	0	0	0	26	47
% Trucks	1.8	0.7	0	0	0	1.3	1.1

	North Great Road (Route 2A) From East			Bedford Road From South			North Great Road (Route 2A) From West			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	83	28	111	36	2	38	40	**176**	216	365
08:00 AM	92	34	126	36	2	38	44	154	198	362
08:15 AM	108	**42**	150	43	**6**	49	48	165	213	412
08:30 AM	**128**	24	**152**	**49**	4	**53**	**50**	174	**224**	**429**
Total Volume	411	128	539	164	14	178	182	669	851	1568
% App. Total	76.3	23.7		92.1	7.9		21.4	78.6		
PHF	.803	.762	.887	.837	.583	.840	.910	.950	.950	.914
Cars	407	128	535	164	14	178	182	660	842	1555
% Cars	99.0	100	99.3	100	100	100	100	98.7	98.9	99.2
Trucks	4	0	4	0	0	0	0	9	9	13
% Trucks	1.0	0	0.7	0	0	0	0	1.3	1.1	0.8

Transporataion Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f (781) 587-0089

S: Bedford Road
E/W: North Great Road (Route 2A)
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932A
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

Groups Printed- Trucks

	North Great Road (Route 2A) From East		Bedford Road From South		North Great Road (Route 2A) From West		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
06:00 AM	0	0	0	0	0	1	1
06:15 AM	0	0	0	0	0	0	0
06:30 AM	2	0	0	0	0	1	3
06:45 AM	2	0	0	0	0	3	5
Total	4	0	0	0	0	5	9
07:00 AM	1	1	0	0	0	2	4
07:15 AM	1	0	0	0	0	4	5
07:30 AM	2	0	0	0	0	2	4
07:45 AM	0	0	0	0	0	2	2
Total	4	1	0	0	0	10	15
08:00 AM	2	0	0	0	0	5	7
08:15 AM	2	0	0	0	0	0	2
08:30 AM	0	0	0	0	0	2	2
08:45 AM	3	0	0	0	0	1	4
Total	7	0	0	0	0	8	15
09:00 AM	1	1	0	0	0	1	3
09:15 AM	3	0	0	0	0	2	5
Grand Total	19	2	0	0	0	26	47
Apprch %	90.5	9.5	0	0	0	100	
Total %	40.4	4.3	0	0	0	55.3	

	North Great Road (Route 2A) From East			Bedford Road From South			North Great Road (Route 2A) From West			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 06:45 AM										
06:45 AM	**2**	0	**2**	0	0	0	0	3	3	**5**
07:00 AM	1	**1**	2	0	0	0	0	2	2	4
07:15 AM	1	0	1	0	0	0	0	**4**	**4**	5
07:30 AM	2	0	2	0	0	0	0	2	2	4
Total Volume	6	1	7	0	0	0	0	11	11	18
% App. Total	85.7	14.3		0	0		0	100		
PHF	.750	.250	.875	.000	.000	.000	.000	.688	.688	.900

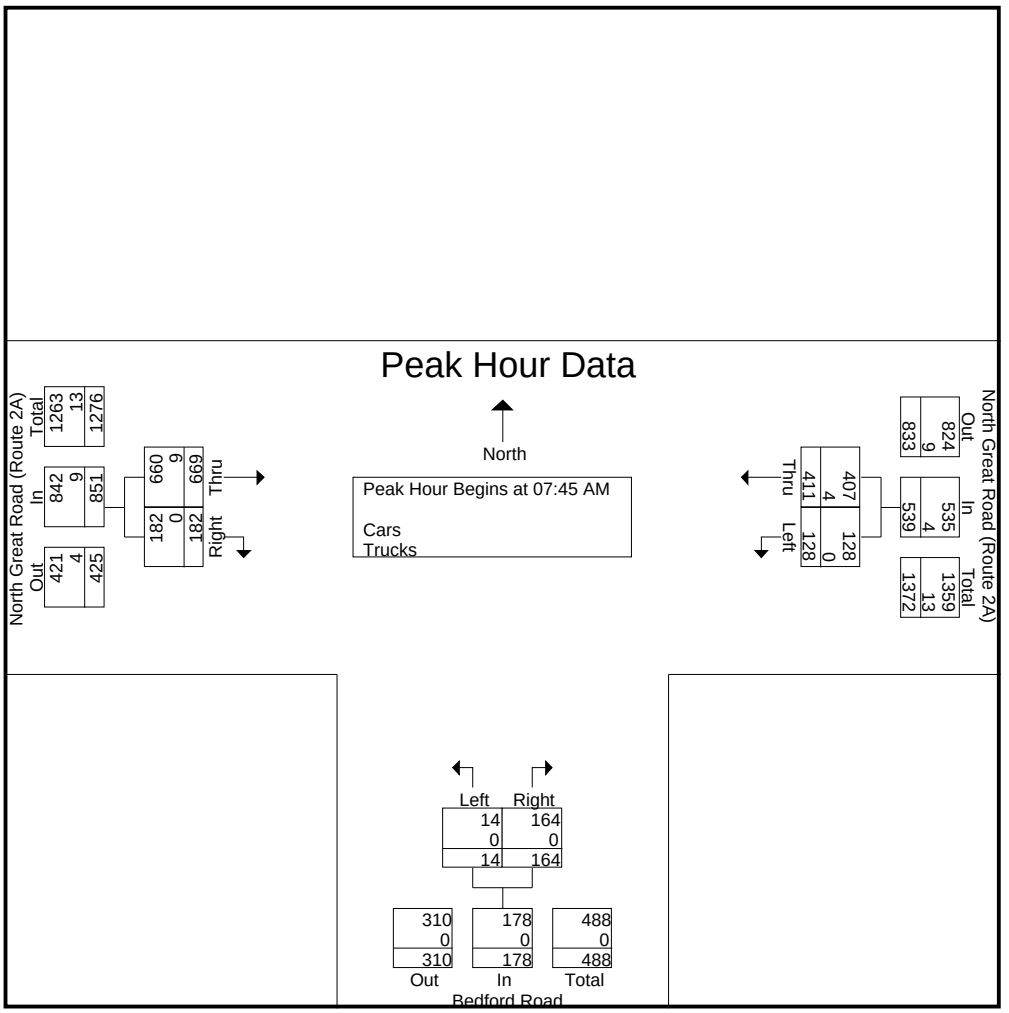
Transporataion Data Corporation

Mario Perone, mperone1@verizon.net
t (781) 587-0086 f (781) 587-0089

S: Bedford Road
E/W: North Great Road (Route 2A)
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932A
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

	North Great Road (Route 2A) From East			Bedford Road From South			North Great Road (Route 2A) From West			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	83	28	111	36	2	38	40	**176**	216	365
08:00 AM	92	34	126	36	2	38	44	154	198	362
08:15 AM	108	**42**	150	43	**6**	49	48	165	213	412
08:30 AM	**128**	24	**152**	**49**	4	**53**	**50**	174	**224**	**429**
Total Volume	411	128	539	164	14	178	182	669	851	1568
% App. Total	76.3	23.7		92.1	7.9		21.4	78.6		
PHF	.803	.762	.887	.837	.583	.840	.910	.950	.950	.914
Cars	407	128	535	164	14	178	182	660	842	1555
% Cars	99.0	100	99.3	100	100	100	100	98.7	98.9	99.2
Trucks	4	0	4	0	0	0	0	9	9	13
% Trucks	1.0	0	0.7	0	0	0	0	1.3	1.1	0.8



Transporataion Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f (781) 587-0089

S: Bedford Road
E/W: North Great Road (Route 2A)
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932AA
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

Groups Printed- Cars - Trucks

	North Great Road (Route 2A) From East		Bedford Road From South		North Great Road (Route 2A) From West		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
03:00 PM	151	48	17	13	7	86	322
03:15 PM	155	35	25	5	4	82	306
03:30 PM	209	47	17	18	9	72	372
03:45 PM	177	37	24	21	6	74	339
Total	692	167	83	57	26	314	1339
04:00 PM	196	45	19	18	7	92	377
04:15 PM	184	47	30	20	4	81	366
04:30 PM	190	75	36	22	7	90	420
04:45 PM	204	69	23	50	3	54	403
Total	774	236	108	110	21	317	1566
05:00 PM	231	65	26	43	6	69	440
05:15 PM	212	73	25	47	4	68	429
05:30 PM	216	76	28	52	4	87	463
05:45 PM	207	63	25	44	8	76	423
Total	866	277	104	186	22	300	1755
Grand Total	2332	680	295	353	69	931	4660
Apprch %	77.4	22.6	45.5	54.5	6.9	93.1	
Total %	50	14.6	6.3	7.6	1.5	20	
Cars	2321	680	295	353	69	927	4645
% Cars	99.5	100	100	100	100	99.6	99.7
Trucks	11	0	0	0	0	4	15
% Trucks	0.5	0	0	0	0	0.4	0.3

	North Great Road (Route 2A) From East			Bedford Road From South			North Great Road (Route 2A) From West			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	**231**	65	**296**	26	43	69	6	69	75	440
05:15 PM	212	73	285	25	47	72	4	68	72	429
05:30 PM	216	**76**	292	**28**	**52**	**80**	4	**87**	**91**	**463**
05:45 PM	207	63	270	25	44	69	**8**	76	84	423
Total Volume	866	277	1143	104	186	290	22	300	322	1755
% App. Total	75.8	24.2		35.9	64.1		6.8	93.2		
PHF	.937	.911	.965	.929	.894	.906	.688	.862	.885	.948
Cars	865	277	1142	104	186	290	22	299	321	1753
% Cars	99.9	100	99.9	100	100	100	100	99.7	99.7	99.9
Trucks	1	0	1	0	0	0	0	1	1	2
% Trucks	0.1	0	0.1	0	0	0	0	0.3	0.3	0.1

Transporataion Data Corporation

Mario Perone, mperone1@verizon.net

t (781) 587-0086 f (781) 587-0089

S: Bedford Road
E/W: North Great Road (Route 2A)
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932AA
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

Groups Printed- Trucks

	North Great Road (Route 2A) From East		Bedford Road From South		North Great Road (Route 2A) From West		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
03:00 PM	2	0	0	0	0	0	2
03:15 PM	3	0	0	0	0	1	4
03:30 PM	1	0	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	0
Total	6	0	0	0	0	1	7
04:00 PM	3	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	2	2
04:45 PM	1	0	0	0	0	0	1
Total	4	0	0	0	0	2	6
05:00 PM	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	1	1
05:30 PM	1	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0
Total	1	0	0	0	0	1	2
Grand Total	11	0	0	0	0	4	15
Apprch %	100	0	0	0	0	100	
Total %	73.3	0	0	0	0	26.7	

	North Great Road (Route 2A) From East			Bedford Road From South			North Great Road (Route 2A) From West			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:15 PM										
03:15 PM	**3**	0	**3**	0	0	0	0	**1**	**1**	**4**
03:30 PM	1	0	1	0	0	0	0	0	0	1
03:45 PM	0	0	0	0	0	0	0	0	0	0
04:00 PM	3	0	3	0	0	0	0	0	0	3
Total Volume	7	0	7	0	0	0	0	1	1	8
% App. Total	100	0		0	0		0	100		
PHF	.583	.000	.583	.000	.000	.000	.000	.250	.250	.500

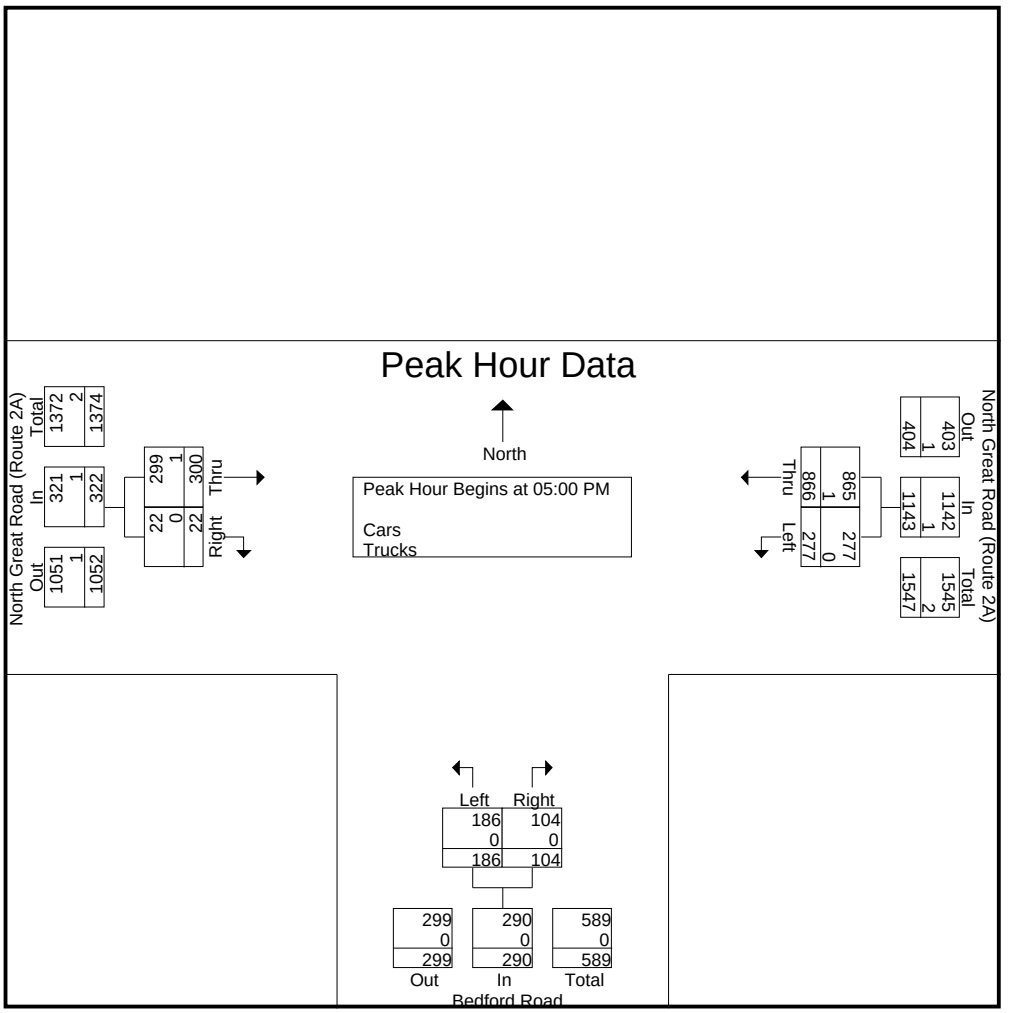
Transporataion Data Corporation

Mario Perone, mperone1@verizon.net
t (781) 587-0086 f (781) 587-0089

S: Bedford Road
E/W: North Great Road (Route 2A)
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932AA
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

	North Great Road (Route 2A) From East			Bedford Road From South			North Great Road (Route 2A) From West			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	**231**	65	**296**	26	43	69	6	69	75	440
05:15 PM	212	73	285	25	47	72	4	68	72	429
05:30 PM	216	**76**	292	**28**	**52**	**80**	4	**87**	**91**	**463**
05:45 PM	207	63	270	25	44	69	**8**	76	84	423
Total Volume	866	277	1143	104	186	290	22	300	322	1755
% App. Total	75.8	24.2		35.9	64.1		6.8	93.2		
PHF	.937	.911	.965	.929	.894	.906	.688	.862	.885	.948
Cars	865	277	1142	104	186	290	22	299	321	1753
% Cars	99.9	100	99.9	100	100	100	100	99.7	99.7	99.9
Trucks	1	0	1	0	0	0	0	1	1	2
% Trucks	0.1	0	0.1	0	0	0	0	0.3	0.3	0.1



Transporataion Data Corporation

Mario Perone, mperone1@verizon.net
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N: Hanscom Drive
E/W: North Great Road (Route 2A)
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932D
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

Groups Printed- Cars - Trucks

	Hanscom Drive From North		North Great Road (Route 2A) From East		North Great Road (Route 2A) From West		
Start Time	Right	Left	Right	Thru	Thru	Left	Int. Total
06:00 AM	6	7	39	38	47	27	164
06:15 AM	11	13	95	43	67	34	263
06:30 AM	21	19	64	43	70	53	270
06:45 AM	21	20	98	64	93	53	349
Total	59	59	296	188	277	167	1046
07:00 AM	18	19	117	66	132	40	392
07:15 AM	18	36	154	90	148	62	508
07:30 AM	24	26	96	88	130	55	419
07:45 AM	19	25	112	88	170	34	448
Total	79	106	479	332	580	191	1767
08:00 AM	27	34	92	96	156	37	442
08:15 AM	31	29	94	118	163	48	483
08:30 AM	19	20	87	128	182	51	487
08:45 AM	16	30	86	95	146	53	426
Total	93	113	359	437	647	189	1838
09:00 AM	14	26	83	80	153	55	411
09:15 AM	18	39	74	70	134	50	385
Grand Total	263	343	1291	1107	1791	652	5447
Apprch %	43.4	56.6	53.8	46.2	73.3	26.7	
Total %	4.8	6.3	23.7	20.3	32.9	12	
Cars	257	332	1261	1087	1769	646	5352
% Cars	97.7	96.8	97.7	98.2	98.8	99.1	98.3
Trucks	6	11	30	20	22	6	95
% Trucks	2.3	3.2	2.3	1.8	1.2	0.9	1.7

	Hanscom Drive From North			North Great Road (Route 2A) From East			North Great Road (Route 2A) From West			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	19	25	44	**112**	88	200	170	34	204	448
08:00 AM	27	**34**	**61**	92	96	188	156	37	193	442
08:15 AM	**31**	29	60	94	118	212	163	48	211	483
08:30 AM	19	20	39	87	**128**	**215**	**182**	**51**	**233**	**487**
Total Volume	96	108	204	385	430	815	671	170	841	1860
% App. Total	47.1	52.9		47.2	52.8		79.8	20.2		
PHF	.774	.794	.836	.859	.840	.948	.922	.833	.902	.955
Cars	94	105	199	376	425	801	664	167	831	1831
% Cars	97.9	97.2	97.5	97.7	98.8	98.3	99.0	98.2	98.8	98.4
Trucks	2	3	5	9	5	14	7	3	10	29
% Trucks	2.1	2.8	2.5	2.3	1.2	1.7	1.0	1.8	1.2	1.6

Transporataion Data Corporation

Mario Perone, mperone1@verizon.net
t (781) 587-0086 f (781) 587-0089

N: Hanscom Drive
E/W: North Great Road (Route 2A)
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932D
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

Groups Printed- Trucks

	Hanscom Drive From North		North Great Road (Route 2A) From East		North Great Road (Route 2A) From West		
Start Time	Right	Left	Right	Thru	Thru	Left	Int. Total
06:00 AM	0	1	1	0	1	0	3
06:15 AM	0	0	1	0	0	0	1
06:30 AM	0	0	2	2	1	0	5
06:45 AM	1	1	3	2	2	3	12
Total	1	2	7	4	4	3	21
07:00 AM	1	1	4	1	1	0	8
07:15 AM	0	0	2	1	3	0	6
07:30 AM	0	1	2	2	3	0	8
07:45 AM	0	0	3	1	2	0	6
Total	1	2	11	5	9	0	28
08:00 AM	2	2	3	1	4	2	14
08:15 AM	0	1	0	2	0	0	3
08:30 AM	0	0	3	1	1	1	6
08:45 AM	1	2	3	2	0	0	8
Total	3	5	9	6	5	3	31
09:00 AM	0	1	2	2	2	0	7
09:15 AM	1	1	1	3	2	0	8
Grand Total	6	11	30	20	22	6	95
Apprch %	35.3	64.7	60	40	78.6	21.4	
Total %	6.3	11.6	31.6	21.1	23.2	6.3	

	Hanscom Drive From North			North Great Road (Route 2A) From East			North Great Road (Route 2A) From West			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 06:45 AM										
06:45 AM	**1**	**1**	**2**	3	**2**	**5**	2	**3**	**5**	**12**
07:00 AM	1	1	2	**4**	1	5	1	0	1	8
07:15 AM	0	0	0	2	1	3	**3**	0	3	6
07:30 AM	0	1	1	2	2	4	3	0	3	8
Total Volume	2	3	5	11	6	17	9	3	12	34
% App. Total	40	60		64.7	35.3		75	25		
PHF	.500	.750	.625	.688	.750	.850	.750	.250	.600	.708

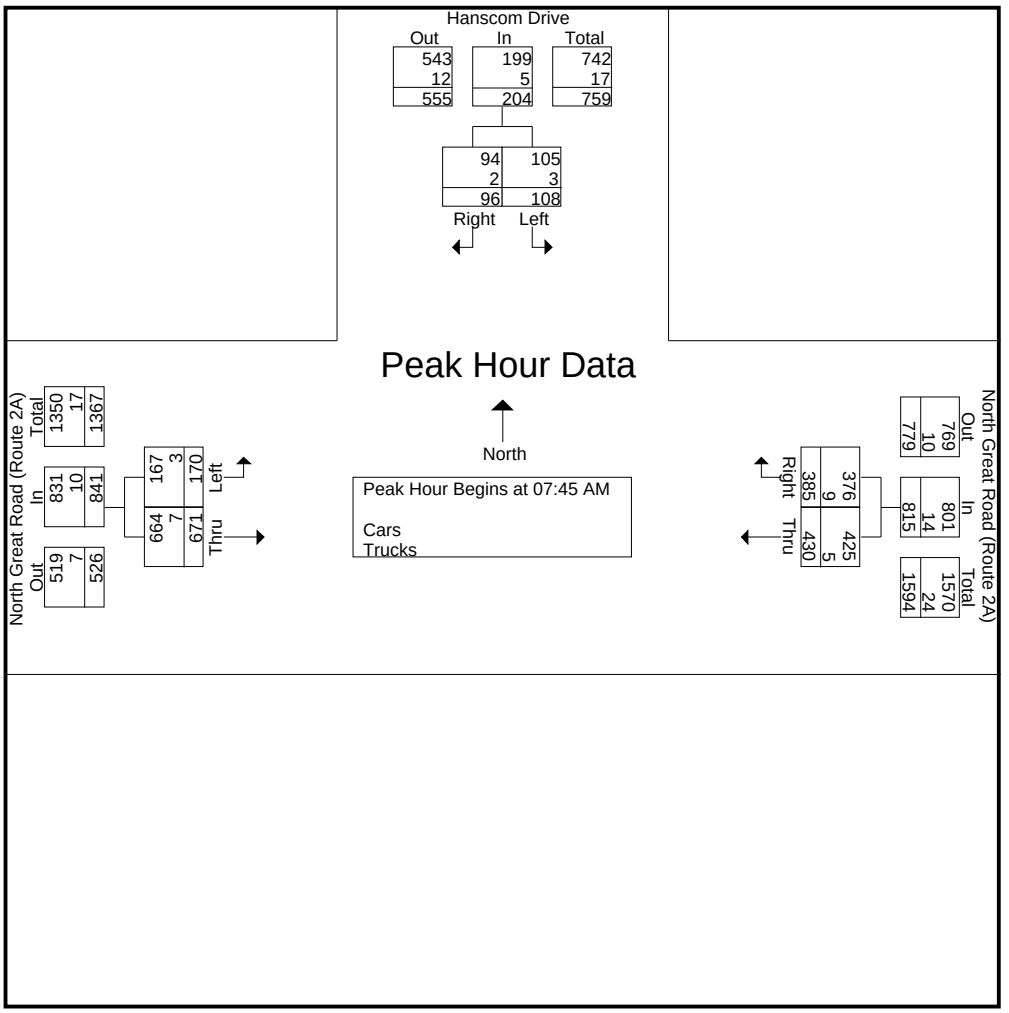
Transporataion Data Corporation

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N: Hanscom Drive
E/W: North Great Road (Route 2A)
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932D
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

	Hanscom Drive From North			North Great Road (Route 2A) From East			North Great Road (Route 2A) From West			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	19	25	44	**112**	88	200	170	34	204	448
08:00 AM	27	**34**	**61**	92	96	188	156	37	193	442
08:15 AM	**31**	29	60	94	118	212	163	48	211	483
08:30 AM	19	20	39	87	**128**	**215**	**182**	**51**	**233**	**487**
Total Volume	96	108	204	385	430	815	671	170	841	1860
% App. Total	47.1	52.9		47.2	52.8		79.8	20.2		
PHF	.774	.794	.836	.859	.840	.948	.922	.833	.902	.955
Cars	94	105	199	376	425	801	664	167	831	1831
% Cars	97.9	97.2	97.5	97.7	98.8	98.3	99.0	98.2	98.8	98.4
Trucks	2	3	5	9	5	14	7	3	10	29
% Trucks	2.1	2.8	2.5	2.3	1.2	1.7	1.0	1.8	1.2	1.6



Transporataion Data Corporation

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City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932DD
Site Code : Y0942711
Start Date : 7/1/2009

Groups Printed- Cars - Trucks

	Hanscom Drive From North		North Great Road (Route 2A) From East		North Great Road (Route 2A) From West		
Start Time	Right	Left	Right	Thru	Thru	Left	Int. Total
03:00 PM	81	89	28	125	98	12	433
03:15 PM	45	67	28	147	97	10	394
03:30 PM	73	80	23	186	86	15	463
03:45 PM	62	51	31	154	79	16	393
Total	261	287	110	612	360	53	1683
04:00 PM	81	81	25	164	86	19	456
04:15 PM	71	65	42	161	92	18	449
04:30 PM	92	71	31	179	86	27	486
04:45 PM	80	73	23	192	62	22	452
Total	324	290	121	696	326	86	1843
05:00 PM	94	68	30	202	76	20	490
05:15 PM	72	71	26	212	76	24	481
05:30 PM	76	82	27	213	99	18	515
05:45 PM	55	61	21	215	89	13	454
Total	297	282	104	842	340	75	1940
Grand Total	882	859	335	2150	1026	214	5466
Apprch %	50.7	49.3	13.5	86.5	82.7	17.3	
Total %	16.1	15.7	6.1	39.3	18.8	3.9	
Cars	881	854	331	2136	1023	213	5438
% Cars	99.9	99.4	98.8	99.3	99.7	99.5	99.5
Trucks	1	5	4	14	3	1	28
% Trucks	0.1	0.6	1.2	0.7	0.3	0.5	0.5

	Hanscom Drive From North			North Great Road (Route 2A) From East			North Great Road (Route 2A) From West			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	**94**	68	**162**	**30**	202	232	76	20	96	490
05:15 PM	72	71	143	26	212	238	76	**24**	100	481
05:30 PM	76	**82**	158	27	213	**240**	**99**	18	**117**	**515**
05:45 PM	55	61	116	21	**215**	236	89	13	102	454
Total Volume	297	282	579	104	842	946	340	75	415	1940
% App. Total	51.3	48.7		11	89		81.9	18.1		
PHF	.790	.860	.894	.867	.979	.985	.859	.781	.887	.942
Cars	296	282	578	104	840	944	339	75	414	1936
% Cars	99.7	100	99.8	100	99.8	99.8	99.7	100	99.8	99.8
Trucks	1	0	1	0	2	2	1	0	1	4
% Trucks	0.3	0	0.2	0	0.2	0.2	0.3	0	0.2	0.2

Transporataion Data Corporation

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N: Hanscom Drive
E/W: North Great Road (Route 2A)
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932DD
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

Groups Printed- Trucks

	Hanscom Drive From North		North Great Road (Route 2A) From East		North Great Road (Route 2A) From West		
Start Time	Right	Left	Right	Thru	Thru	Left	Int. Total
03:00 PM	0	1	1	3	0	0	5
03:15 PM	0	0	0	3	0	1	4
03:30 PM	0	1	0	1	0	0	2
03:45 PM	0	0	1	1	0	0	2
Total	0	2	2	8	0	1	13
04:00 PM	0	1	1	3	0	0	5
04:15 PM	0	0	1	0	0	0	1
04:30 PM	0	2	0	0	2	0	4
04:45 PM	0	0	0	1	0	0	1
Total	0	3	2	4	2	0	11
05:00 PM	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	1	0	1
05:30 PM	1	0	0	1	0	0	2
05:45 PM	0	0	0	1	0	0	1
Total	1	0	0	2	1	0	4
Grand Total	1	5	4	14	3	1	28
Apprch %	16.7	83.3	22.2	77.8	75	25	
Total %	3.6	17.9	14.3	50	10.7	3.6	

	Hanscom Drive From North			North Great Road (Route 2A) From East			North Great Road (Route 2A) From West			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:00 PM										
03:00 PM	0	**1**	**1**	**1**	**3**	**4**	0	0	0	**5**
03:15 PM	0	0	0	0	3	3	0	**1**	**1**	4
03:30 PM	0	1	1	0	1	1	0	0	0	2
03:45 PM	0	0	0	1	1	2	0	0	0	2
Total Volume	0	2	2	2	8	10	0	1	1	13
% App. Total	0	100		20	80		0	100		
PHF	.000	.500	.500	.500	.667	.625	.000	.250	.250	.650

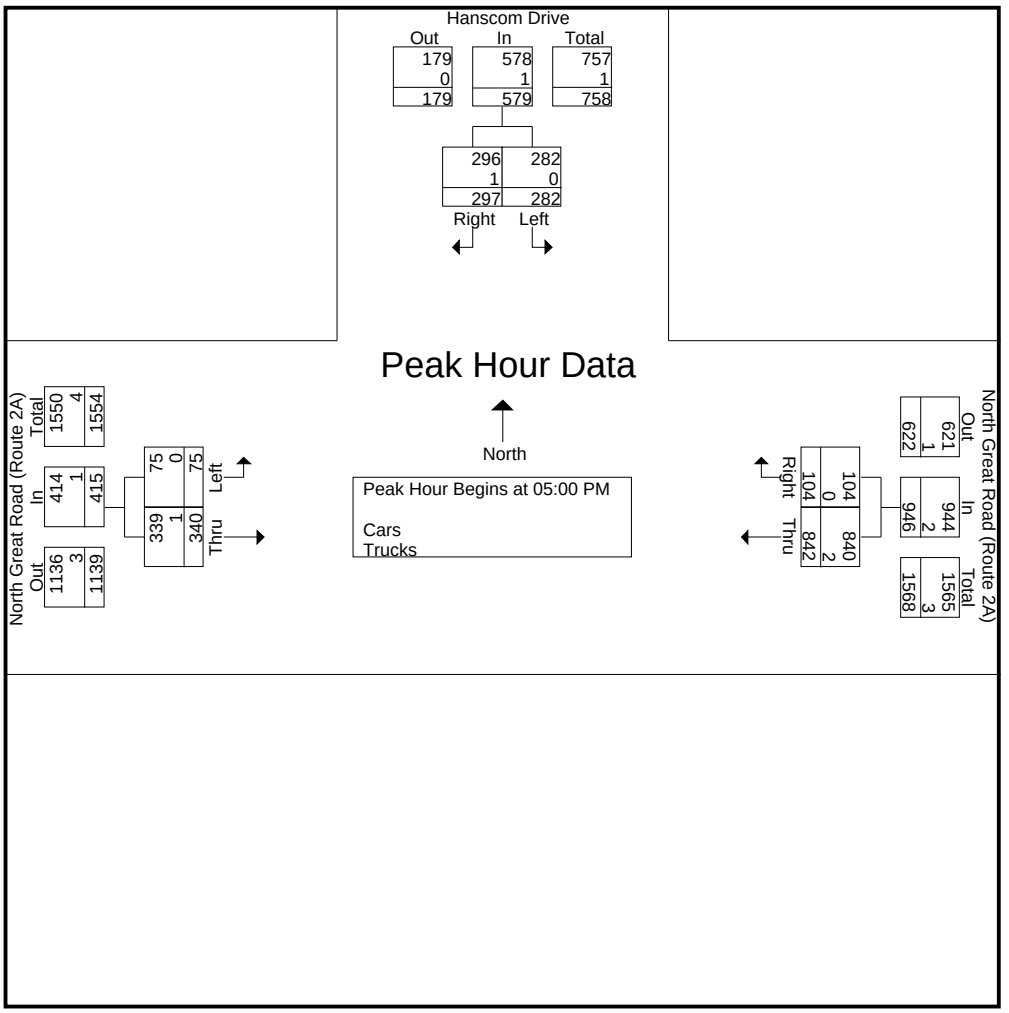
Transporataion Data Corporation

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N: Hanscom Drive
E/W: North Great Road (Route 2A)
City, State: Lincoln, MA
Client: McM/J. Adams

File Name : 03932DD
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

	Hanscom Drive From North			North Great Road (Route 2A) From East			North Great Road (Route 2A) From West			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	**94**	68	**162**	**30**	202	232	76	20	96	490
05:15 PM	72	71	143	26	212	238	76	**24**	100	481
05:30 PM	76	**82**	158	27	213	**240**	**99**	18	**117**	**515**
05:45 PM	55	61	116	21	**215**	236	89	13	102	454
Total Volume	297	282	579	104	842	946	340	75	415	1940
% App. Total	51.3	48.7		11	89		81.9	18.1		
PHF	.790	.860	.894	.867	.979	.985	.859	.781	.887	.942
Cars	296	282	578	104	840	944	339	75	414	1936
% Cars	99.7	100	99.8	100	99.8	99.8	99.7	100	99.8	99.8
Trucks	1	0	1	0	2	2	1	0	1	4
% Trucks	0.3	0	0.2	0	0.2	0.2	0.3	0	0.2	0.2



Transporataion Data Corporation

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N/S: Bedford Street (Route 4/225)
E/W: Jughandle/Hartwell Avenue
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932F
Site Code : Y0942711
Start Date : 7/1/2009

Groups Printed- Cars - Trucks

	Bedford Street (Route 4/225) From North			NB Jughandle for WB Left Turn From East			Bedford Street (Route 4/225) From South			Hartwell Avenue From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
06:00 AM	51	76	0	0	112	4	0	54	0	20	0	4	321
06:15 AM	78	117	0	0	169	12	0	93	0	22	0	5	496
06:30 AM	104	142	0	0	209	18	0	100	0	30	0	10	613
06:45 AM	126	180	0	1	252	43	0	142	0	38	0	5	787
Total	359	515	0	1	742	77	0	389	0	110	0	24	2217
07:00 AM	136	225	0	0	223	43	0	126	0	43	0	11	807
07:15 AM	119	178	0	0	215	38	0	134	0	54	0	15	753
07:30 AM	116	231	0	2	240	51	0	137	0	66	0	17	860
07:45 AM	119	225	0	0	228	55	0	161	0	70	0	17	875
Total	490	859	0	2	906	187	0	558	0	233	0	60	3295
08:00 AM	117	195	0	1	224	50	0	135	0	67	0	28	817
08:15 AM	120	212	0	0	270	47	0	139	0	60	0	19	867
08:30 AM	96	219	0	0	264	74	0	137	0	69	0	15	874
08:45 AM	102	164	0	1	266	56	0	133	0	64	0	24	810
Total	435	790	0	2	1024	227	0	544	0	260	0	86	3368
09:00 AM	79	191	0	0	195	53	0	167	0	62	0	17	764
09:15 AM	65	208	0	0	194	55	0	127	0	56	0	23	728
Grand Total	1428	2563	0	5	3061	599	0	1785	0	721	0	210	10372
Apprch %	35.8	64.2	0	0.1	83.5	16.3	0	100	0	77.4	0	22.6	
Total %	13.8	24.7	0	0	29.5	5.8	0	17.2	0	7	0	2	
Cars	1424	2542	0	5	3019	588	0	1765	0	677	0	207	10227
% Cars	99.7	99.2	0	100	98.6	98.2	0	98.9	0	93.9	0	98.6	98.6
Trucks	4	21	0	0	42	11	0	20	0	44	0	3	145
% Trucks	0.3	0.8	0	0	1.4	1.8	0	1.1	0	6.1	0	1.4	1.4

	Bedford Street (Route 4/225) From North				NB Jughandle for WB Left Turn From East				Bedford Street (Route 4/225) From South				Hartwell Avenue From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	119	**225**	0	**344**	0	228	55	283	0	**161**	0	**161**	**70**	0	17	87	**875**
08:00 AM	117	195	0	312	**1**	224	50	275	0	135	0	135	67	0	**28**	**95**	817
08:15 AM	**120**	212	0	332	0	**270**	47	317	0	139	0	139	60	0	19	79	867
08:30 AM	96	219	0	315	0	264	**74**	**338**	0	137	0	137	69	0	15	84	874
Total Volume	452	851	0	1303	1	986	226	1213	0	572	0	572	266	0	79	345	3433
% App. Total	34.7	65.3	0		0.1	81.3	18.6		0	100	0		77.1	0	22.9		
PHF	.942	.946	.000	.947	.250	.913	.764	.897	.000	.888	.000	.888	.950	.000	.705	.908	.981
Cars	451	841	0	1292	1	973	221	1195	0	568	0	568	253	0	78	331	3386
% Cars	99.8	98.8	0	99.2	100	98.7	97.8	98.5	0	99.3	0	99.3	95.1	0	98.7	95.9	98.6
Trucks	1	10	0	11	0	13	5	18	0	4	0	4	13	0	1	14	47
% Trucks	0.2	1.2	0	0.8	0	1.3	2.2	1.5	0	0.7	0	0.7	4.9	0	1.3	4.1	1.4

Transporataion Data Corporation

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N/S: Bedford Street (Route 4/225)
E/W: Jughandle/Hartwell Avenue
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932F
Site Code : Y0942711
Start Date : 7/1/2009

Groups Printed- Trucks

	Bedford Street (Route 4/225) From North			NB Jughandle for WB Left Turn From East			Bedford Street (Route 4/225) From South			Hartwell Avenue From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
06:00 AM	0	0	0	0	3	0	0	1	0	3	0	0	7
06:15 AM	0	1	0	0	1	1	0	3	0	4	0	0	10
06:30 AM	0	3	0	0	2	0	0	0	0	3	0	0	8
06:45 AM	0	2	0	0	4	2	0	1	0	0	0	0	9
Total	0	6	0	0	10	3	0	5	0	10	0	0	34
07:00 AM	0	0	0	0	2	0	0	1	0	1	0	0	4
07:15 AM	0	0	0	0	4	1	0	1	0	1	0	2	9
07:30 AM	0	3	0	0	3	0	0	2	0	5	0	0	13
07:45 AM	0	4	0	0	1	1	0	1	0	2	0	0	9
Total	0	7	0	0	10	2	0	5	0	9	0	2	35
08:00 AM	0	2	0	0	3	0	0	1	0	4	0	0	10
08:15 AM	1	0	0	0	3	0	0	2	0	3	0	0	9
08:30 AM	0	4	0	0	6	4	0	0	0	4	0	1	19
08:45 AM	2	1	0	0	4	1	0	1	0	9	0	0	18
Total	3	7	0	0	16	5	0	4	0	20	0	1	56
09:00 AM	1	0	0	0	1	0	0	5	0	3	0	0	10
09:15 AM	0	1	0	0	5	1	0	1	0	2	0	0	10
Grand Total	4	21	0	0	42	11	0	20	0	44	0	3	145
Apprch %	16	84	0	0	79.2	20.8	0	100	0	93.6	0	6.4	
Total %	2.8	14.5	0	0	29	7.6	0	13.8	0	30.3	0	2.1	

	Bedford Street (Route 4/225) From North				NB Jughandle for WB Left Turn From East				Bedford Street (Route 4/225) From South				Hartwell Avenue From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:30 AM																	
08:30 AM	0	**4**	0	**4**	0	**6**	**4**	**10**	0	0	0	0	4	0	**1**	5	**19**
08:45 AM	**2**	1	0	3	0	4	1	5	0	1	0	1	**9**	0	0	**9**	18
09:00 AM	1	0	0	1	0	1	0	1	0	**5**	0	**5**	3	0	0	3	10
09:15 AM	0	1	0	1	0	5	1	6	0	1	0	1	2	0	0	2	10
Total Volume	3	6	0	9	0	16	6	22	0	7	0	7	18	0	1	19	57
% App. Total	33.3	66.7	0		0	72.7	27.3		0	100	0		94.7	0	5.3		
PHF	.375	.375	.000	.563	.000	.667	.375	.550	.000	.350	.000	.350	.500	.000	.250	.528	.750

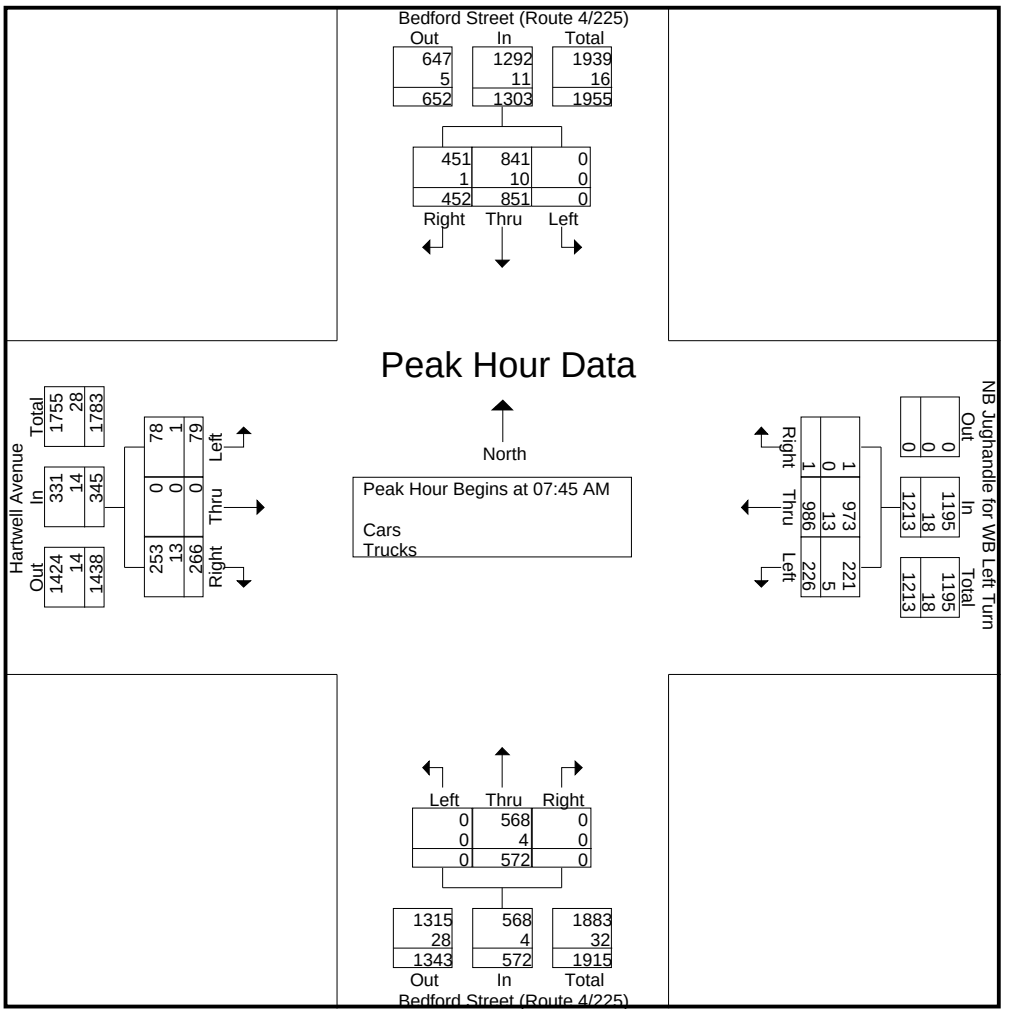
Transporataion Data Corporation

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N/S: Bedford Street (Route 4/225)
E/W: Jughandle/Hartwell Avenue
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932F
Site Code : Y0942711
Start Date : 7/1/2009

	Bedford Street (Route 4/225) From North				NB Jughandle for WB Left Turn From East				Bedford Street (Route 4/225) From South				Hartwell Avenue From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	119	**225**	0	**344**	0	228	55	283	0	**161**	0	**161**	**70**	0	17	87	**875**
08:00 AM	117	195	0	312	**1**	224	50	275	0	135	0	135	67	0	**28**	**95**	817
08:15 AM	**120**	212	0	332	0	**270**	47	317	0	139	0	139	60	0	19	79	867
08:30 AM	96	219	0	315	0	264	**74**	**338**	0	137	0	137	69	0	15	84	874
Total Volume	452	851	0	1303	1	986	226	1213	0	572	0	572	266	0	79	345	3433
% App. Total	34.7	65.3	0		0.1	81.3	18.6		0	100	0		77.1	0	22.9		
PHF	.942	.946	.000	.947	.250	.913	.764	.897	.000	.888	.000	.888	.950	.000	.705	.908	.981
Cars	451	841	0	1292	1	973	221	1195	0	568	0	568	253	0	78	331	3386
% Cars	99.8	98.8	0	99.2	100	98.7	97.8	98.5	0	99.3	0	99.3	95.1	0	98.7	95.9	98.6
Trucks	1	10	0	11	0	13	5	18	0	4	0	4	13	0	1	14	47
% Trucks	0.2	1.2	0	0.8	0	1.3	2.2	1.5	0	0.7	0	0.7	4.9	0	1.3	4.1	1.4



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N/S: Bedford Street (Route 4/225)
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City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932FF
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

Groups Printed- Cars - Trucks

	Bedford Street (Route 4/225) From North			NB Jughandle for WB Left Turn From East			Bedford Street (Route 4/225) From South			Hartwell Avenue From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
03:00 PM	18	200	0	0	72	37	0	159	0	175	0	54	715
03:15 PM	29	158	0	1	57	28	0	166	0	157	0	76	672
03:30 PM	38	186	0	0	42	28	0	161	0	217	0	122	794
03:45 PM	32	138	0	1	65	26	0	165	0	153	0	101	681
Total	117	682	0	2	236	119	0	651	0	702	0	353	2862
04:00 PM	30	184	0	1	45	37	0	182	0	205	0	137	821
04:15 PM	27	181	0	1	60	26	0	174	0	167	0	129	765
04:30 PM	25	169	0	1	51	21	0	191	0	216	0	134	808
04:45 PM	22	140	0	0	83	18	0	192	0	189	0	146	790
Total	104	674	0	3	239	102	0	739	0	777	0	546	3184
05:00 PM	35	175	0	0	67	15	0	206	0	264	0	127	889
05:15 PM	30	151	0	1	68	28	0	205	0	224	0	112	819
05:30 PM	26	128	0	1	74	27	0	182	0	219	0	122	779
05:45 PM	32	138	0	0	53	28	0	207	0	198	0	116	772
Total	123	592	0	2	262	98	0	800	0	905	0	477	3259
Grand Total	344	1948	0	7	737	319	0	2190	0	2384	0	1376	9305
Apprch %	15	85	0	0.7	69.3	30	0	100	0	63.4	0	36.6	
Total %	3.7	20.9	0	0.1	7.9	3.4	0	23.5	0	25.6	0	14.8	
Cars	343	1938	0	7	723	318	0	2178	0	2370	0	1372	9249
% Cars	99.7	99.5	0	100	98.1	99.7	0	99.5	0	99.4	0	99.7	99.4
Trucks	1	10	0	0	14	1	0	12	0	14	0	4	56
% Trucks	0.3	0.5	0	0	1.9	0.3	0	0.5	0	0.6	0	0.3	0.6

	Bedford Street (Route 4/225) From North				NB Jughandle for WB Left Turn From East				Bedford Street (Route 4/225) From South				Hartwell Avenue From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	25	169	0	194	**1**	51	21	73	0	191	0	191	216	0	134	350	808
04:45 PM	22	140	0	162	0	**83**	18	**101**	0	192	0	192	189	0	**146**	335	790
05:00 PM	**35**	**175**	0	**210**	0	67	15	82	0	**206**	0	**206**	**264**	0	127	**391**	**889**
05:15 PM	30	151	0	181	1	68	**28**	97	0	205	0	205	224	0	112	336	819
Total Volume	112	635	0	747	2	269	82	353	0	794	0	794	893	0	519	1412	3306
% App. Total	15	85	0		0.6	76.2	23.2		0	100	0		63.2	0	36.8		
PHF	.800	.907	.000	.889	.500	.810	.732	.874	.000	.964	.000	.964	.846	.000	.889	.903	.930
Cars	112	632	0	744	2	265	81	348	0	792	0	792	888	0	515	1403	3287
% Cars	100	99.5	0	99.6	100	98.5	98.8	98.6	0	99.7	0	99.7	99.4	0	99.2	99.4	99.4
Trucks	0	3	0	3	0	4	1	5	0	2	0	2	5	0	4	9	19
% Trucks	0	0.5	0	0.4	0	1.5	1.2	1.4	0	0.3	0	0.3	0.6	0	0.8	0.6	0.6

Transporataion Data Corporation

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N/S: Bedford Street (Route 4/225)
E/W: Jughandle/Hartwell Avenue
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932FF
Site Code : Y0942711
Start Date : 7/1/2009

Groups Printed- Trucks

	Bedford Street (Route 4/225) From North			NB Jughandle for WB Left Turn From East			Bedford Street (Route 4/225) From South			Hartwell Avenue From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
03:00 PM	0	1	0	0	3	0	0	1	0	2	0	0	7
03:15 PM	0	2	0	0	3	0	0	1	0	2	0	0	8
03:30 PM	0	0	0	0	0	0	0	2	0	1	0	0	3
03:45 PM	1	2	0	0	0	0	0	0	0	2	0	0	5
Total	1	5	0	0	6	0	0	4	0	7	0	0	23
04:00 PM	0	2	0	0	2	0	0	1	0	0	0	0	5
04:15 PM	0	0	0	0	1	0	0	2	0	0	0	0	3
04:30 PM	0	2	0	0	1	0	0	1	0	3	0	2	9
04:45 PM	0	1	0	0	0	0	0	0	0	1	0	1	3
Total	0	5	0	0	4	0	0	4	0	4	0	3	20
05:00 PM	0	0	0	0	1	1	0	1	0	0	0	0	3
05:15 PM	0	0	0	0	2	0	0	0	0	1	0	1	4
05:30 PM	0	0	0	0	1	0	0	0	0	1	0	0	2
05:45 PM	0	0	0	0	0	0	0	3	0	1	0	0	4
Total	0	0	0	0	4	1	0	4	0	3	0	1	13
Grand Total	1	10	0	0	14	1	0	12	0	14	0	4	56
Apprch %	9.1	90.9	0	0	93.3	6.7	0	100	0	77.8	0	22.2	
Total %	1.8	17.9	0	0	25	1.8	0	21.4	0	25	0	7.1	

	Bedford Street (Route 4/225) From North				NB Jughandle for WB Left Turn From East				Bedford Street (Route 4/225) From South				Hartwell Avenue From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	1	0	1	0	**3**	0	**3**	0	1	0	1	**2**	0	0	**2**	7
03:15 PM	0	**2**	0	2	0	3	0	3	0	1	0	1	2	0	0	2	**8**
03:30 PM	0	0	0	0	0	0	0	0	0	**2**	0	**2**	1	0	0	1	3
03:45 PM	**1**	2	0	**3**	0	0	0	0	0	0	0	0	2	0	0	2	5
Total Volume	1	5	0	6	0	6	0	6	0	4	0	4	7	0	0	7	23
% App. Total	16.7	83.3	0		0	100	0		0	100	0		100	0	0		
PHF	.250	.625	.000	.500	.000	.500	.000	.500	.000	.500	.000	.500	.875	.000	.000	.875	.719

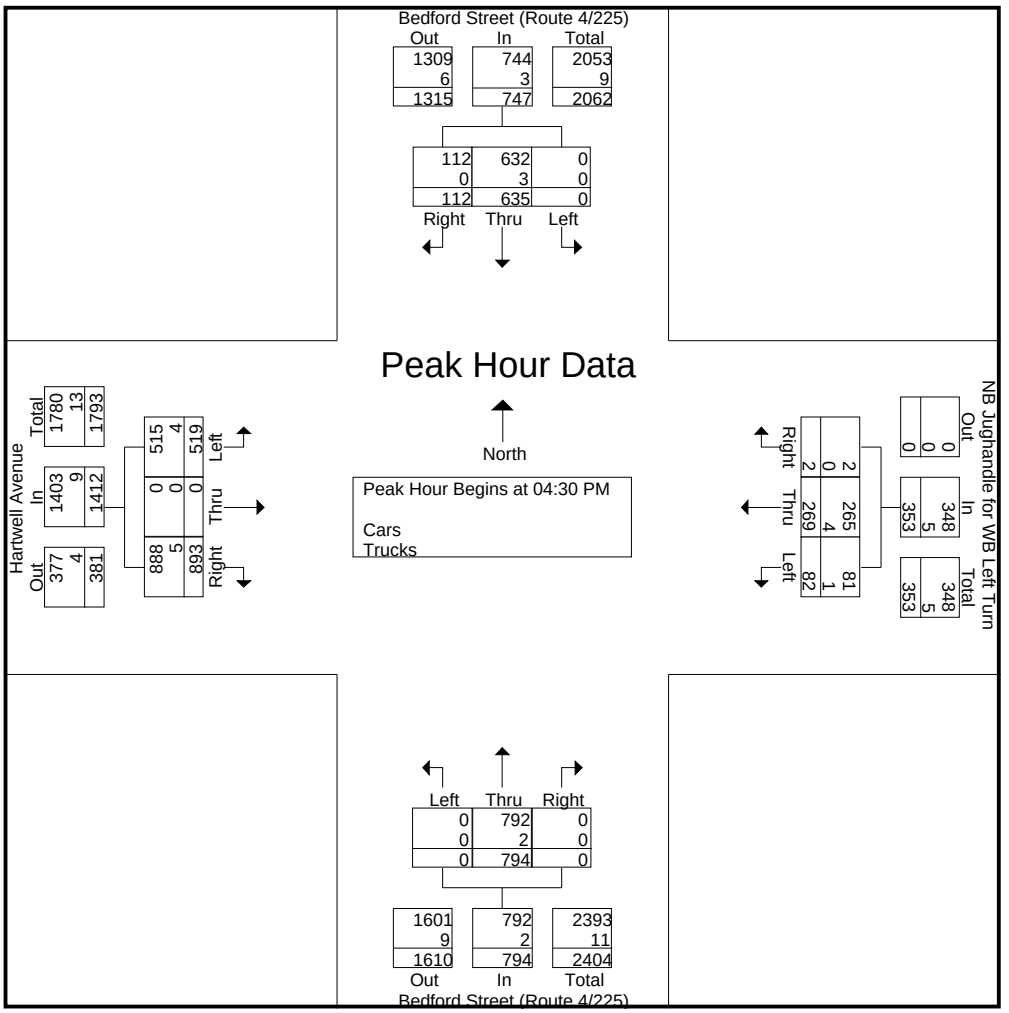
Transporataion Data Corporation

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N/S: Bedford Street (Route 4/225)
E/W: Jughandle/Hartwell Avenue
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932FF
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

	Bedford Street (Route 4/225) From North				NB Jughandle for WB Left Turn From East				Bedford Street (Route 4/225) From South				Hartwell Avenue From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	25	169	0	194	**1**	51	21	73	0	191	0	191	216	0	134	350	808
04:45 PM	22	140	0	162	0	**83**	18	**101**	0	192	0	192	189	0	**146**	335	790
05:00 PM	**35**	**175**	0	**210**	0	67	15	82	0	**206**	0	**206**	**264**	0	127	**391**	**889**
05:15 PM	30	151	0	181	1	68	**28**	97	0	205	0	205	224	0	112	336	819
Total Volume	112	635	0	747	2	269	82	353	0	794	0	794	893	0	519	1412	3306
% App. Total	15	85	0		0.6	76.2	23.2		0	100	0		63.2	0	36.8		
PHF	.800	.907	.000	.889	.500	.810	.732	.874	.000	.964	.000	.964	.846	.000	.889	.903	.930
Cars	112	632	0	744	2	265	81	348	0	792	0	792	888	0	515	1403	3287
% Cars	100	99.5	0	99.6	100	98.5	98.8	98.6	0	99.7	0	99.7	99.4	0	99.2	99.4	99.4
Trucks	0	3	0	3	0	4	1	5	0	2	0	2	5	0	4	9	19
% Trucks	0	0.5	0	0.4	0	1.5	1.2	1.4	0	0.3	0	0.3	0.6	0	0.8	0.6	0.6



Transporataion Data Corporation

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N/S: Maguire Road/Compost Facility
E/W: Hartwell Avenue
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932E
Site Code : Y0942711
Start Date : 7/1/2009

Groups Printed- Cars - Trucks

	Maguire Road From North			Hartwell Avenue From East			Compost Facility From South			Hartwell Avenue From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
06:00 AM	28	1	8	12	112	2	3	0	0	0	12	5	183
06:15 AM	31	0	6	11	184	2	0	0	0	0	20	6	260
06:30 AM	49	2	10	19	227	2	2	0	0	3	27	9	350
06:45 AM	64	2	10	25	296	4	0	0	0	0	25	11	437
Total	172	5	34	67	819	10	5	0	0	3	84	31	1230
07:00 AM	81	0	13	17	243	4	2	3	0	0	33	13	409
07:15 AM	89	0	12	20	190	2	8	2	0	2	36	16	377
07:30 AM	95	1	9	22	215	0	3	0	0	1	46	20	412
07:45 AM	134	0	12	25	233	3	2	0	0	3	47	22	481
Total	399	1	46	84	881	9	15	5	0	6	162	71	1679
08:00 AM	102	0	19	31	216	11	5	0	0	0	41	25	450
08:15 AM	91	1	19	32	267	2	10	1	0	0	39	25	487
08:30 AM	81	1	16	58	186	7	6	0	2	2	51	26	436
08:45 AM	67	1	14	39	227	2	6	0	0	1	58	30	445
Total	341	3	68	160	896	22	27	1	2	3	189	106	1818
09:00 AM	71	0	14	37	163	3	3	0	1	1	60	22	375
09:15 AM	63	2	10	30	156	3	4	0	0	0	50	24	342
Grand Total	1046	11	172	378	2915	47	54	6	3	13	545	254	5444
Apprch %	85.1	0.9	14	11.3	87.3	1.4	85.7	9.5	4.8	1.6	67.1	31.3	
Total %	19.2	0.2	3.2	6.9	53.5	0.9	1	0.1	0.1	0.2	10	4.7	
Cars	1042	11	144	360	2905	35	39	5	3	11	534	251	5340
% Cars	99.6	100	83.7	95.2	99.7	74.5	72.2	83.3	100	84.6	98	98.8	98.1
Trucks	4	0	28	18	10	12	15	1	0	2	11	3	104
% Trucks	0.4	0	16.3	4.8	0.3	25.5	27.8	16.7	0	15.4	2	1.2	1.9

	Maguire Road From North				Hartwell Avenue From East				Compost Facility From South				Hartwell Avenue From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**134**	0	12	**146**	25	233	3	261	2	0	0	2	**3**	47	22	72	481
08:00 AM	102	0	**19**	121	31	216	**11**	258	5	0	0	5	0	41	25	66	450
08:15 AM	91	**1**	19	111	32	**267**	2	**301**	**10**	**1**	0	**11**	0	39	25	64	**487**
08:30 AM	81	1	16	98	**58**	186	7	251	6	0	**2**	8	2	**51**	**26**	**79**	436
Total Volume	408	2	66	476	146	902	23	1071	23	1	2	26	5	178	98	281	1854
% App. Total	85.7	0.4	13.9		13.6	84.2	2.1		88.5	3.8	7.7		1.8	63.3	34.9		
PHF	.761	.500	.868	.815	.629	.845	.523	.890	.575	.250	.250	.591	.417	.873	.942	.889	.952
Cars	406	2	52	460	138	898	17	1053	16	1	2	19	5	175	97	277	1809
% Cars	99.5	100	78.8	96.6	94.5	99.6	73.9	98.3	69.6	100	100	73.1	100	98.3	99.0	98.6	97.6
Trucks	2	0	14	16	8	4	6	18	7	0	0	7	0	3	1	4	45
% Trucks	0.5	0	21.2	3.4	5.5	0.4	26.1	1.7	30.4	0	0	26.9	0	1.7	1.0	1.4	2.4

Transporataion Data Corporation

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N/S: Maguire Road/Compost Facility
E/W: Hartwell Avenue
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932E
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

Groups Printed- Trucks

	Maguire Road From North			Hartwell Avenue From East			Compost Facility From South			Hartwell Avenue From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
06:00 AM	0	0	4	1	0	0	1	0	0	0	0	0	6
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
06:30 AM	0	0	2	1	2	0	0	0	0	0	1	0	6
06:45 AM	1	0	1	1	0	2	0	0	0	0	0	1	6
Total	1	0	7	3	2	2	1	0	0	0	1	2	19
07:00 AM	0	0	1	2	0	1	0	1	0	0	1	0	6
07:15 AM	0	0	0	3	0	1	3	0	0	1	0	0	8
07:30 AM	0	0	1	1	2	0	1	0	0	1	3	0	9
07:45 AM	0	0	2	2	0	0	0	0	0	0	1	0	5
Total	0	0	4	8	2	2	4	1	0	2	5	0	28
08:00 AM	0	0	3	3	0	4	1	0	0	0	0	0	11
08:15 AM	1	0	3	1	3	1	3	0	0	0	1	1	14
08:30 AM	1	0	6	2	1	1	3	0	0	0	1	0	15
08:45 AM	0	0	1	0	0	1	2	0	0	0	2	0	6
Total	2	0	13	6	4	7	9	0	0	0	4	1	46
09:00 AM	0	0	3	1	1	0	1	0	0	0	0	0	6
09:15 AM	1	0	1	0	1	1	0	0	0	0	1	0	5
Grand Total	4	0	28	18	10	12	15	1	0	2	11	3	104
Apprch %	12.5	0	87.5	45	25	30	93.8	6.2	0	12.5	68.8	18.8	
Total %	3.8	0	26.9	17.3	9.6	11.5	14.4	1	0	1.9	10.6	2.9	

	Maguire Road From North				Hartwell Avenue From East				Compost Facility From South				Hartwell Avenue From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	3	3	**3**	0	**4**	**7**	1	0	0	1	0	0	0	0	11
08:15 AM	**1**	0	3	4	1	**3**	1	5	**3**	0	0	**3**	0	1	**1**	**2**	14
08:30 AM	1	0	**6**	**7**	2	1	1	4	3	0	0	3	0	1	0	1	**15**
08:45 AM	0	0	1	1	0	0	1	1	2	0	0	2	0	**2**	0	2	6
Total Volume	2	0	13	15	6	4	7	17	9	0	0	9	0	4	1	5	46
% App. Total	13.3	0	86.7		35.3	23.5	41.2		100	0	0		0	80	20		
PHF	.500	.000	.542	.536	.500	.333	.438	.607	.750	.000	.000	.750	.000	.500	.250	.625	.767

Transporataion Data Corporation

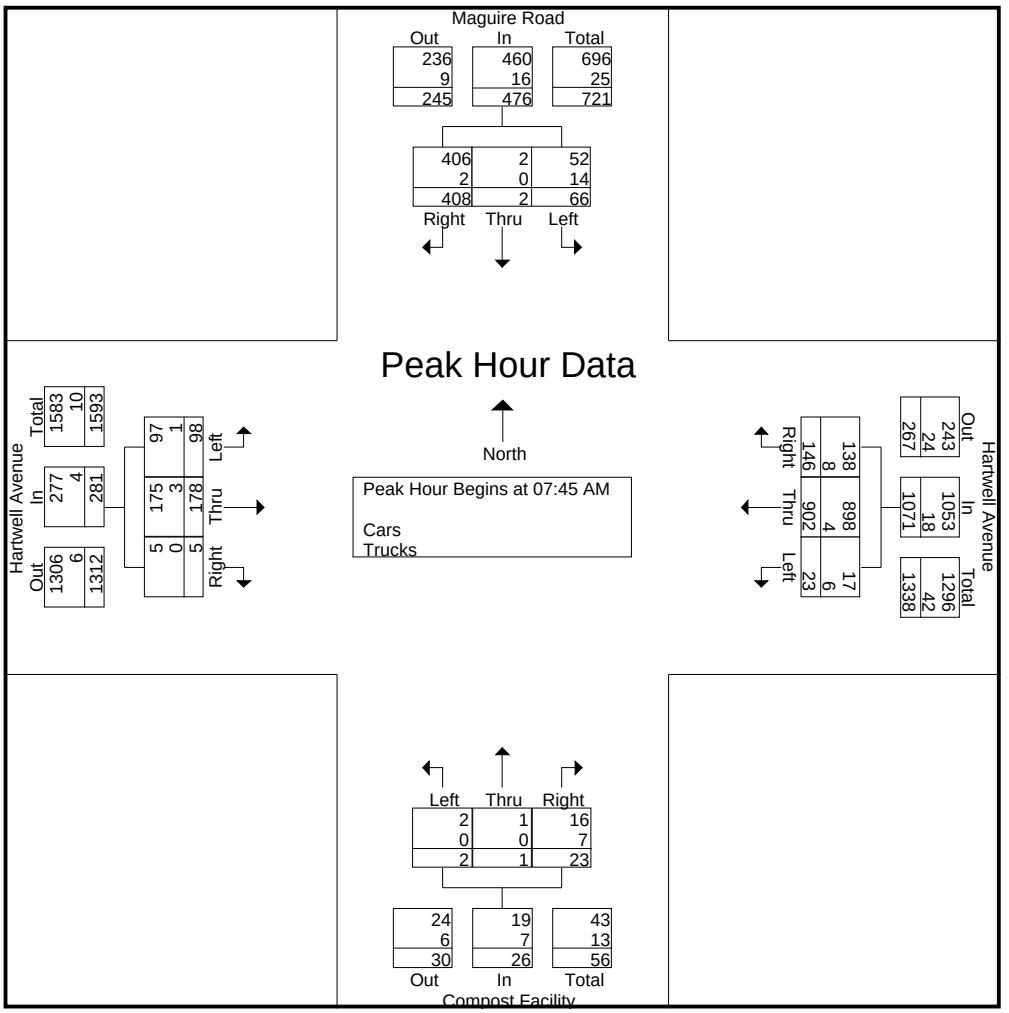
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N/S: Maguire Road/Compost Facility
E/W: Hartwell Avenue
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932E
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

	Maguire Road From North				Hartwell Avenue From East				Compost Facility From South				Hartwell Avenue From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**134**	0	12	**146**	25	233	3	261	2	0	0	2	**3**	47	22	72	481
08:00 AM	102	0	**19**	121	31	216	**11**	258	5	0	0	5	0	41	25	66	450
08:15 AM	91	**1**	19	111	32	**267**	2	**301**	**10**	**1**	0	**11**	0	39	25	64	**487**
08:30 AM	81	1	16	98	**58**	186	7	251	6	0	**2**	8	2	**51**	**26**	**79**	436
Total Volume	408	2	66	476	146	902	23	1071	23	1	2	26	5	178	98	281	1854
% App. Total	85.7	0.4	13.9		13.6	84.2	2.1		88.5	3.8	7.7		1.8	63.3	34.9		
PHF	.761	.500	.868	.815	.629	.845	.523	.890	.575	.250	.250	.591	.417	.873	.942	.889	.952
Cars	406	2	52	460	138	898	17	1053	16	1	2	19	5	175	97	277	1809
% Cars	99.5	100	78.8	96.6	94.5	99.6	73.9	98.3	69.6	100	100	73.1	100	98.3	99.0	98.6	97.6
Trucks	2	0	14	16	8	4	6	18	7	0	0	7	0	3	1	4	45
% Trucks	0.5	0	21.2	3.4	5.5	0.4	26.1	1.7	30.4	0	0	26.9	0	1.7	1.0	1.4	2.4



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N/S: Maguire Road/Compost Facility
E/W: Hartwell Avenue
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932EE
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

Groups Printed- Cars - Trucks

	Maguire Road From North			Hartwell Avenue From East			Compost Facility From South			Hartwell Avenue From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
03:00 PM	20	0	26	22	49	1	2	0	1	3	162	60	346
03:15 PM	28	0	19	19	47	1	11	5	1	4	162	66	363
03:30 PM	29	0	26	22	50	1	3	0	0	0	239	94	464
03:45 PM	24	0	23	24	63	0	0	0	0	0	195	94	423
Total	101	0	94	87	209	3	16	5	2	7	758	314	1596
04:00 PM	31	0	29	22	46	0	1	0	0	0	235	136	500
04:15 PM	27	0	20	20	57	0	0	0	0	0	206	128	458
04:30 PM	35	0	28	19	50	0	0	0	0	0	211	144	487
04:45 PM	38	0	34	26	56	0	1	0	0	0	212	154	521
Total	131	0	111	87	209	0	2	0	0	0	864	562	1966
05:00 PM	47	0	44	42	62	0	0	0	0	0	211	138	544
05:15 PM	38	0	49	30	58	0	0	0	0	0	186	143	504
05:30 PM	37	0	40	31	58	0	0	0	0	0	175	155	496
05:45 PM	40	0	41	20	45	0	0	0	0	0	191	145	482
Total	162	0	174	123	223	0	0	0	0	0	763	581	2026
Grand Total	394	0	379	297	641	3	18	5	2	7	2385	1457	5588
Apprch %	51	0	49	31.6	68.1	0.3	72	20	8	0.2	62	37.9	
Total %	7.1	0	6.8	5.3	11.5	0.1	0.3	0.1	0	0.1	42.7	26.1	
Cars	391	0	372	288	636	3	16	5	2	7	2368	1454	5542
% Cars	99.2	0	98.2	97	99.2	100	88.9	100	100	100	99.3	99.8	99.2
Trucks	3	0	7	9	5	0	2	0	0	0	17	3	46
% Trucks	0.8	0	1.8	3	0.8	0	11.1	0	0	0	0.7	0.2	0.8

	Maguire Road From North				Hartwell Avenue From East				Compost Facility From South				Hartwell Avenue From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	38	0	34	72	26	56	0	82	**1**	0	0	**1**	0	**212**	154	**366**	521
05:00 PM	**47**	0	44	**91**	**42**	**62**	0	**104**	0	0	0	0	0	211	138	349	**544**
05:15 PM	38	0	**49**	87	30	58	0	88	0	0	0	0	0	186	143	329	504
05:30 PM	37	0	40	77	31	58	0	89	0	0	0	0	0	175	**155**	330	496
Total Volume	160	0	167	327	129	234	0	363	1	0	0	1	0	784	590	1374	2065
% App. Total	48.9	0	51.1		35.5	64.5	0		100	0	0		0	57.1	42.9		
PHF	.851	.000	.852	.898	.768	.944	.000	.873	.250	.000	.000	.250	.000	.925	.952	.939	.949
Cars	159	0	164	323	126	233	0	359	1	0	0	1	0	782	590	1372	2055
% Cars	99.4	0	98.2	98.8	97.7	99.6	0	98.9	100	0	0	100	0	99.7	100	99.9	99.5
Trucks	1	0	3	4	3	1	0	4	0	0	0	0	0	2	0	2	10
% Trucks	0.6	0	1.8	1.2	2.3	0.4	0	1.1	0	0	0	0	0	0.3	0	0.1	0.5

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N/S: Maguire Road/Compost Facility
E/W: Hartwell Avenue
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932EE
Site Code : Y0942711
Start Date : 7/1/2009

Groups Printed- Trucks

	Maguire Road From North			Hartwell Avenue From East			Compost Facility From South			Hartwell Avenue From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
03:00 PM	1	0	1	0	1	0	1	0	0	0	0	0	4
03:15 PM	0	0	0	3	0	0	1	0	0	0	6	0	10
03:30 PM	1	0	0	0	0	0	0	0	0	0	4	1	6
03:45 PM	0	0	0	1	1	0	0	0	0	0	2	0	4
Total	2	0	1	4	2	0	2	0	0	0	12	1	24
04:00 PM	0	0	0	1	1	0	0	0	0	0	0	1	3
04:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	2	0	1	0	0	0	0	0	3	1	7
04:45 PM	0	0	1	0	0	0	0	0	0	0	1	0	2
Total	0	0	3	2	2	0	0	0	0	0	4	2	13
05:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	2
05:15 PM	0	0	1	2	0	0	0	0	0	0	1	0	4
05:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	2
05:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	1	0	3	3	1	0	0	0	0	0	1	0	9
Grand Total	3	0	7	9	5	0	2	0	0	0	17	3	46
Apprch %	30	0	70	64.3	35.7	0	100	0	0	0	85	15	
Total %	6.5	0	15.2	19.6	10.9	0	4.3	0	0	0	37	6.5	

	Maguire Road From North				Hartwell Avenue From East				Compost Facility From South				Hartwell Avenue From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	**1**	0	**1**	**2**	0	**1**	0	1	**1**	0	0	**1**	0	0	0	0	4
03:15 PM	0	0	0	0	**3**	0	0	**3**	1	0	0	1	0	**6**	0	**6**	**10**
03:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	4	**1**	5	6
03:45 PM	0	0	0	0	1	1	0	2	0	0	0	0	0	2	0	2	4
Total Volume	2	0	1	3	4	2	0	6	2	0	0	2	0	12	1	13	24
% App. Total	66.7	0	33.3		66.7	33.3	0		100	0	0		0	92.3	7.7		
PHF	.500	.000	.250	.375	.333	.500	.000	.500	.500	.000	.000	.500	.000	.500	.250	.542	.600

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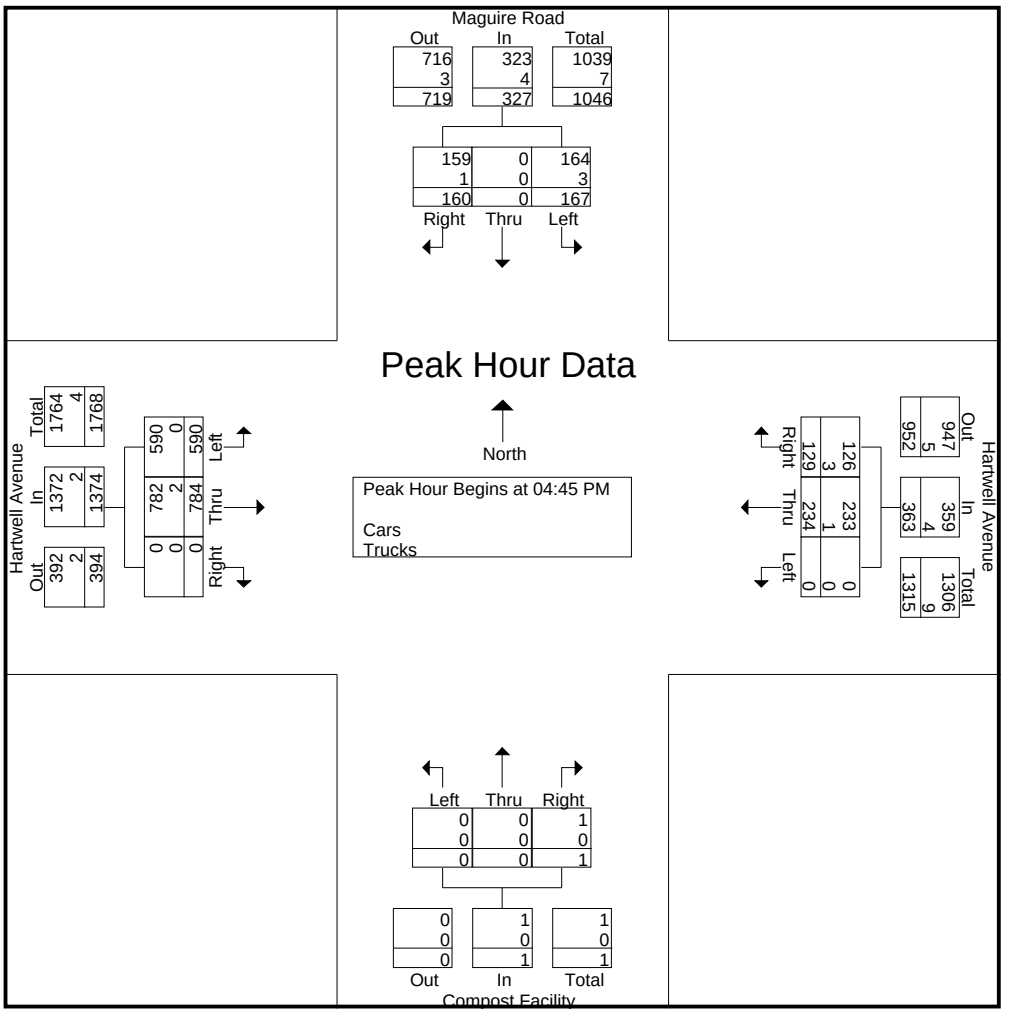
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N/S: Maguire Road/Compost Facility
E/W: Hartwell Avenue
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932EE
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

	Maguire Road From North				Hartwell Avenue From East				Compost Facility From South				Hartwell Avenue From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	38	0	34	72	26	56	0	82	**1**	0	0	**1**	0	**212**	154	**366**	521
05:00 PM	**47**	0	44	**91**	**42**	**62**	0	**104**	0	0	0	0	0	211	138	349	**544**
05:15 PM	38	0	**49**	87	30	58	0	88	0	0	0	0	0	186	143	329	504
05:30 PM	37	0	40	77	31	58	0	89	0	0	0	0	0	175	**155**	330	496
Total Volume	160	0	167	327	129	234	0	363	1	0	0	1	0	784	590	1374	2065
% App. Total	48.9	0	51.1		35.5	64.5	0		100	0	0		0	57.1	42.9		
PHF	.851	.000	.852	.898	.768	.944	.000	.873	.250	.000	.000	.250	.000	.925	.952	.939	.949
Cars	159	0	164	323	126	233	0	359	1	0	0	1	0	782	590	1372	2055
% Cars	99.4	0	98.2	98.8	97.7	99.6	0	98.9	100	0	0	100	0	99.7	100	99.9	99.5
Trucks	1	0	3	4	3	1	0	4	0	0	0	0	0	2	0	2	10
% Trucks	0.6	0	1.8	1.2	2.3	0.4	0	1.1	0	0	0	0	0	0.3	0	0.1	0.5



Transporataion Data Corporation

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S: Wood Street
E/W: Hartwell Avenue/Wood Street
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932C
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

Groups Printed- Cars - Trucks

	Hartwell Avenue From East		Wood Street From South		Wood Street From West		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
06:00 AM	96	45	13	2	1	8	165
06:15 AM	151	57	18	3	1	8	238
06:30 AM	192	70	21	1	3	11	298
06:45 AM	217	96	36	5	0	16	370
Total	656	268	88	11	5	43	1071
07:00 AM	229	89	29	6	4	27	384
07:15 AM	230	78	37	3	0	35	383
07:30 AM	245	87	36	6	2	31	407
07:45 AM	231	144	45	6	1	26	453
Total	935	398	147	21	7	119	1627
08:00 AM	178	151	59	3	3	26	420
08:15 AM	185	160	56	10	3	28	442
08:30 AM	125	136	66	6	6	26	365
08:45 AM	139	129	64	10	2	49	393
Total	627	576	245	29	14	129	1620
09:00 AM	104	118	57	3	6	29	317
09:15 AM	92	109	48	9	2	27	287
Grand Total	2414	1469	585	73	34	347	4922
Apprch %	62.2	37.8	88.9	11.1	8.9	91.1	
Total %	49	29.8	11.9	1.5	0.7	7	
Cars	2410	1457	582	73	32	343	4897
% Cars	99.8	99.2	99.5	100	94.1	98.8	99.5
Trucks	4	12	3	0	2	4	25
% Trucks	0.2	0.8	0.5	0	5.9	1.2	0.5

	Hartwell Avenue From East			Wood Street From South			Wood Street From West			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	**245**	87	332	36	6	42	2	**31**	**33**	407
07:45 AM	231	144	**375**	45	6	51	1	26	27	**453**
08:00 AM	178	151	329	**59**	3	62	**3**	26	29	420
08:15 AM	185	**160**	345	56	**10**	**66**	3	28	31	442
Total Volume	839	542	1381	196	25	221	9	111	120	1722
% App. Total	60.8	39.2		88.7	11.3		7.5	92.5		
PHF	.856	.847	.921	.831	.625	.837	.750	.895	.909	.950
Cars	838	537	1375	195	25	220	9	111	120	1715
% Cars	99.9	99.1	99.6	99.5	100	99.5	100	100	100	99.6
Trucks	1	5	6	1	0	1	0	0	0	7
% Trucks	0.1	0.9	0.4	0.5	0	0.5	0	0	0	0.4

Transporataion Data Corporation

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S: Wood Street
E/W: Hartwell Avenue/Wood Street
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932C
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

Groups Printed- Trucks

	Hartwell Avenue From East		Wood Street From South		Wood Street From West		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
06:00 AM	0	0	0	0	0	0	0
06:15 AM	1	0	0	0	0	1	2
06:30 AM	1	1	0	0	1	0	3
06:45 AM	0	0	0	0	0	0	0
Total	2	1	0	0	1	1	5
07:00 AM	0	0	1	0	0	0	1
07:15 AM	0	1	1	0	0	0	2
07:30 AM	0	2	0	0	0	0	2
07:45 AM	0	0	1	0	0	0	1
Total	0	3	3	0	0	0	6
08:00 AM	0	0	0	0	0	0	0
08:15 AM	1	3	0	0	0	0	4
08:30 AM	0	1	0	0	0	1	2
08:45 AM	1	0	0	0	0	2	3
Total	2	4	0	0	0	3	9
09:00 AM	0	2	0	0	1	0	3
09:15 AM	0	2	0	0	0	0	2
Grand Total	4	12	3	0	2	4	25
Apprch %	25	75	100	0	33.3	66.7	
Total %	16	48	12	0	8	16	

	Hartwell Avenue From East			Wood Street From South			Wood Street From West			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:15 AM										
08:15 AM	**1**	**3**	**4**	0	0	0	0	0	0	**4**
08:30 AM	0	1	1	0	0	0	0	1	1	2
08:45 AM	1	0	1	0	0	0	0	**2**	**2**	3
09:00 AM	0	2	2	0	0	0	**1**	0	1	3
Total Volume	2	6	8	0	0	0	1	3	4	12
% App. Total	25	75		0	0		25	75		
PHF	.500	.500	.500	.000	.000	.000	.250	.375	.500	.750

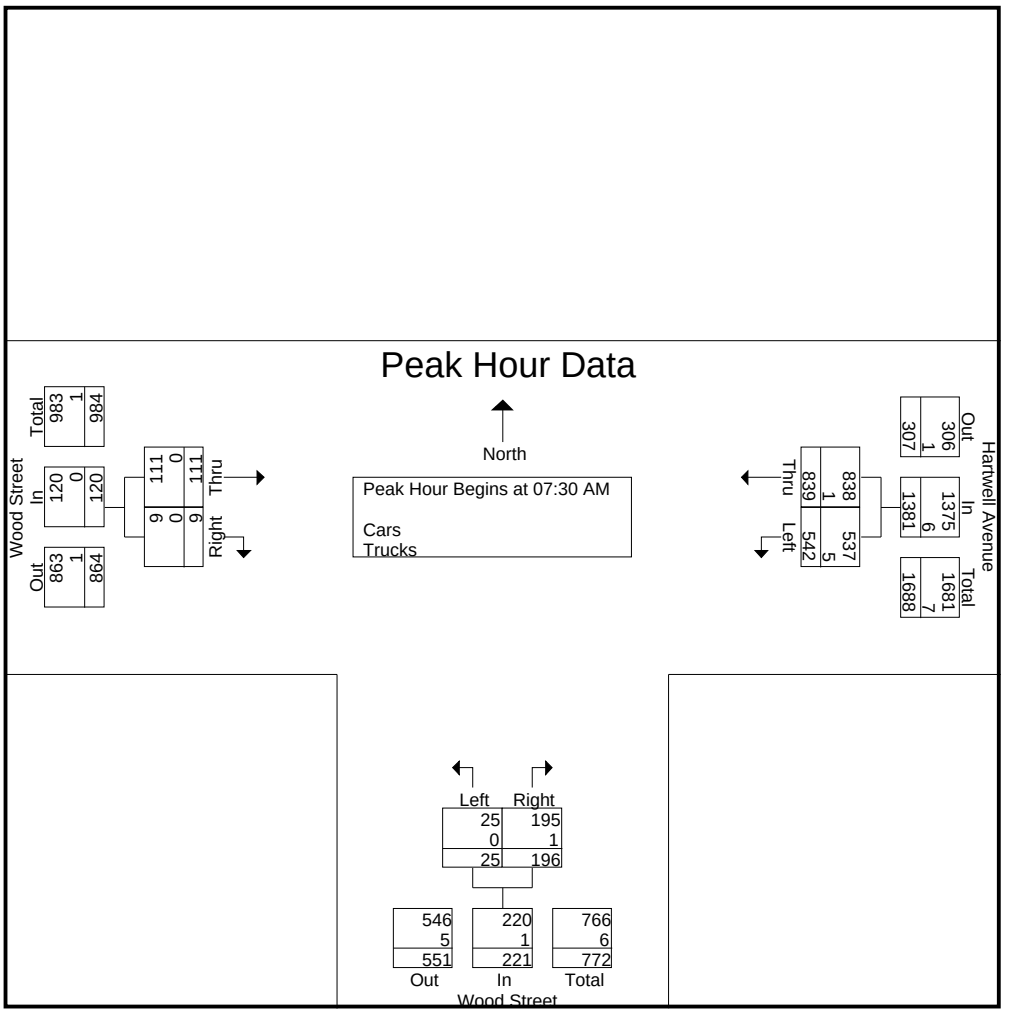
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S: Wood Street
E/W: Hartwell Avenue/Wood Street
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932C
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

	Hartwell Avenue From East			Wood Street From South			Wood Street From West			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 09:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	**245**	87	332	36	6	42	2	**31**	**33**	407
07:45 AM	231	144	**375**	45	6	51	1	26	27	**453**
08:00 AM	178	151	329	**59**	3	62	**3**	26	29	420
08:15 AM	185	**160**	345	56	**10**	**66**	3	28	31	442
Total Volume	839	542	1381	196	25	221	9	111	120	1722
% App. Total	60.8	39.2		88.7	11.3		7.5	92.5		
PHF	.856	.847	.921	.831	.625	.837	.750	.895	.909	.950
Cars	838	537	1375	195	25	220	9	111	120	1715
% Cars	99.9	99.1	99.6	99.5	100	99.5	100	100	100	99.6
Trucks	1	5	6	1	0	1	0	0	0	7
% Trucks	0.1	0.9	0.4	0.5	0	0.5	0	0	0	0.4



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City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932CC
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

Groups Printed- Cars - Trucks

	Hartwell Avenue From East		Wood Street From South		Wood Street From West		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
03:00 PM	36	27	47	1	3	157	271
03:15 PM	44	32	64	4	9	159	312
03:30 PM	26	38	98	1	8	186	357
03:45 PM	41	45	91	2	5	171	355
Total	147	142	300	8	25	673	1295
04:00 PM	44	55	119	1	7	222	448
04:15 PM	39	41	109	2	14	229	434
04:30 PM	33	42	173	1	9	277	535
04:45 PM	33	59	161	0	8	258	519
Total	149	197	562	4	38	986	1936
05:00 PM	31	65	141	0	11	219	467
05:15 PM	38	46	135	2	17	214	452
05:30 PM	22	75	144	1	12	193	447
05:45 PM	18	69	144	4	24	172	431
Total	109	255	564	7	64	798	1797
Grand Total	405	594	1426	19	127	2457	5028
Apprch %	40.5	59.5	98.7	1.3	4.9	95.1	
Total %	8.1	11.8	28.4	0.4	2.5	48.9	
Cars	405	594	1421	19	127	2455	5021
% Cars	100	100	99.6	100	100	99.9	99.9
Trucks	0	0	5	0	0	2	7
% Trucks	0	0	0.4	0	0	0.1	0.1

	Hartwell Avenue From East			Wood Street From South			Wood Street From West			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	33	42	75	**173**	1	**174**	9	**277**	**286**	**535**
04:45 PM	33	59	92	161	0	161	8	258	266	519
05:00 PM	31	**65**	**96**	141	0	141	11	219	230	467
05:15 PM	**38**	46	84	135	**2**	137	**17**	214	231	452
Total Volume	135	212	347	610	3	613	45	968	1013	1973
% App. Total	38.9	61.1		99.5	0.5		4.4	95.6		
PHF	.888	.815	.904	.882	.375	.881	.662	.874	.885	.922
Cars	135	212	347	608	3	611	45	968	1013	1971
% Cars	100	100	100	99.7	100	99.7	100	100	100	99.9
Trucks	0	0	0	2	0	2	0	0	0	2
% Trucks	0	0	0	0.3	0	0.3	0	0	0	0.1

Transporataion Data Corporation

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S: Wood Street
E/W:Hartwell Avenue/Wood Street
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932CC
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

Groups Printed- Trucks

	Hartwell Avenue From East		Wood Street From South		Wood Street From West		
Start Time	Thru	Left	Right	Left	Right	Thru	Int. Total
03:00 PM	0	0	0	0	0	0	0
03:15 PM	0	0	1	0	0	0	1
03:30 PM	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	2	2
Total	0	0	1	0	0	2	3
04:00 PM	0	0	1	0	0	0	1
04:15 PM	0	0	0	0	0	0	0
04:30 PM	0	0	1	0	0	0	1
04:45 PM	0	0	0	0	0	0	0
Total	0	0	2	0	0	0	2
05:00 PM	0	0	0	0	0	0	0
05:15 PM	0	0	1	0	0	0	1
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	1	0	0	0	1
Total	0	0	2	0	0	0	2
Grand Total	0	0	5	0	0	2	7
Apprch %	0	0	100	0	0	100	
Total %	0	0	71.4	0	0	28.6	

	Hartwell Avenue From East			Wood Street From South			Wood Street From West			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:15 PM										
03:15 PM	0	0	0	**1**	0	**1**	0	0	0	1
03:30 PM	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	**2**	**2**	**2**
04:00 PM	0	0	0	1	0	1	0	0	0	1
Total Volume	0	0	0	2	0	2	0	2	2	4
% App. Total	0	0		100	0		0	100		
PHF	.000	.000	.000	.500	.000	.500	.000	.250	.250	.500

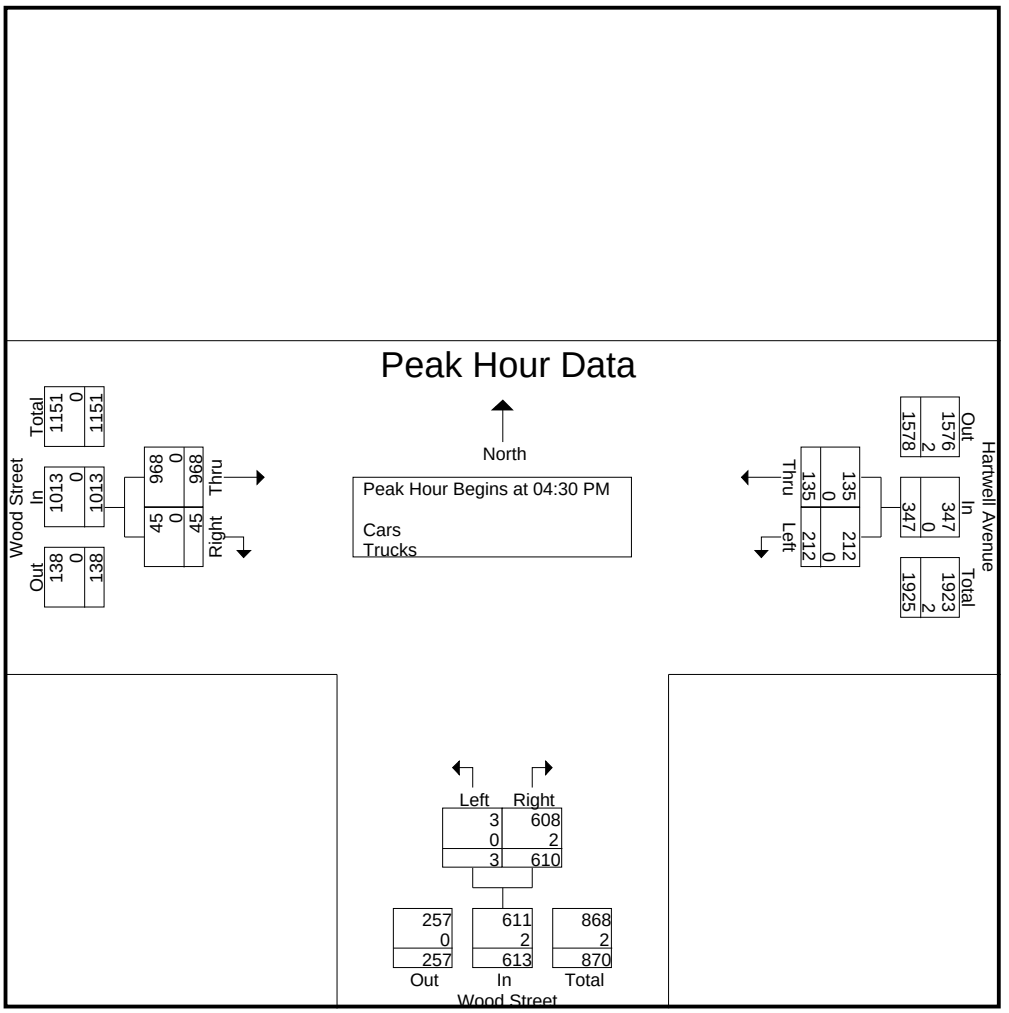
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S: Wood Street
E/W:Hartwell Avenue/Wood Street
City, State: Lexington, MA
Client: McM/J. Adams

File Name : 03932CC
Site Code : Y0942711
Start Date : 7/1/2009
Page No : 1

	Hartwell Avenue From East			Wood Street From South			Wood Street From West			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	33	42	75	**173**	1	**174**	9	**277**	**286**	**535**
04:45 PM	33	59	92	161	0	161	8	258	266	519
05:00 PM	31	**65**	**96**	141	0	141	11	219	230	467
05:15 PM	**38**	46	84	135	**2**	137	**17**	214	231	452
Total Volume	135	212	347	610	3	613	45	968	1013	1973
% App. Total	38.9	61.1		99.5	0.5		4.4	95.6		
PHF	.888	.815	.904	.882	.375	.881	.662	.874	.885	.922
Cars	135	212	347	608	3	611	45	968	1013	1971
% Cars	100	100	100	99.7	100	99.7	100	100	100	99.9
Trucks	0	0	0	2	0	2	0	0	0	2
% Trucks	0	0	0	0.3	0	0.3	0	0	0	0.1



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Appendix D

Site Survey Report

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MASSACHUSETTS
NATIONAL GUARD
JOINT FORCE HEADQUARTERS

SITE SURVEY 08-46

FORT DEVENS
HANSCOM AFB
MILFORD, MA
NATICK, MA



SITE SURVEY REPORT
April 14-17, 2008

LTC THOMAS A. HARROP
CONSTRUCTION AND FACILITIES MAINTENANCE OFFICER
MA ARMY NATIONAL GUARD

CPT NATHAN A. WILDER
FACILITIES PLANS AND PROGRAMS MANAGER
MA ARMY NATIONAL GUARD

50 Maple Street
Milford, MA 01757
(888) 301-3103

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a. Hanscom AFB Site Map
b. Email message from MAJ John Tryon, A7CIB - - Approval to conduct site survey
c. Memorandum from the National Guard Bureau Requesting Site Survey
d. Memorandum from the MA National Guard Requesting Site Survey

1.0 Executive Summary

A "Site Visit" was conducted in Massachusetts, on 14-15 April 2008. The purpose of this visit was to gather information to assist in the determination of where the Joint Force Headquarters building would be stationed. The following locations were evaluated: Fort Devens, Hanscom AFB, Milford, MA, and Natick, MA. This executive Summary is a summation of the findings.

A construction cost will be associated with this program consisting of either major renovation to an existing facility or new construction. Not all sites offered facilities available for renovations which were considered feasible. Renovations of existing structures included environmental impacts due to buildings containing existing hazmat material and not being in a reasonable condition to be economically renovated to meet the mission of the MA National Guard.

The matrix below depicts four sites which were considered and defines whether land is available for new construction and if there are current facilities which could be renovated.

SITE	LAND AVAILABLE	RENOVATION
Fort Devens	Yes	No
Hanscom, AFB	Yes	Yes
Milford, MA	No	Yes
Natick, MA	Yes	No

Several criteria were considered in a quantified analysis of the best location to station the Joint Force Headquarters. Hanscom AFB was quantifiably identified as the most desirable and favorable coarse of action.

1.1 Fort Devens

Fort Devens is an Army Reserve Training Area that provides training facilities and training support to all military services, reserve and active. Located in North Central Massachusetts, Fort Devens is funded by the Army Reserves and is operated under the Army Installation Management Command Northeast Region. As a subordinate installation of Fort Dix, Fort Devens is missioned to support all military services in addition to supporting local, state, and other federal agencies when possible.

Fort Devens provided an option, though an acquisition of land through a real estate purchase decreased the feasibility and timeliness of this course of action.

1.2 Hanscom AFB

Hanscom AFB is the primary Headquarters of the U.S. Air Force Electronics Systems Center (ESC). This installation has an active duty workforce of approximately 1,700 with over 5,000 full time employees. The Base supports over 100,000 retired military personnel, annuitants, and spouses living in the area. The most recent BRAC initiatives has reduced the Hanscom population by over 600 with the loss of the Air Force Research Laboratories.

Hanscom AFB is the best location to construct a new Massachusetts National Guard Joint Force Headquarters. The land available at Hanscom will support the construction of the JFHQ and the United States Property and Fiscal Office which can either co-locate or be placed at another appropriate industrial location on the base. The communications network backbone on Hanscom is superior to any other location in Massachusetts. Because it is a controlled access base the AT/FP requirements meet and exceed National Guard and DOD regulations. Hanscom AFB has the support facilities to support the mission of the Joint Force Headquarters. The highway network surrounding the site provides quick access to the city of Boston and out to communities throughout the Commonwealth. The airfield operated by Mass Port can accommodate any type of military aircraft in the inventory today. Aircraft belonging to the MA National Guard currently use it on a regular basis. The base infrastructure is designed to operate for long periods of time if the local utilities are lost.

1.3 Milford, MA

The Massachusetts National Guard Joint Force Headquarters is currently located in Milford MA. The main facility consists of a 99K SF three story office building with a 98K SF admin/warehouse building attached to the main office building. The facility is situated on 106 acres in a mixed use residential and industrial area of Milford. The facility was constructed in the early 1980's as a Data General Computer manufacturing facility. Over 70% of the site is wetlands. The majority of available land on the site has been fully developed.

The Commonwealth of Massachusetts purchased the property in 1994 for $6.5M dollars. Current tenants include the Headquarters Military Division Massachusetts National Guard, the headquarters for the Massachusetts Army National Guard, the headquarters for the Massachusetts Air National Guard, and several subordinate Army and Air Guard units. The Commonwealth of Massachusetts Department of Corrections also occupies space in the main building as a tenant.

The National Guard was successful in getting a military construction project for an addition and alteration project on the Future Years Defense Plan in FY10 for $25M dollars. It has been determined that to continue with this option would not be in the best interest of the National Guard. The addition and alteration of the current facility would ultimately lead to a larger inefficient building rather than providing the best facility possible with the limited resources available.

1.4 Natick, MA

Natick, MA is a federally owned site which is situated about 30 miles west of Boston. This site offers land needed for new construction though ancillary resources, force protection, communication networks, and access to needed geographic areas in Massachusetts are limited.

2.0 Site – Hanscom AFB, MA
A site north and south of Randolf Road (see attached map of Hanscom AFB) was considered. North of Randolf Road is a building enclave (1105, 1105B, 1102, 1107, etc.) this area provides a usable an adequate parcel of cleared land of approximately 7 acres. The southern parcel is also available and suitable for the stationing and construction of the proposed MA National Guard facility though conditions exist which could provide challenges in a phased project approach. This parcel includes buildings 1503 and building 1507. An additional parcel of 2 + acres of paved parking located east of Green Street will be incorporated in order to support parking needs.

3.0 Project Scope
The Joint Force Headquarters is the stationing for two Major Generals, four Brigadier Generals, and all associated staff. This project will support this command and control mission responsible for all National Guard units assigned in the state.

The scope of the project is for the MA National Guard to construct a 209,000 +/- square foot building consisting of three floors at Hanscom AFB. This building will provide administrative, storage, and training space for a full time and a part time drilling reserve force of ~ 400.

Organizational parking needs will be based off of 65 wheeled vehicles with non-organizational parking proportionate to the needs of the part time drilling force. It is the intent to consider the utilization existing surplus of parking areas into any design of new construction.

The total project cost is $55 million; ideally this would be funded in one phase. Current funding consists of $25.2 million in FY10, without additional funding the project will be phased. The $25.2 million in FY10 will represent phase one of the two phased project totaling $55 million in FY09 dollars.

4.0 Impact to Air Force
No direct monetary costs will be incurred by the Air Force in the planning, programming, or execution of this project. The construction of the building and associated support facilities will be federally funded through the United States Property and Fiscal Office.

Support agreements will be implemented in order for the MA National Guard to properly contribute to base operation costs. Impacts to operation and maintenance activities will be incidental though still negated by the use of support agreements.

Due to reductions in base population as a result of BRAC, Hanscom AFB is not operating at maximum capacity. Impacts on infrastructure such as entry control points and roadways have been more than offset with the current reduction of over 600 full time positions. Additional mitigating factors will be considered to include staggered start and stop times for workdays, compressed work weeks, and the manning of an additional gate during peek traffic times.

Additional support infrastructure such as the centralized heating and cooling systems that are operating at capacity will not be utilized without thorough study and recommendation by the Air Force. The Air Force mission at Hanscom AFB will in no way be negatively impacted by construction or operation of the Joint Force Headquarters.

There is a surplus of base housing at Hanscom AFB. Though no housing requirements are needed with the stationing plan of the MA National Guard, the opportunity for Hanscom AFB to realize higher occupancy rates with the increased full time workforce at Hanscom AFB will exist with the stationing of MA National Guard.

5.0 Benefits to Air Force

Base population has decreased due to BRAC and stationing changes. The additional military presence of the MA National Guard will increase the overall base population which is needed to maximize utilization of common base resources. The addition of the MA National Guard Joint Force Headquarters will compliment the Hanscom AFB community.

6.0 Real Estate Instrument

A license of Federal land from the USAF to the MA National Guard through the Corps of Engineers is the recommended instrument.

7.0 Conclusion

The MA National Guard has met with Congressional Representatives, Hanscom AFB Command, Base Civil Engineering, and National Guard Bureau to discuss this project. It is the opinion that this project at Hanscom AFB is feasible and strategic to best position the MA Army National Guard to meet future mission demands.

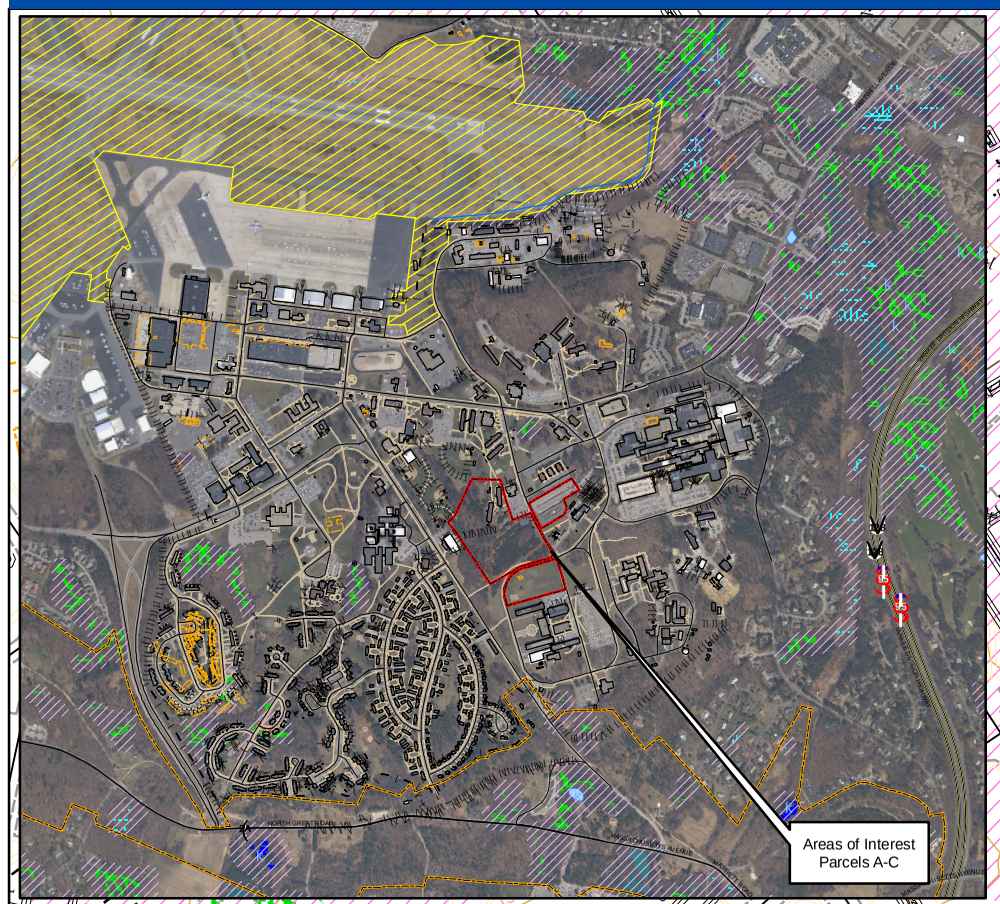
It is proposed and supported by Hanscom AFB that the MA National Guard is stationed at Hanscom AFB. In lue of an increased timetable of military construction dollars and with the concurrence of a real estate instrument from the United States Air Force, the MA National Guard will pursue construction starting in FY10. This site survey will be immediately followed by a request for beddown authority as defined in AFI10-503.

8.0 Supporting Documentation - *See attached*

a. Hanscom AFB Site Map
b. Email message from MAJ John Tryon, A7CIB - - Approval to conduct site survey
c. Memorandum from the National Guard Bureau Requesting Site Survey
d. Memorandum from the MA National Guard Requesting Site Survey

HANSCOM AFB
MAARNG LAND ACQUISITION

MASSACHUSETTS ARMY NATIONAL GUARD
JOINT FORCE HEADQUARTERS
CONSTRUCTION AND FACILITIES MAINTENANCE OFFICE



Parcel A
15.91 Acres

Parcel B
3.09 Acres

Parcel C
4.77 Acres

1105B
1105
1107
Building Not Included
1102F
1102C
1110
1102D

- AT_FPforBuffer
- Buildings/Structures
- Road
- Demolished & Abandoned Buildings
- Parking Areas
- Bridges
- Sidewalk
- Trails
- Fence
- Interstate
- U.S. Highway
- State Route
- ATFP
- MAARNG Land Acquisition
- Contour Line
- NHESP Estimated Habitats of Rare Wildlife
- NHESP Priority Habitats of Rare Species
- Stream
- 200 Foot Stream Setback
- OPEN WATER
- DEEP MARSH
- BOG
- SHALLOW MARSH MEADOW OR FEN
- SHRUB SWAMP
- WOODED SWAMP CONIFEROUS
- WOODED SWAMP DECIDUOUS
- WOODED SWAMP MIXED TREES
- Certified Vernal Pool
- Potential Vernal Pools
- Title 5 Setbacks

0 25 50 100
Meters

0 50 100 200 300 400 500
Feet

Massachusetts Mainland State Plane NAD 83
1:3000
Contour Interval 10 Feet

The information on this map is for planning purposes only. This information is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis.

William A. Cooney
GIS Specialist
Commonwealth of Massachusetts
Military Division, Office of the State Quartermaster

18 April 2008

Wilder, Nathan CPT NGMA

From: Tryon John Maj AF/A7CIB [John.Tryon@pentagon.af.mil]
Sent: Wednesday, April 09, 2008 10:45 PM
To: Powell, Regina A Ms NGB-ARNG; Holmes, Charlene M Civ USAF AFMC HQ AFMC/A8; linda.kondrat@hanscom.af.mil; Wilder, Nathan CPT NGMA; Parks, Ken R Mr NGB-ARNG; Oldham, Dale E LTC - NGB-ARI-RE; Harrop, Thomas A LTC NGMA
Cc: Perkinson Gregory Col AF/A7CIB; AF/A7CIB Workflow
Subject: FW: Request for Site Survey, Hanscom Air Force Base, Massachusetts (UNCLASSIFIED) SSCN: 08-46

Attachments: Request for Site Survey, Hanscom Air Force Base, Massachusetts (UNCLASSIFIED)



Request for Site Survey, Hansc...

To: All Addressees

The subject Army National Guard request to conduct a site survey at Hanscom AFB from 14-17 Apr 08 to investigate base suitability and land availability for the potential future beddown of a 209,000 SF Armed Forces Readiness Center is approved. The Site Survey Control Number is
08-46 and should be referenced on all future correspondence. Additional details for this request are included in attached memos.

IAW AFI 10-503, Base Unit Beddown Program --- approval to conduct this and subsequent follow-on surveys does not constitute beddown approval or authority to obtain/use facilities and/or real estate. Please provide this office an info copy of the site survey report within 45 days of site survey completion. Include in the report any anticipated facility-related/Base Operating Support costs incurred as a result of this potential action. No irrevocable actions may be implemented until
(1) completion of the environmental impact analysis process (EIAP); (2) formal beddown request has been submitted, and (3) formal Air Staff basing approval has been obtained. Direct Liaison Authority (DIRLAUTH) is granted between affected organizations.

POCs:

AFMC:
Charlene Holmes, Charlene.Holmes@wpafb.af.mil, DSN 787-4679, Com (937) 257-4679

66 MSG/CEKC:
Linda L. Kondrat, linda.kondrat@hanscom.af.mil, 478-3573, Com 781-377-3573

AF/A7C:
Maj Tryon, john.tryon@pentagon.af.mil, DSN 664-5270

V/r, JET

John E. Tryon, Maj, USAF
HAF/A7CI
Basing Branch
Comm: 703-604-5270 (DSN 664)
Fax: x5260
Email: john.tryon@pentagon.af.mil

-----Original Message-----
From: Holmes, Charlene M Civ USAF AFMC HQ AFMC/A8 [mailto:Charlene.Holmes2@wpafb.af.mil]

Sent: Monday, April 07, 2008 1:12 PM
To: Tryon John Maj AF/A7CIB
Cc: Kondrat, Linda L CTR USAF AFMC 66 MSG/CEKC
Subject: Request for Site Survey, Hanscom Air Force Base, Massachusetts (UNCLASSIFIED)

Maj Tryon--

Request for subject site survey at Hanscom AFB, 14-17 Apr 08 can be supported. Listed below are the POCs for this effort:
AFMC: Charlene Holmes, Charlene.Holmes@wpafb.af.mil, DSN 787-4679, Com (937) 257-4679
66 MSG/CEKC: Linda L. Kondrat, linda.kondrat@hanscom.af.mil, 478-3573, Com 781-377-3573 Ms. Linda L. Kondrat

Charlene M. Holmes
STRATEGIC PLANNING DIVISION
HQ AFMC/A8X
4375 Chidlaw Road, Room B210
Wright-Patterson AFB OH 45433-5006
Comm (937)257-4679 DSN 787-4679
Charlene.Holmes2@wpafb.af.mil

"This E-mail contains For Official Use Only (FOUO) information which must be protected under The Privacy Act and AFI 33-332."

-----Original Message-----
From: Kondrat, Linda L CTR USAF AFMC 66 MSG/CEKC
Sent: Monday, April 07, 2008 8:00 AM
To: Holmes, Charlene M Civ USAF AFMC HQ AFMC/A8
Cc: Perkins, Chris Civ USAF AFMC 66 MSG/CEG; Cronin, Dennis Civ USAF AFMC 66 MSG/CE; Dolan, James CTR USAF AFMC 66 MSG/CEKC
Subject: RE: Request for Site Survey, Hanscom Air Force Base, Massachusetts (UNCLASSIFIED)

Hi Charlene, this is all clear with Hanscom for their visit.

Linda L. Kondrat

Ms. Linda L. Kondrat

IAP Worldwide Services Inc.

CE Real Property Specialist

* 66 MSG/CEKC

120 Grenier Street

Building 1810

Hanscom AFB, MA 01731

* Ph.: (781) 377-3573 DSN: 478-3573 * Fax: (781) 377-8605 DSN: 478-8605

* Email: linda.kondrat@hanscom.af.mil

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-----Original Message-----
From: Holmes, Charlene M Civ USAF AFMC HQ AFMC/A8
Sent: Thursday, April 03, 2008 3:35 PM
To: Kondrat, Linda L CTR USAF AFMC 66 MSG/CEKC
Subject: FW: Request for Site Survey, Hanscom Air Force Base, Massachusetts (UNCLASSIFIED)

Good Afternoon Linda,

Can Hanscom AFB support the upcoming subject Site Survey slated for 14-17 Apr 08?

Charlene M. Holmes
STRATEGIC PLANNING DIVISION
HQ AFMC/A8X
4375 Chidlaw Road, Room B210
Wright-Patterson AFB OH 45433-5006
Comm (937)257-4679 DSN 787-4679
Charlene.Holmes2@wpafb.af.mil

"This E-mail contains For Official Use Only (FOUO) information which must be protected under The Privacy Act and AFI 33-332."
-----Original Message-----
From: Tryon John Maj AF/A7CIB [mailto:John.Tryon@pentagon.af.mil]
Sent: Thursday, April 03, 2008 3:01 PM
To: AFMC/A8X Workflow; Holmes, Charlene M Civ USAF AFMC HQ AFMC/A8
Subject: FW: Request for Site Survey, Hanscom Air Force Base, Massachusetts (UNCLASSIFIED)

Sir/Ma'am,

Army National Guard requests permission and support to conduct a site survey at Hanscom AFB from 14-17 Apr 08 to investigate base suitability and land availability for the potential future beddown of a 209,000 SF Armed Forces Readiness Center.

Please advise if AFMC supports this site survey and identify POCs for the wing and MAJCOM.

Thank you, John

John E. Tryon, Maj, USAF
HAF/A7CI
Basing Branch
Comm: 703-604-5270 (DSN 664)
Fax: x5260
Email: john.tryon@pentagon.af.mil

-----Original Message-----
From: Powell, Regina A Ms NGB-ARNG [mailto:regina.powell1@us.army.mil]
Sent: Wednesday, April 02, 2008 10:39 AM
To: Tryon John Maj AF/A7CIB
Cc: Wilder, Nathan CPT NGMA; Parks, Ken R Mr NGB-ARNG; Oldham, Dale E LTC - NGB-ARI-RE; Harrop, Thomas A LTC NGMA
Subject: Request for Site Survey, Hanscom Air Force Base, Massachusetts (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Good morning,

Attached you will have the Request for Site Survey, Hanscom Air Force Base, Massachusetts, from the CFMO-MA and the Concurrence memorandum from the Installatons Division Chief, National Guard Bureau.
Once the approval documentation has been prepared would you be so kind to forward copies

via e-mail to the above personnel.

If you require further information, please contact the undersigned.

Regina A. Powell
Real Estate Technician
JG Management Systems Inc.
703.607-1177
327.1177
"IT IS ALWAYS A PLEASURE."

Classification: UNCLASSIFIED
Caveats: NONE

DEPARTMENTS OF THE ARMY AND THE AIR FORCE
NATIONAL GUARD BUREAU
111 SOUTH GEORGE MASON DRIVE
ARLINGTON, VA 22204-1382

NGB-ARI-RE

2 APR 2008

MEMORANDUM FOR HEADQUARTERS, UNITED STATES AIR FORCE, ATTN: A7CIB (Major John Tryon), 1235 SOUTH CLARK STREET, PENTAGON, VIRGINIA 20330-1260

SUBJECT: Request for Site Survey, Hanscom Air Force Base, Massachusetts

1. Reference memorandum, JFHQ-FMO, 27 March 2008, same subject.

2. The National Guard Bureau Installations Division (NGB-ARI) concurs with the request for subject survey.

3. The point of contact for this action is Ken Parks, NGB-ARI-RE, Chief, Real Estate Branch, at DSN 327-7685, 703-607-7685 or ken.parks@ng.army.mil.

Encl

for MICHAEL J. BOUCHARD
Colonel, EN
Installations Division Chief

CF:
CFMO, MA
USPFO, MA

DEPARTMENT OF THE ARMY
DIRECTORATE OF FACILITY ENGINEERING
MASSACHUSETTS NATIONAL GUARD
50 MAPLE STREET, MILFORD, MA 01757

REPLY TO
ATTENTION OF:

JFHQ-FMO

27 March 2008

MEMORANDUM THRU CHIEF, ARMY INSTALLATIONS DIVISION, ATTN: NGB-ARI-RE, 111 SOUTH GEORGE MASON DRIVE, ARLINGION, VA 22204-1382

FOR HEADQUARTERS, UNITED STATES AIR FORCE, ATTN: A7CIB, 1235 SOUTH CLARK STREET, PENTAGON, VIRGINIA 20330-1260

SUBJECT: Request for Site Survey, Hanscom Air Force Base, Massachusetts

1. As outlined by Air Force Instruction (AFI) 10-503, Base Unit Beddown Program, request approval to conduct a site survey at the Hanscom Air Force Base on 14 – 17 April 08. This action will determine, in coordination with the AF Staff, if there is land available and suitable for the construction of a Armed Forces Readiness Center to support the Joint Force Headquarters as part of the MA National Guards Stationing Plan.

2. Facility requirements include 209,000 square feet of administrative, assembly, storage, and training space with appropriate support utilities, security, and parking. The visit will include a survey of available facilities which could be renovated at low cost, and potential sites where new facilities could be constructed to operate a Joint Forces Headquarters. The Site Survey will address costs and benefits to the Air Force, and will assess impact on mission, housing, infrastructure, and man-power. Site Survey report will be coordinated and submitted to HQ USAF/ILEPB within 45 days of the completion of the survey.

3. Administrative and billeting support is not requested.

4. Points of contact for this action are the undersigned, (508)233-6556 or Captain Nathan Wilder at (508)233-6742.

THOMAS HARROP
LTC, EN
CFMO

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Appendix E

Massachusetts National Guard NEPA

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NATIONAL GUARD BUREAU
111 SOUTH GEORGE MASON DRIVE
ARLINGTON VA 22204-1382

NGB-ARE-C

8 June 2009

MEMORANDUM FOR Installation Division (Mr. Ken Parks)

SUBJECT: Review of a Record of Environmental Consideration (REC) for a License and Proposed Construction of a Joint Force Headquarters at Hanscom Air Force Base (AFB) for the Massachusetts ARNG (MAARNG) in Lexington, Massachusetts

1. Reference:

a. REC, Proposed New Massachusetts National Guard, Joint Force Headquarters, Hanscom Air Force Base, Bedford, MA. 4 Feb 09.

b. 32 CFR Part 651, 29 March 2002, Environmental Analysis of Army Actions.

c. The National Guard Bureau (NGB) NEPA Handbook, Guidance on Preparing Environmental Documentation for Army National Guard Actions in Compliance with NEPA of 1969, June 06.

d. EBS Memorandum for a License of 20 Acres and Subsequent Construction of a Joint Force Headquarters at Hanscom Air Force Base (AFB) in Lexington, Massachusetts. 8 Jan 09.

2. Reference 1a states that the REC is an appropriate NEPA document in accordance with references 1b and 1c.

3. Reference 1d indicates that the Environmental Condition Of Property (ECOP) documentation was completed and is sufficient.

4. The point of contact is John B. Haines, NE Regional NEPA/ECOP Program Manager at 703.607.7986, DSN 327-7986, or email John.B.Haines@us.army.mil.

Beth A. Erickson

BETH A. ERICKSON
Chief, Training & Infrastructure Branch

CF:
LTC Elver Crow, NGB-ARI-CO
MAJ Erik Gordon, NGB-ARI-CO
LTC Amelia Calder, NGB-ARI-RE
LTC Thomas Harrop, MAARNG
Mr. Shawn Cody, MAARNG
Mr. Keith Driscoll, MAARNG

ARNG ENVIRONMENTAL CHECKLIST

Enter information in the yellow shaded areas.

PART A - BACKGROUND INFORMATION

1. PROJECT NAME:

Proposed New Massachusetts National Guard, Joint Force Headquarters, Hanscom Air Force Base, Bedford , MA

2. PROJECT NUMBER:	**3. DATE:**
250087	4-Feb-09

4. DESCRIPTION AND LOCATION OF THE PROPOSED ACTION:

The new JFHQ will provide the administrative, classroom training, assembly areas, library, learning center, vault, physical fitness, and storage areas necessary to achieve proficiency in required administrative and training tasks. It will include a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency. The project proposes the phased new construction of a specially designed JFHQ (approximately 200,000 SF multi-story building) and USPF&O warehouse of permanent masonry type construction with appropriate parking and circulation areas and associated appurtenances. The new JFHQ, to be located at Hanscom AFB Massachusetts, features superior access to the major road networks of the state and with ready access to Boston, the flexibility to respond in time of crisis in an expeditious manner, redundant communications and utility infrastructure, fixed and rotary flight lines, and a robust AT/FP program.

5. START DATE (dd-mmm-yy):	1-Oct-09	6. END DATE (dd-mmm-yy):	1-Jun-12		
7. STATE/ORGANIZATION:	Massachusetts National Guard	8. SERVICE COMPONENT:	Army		
9. ADDRESS:	50 Maple Street, Milford, MA 01757				
10. PROPONENT/UNIT NAME:	Massachusetts Army National Guard	11. POC:	LTC Thomas Harrop		
12. PROPONENT/UNIT ADDRESS:	Same as above				
13. COMM VOICE:	508-233-6556	14. COMM FAX:	508-233-6548	15. DSN VOICE:	256-6556
16. DSN FAX:	256-6548	17. EMAIL:	thomas.harrop@us.army.mil		

18. Was the project adequately addressed in a separate environmental review? **Do not include Environmental Baseline Surveys (EBSs).** ☐ YES ☑ NO

If YES, fill out and attach copy of the decision document:	Document Title:
	Reviewing Agency:
	Date of Review: (dd-mmm-yy):

PART B - HISTORICAL INFORMATION

1. Is the agency undergoing, or has it undergone, legal action for NEPA issues?	☑ YES	☐ NO
2. Has there been previous ARNG training, construction, or similar proposals on the site?	☐ YES	☑ NO
3. Are there any known contentious environmental issues currently associated with the site?	☐ YES	☑ NO

Explain any **YES** answers.

The Massachusetts National Guard underwent legal action for NEPA issues at Camp Edwards in the late 1990's that were subsequently addressed and rectified.

4. Has the proposed type of equipment (tracked or wheeled) been operated on the site before?	☑ YES	☐ NO

If NO, what NEPA document covers this action? Provide copy of REC, FNSI, or ROD. **This does not include EBSs.**	Document Title:
	Preparing Agency:
	Date (dd-mmm-yy):

5. Describe the environmental setting, including past and present use of the site.

The site features a topographical rise of approximately 30 feet, from a low point in the northwest corner, to a highpoint on the southeast corner, which is bounded by the intersection of Grenier Road and Randolph Road. The site is currently a forested upland featuring a mixed hardwood-softwood forest. Historical USGS topographical maps and historical aerial photographs indicate the site was periodically cleared and then allowed to re-vegetate. No wetlands or threatened and endangered species have been recorded on the site.

PART C - DESCRIPTION OF PROPOSED PROJECT/ACTION

Include a map with the site clearly marked

1. The proposed action will involve (check all that apply):
- ☐ Training Activities/Areas
- ☑ Construction
- ☑ Reorganization/Restationing
- ☐ Maintenance/Repair/Rehabilitation
- ☑ Lease or License
- ☐ Environmental Plans/Surveys
- ☑ EBS Preparation
- ☐ Other (Explain):

2. Has any related real estate action been addressed in a separate environmental document within the last 5 years? ☐ YES ☑ NO

If YES Document Title: Date (dd-mmm-yy):

3. Number of acres to be disturbed: Less than 5 acres

4. How is the site currently zoned? ☐ Residential ☐ Commercial ☐ Industrial ☐ Park ☑ Other (Explain): Currently part of Hanscom AFB

5. Briefly describe the surrounding area land uses (e.g., undeveloped, recreation, residential, etc):
Hanscom AFB is located in an area of unique history, literary and cultural significance as the towns which surround Hanscom AFB are a focal point of American history and literature, with Minuteman National Park less than 0.5 miles south of the proposed site. The towns which border Hanscom AFB are largely residential in character and are considered suburbs of Boston. Approximately 900 feet east of the site is a military housing complex, while a variety of training, office, research, parking and industrial uses abut the parcel on the south, west and north sides.

6. Provide distances to **ALL** environmentally sensitive areas:

TYPE	Distance	Unit	TYPE	Distance	Unit
a. Prime/Unique Farmland	0.2	miles	e. Wild/Scenic River	2.9	miles
b. Wilderness Area/National Park	0.4	miles	f. Coastal Zones	14.9	miles
c. Sole-Source Aquifer	14.0	miles	g. Floodplain	0.7	miles
d. Wetlands	0.2	miles			

PART D - ENVIRONMENTAL IMPACT ANALYSIS

1. AIR

a. Is the proposed action in a non-attainment/maintenance area? ☑ YES ☐ NO

Attach a General Conformity Determination or Record of Non-Applicability (RONA) for Military Construction activities in non-attainment/maintenance areas.

b. Will the proposed action require an air emissions permit, registration, license, etc?
- During proposed action: ☐ YES ☑ NO
- During normal operations after proposed action is completed: ☑ YES ☐ NO

c. Will the proposed action release objectionable odors, smoke, dust, suspended particles, or noxious gases into the air?
- During proposed action: ☐ YES ☑ NO
- During normal operations after proposed action is completed: ☐ YES ☑ NO

d. Will the proposed action expose sensitive receptors (threatened or endangered plants or animals, or children) to pollutants?
- During proposed action: ☐ YES ☑ NO
- During normal operations after proposed action is completed: ☐ YES ☑ NO

Explain any **YES** answers and/or planned mitigation here.
1a. Massachusetts is a non-attainment area for ozone. The project/action as described is an exempt action under 40 CFR 51.853(c)(2). The proposed action would result in no emissions increase or an increase in emissions that is clearly de minimis. Additionally, Hanscom AFB currently operates under a Title V air permit. An emissions analysis has been conducted and it was determined that the emissions from the proposed action does not meet or exceed the threshold currently permitted. A modification to the existing permit is not needed.

2. TRAFFIC

a. Will the proposed action result in generation of or increase in aircraft activity/traffic? ☐ YES ☑ NO

b. Will the proposed action result in the generation of or increase in vehicular traffic? ☑ YES ☐ NO

c. Will the proposed action use and/or construct unimproved roads?	During proposed action	☐ YES	☑ NO
	During normal operations after proposed action is completed	☐ YES	☑ NO

Explain any **YES** answers and/or planned mitigation here. Include aircraft types, number of sorties, and flight schedules (if applicable).
In 2003, approximately 6,000 commuters traveled to/from Hanscom AFB on a daily basis, with total volumes approximately 1/3 less than in 1998. The propose action is estimated to increase vehicle traffic to/from the base by approximately 350 commuters during weekdays, to levels well below those historically experienced at Hanscom AFB.

3. NOISE

a. Will the proposed action result in an increase in noise levels?	During proposed action	☑ YES	☐ NO
	During normal operations after proposed action is completed	☐ YES	☑ NO

b. Is the proposed action close to any civilian activity where noise might affect the population (add any not listed in the spaces provided)? Include distances for all types: ☐ YES ☑ NO

TYPE	Distance	Unit	TYPE	Distance	Unit
(1) Residence/Home	0.2	miles	(5) Library	0.2	miles
(2) Church	1.3	miles	(6) Wilderness Area	88.0	miles
(3) School	0.2	miles			
(4) Hospital	3.0	miles			

c. Will the proposed action involve aircraft?		☐ YES	☑ NO
d. Will the proposed action involve night (10 pm to 7 am) operations?	During proposed action	☐ YES	☑ NO
	During normal operations after proposed action is completed	☐ YES	☑ NO

Explain any **YES** answers.
Noise levels are expected to increase on a temporary basis in the immediate vicinity of the site during construction. No long-term increases in noise levels during operation of the facility are forecasted.

4. EARTH

a. Will the proposed action result in long-term disruptions, displacements, compaction, or overcovering of soil, a permanent change in topography, or ground surface relief features?	☑ YES	☐ NO
b. Will the proposed action result in a long-term increase in wind or water soil erosion, on or off the site, after the proposed action is completed?	☐ YES	☑ NO

Explain any **YES** answers.
The construction of the facility and associated circulation areas will necessitate re-grading of the sloping parcel. New slopes will be stabilized to prevent wind or water soil erosion.

5. NATURAL RESOURCES

NOTE- A **subject matter expert** from the State/Territory ARNG Environmental Office must confirm the answers to these questions by signing the signature page.

a. Will the proposed action change the diversity or numbers of any species including mammals, birds, reptiles, amphibians, fish, trees, shrubs, grasses, crops, microflora, or aquatic plants?	☐ YES	☑ NO
b. Will the proposed action introduce any non-native species into the area?	☐ YES	☑ NO
c. Will the proposed action impact any plants or animals that are listed or candidates for threatened, unique, rare, or endangered status?	☐ YES	☑ NO
d. Will the proposed action create barriers to prevent the migration or movement of animals?	☐ YES	☑ NO

e. Will the proposed action deteriorate, alter, or destroy existing fish or wildlife habitat?	☐ YES	☑ NO
f. Will the proposed action deplete any non-renewable natural resources?	☐ YES	☑ NO
g. Will the proposed action alter, destroy, or significantly impact environmentally sensitive areas (wetlands, coastal zones, etc.)?	☐ YES	☑ NO

Explain any **YES** answers.

6. LAND USE

a. Will the proposed action alter the present land use of the site?	☐ YES	☑ NO
b. Who owns the property? ☑ Federal/DOD ☐ State ☐ City/Town/County ☐ Private ☐ Other (Explain):		
c. Does the proposed action involve a real estate action (e.g., purchase, lease, permit, or license)?	☑ YES	☐ NO
Answer the following if you answered **YES** above: (1) Has an EBS been completed? **If YES,** attach the EBS.	☑ YES	☐ NO
(2) Require an increase of acreage/amendment to an existing lease or license?	☐ YES	☑ NO
(3) Require new purchase of additional acres using federal, state, or other funds?	☐ YES	☑ NO
(4) Require a new lease, license, and/or land use permit?	☑ YES	☐ NO
(5) Replace or dispose of existing facilities?	☑ YES	☐ NO

Explain any **YES** answers.
The proposed action will require a real property lease between the US Air Force and the Commonwealth of Massachusetts for the site. The proposed JFHQ at Hanscom AFB will replace the current JFHQ located in Milford, MA. The Milford facility will then be backfilled with other Guard units.

7. SOLID WASTE

a. Will the proposed action generate solid wastes that must be disposed of on or off site?	☑ YES	☐ NO

Explain a **YES** answer.
Construction and then the routine operations of the JFHQ will generate solid waste that will disposed of off site in accordance with applicable federal, state and local laws and regulations.

8. HAZARDOUS WASTE

a. Will the proposed action generate hazardous waste?		☐ YES	☑ NO
b. Will the proposed action store and/or prepare for the disposal of hazardous waste or materials?	During proposed action	☐ YES	☑ NO
	During normal operations after proposed action is completed	☐ YES	☑ NO
c. Does the proposed action require a permit to accumulate hazardous waste or materials at the site?	During proposed action	☐ YES	☑ NO
	During normal operations after proposed action is completed	☐ YES	☑ NO
d. Does the proposed action have an increased risk for explosion, spill, or the release of hazardous waste or materials (including but not limited to pesticides, chemicals, or radiation)?	During proposed action	☐ YES	☑ NO
	During normal operations after proposed action is completed	☐ YES	☑ NO
e. Will the proposed action require the presence of trained personnel to handle and dispose of hazardous and/or toxic waste/materials?	During proposed action	☐ YES	☑ NO
	During normal operations after proposed action is completed	☐ YES	☑ NO

f. Will the proposed action involve the opportunity for hazardous material minimization and recycling?	During proposed action During normal operations after proposed action is completed	☐ YES ☐ YES	☑ NO ☑ NO
Explain any **YES** answers.			
g. Do you have a plan describing procedures for the proper handling, storage, use, disposal, and cleanup of hazardous and/or toxic materials?	During proposed action During normal operations after proposed action is completed	☑ YES ☑ YES	☐ NO ☐ NO
Explain any **NO** answers.			

9. WATER

a. Will the proposed action change currents, course, or direction of water movements in marine or fresh waters?		☐ YES	☑ NO
b. Will the proposed action discharge sediments, liquids, or solid wastes into surface waters, or alter the surface water quality?	During proposed action During normal operations after proposed action is completed	☐ YES ☐ YES	☑ NO ☑ NO
c. Will the proposed action change the quality and/or quantity of ground waters, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?		☐ YES	☑ NO
d. Does the proposed action have the potential to accidentally spill hazardous or toxic materials in or near a body of water?	During proposed action During normal operations after proposed action is completed	☐ YES ☐ YES	☑ NO ☑ NO
e. Does the proposed action have the need for a Spill Control and Countermeasure Plan, and/or Installation Spill Contingency Plan (SPCC and/or ISCP)?	During proposed action During normal operations after proposed action is completed	☐ YES ☐ YES	☑ NO ☑ NO
f. Will the proposed action construct facilities or implement actions within floodplains and/or wetlands?	During proposed action During normal operations after proposed action is completed	☐ YES ☐ YES	☑ NO ☑ NO
g. Does the proposed action require an NPDES stormwater or wastewater discharge permit?		☑ YES	☐ NO
h. Does the proposed action involve the construction of a water or wastewater treatment system (oil water separators, grease traps, etc)?		☐ YES	☑ NO

Explain any **YES** answers.

The construction will be over an acre which would then require a NPDES constuction stormwater permit and plan. An analysis is currently underway to determine if stormwater runoff from the proposed action will meet or exceed the thresholds currently permitted for Hanscom AFB.

10. CULTURAL RESOURCES

a. Does the proposed action involve an undertaking (Reference: 36 CFR 800.161[y]) to a building/structure 50 years or older?	☑ YES	☐ NO
If YES to Question a, has an architectural inventory/evaluation been completed to determine eligibility for the National Register of Historic Places?	☐ YES	☑ NO
b. Does the proposed action involve ground disturbance? (Reference: 36 CFR 800.161[y])	☑ YES	☐ NO
If YES to Question b, has an archaeological inventory been completed to determine if there are any archaeological sites present?	☑ YES	☐ NO
If YES to Question b, did the state contact any Federally-recognized Tribes to comment on the proposed action?	☐ YES	☑ NO
c. Does the proposed action fall under any Federal or Nationwide Programmatic Agreement or Programmatic Comment? **If YES**, reference it below.	☐ YES	☑ NO
If NO to Question c, has the state contacted the SHPO for comments?	☑ YES	☐ NO
d. Does the proposed action have the potential to affect any traditional cultural properties or sacred sites? **If YES,** attach coordination with Federally-recognized Tribes.	☐ YES	☑ NO

Explain any **YES** answers.

The MA SHPO concurred with the finding that the project will not have an "adverse effect" on the subject property. A Phase I archaeological survey determined that there are no known archaeological properties within the project site (Abell, Julie, Sean Fitzwell, and Peter Glumac, 1998 Final Phase 1 Archaeological Survey Hanscom Air Force Base, Massachusetts). Buildings 1503 and 1507 and its associated storage facilities, constructed in 1955, are located within Parcel A. An architectural building and inventory survey of Hanscom AFB was conducted by PAL in 2003. The survey indicated that both buildings were not eligible for listing on the National Register Historic Places. There are no known Federally recognized tribes with ancestral ties or cultural affiliation associated with the project site.

11. POPULATION

a. Will the proposed action alter the location, distribution, density, or growth rate of the human population of an area?		☐ YES	☑ NO
b. Will the proposed action affect children? Reference: Executive Order 13045	During proposed action	☐ YES	☑ NO
	During normal operations after proposed action is completed	☐ YES	☑ NO
c. Are there any Environmental Justice issues associated with the proposed action? Reference: Executive Order 12898.		☐ YES	☑ NO

Explain any **YES** answers.

12. INFRASTRUCTURE

a. Will the proposed action result in the need for new systems or substantial alterations to the following utilities:

(1) Electrical power, fossil fuel or other (specify):	☐ YES	☑ NO
(2) Drinking water?	☐ YES	☑ NO
(3) Wastewater treatment?	☐ YES	☑ NO
(4) Sewer collection system?	☐ YES	☑ NO
(5) Wash racks?	☐ YES	☑ NO
(6) Solid waste disposal?	☐ YES	☑ NO

Explain any **YES** answers.

PART E - INNOVATIVE READINESS TRAINING (IRT)

Skip this portion if this is not an IRT Project

1. REQUESTER INFORMATION

a. REQUESTER NAME:	b. TITLE:	
c. AGENCY NAME:		
d. AGENCY ADDRESS:		
e. COMM VOICE:	f. COMM FAX:	g. DSN VOICE:
h. DSN FAX:	i. EMAIL:	

j. TYPE: ☐ FEDERAL ☐ STATE ☐ LOCAL/MUNICIPAL ☐ YOUTH/CHARITABLE

k. SUPPORT TYPE REQUESTED:

☐ ENGINEER ☐ TRANSPORTATION ☐ TECH ASSISTANCE ☐ LOGISTICAL

☐ COMMUNICATION ☐ ADMINISTRATIVE ☐ CEREMONIAL ☐ PARADE

☐ OTHER (SPECIFY):

2. ASSIGNED UNIT INFORMATION (Filled out by assigned National Guard unit)

a. UNIT ASSIGNED PROJECT:	b. SERVICE COMPONENT:
c. UNIT ADDRESS:	
d. PROJECT OFFICER RANK: NAME:	
e. SITE VISIT DATE (dd-mmm-yy	

f. PROJECT ASSESSMENT (Give detailed assessment of project requirements. Review project requirements against the screening criteria in Section 651.29 of 32 CFR Part 651. If the project qualifies for a Categorical Exclusion, indicate the Categorical Exclusion code).

g. ESTIMATED NUMBER OF HOURS REQUIRED TO COMPLETE PROJECT:	h. PERSONNEL REQUIRED:	OFFICER	ENLISTED

PART F - DETERMINATION

a. Does the proposed action have the potential to degrade the quality of the environment, or curtail the diversity of the environment? ☐ YES ☑ NO

b. Does the proposed action have the potential for cumulative impacts on environmental quality when the effects are combined with those of other Federal/State actions, or when the action is of lengthy duration? ☐ YES ☑ NO

c. Does the proposed action have environmental effects that will cause substantial adverse effects on the human or natural environment, either directly or indirectly? ☐ YES ☑ NO

On the basis of this initial evaluation, the following is appropriate (check one):

- ☐ An **Environmental Baseline Survey (EBS)** and a **new checklist** once the EBS is completed.
- ☐ IAW 32 CFR 651 Appendix B, the proposed action qualifies for a **Categorical Exclusion (CX)** that does not require a Record of Environmental Consideration.
- ☑ A **Record of Environmental Consideration (REC).**
- ☐ An **Environmental Assessment (EA).**
- ☐ A **Notice of Intent (NOI)** to prepare an **Environmental Impact Statement (EIS).**

Signature of Proponent (Requester)	Concurrence: Environmental Program Manager
LTC Thomas Harrop	Shawn Cody
Printed Name of Proponent (Requester)	Printed Name of Env. Program Manager
29 April 2009	29 April 09
Date Signed	Date Signed

Concurrence (as needed):

Signature of Landowner	Signature of Commander
Printed Name of Landowner	Printed Name of Commander
Date Signed	Date Signed
Signature of Facilities Officer	Signature of Plans & Operations Officer
Printed Name of Facilities Officer	Printed Name of Plans & Operations Officer
Date Signed	Date Signed

ARNG RECORD OF ENVIRONMENTAL CONSIDERATION

1. PROJECT NAME:

Proposed New Massachusetts National Guard, Joint Force Headquarters, Hanscom Air Force Base, Bedford , MA

2. PROJECT NUMBER:	**3. DATE:**
250087	4-Feb-09
4. PROJECT START DATE (dd-mmm-yy):	1-Oct-09
5. PROJECT END DATE (dd-mmm-yy):	1-Jun-12

6. DESCRIPTION AND LOCATION OF THE PROPOSED ACTION:

The new JFHQ will provide the administrative, classroom training, assembly areas, library, learning center, vault, physical fitness, and storage areas necessary to achieve proficiency in required administrative and training tasks. It will include a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency. The project proposes the phased new construction of a specially designed JFHQ (approximately 200,000 SF multi-story building) and USPF&O warehouse of permanent masonry type construction with appropriate parking and circulation areas and associated appurtenances. The new JFHQ, to be located at Hanscom AFB Massachusetts, features superior access to the major road networks of the state and with ready access to Boston, the flexibility to respond in time of crisis in an expeditious manner, redundant communications and utility infrastructure, fixed and rotary flight lines, and a robust AT/FP program.

7. CHOOSE **ONE** OF THE FOLLOWING:

☐ An existing **Environmental Assessment** adequately covers the scope of this project.
EA Date (dd-mmm-yy) Conducted By:

☐ An existing **Environmental Impact Statement** adequately covers the scope of this project.
EIS Date (dd-mmm-yy Conducted By:

☑ After reviewing the screening criteria and completing the ARNG Environmental Checklist, this project qualifies for a **Categorical Exclusion** (select one below).

Categorical Exclusion Code: C-1: Construction of an addition to an existing structure or new...
See 32 CFR 651 App. B

☐ This project is exempt from NEPA requirements under the provisions of:
Cite superseding law:

8. REMARKS:

Signature of Proponent (Requester)

LTC Thomas Harrop
Printed Name of Proponent (Requester)

29 April 2009
Date Signed

Concurrence:
Environmental Program Manager

Shawn Cody
Printed Name of Env. Program Manager

29 apr 09
Date Signed

Appendix F

Air Conformity Applicability Analysis

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GENERAL CONFORMITY – RECORD OF NON-APPLICABILITY

Project/Action Name: **Hanscom Air Force Base - Joint Forces Headquarters (JFHQ) Facility Construction and Renovation Project – Alternative 1: Preferred Alternative**

Project/Action Point of Contact:

Begin Date: 1 June 2010 **End Date: 1 October 2012 (28 months of construction)**

General Conformity under the Clean Air Act, Section 176(c), has been evaluated for the project described above according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to this proposed project/action because the total direct and indirect emissions in tons per year (tpy) for the applicable pollutants of concern (i.e., NO_x and VOC) for the year showing the highest emissions have been estimated to be:

2011Emissions Summary	VOC (tpy)	NO_x (tpy)
Construction Phase	2.60	11.51
Operational Phase	-	-
TOTAL	**2.60**	**11.51**

These emission rates are below the conformity threshold values established at 40 CFR 93.153(b) of:

Conformity Threshold Rate

VOC	50 tpy
NO_x	100 tpy

In addition, the project/action is not considered regionally significant under 40 CFR 93.153(i), as the estimated emissions, using reasonable and conservative assumptions, are significantly less than 10% of the regional emissions. Therefore, a conformity determination is not required.

Supporting documentation and emissions estimates for the project/action (i.e., construction/ renovation and operational phases) are attached and included in the NEPA documentation.

SIGNED 

DATE 9 DEC 2009

SUPPORTING DOCUMENTATION

Description of Project/Action:
The Massachusetts National Guard plans to construct a Joint Forces Headquarters (JFHQ) Facility at Hanscom Air Force Base (AFB). This proposed project will contain approximately 200,000 square feet and will consist of the JFHQ building, as well as parking for privately owned vehicles (POV) and military personnel. The project will also include the minor interior renovations of an adjacent three story office building and the installation of six fuel burning emissions units at the new JFHQ.

Methodology:
The General Conformity Applicability Analysis was conducted using the methodology outlined in the appropriate Department of Defense general conformity guidance documents (USAF, 2003) (USACHPPM, 2003). A Record of Non-Applicability (RONA) was prepared since the NO_x and VOC emissions are less than the General Conformity *de minimis* thresholds and are not considered to be regionally significant.

Calculations were performed using an Excel spreadsheet that used EPA-approved emission factors (USEPA, 1991). The spreadsheet quantified emissions from site clearing and grading, paving and heavy equipment used for the all related construction activities, and the POVs used to transport workers to/from the site for the estimated duration of the project (which included the renovation). Emissions from the proposed stationary sources were quantified based on the first year of operation. This was performed by using an Excel spreadsheet utilizing information from the aforementioned EPA document, as well as from EPA's AP-42 emission factor document (USEPA, 1995).

The vehicle miles of travel (VMT) were estimated by subtracting the distance travelled by the approximately 400 personnel member commuting to the Milford location of the JFHQ, from the distance they would travel once they are relocated to the Hanscom AFB JFHQ. This value, the delta of miles travelled, represents the increase of VMT due to relocating the JFHQ.

Input Parameters and Assumptions:
Project-specific parameters were used or assumed for the proposed project. Although the exact means and methods of construction would be the responsibility of the contractor, it was necessary to make certain assumptions, such as the quantity and type of construction vehicles, to estimate emissions. When possible, conservative assumptions were made and based on the RSMeans document for determining necessary construction equipment (RSMeans, 2007).

Construction Activities:
The entire project area would be 4.9 acres including 1.6 acres for a paved parking lot. The construction project duration was assumed to be 28 months in duration (SEA, 2009). Other parameters and assumptions were made for the following related activities:

<u>Heavy Construction Equipment</u>

- This includes emissions from heavy construction equipment involved in site construction activities, such as grading and soil movement, debris hauling, asphalt paving and concrete pouring.

Fugitive Dust from Site Preparation

- Fugitive dust emissions were calculated using the greatest number of eight-hour days that equipment was estimated to operate. Land disturbance activities were assumed to last for approximately thirty days. To obtain worst case emissions, no controls were assumed.

Construction Employee Travel

- It was estimated that an average of 30 contractors would be required to be on-site every day, five days a week, for 28 months to complete the project. To obtain worst case emissions, no carpooling or public transportation was assumed (i.e., every contractor drove individual POV).

Operational Activities:

Stationary Emission Sources

- Three boilers, one make-up air unit, one hot water heater, and one emergency generator would be installed after completion of the construction phase (SEA, 2009). All units would run on natural gas. To obtain worst case emissions, no low NO_x controls were assumed.

JFHQ Employee Travel

- It was estimated that an average of 400 employees would be required on-site for the 240 working days during the first year of operation.
- Mileage for employee travel was estimated using the November 16, 2009 URS Memorandum that details vehicle miles travelled to the JFHQ.

Results:

Estimated Calculations

Based on the estimated VOC and NO_x emissions, using conservative and reasonable assumptions, the total project emissions are well below the regulatory thresholds of 50 tpy and 100 tpy, respectively.

Year	Phase	Emissions (tpy)				
		VOC	NO_x	CO	SO_2	PM
2010	Construction	1.30	5.75	2.92	0.41	0.52
	Operational	-	-	-	-	-
	Total 2010 Emissions	1.30	5.75	2.92	0.41	0.52
2011	Construction	2.6	11.51	5.87	0.81	1.03
	Operational	-	-	-	-	-
	Total 2011 Emissions	2.60	11.51	5.87	0.81	1.03
2012	Construction	2.17	9.59	4.90	0.68	0.85
	Operational	0.29	1.35	0.93	0.04	0.15
	Total 2012 Emissions	2.46	10.94	5.83	0.72	1.00
2013	Construction	-	-	-	-	-
	Operational	1.44	6.73	4.66	0.22	0.03
	Total 2013 Emissions	1.44	6.73	4.66	0.22	0.03
TOTAL PROJECT EMISSIONS		**7.80**	**34.93**	**19.28**	**2.16**	**2.58**

Emissions would be highest during calendar year 2011; therefore, those emissions were reported in the Record of Non-Applicability and compared to the general conformity annual thresholds.

Regional Significance

An action is regionally significant if the total direct and indirect emissions of an individual pollutant amount to 10 percent or more of the non-attainment area emissions of that pollutant. Table E1-1 of the Commonwealth of Massachusetts State Implementation Plan (SIP) for the ozone non-attainment area (MADEP, 2008) shows the total area-wide emissions to be as follows:

VOC	540.3 tons/day
NO_x	475.2 tons/day

The total emissions from the project were estimated to be significantly less than 10 percent of the area-wide emissions as described in the applicable SIP.

References:

Massachusetts Department of Environmental Protection (MADEP). Final Massachusetts State Implementation Plan to Demonstrate Attainment of the National Ambient Air Quality Standard for Ozone. Jan 31 2008.

RSMeans. Babbitt, Christopher; Baker, Ted; Balboni, Barbara. RSMeans Site Work & Landscape Cost Data. 30 November 2007.

SEA Consultants, Inc. 2009. Design parameters .

URS Memorandum for Brian Vallaincourt. Subject: Vehicle Miles Travelled (VMT) Analysis for Proposed Joint Force Headquarters (JFHQ). 16 November 2009.

U.S. Air Force (USAF). IERA Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installation, May 1999, Revised January 2002, Section 4.

USAF. Memorandum for ALMAJCOM/CEVs, HQ USAFA/CEV, 11th WG/CEV. Subject: Air Conformity Guide. 26 August. 2003.

US Army Center for Health Promotion and Preventative Medicine (USACHPPM) Dempsey, Judith; Polyak, Lisa; Tushek, Stephen. Technical Guide for Preparing a Record of Nonapplicability for the General Conformity Rule. November 2003.

USEPA. AP 42, Fifth Edition. *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources.* Sections 1.3, 1.4, 3.2 January 1995. http://www.epa.gov/ttn/chief/ap42/

USEPA. Nonroad Engine and Vehicle Emission Study--Report, Doc 21A-2001, 1991.

Appendix G

Public Comments and Response

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Your communities

Holiday offerings burst with good cheer

By Denise Taylor
GLOBE CORRESPONDENT

Holiday events are popping up all over the calendar. Get your fill of latkes, nutcrackers, menorahs, Santa sightings, dreidels, and Scrooge (and get in some shopping, too) at these seasonal favorites.

HANUKKAH FESTIVITIES



Hot Peas 'n Butter will add a twist to the Hanukkah Fiesta in Newton on Sunday.

LIGHTING, LATKES, AND GREAT DEBATE: Bundle up for the outdoor menorah lighting Saturday at Congregation Beth El's annual Hanukkah celebration in Sudbury, then head inside for singing, games, crafts, latkes, stories, and an interactive play about the holiday. Then dig into a fun discussion of the Great Hanukkah Debate: whether to light the menorah's candles from the left or the right. 4-6 p.m., 105 Hudson Road in Sudbury. Free. 978-443-9622, www.bethelsudbury.org.

MEGA MENORAH: Gather at Sudbury's Town Hall for the lighting of a 9-foot menorah to kick off the Chabad Center of Sudbury's Mega Hanukkah celebration Sunday. Afterward, fill up on hot latkes and jelly doughnuts as Benjamin the Clown wows the crowd. A former member of the Moscow Circus, he's known for juggling everything no matter how sharp or how on fire it may be. Crafts and games round out the fun starting at 5:30 p.m. 322 Concord Road, Sudbury. Free. 978-443-3691, www.chabadsudbury.com.

FIESTA CONCERT: No latkes here, but you can get your fill of hit children's musical group Hot Peas 'n Butter on Sunday at the Leventhal-Sidman Jewish Community Center's Hanukkah Fiesta in Newton. Known for its Afro-Caribbean, folk, and rock sound (maybe you've seen the videos on Nickelodeon and Noggin), the Parents Choice Award-winning group will add a new holiday twist for this special show. The day's activities include art projects, candle lighting, refreshments, and open gym time. The fiesta is 10 a.m. to 2 p.m., with Hot Peas 'n Butter concerts at 11 a.m. and 1 p.m. at 333 Nahanton St. Fiesta admission free. Concert tickets $10, show appropriate for ages 2-8. 617-965-5226, www.jccgb.org.

STING LIKE A MACCABEE: Congregation Or Atid's annual Hannukah Carnival features creative games such as Hannukah bingo, Hannukah Twister, and a three-legged Maccabee race with obstacle course. Kids get a passport at the door that they can stamp as they take part in each activity, from face painting and craft-making to games and mural painting. A full dairy meal with latkes and traditional sufganiyot doughnuts is included. 4:30-6:30 p.m., Sunday. Admission, including meal: $12 adults, $10 children 4 and up, or $40 per family. RSVP. 97 Concord Road, Wayland. 508-358-9623. www.congregationoratid.org.

SCROOGE SIGHTINGS

DRAMATIC CHARM: The New Repertory Theater in Watertown brings back its popular dramatic adaptation of "A Christmas Carol," replete with flying ghosts, lively music, and this year's absolutely charming Tiny Tim, 7-year-old Ella Miller of Belmont, opening tomorrow at 8 p.m., with performances through Dec. 27, at the Arsenal Center for the Arts, 321 Arsenal St., Watertown. $35-$54; ages 12 and younger $9-$14; seniors $7 discount; student rush $13. 617-923-8487, www.newrep.org.

SING IT, EBENEZER: Composer and playwright David MacAdam's inspirational musical adaptation of the Charles Dickens classic opens at Concord's Emerson Umbrella Center for the Arts at 7:30 p.m.



HANNAH MCCLURE

Ed Barker and Ella Miller star in New Repertory Theatre's "A Christmas Carol."



In Concord, Robert Fardy plays Scrooge in a musical based on the Dickens classic.

tomorrow. Though most know him as the pastor of New Life Community Church in Concord, MacAdam has a number of plays to his name, including "Ebenezer Scrooge: A Christmas Carol," which made its debut in England in 1984. It's an annual tradition here featuring a cast of local talents led by Robert Fardy as Scrooge. The run continues through Dec. 20 at 40 Stow St. Tickets $18; students, seniors $16: ages 5-12 $14; not recommended for younger children. 877-746-9755, www.newlifefinearts.org.

ONE STAGE, ONE MAN: Dickens himself was quite the rage when he gave solo dramatic readings of "A Christmas Carol" to rapt audiences. Framingham native Al LePage returns with his popular re-creation of the author's one-man show in period dress (right down to the socks), taking the audience back to 1869 as the Victorian thespian Thomas Hutchinson and putting his acrobatic voice to the test in an interactive performance. Proceeds benefit local nonprofit organizations, the Framingham History Center, Literacy Unlimited, A Place to Turn, and Longfellow's Wayside Inn. Best for ages 10 and up. Shortened family version is 7 p.m. tonight in the Framingham Centre Village Hall, 2 Oak St., 508-872-0484. Full show is 6 p.m. Saturday, Martha-Mary Chapel at Wayside Inn, 72 Wayside Inn Road, Sudbury, 978-443-1776. Tickets are $10.

DONATE WHAT YOU CAN: Taking their cue from the play's heartwarming final act, the Sour Grapes Collaborative is getting generous. Tickets for troupe's one-hour adaptation of "A Christmas Carol" are priced as "what you can pay." All are welcome at this dramatic interpretation created by alums of the esteemed Wellesley Summer Theatre Company, opening Tuesday 7 p.m. and running through Dec. 20 at Schneider Hall on the Wellesley College campus, 106 Central St. 781-283-2000.

SONG AND DANCE

GOING NUTCRACKERS I: A live orchestra, leads tapped from the best professional ballets, shimmering costumes, and the gusto of a local cast of more than 100 always make for a magical production of "The Nutcracker" by the Franklin Performing Arts Company. But this year you can add in new staging, choreography, and costuming. Heading up the cast are special guest professional artists Michele Gifford (soloist with New York City Ballet) as the Sugar Plum Fairy and Matthew Prescott of the Joffrey Ballet as the Cavalier. But all those cute mice may just steal the show. 7:30 p.m. Saturday and 2 p.m. Sunday, Horace Mann Middle School, 224 Oak St., Franklin. Tickets $24-$26. 508-528-8668, gmartins@necpaonline.com.

GOING NUTCRACKERS II: From Clara's graceful pirouettes to the leaping Sugar Plum Fairy to the raucous Russian dancers, Jose Mateo Ballet Theatre's "The Nutcracker" breathes humor and cheer into an always magical production. The next performance is tomorrow, 7:30 p.m., at Brandeis University's Spingold Theatre, 415 South St., Waltham, with weekend shows continuing through Dec. 20. $15-$50. 781-736-3400, 617-354-7467, www.balletheatre.org.

HOLIDAY MUSIC

POPS FOR THE SEASON: The New World Choral joins Claflin Hill Symphony Orchestra for a rousing holiday pops program 7:30 p.m. Saturday in Milford Town Hall. The packed program leaps gleefully from classical greats such as "The Nutcracker" favorites to well-loved carols, Christmas hits, Hanukkah tunes, and a new Claflin specialty, Russian Christmas songs. New, unwrapped toys will be collected for Toys for Tots. 52 Main St., Milford. Tickets: $33-$38; youths, seniors $28. 508-478-5924, www.claflinhill.org.

FESTIVE SHOPPING

FROSTY & FRIENDS: Consider the Frosty's Festival and Winter Marketplace on Saturday in Needham your chance to hang with the holiday "in crowd," as Frosty, Santa and Mrs. Claus, the Sugar Plum Fairy, and other winter friends will be posing with visitors, so feel free to bring cameras and play paparazzi. More fun for the youngsters includes multicultural winter crafts, games, and activities, at with admission $10 per child ($30 per family) for the festival, 9:30 a.m.-2 p.m. at Pollard Middle School, 200 Harris Ave. There's no admission fee for the Winter Marketplace, which features more than 40 artists and vendors offering unique and handmade gifts. Cosponsored by the Needham Women's Club and the nonprofit Parent Talk. For details go to www.parenttalk.info.

Have an idea for the Arts column? Please contact westarts@globe.com.

SNAPSHOT | **Out of work**

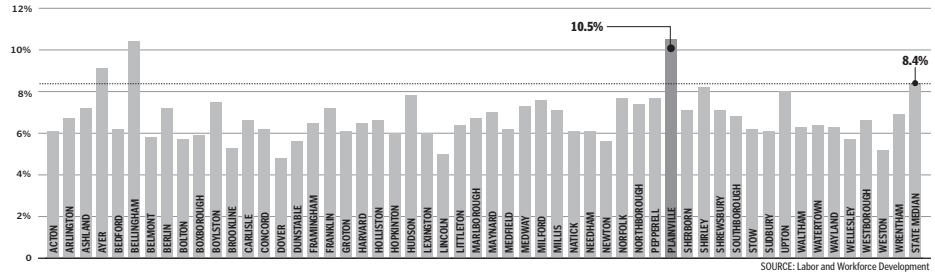


By Matt Carroll | GLOBE STAFF

Jobless rate for October, not seasonally adjusted.

Comments or ideas: mcarroll@globe.com

Snapshot statistics appear weekly. For a complete report, go to: boston.com/governmentcenter/#snapshots



SOURCE: Labor and Workforce Development

SEASONS SAVINGS

Johnnie Walker Red 1.75 ltr	$32.99	Seagrams Gin 1.75 ltr	$16.99
Beefeater Gin 1.75 ltr	$26.99	Canadian Mist 1.75 ltr	$15.99
Bacardi Rum White & Gold 1.75 ltr	$22.99	Pinnacle Vodka 1.75 ltr	$15.99
The Macallan 12 yr 750 ml	$39.99	Drambuie 750 ml	$24.49
Chivas Regal 750 ml	$27.49	Maker's Mark Bourbon 750 ml	$22.49
Crown Royal 750 ml	$23.49	Bailey's Irish Cream 750 ml	$21.99
Hennesey V.S. 750 ml	$26.99	Kahlua 750 ml	$15.99
Taittinger Brut La Francaise 750 ml	$44.99	Red Rock Merlot 750 ml	$9.99
Louis Martini Sonoma Canerbet Sauvignon 750 ml	$11.99	Bella Serra 1.5 ltr	$9.99
Davinci Chianti DOCG 750 ml	$9.99	Clos du Bois Chardonnay 750 ml	$8.99
Gascon Malbec 750ml	$9.99	Cupcake Chardonnay& Sauv Blanc 750 ml	$7.99
Parallete 45 Cotes du Rhone 750 ml	$9.99	Tomaiolo Pinot Grigio 750 ml	$7.99
Korbel Brut & Extra Dry 750 ml	$9.99	Smoking Loon 750 ml	$7.99
Segura Viudas Brut 1.5 ltr	$9.99	Dancing Bull Zinfandel 750 ml	$7.99
Wachusett Ales 2-12packs 12 oz bottles	$23.99 + dep	Michelob Ultra 18 pack 12 oz cans	$12.49 + dep
Stella Artois 2-12 packs 12 oz bottles	$22.99 + dep	Busch & Busch Light 30 pack 12 oz cans	$13.99 + dep
Heineken 24-12 oz bottles loose	$21.99 + dep	Mike's Hard Lemonade 12 pack 12 oz bottles	$10.99 + dep

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Public Notice of Availability
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ATTN: Mr. Donald Morris
120 Grenier Street
Hanscom AFB, MA 01731-1910
(781) 377-2475
E-Mail: Donald.Morris@hanscom.af.mil

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NEWS

has not proposed an override, but has asked all departments to present three budgets: a base budget (at –0.5 percent), a level services budget, and a preferred budget.

Personnel decisions

On the town side, the base budget proposes cuts that would reduce staffing levels across several departments, including public safety and the Department of Public Works.

According to Town Administrator Tim Higgins, one full-time firefighter position would be eliminated and administrative support to the Police Department would be reduced by 50 percent, which Police Chief Kevin Mooney said would result in an officer being taken off the streets to perform administrative tasks.

Higgins said the base budget would also eliminate one full-time DPW crew position, something that he and the Board of Selectmen are not comfortable with.

"We think we're at a point now that we really can't achieve the purposes of the department if we reduce [staffing]," he said.

These and other proposed

key issue is the aging of equipment, which the town has not been able to maintain at the recommended schedule. Most desktop computers at Town Offices are more than five years old, he said.

"The issue here is to stabilize our current environment," Miller said.

The first two years are a "get well" plan, he said, with new initiatives being funded in the final three years of the plan.

Included in the $211,000 line item in the preferred budget is $73,000 to hire an administrative applications support manager. Currently, the town has about a dozen servers and 110 desktops spread around multiple locations with only one person, Miller, to service them.

"We can't expect Chuck to be a one-man band," said Higgins, who called the IT plan one of the most critical line items in the fiscal 2011 budget. "We recognize in bringing this forward that the timing couldn't be worse ... [but] if we don't increase the investment in the near term, the capabilities we've developed over the last 10

Sundays off

Under the base budget, the Lincoln Public Library would no longer be open on Sundays, according to Library Director Barbara Myles.

Finance Committee member Robert Steinbrook said he was concerned about closing the library on a day that may be convenient for residents and asked whether usage was in fact lowest on Sundays.

Library Trustee Jacquelin Apsler said Sundays were somewhere in the middle in terms of usage, but that there were many factors that went into the decision to close on Sundays.

"We felt this was the most equitable across the board for both residents and employees, and the overall functioning of the library," Apsler said. "We did look very hard at this."

In the level services budget, the library would be open on 28 Sundays, Myles said.

The preferred budget would add hours for the Webmaster and archivist, and increase spending on books, periodicals, databases, and other additions to the library's collection.

Net state aid to Lincoln has dropped dramatically in the past several fiscal years. SOURCE: LINCOLN FINANCE COMMITTEE

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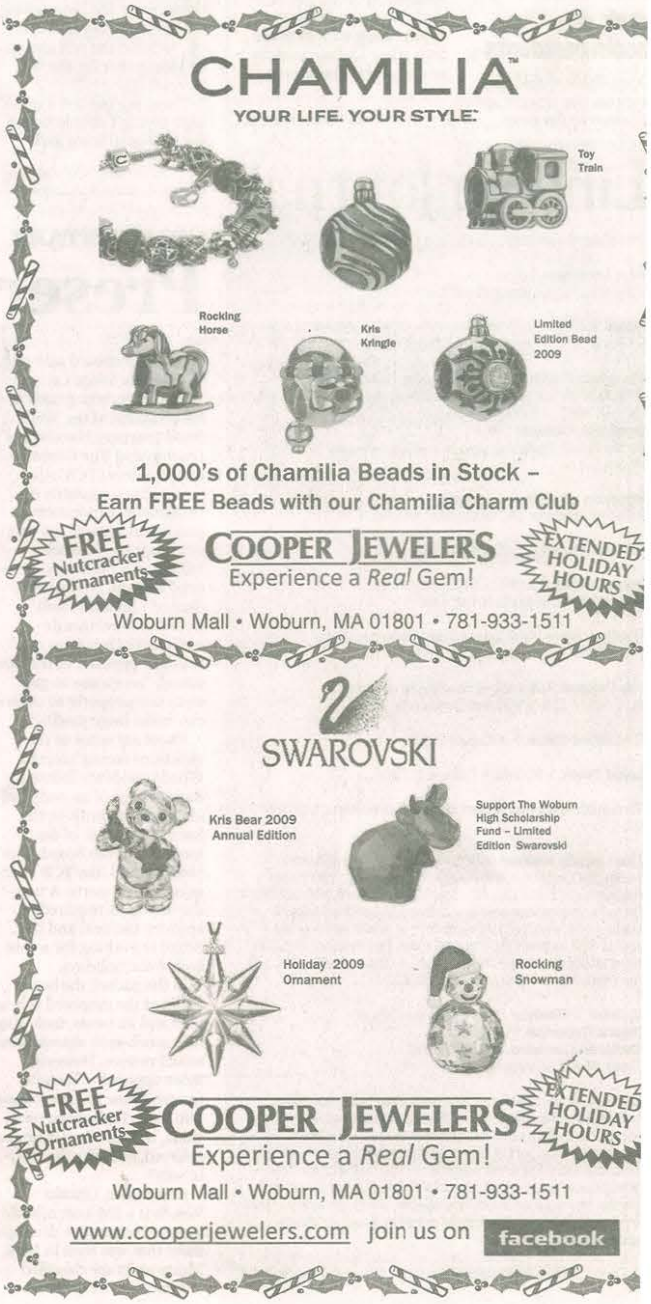
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SENIORS

TO SUBMIT E-mail concord@cnc.com; fax 978-371-5711; mail to P.O. Box 9191, Concord, MA 01742; drop off at 150 Baker Ave. Ext.; call Editor Cheryl Lecesse at 978-371-5742.

ELDER SERVICES

Program provides daily support

For those in need of a break from caregiving this holiday season, Cooperative Elder Services can help.

Cooperative Elder Services Inc., an adult day health and Alzheimer's day program at 7 Chamberlin Drive, provides respite care and a safe, structured environment for elders. The program serves elders from Concord, Carlisle and surrounding communities.

The program is open Monday through Friday 8 a.m. to 4 p.m. Door to door transportation can be arranged. Elders attend one to five days per week depending upon their needs. The program includes a light breakfast, full hot lunch and afternoon snack, daily nursing care, socialization and a full range of activities, and social service support. One client said, "The program has been a lifesaver. I get to spend the day with my friends and enjoy all sorts of activities." The goal is to help frail elders remain in their homes and the community.

To visit the center or find out more information, contact Pat Oliphant at 978-318-0046 or visit www.elderdayservices.com.

SENIOR MENU

Week of Dec. 14

Monday 3C soup w/crackers, baked chicken w/Marsala sauce, brown rice, white bread, pears.

Tuesday Special – roast beef au jus, baked potato, sour cream, winter squash with cinnamon, whole-wheat dinner roll, cherry pies. Diet: Chocolate pudding.

Wednesday Meatballs and sausage w/tomato sauce, ziti, Italian-style green beans, multigrain bread, lemon pudding. Diet SF lemon pudding.

Thursday Vegetable beef barley soup w/crackers, broccoli bake, stewed tomatoes, multigrain bread, sliced peaches.

Friday Chuckwagon stew, whipped potatoes, green beans, whole wheat bread, fresh fruit.

Diet: unsweetened chocolate mint pudding.
Menus subject to change without notice. Meals include margarine and milk. All soups served with crackers. Diet desserts available upon request. Donation: $2.

Reservations must be made by noon the day before you wish to eat. Transportation is available on some days. Call site manager for details.

Site location: Peter Buckley Terrace, 115 Stow St., 978-371-0036.

AT THE COA

Y.E.S. Club

For young energetic Concord seniors (55 years old and older). Evening and weekend programs geared toward the "younger" crowd will take place throughout the coming year. For more information call 978-318-3111 or e-mail lkalinoski@concordma.gov.

Health

Blood pressure screening Every Wednesday, 10 a.m. to noon.
Diabetic screening Wednesday, Dec. 16, 10 a.m. to noon.
Podiatry clinic Jan. 20, 2010
Talking about cancer Friday, Dec. 11, at 11 a.m., a holistic nurse who works in oncology will speak and share her knowledge about the best words and phrases to use when approaching friends and loved ones who have a form of cancer.
Holiday Blues Thursday, Dec. 17, 10 a.m. Karen Breehey of Arlington Visiting Nurses will give an informative and meaningful lecture on avoiding the blues this winter. Call the COA to register.

Other activities

Art Space Gallery The exhibit for December will feature artwork by Acey Welch. Welch studied at the Museum of Fine Arts in Boston and majored in architectural sciences at Radcliffe. Her career was in the graphic arts at the MIT Lincoln Lab, Mitre and Haley and Aldrich Geotechnical Firm. She found time to paint in her retirement. Welch's exhibit features work of her two great loves — the U.S. Southwest and the ocean.
Fuel assistance Now is the time to call about help with fuel costs. Those who are responsible for paying for heat and are having trouble doing so should call the COA to determine eligibility for fuel assistance. COA staff will help residents complete their applications.
Lock Box Program These boxes allow the Police or Fire departments to enter a home without damaging doors or windows. The COA would like to make lock boxes available to those who are interested; however, staff needs to know how many seniors would like to have one installed on their doors. If interested in this program, call Lori at 978-318-3111.
Are you OK? Seniors who would like a phone call several times a week for a chat can call the COA. To volunteer to make the calls, call Lori or Muffie at the COA.
Family Trees The COA is again participating in the Concord Museum holiday tree project. Each tree is decorated to interpret a children's book. This year, the COA's book is "Olivia Forms a Band," Olivia being a very energetic little pig. The committee has once again produced a tree bursting with creativity, charm and color. Thank you to Helen Ford, Jean Fitzgibbon, Jill Colpak, Jean Farmer, Jean Moscariello and Sally Montgomery.
COA Holiday Lunch Wednesday, Dec. 16, noon. Each December the Friends of the Concord COA treats everyone to a special lunch. Everyone puts on a favorite holiday sweater and arrives hungry and full of good cheer. This year, there will be a special appearance of two favorite personalities plus an extra-special treat. Ray Snay, experienced Toast Master and talented teller of tales, will entertain with his holiday stories. Sign ups are required.
COA Cinema Friday, Dec. 18, 1 p.m. Come and relax with a film that has been called "witty, sentimental, romantic and goofy." The title is "Love, Actually," with Hugh Grant playing the prime minister of England and living at 10 Downing St. Naturally there is a girl involved but that is only one of the several love stories featuring well-known actors too numerous to mention. Sign up.
Welcome the New Year Wednesday, Dec. 30, 11:15 a.m. This is a special Lunch Bunch trip to a very small bed and breakfast in Barre called The Jenkins Inn. Three entrees from which to choose: Maryland crab cakes, chicken and spinach cannelloni and chopped beef in puff pastry. The meal will include a salad, vegetable, potato, dessert (crème brulee) and coffee or tea. The price is $24, which includes tax and gratuity. Van fe is $5. To sign up, make a chec out to The Jenkins Inn for $24 Bring or mail the check to the COA. Van fee due that day. Also, indicate your choice of entrée. Barre is about an hour's drive on Route 2. The group will leave at 11:15 a.m. If bad weather threatens or is present, the trip will be cancelled.
Dance championships Friday Jan. 22, 2010, at 12:30 p.m. The Eastern U.S. Dancesport Championships are being held at the Boston Renaissance Waterfront Hotel. Seniors have been given the opportunity to purchase tickets for the Friday matinee for $15. Make out a check for $15 payable to Concord Friends of the COA upon registration. Van fee is $5, payable on day of trip. The group will leave HWCC at 12:3 p.m. Sign ups are being accepted.

Concord Council on Aging

LOCATION Harvey Wheeler Community Center, 1276 Main St.
PHONE 978-318-3020
All activities are for Concord seniors on a first-come first-serve basis. Non-residents may participate where space available.

www.wickedlocal.com/concord
Connect

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Finding of No Significant Impact (FONSI)

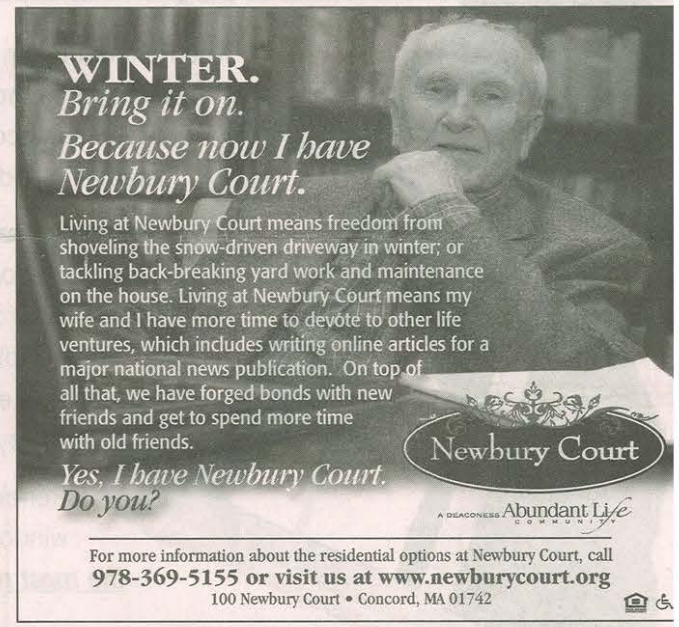
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NEWS

TURF

From Page 1

to go, but the fact that we were able to come up with this money during such tough economic times really shows the support that the town is providing for this project."

At the recommendation of the selectmen, a Fields Partnership team will be formed to add voice to the design process. The partnership will include stakeholders in town fields, including the Bedford DPW, Bedford school athletics and the Bedford Recreation Department. The Board of Health will also be consulted regarding the turf material specifications.

Moving forward, the partnership will address ongoing communication needs across various sports organizations. With the prospect of the new turf field on the horizon, as well as some other CPC-funded projects, field utilization will require continued sharing and coordination. The group expects to being meeting in January.

"We are truly moved by the generosity shown by Bedford residents and businesses," said Lespasio. "The breadth of support for this project demonstrates how excited Bed residents are about filling void in availability of outc fields. However, it is st long road to Town Meeti

More information on progress of the turf field ca found at www.bedfordturf

SELECTMEN

Board continues public hearing for tax allocation

By Susan Ellis
Bedford@cnc.com

The selectmen met on Monday night to approve the tax allocation among classifications, but were forced to continue the public hearing for a second time due to a lack of approval from the state.

Associate Assessor John Speidel said he had turned in four items and to date gotten approval for only two.

"Basically we are waiting for the new growth stuff," he said, adding that it was difficult to tell how much longer approval might take.

Although there is some concern about completing the process in time for the mailing of third quarter tax bill, Town Manager Rick Reed pointed out that the town needed only three days to generate the bills once all of the necessary approvals were received.

The public hearing on the allocation is scheduled to continue Dec. 14 at 7:35 p.m.

In other business, selectman Cathy Cordes reported that the Community Preservation Committee (CPC) held a meeting last week to review proposals for project funding. Topping the list was a proposal for the design of the Minuteman Bikeway Extension submitted by DPW Director Rich Warrington. Also submitted was a proposal for the Old Water Reservoir Project and there was discussion about the possible use of community preservation money for the proposed turf field at Bedford High School.

The CPC makes decisions about funding projects having to do with open space, affordable housing and historic preservation using money collected as a result of the Community Preservation Act (CPA). The CPA program creates a surcharge on property taxes and allows the town to get matching funds from the state. However, there are restrictions on the use of the money, including stipulations on how it can be divided among the three project categories.

Discussions about funding will continue at the next CPC meeting on Jan. 14.

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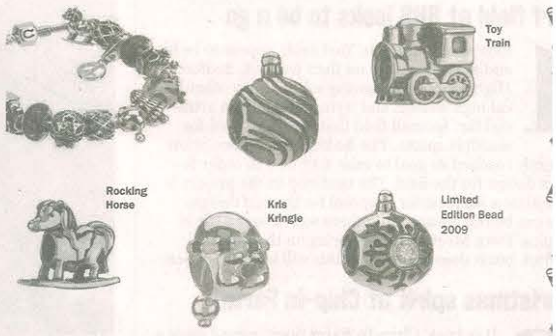
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MPETITION

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k with tens of thousands
udents in the 53rd semi-
nal Knowledge Master
n academic competition,
took top honors in Mas-
usetts.
l this, and the team just
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ore than 100 middle
ol, junior high, and high
ol teams competed Dec.
answer 200 questions
ning a host of disciplines,
history and geography
ology and health. Teams
ed points for the speed and accuracy of their answers.

The 11 students on the Lexington team placed first in Massachusetts and ninth overall in a field of 678 schools in the high school division, scoring 1,671 of 2,000 possible points.

Seongcheol Kim, a senior at Lexington High School, founded the Knowledge Master team at the beginning of the school year with the intention of introducing a team activity in which students of all academic inclinations can participate.

He said he valued in particular the inclusive and cooperative nature of the competition, in addition to the demand for individual flair.

"Many of the questions are designed to be analytical puzzles that can be answered only by putting together different pieces of knowledge that team members have to offer," he said. "And the feeling of gratification from tackling the questions, whether through specialized knowledge or cooperative problem-solving, can be immensely invigorating."

Since its founding in September, the team has held weekly practices under the auspices of its teacher-coach, Karen Girondel.

"It is a real joy for me to watch this dedicated group of students for whom being students seems to be so tremendously fun," said Girondel, who teaches French at Lexington High School. "It is particularly remarkable how they combine forces — using logic, etymology, and even foreign language skills to arrive at answers to questions that none of them knows straight out."

Designed to stimulate learning and recognition for academic achievement, the Knowledge Master Open runs on classroom computers to allow all students the opportunity to compete in a large academic event without the expense of traveling to a central site. The competition is presented twice each school year by Academic Hallmarks, a Colorado software publisher.

The team

- Seongcheol Kim, student coordinator and "primus inter pares"
- Mark Chonofsky
- Michael Exter
- Christine Hsiao
- Jennifer Hsu
- Jaeyoon Lee
- Lisa Liu
- Welkin Uttaro
- Flora Wang
- Michael Watterson
- James Zhang

STIVAL

Musicians earn seats at prestigious venue

the 450 students se-
d to participate in the
sachusetts Northeastern
rict Senior Music Festi-
15 percent of the per-
ers will be from Lexing-
High School.
total of 67 Lexington
ents were selected to par-
ate in the Massachusetts
ic Educators Associa-
s (MMEA) event.
e program is offered by
MMEA as an enrichment
ortunity providing a mu-
experience to talented
g people.
e students were selected
erform in the Senior Dis-
Concert Band, Orches-
Chorus and Jazz Ensem-
They will rehearse with
t conductors and then
orm in a concert to be
at Lowell High School
aturday, Jan. 9, 2010.
epresenting Lexington
n School in the concert
be the following:

I
ika Arya, Bass clarinet,
e 12
Borjas, clarinet, grade 12
Chang, clarinet, grade 11
edo Chang, trombone,
e 10
el Davidow, French horn,
e 11
stey, French horn, grade

es Gorry, flute, grade 12
Andrew Goulet, clarinet, grade 10
Ben Goulet, trumpet, grade 12
Jorie Heilman, flute, grade 11
David Huang, baritone/euphonium, grade 12
Tom Jeon, clarinet, grade 9
Judith Kan, flute, grade 10
Kyuil Lee, clarinet, grade 9
Jeff Lin, alto saxophone, grade 12
Nihaal Mehta, trumpet grade 12
Anne Mok, clarinet, grade 12
Emily Roizin, French horn, grade 11
Yuankai Shan, bassoon grade 9
Edward Shin, clarinet, grade 9
Louisa Slosar, bassoon, grade 11
Thea Vanderschmidt, flute, grade 12
Andrew Villanueva, oboe, grade 11
Michael Watterson, French horn, grade 12
Kevin Wen, trumpet, grade 10
Shannon Woods, flute, grade 11

Chorus
Camille Briskin, grade 12
Charlotte Cramer, grade 11
Julia Harden, grade 11
Lauren Jackson, grade 10
Tommy Moriarty, grade 12
Hannah Ornatowski, grade 10
Katherine Sheena, grade 12
Jackson Thea, grade 11

Jazz
Kevin Cho, tenor saxophone, grade 11
Josh Gilbert, trumpet, grade 10
Isaac Levien, string bass grade 10
Jacob Paulson, trombone, grade 10
Nicholas Singer, trumpet, grade 12
Nate Tarrh, alto saxophone, grade 12
Jeff Wu, piano, grade 12

Orchestra
Yasmeen Al-Mazeedi, violin, grade 11
Carina Belvin, violin, grade 10
Sophia Bernitz Violin grade 10
Hyun Yung Boo, cello, grade 9
Taylor Chan, snare drum, grade 9
Carolyn Chang, viola, grade 10
Inyoung Chang, cello, grade 12
Nate Coburn, French horn, grade 10
Alexandra Ding, violin, grade 9
Hansol Doh, violin, grade 11
Ben Edelstein, violin, grade 10
Raphael Goemans, violin, grade 11
Krista Hu, violin, grade 9
Katie Jeong, clarinet, grade 11
Brittney Joyce, bassoon, grade 12
Ellen Kim, flute, grade 11
Allison Lau, viola, grade 10
Kevin McElhatton, violin, grade 9
Petar Ojdrovic, string bass, grade 9
Hao-Kai Pai, violin, grade 11
Wilson Qin, viola, grade 11
Aashik Rao, violin, grade 12
Amanda Su, violin, grade 11
Susan Wang, violin, grade 9
Thomas Wong, viola, grade 9
Brian Xiao, violin, grade 9

CONCERTS

Bands to blare beginning today

Music fans will have two opportunities to catch free performances of the best and brightest musicians from Lexington High School in the coming week.

Ensembles from the Lexington High School music program will perform at Donald J. Gillespie, Jr. Auditorium at Lexington High School, 251 Waltham St., Dec. 10 and 17.

The Repertoire Orchestra, Concert Band and Symphonic Band will host a concert Dec. 10 at 7:30 p.m. This is a free concert. The snow date is Wednesday, Dec. 16 at the same time.

A seasonal concert featuring the Big Band and Jazz Ensemble, Madrigals, Concert Choir, Women's Choir and Mixed Chorus will take place Dec. 17 at 7:30 p.m. The snow date is Friday, Dec. 18 at 7:30 p.m.

Public Notice of Availability
Finding of No Significant Impact (FONSI)

The United States Air Force and the Massachusetts National Guard (MANG) announce the availability of an Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for the proposed construction of a new replacement Joint Force Headquarters (JFHQ) at Hanscom Air Force Base (AFB).

The MANG proposes to construct the JFHQ on-base, to enhance the command, control, and response of the MANG and to provide sufficient administrative and training areas. The project includes a Joint Operations Center with the ability to conduct sustained command and control operations during a civil military emergency and entails the two-phased construction of a specially designed JFHQ (approximately 200,000 SF multi-story building) of permanent masonry type construction with appropriate parking and circulation areas. The project will include relocation of approximately 400 personnel from the existing JFHQ located in Milford MA, which suffers from a deteriorating building envelope and interior layout inefficiencies that have the potential to degrade the MANG's ability to respond to civil and federal emergencies.

The EA/Draft FONSI address the effects, both beneficial and adverse, of the construction of the new JFHQ. The Draft FONSI summarizes the impact analysis and includes the agency conclusion on the Proposed Action. This document is now available for public review and comment at the main public libraries in Bedford, Concord, Lexington and Lincoln, or may also be reviewed online at: https://backup.filesanywhere.com/fs/v.aspx?v=906f6286615eb3bcac6e or by contacting Hanscom AFB at the address shown below:

Hanscom AFB 66 MSG/CEV
ATTN: Mr. Donald Morris
120 Grenier Street
Hanscom AFB, MA 01731-1910
(781) 377-2475
E-Mail: Donald.Morris@hanscom.af.mil

Those wishing to make written comment on this document should submit them to Mr. Donald Morris at the Hanscom Air Force Base at the above address, no later than January 07, 2010. Written substantive comments received within the review period will be addressed.

ENT

Deck the Halls

JOHN M. STELLA
P.O. BOX 543
BEDFORD, MA. 01730

HANSCOM AFB 66 MSG/CEV
ATTN : MR. DONALD MORRIS
120 GRENIER ST.
HANSCOM AFB, MA. 01731

DEC. 23, 2009

DEAR MR. MORRIS :

AS A LONG TIME STRONG SUPPORTER OF HANSCOM AFB , I AM WRITING TO YOU A LETTER THAT I STRONGLY SUPPORT THE MASSACHUSETTS ARMY NATIONAL GUARD TO PROPOSE TO CONSTRUCT JFHQ ON HANSCOM AFB .

THIS PROPOSED PLAN WOULD CREATE NEW PARTNERSHIP BETWEEN HANSCOM AFB AND MASSACHUSETTS ARMY NATIONAL GUARD ON THE BASE . THIS WOULD CREATE MORE JOBS AND BOOST TO OUR LOCAL, REGIONAL, AND STATE ECOMONCIES. THIS WOULD EXPAND HANSCOM AFB .

FOR YEARS FORMER FT DEVENS ARMY BASE HAD PARTNERSHIP WITH THE MASSACHUSETTS ARMY NATIONAL GUARD NEAR THE FT DEVENS ARMY BASE. . FORT DEVENS WAS CLOSED IN 1996 AFTER 79 YEARS OF SERVICE TO OUR NATION WHICH WAS RUN BY THE U.S. ARMY. CURRENTLY, FORT DEVENS TRAINNING BASE IS RUN BY THE U.S. ARMY RESERVE ONLY FOR TRAINNING.

I STRONGLY RECOMMEND THAT I SUPPORT THE MASSACHUSETTS ARMY NATIONAL GUARD TO CONSTRUCT AND BUILD NEW JFHQ AT HANSCOM AFB. I ALSO SUPPORT THE MANG TO RELOCATE TO HANSCOM AFB.

(over please)

PLEASE SEND ME MORE INFORMATION OF MANG TO PROPOSE TO CONSTRUCT A NEW JFHQ AT HANSCOM AFB . PLEASE SEND ME MORE INFORMATION AT ABOVE ADDRESS.

THANK YOU FOR YOUR CONSIDERATION AND THANK YOU VERY MUCH.

SINCERELY,

JOHN STELLA

TOWN OF BEDFORD
BEDFORD, MASSACHUSETTS 01730

TTD/TTY: 781-687-6124

Planning Board
Margot Fleischman, *Chair*
Sandra Hackman, *Clerk* Janet Powers
Steven Spector Lisa Mustapich
Richard Joly, Planning Director

TOWN HALL—10 Mudge Way
BEDFORD, MASSACHUSETTS 01730
TEL 781-275-1548
FAX 781-271-0537

December 23, 2009

Hanscom AFB 66 MSG/CEV
Attn: Mr. Donald Morris
120 Grenier Street
Hanscom AFB, MA 01731-1910

Dear Mr. Morris,

I am writing to comment on the Environmental Assessment and Draft Finding of No Significant Impact for the proposed construction of a new replacement Joint Force Headquarters at Hanscom Air Force Base. The Bedford Planning Board is concerned about the traffic impacts from this proposed development. It is recommended that you coordinate with the Town of Lexington concerning the Hartwell Avenue Traffic Study that is being done by Lexington. It is recommended that you support the recommendation of this study in order to minimize traffic impacts in the Hartwell Avenue area.

The Planning Board commends you for your plans to use Transportation Demand Management provisions to minimize traffic congestion and your intent to meet LEED requirements to promote environmental protection. It is recommended that these programs be used to the maximum extent possible in order to address traffic impacts and protect the environment.

For the Planning Board,
Richard Joly
Richard Joly
Planning Director

cc: H.A.T.S/Jeannie Krieger, Chair

Town of Lexington
Planning Department

Maryann McCall-Taylor, Planning Director
Aaron Henry, Senior Planner

(781) 862-0500 x 245
Facsimile: (781) 861-2748

January 5, 2010

Hanscom AFB 66 MSG/CEV
Attn: Mr. Donald Morris
120 Grenier Street
Hanscom AFB, MA 01731-1910

Dear Mr. Morris:

I am writing to comment on the Environmental Assessment and Draft Finding of No Significant Impact for the proposed construction of a new replacement Joint Force Headquarters at Hanscom Air Force Base.

The major concern of the Town of Lexington is with the traffic that will be generated by the relocation of approximately 400 personnel. The only mitigation of traffic that is proposed is a list of ten transportation demand management (TDM) measures. While the Town strongly endorses TDM measures, they are most effective when there is a designated on-site coordinator and we note that such a position is not listed. We suggest that such a position be created to encourage and support the TDM measures. In addition, we hope that the Base will work with the Town of Lexington to coordinate TDM measures, perhaps creating economies of scale for all involved.

The traffic study concludes that there will be no mitigation measures beyond the ten TDM measures outlined in the report based on the fact that "traffic congestion is anticipated to increase at key study area intersection with or without the relocation of the JFHQ." We have recently adopted a Transportation Management Overlay District (TMOD) that covers the Hartwell Avenue area that takes a fairly novel approach to traffic generated by new or increased development. It holds the developer responsible for mitigating any increased traffic by participating in a transportation management association and paying an impact fee. It is our hope that you will fully participate in these programs as they are developed.

Yours truly,

Maryann McCall-Taylor

Maryann McCall-Taylor

cc: Jeanne Krieger, H.A.T.S. chair

Meeting Notes
Replacement JFHQ EA
Lexington Town Hall
13 Jan 2010, 1:30 PM
Attendees: (see sign in sheet)

The Town of Lexington (the Town) agreed with the summary of findings presented in the proposed Joint Force Headquarters Traffic Impact and Access Study. Representatives of Hanscom Air Force Base accepted the Town's request to appoint a Traffic Management coordinator to assist with issues or concerns relating to traffic regarding the Hartwell Avenue Corridor. The Town noted that Hanscom Air Force Base (HAFB) and the Massachusetts National Guard (MANG) are ahead of the Town regarding Transportation Demand Management (TDM) measures. The Town is well aware of the traffic congestion throughout the Route 4/225 and Hartwell Avenue Corridor, and would like to improve traffic operations and pedestrian safety. Town hired consultant, Tetra Tech Rizzo, created a number of Alternatives to improve the quality of operations at the intersection of Route 4/225 and Hartwell Avenue and roadway improvements along Hartwell Avenue. The study is underway and recommendations are not complete. The Town also noted, Massachusetts Department of Transportation (MassDOT), Highway Division may assist with any improvements at the intersection of Route 4/225 and Hartwell Avenue. If further assistance is needed with coordinating with MassDOT Highway, HAFB and the MANG will support coordination efforts.

The Town inquired if non-military civilians who work in the neighboring area of Hartwell Avenue can utilize the current Nashua Bus Shuttle Services or any proposed shuttle service in the future. HAFB did not see an issue with it, as long as civilians are off the shuttle before/after it enters/exits HAFB grounds.

Don Morris asked the Town's Planning Director if Lexington is satisfied with what was discussed and the Planning Director concurred. Colonel Crivello noted HAFB and MANG appreciates the Hanscom Area Towns Selectman (HATS) program and the coordination services it provides to keep a healthy relationship with the towns and residents.

Lexington Traffic Meeting
Lexington Town Hall, Rm 6-1
13 Jan 10 1:30 pm

STEVE WAGNER	MASS NATIONAL GUARD PROJECT MANAGER	508-233-6511
COL RICHARD CRIVELLO	MA NATIONAL GUARD DIR OF LOGISTICS	508-233-6891
KEITH J DRISCOLL	MA NATIONAL GUARD NEPA/CULTURAL RESOURCES	508-233-6512
LTC Thomas Harrop	MA National Guard Facilities	508-233-6556
Brian Vaillancourt	URS Corporation Consultant	857 383 3822
Jared Hite	URS Corporation Consultant	857 383 3857
DON MORRIS	AIR FORCE HANSCOM AFB	781-377-2475
Greg Caudi	Hanscom AFB	7813777950
Maryann McCall-Taylor	Planning Director Lexington	781 862 0500 ext. 242
Susan Yanofsky	Economic Development Lexington	781 862 0500 ext. 239

Public Comment Response Matrix
Replacement Joint Force Headquarters EA
Hanscom Air Force Base, Massachusetts
January 22, 2010

#	Location			Comment	Commenter	Response
	Page	Line	Section			
1			General Comment	"As a long time strong supporter of Hanscom AFB, I am writing to you a letter that is strongly support the Massachusetts Army National Guard to propose to construct JFHQ on Hanscom AFB."	John Stella	Comment noted.
2			General Comment	"Please send me more information of MANG to propose to construct a new JFHQ at Hanscom AFB."	John Stella	Mr. Stella will be added to the distribution list and provided publicly available documents regarding the JFHQ project in the future.
3			General Comment	"The Bedford Planning Board is concerned about the traffic impacts from this proposed development. It is recommended that you coordinate with the Town of Lexington concerning the Hartwell Avenue Traffic Study that is being done by Lexington. It is recommended that you support the recommendation of this study in order to minimize traffic impacts in the Hartwell Avenue area."	Richard Joy, Planning Director, Town of Bedford	In regards to traffic impacts see Appendix C of the EA. The Guard has met officially with the Town of Lexington (1/13/10), and discussed the conceptual recommendations of the Hartwell Avenue Traffic Study. See attached meeting notes and sign-in sheet.
4			General Comment	"The Planning Board commends you for your plans to use Transportation Demand Management provisions to minimize traffic congestion and your intent to meet LEED requirements to promote environmental protection. It is recommended that these programs be used to the maximum extent possible in order to address traffic impacts and protect the environment."	Richard Joy, Planning Director, Town of Bedford	Comment noted, the extent of the TDM measures proposed are provided in Appendix C, and the extent of the LEED measures is addressed throughout Section 4.
5			General Comment	"We suggest that such a position be created to encourage and support the TDM measures."	Maryann McCall-Taylor, Planning Director, Town of Lexington	See Section 4.5.
6			General Comment	"In addition, we hope that the Base will work with the Town of Lexington to coordinate TDM measures, perhaps creating economies of scale for all involved."	Maryann McCall-Taylor, Planning Director, Town of Lexington	The Guard has met officially with the Town of Lexington (1/13/10), and discussed the conceptual recommendations of the Hartwell Avenue Traffic Study. See attached meeting notes and sign-in sheet.
7			General Comment	"It is our hope that you will fully participate in these programs as they are developed."	Maryann McCall-Taylor, Planning Director, Town of Lexington	The Guard has met officially with the Town of Lexington (1/13/10), and discussed the conceptual recommendations of the Hartwell Avenue Traffic Study. See attached meeting notes and sign-in sheet.