File 82-17

ENVIRONMENTAL ASSESSMENT

CONSTRUCTION AND OPERATION OF A FIRE TRAINING TOWER AND CAR WASH

NIAGARA FALLS AIR RESERVE STATION, NEW YORK

914TH AIRLIFT WING
MISSION SUPPORT GROUP/ENVIRONMENTAL
2405 Franklin Drive
Niagara Falls, New York 14304-5063

FEBRUARY 2006

Report Documentation Page

Form Approved
OMB No. 0704-0188

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1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
FEB 2006		**00-00-2006 to 00-00-2006**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Environmental Assessment: Construction and Operation of Fire Training Tower and Car Wash at Niagra Falls Air Reserve Station, New York	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **engineering-environmental Management, Inc. (e2M Inc), 3949 Pender Dr,Fairfax,VA,22030**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

The purpose of the Proposed Action is to construct a Fire Training Tower to meet the fire training program requirements of Air Force Instruction (AFI) 32-2001, The Fire Protection Operations and Fire Prevention Program, at Niagara Falls ARS to enable personnel to perform activities necessary to meet USAF mission, emergency response, and force protection concerns at the Installation. The Proposed Action would also construct and operate a car wash for Niagara Falls ARS personnel. The 914 AW has identified the need to implement two construction projects to support base organizations. Under the No Action AltefUative, Niagara Falls ARS personnel would not have a car wash or Fire Training Tower. There would be no change from existing conditions at the Installation. This alternative would not address USAF mission and emergency response at Niagara Falls ARS. This EA has been prepared to evaluate the Proposed Action and the No Action Alternative. Resources that will be considered in the impact analysis are noise, land use, air quality, safety geological resources, water resources, cultural resources, biological resources, infrastructure, and hazardous materials and wastes. The EA will be made available to the public upon completion.

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**Same as Report (SAR)**	**144**	

Abbreviations and Acronyms

$\mu g/m^3$	micrograms per cubic meter
107 ARW	107th Air Refueling Wing
914 AW	914th Airlift Wing
ACM	Asbestos Containing Materials
AFCEE	Air Force Center for Environmental Excellence
AFI	Air Force Instruction
AFPD	Air Force Policy Directive
AFRC	Air Force Reserve Command
AICUZ	Air Installation Compatible Use Zone
APE	Area of Potential Effect
AQCR	Air Quality Control Region
ARS	Air Reserve Station
C&D	Construction and demolition
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEV	914 Environmental Division
CFR	Code of Federal Regulations
CO	carbon monoxide
CSA	central storage area
CWA	Clean Water Act
CY	calendar year
dB	decibel
dBA	A-weighted decibel
DNL	Day-night average sound level
DOD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
ft^2	square feet
HQ	Headquarters
IAP	International Airport
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
LBP	lead-based paint
MEPS	Military Entrance Processing Station
mg/m^3	milligrams per cubic meter
MSW	municipal solid waste
MWR	Morale, Welfare, and Recreation
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFIAQCR	Niagara Falls Intrastate Air Quality Control Region
NFTA	Niagara Frontier Transportation Authority
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NSR	new source review
NYANG	New York Air National Guard
NYSDEC	New York State Department of Environmental Conservation
O_3	ozone
OSHA	Occupational Safety and Health Administration
Pb	lead
$PM_{10/2.5}$	Particulate matter particles equal to or less than 10/2.5 microns
POL	Petroleum, Oil, and Lubricant
ppm	parts per million
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	sulfur dioxide
SPDES	State Pollutant Discharge Elimination System
SWPPP	Storm Water Pollution Prevention Plan
tpy	tons per year
TSP	total suspended particulates
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound

FINDING OF NO SIGNIFICANT IMPACT (FONSI)/ FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA)

PROPOSED CONSTRUCTION AND OPERATION OF A FIRE TRAINING TOWER AND CAR WASH AT NIAGARA FALLS AIR RESERVE STATION, NEW YORK

INTRODUCTION

The 914th Airlift Wing (914 AW) of the United States Air Force (USAF) proposes to construct and operate a Fire Training Tower and a Car Wash at Niagara Falls Air Reserve Station (ARS), New York. The Proposed Action, alternatives to the Proposed Action, and the No Action Alternative were assessed in an Environmental Assessment (EA).

The 914 AW is an Air Force Reserve Command (AFRC) unit, and is the host unit at Niagara Falls ARS. The 914 AW is assigned eight C-130H aircraft which perform a diversity of roles, including airdrop of supplies, airlift support, aero-medical missions, and natural disaster relief missions. The major tenant at Niagara Falls ARS is the 107th Air Refueling Wing (107 ARW) of the New York Air National Guard (NYANG). The 107 ARW is assigned nine KC-135R tanker aircraft, and their primary mission is to provide in-flight refueling for military aircraft operations worldwide.

PROPOSED ACTION—FIRE TRAINING TOWER

Purpose and Need. The 914 AW has identified the need to construct a Fire Training Tower at Niagara Falls ARS. The Fire Training Tower is needed to conduct live structural fire training to meet the training program requirements of Air Force Instruction (AFI) 32-2001, *The Fire Protection Operations and Fire Prevention Program*. The Niagara Falls ARS Fire Department does not currently conduct structural fire training.

Description of the Proposed Action. The Proposed Action consists of constructing and operating a Fire Training Tower at the Installation's existing search-and-rescue and fire training area. This existing training area is completely covered by gravel and has been substantially disturbed by firefighting activities and exercises. Construction of the Fire Training Tower would also include the construction of a concrete pad and piping to direct water from the training tower to the adjacent fire training pit water conservation pond. The Fire Training Tower would be manufactured by an existing vendor of training towers and installed near the existing search-and-rescue training building at the fire training area on Niagara Falls ARS. The tower would be two stories with an annex and approximately 15 by 30 feet in size. There would be minimal additional disturbance to this area; estimated to be less than one-quarter acre.

No Action Alternative. Under the No Action Alternative, there would be no change from existing conditions at the base. The Niagara Falls ARS Fire Department would not train personnel to fight structural fires.

Anticipated Environmental Impacts. Analysis performed in the EA addressed potential effects on air quality, noise, land use, safety, geological resources, water resources, biological resources, cultural resources, socioeconomics and environmental justice, infrastructure, and hazardous materials and waste. However, a small portion of the Proposed Fire Training Tower would be located within a 100-year floodplain. Based on Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps (FIRMs) for Wheatfield and Niagara, New York, for the purposes of this EA, it is assumed that a portion of the proposed construction of the Fire Training Tower would take place in the 100-year floodplain. Although in a floodplain, the proposed location of the Fire Training Tower would be consistent with the current land use. A 1999 special report, Summary of Hydrology for the Niagara Falls Air Reserve Station, by the Buffalo District of the U.S. Army Corps of Engineers (USACE), indicated that development along Cayuga Creek at Niagara Falls ARS only increased runoff by 0.4 percent. The

modeling indicated that the Installation has very little impact on peak discharge of Cayuga Creek downstream. Further development at Niagara Falls would not add a significant area of impervious surfaces that would affect downstream water quality. The Proposed Action would impact a small portion of the 100-year floodplain area and construction impacts would be kept as minimal as possible during construction activities. Therefore, the long-term direct adverse effects on the Installation's 100-year floodplain would minor or negligible.

PROPOSED ACTION—CAR WASH

Purpose and Need. The need for the car wash was identified in a basewide survey conducted by the AFRC and 914 MSG/SV (community services) in October 2003. The survey was conducted to identify projects that would meet the needs of Installation personnel, enhance morale, and generate revenue for the Installation's Morale, Welfare, and Recreation (MWR) program. The survey found that approximately 97 percent of Installation personnel would use a car wash. An internal needs validation study would also be conducted to confirm the need. If approved, Niagara Falls ARS would seek AFRC funding to construct the facility. The purpose of the Proposed Action is to meet Installation personnel needs by constructing a car wash on Niagara Falls ARS.

Description of the Proposed Action. The Proposed Action consists of constructing and operating a car wash for military and civilian personnel assigned to Niagara Falls ARS. The proposed location for the car wash is east of and adjacent to Building 206, within the Installation's commercial services area. This location is preferred because it would consolidate commercial services in one area. The proposed car wash would consist of two self-service, coin-operated hand wash bays, one automatic (touch-free type) wash bay, and coin-operated vacuums. The preferred automatic car wash unit would be either the Mark VII® GT-700 or GT-500. The 2,130 square foot (ft^2) facility would include a curbed concrete wash rack, a concrete block building, foundation and slab, grit basin, plumbing and electrical connections, sanitary and storm sewer lines, pumps, power washers, a natural gas-fired water heater, roll-up doors, and all necessary support equipment. The vacuum station would consist of a two-car canopy over a centralized simple curb island with bollard protection on which the vacuum equipment would be mounted. Both the wand and automatic bays would share a common equipment room. Construction of the car wash would also require demolition of approximately 200 feet of an existing asphalt curb and construction of approximately one-half acre of new pavement. Niagara Falls ARS estimated that 20 to 30 customers would use the car wash per day.

Alternative Car Wash Construction Location. Niagara Falls ARS also considered other locations to construct a car wash. An alternative location for the proposed car wash at Niagara Falls ARS is west of Buildings 828 and 830 (the Hazardous Waste Storage Building). The alternative site, a mowed field similar to that of the Proposed Action, is across Johnson Street from Building 206 between the Hazardous Waste Storage Building and Building 920. The alternative location might require 1,000 ft^2 more new pavement compared to the Proposed Action. All other aspects of the car wash at the alternative site would be the same as the Proposed Action. This alternative was deemed viable and was analyzed in the EA.

No Action Alternative. Under the No Action Alternative, there would be no change from existing conditions at the base. Personnel would not have a car wash on the Installation, would use off-site facilities, and MWR would not have additional revenue. The No Action Alternative would not address USAF mission at Niagara Falls ARS.

Anticipated Environmental Impacts. Analysis performed in the EA addressed potential effects on air quality, noise, land use, safety, geological resources, water resources, biological resources, cultural resources, socioeconomics and environmental justice, infrastructure, and hazardous materials and waste. Analysis of the Proposed Action indicates that the affected environment would not be significantly impacted by construction of the car wash.

PUBLIC REVIEW AND INTERAGENCY COORDINATION

The elements of the Proposed Action were found to comply with the criteria or standards of environmental quality and coordinated with the appropriate Federal, state, and local agencies. Copies of the EA and FONSI/FONPA were mailed to Federal, state, and local agencies. A Notice of Availability for the EA and FONSI/FONPA was published in the *Niagara Gazette* on January 26, 2006.

FINDINGS

Finding of No Significant Impact. Reasonable alternatives were considered. The Proposed Action was found to be the preferred alternative to meet the Installation's purposes and needs. After review of the EA prepared in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council of Environmental Quality (CEQ) regulations, and Environmental Impact Analysis Process (EIAP), 32 Code of Federal Regulations 989, as amended, I have determined that the Proposed Action would not have a significant impact on the quality of the human or natural environment and, therefore, an Environmental Impact Statement (EIS) does not need to be prepared. This decision has been made after taking into account all submitted information, and considering a full range of practical alternatives that would meet project requirements and are within the legal authority of the USAF.

Finding of No Practicable Alternative. Reasonable alternatives were considered, but no other alternative to the Proposed Action meets the safety or operational requirements of the 914 AW. Pursuant to Executive Order 11988 and the authority delegated by Secretary of the Air Force Order 791.1, and taking the above information into account, I find that there is no practicable alternative to this action and that the Proposed Action includes all practicable measures to minimize harm to the environment. This decision has been made after taking into account all submitted information, and considering a full range of practical alternatives that would meet project requirements and are within the legal authority of the USAF.

STEVEN W. ZANDER, Colonel, USAF
The Civil Engineer

31 Mar 06
Date

COVER SHEET

ENVIRONMENTAL ASSESSMENT
CONSTRUCTION AND OPERATION OF A FIRE TRAINING TOWER AND CAR WASH AT NIAGARA FALLS AIR RESERVE STATION, NEW YORK

Responsible Agencies: U.S. Air Force (USAF), Air Force Reserve Command (AFRC), and 914th Airlift Wing (914 AW), Niagara Falls Air Reserve Station (ARS), New York.

Affected Location: Niagara Falls ARS, New York.

Proposed Action: Construct and Operate a Fire Training Tower and a Car Wash at Niagara Falls ARS.

Report Designation: Environmental Assessment (EA).

Written comments and inquiries regarding this document should be directed to 914 MSG/CEV, Niagara Falls ARS, 2405 Franklin Drive, Niagara Falls, New York 14304-5063.

Abstract: The purpose of the Proposed Action is to construct a Fire Training Tower to meet the fire training program requirements of Air Force Instruction (AFI) 32-2001, *The Fire Protection Operations and Fire Prevention Program,* at Niagara Falls ARS to enable personnel to perform activities necessary to meet USAF mission, emergency response, and force protection concerns at the Installation. The Proposed Action would also construct and operate a car wash for Niagara Falls ARS personnel. The 914 AW has identified the need to implement two construction projects to support base organizations.

Under the No Action Alternative, Niagara Falls ARS personnel would not have a car wash or Fire Training Tower. There would be no change from existing conditions at the Installation. This alternative would not address USAF mission and emergency response at Niagara Falls ARS.

This EA has been prepared to evaluate the Proposed Action and the No Action Alternative. Resources that will be considered in the impact analysis are noise, land use, air quality, safety, geological resources, water resources, cultural resources, biological resources, infrastructure, and hazardous materials and wastes. The EA will be made available to the public upon completion.

ENVIRONMENTAL ASSESSMENT

CONSTRUCTION AND OPERATION OF A FIRE TRAINING TOWER AND CAR WASH AT

NIAGARA FALLS AIR RESERVE STATION, NEW YORK

914TH AIRLIFT WING
MISSION SUPPORT GROUP/ENVIRONMENTAL
2405 Franklin Drive
Niagara Falls, New York 14304-5063

FEBRUARY 2006

ENVIRONMENTAL ASSESSMENT
CONSTRUCTION AND OPERATION OF A FIRE TRAINING TOWER AND CAR WASH AT NIAGARA FALLS AIR RESERVE STATION, NEW YORK

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1. Purpose and Need for Proposed Action

1.1 Background

The 914th Airlift Wing (914 AW) is an Air Force Reserve Command (AFRC) unit and is the host unit at Niagara Falls Air Reserve Station (ARS), New York. The 914 AW is assigned eight C-130H aircraft that perform diverse roles, including airdrop of supplies, airlift support, aeromedical missions, and natural disaster relief missions. The major tenant at Niagara Falls ARS is the 107th Air Refueling Wing (107 ARW) of the New York Air National Guard (NYANG). The 107 ARW, assigned nine KC-135R tanker aircraft, primarily provides in-flight refueling for military aircraft operations worldwide.

As part of the decisionmaking process, the AFRC and the 914 AW are conducting an environmental analysis to determine the potential environmental impacts of this Proposed Action. The Proposed Action involves constructing and operating a Fire Training Tower and a car wash at Niagara Falls ARS.

This Environmental Assessment (EA) analyzes the Proposed Action, alternatives to the Proposed Action, and the No Action Alternative. If the analyses presented in the EA indicate that implementation of the Proposed Action would not result in significant environmental impacts, a Finding of No Significant Impact (FONSI) would be prepared. A FONSI briefly presents reasons why a Proposed Action would not have a significant effect on the human environment and why an Environmental Impact Statement (EIS) is unnecessary. If significant environmental issues are identified that cannot be mitigated to insignificance, an EIS would be accomplished, or the Proposed Action would be abandoned and no action would be taken. In addition, if the EA finds that the Proposed Action would impact a floodplain, a Finding of No Practical Alternative (FONPA) would be prepared.

1.2 Purpose and Need for the Proposed Action

The 914 AW has identified the need to construct a Fire Training Tower and a car wash at Niagara Falls ARS. The Fire Training Tower is needed to conduct live structural fire training to meet the training program requirements of Air Force Instruction (AFI) 32-2001, *The Fire Protection Operations and Fire Prevention Program.* The Niagara Falls ARS Fire Department does not currently conduct structural fire training.

The need for the car wash was identified in a basewide survey conducted by the AFRC and 914 MSG/SV (community services) in October 2003. The survey was conducted to identify projects that would meet the needs of Installation personnel, enhance morale, and generate revenue for the Installation's Morale, Welfare, and Recreation (MWR) program. The survey found that approximately 97 percent of Installation personnel would use a car wash. An internal needs validation study would also be conducted to confirm the need. If approved, Niagara Falls ARS would seek AFRC funding to construct the facility. The purpose of the Proposed Action is to meet Installation personnel needs by constructing a car wash on Niagara Falls ARS.

1.3 Location of the Proposed Action

Niagara Falls ARS is in Niagara County in western New York, approximately 6 miles east of the City of Niagara Falls and 20 miles north of the City of Buffalo. Adjacent communities include the towns of Niagara, Lewiston, Wheatfield, and the City of Niagara Falls. Figure 1-1 shows the location of Niagara Falls ARS in relation to the surrounding region. Niagara Falls International Airport (IAP) is directly south of and contiguous to the Installation. The boundary between the airport and the Installation coincides with the channel of Cayuga Creek, which flows from east to west, south of the Installation flightline apron. The Installation occupies 985 acres of land north of Niagara Falls IAP. Vehicular access to Niagara Falls ARS is provided through the Main Gate, off Lockport Road.

1.4 Summary of Key Environmental Compliance Requirements

1.4.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] Section 4321-4347) is a Federal statute requiring the identification and analysis of potential environmental impacts of proposed Federal actions before those actions are taken. NEPA mandated a structured approach to environmental impact analysis that requires Federal agencies to use an interdisciplinary and systematic approach in their decisionmaking process. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. The intent of NEPA is to protect, restore, or enhance the environment through well-informed Federal decisions.

The process for implementing NEPA is codified in Title 40 of the Code of Federal Regulations (CFR), Parts 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act.* The Council on Environmental Quality (CEQ) was established under NEPA to implement and oversee Federal policy in this process. To this end, the CEQ regulations

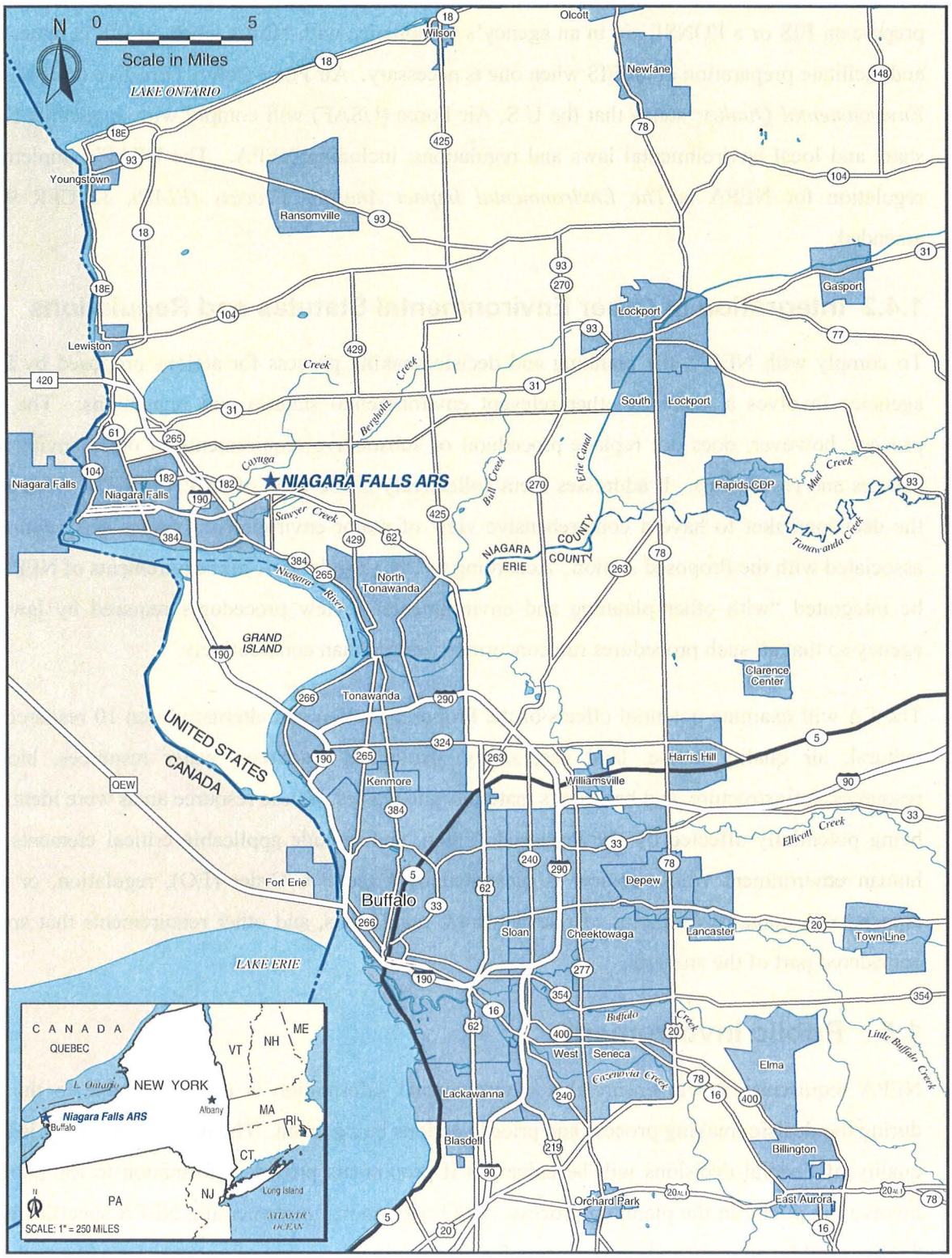

Figure 1-1. Niagara Falls ARS Vicinity Map

specify that an EA be prepared to briefly provide evidence and analysis for determining whether to prepare an EIS or a FONSI, aid in an agency's compliance with NEPA when an EIS is unnecessary, and facilitate preparation of an EIS when one is necessary. Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the U.S. Air Force (USAF) will comply with applicable Federal, state, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is *The Environmental Impact Analysis Process (EIAP)*, 32 CFR 989, as amended.

1.4.2 Integration of Other Environmental Statutes and Regulations

To comply with NEPA, the planning and decisionmaking process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decisionmaker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated "with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively."

The EA will examine potential effects of the Proposed Action and alternatives on 10 resource areas: cultural, air quality, noise, land use, safety, geological resources, water resources, biological resources, infrastructure, and hazardous materials and wastes. These resource areas were identified as being potentially affected by the Proposed Action, and include applicable critical elements of the human environment whose review is mandated by Executive Order (EO), regulation, or policy. Appendix A contains examples of relevant laws, regulations, and other requirements that are often considered part of the analysis.

1.5 Public Involvement

NEPA requirements help ensure that environmental information is made available to the public during the decisionmaking process and prior to actions being taken. The premise of NEPA is that the quality of Federal decisions will be enhanced if proponents provide information to the public and involve the public in the planning process. CEQ regulations implementing NEPA specifically state, "There shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to proposed actions. This process shall be termed scoping."

The Intergovernmental Coordination Act and EO 12372, *Intergovernmental Review of Federal Programs,* require Federal agencies to cooperate with and consider state and local views in implementing a Federal proposal. AFI 32-7060 requires AFRC to implement a process known as Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), which is used for the purpose of agency coordination and implements scoping requirements. Through the IICEP process, the 914 AW will notify relevant Federal, state, local agencies, and the surrounding communities of the action proposed and provide them sufficient time to make known their environmental concerns specific to the action.

The public involvement process also provides AFRC the opportunity to cooperate with and consider state and local views in implementing this Federal proposal. The 914 AW coordinated with agencies such as U.S. Environmental Protection Agency (USEPA); U.S. Fish and Wildlife Service (USFWS); State Historic Preservation Office (SHPO); and other Federal, state, and local agencies. Appendix B includes a copy of the letter mailed to the agencies for the EA and the distribution list. A copy of the EA was sent as an attachment to each person on the list and made available in community libraries to enhance the opportunity for public involvement.

A Notice of Availability for the draft EA and FONSI/FONPA will be published in the *Niagara Gazette* on January 26, 2006. This was done to solicit comments on the Proposed Action and involve the local community in the decisionmaking process.

1.6 Introduction to the Organization of this Document

This EA is organized into seven sections. Section 1 contains background information on Niagara Falls ARS, the purpose of and need for the Proposed Action, the location of the Proposed Action, a summary of environmental compliance requirements, a description of interagency coordination and community involvement, and an introduction to the organization of the EA. Section 2 provides a detailed description of the Proposed Action, alternatives to the Proposed Action, a description of the No Action Alternative, a description of the decision to be made, and identification of the preferred alternative. Section 3 describes the biophysical resources and baseline conditions that would be affected by the Proposed Action and Alternatives. Section 4 presents an analysis of the environmental consequences of each alternative, and Section 5 analyzes the potential cumulative impacts on Niagara Falls ARS. Section 6 lists the preparers of the EA, and Section 7 lists the sources of information used in the preparation of the document.

Appendix A includes examples of relevant laws, regulations, and other requirements that are often considered as part of the EA. Appendix B of the EA includes a copy of the IICEP letter mailed to the agencies for this action, the IICEP distribution list, and Notice of Availability. Appendix C contains the emissions calculation for the Clean Air Act Conformity Emissions Calculations.

2. Description of Proposed Action and Alternatives

2.1 Detailed Description of the Proposed Action

The Proposed Action would be a multiyear effort, with construction scheduled in a logical sequence to allow the projects to proceed in a timely fashion without interruption to Installation services. Figure 2-1 illustrates where the proposed Fire Training Tower and car wash would be located on the Installation. Where applicable, the new facilities would be designed to comply with current architectural standards at Niagara Falls ARS. All landscaping would be completed in accordance with Niagara Falls ARS standards, and construction would comply with all applicable fire and safety codes. The Proposed Action would meet all applicable antiterrorism/force protection requirements.

Potable water, sanitary sewer, storm sewer, underground/overhead primary electric, and natural gas utilities are adequate to meet the Proposed Action's utility demands. Construction and demolition (C&D) waste would be the responsibility of the construction contractor(s). All C&D waste generated as part of the Proposed Action would be recycled to the greatest extent practicable. The contractor would transport the remaining C&D waste to an approved landfill.

The proposed projects would result in no change in officer, Reserve officer, or enlisted Air Reserve Technician positions; or unit Reserve enlisted authorizations. The two proposed projects are discussed in detail below.

The preferred location of the Fire Training Tower is within the 100-year floodplain and the preferred location of the car wash is adjacent to the floodplain. Based on an April 2005 floodplain survey performed by the Buffalo District of the U.S. Army Corps of Engineers (USACE), construction of the Fire Training Tower would take place in the 100-year floodplain. Therefore a FONPA would be required. AFI 32-7064, *Integrated Natural Resources Management*, requires USAF lands to be managed to reduce the risk of flood loss. Construction within a floodplain is restricted unless there are no practical alternatives to such construction. Documentation is required in the form of a FONPA before any action may proceed within a floodplain. In preparing a FONPA, Headquarters (HQ) AFRC must consider the full range of practicable alternatives that will meet justified program requirements, as well as those that are within the legal authority of the USAF, meet technology standards, are cost effective, do not result in unreasonable adverse environmental impacts, and other pertinent factors.

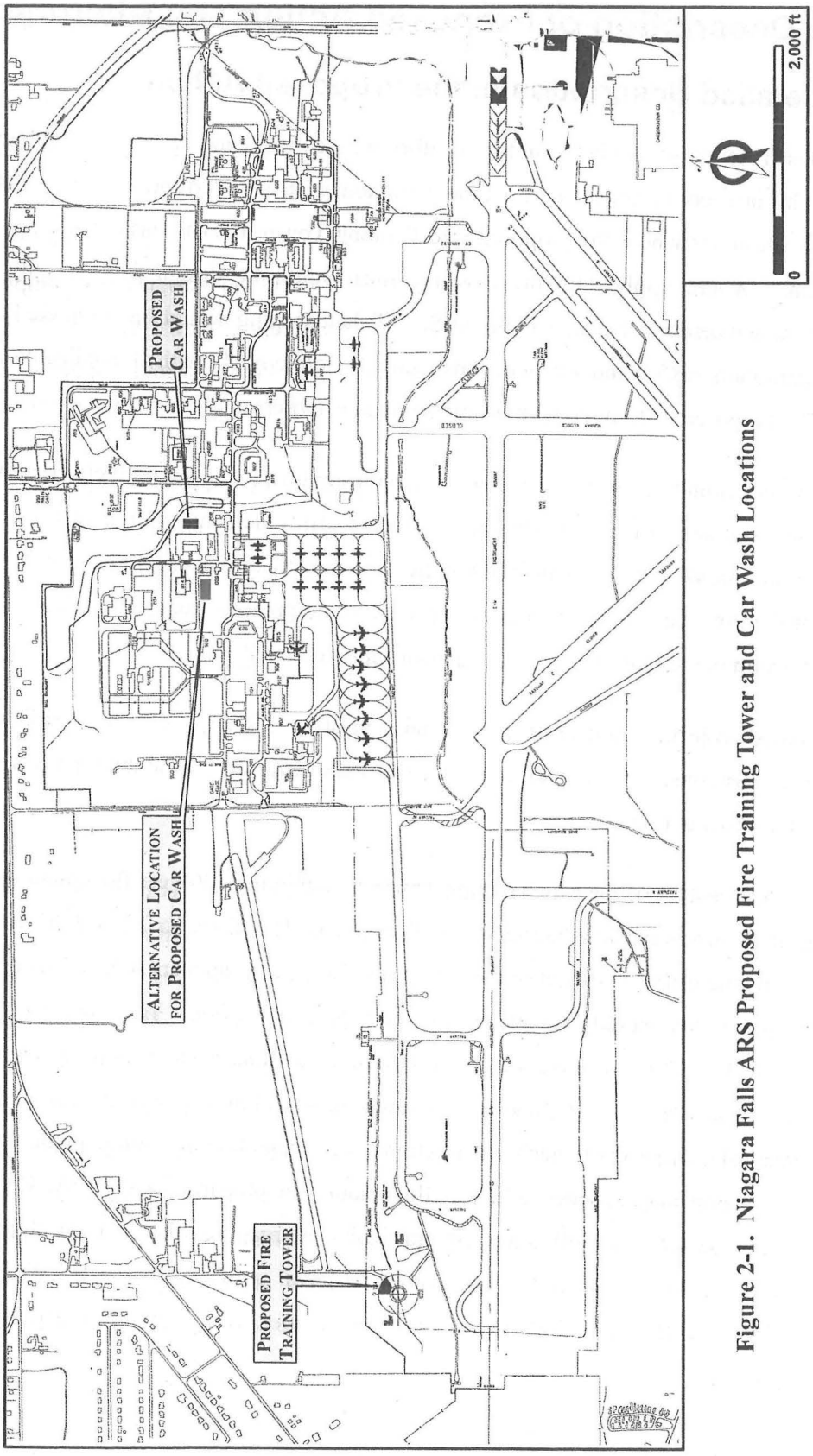

Figure 2-1. Niagara Falls ARS Proposed Fire Training Tower and Car Wash Locations

Fire Training Tower. The Proposed Action consists of constructing a Fire Training Tower. Construction of the Fire Training Tower would also include the construction of a concrete pad and piping to direct water from the training tower to the adjacent fire pit. The Fire Training Tower would be manufactured by an existing vendor of training towers and installed near the existing search-and-rescue training building at the fire training area on Niagara Falls ARS. Figure 2-2 is an example of the proposed Fire Training Tower. Figure 2-3 is the proposed location of the Fire Training Tower within the Installation's fire training area. The search-and-rescue training building can be seen at the left of the photograph, and the fire training pit water conservation pond is within the fenced area to the right. The tower would be two stories with an annex and approximately 15 by 30 feet in size. The area that would be disturbed to construct the Fire Training Tower is estimated to be no more than one-quarter acre.

Once constructed, the Niagara Falls ARS Fire Department would conduct fire training up to four times per month for approximately 62 firefighters and an undetermined number of reserve personnel. For each training session, a fire would be started in the tower and extinguished by the trainees. This process would be repeated several times during the training until the training objectives were met. "Class A" combustibles, which are natural products like wood, straw, or paper, would be used to start and fuel the fire. It is estimated that fires would cumulatively burn for no more than 1 hour per training session, for a total of 4 hours per month. Water and other debris would be contained within the concrete pad and directed to the fire training pit water conservation pond where it would enter the Niagara Falls sanitary sewer system for treatment. The training would be conducted between May and October. Niagara Falls ARS would also make the Fire Training Tower available to nearby fire departments to conduct training.

The Proposed Action also consists of constructing and operating a car wash for military and civilian personnel assigned to Niagara Falls ARS. The proposed car wash would consist of two self-service, coin-operated hand wash bays, one automatic (touch-free type) wash bay, and coin-operated vacuums. The preferred automatic car wash unit would be either the Mark VII® GT-700 or GT-500. The 2,130 square foot (ft^2) facility would include a curbed concrete wash rack, a concrete block building, foundation and slab, grit basin, plumbing and electrical connections, sanitary and storm sewer lines, pumps, power washers, a natural gas-fired water heater, roll-up doors, and all necessary support equipment. The vacuum station would consist of a two-car canopy over a centralized simple curb island with bollard protection on which the vacuum equipment would be mounted. Both the wand and automatic bays would share a common equipment room. Construction of the car wash would also require demolition of approximately 200 feet of an existing asphalt curb and construction

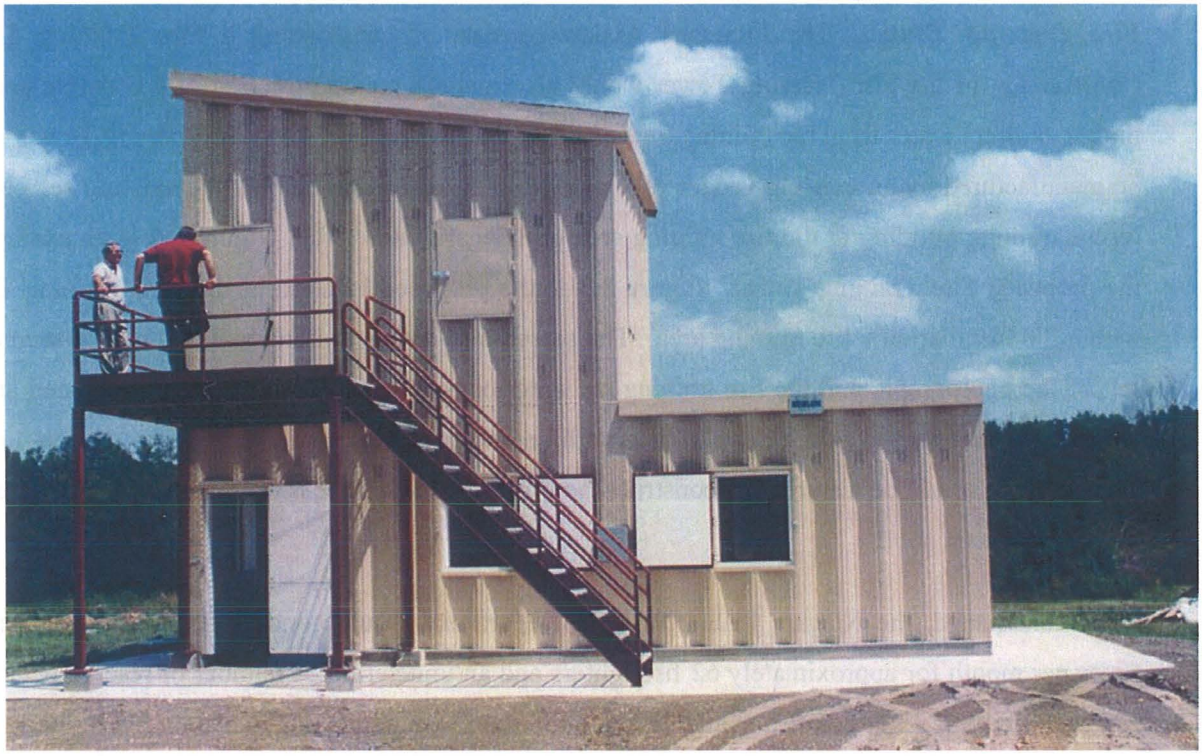

Figure 2-2. Example of Proposed Fire Training Tower

Figure 2-3. Location of Proposed Fire Training Tower

of approximately one-half acre of new pavement. Niagara Falls ARS estimated that 20 to 30 customers would use the car wash per day.

The proposed location for the car wash is east of and adjacent to Building 206, within the Installation's commercial services area. The Proposed Action location is preferred because it would consolidate commercial services in one area. Building 206 includes a credit union, the Flight Line Diner, and a bowling alley. Figures 2-4 through 2-6 show the proposed location of the car wash. Figure 2-4 shows the proposed location looking west toward Building 206. Figures 2-5 and 2-6 show the proposed location looking from Building 206 toward the northeast, and southeast, respectively. Figures 2-7 and 2-8 illustrate the type of proposed car wash.

Figure 2-4. Location of Proposed Car Wash

Figure 2-5. Location of Proposed Car Wash

Figure 2-6. Location of Proposed Car Wash

Figure 2-7. Example of Proposed Automatic Car Wash Equipment

Figure 2-8. Example of Proposed Car Wash

2.2 Alternatives

As part of the NEPA process, reasonable alternatives to the Proposed Action must be considered. The development of reasonable alternatives involved discussions with Niagara Falls ARS Installation and tenant personnel to identify the purpose and need of the action(s), alternative courses of action, designs, locations, and management practices for achieving each activity's purpose and need. Consistent with the intent of NEPA, this screening process focused on identifying a range of reasonable project-specific alternatives and, from that, developing proposed actions that could be implemented in the foreseeable future. Management alternatives deemed infeasible were not analyzed further.

For the proposed Fire Training Tower, Niagara Falls ARS considered renting or leasing mobile Fire Training Towers. However, mobile Fire Training Towers are typically fired by propane, which does not provide as realistic a fire training experience as Class A combustibles. The Fire Department determined that the use of mobile Fire Training Towers was too expensive compared to constructing a tower. The next closest Fire Training Tower is in Lockport, New York, approximately 1-hour driving distance from the Installation, which was deemed to be too great to make training feasible. Other locations on Niagara Falls ARS were also considered. However, the existing fire training area was determined to be the practicable location due to the existing fire training pit water conservation pond and other infrastructure to contain and collect water and debris from the fire training exercises. Therefore, that alternative was not considered in detail.

For the proposed car wash, Niagara Falls ARS considered co-locating the car wash with a proposed government vehicle wash for military vehicles near the motor pool in the area of Buildings 506 and 532. The proposed government vehicle wash has not been constructed and is not in current Installation planning documents. Niagara Falls ARS has also determined that there would be no advantage to co-locating the car wash with the military vehicle wash. Therefore, that alternative was not considered in detail.

Niagara Falls ARS also considered other locations to construct a car wash. An alternative location for the proposed car wash at Niagara Falls ARS is west of Buildings 828 and 830 (the Hazardous Waste Storage Building). The alternative site, a mowed field similar to that of the Proposed Action, is across Johnson Street from Building 206 between the Hazardous Waste Storage Building and Building 920. The alternative location might require an additional 1,000 ft^2 of pavement than the Proposed Action. All other aspects of the car wash at the alternative site would be the same as the

Proposed Action. This alternative was deemed viable and has been carried forward for analysis in the EA.

2.3 No Action Alternative

Under the No Action Alternative, there would be no change from existing conditions at the base. The Niagara Falls ARS Fire Department would not train personnel to fight structural fires. Personnel would not have a car wash on the Installation, would use off-site facilities, and MWR would not have additional revenue. The No Action Alternative would not address USAF mission and emergency response at Niagara Falls ARS.

2.4 Decision to be Made and Identification of Preferred Alternative

The USAF would make one of the following decisions:

- Implement the Proposed Action
- Implement one or more of the alternatives to the Proposed Action
- Not implement the Proposed Action (No Action Alternative)

The Preferred Alternative is the implementation of the Proposed Action.

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3. Affected Environment

Section 3 describes the environmental resources and conditions most likely to be affected by the proposed construction projects. This section provides information to serve as a baseline from which to identify and evaluate environmental changes likely to result from implementation of the Proposed Action. Baseline conditions represent current conditions. The potential direct and indirect environmental impacts of the Proposed Action and No Action Alternative on the baseline conditions are described in Section 4.0.

In compliance with NEPA, CEQ regulations, and 32 CFR Part 989, as amended, the description of the affected environment focuses on those resources and conditions potentially affected by the Proposed Action. Three aspects of the affected environment that are frequently evaluated in an EA (cultural resources, socioeconomics, and environmental justice) would not be affected by the Proposed Action, and therefore, are not analyzed further in this EA. The following details the basis for such exclusions:

Cultural Resources. An Installation-wide Stage 1 archaeological survey was conducted from June to August 1998. The May 7, 2000, survey reported that none of the historic (modern) artifacts identified were considered to be culturally important. The report also recommended that no further cultural resources investigations were necessary on the Niagara Falls ARS property.

A survey for Cold War Historic Properties has not been finalized. Projects that involve Cold War Era facilities are reviewed on a case-by-case basis with the New York SHPO. There are four buildings approximately 800 feet from the proposed car wash and alternative locations. The buildings were built between 1955 and 1965 (No. 800, 914th TAG; No. 803, Base Chapel; No. 804, 70th Aeromedical Evacuation Flight; and No. 808, Electrical Power Station Building). Two buildings (No. 202, Base Civil Engineer, Fire Department and Engine Shop and No. 204, Engine Shop), approximately 500 feet from the proposed car wash location, were built in 1960. Buildings 202 and 204 were associated with the 35th Missile Defense Squadron.

For the purpose of this EA, the Area of Potential Effect (APE) for the Proposed Action is defined by the construction limits of the car wash and Fire Training Tower (see Figure 2-1). Buildings 202, 204, 800, 803, 804, and 808 are outside the APE and there would be no direct impact on potentially significant resources from the Proposed Action. Therefore, there would be no effect on cultural resources at Niagara Falls ARS.

Procedures for handling unexpected discoveries of historic properties during construction are outlined in the Cultural Resources Management Plan (AFRC 1996). Contractors that are involved in excavating projects are required to stop work when there is an unanticipated discovery of historic properties and to report the finding to the Cultural Resources Manager of the 914 Environmental Division (CEV).

Socioeconomics. The Proposed Action does not involve any activities that would contribute to changes in socioeconomic resources. There would be no change in the number of personnel assigned to Niagara Falls ARS; therefore, there would be no change in area population or associated changes in demand for housing and services. The proposed construction projects are relatively small and would not affect local employment rates. Accordingly, the USAF has omitted detailed examination of socioeconomics.

Environmental Justice. The Proposed Action does not involve any activities that would affect residences around the Installation or contribute to changes in low-income or minority populations. Accordingly, the USAF has omitted detailed examination of environmental justice.

3.1 Noise

3.1.1 Definition of the Resource

Physically, there is no distinction between sound and noise. Sound is a sensory perception and the complex pattern of sound waves is labeled (e.g., noise, music, speech). Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Human response to noise varies according to the source type, characteristics of the noise source, distance between source and receptor, receptor sensitivity, and time of day.

Sound is measured with instruments that record instantaneous sound levels in decibels (dB). A-weighted sound level measurements (dBA) are used to characterize sound levels that can be sensed by the human ear. "A-weighted" denotes the adjustment of the frequency content of a noise event to represent the way in which the average human ear responds to the noise event. All sound levels analyzed in this EA are A-weighted.

Noise Criteria and Regulations. Federal and local governments have established noise guidelines and regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological, psychological, and social effects associated with noise. The following paragraphs describe the guidelines and regulations that are relevant to the project.

According to the USAF, Federal Aviation Administration (FAA), and U.S. Department of Housing and Urban Development criteria, residential units and other noise-sensitive land uses are "clearly unacceptable" in areas where the noise exposure exceeds a day-night level (DNL) of 75 dBA; "normally unacceptable" in regions exposed to noise between the DNL of 65 to 75 dBA; and "normally acceptable" in areas exposed to noise of 65 dBA or less exists. The Federal Interagency Committee on Urban Noise developed land use compatibility guidelines for noise in terms of DNL (USDOT 1980). DNL is the metric used by USAF in determining noise impacts of military airfield operations for land use planning. USAF land use compatibility guidelines (relative to DNL values) are documented in the Air Installation Compatible Use Zone (AICUZ) Program Handbook (USAF 1999). Five noise zones are used in AICUZ studies to identify noise impacts from aircraft operations. These noise zones range from a DNL of 65 to 80 dBA and above. For example, it is recommended that no residential uses, such as homes, multifamily dwellings, dormitories, hotels, and mobile home parks, be situated where the noise is expected to exceed a DNL of 65 dBA. If sensitive structures are located in areas within a DNL range of 65 to 75 dBA, noise-sensitive structures should be designed to achieve a DNL of 25 to 30 dBA interior noise reduction. Some commercial and industrial uses are considered acceptable where the noise level exceeds a DNL of 65 dBA. For outdoor activities, USEPA recommends a DNL of 55 dBA as the sound level below which there is no reason to suspect that the general population will be at risk from any of the effects of noise (USEPA 1974).

3.1.2 Existing Conditions

In 1992, the Air Force Center for Environmental Excellence (AFCEE) developed noise contours for Niagara Falls IAP using information collected on NYANG, AFRC, Air Canada, and other transient aircraft operations. These are the latest available noise contours developed for Niagara Falls IAP. Figure 3-1 depicts the Niagara Falls IAP 1992 noise contours near Niagara Falls ARS (AFCEE 1992).

Nearly all studies on the compatibility of residential development and aircraft noise recommend no residential uses in noise zones above a DNL of 75 dBA average. Usually, no restrictions are recommended in noise zones below DNL of 65 dBA. Between DNL of 65 and 75 dBA, there is currently no consensus. As shown in Figure 3-1, the majority of the Installation is within the DNL 65 dBA noise contour.

As expected, the highest average sound levels (DNL of 70 dBA and above) occur adjacent to the runways and parallel taxiway. Sound levels exceeding DNL of 65 dBA extend beyond the airfield and consume the majority of the Installation, including those used primarily for billeting and administration.

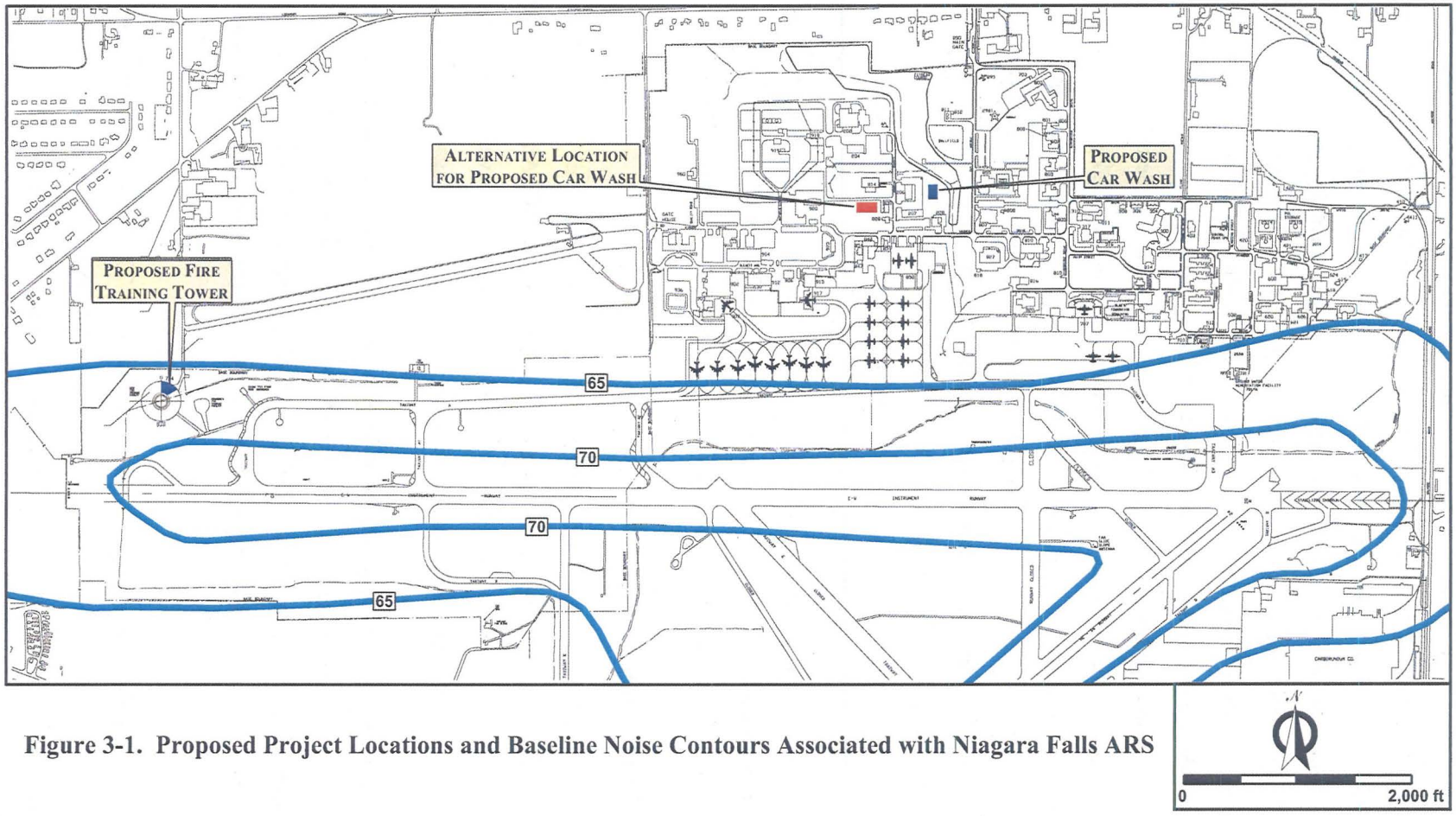

Figure 3-1. Proposed Project Locations and Baseline Noise Contours Associated with Niagara Falls ARS

As part of its standard aircraft operating procedures, the 914 AW attempts to minimize noise disturbances to the civilian community. On the Installation, land use planning and facility siting are compatible with airfield operations and related noise levels. With limited sites for visiting officer and airmen quarters, Installation planners ensure that noise attenuation features are included in the design of facilities to be constructed in high noise areas, thereby reducing building interior noise to acceptable levels. Noise from aircraft operations is not expected to constrain future development at the Installation (NFARS 1998). Figure 3-2 shows the common noise levels for indoor and outdoor noises.

Building construction, modification, and demolition work can cause considerable noise emissions. A variety of sounds comes from cranes, cement mixers, welding, hammering, boring, and other work processes. Construction equipment and building operations are often poorly silenced, but quickly become a part of the ambient noise levels heard every day. Table 3-1 provides various sound levels that are associated with typical construction equipment.

Table 3-1. Noise Levels for Construction Equipment

Equipment	Average (dBA)	Range (dBA)
Front end loaders	88	85-91
Excavators	87	86-90
Backhoes	86.5	76-89
Scrapers	96	84-102
Compressors	79	62-92
Pavers	101	100-102
Rollers (compactors)	90	79-93
Graders, concrete pumps and mixers, and generators	< 85	

Source: Eaton 2004

3.2 Land Use

3.2.1 Definition of the Resource

The term "land use" refers to real property classifications that indicate either natural conditions or types of human activity occurring on a parcel. In many cases, land use descriptions are codified in local zoning laws. There is, however, no nationally recognized convention or uniform terminology for describing land use categories. As a result, the meanings of various land use descriptions, "labels," and definitions vary among jurisdictions.

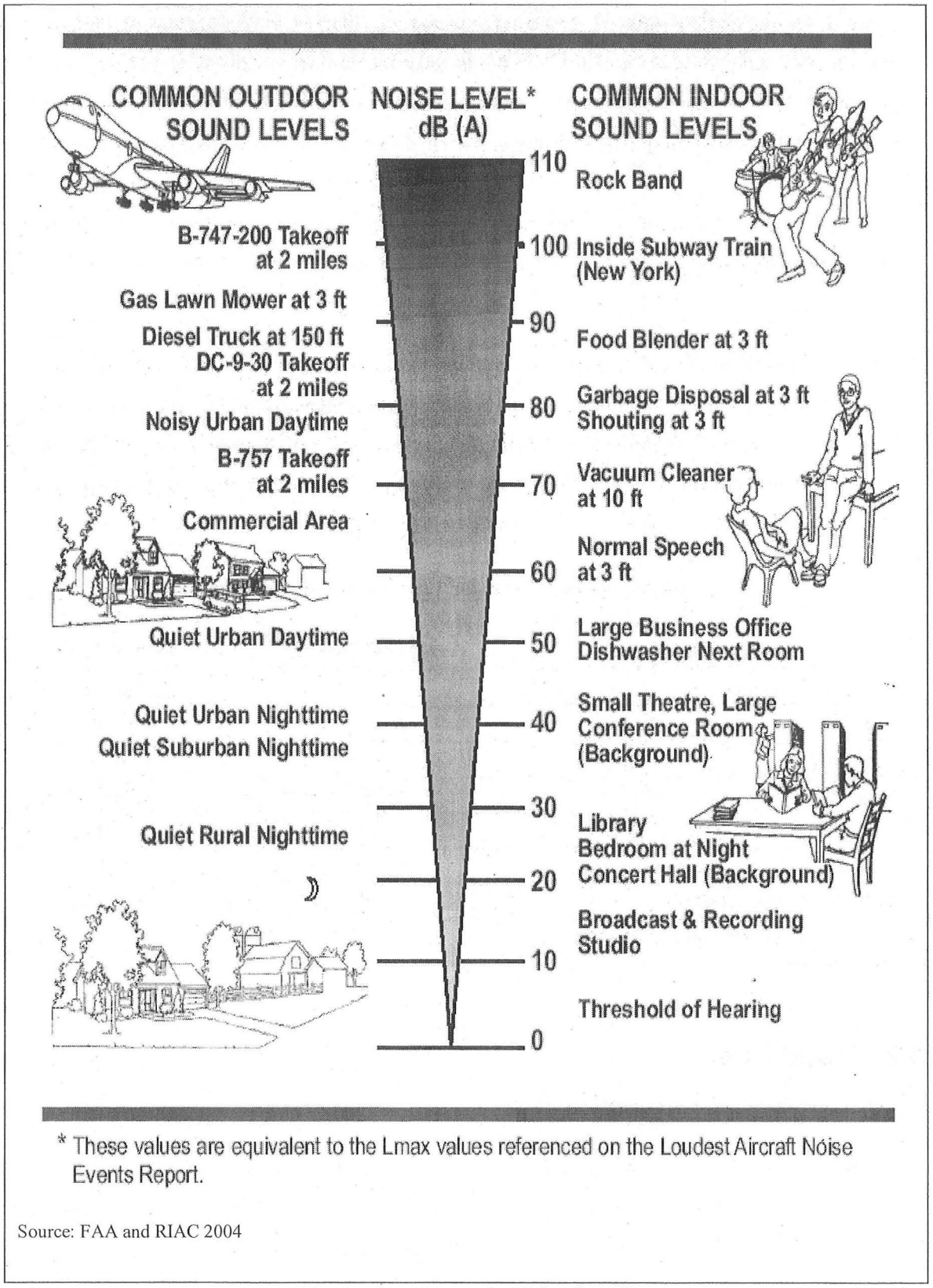

Figure 3-2. Common Noise Levels

Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. There is a wide variety of land use categories resulting from human activity. Descriptive terms often used include residential, commercial, industrial, agricultural, institutional, and recreational.

Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent property parcels or areas. Compatibility among land uses fosters the societal interest of obtaining the highest and best uses of real property. Tools supporting land use planning include written master plans, management plans, and zoning regulations. In appropriate cases, the locations and extent of proposed actions need to be evaluated for their potential effects on project site and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with any applicable land use or zoning regulations. Other relevant factors include matters such as existing land use at the project site, the types of land uses on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its "permanence."

3.2.2 Existing Conditions

The on- and off-Installation land use information provided below was obtained from the Niagara Falls ARS General Plan (NFARS 1998). The land use plan at Niagara Falls ARS emphasizes the consolidation of similar activities and the promotion of positive functional relationships between land uses. As older facilities are demolished, new buildings should be sited according to the plan. This effort will result in the consolidation of aircraft operations and maintenance functions adjacent to the airfield. See Figure 3-3 for existing land use at Niagara Falls ARS.

Most of the changes to the Installation's development pattern involve the consolidation of land use pockets to form larger land use areas yielding greater future development potential. Emphasis was also placed on preserving the 100-year floodplain and wetland areas by designating these sites as either open space or outdoor recreation areas. The key to successfully developing Niagara Falls ARS would be the identification and consolidation of compatible activities and the continued use of land use areas as opposed to individually sited facilities.

There are three main land use types within the Installation boundary: administrative, industrial, and aircraft and maintenance. The central portion of the Installation is primarily made up of administrative land use areas. Two large parcels of industrial land use areas are located in the western and eastern portions of the Installation.

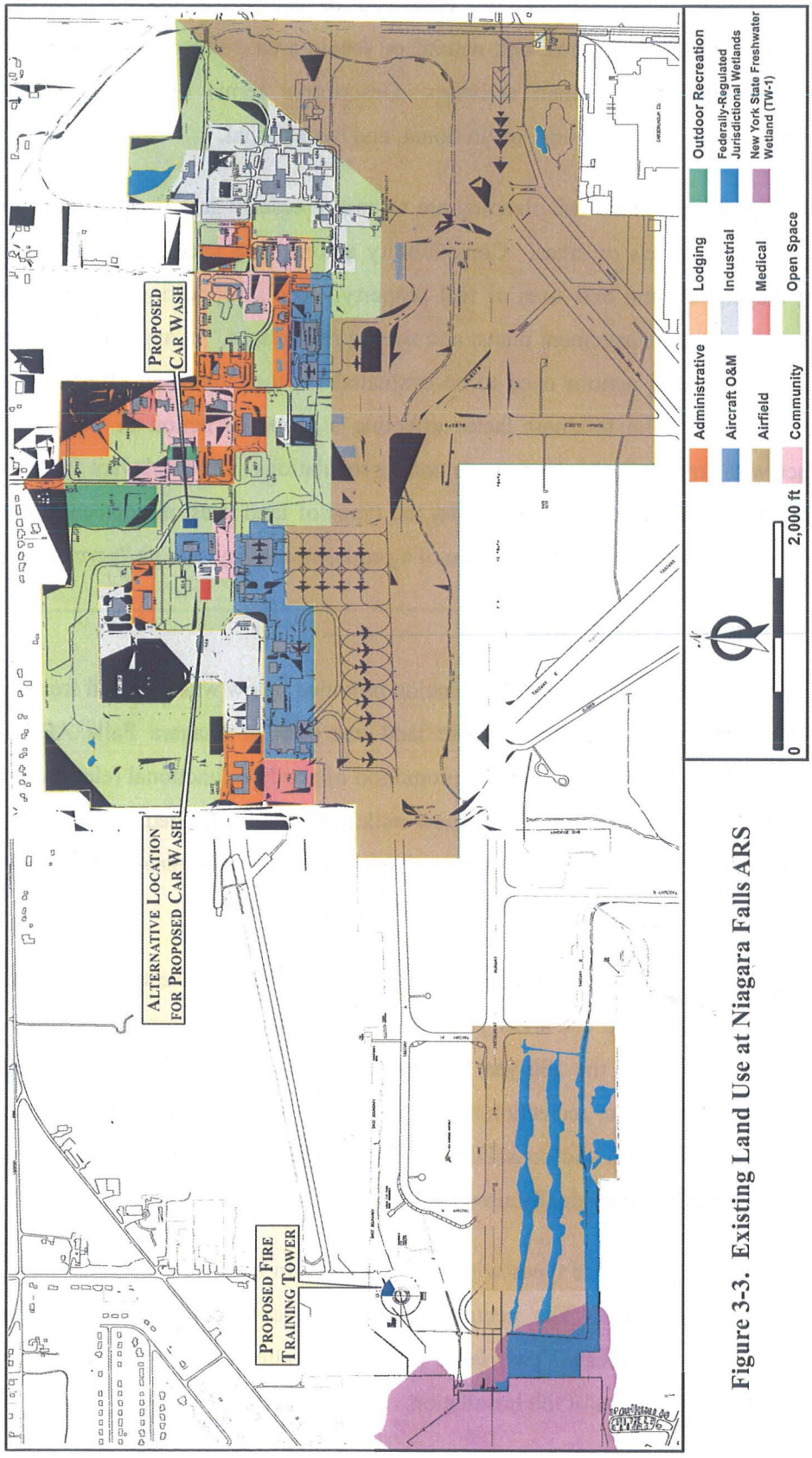

Figure 3-3. Existing Land Use at Niagara Falls ARS

Off-Installation Land Use. Immediately to the south of the Installation is the main taxiway used by NYANG and AFRC aircraft accessing Niagara Falls IAP. Further south are Niagara Falls IAP's general aviation and passenger terminals and hangars, and the remainder of the airport's runways and taxiways. The presence of these facilities effectively precludes the Installation from constructing any facilities south of this point. To the north, west, and east are areas of rural to low-density residential and industrial land uses.

3.3 Air Quality

3.3.1 Definition of the Resource

In accordance with Federal Clean Air Act (CAA) requirements, the air quality in a given region or area is measured by the concentration of various pollutants in the atmosphere. The measurements of these "criteria pollutants" in ambient air are expressed in units of parts per million (ppm) or in units of micrograms per cubic meter ($\mu g/m^3$). The air quality in a region is a result not only of the types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface topography, the size of the topological "air basin," and the prevailing meteorological conditions.

The CAA directed USEPA to develop, implement, and enforce strong environmental regulations that would ensure clean and healthy ambient air quality. To protect public health and welfare, USEPA developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to impact human health and the environment. USEPA established both primary and secondary NAAQS under the provisions of the CAA. NAAQS are currently established for six criteria air pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter [PM_{10}] and particulate matter equal to or less than 2.5 microns in diameter [$PM_{2.5}$]), and lead (Pb). The primary NAAQS represent maximum levels of background air pollution that are considered safe, with an adequate margin of safety to protect public health. Secondary NAAQS represent the maximum pollutant concentration necessary to protect vegetation, crops, and other public resources along with maintaining visibility standards. USEPA designated $PM_{2.5}$ nonattainment areas in December 2004, and plans on finalizing the $PM_{2.5}$ implementation rule by early 2006 (USEPA 2004a). Table 3-2 presents the primary and secondary NAAQS that apply to the air quality in New York (USEPA 2004b).

Table 3-2. National Ambient Air Quality Standards

Pollutant	Standard Value		Standard Type
Carbon Monoxide (CO)			
8-hour Average[1]	9 ppm	(10 mg/m^3)	Primary
1-hour Average[1]	35 ppm	(40 mg/m^3)	Primary
Nitrogen Dioxide (NO_2)			
Annual Arithmetic Mean	0.053 ppm	(100 µg/m^3)	Primary and Secondary
Ozone (O_3)			
1-hour Average[6]	0.12 ppm	(235 µg/m^3)	Primary and Secondary
8-hour Average[5]	0.08 ppm	(157 µg/m^3)	Primary and Secondary
Lead (Pb)			
Quarterly Average		1.5 µg/m^3	Primary and Secondary
Particulate < 10 micrometers (PM_{10})			
Annual Arithmetic Mean[2]		50 µg/m^3	Primary and Secondary
24-hour Average[1]		150 µg/m^3	Primary
Particulate < 2.5 micrometers ($PM_{2.5}$)			
Annual Arithmetic Mean[3]		15 µg/m^3	Primary and Secondary
24-hour Average[4]		65 µg/m^3	Primary
Sulfur Dioxide (SO_2)			
Annual Arithmetic Mean	0.03 ppm	(80 µg/m^3)	Primary
24-hour Average[1]	0.14 ppm	(365 µg/m^3)	Primary
3-hour Average[1]	0.5 ppm	(1300 µg/m^3)	Secondary

Source: USEPA 2004b

Notes: Parenthetical values are approximate equivalent concentrations.
mg/m^3: milligrams per cubic meter
[1] Not to be exceeded more than once per year.
[2] To attain this standard, the expected annual arithmetic mean PM_{10} concentration at each monitor within an area must not exceed 50 µg/m^3.
[3] To attain this standard, the 3-year average of the annual arithmetic mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m^3.
[4] To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 65 µg/m^3.
[5] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
[6] (a) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is ≤ 1, as determined by Appendix H. (b) The 1-hour NAAQS will no longer apply to an area 1 year after the effective date of the designation of that area for the 8-hour ozone NAAQS. The effective designation date for most areas is June 15, 2004 (40 CFR 50.9; see Federal Register May 30, 2004 [69 FR 23996]).

Although O_3 is considered a criteria air pollutant and is measurable in the atmosphere, it is not often considered a regulated air pollutant when calculating emissions because O_3 is typically not emitted directly from most emissions sources. Ozone is formed in the atmosphere by photochemical reactions involving sunlight and previously emitted pollutants or "O_3 precursors." These O_3 precursors consist primarily of nitrogen oxides (NO_x) and volatile organic compounds (VOCs) that are directly emitted from a wide range of emissions sources. For this reason, regulatory agencies attempt to limit

atmospheric O_3 concentrations by controlling VOC pollutants (also identified as reactive organic gases) and NO_2.

The General Conformity Rule and the promulgated regulations found in 40 CFR Part 93 exempt certain Federal actions from conformity determinations (e.g., contaminated site cleanup and natural emergency response activities). Other Federal actions are assumed to conform if total indirect and direct project emissions are below *de minimis* levels presented in 40 CFR 93.153. The threshold levels (in tons of pollutant per year) depend upon the nonattainment status that USEPA has assigned to a nonattainment area. Once the net change in nonattainment pollutants is calculated, the Federal agency must compare them to the *de minimis* thresholds.

3.3.2 Existing Conditions

Regional Air Quality. USEPA classifies the air quality in an air quality control region (AQCR) or in subareas of an AQCR according to whether the concentration of criteria pollutants in ambient air exceeds the primary or secondary NAAQS. All areas within each AQCR are therefore designated as either "attainment," "nonattainment," or "unclassified" for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS, nonattainment indicates that air quality exceeds NAAQS, and an unclassifiable air quality designation by USEPA means that there is not enough information to appropriately classify an AQCR, so the area is considered attainment.

The New York State Department of Environmental Conservation (NYSDEC) is responsible for implementation of the CAA and has adopted the Federal primary and secondary NAAQS. The State of New York submitted a total suspended particulate (TSP) Attainment Plan for the Niagara Falls Intrastate Air Quality Control Region (NFIAQCR) to the USEPA in February 1993, and revised the plan in January 1987. The USEPA approved the TSP Attainment Plan in May 1991 (USEPA 2003).

Niagara Falls ARS. Niagara Falls ARS is located within the NFIAQCR, which consists of Erie and Niagara counties in the state of New York. The NFIAQCR is designated as a marginal nonattainment area for the 1-hour ozone standard and as a moderate nonattainment area for the 8-hour ozone standard (USEPA 2004c).

3.4 Safety

3.4.1 Definition of the Resource

A safe environment is one in which there is no, or an optimally reduced, potential for property damage, serious bodily injury or illness, or death. Human health and safety addresses (1) workers' health and safety during demolition activities and facilities construction, and (2) public safety during demolition and construction activities and during subsequent operations of those facilities.

Construction site safety is largely a matter of adherence to regulatory requirements imposed for the benefit of employees and implementation of operational practices that reduce risks of illness, injury, death, and property damage. The health and safety of onsite military and civilian workers are safeguarded by numerous Department of Defense (DOD) and USAF regulations designed to comply with standards issued by the Occupational Safety and Health Administration (OSHA) and USEPA. These standards specify the amount and type of training required for industrial workers, the use of personal protective equipment and clothing, engineering controls, and maximum exposure limits for workplace stressors. Extremely noisy environments can also mask verbal or mechanical warning signals such as sirens, bells, or horns.

3.4.2 Existing Conditions

All contractors performing construction activities are responsible for following ground safety and OSHA regulations and are required to conduct construction activities in a manner that does not pose any risk to workers or personnel. Industrial hygiene programs address exposure to hazardous materials, use of personal protective equipment, and use and availability of Material Safety Data Sheets. Industrial hygiene is the responsibility of contractors, as applicable. Contractor responsibilities are to review potentially hazardous workplaces; monitor exposure to workplace chemical (e.g., asbestos, lead, hazardous material), physical (e.g., noise propagation), and biological (e.g. infectious waste) agents; recommend and evaluate controls (e.g., ventilation, respirators) to ensure personnel are properly protected or unexposed; and ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to any accidental chemical exposures or engaged in hazardous waste work.

3.5 Geological Resources

3.5.1 Definition of the Resource

Geological resources consist of the earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography, soils, geology, minerals, and, where applicable, paleontology.

Topography and Geology. Topography pertains to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features. Geology, which concerns itself with the study of the earth's composition, provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition. Hydrogeology extends the study of the subsurface to water-bearing structures. Hydrogeological information helps in the assessment of the quality and quantity of groundwater and its movement.

Soils. Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their abilities to support certain applications or uses. In appropriate cases, soils properties must be examined for their compatibility with particular construction activities or types of land use.

3.5.2 Existing Conditions

Topography and Geology. The topography of Niagara Falls ARS is flat to gently sloping, with elevations ranging from 578 to 600 feet above sea level. The Installation is in the Niagarian Provincial series, in the eastern lake section of the Central Lowland physiographic province. The Niagarian Provincial series is "richly fossiliferous" with 400 feet of deposits, including dolomite, limestone, shale, and sandstone, from diverse environments ranging from nonmaritime sandstones to deep water shales (AFRC 1998).

Soils. Niagara Falls ARS occupies level to gently sloping land areas dominated by two soil series: Odessa silty clay loam and the Lakemont silty clay loam. These soils formed in glacial material deposited during and shortly after the Ice Age (the Pleistocene epoch). The Odessa soil, a moderately fine-textured soil, covers approximately 95 percent of Niagara Falls ARS. This soil drains somewhat poorly, has moderately slow permeability, and a seasonably high water table at 6 to 12 inches below

the surface. The other 5 percent of the Installation is covered by the Lakemont soil series, a moderately coarse and medium-textured soil that is poorly to very poorly drained, has moderately slow permeability at the surface layer, slow permeability in the subsoil, and a seasonably high water table at or immediately below the surface. The water-holding capacity of both soils is high, and the erosion potential is slight. Approximately half of the area, however, is overlain by pavement and other impermeable structures (AFRC 1998).

3.6 Water Resources

3.6.1 Definition of the Resource

Water resources include groundwater, surface water, floodplains, and wastewater and storm water systems. Evaluation identifies the quantity and quality of the resource and the demand on the resource for potable, irrigation, and industrial purposes.

Groundwater. Groundwater consists of the subsurface hydrologic resources. It is an essential resource often used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater typically may be described in terms of its depth from the surface, aquifer or well capacity, water quality, surrounding geologic composition, and recharge rate.

Surface Water. Surface water resources consist of lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale. Storm water flows, which may be exacerbated by high proportions of impervious surfaces associated with buildings, roads, and parking lots, are important to management of surface water. Storm water is also important to surface water quality because of the potential to introduce sediments and other contaminants into lakes, rivers, and streams.

Storm water systems convey precipitation away from developed sites to appropriate receiving surface waters. For a variety of reasons, storm water systems might employ a variety of devices to slow the movement of water. For instance, a large, sudden flow could scour a streambed and harm biological resources in that habitat. Storm water systems provide the benefit of reducing amounts of sediments and other contaminants that would otherwise flow directly into surface waters. Failure to appropriately size storm water systems to either hold or delay conveyance of the largest predicted precipitation event will often lead to downstream flooding and the environmental and economic damages associated with flooding. As a general rule, higher densities of development, such as are found in urban areas, require greater degrees of storm water management because of the higher proportions of impervious surfaces that occur in urban centers.

Floodplains. For the purposes of this EA, floodplains are those low-elevation areas along a river or stream channel subject to flooding from rain or melting snow. The risk of flooding typically hinges on local topography, frequency of precipitation events, precipitation intensity, and size of the watershed above the floodplain. Flood potential is evaluated by the Federal Emergency Management Agency (FEMA). The 100-year floodplain is the area that has a 1 percent chance of inundation by a flood event in a given year. Certain facilities inherently pose too great a risk to be in either the 100- or 500-year floodplain, such as hospitals, schools, or storage buildings for irreplaceable records. Federal, state, and local regulations often limit floodplain development to passive uses such as recreational and preservation activities to reduce the risks to human health and safety.

EO 11988, *Floodplain Management*, requires Federal agencies to determine whether a proposed action would occur within a floodplain. This determination typically involves consultation of the appropriate floodplain survey, which contains enough general information to determine the relationship of the project area to nearby floodplains. EO 11988 directs Federal agencies to avoid floodplains unless the agency determines that there is no practicable alternative. Where the only practicable alternative is to site in a floodplain, a specific step-by-step process must be followed to comply with EO 11988. This "8-step" process is detailed in the FEMA document "Further Advice on EO 11988 Floodplain Management." The 8 steps in floodplain compliance are

1. Determine whether the action will occur in, or stimulate development in, a floodplain.
2. Receive public review/input of the Proposed Action.
3. Identify and evaluate practicable alternatives to locating in the floodplain.
4. Identify the impacts of the Proposed Action (when it occurs in a floodplain).
5. Minimize threats to life, property, and natural and beneficial floodplain values, and restore and preserve natural and beneficial floodplain values.
6. Reevaluate alternatives in light of any new information that might have become available.
7. Issue findings and a public explanation.
8. Implement the action.

Steps 1 and 3 through 6 have been undertaken as part of this EA and are further discussed in Section 4.5.2. Steps 2 and 7 will be undertaken simultaneously with public comments on this EA.

Wastewater. Wastewater treatment systems might treat sanitary sewer, industrial, or both kinds of wastes. Most systems are publicly owned treatment works. For regulatory purposes, there is a subcategory of federally owned treatment works. Wastewater treatment systems consist of a central treatment plant and a collection system of piping from waste sources. As a very general rule, treatment works are identified as primary (mechanical treatment only), secondary (mechanical and

biological treatment), or tertiary (mechanical and biological or chemical treatment). Wastewater treatment plants operate under National Pollutant Discharge Elimination System (NPDES) permits issued by USEPA or the states pursuant to the Clean Water Act (CWA). Key issues concerning wastewater systems typically involve the age of the system (either its collection system and infiltration/inflow problems or the treatment plant itself), the capacity of a treatment plant (usually expressed in millions of gallons per day), and a treatment plant's record of violations of its NPDES permit.

3.6.2 Existing Conditions

The water resources information provided below was obtained from the Niagara Falls ARS General Plan (NFARS 1998), Integrated Natural Resources Management Plan (AFRC 1998), and Storm Water Pollution Prevention Plan (SWPPP) (NFARS 2002a), unless otherwise cited.

Groundwater. The aquifers of the Lake Erie-Niagara River Basin are primarily carbonate-rock aquifers, characteristic of the Central Lowland Province of western New York. The aquifers typically produce only small to moderate amounts of water to wells. Water is stored and moves mainly in secondary fractures. Minerals in solution are calcite, dolomite, gypsum, and halite, resulting in hard and salty groundwater. Much of the groundwater contains sulfate and chloride ions in excess of 250 milligrams per liter, so quality of water is poor and deteriorates further with depth. Groundwater must be treated for most uses. Niagara Falls ARS has no active potable water wells.

Surface Water. The major surface water feature at Niagara Falls ARS is Cayuga Creek. Cayuga Creek enters the Installation from the east and flows west along the southern border of the Installation, dividing the ARS from the IAP. Ultimately, the Cayuga Creek drains into the Niagara River, upstream of the American and Horseshoe Falls as part of the Lake Erie-Niagara River Basin. Two unnamed artificial tributaries of Cayuga Creek are other important surface water features at Niagara Falls ARS. One tributary originates in the northwest portion of the Installation and flows south through the center of the Niagara Falls ARS. This tributary functions as the primary storm water conveyance, draining half of the Installation's acreage. The second tributary flows north to south along the western end of the airfield outside of the cantonment and has minimal impact on the rest of the Installation.

Storm water is collected from impervious surfaces, such as roads, airfields, and buildings and channeled to six outfalls along the Cayuga or its tributaries. The storm drainage system consists of catch basins, curb inlets, and culverts, which guide storm water through a combination of

underground storm mains, human-made tiled ditches, and natural drainage ways. A 1999 special report, *Summary of Hydrology for the Niagara Falls Air Reserve Station,* by the Buffalo District of the USACE, indicated that development along Cayuga Creek at Niagara Falls ARS only increased runoff by 0.4 percent (USACE 1999). The modeling indicated that the Installation has very little impact on peak discharge of Cayuga Creek downstream.

Niagara Falls ARS operates under the NYSDEC SPDES General Permit for Storm Water Discharges Associated with Industrial Activity permit which authorizes the discharge of storm water from the facility to "waters of the United States." Projects that require coverage under the SPDES General Permit for storm water discharges from construction activities apply for coverage separately with separate Storm Water Pollution Prevention Plans (SWPPPs) and Notices of Intent. An active SWPPP (NFARS 2002a) is currently in place to minimize the effects of storm water discharge into surface waters.

The State of New York, under USEPA authority, has recently begun the Phase II Storm Water Requirements for municipal separate storm water sewer systems within urbanized areas. The Buffalo-Niagara Falls area is considered one of these urbanized areas that will be required to develop storm water control programs (NYSDEC 2003). Under the Phase II municipal separate storm water sewer systems regulations, small construction projects (defined as more than 1 acre but less than 5 acres) need permit coverage; construction of that type was previously covered under General SPDES permits. Niagara Falls ARS wastewater is treated through Niagara County Sewer District No. 1, as discussed further in Section 3.8.2.

Floodplains. Based on the USACE floodplain survey, construction of the Fire Training Tower would take place in the 100-year floodplain and the car wash would be constructed adjacent to the floodplain. Given the extent of the floodplains, floodwaters could potentially affect many areas and functions of the Installation, particularly Taxiway A3 and the eastern end of the runway. Those localities would be completely inundated as a result of a 100-year storm event. The major tributary flowing north-south through the Installation precludes development because the immediate area is in the 100-year floodplain. Figure 3-4 illustrates the 100-year floodplain on the Installation.

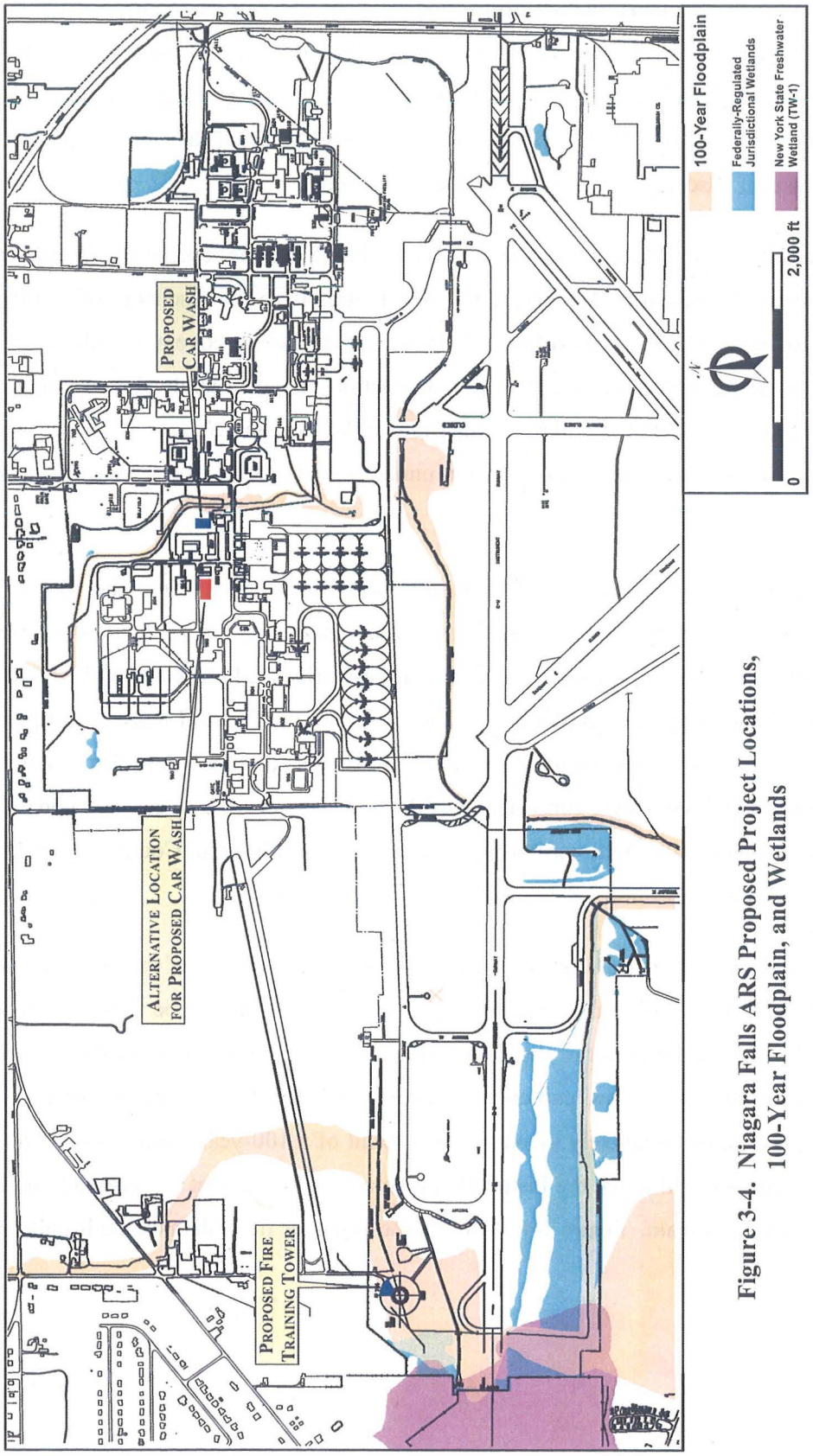

Figure 3-4. Niagara Falls ARS Proposed Project Locations, 100-Year Floodplain, and Wetlands

Wastewater. Wastewater generated by the Installation is disposed of through Niagara County Sewer District's No. 1 sanitary sewer lines and sewage treatment facility. Niagara Falls ARS's wastewater is carried off Installation via one 8-inch force main. Because the 914 AW and 107 ARW systems are tied together, all wastewater is delivered off Installation with this line. All wastewater is delivered to the District's wastewater treatment plant, where it is treated and discharged. Niagara Falls ARS does not use septic systems for the treatment and disposal of wastewater. Industrial wastes are treated through oil/water separators and grease traps which subsequently discharge directly to the sanitary sewer system for additional treatment. The Niagara Falls Sewer District's sanitary sewer collection system and sewage treatment plant are adequate to meet the wastewater treatment requirements of Niagara Falls ARS (NFARS 1998).

3.7 Biological Resources

3.7.1 Definition of the Resource

Biological resources include native or naturalized plants and animals and the habitats (i.e., wetlands, forests, and grasslands) in which they exist. Sensitive and protected biological resources include federally listed (endangered or threatened), proposed, and candidate species, and designated or proposed critical habitat; species of concern managed under Conservation Agreements or Management Plans; and state-listed species.Under the Endangered Species Act (ESA), an "endangered species" is defined as any species in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future. The USFWS recently presented an updated list of species considered candidates for possible listing under the ESA. Although candidate species receive no statutory protection under the ESA, the USFWS has attempted to advise government agencies, industry, and the public that these species are at risk and might warrant protection under the ESA in the future.

Wetlands are important natural systems and habitats because of the diverse biologic and hydrologic functions they perform. These functions include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, wildlife habitat and unique flora and fauna niche provisions, storm water attenuation and storage, sediment detention, and erosion protection. Wetlands are protected as a subset of the "waters of the United States" under Section 404 of the CWA. The term "waters of the United States" has a broad meaning under the CWA and incorporates deepwater aquatic habitats and special aquatic habitats (including wetlands). The U.S. Army Corps of Engineers (USACE) defines wetlands as "those areas that are inundated or saturated with ground

or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. In addition, EO 11990, *Protection of Wetlands*, directs Federal agencies to avoid destruction or modification of wetlands whenever there is a practicable alternative.

3.7.2 Existing Conditions

Vegetation. Most of Niagara Falls ARS is urbanized and the original vegetation has been removed or significantly altered by development, construction, landscaping, and other disturbances. Turf grasses and various broadleaf weeds are the dominate vegetation types on Niagara Falls ARS. There have been no observations made of any historically significant or unique native vegetative species occurring on the Installation. Grassland communities are the predominate habitat on the Installation which support numerous ground-nesting birds, such as the meadowlark, grasshopper sparrow, and upland sandpiper. NYSDEC has indicated that the Installation's grassland habitat has regional importance for supporting a variety of grassland bird species. Wetland communities, although limited, are another habitat type on the Installation, and are the preferred habitat for the majority of the freshwater wading bird populations in Western New York (AFRC 1998).

Wildlife. Common mammals on Niagara Falls ARS includes the beaver (*Castor Canadensis*), coyote (*Canus lutrans*), deer mouse (*Peromyscus maniculatus*), eastern cottontail rabbit (*Sylvilagus floridanus*), meadow vole (*Microtus pennsylanicus*), muskrat (*Ondatra zibethica*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), striped skunk (*Mephitis mephitis*), whitetail deer (*Odocoileus virginianus*), and woodchuck (*Marmota monax)* (NFARS 2001).

The most abundant native birds in the area include the red-winged black bird (*Agelaius phoeniceus*), European starling (*Sturnus vulgaris*), song sparrow (*Melospiza melodia*), gulls (*Larus* spp.), eastern meadowlark (*Sturnella magna*), savannah sparrow (*Passerculus sandwichensis*), rock dove (*Columbia livia*), mourning dove (*Zenaida asiatica*), killdeer (*Charadrius vociferous*), American crow (*Corvus brachyrhynchos*), and great blue heron (*Ardea herodias*). During winter months, the mallard (*Anas platyrhynchos*), American black duck (*A. rubripes*), Canada goose (*Branta canadensis*), and great blue heron (*Ardea herodias*) are observed on the Installation (NFARS 2001).

The eastern garter snake (*Thamophis sirtalis*), midland painted turtle (*Chysmys picta marginata*), northern leopard frog (*Rana pipiens*), snapping turtle (*Chelydras serpentine*), and wood frog (*Rana sylvatica*) are herptofauna commonly found on Niagara Falls ARS (NFARS 2001).

The fisheries habitat on Niagara Falls ARS consists of Cayuga Creek and its unnamed tributaries. Intermittent flow and limited aquatic habitat attribute to the relatively low value of these waterways in relation to their regional ability to support aquatic species (AFRC 1998).

Sensitive Species. No federally listed endangered, threatened, proposed, or candidate species are known to inhabit Niagara Falls ARS, and there is no critical habitat on the Installation. Two species might migrate through the Installation, the bald eagle *(Haliaeetus leucocephalus)* and piping plover *(Charadrius melodus)*. Table 3-4 lists Federal- and state-listed threatened and endangered species that occur in the vicinity of the Installation. Threatened and endangered species on Niagara Falls ARS are identified by one of the following categories: *occurs, migrates through,* or *historic range.* The term *occurs* refers to a species inhabiting the Installation on a continuing basis. The term *migrates through* refers to a species inhabiting the Installation on an indiscriminate basis. The term *historic range* is used when Federal and state agencies are unable to confirm the presence of a species on the Installation due to insufficient data, but where historical information indicates that the species previously inhabited or migrated through the area.

A 2001 inventory conducted by the USFWS found and confirmed six New York State-listed bird species on the Installation. These include the upland sandpiper *(Bartramia longicauda),* short-eared owl *(Asio flammeus)*, northern harrier *(Circus cyaneus)*, grasshopper sparrow *(Ammodramus savannarum)*, American bittern *(Botaurus lentiginosus)*, and horned lark *(Eremophila alpestris)* (NFARS 2001). Several other transient species might periodically use the Installation for roosting and/or foraging. Under Part 182 of the New York State Environmental Conservation Law, an "Endangered Species" is defined as any native species in imminent danger of extirpation or extinction in New York, or a species that is federally listed as endangered. A "Threatened Species" is defined as any native species likely to become endangered in New York within the foreseeable future, or a species that is federally listed as threatened (AFRC 1998).

Upland Sandpiper. Formerly known as the upland plover, the upland sandpiper is a slender, moderate-sized shorebird with a small head; large "shoe-button" eyes; short and thick dark brown bill; long, thin neck; long, yellowish legs; and a relatively long tail. The upland sandpiper inhabits open expanses of grassy fields, hay fields, and mown grassy strips adjacent to runways and taxiways of airports and military installations. In general, upland sandpipers forage within short vegetation and nest and rear broods within taller vegetation. Upland sandpipers are sensitive to vegetation height and might not use sites with vegetation exceeding 70 centimeters (28 inches). Pastures that receive

Table 3-4. Threatened and Endangered Species Occurring on or in the Vicinity of Niagara Falls ARS

Common Name/Scientific Name	Status		Presence on Niagara Falls ARS
	Federal	State	
Birds			
American bittern/*Botaurus lentiginosus*	NL	SC	occurs
American Peregrine falcon/*Falco peregrinus anatum*	NL	E	migrates through
Bald eagle/*Haliaeetus leucocephalus*	T	T	migrates through
Common nighthawk/*Chordelles minor*	NL	SC	migrates through
Common tern/*Sterna hirundo*	NL	T	migrates through
Grasshopper sparrow/*Ammodramus savannarum*	NL	SC	occurs
Henslow's sparrow/*Ammodramus henslowii*	NL	T	historic range
Horned lark/ *Eremophila alpestris*	NL	SC	occurs
Loggerhead shrike/*Lanius ludovicianus*	NL	E	historic range
Northern harrier/*Circus cyaneus*	NL	T	occurs
Piping plover/*Charadrius melodus*	T	E	migrates through
Red-shouldered hawk/*Buteo lineatus*	NL	SC	migrates through
Short-eared owl/*Asio flammeus*	NL	E	occurs
Upland sandpiper/*Bartramia longicauda*	NL	T	occurs
Vesper sparrow/*Pooecetes gramineus*	NL	SC	historic range
Amphibians/Reptiles			
Eastern box turtle/*terrapene Carolina*	NL	E	occurs
Northern cricket frog/*Acris crapitans*	NL	E	historic range
Mammals			
Allegheny woodrat/*Neotoma floridana*	NL	E	historic range
Indiana bat/*Myotis sodalist*	E	E	historic range

Source: AFRC 1998, NYSDEC 2004a

Notes:

E: Listed as Endangered

T: Listed as Threatened

SC: NYSDEC Species of Concern

NL: Not listed

light to moderate levels of grazing offer quality habitat for upland sandpipers. The upland sandpiper is currently experiencing population decline over much of its range, particularly in the Midwest and the eastern United States.

Upland sandpipers require several basic structural components. Habitats must be maintained at an early successional stage. Territories often contain telephone poles, fence posts, wires, or a few scattered small trees or shrubs, which are used as perches. Traditional nesting sites are often used in successive years provided that suitable habitat remains. Upland sandpipers require large home ranges. Surveys for the USFWS inventory made several sightings of this species (see Figure 3-5). Upland sandpipers were observed in survey plots near the runway. On one occurrence, two adults were displaying territorial behavior while one fledgling (unable to fly) continued to run away from the observers. No nest was found; however, repeated sightings during the breeding season suggest breeding activity on the Installation (NFARS 2001).

Short-eared Owl. Short-eared owls are medium-size owls with small ear tufts that appear as two ridges along the top of the head. They have round, beige facial disks similar to those of barn owls (NYSDEC 2004b). The breeding season for the short-eared owl usually begins in late May. Short-eared owls generally nest on the ground on dry uplands, but wetter lowlands, such as peat bogs and wetlands are occasionally used. Nests were usually in areas with vegetation 30-60 centimeter (11.8-23.6 inches) high and 2- to 8-year-old residual vegetation (Dechant, et. al. 2003b). In general, airports such as the Niagara Falls ARS provide the required openness and grassland habitat that attracts the short-eared owl for foraging, resting, roosting, and breeding (NFARS 2001). Surveys for the USFWS inventory observed six short-eared owls in 1998 in one survey plot near the runway (see Figure 3-5). These were the only sightings of this species during the survey; however, additional winter sightings have been reported on and adjacent to the Niagara Falls ARS. The USFWS inventory report suggested that the short-eared owl utilizes the Niagara Falls ARS, as well as adjacent lands, for overwintering or migratory stop-over habitat (NFARS 2001).

Northern Harrier. The northern harrier, formerly known as the marsh hawk, is a 41- to 61-cm (16- to 24-inch), slender-bodied hawk that has a long tail and wings, long yellow legs, distinct facial disks and a conspicuous white rum patch (Dechant, et al. 2003c). Northern harriers usually return to the same area to nest. The nest is built on the ground, often near low shrubs. Northern harriers prefer relatively open habitats characterized by tall, dense vegetation, and abundant residual vegetation. They use native or tame vegetation in wet or dry grasslands, fresh to alkali wetlands, lightly grazed pastures, croplands, fallow fields, oldfields, and brushy areas. Although cropland and fallow fields are used for nesting, most nests are found in undisturbed wetlands or grasslands dominated by thick vegetation (Dechant, et. al. 2003c).

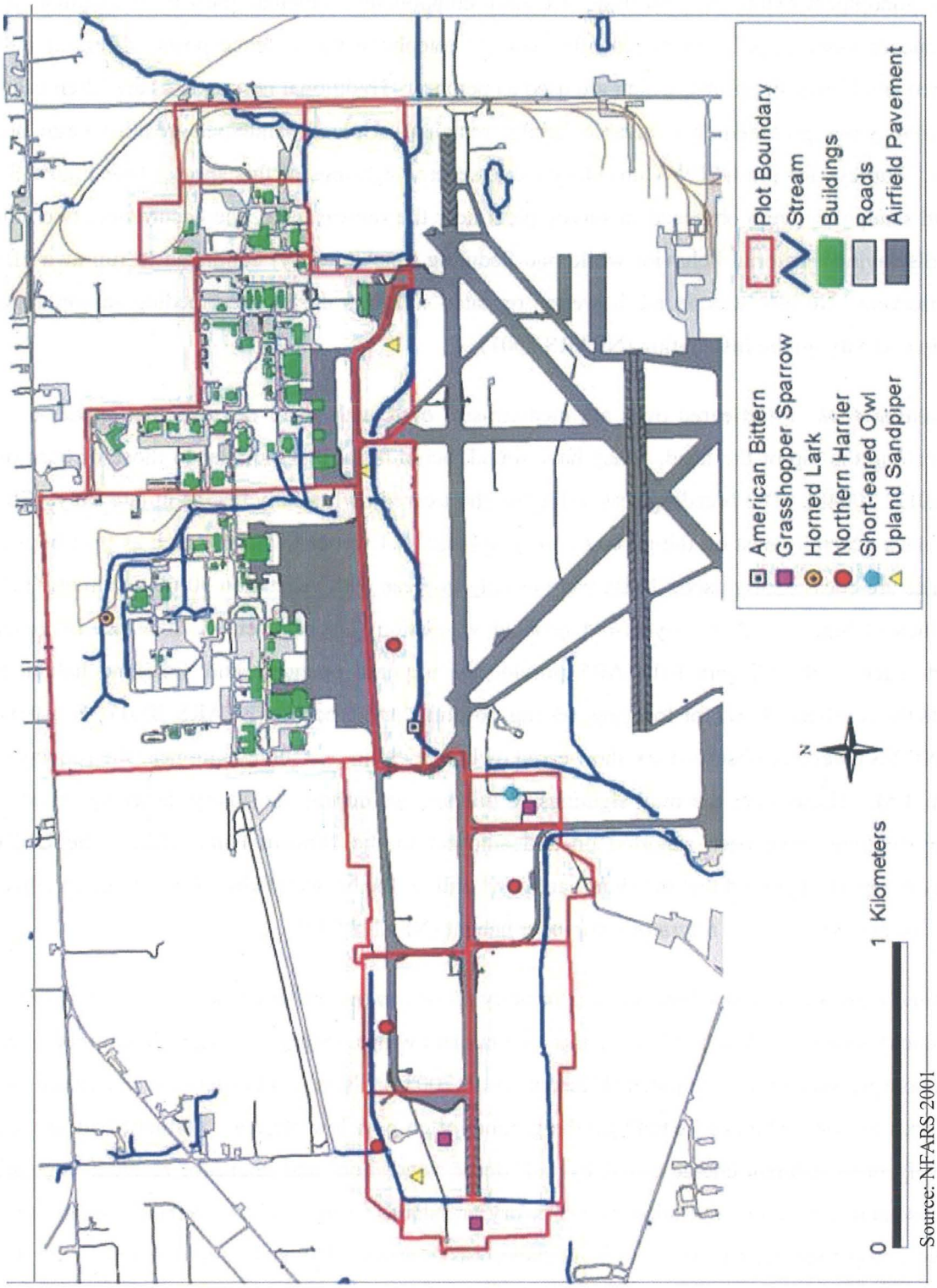

Figure 3-5. Locations of State-Threatened and -Endangered Species and Species of Concern Found on Niagara Falls ARS

Historic populations of northern harriers were considered abundant and widespread. However, declines have been observed in recent decades (Dechant, et al. 2003c). Protection of suitable habitat is the most vital need of northern harriers. Population size and reproductive success of this species are dependent upon prey populations. It is important that any management plan allows for healthy prey populations and provides habitats that are suitable for them as well (Dechant, et al. 2003c). An abundance of prey (e.g., meadow voles) at Niagara Falls ARS provides the northern harrier with the supplementary mainstay to remain on the property. The USFWS inventory report concluded that the northern harrier utilizes the Niagara Falls ARS for foraging; however, no nesting on site was confirmed (NFARS 2001).

Grasshopper Sparrow. Adult grasshopper sparrows are small, chunky, and gray-brown above, with buffy sides and breast and a short, bristly tail. The head appears flat and the crown is dark, with a pale central stripe. The bird has a white eye-ring; a yellow-orange spot can often be seen between the eye and beak. The grasshopper sparrow breeds in late May and early June and usually raises 2 or 3 broods per year (CDEP 2004a).

Grasshopper sparrows prefer grasslands of intermediate height and are often associated with clumped vegetation interspersed with patches of bare ground. Grasshoper sparrows breed in both native and tame grassland vegetation, including native prarie, pasture, hayfields, airports, and reclaimed surface mines (Dechant, et.al. 2003d). Grasshopper sparrows have steadily declined as dry, grassy uplands and farms have reverted to forests or have been replaced by developments. Protection of open, grassland areas is essential to maintaining breeding populations of grasshopper sparrows. Maintaining fields and remaining at a distance from nests can also help this species (CDEP 2004a).

Surveys for the USFWS inventory observed grasshopper sparrows on several survey plots near the runway (see Figure 3-5). The USFWS inventory report concluded that repeated sightings during the breeding season suggests breeding activity on the Niagara Falls ARS and that the grassland areas on the Niagara Falls ARS provide quality habitat for this species (NFARS 2001).

American Bittern. This large heron is most often seen when flushed from marshes. Its most easily identified by its large size—up to 34 inches tall and with a 50-inch wingspan—and its streaked brown plumage (Dechant, et al. 2003e). American bitterns nest in marshes across the northern United States and southern Canada. The American bittern is a common bird of the marshlands, but is seldom seen. American bitterns avoid annually burned, mowed, heavily grazed, and tilled areas. The American bittern is considered threatened because of the continuing disappearance of the wetland habitats it

needs to exist. Areas where American bitterns regularly nest need to be identified and, where possible, protected from development (Dechant, et al. 2003e). Surveys for the USFWS inventory observed the American bittern once in a survey plot near Cayuga Creek (see Figure 3-5). The USFWS inventory report concluded that this limited sighting indicates infrequent, transient use by the species (NFARS 2001).

Horned Lark. The brownish horned lark is best identified by its very distinctive head pattern: black "horns" (feather tufts), a white or yellowish face and throat, a broad black stripe under the eye, and a black bib. Horned lark populations have steadily declined as dry, open uplands have reverted to forests or have been destroyed by development. As with other ground-nesting birds, high populations of predators, such as raccoons, skunks, and housecats, have also contributed to the decline of this species. Protection of open grassland and agricultural areas is essential to conserving breeding populations of horned larks. Maintaining fields, both inland and along coastlines, and keeping a safe distance from horned lark nests will help protect this species (CDEP 2004b).

Wetlands. Wetlands are protected in New York State under Article 24 of the New York Environmental Conservation Law, commonly known as the Freshwater Wetlands Act (the Act or Article 24). Freshwater wetlands, as defined by the Act, are wetland areas 12.4 acres or larger (except under special circumstances). The Act protects the wetland and 100 feet of protective buffer surrounding it (AFRC 1998).

An emergent marsh/shrub wetland covering 72 acres west of the Niagara Falls IAP main runway was delineated in 1992 by the NYSDEC. A small portion of this New York State wetland is on Niagara Falls ARS property. Currently, Niagara Falls ARS has a permit (Permit 90-87-0946) from NYSDEC for management of this wetland area and its 100-foot buffer west of Runway 10L-28R. This permit allows the 914 AW to remove emergent trees and brush and to periodically mow approximately 4 acres of the wetland and its 100-foot buffer zone within the Installation boundaries (AFRC 1998).

A July 1997 survey of the acreage at Niagara Falls ARS identified approximately 38 acres of Jurisdictional Wetlands or Waters on the Installation. In August 2002, the USFWS performed a reevaluation of wetland boundaries and assessment of wetland values and functions on Niagara Falls ARS (USFWS 2003). The wetlands were mapped in similar locations to those mapped in the 1997 survey, though the exact location of the boundaries had shifted. This shift could be due to differences in the time of year the survey was conducted, ongoing maintenance and development on the Installation, and meteorological conditions (severe drought conditions were encountered during the

2002 survey) (USFWS 2003). Research and field delineation revealed that there are currently nine Federal jurisdictional wetlands covering approximately 37.47 acres on Niagara Falls ARS.

3.8 Infrastructure

3.8.1 Definition of the Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as "urban" or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to the economic growth of an area. The infrastructure components to be discussed in this section include transportation systems, utilities (electrical power, natural gas, and water supply), solid waste, and sanitary systems. The Proposed Action would not result in any changes to Niagara Falls ARS central heating systems, communications systems, or Pollution Prevention programs.

Solid waste management primarily concerns itself with the availability of landfills to support a population's residential, commercial, and industrial needs. Alternative means of waste disposal might involve waste-to-energy programs or incineration. In some localities, landfills are designed specifically for, and limited to, disposal of C&D debris. Recycling programs for various waste categories (e.g., glass, metals, and papers) reduce reliance of landfills for disposal.

3.8.2 Existing Conditions

Water Supply. The primary source from which the Installation obtains its potable water is from the City of Niagara Falls, with the Town of Wheatfield serving as a secondary source. Niagara Falls ARS has no active potable water wells. Potable water consumption at Niagara Falls ARS averages approximately 1.72 million gallons per month. The Installation's potable water, from the Niagara River, is pretreated before it is conveyed to Niagara Falls ARS. The Installation does not provide any additional treatment to the potable water supply prior to consumption. This system meets all USEPA potable water standards. There are no reported problems of potable water quality (NFARS 1998).

The Installation's potable water system is also used for fire protection and suppression. Fire suppression capability is supplemented by a 150,000-gallon ground-level reservoir and three diesel pumps. This reservoir supports fire suppression for four aircraft maintenance hangars used by the 914 AW and the 107 ARW. Fire hydrants are provided at regular intervals on the potable water-distribution system throughout the Installation (NFARS 1998).

Natural Gas. National Fuel Gas Company is the natural gas provider for Niagara Falls ARS. The USAF owns and maintains all gas lines on the Installation. Niagara Falls ARS assumes maintenance responsibility for any line that is 2 inches or less or is within 5 feet of a building on the Installation. There is no storage facility for natural gas on the Installation. National Fuel Gas provides uninterrupted service to the Installation, and utility personnel indicate that historically there have been no capacity or supply hindrances. The gas supply system is sufficient for current needs and requirements (NFARS 1998). Natural gas is the primary heating source for Installation facilities. Natural gas supplies both Installation heating plants in addition to fueling natural gas-fired furnaces for steam boilers and radiant heat systems within individual facilities (NFARS 1998).

Electricity. The Niagara Mohawk Power Corporation (Niagara Mohawk) is the purveyor of electricity for Niagara Falls ARS. Niagara Mohawk owns and maintains all off-Installation equipment. Niagara Falls ARS owns and maintains the system once it crosses into the Installation boundary. Mission-critical facilities are equipped with emergency generators in the event of unplanned commercial power outages. Niagara Mohawk supplies electrical power to Niagara Falls ARS through two incoming electrical supply lines. The looped system consists of aboveground mounted power lines and copper laterals. The 107 ARW and the 914 AW electrical distribution systems are separated by a switch that is maintained by Niagara Mohawk on the same circuit (NFARS 1998).

Transportation Network. Vehicular access to Niagara Falls ARS is provided at three points. The Main Gate, supporting the highest traffic volume, is off Lockport Road. Two alternate access points are provided at the eastern and western perimeters of the Installation. Access to the Installation is provided by the arterial Lockport Road. The three collector roads, Tuscarora Road, Ent Avenue, and Walmore Road extend from Lockport Road. Ent Avenue is the main entrance to the Installation and experiences the highest traffic volumes. Once inside the Installation, primary roads provide circulation (NFARS 1998).

Solid Waste. Wastes disposed of in the solid waste stream at Niagara Falls ARS are expected to consist only of those materials that cannot be effectively recycled. This commonly includes paper towels and other sanitary wastes, food-soiled wrappings and packaging, most food wastes, plastic bags and wrappings, nonrecyclable C&D wastes, and other miscellaneous nonrecyclable materials from administrative, industrial, food-service, and retail operations. Modern Disposal Services, Inc. handles collection, transportation, and disposal of refuse at Niagara Falls ARS. This refuse is

disposed of in a nearby landfill, typically one belonging to Modern Disposal Services, Inc. Niagara Falls ARS does not operate a solid waste landfill on the Installation (NFARS 1998).

C&D waste and nonrecurring municipal solid waste (MSW) generated under contract are the responsibility of the contractor. C&D waste and nonrecurring MSW generated under contract or by Installation personnel are recycled to the greatest extent possible. Contractors are required to report the quantities of recycled C&D waste. Specifications in these contracts require contractors to provide information regarding the disposition of the waste they generate. Nonrecyclable C&D waste is collected in two C&D dumpsters, one for the 914 AW and one for the 107 ARW.

3.9 Hazardous Materials and Waste

3.9.1 Definition of the Resource

AFPD 32-70, *Environmental Quality*, establishes the policy that the USAF is committed to

- Cleaning up environmental damage resulting from its past activities
- Meeting all environmental standards applicable to its present operations
- Planning its future activities to minimize environmental impacts
- Managing responsibly the irreplaceable natural and cultural resources it holds in public trust
- Eliminating pollution from its activities wherever possible

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act, and the Toxic Substances Control Act define hazardous materials. Hazardous material is defined as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that could cause an increase in mortality, serious irreversible illness, or incapacitating reversible illness: or that could pose a substantial threat to human health or the environment.

The Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA), which was further amended by the Hazardous and Solid Waste Amendments, defines hazardous wastes. Hazardous waste is defined as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that pose a substantial present or potential hazard to human health or the environment.

Evaluation of hazardous materials and wastes focuses on underground and aboveground storage tanks and the storage, transport, and use of pesticides and herbicides, fuels, and Petroleum, Oil, and

Lubricants (POL). Evaluation can also extend to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of a proposed action. In addition to being a threat to humans, the improper release of hazardous materials and wastes can threaten the health and well-being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of hazardous materials or wastes, the extent of contamination varies based on type of soil, topography, and water resources.

Through its Environmental Restoration Program (ERP), DOD evaluates and cleans up sites where hazardous wastes have been spilled or released to the environment. ERP, formerly known as the Installation Restoration Program, is a subcomponent of the Defense Environmental Restoration Program that became law under Superfund Amendments and Reauthorization Act. ERP provides a uniform, thorough methodology to evaluate past disposal sites, to control the migration of contaminants, to minimize potential hazards to human health and the environment, and to clean up contamination. It also aids in identification of properties and their usefulness for given purposes (e.g., activities dependent on groundwater usage might be foreclosed where a groundwater contaminant plume remains to complete remediation).

3.9.2 Existing Conditions

Asbestos-Containing Materials and Lead-Based Paint. The Proposed Action would not involve Asbestos-containing materials (ACM) or lead-based paint (LBP) at Niagara Falls ARS. Specifications for proposed construction and USAF regulations prohibit the use of ACM and LBP for new construction.

Hazardous Materials. AFI 32-7086, *Hazardous Materials Management*, establishes procedures and standards that govern management of hazardous materials throughout the USAF. It applies to all USAF personnel who authorize, procure, issue, use, or dispose of hazardous materials, and to those who manage, monitor, or track any of those activities. Hazardous and toxic material procurements at the Niagara Falls ARS are approved and tracked by the 914 AW Commander. The Environmental Management Office at Niagara Falls ARS supports and monitors environmental permits, hazardous material and hazardous wastes storage, spill prevention and response, and participation on the Installation Environmental Protection Committee.

Hazardous Waste. Hazardous waste generated within the State of New York must be managed in accordance with USEPA, State of New York, and USAF regulatory requirements. The 914 AW maintains a *Hazardous Waste Management Plan* (NFARS 2002b) as directed by AFI 32-7042, *Solid*

and Hazardous Waste Compliance. This plan prescribes the roles and responsibilities of all members of Niagara Falls ARS with respect to the waste stream inventory, waste analysis plan, hazardous waste management procedures, training, emergency response, and pollution prevention. The plan establishes the procedures to comply with applicable Federal, state, and local standards for solid waste and hazardous waste management.

Niagara Falls ARS is a large quantity generator, which is defined by RCRA as a generator who generates greater than 1,000 kilograms per month of hazardous waste. All organizations on the Installation are considered one generator for purposes of determining the quantity of hazardous wastes generated monthly. A large quantity generator may accumulate hazardous wastes on site for up to 90 days without a permit. A USEPA identification number has been assigned to the 914 AW and 107 ARW on Niagara Falls ARS for use in tracking hazardous waste once it leaves the Installation. It is the responsibility of hazardous wastes generators to ensure that their hazardous waste is transferred daily to a designated accumulation point.

The 914 AW has a central storage area (CSA) for the storage of hazardous wastes for less than 90 days before they are transported off site for proper handling. Individual shops manage wastes at satellite or initial accumulation points before transporting the wastes to the CSA. Processes generating hazardous wastes on Niagara Falls ARS include aircraft and vehicle maintenance, parts cleaning, support equipment maintenance, general facility maintenance, painting, nondestructive inspection, weapons training and cleaning, and expired shelf-life chemicals.

Hazardous waste is temporarily accumulated and stored at Niagara Falls ARS at either hazardous wastes accumulation points or the 90-day CSA. Wastes may be stored at the CSA for up to 1 year, and hazardous wastes must be shipped to a permitted Treatment, Storage, or Disposal Facility or to a facility that has interim status within 90 days of receipt at the CSA. Niagara Falls ARS uses the DOD-operated Defense Reutilization and Marketing Office in Portsmouth, New Hampshire, for transfer of the majority of its hazardous waste to a permitted treatment, storage, or disposal facility.

Environmental Restoration Program. Niagara Falls ARS began its ERP in 1983. The evaluation process consisted of a Phase I Records Search to identify potential sites of concern, which warranted further investigation. In accordance with USAF policy, all ERP sites at the Installation are addressed in a manner consistent with the CERCLA process. None of the sites are on the National Priorities List (NFARS 1998).

Niagara Falls ARS has 14 ERP sites identified through a rigorous process of site evaluation (see Figure 3-6). Some of these 14 sites encompass areas of potential soil and groundwater contamination stemming from past waste management practices or accidental releases (NFARS 1998). Of the 14 sites, No Further Response Action Planned decision documents have been completed and approved for four sites: 6, 11, 12, and 13. Of the remaining sites, long-term groundwater monitoring is under way at Sites 1, 2, 4, 5, 7, 8, and 9. Remedial designs involving groundwater extraction and discharge have been developed for sites 3, 10, and 13. Any proposed alteration on an area designated as an ERP site needs a waiver from Headquarters AFRC (NFARS 1998).

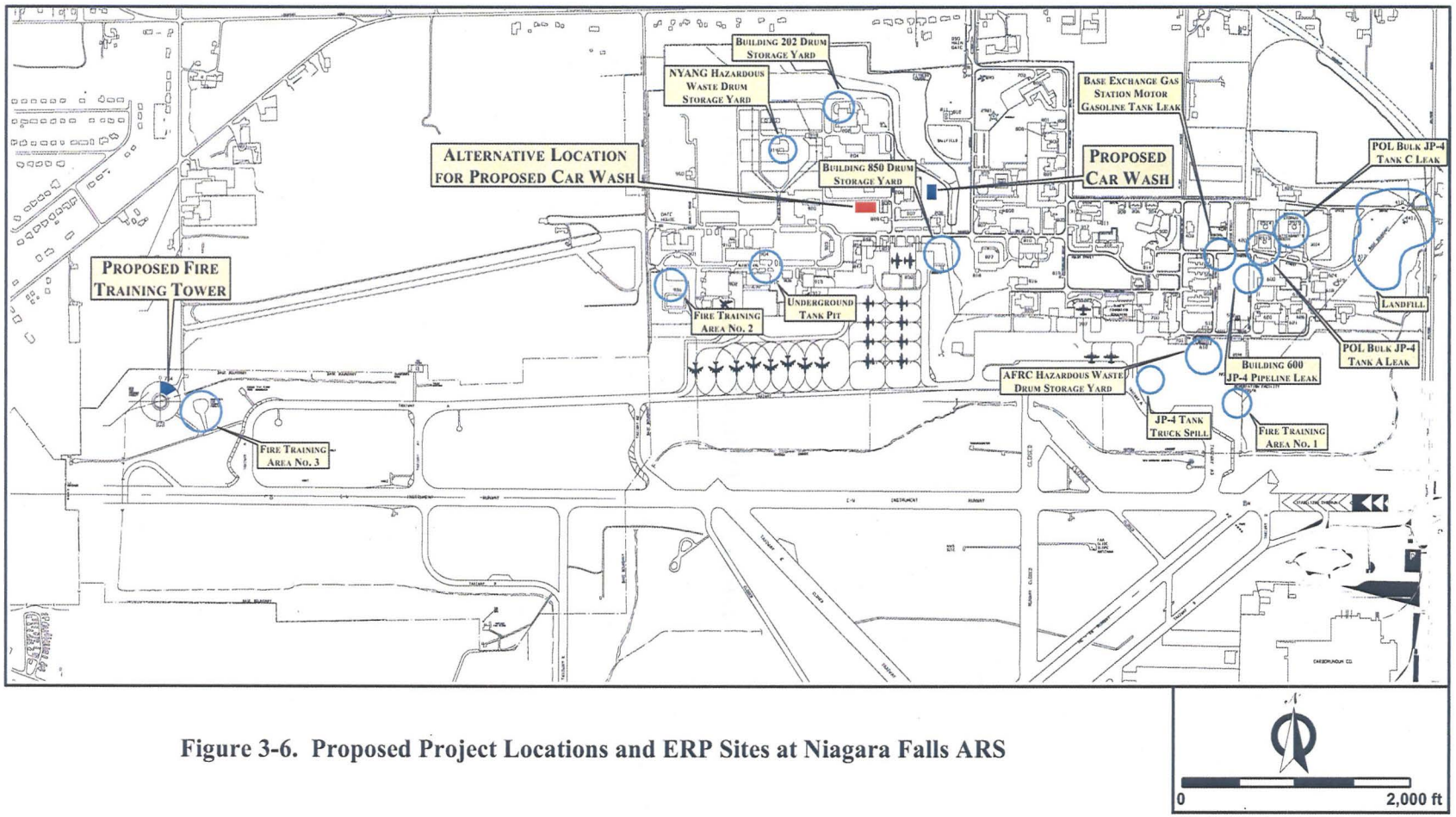

Figure 3-6. Proposed Project Locations and ERP Sites at Niagara Falls ARS

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4. Environmental Consequences

Section 4 presents an evaluation of the environmental impacts that might result from implementing the Proposed Action, alternatives, or the No Action Alternative. This section focuses on impacts considered potentially significant. The general approach followed throughout this section is to describe briefly the range of impacts that would occur and then provide a discussion of impacts that are considered significant.

The EA analysis includes direct, indirect, and cumulative impacts. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Cumulative effects are impacts that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7). The cumulative impact analysis is provided in Section 5.0 of this EA.

The specific criteria for determining the significance of impacts and assumption for the analyses are presented under each resource area. Significance criteria for most potential impacts were obtained from standard criteria; Federal, state, or local agency guidelines and requirements; or legislative criteria. Long-term implications of the Proposed Action are also presented in this section.

The significance of an action is measured in terms of its context and intensity. The extent to which a proposed action might affect an environmental resource depends on many factors. In some cases, environmental resources might be affected directly; in others, they might be affected indirectly; and in some cases, not affected at all. The significance of an action is analyzed in several contexts, such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance might vary with the setting of a proposed action.

Intensity refers to the severity of impact. Impacts might be beneficial or adverse. Consideration must be given to whether an impact affects public health or safety and whether it affects areas with unique characteristics, such as historical or cultural resources, wetlands, or ecologically critical areas. The significance of impacts might also depend on the degree of their being controversial or posing highly uncertain, unique, or unknown risks. Significance might be found where an action sets a precedent for future actions with significant impacts, as well as in cases involving cumulative impacts. In considering intensity, consideration must be given to the degree to which the action could adversely

affect animal or plant species listed as endangered or threatened or their habitat. Finally, in evaluating intensity, consideration must be given to whether an action threatens a violation of a law or regulation imposed for the protection of the environment.

4.1 Noise

4.1.1 Significance Criteria

Noise impact analyses typically evaluate potential changes to existing noise environments that would result from implementation of a proposed action. Potential changes in the noise environment can be beneficial (i.e., if they reduce the number of sensitive receptors exposed to unacceptable noise levels), negligible (i.e., if the total area exposed to unacceptable noise levels is essentially unchanged), or adverse (i.e., if they result in increased noise exposure to unacceptable noise levels). The USAF establishes guidelines and develops cooperative agreements to mitigate impacts on neighboring communities. Federal and state laws and local ordinances establish standards and limitations for noise output from airfields, heliports, helipads, power-generating plants, and motor vehicles. AFRC activities are operated in accordance with all Federal and state laws and local ordinances.

Noise impact criteria normally are based on a combination of land use compatibility guidelines and factors related to duration and magnitude of the noise level, including the time of day and the conduct of operations.

4.1.2 Proposed Action

Fire Training Tower. Operation of the Fire Training Tower would have minor, short-term, direct impacts to the environment from the equipment used in the training session (e.g., pumper trucks and other auxiliary equipment). Each training session is estimated to last about four to six hours, 4 times per month between May and October. The Fire Training Tower is nearly 4,000 feet away from the majority of the Installation's operations. The proposed Fire Training Tower would be at the end of the runway nearly 1 mile away from the majority of the Installations routine activities, and would generally not have an effect on personnel. For these reasons, these operations would produce minimal noise annoyances. The proposed Fire Training Tower would not subject firefighters to noise levels higher than are currently experienced under occupational situations.

Construction activities associated with the Proposed Action would have short-term, minor, direct impacts from the use of heavy equipment. These activities would occur in fiscal year 2005. Construction workers would be exposed to high noise levels during construction. Implementation of

the Proposed Action would have minor, temporary direct effects on the noise environment near the project site resulting from the use of heavy equipment during construction activities. No indirect impacts are expected.

Car Wash. The operation of the car wash would have occasional short-term, direct impacts from the automatic car wash dryer and self-service vacuum (approximately 90 dBA of noise emissions). The automatic car wash with dryer would be the primary source of emissions. The approximate duration of the Mark VII® GT-700 is 2 minutes 30 seconds; the GT-500 nearly 3 minutes. The majority of the noise would be incurred at the exit of the car wash when the dryer feature is utilized for approximately 20 seconds. The automatic car wash would not require occupants of the vehicle to exit.

Depending on which model of dryer is chosen for the automatic car wash, the highest volume of noise measured could be between 84 dBA and 92 dBA; measured at 10 feet. This measurement was taken outside the car. The Proposed Action would use the Mark VII Brand with American Fan 20 horsepower onboard blower. According to 2004 Study, at a 10 foot distance, this dryer was measured at 85 dBA. To reduce the noise produced by the blower, the Proposed Action would include the addition of "Ultimate Air Doors." These polycarbonate doors have been tested to reduce the noise from 24 to 31 dBA at 5 feet, depending on the door's thickness. Assuming the least amount of noise dampening, the car wash blower would be approximately 61 dBA; usually no restrictions are recommended in noise zones below 65dBA. Therefore no long-term, significant exposure would be expected. Additionally, before a blower is chosen, Niagara Falls ARS and the contractor for the car wash will consider the use of newer, quieter blowers, if any have been invented before implementation of the Proposed Action.

Short-term, minor, direct impacts would also occur during the construetion and repaving activities associated with the Proposed Action from the use of heavy equipment. These activities would occur in fiscal year 2005. Construction workers would be exposed to high noise levels during construction. The nearby facilities would experience muffled construction noise during the workday. However, noise generation would last only for the duration of construction activities, and could be reduced by equipment exhaust mufflers and restriction of construction activity to normal working hours (i.e., between 7:00 a.m. and 5:00 p.m.). Noise produced by construction at the sites would not affect sensitive receptors on or off the Installation. The noise environment on the Installation is dominated by military aircraft overflights so noise associated with construction activities would be

comparatively minor. The noise produced by aircraft activities would not change under the Proposed Action.

4.1.3 Alternative Location of Car Wash

Operation of the car wash at the alternative location would be not produce additional operational noise compared to the Proposed Action. Additional paving (1,000 ft^2) would be required so construction noise would last longer compared to the length of time required for the Proposed Action.

4.2 Land Use

4.2.1 Significance Criteria

The significance of potential land use impacts is based on the level of land use sensitivity in areas affected by a proposed action and compatibility of proposed actions with existing conditions. In general, a land use impact would be significant if it were to

- Be inconsistent or in noncompliance with existing land use plans or policies
- Preclude the viability of existing land use
- Preclude continued use or occupation of an area
- Be incompatible with adjacent land use to the extent that public health or safety is threatened
- Conflict with planning criteria established to ensure the safety and protection of human life and property.

Most of the changes to the Installation's development pattern involve the consolidation of land use pockets to form larger land use areas yielding greater future development potential. Emphasis was also placed on preserving the 100-year floodplain and wetland areas by designating these sites as either open space or outdoor recreation areas. The key to successfully developing Niagara Falls ARS will be the identification and consolidation of compatible activities and the continued use of land use areas as opposed to individually sited facilities.

4.2.2 Proposed Action

Implementation of the Proposed Action has the potential for direct and indirect minor adverse effects on land use. Direct impacts from the Proposed Action include converting land designated as "open land" to developed "Aircraft O&M" (see Figure 3-3). The parcels of land have been designated as "open land" due to its proximity to the 100-year floodplain.

The Proposed Action has the potential to increase storm water runoff from the creation of impervious surfaces. Since the type of land use is a factor in the amount of runoff from a watershed, changes in the land use will change the runoff. However, Niagara Falls ARS has a no net runoff requirement as part of the SWPPP. Based on the results of the USACE hydrology study, development at Niagara Falls ARS would not add a significant area of impervious surfaces that would affect downstream water quality (see section 4.5.2 for further discussion on SWPPP practices used to reduce runoff amounts). Therefore, the Proposed Action would cause minor impacts to land use.

Fire Training Tower. The proposed Fire Training Tower would be constructed at the Installation's existing search-and-rescue and fire training area. This land is disturbed from firefighting activities and exercises and is completely covered by gravel. There would be minimal additional disturbance to this area. Although in a floodplain, the preferred location of the Fire Training Tower would be consistent with the current land use. Therefore, there would be no impact on land use under the Proposed Action. Impacts associated with construction would include temporary disruption of land uses due to elevated noise levels, increased dust, interference with roadway access and visual effects.

Car Wash. Implementation of the Proposed Action would have minor, direct impacts on land use on the Installation. The proposed location is adjacent to a developed area. Impacts associated with construction would include temporary disruption of land uses due to elevated noise levels, increased dust, interference with roadway access and visual effects. The installation of utilities, such as power, water, and sanitary sewer, could temporarily indirectly affect land uses. Minor adverse effects would be expected as a result of the Proposed Action.

4.2.3 Alternative Location of Car Wash

If the alternative location for the car wash were implemented, an existing undeveloped mowed field in the Installation's commercial area would be converted to a developed commercial area. Impacts associated with construction would include temporary disruption of land uses due to elevated noise levels, increased dust, interference with roadway access and visual effects. The installation of utilities, such as power, water, and sanitary sewer, could temporarily indirectly affect land uses. Minor adverse effects would be expected as a result of the alternative action.

4.3 Air Quality

4.3.1 Significance Criteria

The environmental consequences to local and regional air quality conditions near a proposed Federal action are determined based on the increases in regulated pollutant emissions relative to existing conditions and ambient air quality. Specifically, the impact in NAAQS "attainment" areas would be considered significant if the net increases in pollutant emissions from the Federal action would result in any one of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Expose sensitive receptors to substantially increased pollutant concentrations
- Represent an increase of 10 percent or more in an affected AQCR emissions inventory
- Exceed any Evaluation Criteria established by a State Implementation Plan (SIP)

Effects on air quality in NAAQS "nonattainment" areas are considered significant if the net changes in project-related pollutant emissions result in any of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Increase the frequency or severity of a violation of any ambient air quality standard
- Delay the attainment of any standard or other milestone contained in the SIP

With respect to the General Conformity Rule, effects on air quality would be considered significant if the proposed Federal action would result in an increase of a nonattainment or maintenance area's emissions inventory by 10 percent or more for one or more nonattainment pollutants, or if such emissions exceed *de minimis* threshold levels established in 40 CFR 93.153(b) for individual nonattainment pollutants or for pollutants for which the area has been redesignated as a maintenance area.

The *de minimis* threshold emissions rates were established by USEPA in the General Conformity Rule to focus analysis requirements on those Federal actions with the potential to have "significant" air quality impacts. Table 4-1 presents these thresholds, by regulated pollutant. These *de minimis* thresholds are similar, in most cases, to the definitions for major stationary sources of criteria and precursors to criteria pollutants under the CAA's New Source Review (NSR) Program (CAA Title I). As shown in Table 4-1, *de minimis* thresholds vary depending upon the severity of the nonattainment area classification.

Table 4-1. General Conformity *de minimis* Emission Thresholds

Pollutant	Status	Classification	*de minimis* Limit (tpy)
O_3 (measured as NO_x or VOCs)	Nonattainment	Extreme	10
		Severe	25
		Serious	50
		Moderate/marginal (inside ozone transport region)	50 (VOCs)/100 (NO_x)
		All others	100
	Maintenance	Inside ozone transport region	50 (VOCs)/100 (NO_x)
		Outside ozone transport region	100
CO	Nonattainment/ maintenance	All	100
PM_{10}	Nonattainment/ maintenance	Serious	70
		Moderate	100
		Not Applicable	100
SO_2	Nonattainment/ maintenance	Not Applicable	100
NO_x	Nonattainment/ maintenance	Not Applicable	100

Source: 40 CFR 93.153

These *de minimis* thresholds are similar, in most cases, to the definitions for major stationary sources of criteria and precursors to criteria pollutants under the CAA's New Source Review (NSR) Program (CAA Title I). The *de minimis* thresholds vary depending on the severity of the nonattainment area classification.

In addition to the *de minimis* emissions thresholds, Federal Prevention of Significant Deterioration (PSD) regulations define air pollutant emissions to be significant if the source is within 10 kilometers of any Class I area, and emissions would cause an increase in the concentration of any regulated pollutant in the Class I area of 1 $\mu g/m^3$ or more (40 CFR 52.21(b)(23)(iii)).

4.3.2 Proposed Action

No long-term air quality effects are expected from the Proposed Action. The Proposed Action would have short-term, minor, direct adverse effects to air quality during construction and negligible, short-term, direct impacts during operation. Regulated pollutant emissions from the Proposed Action would not contribute to or affect local or regional attainment status with NAAQS. The Proposed Action would generate air pollutant emissions as a result of grading, filling, compacting, demolition,

and construction operations, but these emissions would be temporary and would not be expected to generate any off-site effects.

The construction projects would generate TSP and PM_{10} emissions as fugitive dust from ground-disturbing activities (e.g., grading, demolition, soil piles) and combustion of fuels in construction equipment. Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity.

Fugitive dust emissions for various construction activities were calculated using emissions factors and assumptions published in USEPA's AP-42 Section 11.9 dated October 1998 and Section 13.2 dated December 2003. These estimates assume that 230 working days are available per year for construction (accounting for weekends, weather, and holidays). The average soil percent moisture was estimated to be 60 percent, which is based upon a ratio of the calculated soil moisture to the maximum soil moisture for the region (NOAA 2005). Wind speed of greater than 12 miles per hour is recorded an estimated 40 percent of the time, which is based on average wind rose data and measured speed for the Buffalo, New York area near Niagara Falls ARS (NRCS 2003).

Construction operations would also result in emissions of criteria pollutants as combustion products from construction equipment, as well as evaporative emissions from architectural coatings and asphalt paving operations. These emissions would be of a temporary nature. The emissions factors and estimates were generated based on guidance provided in *Guide to Air Quality Assessment* from the Sacramento Metropolitan Air Quality Management District (SMAQMD 1994).

For purposes of this analysis, the project duration and affected project site area that would be disturbed (presented in Section 2.0) was used to estimate fugitive dust and all other criteria pollutant emissions. The construction emissions presented in Table 4-2 include the estimated annual construction PM_{10} emissions associated with the Proposed Action at Niagara Falls ARS. These emissions would produce slightly elevated short-term PM_{10} ambient air concentrations. However, the effects would be temporary, and would fall off rapidly with distance from the proposed construction site.

Specific information describing the types of construction equipment required for a specific task, the hours the equipment is operated, and the operating conditions vary widely from project to project. For purposes of analysis, these parameters were estimated using established methodologies for

construction and experience with similar types of construction projects. Combustion by-product emissions from construction equipment exhausts were estimated using USEPA's AP-42 emissions factors for heavy-duty, diesel-powered construction equipment.

Table 4-2. Annual Construction Emissions Estimates from the Proposed Action

	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_x (tpy)	PM_{10} (tpy)
Calendar Year 2005	8.28	1.38	10.35	0.22	0.77
Calendar Year 2006	7.70	1.26	9.30	0.22	0.69

tpy: tons per year

The construction emissions presented in Table 4-2 include the estimated annual emissions from construction equipment exhaust associated with the Proposed Action. As with fugitive dust emissions, combustion emissions would produce slightly elevated air pollutant concentrations. Early phases of construction projects involve heavier diesel equipment and earthmoving, resulting in higher NO_x and PM_{10} emissions. Later phases of construction projects involve more light gasoline equipment and surface coating, resulting in more CO and VOC emissions. However, the effects would be temporary, fall off rapidly with distance from the proposed construction site, and would not result in any long-term effects. Emission estimates were based on the assumption that the Proposed Action would be completed over a 2-year period from Calendar Year (CY) 2005-2006. It was assumed that during CY 2005, 100 percent of the existing pavement would be demolished and 50 percent of the building construction would occur, and that during CY 2006, 100 percent of the paving and the remaining 50 percent of the building construction would occur.

Since Niagara Falls ARS is within a nonattainment area for O_3, General Conformity Rule requirements are applicable. However, as shown in Table 4-2, the Proposed Action would generate emissions well below conformity *de minimis* limits as specified in 40 CFR 93.153. This is true evien if all construction occurred within the same year. Therefore, the Proposed Action would not trigger the requirement to prepare a conformity determination report to demonstrate conformity with the General Conformity Rule. Also, since the emissions generated would be below *de minimis* levels, it is reasonable to assume that the temporary construction emissions caused by the Proposed Action would not cause a violation of the NAAQS. In summary, no significant impact on regional or local air quality would result from implementation of the Proposed Action. Appendix C details the emissions factors, calculations, and estimates of construction-related emissions for the Proposed Action.

Local and regional pollutant effects resulting from direct and indirect emissions from stationary emissions sources under the Proposed Action are addressed through Federal and state permitting program requirements under NSR regulations (40 CFR Parts 51 and 52).

4.3.3 Alternative Location for Car Wash

Impacts on air quality under the alternative action would be similar to the Proposed Action. However, under the alternate action, there would be an additional 1000 ft^2 of pavement. The additional pavement would result in a negligible increase in construction emissions.

4.4 Safety

4.4.1 Significance Criteria

Impacts were assessed based on direct effects from construction activities, as well as secondary effects, such as environmental contamination. The extent of these secondary effects is situationally dependent and difficult to quantify.

4.4.2 Proposed Action

Fire Training Tower. The proposed Fire Training Tower would have a beneficial, direct impact to safety through improved Fire Fighter training. The operation of the Fire Training Tower would comply with AFI 32-2001, which implements AFPD 32-20, DOD Instruction 6055.6, OSHA, and National Fire and Protection Associations standards. Short-term, minor adverse effects on safety would be expected from construction of the Fire Training Tower. Implementation of the Proposed Action would slightly increase the short-term risk associated with construction contractors performing work at Niagara Falls ARS during the normal workday because the level of such activity would increase. Contractors would be required to establish and maintain safety programs. Projects associated with the Proposed Action would not pose a safety risk to Installation personnel or to activities at the Installation.

Car Wash. Operation of the car wash would have negligible adverse effects to user safety from potential slips or falls while using the car wash. The self-service bays of the car wash would have thermostatically controlled heated floors to prevent freezing of discharged water in the winter months. The automatic bay would heated by a radiant heater. Due to the nature of the car wash, much of the area would be wet, which is generally known to increase the possibility of slips, trips, and falls. During the winter months, the paved area near the car wash might experience icing from water tracked out of the car wash. The car wash area would be graded as much as possible to augment

drainage to help prevent standing water. Persons using the manual car wash bays might be at higher risk for slips, trips, and falls because of the wet floor.

Short-term, minor adverse effects on safety would be expected from car wash construction activities. Implementation of the Proposed Action would slightly increase the short-term risk associated with construction contractors performing work at Niagara Falls ARS during the normal workday because the level of such activity would increase. Contractors would be required to establish and maintain safety programs. Projects associated with the Proposed Action would not pose a safety risk to Installation personnel or to activities at the Installation.

4.4.3 Alternative Car Wash Location

Impacts on safety from constructing and operating a car wash at the Alternative location would be identical to the Proposed Action.

4.5 Geological Resources

4.5.1 Significance Criteria

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential impacts of a proposed action on geological resources. Generally, impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering design are incorporated into project development.

Analysis of potential impacts on geological resources typically includes

- Identification and description of resources that could potentially be affected.
- Examination of a proposed action and the potential effects this action might have to the resource.
- Assessment of the significance of potential impacts.
- Provision of mitigation measures in the event that potentially significant impacts are identified.

4.5.2 Proposed Action

Fire Training Tower and Car Wash. Operation of the Fire Training Tower and car wash would have minor, long-term adverse effects on geological resources (soils).

Construction activities for the Proposed Action, such as grading, excavating, and recontouring of the soil, would result in soil disturbance. Implementation of best management practices during construction would limit potential impacts resulting from construction activities. Fugitive dust from construction activities would be minimized by watering and soil stockpiling, thereby reducing to negligible levels the total amount of soil exposed. Standard erosion controls (such as silt fencing, sediment traps, application of water sprays, and revegetation at disturbed areas) would also reduce potential impacts related to these characteristics. Niagara Falls ARS operates under the NYSDEC SPDES General Permit for Storm Water Discharges Associated with Industrial Activity permit which authorizes the discharge of storm water from the facility to "waters of the United States." Projects that require coverage under the SPDES General Permit for storm water discharges from construction activities apply for coverage separately with separate SWPPPs and Notices of Intent.

4.5.3 Alternative Car Wash Location

Impacts to geological resources (soils) from construction of the car wash at the Alternative location would be identical to the Proposed Action.

4.6 Water Resources

4.6.1 Significance Criteria

Significance criteria for water resources impacts are based on water availability, quality, and use; existence of floodplains; and associated regulations. A potential impact on water resources would be significant if it were to result in one of the following scenarios:

- Reduce water availability to existing users or interfere with the supply.
- Create or contribute to overdraft of groundwater basins or exceed safe annual yield of water supply sources.
- Adversely affect water quality or endanger public health by creating or worsening adverse health hazard conditions.
- Threaten or damage unique hydrologic characteristics.
- Violate established laws or regulations that have been adopted to protect or manage water resources of an area.

The impact of flood hazards on a proposed action is potentially significant if such an action is proposed in an area with a high probability of flooding.

4.6.2 Proposed Action

Fire Training Tower and Car Wash. Operation of the Fire Training Tower and car wash would have negligible, direct adverse impacts to water quality from the increased generation of water requiring treatment. Those impacts are discussed further in Section 4.8.2, Infrastructure.

Construction of the car wash would have negligible direct adverse effects on the Installation's 100-year floodplain due to the increase of storm water runoff from the creation of impervious surfaces. However, Niagara Falls ARS has a no net runoff requirement as part of the SWPPP. Based on the results of the USACE hydrology study, development at Niagara Falls ARS would not add a significant area of impervious surfaces that would affect downstream water quality (see section 4.5.2 for further discussion on SWPPP practices used to reduce runoff amounts). Therefore, construction of the car wash would cause minor impacts to the 100-year floodplain.

The construction of the Fire Training Tower would have long-term, negligible direct adverse effects on the Installation's 100-year floodplain. A portion of the Fire Training Tower would be in the 100-year floodplain. The 1999 USACE Hydrology indicated that development along Cayuga Creek at Niagara Falls ARS only increased runoff by 0.4 percent (USACE 1999). The modeling indicated that the Installation has very little impact on peak discharge of Cayuga Creek downstream. Further development at Niagara Falls would not add a significant area of impervious surfaces that would affect downstream water quality.

When facilities are built within the floodplains of rivers and streams, important flood storage capacity is removed. When a floodplain is filled, water cannot spread out. Displaced water must go somewhere; usually flooding is forced into other areas. Building in the floodplain may also constrict the area where water can flow. Increased water velocity might cause additional erosion problems and floodwater backs up, flooding upstream areas.

Also with development come more intensive land use and a related increase in pollutants, negatively affecting water quality and stream health. There is a direct relationship between the intensity of development in an area (indicated by the amount of impervious surfaces) and the degree of degradation of its streams. As little as 20 percent impervious surface cover in a watershed can render a stream lifeless. The impervious surfaces prevent infiltration and the natural processing of nutrients, sediment, pathogens, and other contaminants. As a result, surface water quality becomes degraded. Healthy water systems provide drainage, aquatic habitat, and natural filtering of pollutants.

Under the Proposed Action, short-term, minor adverse effects on sedimentation and erosion from construction activities are possible from the Proposed Action. Niagara Falls ARS operates under the NYSDEC SPDES General Permit for Storm Water Discharges Associated with Industrial Activity permit which authorizes the discharge of storm water from the facility to "waters of the United States." Projects that require coverage under the SPDES General Permit for storm water discharges from construction activities apply for coverage separately with separate SWPPPs and Notices of Intent.

Adherence to proper engineering practices and applicable codes and ordinances would reduce storm water runoff-related impacts to a level of insignificance. Erosion and sedimentation controls would be in place during construction to reduce and control siltation or erosion impacts on areas outside of the construction site. Construction activities would require the use of water for dust suppression. The volume of water to be used for dust control would be minimal. No runoff would be expected to result for this process. Therefore, minor long-term direct adverse effects on surface water would be expected as a result of the Proposed Action.

Mitigation. In accordance with Step 5 of the FEMA document, "Further Advice on EO 11988," when the only practicable alternative is to construct in a floodplain, the agency should minimize threats to life, property, and natural and beneficial floodplain values, and restore and preserve natural and beneficial floodplain values. Niagara Falls ARS would implement necessary floodproofing measures during the construction of the Fire Training Tower.

For the purposes of this EA, floodproofing is defined as activities to eliminate or reduce the potential for flood damage. Examples of floodproofing activities for the Proposed Action would include raising access roads and facilities above the 100-year floodplain; constructing berms; elevating ground-mounted transformers and vulnerable equipment, and electrical controls; elevating or relocating furnaces, hot water heaters, and electrical panels; providing openings in foundation walls that allow floodwaters in and out, thus avoiding collapse; and installing sump pumps with back-up power.

4.6.3 Alternative Location of Car Wash

Under this alternative, impacts would nearly be identical to the Proposed Action. There would be no potential to impact the floodplains due to the greater distance to the floodplain.

4.7 Biological Resources

4.7.1 Significance Criteria

This section evaluates the potential impacts on biological resources under the Proposed Action and alternatives. The significance of impact on biological resources is based on (1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, (2) the proportion of the resource that would be affected relative to its occurrence in the region, (3) the sensitivity of the resource to proposed activities, and (4) the duration of ecological ramifications. This EA will use a habitat perspective to provide a framework for analysis of general classes of effects (i.e., removal of critical habitat, noise associated with training, human disturbance). The impacts on biological resources are significant if species or habitats of high concern are adversely affected over relatively large areas. Impacts are also considered significant if disturbances cause reductions in population size or distribution of a species of high concern, such as state-listed sensitive species.

Ground disturbance and noise associated with the Proposed Action directly or indirectly cause potential impacts on biological resources. Direct impacts from ground disturbance were evaluated by identifying the types and locations of potential ground-disturbing activities in correlation to important biological resources. Habitat removal and damage or degradation of habitats could be effects associated with ground-disturbing activities.

Noise associated with a proposed action might be of sufficient magnitude to result in the direct loss of individuals and reduce reproductive output within certain ecological settings. Ultimately, extreme cases of such stresses could have the potential to lead to population declines or local or regional extinction. To evaluate effects, considerations were given to number of individuals or critical species involved, amount of habitat affected, relationship of the area of potential effect to total critical habitat within the region, type of stressors involved, and magnitude of the effects.

4.7.2 Proposed Action

Vegetation. Operation of the Fire Training Tower and car wash would have no direct or indirect impact to vegetation resources.

Fire Training Tower. Construction of the Fire Training Tower would have no impact to vegetation because the proposed location is currently covered by gravel.

Car Wash. Proposed construction activities for the car wash would affect approximately 0.5 acres of mowed lawn in a maintained commercial area. The additional pavement would permanently remove

any vegetated areas. To lessen the impact on vegetation, temporarily disturbed areas would be revegetated.

Wildlife and Sensitive Species. Extensive development of the Niagara Falls ARS has left minimal habitat for wildlife. Furthermore, most of the area associated with the Proposed Action consists of previously disturbed, landscaped, paved, or mowed lands that provides marginal habitat for wildlife. Common species of birds, mammals, and reptiles that occur at the Installation might visit proposed construction sites, but are likely to spend the majority of their time in the undeveloped portions of the Installation. The indirect effects of construction noise and heavy equipment use would be slightly adverse in the short term (during construction). Wildlife would quickly recover once the construction noise ceased. This assessment is based on the limited extent of areas that would be affected by the Proposed Action.

Fire Training Tower. The proposed location of the Fire Training Tower is near potentially suitable habitat for the upland sandpiper, grasshopper sparrow, and the northern harrier. These species prefer pastures and hayfields (i.e., alfalfa and clover fields) and exotic or native prairie of short grasses. The upland sandpiper and the grasshopper sparrow have been sighted within 800 feet of the proposed area during breeding season, suggesting this area is used for nesting. Since the proposed location is currently used by the fire department, it can be assumed that the species in the area have become accustomed to the operations carried out at this location.

However, the burning of material for fire training purpose might be of some annoyance to the species surrounding the Fire Training Tower. Because of the infrequent use of the Fire Training Tower, it is unlikely that the species would be significantly affected. During training sessions species may relocate for the duration of the exercise, which would be approximately four to six hours, 4 times per month. Therefore, direct and indirect effects on wildlife, including the upland sandpiper grasshopper sparrow, and northern harrier would not be significant.

Car Wash. The location of the proposed car wash is not known be a primary location for residence or feeding for any species existing on the Installation. Species normally reside and feed in the uninhabited areas of the Installation. Surveys for the USFWS inventory observed three horned larks during mammal surveys in a survey plot at the northern portion of the Installation; approximately 800 feet northwest of the preferred and alternative location of the proposed car wash (see Figure 3-5). The USFWS inventory report concluded that this limited sighting indicates infrequent, transient use

by the species (NFARS 2001). Therefore, construction and operation of the car wash would have no direct impact on any sensitive species.

Wetlands. Impacts on wetlands would be controlled through implementation of best management practices.

Fire Training Tower. The Fire Training Tower would be adjacent approximately 400 feet, to a USACE-verified jurisdictional wetland, referred to as Wetland TW-1 (see Figure 3-4). The primary functions of this wetland are flood-flow alteration and storm water attenuation. Minor functions include groundwater recharge, sediment and toxicant retention, and wildlife habitat. Water and debris from training sessions would not enter the wetland; rather, they would be contained on a concrete pad and directed toward the fire training pit water conservation pond, where they would enter the Niagara Falls sanitary sewer system. Therefore, minor adverse effects may result from construction and operation of the Fire Training Tower.

Minor, adverse effects are possible as a result of construction adjacent to Wetland TW-1. Direct impacts would be expected from small amounts of sediment and vehicle fluids that would enter the wetland through storm water runoff. Adherence to proper engineering practices and applicable codes and ordinances would reduce storm water runoff-related impacts to a level of insignificance. Erosion and sedimentation controls would be in place during construction to reduce and control siltation or erosion impacts on areas outside of the construction site. Construction activities would require the use of water for dust suppression. The volume of water to be used for dust control would be minimal. No runoff would be expected to result for this process. Therefore, minor long-term direct adverse effects on surface water would be expected as a result of the Proposed Action.

Car Wash. The closest wetland to the preferred site for the car wash is approximately 500 feet north (see Figure 3-4). A second wetland to the northwest is greater than 1,200 feet away from the proposed car wash location. These two wetlands primarily provide flood-flow alteration and storm water retention. Therefore, construction and operation of the car wash would not impact wetlands.

4.7.3 Alternative Location for the Car Wash

Impacts on biological resources from the alternative location would be similar to the preferred car wash location. This area does not support any plant or animal species of concern, or any nearby wetlands. Therefore, implementation of the alternative action would not impact biological resources at Niagara Falls ARS.

4.8 Infrastructure

4.8.1 Significance Criteria

Impacts on infrastructure are evaluated on their potential for disruption or improvement of existing levels of service and additional needs for energy and water consumption, wastewater systems, and transportation patterns and circulation. Impacts might arise from physical changes to circulation, construction activities, introduction of construction-related traffic on local roads or changes in daily or peak-hour traffic volumes, and energy needs created by either direct or indirect workforce and population changes related to Installation activities.

4.8.2 Proposed Action

Water Supply. The operation of the Fire Training Tower and car wash would have negligible adverse effects from increased water use, but these would be negligible in comparison with total base water usage. Water supply lines from Niagara Falls and Wheatfield have adequate capacity and supply to accommodate water demands from the Proposed Action.

Sanitary Systems. The operation of the Fire Training Tower and car wash would have negligible long-term, adverse effects on the sanitary sewer system. Take-away lines from the City of Niagara Falls would be adequate to handle the additional used water (Nerone 2005). Implementation might have minor, adverse effects from increases in sanitary sewage, but these would be minor in comparison with total base water usage. Energy conservation measures would be used. Therefore, overall negligible adverse effects on sanitary systems are expected as a result of the Proposed Action.

Natural Gas Systems. Construction and operation of the Fire Training Tower would not have an impact on natural gas systems. Operation of the car wash would result in an increase in natural gas usage, primarily in the winter months when more heated water is needed. The self-service bays would have thermostatically controlled heated floors to prevent freezing of discharged water in the winter months, and the water supplied to these bays would need to be warmed. It is assumed that fewer people would use the manual unit in the winter months. They would use the automatic unit which is more efficient. Because the bay would be heated by a wall-mounted radiant heater, it would use less heated water since. The automatic unit would need heated water for the presoak (30 seconds), which would come from a built-in water heater (approximately 5 gallons) on the washing unit. New natural gas supply lines would be necessary. The increased amount is insignificant compared to total base requirements. Negligible adverse impacts from increased consumption on the natural gas systems would result from the Proposed Action.

Electrical Systems. Construction and operation of the Fire Training Tower would not have an impact on electrical systems. Operation of the car wash would result in an increase of electrical power usage. The electrical power system, purchased through Niagara Mohawk and distributed through government-owned lines, would accommodate the Proposed Action. New power supply lines would be necessary. The increase in electrical demand would be minor compare to overall base requirements; therefore, long-term negligible adverse impacts on electrical power would result from the Proposed Action.

Transportation Network. Potential impacts on transportation and circulation are evaluated for disruption or improvement of current transportation patterns and systems, deterioration or improvement of traffic volume, and changes in existing levels of transportation safety. Impacts could arise from physical changes to circulation (e.g., closing, rerouting, or creating roads), construction activity, introduction of construction-related traffic on local roads or changes in daily or peak-hour traffic volumes increased by either direct or indirect work force, or population changes related to facility activities. Impacts on roadway capacities would be significant if roads were forced to operate at or above their full design capacity.

Overall, adverse effects on transportation would be short-term and minor during construction of the Fire Training Tower and car wash. The fire training sessions would require the firefighters to travel from the station to the training area at the end of the runway once a week, four times per month. They would presumably use Taxiway A instead of the primary roads. There might be long-term negligible adverse impacts from the increase in traffic entering and exiting the car wash. It is anticipated that the traffic would be greatest during lunch time and in good weather. The roads most impacted would be Johnson Street and Wagner Avenue.

Solid Waste. The mixture of dirt, grime and grit that accumulates in sumps is classified as a solid waste sludge and must be appropriately disposed. Sump wastes generated by car wash and vehicle maintenance shops are not considered hazardous wastes. An exception to this assumption would be if hazardous waste was placed into the sump for disposal purposes. As a result, unless hazardous waste is known or suspected to be present in the sump, wastes from car wash and vehicle maintenance shops can be considered a solid waste and disposed of accordingly. If the car wash determines that it's sludge and/or grit is not hazardous (90 percent of the time it would not) the sludge may be disposed of at the local landfill or land farm.

In considering the basis for evaluating the significance of impacts on solid waste, several items are considered including evaluating the degree to which the proposed construction projects could affect the existing solid waste management program and capacity of the area landfill. Solid waste generated from the proposed construction activities would consist of building materials such as solid pieces of concrete, metals (conduit, piping, and wiring), and lumber. Analysis of the impacts associated with implementation of the Proposed Action and other actions is based on the following assumptions (USACE 1976):

- Approximately 4 pounds of construction debris is generated for each square foot of floor area for new structures
- Approximately 1 pound of construction debris is generated for each square foot of new asphalt
- Approximately 92 pounds of demolition debris is generated for each square foot of floor area for old structures.

Table 4-2 presents the amount of MSW (tons) generated from the proposed construction activities using the assumptions detailed above. The landfill space required at the approved landfill used by the contractor would increase by 20.75 tons over the life of the project.

Table 4-2. Projected Construction and Demolition Waste Generation

Construction/Demolition Project	Construction Area (ft^2)	Demolition Area (ft^2)	Concrete Area (ft^2)	Waste (pounds)
Fire Training Tower Paved Area			11,000	11,000
Preferred Car Wash Location Paved Area			22,000	22,000
Construct Car Wash	2,130			8,500
			Total Waste (pounds)	**41,500**
			Total Waste (tons)	**20.75**

4.8.3 Alternative Location of the Car Wash

Under the alternative action, effects on water supply, sanitary systems, natural gas systems, central heating systems, communication systems, electrical systems, and solid waste for car wash operations would be similar to the Proposed Action. Table 4-3 presents the amount of MSW (tons) generated from the proposed construction activities using the alternative car wash location. The landfill space required at the approved landfill used by the contractor would increase by 21.25 tons over the life of the project.

Table 4-3. Alternative Car Wash Location Projected Construction and Demolition Waste Generation

Construction/Demolition Project	Construction Area (ft^2)	Demolition Area (ft^2)	Concrete Area (ft^2)	Waste (pounds)
Fire Training Tower Paved Area			11,000	11,000
Alternative Car Wash Location Paved Area			23,000	23,000
Construct Car Wash	2,130			8,500
			Total Waste (pounds)	**42,500**
			Total Waste (tons)	**21.25**

4.9 Hazardous Materials and Waste

4.9.1 Significance Criteria

Impacts on hazardous materials and waste would be considered significant if the Federal action resulted in noncompliance with applicable Federal and NYSDEC regulations, or increased the amounts generated or procured beyond current Niagara Falls ARS waste management procedures and capacities. Impacts on the ERP would be considered significant if the Federal action disturbed (or created) contaminated sites resulting in adverse effects on human health or the environment. Impacts on fuels management would be significant if the established management policies, procedures, and handling capacities could not accommodate the activities associated with the Proposed Action.

Hazardous Materials. Products containing hazardous materials would be procured and used during proposed construction activities. Construction equipment contains fuel, lubricating oils, hydraulic fluid, and coolants that could be a regulated hazardous substance if they spilled or leaked on the construction site. During construction activities, vehicle and equipment operators would take steps to minimize the potential for a release of hazardous substances from all construction equipment. Prior to mobilization on the site, all vehicles and equipment would be inspected to ensure correct and leak-free operation. Construction vehicles and equipment would be inspected daily to ensure that there are no discharges, and maintenance activities would not be conducted at any construction site. Appropriate spill-containment material would be kept on site. All fuels and other materials would be contained in the equipment or stored in appropriate containers. All materials would be removed upon completion of construction activities. It is anticipated that the quantity of products containing hazardous materials used during the C&D activities would be minimal and that their use would be of short duration. Contractors would be responsible for the management of hazardous materials, which

would be handled in accordance with Federal and state regulations. Therefore, no significant impacts from hazardous materials are expected from the proposed construction activities.

Hazardous Waste. There would be no hazardous waste generated from the operational phase of the Fire Training Tower. The waste produced would be the result of burnt Class A combustibles (wood, straw, and paper). It is anticipated that the quantity of hazardous waste generated from proposed construction activities would be negligible. 914 MSG/CEV would be responsible for the disposal of hazardous wastes in accordance with Federal and state laws and regulations. Therefore, the Proposed Action would not impact the Installation's hazardous waste management program.

Car wash operations may generate hazardous waste, primarily as a result of contaminated sludges and grit from the sand trap. Niagara Falls ARS would be responsible for determining if the waste is hazardous. To determine if the waste is hazardous it should be tested for total metal concentration of lead, mercury and cadmium using USEPA method 6010. It is recommended that over a period of one year, 2 separate samples should be taken of the sludge and tested. This will prove that routine operation of the car wash does not create a hazardous waste. Facilities that routinely wash heavy equipment, oil drilling rigs or diesel trucks are much more likely to generate hazardous waste

Environmental Restoration Program. The proposed location of the Fire Training Tower is immediately adjacent to ERP Site 9, Fire Training Area No. 3. Long term groundwater monitoring is currently underway at this site. While it is unlikely that groundwater contamination from the ERP sites would be encountered during these construction activities, the potential exists to encounter volatilized fuel from the ERP sites. Should contamination be encountered, the handling, storage, transportation, and disposal activities would be conducted in accordance with applicable Federal, state, and local regulations; AFIs; and Niagara Falls ARS management procedures.

One ERP Site is in the vicinity (600 feet) of the proposed construction activities for the car wash (refer to Figure 3-6). This Site, Building 850 Drum Storage Yard, is under a No Further Response Action Plan. Therefore, construction and operation of the car wash should not impact ERP at Niagara Falls ARS. While it is unlikely that groundwater contamination from the ERP sites would be encountered during these construction activities, the potential exists to encounter volatilized fuel from the ERP sites. Should contamination be encountered, the handling, storage, transportation, and disposal activities would be conducted in accordance with applicable Federal, state, and local regulations; AFIs; and Niagara Falls ARS management procedures.

4.9.2 Alternative Location of the Car Wash

Under this alternative, effects on hazardous materials and waste would be identical to those described under the Proposed Action. No effects on ACM, LBP, or ERP would be expected under this alternative.

4.10 No Action Alternative

Under the No Action Alternative, existing conditions would remain as is and none of the proposed projects would occur. If the No Action Alternative were carried forward, there would be no change in or effects on air quality, noise, land use, geological resources, biological resources, or hazardous materials and waste at Niagara Falls ARS. Long-term adverse effects on water resources and infrastructure would not be expected. Not implementing the Fire Training Tower would hinder the capability and training of the firefighters in and around Niagara Falls ARS.

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5. Cumulative and Adverse Impacts

Cumulative impacts on environmental resources result from incremental effects of proposed actions, when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over time by various agencies (Federal, state, and local) or individuals. Informed decision-making is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

5.1 Impact Analysis

Other projects evaluated in the cumulative impact analysis were identified through a review of public documents, information gained from the IICEP, and coordination with local agencies.

In 2004, the construction of a Military Entrance Processing Station (MEPS) Facility at Niagara Falls ARS was approved. Also in 2004, 914 AW proposed eight construction and maintenance projects to renovate, construct, or replace existing facilities, implement the Integrated Pest Management Plan, and conduct Annual Fire Truck Dry Chemical Testing at Niagara Falls ARS. The proposed projects are (1) revitalize Water Distribution System, (2) extension of the AFRC Ramp, (3) widen driveway at Hazardous Waste Storage Building, (4) add to and alter Civil Engineering Building, (5) alter and repair Parking Lots, (6) repair and replace Sanitary Sewer System, (7) construct Bivouac, and (8) replace the Wagner Drive Culvert.

In 2003, Niagara Falls ARS proposed 12 capital improvement program projects to replace inadequate existing facilities, or construct new facilities that were necessary to meet USAF mission, emergency response, and force protection concerns at the Installation. These projects are (1) construct Base Civil Engineer Administrative Facility/Demolish Building 403, (2) add to Base Medical Training Facility/Clinic (Building 802), (3) install force protection measures at Main Gate, (4) demolish and construct Visiting Quarters Facility (Phases I and II), (5) construct Fire/Crash Rescue Facility, (6) demolish and construct Dining Facility, (7) Construct Recycling/Centralized Waste Center, (8) construct Flightline Access Road, (9) demolish and construct Lift Station, (10) add to and alter Security Police Facility (Building 310), (11) construct AFRC Recruitment Billboard, and (12) construct Vehicle Wash Facility.

In October 2001, Veridian Corporation—now a part of General Dynamics—announced the development of a new flight research complex at the Niagara Falls IAP. When announced, the $7 million construction project was expected to create an additional 80 jobs while retaining 45 jobs at Veridian's Flight Research Operation. The 75,000 square foot flight research facility will include two hangars totaling 43,000 $ft^2$and engineering and office space of 31,000 ft^2. The new facility should be completed by August 2004 (Veridian 2002).

The Niagara Frontier Transportation Authority (NFTA) has plans for several small facility upgrades at the Niagara Falls IAP. The East Apron Expansion Project will be undertaken to meet new FAA requirements. The NFTA is also undertaking preliminary discussions to construct a new terminal building, but no preliminary design work has been conducted or funded (Minkel 2004).

The number of new development activities within the Niagara Falls area is generally low, and no cumulative impacts related to land use, overall zoning, and land management objectives have been identified as a part of the Proposed Action.

Noise. Operation of the car wash would generate noise at levels above 80 dBA. The noise would be short in duration and is not anticipated to result in a significant cumulative impact. Construction would generate minimal amounts of noise. The cumulative impacts of increased noise would not result in a significant cumulative impact.

Land Use. The Proposed Action is consistent with the current land use patterns at Niagara Falls ARS and would not adversely affect the overall trend or pattern of development around the Niagara Falls ARS. No significant development projects were identified in the vicinity of Niagara Falls ARS. No cumulative impacts related to land use, overall zoning, and land management objectives were identified.

Air Quality. The Proposed Action would result in low levels of air emissions below *de minimus* thresholds. The Proposed Action would not combine with other development activities or stimulate further development that would significantly impact air quality. One of the most influential air quality fluctuations is the emissions from automobiles. None of the Proposed Actions would affect transportation on or around Niagara Falls ARS.

Geological Resources. The Proposed Action would occur on previously disturbed lands on the Installation. Construction activities, such as grading, excavating, and recontouring of the soil, would

result in further soil disturbance. Soil and erosion control measures would reduce the potential for significant adverse, cumulative impacts.

Water Resources. The proposed location of the Fire Training Tower would have minor adverse impacts on the 100-year floodplain at Niagara Falls ARS and result minor development in the floodplain of uninhabitable structures. The proposed location of the car wash is adjacent to the 100-year floodplain and should not impact the floodplain. The Proposed Action would have a negligible increase in impervious surface area within its watershed. Best management practices would be implemented in the design and development of the Proposed Action. With adherence to BMPs, the Proposed Action would result in no net increase of storm water runoff within its watershed. Since a large proportion of the recharge areas in and around Niagara Falls ARS remain undeveloped (or lack extensive impervious surfaces) the cumulative effects of reduced surficial aquifer recharge would not be significant.

Biological Resources. The Proposed Action would occur on previously disturbed lands on the Installation. Past development practices have caused extensive loss of native habitat and natural resources, and have had a greater adverse impact on the biological resources than would occur from implementation of the Proposed Action. The Proposed Action would not lead to significant habitat loss or fragmentation. The cumulative effects of proposed construction projects would not be significant.

Table 5-1 summarizes potential cumulative effects on resources from the Proposed Action when combined with other past, present, and future activities.

5.2 Unavoidable Adverse Impacts

Unavoidable adverse impacts would result from implementation of the Proposed Action. None of these impacts would be significant.

Geological Resources. Under the Proposed Action, construction activities, such as grading, excavating, and recontouring of the soil, would result in soil disturbance. Implementation of best management practices during construction would limit potential effects resulting from construction activities. Standard erosion control means would also reduce potential impacts related to these characteristics. Although unavoidable, impacts on soils are not considered significant.

Hazardous Materials and Waste. The generation of hazardous materials and wastes are unavoidable conditions associated with the Proposed Action. However, the potential for these unavoidable

situations would not significantly increase over baseline conditions and, therefore, are not considered significant.

Table 5-1. Cumulative Effects to Resources

Resource	Past Actions	Current Background Activities	Proposed Action	Future Actions	Cumulative Effects
Noise	Aircraft activities are dominant noise source.	Aircraft activities are dominant noise source.	Long-term negligible noise from car wash. Short-term noise from construction of the Fire Training Tower and car wash.	None.	Aircraft activities will remain the dominant noise source, effect not significant.
Land use	Past development practices (conversion of forest to agriculture) has extensively modified land use.	Military installation, commercial, residential, light industrial land uses.	The Proposed Action would represent a negligible loss of open space.	None.	None.
Air Quality	Marginal nonattainment area for O_3.	Emissions from aircraft, vehicles, buildings.	Emissions from construction and operations would be below *de minimus* thresholds.	None.	Continued marginal nonattainment for O_3, effect not significant.
Geological Resources	Past development practices (conversion of forest to agriculture) has extensively modified soil.	None.	Grading, excavating, and recontouring of the soil would result in further soil disturbance.	None.	Impacts would be permanent but localized, effect not significant.
Water Resources	Surface water quality moderately impacted by development.	Storm Water discharge to Cayuga Creek within permitted limits.	Potential sedimentation from construction activities. Increased generation of water requiring treatment.	None.	None.
Biological Resources	Degraded historic habitat of sensitive and common wildlife species.	Installation operations impact wildlife habitat.	Disturbance of vegetation by construction. Displacement and potential to kill or injure small, nonsensitive mammals and rodents during construction.	None.	Permanent loss of vegetation and low-quality habitat, effect not significant.

Energy. The use of nonrenewable resources is an unavoidable occurrence, although not considered significant. The Proposed Action would require the use of fossil fuels, a nonrenewable natural resource. Energy supplies, although relatively small, would be committed to the Proposed Action or No Action Alternative.

5.3 Compatibility of the Proposed Action and Alternatives with the Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

Impacts on the ground surface as a result of the Proposed Action would occur entirely within the boundaries of Niagara Falls ARS. Construction of the Proposed Action would not result in a significant or incompatible land use change on the Installation. However, the open space lost would be approximately one percent of the total open space on the Installation. Consequently, the amount of open space lost from construction of the Proposed Action would be insignificant. The proposed location of the Fire Training Tower is consistent with its current land use. The Proposed Action would not conflict with any applicable off-Installation land use ordinances or designated clear zones.

5.4 Relationship between the Short-term Use of the Environment and Long-term Productivity

Short-term uses of the biophysical components of human environment include direct construction-related disturbances and direct impacts associated with an increase in population and activity that occurs over a period of less than 5 years. Long-term uses of human environment include those impacts occurring over a period of more than 5 years, including permanent resource loss.

Several kinds of activities could result in short-term resource uses that compromise long-term productivity. Filling of wetlands or loss of other especially important habitats and consumptive use of high-quality water at nonrenewable rates are examples of actions that affect long-term productivity. The Proposed Action would not result in an intensification of land use at Niagara Falls ARS and in the surrounding area. Development of the Proposed Action would represent a negligible loss of open space. Therefore, it is anticipated that the Proposed Action would result in minimal cumulative land use or aesthetic impacts.

5.5 Irreversible and Irretrievable Commitments of Resources

The irreversible environmental changes that would result from implementation of the Proposed Action involve the consumption of material resources, energy resources, land, biological habitat, and human resources. The use of these resources is considered to be permanent.

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources will have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable time frame (e.g., energy and minerals).

Material Resources. Material resources used for the Proposed Action include building materials (for construction of facilities), concrete and asphalt (for roads), and various material supplies (for infrastructure). Most of the materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

Energy Resources. Energy resources used for the Proposed Action would be irretrievably lost. These include petroleum-based products (such as gasoline and diesel), natural gas, and electricity. During construction, gasoline and diesel would be used for the operation of construction vehicles. During operation, gasoline would be used for the operation of private and government-owned vehicles. Natural gas and electricity would be used by operational activities. Consumption of these energy resources would not place a significant demand on their availability in the region. Therefore, no significant impacts would be expected.

Biological Habitat. The Proposed Action would result in minimal loss of vegetation and wildlife habitat on the proposed construction sites.

Human Resources. The use of human resources for construction and operation is considered an irretrievable loss, only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the Proposed Action represents employment opportunities, and is considered beneficial.

Floodplains. The construction and operation of the Fire Training Tower would have negligible impact on the 100-year floodplain. The Fire Training Tower would not be inhabited or contain sensitive equipment or records. The car wash would be outside of the floodplain. The Proposed Action would not stimulate further development in the floodplain; therefore, no significant impacts would be expected.

6. Preparers

This EA has been prepared under the direction of Niagara Falls ARS. The individuals who contributed to the preparation of this document are listed below.

Louise Baxter
engineering-environmental Management (e^2M), Inc.
M.P.A. Public Administration
B.S. Political Science
Years of Experience: 7

Suanne Collinsworth
e^2M
M.S. Environmental Sciences and Engineering
B.S. Geology
Certificate of Water Quality Management

Tim Demorest
e^2M
A.M. Classical Studies
B.A. Classical Studies
Years of Experience: 2

Brian Hoppy
e^2M
B.S. Biology
Certificate of Environmental Management
Years of Experience: 13

Ron Lamb, CEP
e^2M
M.S. Environmental Science
M.A. Political Science
B.A. Political Science
Years of Experience: 20

Rachel Schneider
e^2M
B.A. Chemistry
Years of Experience: 4

Devin Scherer
e^2M
B.S. Biology
Years of Experience: 1

Nick Steinke
e^2M
B.S. Manufacturing Engineering
Years of Experience: 4

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Appendix A

Applicable Laws, Regulations, Policies and Planning Criteria

Appendix A

Applicable Laws, Regulations, Policies and Planning Criteria

When considering the affected environment, physical, biological, economic, and social environmental factors must be considered. In addition to NEPA there are other environmental laws as well as EOs to be considered when preparing EAs and EISs. These laws are summarized below.

Safety

AFI 91-202, the USAF Mishap Prevention Program, implements *AFPD 91-2, Safety Programs*. It establishes mishap prevention program requirements (including the Bird/Wildlife Aircraft Strike Hazard [BASH] Program), assigns responsibilities for program elements, and contains program management information. This instruction applies to all USAF personnel.

AFI 91-301, Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program, implements AFPD 91-3, Occupational Safety and Health, by outlining the AFOSH Program. The purpose of the AFOSH Program is to minimize loss of Air Force resources and to protect Air Force personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program (AFI 91-202), these standards ensure all Air Force workplaces meet Federal safety and health requirements. This instruction applies to all Air Force activities.

Air Quality

The Clean Air Act (CAA) of 1970, and Amendments of 1977 and 1990, recognizes that increases in air pollution result in danger to public health and welfare. To protect and enhance the quality of the Nation's air resources, the CAA authorizes the USEPA to set six National Ambient Air Quality Standards (NAAQSs) which regulate carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter pollution emissions. The CAA seeks to reduce or eliminate the creation of pollutants at their source, and designates this responsibility to State and local governments. States are directed to utilize financial and technical assistance as well as leadership from the Federal government to develop implementation plans to achieve NAAQS. Geographic areas are officially designated by the EPA as being in attainment or non-attainment to pollutants in relation to their compliance with NAAQS. Geographic regions established for air quality planning purposes are designated as Air Quality Control Regions (AQCR). Pollutant concentration levels are measured at designated monitoring stations within the AQCR. An area is designated as unclassifiable where

insufficient monitoring data exists. Section 309 of the CAA authorizes the EPA to review and comment on impact statements prepared by other agencies.

An agency should consider what effect an action may have on NAAQS due to short-term increases in air pollution during construction as well as long-term increases resulting from changes in traffic patterns. For actions in attainment areas, a Federal agency may also be subject to EPA's Prevention of Significant Deterioration (PSD) regulations. These regulations apply to new major stationary sources and modifications to such sources. Although few agency facilities will actually emit pollutants, increases in pollution can result from a change in traffic patterns or volume. Section 118 of the CAA waives Federal immunity from complying with the CAA and states all Federal agencies will comply with all Federal and State approved requirements.

Noise

The Air Installation Compatible Use Zone (AICUZ) Program, (AFI 32-7063), provides guidance to air bases and local communities in planning land uses compatible with airfield operations. The AICUZ program describes existing aircraft noise and flight safety zones on and near Air Force installations.

Land Use

Land use guidelines established by the U.S. Department of Housing and Urban Development (HUD) and based on findings of the Federal Interagency Committee on Noise (FICON) recommend acceptable levels of noise exposure for land use.

Water Resources

The Clean Water Act (CWA) of 1977 is an amendment to the Federal Water Pollution Control Act of 1972, is administered by the EPA and sets the basic structure for regulating discharges of pollutants into U.S. waters. The CWA requires the EPA to establish water quality standards for specified contaminants in surface waters and forbids the discharge of pollutants from a point source into navigable waters without a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits are issued by EPA or the appropriate State if it has assumed responsibility. Section 404 of the CWA establishes a Federal program to regulate the discharge of dredged and fill material into waters of the United States. Section 404 permits are issued by the US Army Corps of Engineers (USACE). Waters of the United States include interstate and intrastate lakes, rivers, streams, and wetlands which are used for commerce, recreation, industry, sources of fish, and other purposes. The objective of the Act is to restore and maintain the chemical, physical, and biological integrity of the

Nation's waters. Each agency should consider the impact on water quality from actions such as the discharge of dredge or fill material into U.S. waters from construction, or the discharge of pollutants as a result of facility occupation.

The Safe Drinking Water Act (SDWA) of 1974 establishes a Federal program to monitor and increase the safety of all commercially and publicly supplied drinking water. Congress amended the SDWA in 1986, mandating dramatic changes in nationwide safeguards for drinking water and establishing new Federal enforcement responsibility on the part of the EPA. The 1986 amendments to the SDWA require the EPA to establish Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs) and Best Available Technology (BAT) treatment techniques for organic, inorganic, radioactive, and microbial contaminants, and turbidity. MCLGs are maximum concentrations below which no negative human health effects are known to exist. The 1996 amendments set current Federal MCLs, MCLGs, and BATs for organic, inorganic, microbiological, and radiological contaminants in public drinking water supplies.

The Coastal Zone Management Act (CZMA) of 1972 is concerned with the effective management, beneficial use, protection, and development of the Nation's coastal zone. The coastal zone refers to the coastal waters and the adjacent shorelines including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches, and includes the Great Lakes. The CZMA declares a National policy to preserve, protect and develop, and where possible restore or enhance the resources of the Nation's coastal zone. The CZMA encourages states to exercise their full authority over the coastal zone, through the development of land and water use programs in cooperation with Federal and local governments. States may apply for grants to help develop and implement management programs to achieve wise use of the land and water resources of the coastal zone. Development projects affecting land or water use or natural resources of a coastal zone, must ensure the project is, to the maximum extent practicable, consistent with the state's coastal zone management program.

The Wild and Scenic Rivers Act (WSRA) of 1968 provides for a wild and scenic river system by recognizing the remarkable values of specific rivers of the Nation. These selected rivers and their immediate environment are preserved in a free-flowing condition, without dams or other construction. The policy not only protects the water quality of the selected rivers but also provides for the enjoyment of present and future generations. Any river in a free-flowing condition is eligible for inclusion, and can be authorized as such by an Act of Congress, an act of State legislature, or by the Secretary of Interior upon the recommendation of the Governor of the State(s) through which the river flows.

EO 11988, "Floodplain Management," May 24, 1977, directs agencies to consider alternatives to avoid adverse effects and incompatible development in floodplains. An agency may locate a facility in a floodplain if the head of the agency finds there is no practicable alternative. If it is found there is no practicable alternative, the agency must minimize potential harm to the floodplain, and circulate a notice explaining why the action is to be located in the floodplain prior to taking action. Finally, new construction in a floodplain must apply accepted floodproofing and flood protection to include elevating structures above the base flood level rather than filling in land.

Biological Resources

EO 11990,"Protection of Wetlands," May 24, 1977, directs agencies to consider alternatives to avoid adverse effects and incompatible development in wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands.

The Endangered Species Act (ESA) of 1973 establishes a Federal program to conserve, protect and restore threatened and endangered plants and animals and their habitats. The ESA specifically charges Federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All Federal agencies must insure any action they authorize, fund or carry out is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction of critical habitat for these species, unless the agency has been granted an exemption. The Secretary of the Interior, using the best available scientific data, determines which species are officially endangered or threatened, and the USFWS maintains the list. A list of Federal endangered species may be obtained from the Endangered Species Division, U.S. Fish and Wildlife Service (703-358-2171). States may also have their own lists of threatened and endangered species which may be obtained by calling the appropriate State Fish and Wildlife office. Some species, such as the bald eagle, also have laws specifically for their protection (e.g., Bald Eagle Protection Act).

The Migratory Bird Treaty Act of 1918, amended in 1936, 1960, 1968, 1969, 1974, 1978, 1986, and 1989 implements treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless otherwise permitted by regulations, the Act makes it unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill;

possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. The Act also make it unlawful to ship, transport or carry from one state, territory or district to another, or through a foreign country, any bird, part, nest or egg that was captured, killed, taken, shipped, transported or carried contrary to the laws from where it was obtained; and import from Canada any bird, part, nest or egg obtained contrary to the laws of the province from which it was obtained. The U.S. Department of the Interior has authority to arrest, with or without a warrant, a person violating the Act.

EO 13186, "Conservation of Migratory Birds", January 10, 2001, creates a more comprehensive strategy for the conservation of migratory birds by the Federal government. The Order provides a specific framework for the Federal government's compliance with its treaty obligations to Canada, Mexico, Russia, and Japan. The Order provides broad guidelines on conservation responsibilities and requires the development of more detailed guidance in Memoranda of Understanding (MOU) within two years of its implementation. The Order will be coordinated and implemented by the Fish and Wildlife Service. The MOU will outline how Federal agencies will promote conservation of migratory birds. The Order will requires the support of various conservation planning efforts already in progress; incorporation of bird conservation considerations into agency planning, including NEPA analyses; and reporting annually on the level of take of migratory birds.

EO 11514 "Protection and Enhancement of Environmental Quality," March 5, 1970, states the President, with assistance from the CEQ, will lead a national effort to provide leadership in protecting and enhancing the environment for the purpose of sustaining and enriching human life. Federal agencies are directed to meet national environmental goals through their policies, programs, and plans. Agencies should also continually monitor and evaluate their activities to protect and enhance the quality of the environment. Consistent with NEPA, agencies are directed to share information about existing or potential environmental problems with all interested parties, including the public, in order to obtain their views.

Cultural Resources

The National Historic Preservation Act (NHPA) of 1966 sets forth national policy to identify and preserve properties of state, local, and national significance. The NHPA establishes the Advisory Council on Historic Preservation (Council), State Historic Preservation Officers, and the National Register of Historic Places (NRHP). The Council advises the President, Congress and Federal agencies on historic preservation issues. Section 106 of the act directs Federal agencies to take into

account effects of their undertakings (actions and authorizations) on properties included in or eligible for NRHP. Section 110 sets inventory, nomination, protection and preservation responsibilities for federally owned cultural properties. Section 106 of the act is implemented by regulations of the Council, 36 CFR Part 800.

The agency should coordinate studies and documents prepared under Section 106 with NEPA where appropriate. However, NEPA and NHPA are separate statutes and compliance with one does not constitute compliance with the other. For example, actions which qualify for a categorical exclusion under NEPA, may still require Section 106 review under NHPA. It is the responsibility of the agency official to identify properties in the area of potential effects, and whether they are included or eligible for inclusion in the National Register of Historic Places. Section 110 of the NHPA requires Federal agencies to identify, evaluate, and nominate historic property under agency control to the National Register of Historic Places.

The Archaeological Resource Protection Act (ARPA) of 1979 protects archaeological resources on public and Indian lands. It provides felony-level penalties for the unauthorized excavation, removal, damage, alteration or defacement of any archaeological resource, defined as material remains of past human life or activities which are at least 100 years old. Before archaeological resources are excavated or removed from public lands, the Federal land manager must issue a permit detailing the time, scope, location and specific purpose of the proposed work. ARPA also fosters the exchange of information about archaeological resources between governmental agencies, the professional archaeological community, and private individuals. ARPA is implemented by regulations found in 43 CFR Part 7.

The American Indian Religious Freedom Act of 1978 and Amendments of 1994 recognizes that freedom of religion for all people is an inherent right, and traditional American Indian religions are an indispensable and irreplaceable part of Indian life. It also recognized the lack of Federal policy on this issue and made it the policy of the United States to protect and preserve the inherent right of religious freedom for Native Americans. The 1994 Amendments provide clear legal protection for the religious use of peyote cactus as a religious sacrament. Federal agencies are responsible for evaluating their actions and policies to determine if changes should be made to protect and preserve the religious cultural rights and practices of Native Americans. These evaluations must be made in consultation with native traditional religious leaders.

Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 establishes rights of Indian tribes to claim ownership of certain "cultural items", defined as native American human remains, funerary objects, sacred objects and objects of cultural patrimony, held or controlled by Federal agencies. Cultural items discovered on Federal or tribal lands are, in order of primacy, the property of lineal descendants, if these can be determined, the tribe owning the land where the items were discovered, of the tribe with the closest cultural affiliation with the items. Discoveries of cultural items on Federal or tribal land must be reported to the appropriate Indian tribe and the Federal agency with jurisdiction over the land. If the discovery is made as a result of a land use, activity in the area must stop and the items must be protected pending the outcome of consultation with the affiliated tribe.

EO 11593 "Protection and Enhancement of the Cultural Environment," May 13, 1971, directs the Federal Government to provide leadership in the preservation, restoration, and maintenance of the historic and cultural environment. Federal agencies are required to locate and evaluate all Federal sites under their jurisdiction or control which may qualify for listing on the National Register of Historic Places. Agencies must allow the Advisory Council on Historic Preservation to comment on the alteration, demolition, sale, or transfer of property which is likely to meet the criteria for listing as determined by the Secretary of the Interior in consultation with the State Historic Preservation Officer. Agencies must also initiate procedures to maintain federally owned sites listed on the National Register.

EO 13007 "Indian Sacred Sites", May 24, 1996, provides that agencies managing Federal lands, to the extent practicable, permitted by law, and not inconsistent with agency functions, shall accommodate Indian religious practitioners' access to and ceremonial use of Indian sacred sites, shall avoid adversely affecting the physical integrity of such sites, and shall maintain the confidentiality of such sites. Federal agencies are responsible for informing tribes of proposed actions that could restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites.

EO 13287 "Preserve America", March 3, 2003, orders the Federal Government to take a leadership role in protection, enhancement, and contemporary use of historic properties owned by the Federal Government, and promote intergovernmental cooperation and partnerships for preservation and use of historic properties. The order established new accountability for agencies with regard to inventories and stewardship.

Socioeconomics and Environmental Justice

The Environmental Quality Improvement Act (EQIA) of 1970 ensures each Federal agency conducting or supporting public works activities affecting the environment implements policies established under existing law. The EQIA also created the Office Environmental Quality to provide professional and administrative staff for the CEQ. The Director of the Office of Environmental Quality assists and advises the President on Federal policies and programs affecting environmental quality. The Office of Environmental Quality reviews the adequacy of existing environmental monitoring and predicting systems, and assists Federal agencies in appraising the effectiveness of existing and proposed facilities which affect environmental quality.

EO 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," February 11, 1994, directs Federal agencies to make achieving environmental justice part of their mission. Agencies must identify and address adverse human health and/or environmental effects its activities have on minority and low-income populations, and develop agency-wide environmental justice strategies. The strategy must list "programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations, ensure greater public participation, improve research and data collection relating to the health of and environment of minority populations and low-income populations, and identify differential patterns of consumption of natural resources among minority populations and low-income populations." A copy of the strategy and progress reports must be provided to the Federal Working Group on Environmental Justice. Responsibility for compliance with this EO lies with each Federal agency.

Hazardous Materials and Waste

The *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980* authorizes the EPA to respond to spills and other releases of hazardous substances to the environment, and authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. CERCLA also provides a Federal "Superfund" to respond to emergencies immediately. Although the "Superfund" provides funds for clean up of sites where potentially responsible parties cannot be identified, the EPA is authorized to recover funds through damages collected from responsible parties. This funding process places the economic burden for cleanup on polluters.

The Superfund Amendments and Reauthorization Act (SARA) of 1986 mandates strong cleanup standards, and authorizes the EPA to use a variety of incentives to encourage settlements. Title III of SARA authorizes the Emergency Planning and Community Right to Know Act (EPCRA), which requires facility operators with "hazardous substances" or "extremely hazardous substances" to prepare comprehensive emergency plans and to report accidental releases. EO 12856, "Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements," requires Federal agencies to comply with the provisions EPCRA. If a Federal agency acquires a contaminated site it can be held liable for clean up as the property owner/operator. A Federal agency can also incur liability if it leases a property, as the courts have found lessees liable as "owners." However, if the agency exercises due diligence by conducting a Phase I Environmental Site Assessment, it may claim the "innocent purchaser" defense under CERCLA. According to Title 42 USC 9601(35), the current owner/operator must show it undertook "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" before buying the property to use this defense.

The Resource Conservation and Recovery Act (RCRA) of 1976 is an amendment to the Solid Waste Disposal Act, authorizes the EPA to provide for "cradle-to-grave" management of hazardous waste, and sets a framework for the management of non-hazardous municipal solid waste. Under RCRA, hazardous waste is controlled from generation to disposal through tracking and permitting systems, and restrictions and controls on the placement of waste on or into the land. Under RCRA, a waste is defined as hazardous if it is ignitable, corrosive, reactive, toxic or listed by the EPA as being hazardous. With the 1984 Hazardous and Solid Waste Amendments (HSWA), Congress targeted stricter standards for waste disposal and encouraged pollution prevention by prohibiting the land disposal of particular wastes. The HSWA amendments strengthen control of both hazardous and nonhazardous waste and emphasize the prevention of pollution of groundwater.

The Toxic Substance Control Act (TSCA) of 1976 consists of four titles. Title I established requirements and authorities to identify and control toxic chemical hazards to human health and the environment. TSCA authorized the EPA to gather information on chemical risks, require companies to test chemicals for toxic effects, and regulate chemicals with unreasonable risk. TSCA also singled out polychlorinated bi-phenyls (PCBs) for regulation and as a result are being phased out. TSCA and its regulations govern the manufacture, processing, distribution, use, marking, storage, disposal, clean-up, and release reporting requirements for numerous chemicals like PCBs. PCBs are persistent when released into the environment and accumulate in the tissues of living organisms. They have been shown to cause adverse health effects on laboratory animals and may cause adverse health

effects in humans. TSCA Title II provides statutory framework for "Asbestos Hazard Emergency Response," which applies only to schools. TSCA Title III, "Indoor Radon Abatement," states indoor air in buildings of the United States should be as free of radon as the outside ambient air. Federal agencies are required to conduct studies on the extent of radon contamination in buildings they own. TSCA Title IV, "Lead Exposure Reduction," directs Federal agencies to "conduct a comprehensive program to promote safe, effective, and affordable monitoring, detection, and abatement of lead-based paint and other lead exposure hazards." Further, any Federal agency having jurisdiction over a property or facility must comply with all Federal, State, interstate, and local requirements concerning lead-based paint.

The *Pollution Prevention Act (PPA) of 1990* encourages manufacturers to avoid the generation of pollution by modifying equipment and processes, redesigning products, substituting raw materials, and making improvements in management techniques, training, and inventory control. EO 12856, "Federal Compliance with Right-to Know Laws and Pollution Prevention Requirements," requires Federal agencies to comply with the provisions of the PPA, and also requires Federal agencies to ensure all necessary actions are taken to prevent pollution. In addition, in Federal Register Volume 58 Number 18 (January 29, 1993), the Council on Environmental Quality provides guidance to Federal agencies on how to "incorporate pollution prevention principles, techniques, and mechanisms into their planning and decision making processes and to evaluate and report those efforts, as appropriate, in documents pursuant to NEPA."

Appendix B

Public Involvement/Interagency and Intergovernmental Coordination for Environmental Planning Correspondence Letter and List

APPENDIX B

PUBLIC INVOLVEMENT/INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING CORRESPONDENCE LIST

New York State Department of Environmental Conservation
Buffalo Regional Headquarters
270 Michigan Avenue
Buffalo, NY 14203-2999

U.S. Army Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, NY 14207

Mr. Gregory Tessmann
District Conservationist
U.S. Department of Agriculture
Natural Resources Conservation Service,
Lockport Service Center
4487 Lake Avenue
Lockport, NY 14094-1139

Ms. Bernadette Castro
State Historic Preservation Office
Parks, Recreation & Historic Preservation
Agency Building #1, Empire State Plaza
Albany, NY 12238

Kevin P. O'Brien, PE
Niagara County Dept. of Public Works
Brooks County Office Building
59 Park Avenue
Lockport, NY 14094

Richard Lord
New York State Office of Parks, Recreation, and
Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189
Waterford, NY 12188-0189

Arthur F. Kroening
Superintendent
Town of Wheatfield Highway Department
6860 Ward Road
Niagara Falls, NY 14304

Mr. Kofi Fynn-Aikins
Supervisory Fish & Wildlife Biologist, Chief
U.S. Fish & Wildlife Service
Lower Great Lakes Region
Fishery Resources Office
405 North French Road
Suite 120 A
Amherst, NY 14228

Office of Environmental Services
City Hall
745 Main Street
Niagara Falls, NY 14302-0069

FEMA Region II
26 Federal Plaza, Suite 1307
New York, NY 10278-0001

«Date»

MEMORANDUM FOR: SEE DISTRIBUTION

FROM: 914 MSG/CE
2405 Franklin Drive
Niagara Falls ARS, NY 14304-5063

SUBJECT: Environmental Assessment for Review and Comment

The Air Force Reserve Command (AFRC) and 914th Airlift Wing (914 AW) has prepared a draft Environmental Assessment (EA) on the proposed *Construction of a Fire Training Tower and a Car Wash at Niagara Falls ARS, NY*. The environmental impact analysis process for this proposal is being conducted by the Air Force Reserve Command in accordance with the Council on Environmental Quality guidelines pursuant to the requirements of the National Environmental Policy Act of 1969. The draft EA for the proposed Construction of a Fire Training Tower and a Car Wash is included with this correspondence as Attachment 1.

In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached draft EA and solicit your comments concerning the proposal and any potential environmental consequences. Please provide written comments or information regarding the action at your earliest convenience but no later than 30 days from the date of this letter. Appendix B of the draft EA contains a listing of those Federal, state, and local agencies that have been contacted. If there are any additional agencies that you feel should review and comment on the proposed activities, please include them in your distribution of this letter and the attached materials.

Please address questions concerning or comments on the proposal to our consultant, engineering-environmental Management, Inc. (e^2M). The point-of-contact at e^2M is Mr. Ron Lamb. He can be reached at (703) 273-7171. Please forward your written comments to Mr. Lamb, in care of engineering-environmental Management, Inc. (e^2M), 3949 Pender Drive, Suite 120, Fairfax, Virginia 22030. Thank you for your assistance.

Sincerely

DERMOTT F. SMYTH
Base Civil Engineer

Attachments:
1. EA

PUBLIC NOTICE

Notice of Availability
Draft Finding of No Significant Impact (FONSI) and Supplemental Environmental Assessment (EA) of Herbicide Application for Installation Fenceline, Railroad Tracks, and Broadleaf Weed Control and FONSI/Finding of No Practicable Alternative and EA of Construction and Operation of a Fire Training Tower and a Car Wash At Niagara Falls Air Reserve Station, New York

Niagara Falls ARS, New York- A supplemental Environmental Assessment (EA) on the proposed application of herbicide along Installation fenceline and railroad tracks and broadleaf weed control at Niagara Falls Air Reserve Station (ARS), New York has been prepared in accordance with the Integrated Pest Management Plan (IPMP). The supplemental EA is tiered to the *Environmental Assessment on Implementation of the Integrated Pest Management Plan (IPMP) and Dry Chemical Testing at Niagara Fall Air Reserve Station, New York,* June 13, 2005. The Air Force Reserve Command (AFRC) is proposing to issue a Finding of No Significant Impact (FONSI) based on this Operation of a Fire Training Tower and a Car Wash at Niagara Falls ARS. The AFRC is proposing to issue a FONSI/Finding of No Practicable Alternative (FONPA) based on this EA.

The analysis considered potential effects of Proposed Action, alternative actions, and the No Action Alternative on eleven resources areas, land use, air quality, safety, geological resources, cultural resources, water resources,biological resources, socioeconomic and environmental justice, infrastructure, and hazardous materials and waste. the results, as found in the EAs, show that the affected environmental would not be significantly impacted by proceeding with the proposed herbicide application, Fire Training Tower and Car Wash construction and operation activities. However, a portion of the Fire Training Tower would be located within a 100-year floodplan-indicating the FONSI/FONPA would be appropriate. An Environmental Impact Statement should not be necessary to implement the Proposed Actions.

A copy of the Draft FONSI, FONSI/FONPA and EAs showing the analysis are available for review at Niagara Falls Public Library, Earl W. Brydges Building, 1425 Main St. Niagara Falls, NY, 14305. Public comments on the documents will be accepted up to 20 February 2006. Written comments and inquiries on the documents should be directed to: 914th AW Office of Public Affairs, 2720 Kirkbridge Drive, Niagara Falls ARS, NY, 14304-5001. Or call 716-236-2136.

New York State Department of Environmental Conservation
Division of Environmental Permits, Region 9
270 Michigan Avenue, Buffalo, New York, 14203-2999
Phone: (716) 851-7165 • **FAX:** (716) 851-7168
Website: www.dec.state.ny.us

Denise M. Sheehan
Commissioner

February 16, 2006

Mr. Ron Lamb, CEP
engineering-environmental Management, Inc.
3949 Pender Dr., Suite 120
Fairfax, VA 22030

Dear Mr. Lamb:

FIRE TRAINING TOWER AND CAR WASH
NIAGARA FALLS AIR RESERVE STATION
TOWN OF WHEATFIELD
NIAGARA COUNTY

This will acknowledge the January 23, 2006 receipt of the Draft Environmental Assessment (EA) on the proposed construction and operation of a Fire Training Tower and Car Wash at the Niagara Falls Air Reserve Station (ARS). Please recognize that the proposed Fire Training Tower or either location for the proposed Car Wash will neither disturb any stream regulated pursuant to Article 15, Title 5 (Protection of Waters) of the NYS Environmental Conservation Law (ECL) nor be within 100 feet of any wetland regulated pursuant to Article 24 (Freshwater Wetlands) of the ECL. Furthermore, the proposed Fire Training Tower is exempt from Air Resource Regulations, 6 NYCRR Part 201-3.3(c)(32).

It was noted that Figure 3-4 does not show the 100-Year Floodplain in the area of the proposed Fire Training Tower as it is depicted on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (Community-Panel Number 360507 0002B).

Also recognize that the US Department of the Army, Corps of Engineers (US Army Engineer District, Buffalo, 1776 Niagara Street, Buffalo, New York 14207-3199, Attn: Regulatory Branch) may require that this Department issue Water Quality Certification pursuant to Section 401 of the Federal Water Pollution Control Act and 6NYCRR Section 608.9, if construction involves fill in any waters of the United States, including Federally regulated wetlands. However, the Water Quality Certification issued by Chief Permit Administrator, Mr. William Adriance, on March 15, 2002 for the existing Nationwide Permit Program may cover the proposed work.

If you have any questions regarding these comments, please contact Mr. Jeffrey Dietz or me at 716-851-7165.

Respectfully,

David S. Denk
Deputy Permit Administrator

JED:jaf

cc: Mr. Larry Sitzman, Region 9 Division of Air Resources
US Department of the Army, Corps of Engineers, Buffalo District Office
Mr. Dermott Smyth, Department of the Air Force/ Attn: Mr. James Mathews

Appendix C

Clean Air Act General Conformity Emission Calculations

Emissions Estimates for EA of Proposed Fire Training Tower and Car Wash at Niagara Falls ARS, NY

Summary	Summarizes total emissions by calendar year. (this worksheet) Pages C-1, C-2, and C-3
Combustion	Estimates emissions from non-road equipment exhaust as well as painting. (one worksheet for each calendar year) Pages C-4, C-5, C-6, and C-7 for 2005; pages C-12, C-13, C-14, and C-15 for 2006
Fugitive	Estimates fine particulate emissions from earthmoving, vehicle traffic, and windblown dust (one worksheet for each calendar year) Pages C-8, C-9, C-10 for 2005; pages C-16, C-17, and C-18 for 2006
Grading	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions (one worksheet for each calendar year) Page C-11 for 2005; page C-19 for 2006

		NOx (ton)	VOC (ton)	CO (ton)	SO2 (ton)	PM10 (ton)
CY2005	Combustion	8.28	1.38	10.35	0.22	0.27
(one table for each	Fugitive Dust					0.50
calendar year)	TOTAL CY2005	8.28	1.38	10.35	0.22	0.77

		NOx (ton)	VOC (ton)	CO (ton)	SO2 (ton)	PM10 (ton)
CY2006	Combustion	7.70	1.26	9.30	0.22	0.25
(one table for each	Fugitive Dust					0.43
calendar year)	TOTAL CY2006	7.70	1.26	9.30	0.22	0.69

Since future year budgets were not readily available, actual 1999 air emissions inventories for the counties were used as an approximation of the regional inventory. Because the Proposed Action is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Niagara Frontier Intrastate Air Quality Control Region (NFAQCR)

	Point and Area Sources Combined				
Year	NOx (tpy)	VOC (tpy)	CO (tpy)	SO2 (tpy)	PM10 (tpy)
1999	67,345	68,035	440,085	80,811	40,715

Source: USEPA-AirData NET Tier Report (http://www.epa.gov/air/data/emcatrep.html?st~NY~New%20York). Site visited on 03/10/05

Determination Significance (Significance Threshold = 10%)
(one table for each year)

	Point and Area Sources Combined				
	NOx (tpy)	VOC (tpy)	CO (tpy)	SO2 (tpy)	PM10 (tpy)
Minimum -1999	67,345	68,035	440,085	80,811	40,715
2005 Emissions	8.28	1.38	10.35	0.22	0.77
Proposed Action %	**0.0123%**	**0.0020%**	**0.0024%**	**0.0003%**	**0.0019%**

Determination Significance (Significance Threshold = 10%)
(one table for each year)

	Point and Area Sources Combined				
	NOx (tpy)	VOC (tpy)	CO (tpy)	SO2 (tpy)	PM10 (tpy)
Minimum -1999	67,345	68,035	440,085	80,811	40,715
2006 Emissions	7.70	1.26	9.30	0.22	0.69
Proposed Action %	**0.0114%**	**0.0019%**	**0.0021%**	**0.0003%**	**0.0017%**

Fire Training Tower and Car Wash at Niagara Falls ARS

Construction Combustion Emissions for CY 2005
Combustion Emissions of VOC, NOx, SO2, CO and PM10 Due to Construction

Includes:

1	50% of Building Construction	12,323	ft^2	0.28	acres
2	100% of Demolish Pavements	5,100	ft^2	0.12	acres

Total Building Construction Area:	12,323 ft^2	(1)	
Total Demolished Area:	5,100 ft^2	(2)	
Total Paved Area:	0 ft^2		
Total Disturbed Area:	17,423 ft^2	(1 and 2)	
Construction Duration:	0.83 year(s)		
Annual Construction Activity:	230 days/yr	(assume 230 days/year unless project-specific data known)	

Summary of Input Parameters

	Total Area (ft2)	Total Area (acres)	Total Days	
Grading:	17,423	0.40	1	(from "Grading" worksheet)
Paving:	0	0.00	0	
Demolition:	5,100	0.12	171	
Building Construction:	12,323	0.28	171	
Architectural Coating	12,323	0.28	20	(per the SMAQMD "Air Quality of Thresholds of Significance", 1994 version)

NOTE: As a worst case estimate, paving, demolition, and building construction days are each assumed to be the total number of construction days minus grading and coating days; enter days for each activity if known, and adjust unknown activity days accordingly

Emission Factors Used for Construction Equipment

Reference: Guide to Air Quality Assessment, SMAQMD, 2004

Emission factors are taken from Table 3-2 for CY 2005. Assumptions regarding the type and number of equipment are from Table 3-1 unless otherwise noted.

Grading

Equipment	No. Reqd.[a] per 10 acres	NOx (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c]	PM_{10} (lb/day)
Bulldozer	1	29.40	3.66	25.09	0.59	1.17
Motor Grader	1	10.22	1.76	14.98	0.20	0.28
Water Truck	1	20.89	3.60	30.62	0.42	0.58
Total per 10 acres of activity	3	60.51	9.02	70.69	1.21	2.03

Paving

Equipment	No. Reqd.[a] per 10 acres	NOx (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c]	PM_{10} (lb/day)
Paver	1	7.93	1.37	11.62	0.16	0.22
Roller	1	5.01	0.86	7.34	0.10	0.14
Total per 10 acres of activity	2	12.94	2.23	18.96	0.26	0.36

Demolition

Equipment	No. Reqd.[a] per 10 acres	NOx (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c]	PM_{10} (lb/day)
Loader	1	7.86	1.35	11.52	0.16	0.22
Haul Truck	1	20.89	3.60	30.62	0.42	0.58
Total per 10 acres of activity	2	28.75	4.95	42.14	0.58	0.80

Building Construction

Equipment[d]	No. Reqd.[a] per 10 acres	NOx (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c]	PM_{10} (lb/day)
Stationary						
Generator Set	1	11.83	1.47	10.09	0.24	0.47
Industrial Saw	1	17.02	2.12	14.52	0.34	0.68
Welder	1	4.48	0.56	3.83	0.09	0.18
Mobile (non-road)						
Truck	1	20.89	3.60	30.62	0.84	0.58
Forklift	1	4.57	0.79	6.70	0.18	0.13
Crane	1	8.37	1.44	12.27	0.33	0.23
Total per 10 acres of activity	6	67.16	9.98	78.03	2.02	2.27

Note: Footnotes for tables are on following page

Architectural Coatings

Equipment	No. Reqd.[a] per 10 acres	NOx (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c]	PM_{10} (lb/day)
Air Compressor	1	6.83	0.85	5.82	0.14	0.27
Total per 10 acres of activity	1	6.83	0.85	5.82	0.14	0.27

a) The SMAQMD 2004 guidance suggests a default equipment fleet for each activitiy, assuming 10 acres of that activity, (e.g., 10 acres of grading, 10 acres of paving, etc.). The default equipment fleet is increased for each 10 acre increment in the size of the construction project. That is, a 26 acre project would round to 30 acres and the fleet size would be three times the default fleet for a 10 acre project.

b) The SMAQMD 2004 reference lists emission factors for reactive organic gas (ROG). For the purposes of this worksheet ROG = VOC.

c) The SMAQMD 2004 reference does not provide SO_2 emission factors. For this worksheet, SO_2 emissions have been estimated based on approximate fuel use rate for diesel equipment and the assumption of 500 ppm sulfur diesel fuel. For the average of the equipment fleet, the resulting SO_2 factor was found to be approximately 0.04 times the NOx emission factor for the mobile equipment (based upon 2002 USAF IERA "Air Emissions Inventory Guidance") and 0.02 times the NOx emission factor for all other equipment (based on AP-42, Table 3.4-1)

d) Typical equipment fleet for building construction was not itemized in SMAQMD 2004 guidance. The equipment list above was assumed based on SMAQMD 1994 guidance.

PROJECT-SPECIFIC EMISSION FACTOR SUMMARY

Source	Equipment Multiplier*	SMAQMD Emission Factors (lb/day) NOx	VOC	CO	SO2**	PM10
Grading Equipment	1	60.51	9.02	70.69	1.21	2.03
Paving Equipment	1	12.94	2.23	18.96	0.26	0.36
Demolition Equipment	1	28.75	4.95	42.14	0.58	0.80
Building Construction	1	67.16	9.98	78.03	2.02	2.27
Air Compressor for Architectural Coating	1	6.83	0.85	5.82	0.14	0.27
Architectural Coating**			9.05			

*The equipment multiplier is an integer that represents units of 10 acres for purposes of estimating the number of equipment required for the project

**Emission factor is from the evaporation of solvents during painting, per "Air Quality Thresholds of Significance", SMAQMD, 1994

Annual Emissions by Activity (lbs/yr)

	NOx	VOC	CO	SO2	PM10
Grading Equipment	60.5	9.0	70.7	1.2	2.0
Paving	0.0	0.0	0.0	0.0	0.0
Demolition	4906.7	844.8	7191.9	98.1	136.5
Building Construction	11462.0	1703.3	13317.1	344.7	387.4
Architectural Coatings	136.6	197.9	116.4	2.7	5.4
Total Emissions (lbs/yr):	**16565.8**	**2755.0**	**20696.1**	**446.8**	**531.4**

Results: Daily and Annual Emission Rates

	NOx	VOC	CO	SO2	PM10
Emissions, average lbs/day	16565.75	2755.01	20696.10	446.79	531.38
Emissions, tons/yr	8.28	1.38	10.35	0.22	0.27

Fire Training Tower and Car Wash at Niagara Falls ARS

Construction Fugitive Dust Emissions for CY 2005

Calculation of PM10 Emissions Due to Site Preparation (Uncontrolled).

User Input Parameters / Assumptions

Acres graded per year:	0.40	acres/yr	(From "Combustion" worksheet)
Grading days/yr:	0.44	days/yr	(From "Grading" worksheet)
Exposed days/yr:	90	assumed days/yr graded area is exposed	
Grading Hours/day:	8	hr/day	
Soil piles area fraction:	0.10	(assumed fraction of site area covered by soil piles)	
Soil percent silt, s:	8.5	%	(mean silt content; expected range: 0.56 to 23, AP-42 Table 13.2.2-1)
Soil percent moisture, M:	60	%	(NOAA 2005 http://www.cpc.noaa.gov/products/soilmst/w.html)
Annual rainfall days, p:	150	days/yr rainfall exceeds 0.01 inch/day (AP-42 Fig 13.2.2-1)	
Wind speed > 12 mph %, I:	40	% ave. wind speed near NFARS in Buffalo, NY (ftp://ftp.wcc.nrcs.usda.gov/downloads/climate/windrose/new_york/buffalo/)	
Fraction of TSP, J:	0.5	per California Environmental Quality Act (CEQA) Air Quality Handbook, SCAQMD, 1993, p. A9-99	
Mean vehicle speed, S:	5	mi/hr	(On-site)
Dozer path width:	8	ft	
Qty construction vehicles:	3.00	vehicles	(From "Grading" worksheet)
On-site VMT/vehicle/day:	5	mi/veh/day	(Excluding bulldozer VMT during grading)
PM10 Adjustment Factor k	1.5	lb/VMT	(AP-42 Table 13.2.2-2 12/03 for PM10 for unpaved roads)
PM10 Adjustment Factor a	0.9	(dimensionless)	(AP-42 Table 13.2.2-2 12/03 for PM10 for unpaved roads)
PM10 Adjustment Factor b	0.45	(dimensionless)	(AP-42 Table 13.2.2-2 12/03 for PM10 for unpaved roads)
Mean Vehicle Weight W	40	tons	assumed for aggregate trucks

TSP - Total Suspended Particulate
VMT - Vehicle Miles Traveled

Emissions Due to Soil Disturbance Activities

Operation Parameters (Calculated from User Inputs)

Grading duration per acre	8.7 hr/acre	
Bulldozer mileage per acre	1 VMT/acre	(Miles traveled by bulldozer during grading)
Construction VMT per day	15 VMT/day	
Construction VMT per acre	16.4 VMT/acre	(Travel on unpaved surfaces within site)

Equations Used (Corrected for PM10)

Operation	Empirical Equation	Units	AP-42 Section (5th Edition)
Bulldozing	$0.75(s^{1.5})/(M^{1.4})$	lbs/hr	Table 11.9-1, Overburden
Grading	$(0.60)(0.051)s^{2.0}$	lbs/VMT	Table 11.9-1,
Vehicle Traffic (unpaved roads)	$[(k(s/12)^{a}(W/3)^{b})]\ [(365-P)/365]$	lbs/VMT	Section 13.2.2

Source: Compilation of Air Pollutant Emission Factors, Vol. I, USEPA AP-42, Section 11.9 dated 10/98 and Section 13.2 dated 12/03

Calculation of PM10 Emission Factors for Each Operation

Operation	Emission Factor (mass/ unit)	Operation Parameter	Emission Factor (lbs/ acre)
Bulldozing	0.06 lbs/hr	8.7 hr/acre	0.50 lbs/acre
Grading	0.77 lbs/VMT	1 VMT/acre	0.80 lbs/acre
Vehicle Traffic (unpaved roads)	2.08 lbs/VMT	16.4 VMT/acre	34.10 lbs/acre

Emissions Due to Wind Erosion of Soil Piles and Exposed Graded Surface

Reference: California Environmental Quality Act (CEQA) Air Quality Handbook, SCAQMD, 1993.

Soil Piles EF = 1.7(s/1.5)[(365 - p)/235](I/15)(J) = (s)(365 - p)(I)(J)/(3110.2941), p. A9-99.

Soil Piles EF = 11.8 lbs/day/acre covered by soil piles

Consider soil piles area fraction so that EF applies to graded area

Soil piles area fraction: 0.10 (Fraction of site area covered by soil piles)
Soil Piles EF = 1.18 lbs/day/acres graded

Graded Surface EF = 26.4 lbs/day/acre (recommended in CEQA Manual, p. A9-93).

Calculation of Annual PM10 Emissions

Source	Emission Factor	Graded Acres/yr	Exposed days/yr	Emissions lbs/yr	Emissions tons/yr
Bulldozing	0.50 lbs/acre	0.40	NA	0	0.00
Grading	0.80 lbs/acre	0.40	NA	0	0.00
Vehicle Traffic	34.10 lbs/acre	0.40	NA	14	0.01
Erosion of Soil Piles	1.18 lbs/acre/day	0.40	90	42	0.02
Erosion of Graded Surface	26.40 lbs/acre/day	0.40	90	950	0.48
TOTAL				1,007	0.50

Soil Disturbance EF: 35.40 lbs/acre
Wind Erosion EF: 27.58 lbs/acre/day

Back calculate to get EF: 5756.79 lbs/acre/grading day

Fire Training Tower and Car Wash at Niagara Falls ARS

Construction (Grading) Schedule for CY 2005

Estimate of time required to grade a specified area.

Input Parameters

Construction area: 0.40 acres/yr (from "Combustion" Worksheet)

Qty Equipment: 3.00 (calculated based on acres disturbed, assuming that up to three machines can effectively work on a 25 acre area, with a minimum of three machines for any job, regardless of area graded)

Assumptions.

Terrain is mostly flat.
An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.
200 hp bulldozers are used for site clearing.
300 hp bulldozers are used for stripping, excavation, and backfill.
Vibratory drum rollers are used for compacting.
Stripping, Excavation, Backfill and Compaction require an average of two passes each.
Excavation and Backfill are assumed to involve only half of the site.

Calculation of days required for one piece of equipment to grade the specified area.

Reference: Means Heavy Construction Cost Data, 6th Ed., R. S. Means, 1992.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day)	equip-days per acre	Acres/yr (project-specific)	Equip-days per year
021 108 0550	Site Clearing	Dozer & rake, medium brush	0.6	acre/day	0.6	1.67	0.40	0.67
021 144 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	0.40	0.20
022 242 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	0.20	0.20
022 208 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	0.20	0.08
022 226 5020	Compaction	Vibrating roller, 6 " lifts, 3 passes	1,950	cu. yd/day	2.42	0.41	0.40	0.17
TOTAL								1.31

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 1.31
Qty Equipment: 3.00
Grading days/yr: 0.44

Fire Training Tower and Car Wash at Niagara Falls ARS

Construction Combustion Emissions for CY 2006
Combustion Emissions of VOC, NOx, SO2, CO and PM10 Due to Construction

Includes:

1	50% of Building Construction	12,323 ft²	0.28	acres
2	100% of Paving	2,700 ft²	0.06	acres

Total Building Construction Area:	12,323	ft²	(1)
Total Demolished Area:	0		
Total Paved Area:	2,700	ft²	(2)
Total Disturbed Area:	15,023	ft²	(1 and 2)
Construction Duration:	0.9	year(s)	
Annual Construction Activity:	230	days/yr	(assume 230 days/year unless project-specific data known)

Summary of Input Parameters

	Total Area (ft2)	Total Area (acres)	Total Days	
Grading:	15,023	0.34	1	(from "Grading" worksheet)
Paving:	2,700	0.06	190	
Demolition:	0	0.00	0	
Building Construction:	12,323	0.28	190	
Architectural Coating	12,323	0.28	20	(per the SMAQMD "Air Quality of Thresholds of Significance", 1994 version)

NOTE: As a worst case estimate, paving, demolition, and building construction days are each assumed to be the total number of construction days minus grading and coating days; enter days for each activity if known, and adjust unknown activity days accordingly

Emission Factors Used for Construction Equipment

Reference: Guide to Air Quality Assessment, SMAQMD, 2004

Emission factors are taken from Table 3-2 for CY 2005. Assumptions regarding the type and number of equipment are from Table 3-1 unless otherwise noted.

Grading

Equipment	No. Reqd.[a] per 10 acres	NOx (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c]	PM_{10} (lb/day)
Bulldozer	1	29.40	3.66	25.09	0.59	1.17
Motor Grader	1	10.22	1.76	14.98	0.20	0.28
Water Truck	1	20.89	3.60	30.62	0.42	0.58
Total per 10 acres of activity	3	60.51	9.02	70.69	1.21	2.03

Paving

Equipment	No. Reqd.[a] per 10 acres	NOx (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c]	PM_{10} (lb/day)
Paver	1	7.93	1.37	11.62	0.16	0.22
Roller	1	5.01	0.86	7.34	0.10	0.14
Total per 10 acres of activity	2	12.94	2.23	18.96	0.26	0.36

Demolition

Equipment	No. Reqd.[a] per 10 acres	NOx (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c]	PM_{10} (lb/day)
Loader	1	7.86	1.35	11.52	0.16	0.22
Haul Truck	1	20.89	3.60	30.62	0.42	0.58
Total per 10 acres of activity	2	28.75	4.95	42.14	0.58	0.80

Building Construction

Equipment[d]	No. Reqd.[a] per 10 acres	NOx (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c]	PM_{10} (lb/day)
Stationary						
Generator Set	1	11.83	1.47	10.09	0.24	0.47
Industrial Saw	1	17.02	2.12	14.52	0.34	0.68
Welder	1	4.48	0.56	3.83	0.09	0.18
Mobile (non-road)						
Truck	1	20.89	3.60	30.62	0.84	0.58
Forklift	1	4.57	0.79	6.70	0.18	0.13
Crane	1	8.37	1.44	12.27	0.33	0.23
Total per 10 acres of activity	6	67.16	9.98	78.03	2.02	2.27

Note: Footnotes for tables are on following page

Architectural Coatings

Equipment	No. Reqd.[a] per 10 acres	NOx (lb/day)	VOC[b] (lb/day)	CO (lb/day)	SO_2[c]	PM_{10} (lb/day)
Air Compressor	1	6.83	0.85	5.82	0.14	0.27
Total per 10 acres of activity	1	6.83	0.85	5.82	0.14	0.27

a) The SMAQMD 2004 guidance suggests a default equipment fleet for each activitiy, assuming 10 acres of that activity, (e.g., 10 acres of grading, 10 acres of paving, etc.). The default equipment fleet is increased for each 10 acre increment in the size of the construction project. That is, a 26 acre project would round to 30 acres and the fleet size would be three times the default fleet for a 10 acre project.

b) The SMAQMD 2004 reference lists emission factors for reactive organic gas (ROG). For the purposes of this worksheet ROG = VOC.

c) The SMAQMD 2004 reference does not provide SO_2 emission factors. For this worksheet, SO_2 emissions have been estimated based on approximate fuel use rate for diesel equipment and the assumption of 500 ppm sulfur diesel fuel. For the average of the equipment fleet, the resulting SO_2 factor was found to be approximately 0.04 times the NOx emission factor for the mobile equipment (based upon 2002 USAF IERA "Air Emissions Inventory Guidance") and 0.02 times the NOx emission factor for all other equipment (based on AP-42, Table 3.4-1)

d) Typical equipment fleet for building construction was not itemized in SMAQMD 2004 guidance. The equipment list above was assumed based on SMAQMD 1994 guidance.

PROJECT-SPECIFIC EMISSION FACTOR SUMMARY

Source	Equipment Multiplier*	SMAQMD Emission Factors (lb/day)				
		NOx	VOC	CO	SO2**	PM10
Grading Equipment	1	60.51	9.02	70.69	1.21	2.03
Paving Equipment	1	12.94	2.23	18.96	0.26	0.36
Demolition Equipment	1	28.75	4.95	42.14	0.58	0.80
Building Construction	1	67.16	9.98	78.03	2.02	2.27
Air Compressor for Architectural Coating	1	6.83	0.85	5.82	0.14	0.27
Architectural Coating**			9.05			

*The equipment multiplier is an integer that represents units of 10 acres for purposes of estimating the number of equipment required for the project

**Emission factor is from the evaporation of solvents during painting, per "Air Quality Thresholds of Significance", SMAQMD, 1994

Annual Emissions by Activity (lbs/yr)

	NOx	VOC	CO	SO2	PM10
Grading Equipment	60.5	9.0	70.7	1.2	2.0
Paving	2456.4	423.3	3599.2	49.1	68.3
Demolition	0.0	0.0	0.0	0.0	0.0
Building Construction	12749.2	1894.5	14812.7	383.4	430.9
Architectural Coatings	136.6	197.9	116.4	2.7	5.4
Total Emissions (lbs/yr):	**15402.8**	**2524.8**	**18599.0**	**436.5**	**506.7**

Results: Daily and Annual Emission Rates

	NOx	VOC	CO	SO2	PM10
Emissions, average lbs/day	15402.76	2524.83	18599.03	436.50	506.69
Emissions, tons/yr	7.70	1.26	9.30	0.22	0.25

Fire Training Tower and Car Wash at Niagara Falls ARS

Construction Fugitive Dust Emissions for CY 2006

Calculation of PM10 Emissions Due to Site Preparation (Uncontrolled).

User Input Parameters / Assumptions

Acres graded per year:	0.34	acres/yr	(From "Combustion" worksheet)
Grading days/yr:	0.38	days/yr	(From "Grading" worksheet)
Exposed days/yr:	90	assumed days/yr graded area is exposed	
Grading Hours/day:	8	hr/day	
Soil piles area fraction:	0.10	(assumed fraction of site area covered by soil piles)	
Soil percent silt, s:	8.5	%	(mean silt content; expected range: 0.56 to 23, AP-42 Table 13.2.2-1)
Soil percent moisture, M:	60	%	(NOAA 2005 http://www.cpc.noaa.gov/products/soilmst/w.html)
Annual rainfall days, p:	150	days/yr	rainfall exceeds 0.01 inch/day (AP-42 Fig 13.2.2-1)
Wind speed > 12 mph %, I:	40	% ave. wind speed near NFARS in Buffalo, NY (ftp://ftp.wcc.nrcs.usda.gov/downloads/climate/windrose/new_york/buffalo/)	
Fraction of TSP, J:	0.5	per California Environmental Quality Act (CEQA) Air Quality Handbook, SCAQMD, 1993, p. A9-99	
Mean vehicle speed, S:	5	mi/hr	(On-site)
Dozer path width:	8	ft	
Qty construction vehicles:	3.00	vehicles	(From "Grading" worksheet)
On-site VMT/vehicle/day:	5	mi/veh/day	(Excluding bulldozer VMT during grading)
PM10 Adjustment Factor k	1.5	lb/VMT	(AP-42 Table 13.2.2-2 12/03 for PM10 for unpaved roads)
PM10 Adjustment Factor a	0.9	(dimensionless)	(AP-42 Table 13.2.2-2 12/03 for PM10 for unpaved roads)
PM10 Adjustment Factor b	0.45	(dimensionless)	(AP-42 Table 13.2.2-2 12/03 for PM10 for unpaved roads)
Mean Vehicle Weight W	40	tons	assumed for aggregate trucks

TSP - Total Suspended Particulate
VMT - Vehicle Miles Traveled

Emissions Due to Soil Disturbance Activities

Operation Parameters (Calculated from User Inputs)

Grading duration per acre	8.7	hr/acre	
Bulldozer mileage per acre	1	VMT/acre	(Miles traveled by bulldozer during grading)
Construction VMT per day	15	VMT/day	
Construction VMT per acre	16.4	VMT/acre	(Travel on unpaved surfaces within site)

Equations Used (Corrected for PM10)

Operation	Empirical Equation	Units	AP-42 Section (5th Edition)
Bulldozing	$0.75(s^{1.5})/(M^{1.4})$	lbs/hr	Table 11.9-1, Overburden
Grading	$(0.60)(0.051)s^{2.0}$	lbs/VMT	Table 11.9-1,
Vehicle Traffic (unpaved roads)	$[(k(s/12)^{a}(W/3)^{b})]\ [(365-P)/365]$	lbs/VMT	Section 13.2.2

Source: Compilation of Air Pollutant Emission Factors, Vol. I, USEPA AP-42, Section 11.9 dated 10/98 and Section 13.2 dated 12/03

Calculation of PM10 Emission Factors for Each Operation

Operation	Emission Factor (mass/ unit)	Operation Parameter	Emission Factor (lbs/ acre)
Bulldozing	0.06 lbs/hr	8.7 hr/acre	0.50 lbs/acre
Grading	0.77 lbs/VMT	1 VMT/acre	0.80 lbs/acre
Vehicle Traffic (unpaved roads)	2.08 lbs/VMT	16.4 VMT/acre	34.10 lbs/acre

Emissions Due to Wind Erosion of Soil Piles and Exposed Graded Surface

Reference: California Environmental Quality Act (CEQA) Air Quality Handbook, SCAQMD, 1993.

Soil Piles EF = 1.7(s/1.5)[(365 - p)/235](I/15)(J) = (s)(365 - p)(I)(J)/(3110.2941), p. A9-99.

Soil Piles EF = 11.8 lbs/day/acre covered by soil piles

Consider soil piles area fraction so that EF applies to graded area

Soil piles area fraction: 0.10 (Fraction of site area covered by soil piles)
Soil Piles EF = 1.18 lbs/day/acres graded

Graded Surface EF = 26.4 lbs/day/acre (recommended in CEQA Manual, p. A9-93).

Calculation of Annual PM10 Emissions

Source	Emission Factor	Graded Acres/yr	Exposed days/yr	Emissions lbs/yr	Emissions tons/yr
Bulldozing	0.50 lbs/acre	0.34	NA	0	0.00
Grading	0.80 lbs/acre	0.34	NA	0	0.00
Vehicle Traffic	34.10 lbs/acre	0.34	NA	12	0.01
Erosion of Soil Piles	1.18 lbs/acre/day	0.34	90	37	0.02
Erosion of Graded Surface	26.40 lbs/acre/day	0.34	90	819	0.41
TOTAL				868	0.43

Soil Disturbance EF: 35.40 lbs/acre
Wind Erosion EF: 27.58 lbs/acre/day

Back calculate to get EF: 6676.50 lbs/acre/grading day

Fire Training Tower and Car Wash at Niagara Falls ARS

Construction (Grading) Schedule for CY 2006

Estimate of time required to grade a specified area.

Input Parameters
Construction area: 0.34 acres/yr (from "Combustion" Worksheet)
Qty Equipment: 3.00 (calculated based on acres disturbed, assuming that up to three machines can effectively work on a 25 acre area, with a minimum of three machines for any job, regardless of area graded)

Assumptions.
Terrain is mostly flat.
An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.
200 hp bulldozers are used for site clearing.
300 hp bulldozers are used for stripping, excavation, and backfill.
Vibratory drum rollers are used for compacting.
Stripping, Excavation, Backfill and Compaction require an average of two passes each.
Excavation and Backfill are assumed to involve only half of the site.

Calculation of days required for one piece of equipment to grade the specified area.

Reference: Means Heavy Construction Cost Data, 6th Ed., R. S. Means, 1992.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day)	equip-days per acre	Acres/yr (project-specific)	Equip-days per year
021 108 0550	Site Clearing	Dozer & rake, medium brush	0.6	acre/day	0.6	1.67	0.34	0.57
021 144 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	0.34	0.17
022 242 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	0.17	0.17
022 208 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	0.17	0.07
022 226 5020	Compaction	Vibrating roller, 6 " lifts, 3 passes	1,950	cu. yd/day	2.42	0.41	0.34	0.14
TOTAL								1.13

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 1.13
Qty Equipment: 3.00
Grading days/yr: 0.38

Fire Training Tower and Car Wash at Niagara Falls ARS

Niagara Frontier Intrastate Air Quality Control Region (NFAQCR)

			Area Source Emissions						Point Source Emissions					
Row #	State	County	CO	NOx	PM10	PM2.5	SO2	VOC	CO	NOx	PM10	PM2.5	SO2	VOC
SORT														
1	NY	Erie Co	341,539	35,772	26,305	9,474	9,825	51,075	3,724	12,197	3,647	3,213	53,925	798
2	NY	Niagara Co	83,348	8,277	9,609	2,873	2,974	15,829	11,474	11,099	1,154	936	14,087	333
Grand Total			424,887	44,049	35,914	12,347	12,799	66,904	15,198	23,296	4,801	4,149	68,012	1,131

SOURCE:
http://www.epa.gov/air/data/emcatrep.html?st~NY~New%20York
USEPA - AirData NET Tier Report
*Net Air pollution sources (area and point) in tons per year (1999)
Site visited on March 10, 2005