ENVIRONMENTAL ASSESSMENT

TERMINAL CONSTRUCTION

AT THE

NIAGARA FALLS INTERNATIONAL AIRPORT

Niagara Frontier Transportation Authority
Niagara Falls International Airport
Niagara Falls, New York

September 2007

ACRONYMS AND ABBREVIATIONS

AADT	Annual Average Daily Traffic
AC	Advisory Circular
AEM	Area Equivalent Method
AFI	Air Force Instruction
ARW	Air Reserve Wing
AST	Aboveground Storage Tank
BNIA	Buffalo-Niagara International Airport
Blvd	Boulevard
Btu	British Thermal Unit
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Plan
dB	Decibel
DHS	Department of Homeland Security
DNL	Day-Night average sound level
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
F	Fahrenheit
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FBO	Fixed Base Operator
FONSI	Finding of No Significant Impact
HUD	Department of Housing and Urban Development
IFR	Instrument Flight Rules
LOS	Level of Service
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFIA	Niagara Falls International Airport
NFITC	Niagara Falls International Transportation Center
NFTA	Niagara Frontier Transportation Authority
NOAA	National Oceanic and Atmospheric Association
NO_x	Nitrogen Oxides
NPL	National Priority List
NRHP	National Register of Historic Places
NYSDEC	New York State Department of Environmental Conservation
NYANG	New York Air National Guard
O_3	Ozone
OSHA	Occupational Safety and Health Act
OWS	Oil/water Separator
Pb	Lead
PM_{10}	Particulate Matter (10 microns)
POL	Petrolium, Oils and Lubricants
ppm	Parts Per Million
Rd	Road
SEL	Sound Exposure Level
SEQRA	State Environmental Quality Review Act
SIP	State Implementation Plan
SO_x	Sulfur Oxides
tpy	Tons Per Year
US	United States
USAF	United States Air Force
USEPA	United States Environmental Protection Agency
U.S.C.	United States Code

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EXECUTIVE SUMMARY

This Environmental Assessment (EA) evaluates the environmental effects for construction of a new terminal building and associated airside (terminal apron) and landside (parking and ground access) facilities that are proposed at the Niagara Falls International Airport (NFIA) in Niagara Falls, New York.

The NFIA is proposing to construct a new airline terminal building, a new aircraft parking apron, an additional parking lot and improved ground access. The existing NFIA terminal facilities have several functional difficulties relating to limited space and the age of the building, and existing road access and parking at NFIA is inadequate to support the requirements of the proposed terminal. The existing apron is inadequate to simultaneously handle both inbound and outbound flights, because, currently, the baggage claim for deplaning passengers and the baggage screening for outbound passengers are completed in the same area. Separate areas for these activities will be needed in order for NFIA to comply with current FAA and DHS requirements The NFIA currently has the capacity to support 160,200 operations (either a take-off or landing) per year; however, in 2005 the airport only handled 47,030 operations. This included 2,126 commercial airline operations, with the remaining operations comprised of air taxi, general aviation, and military aircraft.

This EA considers two alternatives to the Proposed Action for updating the airline terminal facilities at the NFIA:

- Renovate the existing terminal building to provide the necessary updated facilities ("Expansion and Renovation of the Existing Terminal Facility"); and
- Alternative locations for the aircraft parking apron and the additional parking area.

The alternative locations for the aircraft parking apron and the additional parking area was eliminated from the list of reasonable alternatives. The apron must be located adjacent to the terminal building in order for passengers to board and de-board the

aircraft. Locating the apron anywhere other than adjacent to the terminal building would not provide terminal access for arriving and departing aircraft. To provide timely access and efficient traffic patterns, the traffic circle and parking facilities should be located as close to the terminal building as possible. The location described in the Proposed Action would minimize the distance between the Williams Road access point and the proposed terminal facility and connect the proposed parking area with the existing parking lot.

This EA evaluates the potential effects of the Proposed Action and the "Expansion and Renovation of the Existing Terminal Building" Alternative on twelve resource areas at, and in the vicinity of, the NFIA. The EA concludes that the Proposed Action would have no adverse effect on Safety, Land Use, Geological Resources, Water Resources, Biological Resources, Visual Resources, Cultural Resources, and Hazardous Materials and Waste.

The Proposed Action would have a minor short-term, localized adverse impact on air quality by causing a temporary increase in air pollutant emissions, primarily particulate matter (PM_{10}) and nitrogen oxides (NOx) during construction. Both NOx and VOC emissions from the stationary (boilers) and mobile sources (aircraft and vehicles) during operations would be negligible compared to the conformity applicability thresholds. The air emissions analysis determined that the new emissions would not exceed *de minimus* limits for conformity or the regionally significant emission levels for local pollutants.

The Proposed Action would have a temporary adverse impact on noise. The use of heavy equipment for site preparation and development would generate noise exposure above ambient levels during the construction period. The noise produced, however, would be short-term and would not permanently affect any noise-sensitive receptors on- or off-site. There would be a slight growth in aircraft operations at the NFIA over the next five years and would cause a 4.6 percent increase the 65 dB noise contour. However, this increase is below the FAA significance threshold; therefore, there would be no significant impact on noise.

There would be both minor adverse and beneficial effects on transportation at the NFIA from the Proposed Action. There would be a minor increase in traffic during

construction operations, however this would cease upon completion of the proposed construction activities. The Proposed Action would improve the efficiency of on-site traffic flow and provide on-site access to the adjacent businesses. The Route 62/Williams Road/Airport Access Drive intersection would continue to operate below capacity and would provide a generally acceptable level of service (LOS); however, the intersection would be closer to capacity and the LOS would be less than without the potential airport traffic.

The Proposed Action would have positive, short-term economic impacts locally and regionally, as a result of the proposed construction activities. The benefits would include a temporary increase in construction employment, construction materials purchased from local vendors as well as meals, gasoline and other amenities to support the construction workers during this period.

Although the "Expansion and Renovation of the Existing Terminal Building" Alternative would eliminate the need to construct a new building; the expansion and renovation of the existing building would require extensive structural modifications and require a reduction in the size of the aircraft parking apron. This would reduce future flexibility at the NFIA. Therefore, the Proposed Action is the best viable option to allow the NFIA to update its current facilities and accommodate regional transportation.

1.0 INTRODUCTION

1.1 PURPOSE AND NEED

The Niagara Frontier Transportation Authority (NFTA) has prepared this Environmental Assessment (EA) for construction of a new terminal building and associated airside (terminal apron) and landside (parking and ground access) facilities that are proposed at the Niagara Falls International Airport (NFIA) in Niagara Falls, New York (Figures 1-1 and 1-2). This EA was prepared in accordance with Federal Aviation Administration (FAA) Orders 5050.4B and 1050.1E, the *National Environmental Policy A*ct (NEPA), and the *New York State Environmental Quality Review Act* (SEQRA) standards.

According to the 1994 Master Plan, the NFIA currently has the capacity to support 160,200 operations (either a take-off or landing) per year; however, in 2005 the airport only handled 47,030 operations, or approximately 29 percent of the airport capacity (NFIA Forecast, 2007). This included 2,126 commercial operations (including air taxi), with the remaining operations comprised of general aviation, and military aircraft (Table 1-1).

Table 1-1. Distribution of Airport Operations in 2005 at the NFIA

Type of Aircraft	Number of Operations
Commercial/Air Cargo	2,126
General Aviation	32,527
Military	12,377
Total	**47,030**

Source: NFIA Forecast, 2007

The projected increase in airline operations within the next five years is 3,201 operations for a total of 50,231 operations as approved by the New York Airports District Office (NY ADO) in February 2007 (NFIA Forecast, 2007).

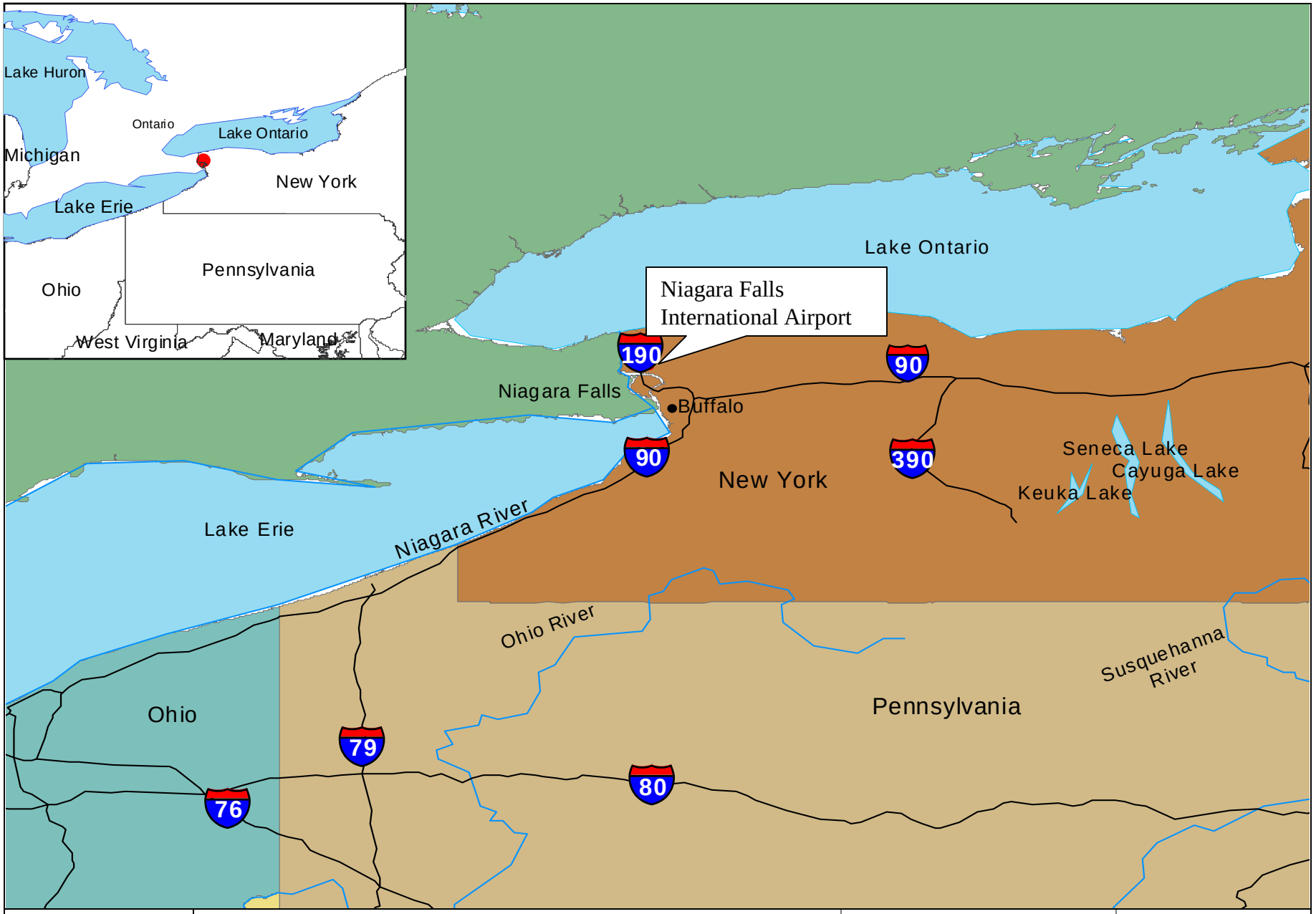

Figure 1-1.

Location of Niagara Falls International Airport

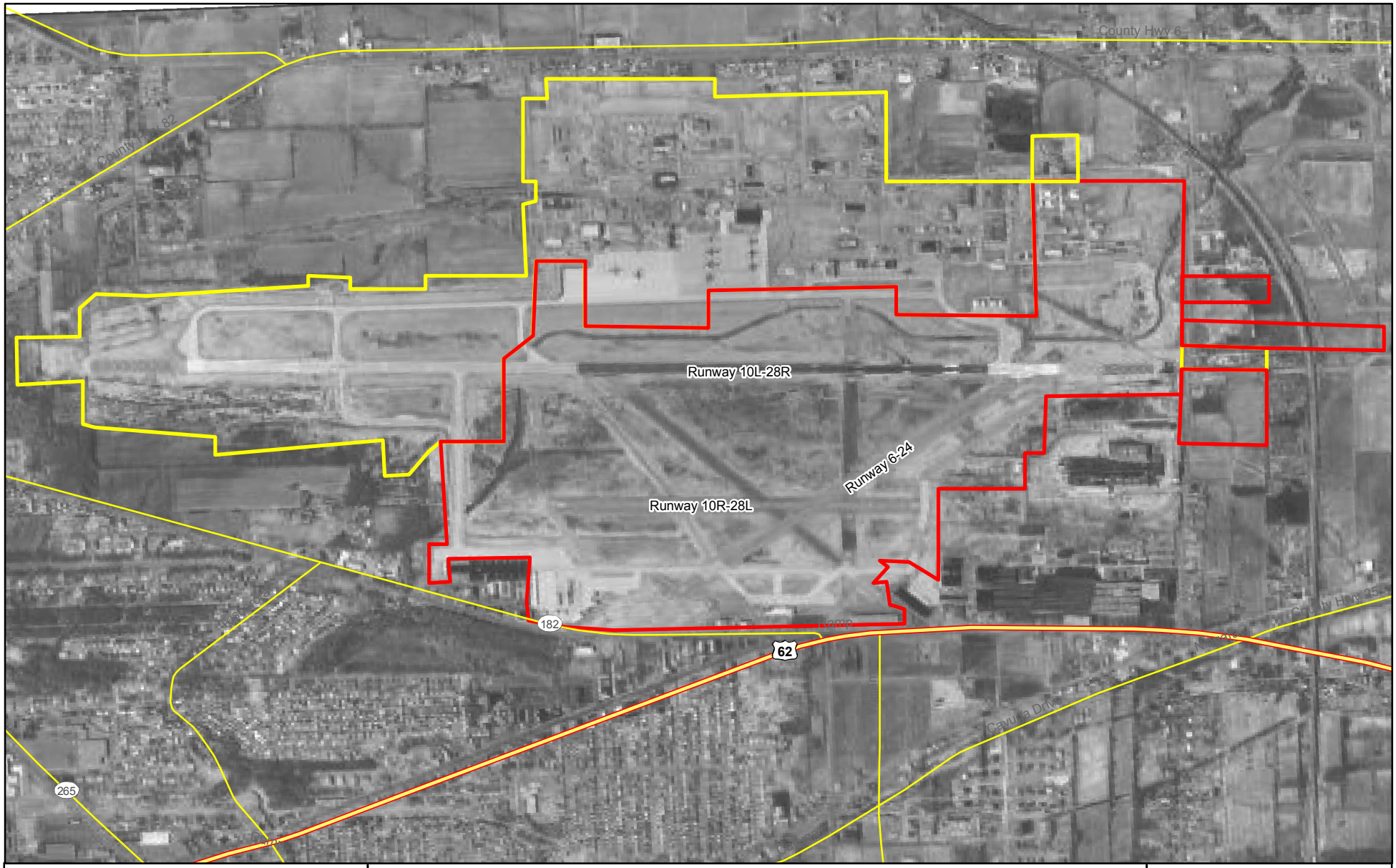

Figure 1-2. NFIA Property Boundary
Niagara Falls International Airport

The forecast projections include the projected operational start-up of Myrtle Beach Direct in March 2007. Myrtle Beach Direct provides non-stop service from Niagara Falls to Myrtle Beach, South Carolina and is anticipated to offer approximately 2 flights per week during 2007 and increase to 3 flights per week in 2011. The Proposed Action includes the construction of a new terminal and modifications to the existing aircraft apron, and parking facilities at NFIA to accommodate the charter tour operations.

Central to the Proposed Action is the construction of a new airline passenger terminal. The new passenger terminal would support commercial flights, general aviation, itinerant use, and charter services at NFIA, including routes serving the unique tourism destinations on the United States and Canadian sides of the Niagara Falls area. The existing NFIA terminal facilities have several functional difficulties relating to limited space and the age of the building, which pre-dates current Federal Aviation Administration (FAA) and Department Homeland Security (DHS) passenger and baggage security screening regulations (McFarland-Johnson, Inc. 2004). Due to this, the existing apron is inadequate to simultaneously process both inbound and outbound flights because, currently, the baggage claim for deplaning passengers and the baggage screening for outbound passengers are completed in the same area. Separate areas for these activities will be needed in order for NFIA to comply with current FAA and DHS requirements.

An additional parking lot and improved ground access for NFIA passengers and employees would also be an integral part of the Proposed Action. Existing road access and parking at NFIA does not provide the necessary capacity for the proposed terminal.

Detailed descriptions of these construction activities are provided in Section 2.1 of this document.

1.2 LOCATION

The NFIA is located four miles east of the City of Niagara Falls, New York (Figure 1-1). The airport property lies within the Towns of Niagara and Wheatfield, in Niagara County, New York. The NFTA owns and operates the NFIA as a joint-use general

aviation and military airport serving local and transient general aviation traffic as well as military aircraft (NYSDOT, 2002). The NFIA hosts the United States Air Force 107th Air Reserve Wing (ARW) and is the upstate home of the New York 914th Air National Guard (NYANG). The US Army National Guard occupies a small area southwest of the NFIA adjacent to the NFIA maintenance garage. The NFIA has 79 based aircraft, including aircraft associated with the NYANG (FAA, 2002).

1.3 SUMMARY OF ENVIRONMENTAL STUDY REQUIREMENTS

The primary legislation affecting the FAA's decision-making process is the NEPA of 1969. The following sections describe this act and other applicable federal and state regulations.

1.3.1 National Environmental Policy Act

NEPA requires that federal agencies consider the potential environmental consequences of proposed actions in their decision-making process. The law's intent is to protect, restore, or enhance the environment through well-informed federal decisions. The Council on Environmental Quality (CEQ) was established under NEPA for the purpose of implementing and overseeing federal policies as they relate to this process. In 1978, the CEQ issued *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 Code of Federal Regulations [CFR] §1500-1508 [CEQ, 1978]). These regulations specify that an EA:

- briefly provide sufficient analysis and evidence for determining whether or not to prepare an Environmental Impact Statement (EIS) or a Finding Of No Significant Impact (FONSI);
- aid in the agency's compliance with NEPA when an EIS is deemed unnecessary; and
- facilitate EIS preparation when one is necessary.

Further, to comply with other relevant environmental requirements in addition to NEPA (e.g., the Safe Drinking Water Act, Endangered Species Act, and National Historic Preservation Act) and to assess potential environmental impacts, the EA includes a thorough examination of all environmental issues pertinent to the Project.

1.3.2 Federal Aviation Administration Regulations

The FAA is responsible for managing airports for public safety and ensuring efficient use for commercial air traffic, general aviation, and national defense, including the Department of Defense (DoD). To identify and manage potentially significant environmental and social impacts of airport-related proposals, the FAA established Order 1050.1E, Environmental Impacts: Policies and Procedures

FAA Order 1050.1E provides the FAA with policies and procedures to ensure agency compliance with NEPA and implementing regulations issued by the CEQ (40 CFR parts 1500-1508). Appendix A of this order identifies 18 environmental resources that should be considered during the NEPA process. This EA considers each of the resources as prescribed by the FAA Order 1050.1 The locations where each of these resources is discussed in the EA, or the rationale for excluding a detailed discussion of a specific resource, are provided in Table 1-2.

Table 1-2. FAA Order 1050.1, Environmental Resources to be Considered

Resource	Location in the EA, or Rationale for Exclusion
Air Quality	Sections 3.2, 4.2 – Air Quality
Coastal Resources	Sections 3.6, 4.6 – Water Resources
Compatible Land Use	Sections 3.4, 4.4 – Land Use
Construction Impacts	Potential construction impacts are discussed individually for each resource in Chapter 4.0
Department of Transportation Act: Section 4(f)	There are no Section 4(f) lands at, or in the vicinity of, the NFIA; therefore, this resource was eliminated from further consideration.
Farmlands	There are no farmlands or Prime Farmland soils at, or in the vicinity of, the NFIA; therefore, this resource was eliminated from further consideration
Fish, Wildlife, and Plants	Sections 3.7, 4.7 – Terrestrial Resources and Sections 3.6, 4.6 – Water Resources
Floodplains	Sections 3.6, 4.6 – Water Resources
Hazardous Materials, Pollutions Prevention, and Solid Waste	Sections 3.11, 4.11 – Hazardous Waste
Historical, Architectural, Archeological, and Cultural Resources	Sections 3.9, 4.9 – Cultural Resources
Light Emissions and Visual Impacts	Sections 3.8, 4.8 – Visual Resources
Natural Resources and Energy Supply	The Proposed Action or Alternative would not involve extractive activities or changes in the energy supply; therefore, this resource was eliminated from further consideration
Noise	Sections 3.3, 4.3 – Noise
Secondary (Induced) Impacts	Sections 3.10, 4.10 – Socioeconomic Resources
Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks	Sections 3.10, 4.10 – Socioeconomic Resources
Water Quality	Sections 3.6, 4.6 – Water Resources
Wetlands	Sections 3.7, 4.7 – Terrestrial Resources
Wild and Scenic Rivers	There are no Wild and Scenic Rivers at, or in the vicinity of, the NFIA; therefore, this resource was eliminated from further consideration

1.3.3 New York State Regulations

Because this Proposed Action would take place in New York, it is necessary for the Proposed Action to comply with the requirements of the New York State Environmental Quality Review Act (SEQRA). SEQRA requires all state and local government agencies to consider and balance environmental impacts equally with the social and economic aspects of all actions they have the discretion to approve, fund, or directly undertake. The NFTA has cooperated with state and local agencies to the fullest extent possible to reduce duplication between NEPA and SEQRA requirements.

1.4 INTERAGENCY AND PUBLIC CONSULTATION

This process requires that project proponents notify relevant government agencies prior to making a statement of potential environmental impacts relative to their proposed project. Accordingly, the NFIA will notify relevant federal, state, and local agencies of the proposed project and allow them sufficient time to communicate their environmental

concerns specific to the project. Copies of correspondence will be provided in Appendix B.

1.5 AIR CONFORMITY REQUIREMENTS

Federal agencies are required to make a determination that a Proposed Action conforms to an approved Clean Air Act (CAA) implementation plan. Typically, each state develops, and must receive EPA approval for, its State Implementation Plan (SIP), which documents the rules it will implement to achieve or maintain attainment of the National Ambient Air Quality Standards (NAAQS). The U.S. Environmental Protection Agency (EPA) has set forth regulations (40 CFR 93, Subpart B) that outline the requirements and procedures for a conformity determination. Because the goal of the rule is to ensure that a Proposed Action does not prevent an area from achieving or maintaining attainment, only projects in either a non-attainment or maintenance area must undergo further analysis. In order to address the conformity requirements, this EA includes a conformity determination and an analysis of air emissions associated with the Proposed Action.

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This section of the EA describes the proposed Terminal Project and presents the alternatives to the Proposed Action that have been considered.

2.1 PROPOSED ACTION

The proposed Terminal Project is separated into three construction activities:

1. Construction of a new airline terminal building;

2. Construction of a new aircraft parking apron; and

3. Construction of additional parking and ground access improvements.

2.1.1 Airline Terminal Building

The new airline terminal building would be 66,625 square feet and include two gates, one with a loading bridge to accommodate large aircraft (e.g., B-747-400, B-757-300 and L-1011), processing facilities for international passengers, the capacity to process 504 enplaning or deplaning passengers in one hour, and a small transportation center to process and support charter and transit bus travel. The new terminal building would have the potential to add two additional gates including one loading bridge; however, these gates would not be fully installed as part of the Proposed Action. Operation of the new terminal would not require additional permanent staff.

The existing terminal building would not be demolished as part of the Proposed Action. It would be maintained for undetermined future use (Pers. Comm., Mark Clark).

2.1.2 Aircraft Parking Apron

The aircraft parking apron would cover approximately 192,500 square feet and have the capability to simultaneously support up to two commercial aircraft (Design Group V aircraft: B-767-400) and two regional jets (design aircraft: DHC 8-300). Design Group V

aircraft (B-747-400) are the largest aircraft with the potential to land at the NFIA; however, these aircraft would use the airport on an intermittent basis that does not justify a dedicated gate. Group V aircraft would utilize two adjacent gates for enplaning and deplaning passengers. Construction of the proposed aircraft parking apron would require the demolition and repaving of portions of Taxiways C, E, F and the North-South Runway to maximize the distance between the runways and the proposed new terminal facility.

2.1.3 Parking Facilities and Ground Access Improvements

The proposed parking facilities at the new terminal building would increase on-site parking by 230 spaces (91,600 square feet). In combination with the existing 257 parking spaces at the NFIA, the Proposed Action would add 230 additional spaces for a total of 487 on-site parking spaces. Ground access improvements include curbside pick-up areas, a bus staging area, and a three-lane, four-leg urban roundabout and a two-lane parallel drive that provides access to adjacent airport-related businesses including Veridian, Rainbow Industrial Center, and Carborundum (Figure 2-1).

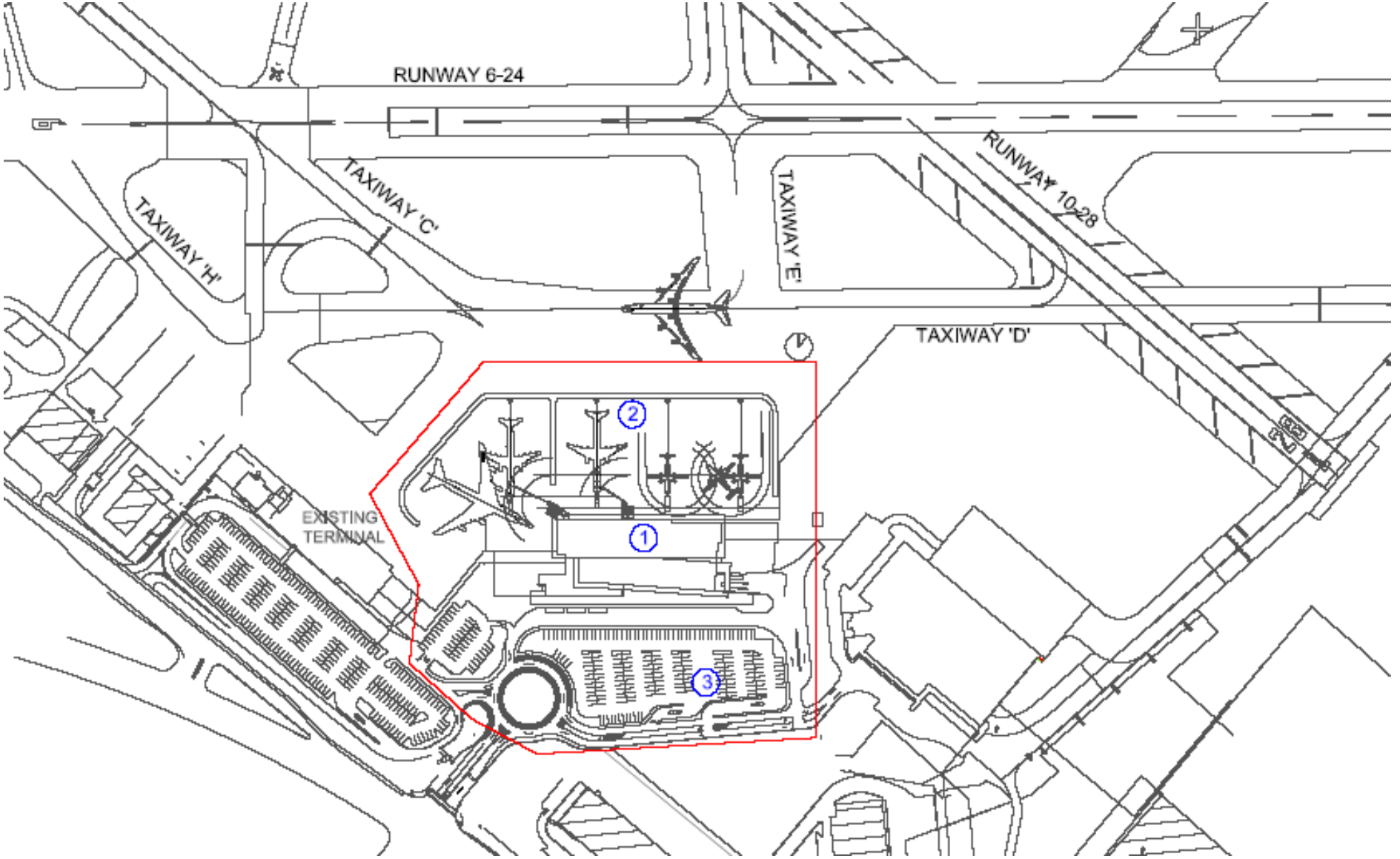

Figure 2-1.

Proposed Construction Activities

Legend

- Proposed Project Area
- 1 Proposed Terminal Building
- 2 Proposed Aircraft Parking Apron
- 3 Proposed Ground Access and Parking

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2.2 ALTERNATIVES TO THE PROPOSED ACTION

As part of the EA process, potential alternatives to the Proposed Action were evaluated and compared to the Proposed Action.

2.2.1 Expansion and Renovation of the Existing Terminal Building

The Terminal Concept Study (URS, 2003) evaluated the potential for expansion and renovation of the existing terminal building as an alternative to construction of a new terminal building. The existing terminal building provides approximately half of the floor area that is necessary for the potential future operations at NFIA. Expanding the existing building as a single-floor design would encroach upon the Runway 6-24 area (within 500 feet of the centerline of the runway) and would not comply with Federal Aviation Regulation (FAR) Part 77 *Objects Affecting Navigable Airspace*. The expansion would decrease the size of the current flight apron forcing parked aircraft closer to the runway centerline violating the FAA Runway Safety Area criteria. This compliance issue could be addressed by building a second level on the existing terminal building; however, the building is not currently structured to support a second level and would require expensive structural modifications. Additionally, the flight apron would decrease in size under this option, limiting future flexibility.

The current ground access and parking facilities cannot accommodate the potential increase in airport traffic. Similar to that required for the Proposed Action, expansion and renovation of the existing terminal building would require the expansion of the current parking area and improved ground access for NFIA passengers and employees.

2.2.2 No Action Alternative

The No-Action Alternative would leave the existing terminal building, apron, and parking facilities as is. Under this alternative, the current terminal, apron, and parking facilities would be used for all current and future airport operations. Adoption of the No-Action Alternative would mean that the NFIA would not be able to expand operations

and provide needed transportation services in the region. Therefore, it would not be an acceptable operational alternative to the Proposed Action.

The description of existing environmental conditions presented in Section 3, Affected Environment, of the EA documents conditions as they would occur (i.e., remain) if the No-Action Alternative was selected.

2.3 OTHER ALTERNATIVES CONSIDERED BUT ELIMINATED

Several alternatives, including alternate locations for the aircraft parking apron and parking facility and ground access improvements, were considered, but eliminated. The aircraft parking apron must be adjacent to the terminal building in order to load and unload passengers. Locating the apron anywhere other than adjacent to the terminal building would not provide proper access for arriving and departing aircraft. Therefore, no feasible alternative was identified for the location of the aircraft parking apron.

The parking facility and ground access improvements also could not be located anywhere other than the location described in the Proposed Action. Williams Road currently provides the only ground access point to the NFIA property. To provide timely access and efficient traffic patterns, the traffic circle and parking facilities should be located as close to the terminal building as possible. The location described in the Proposed Action would place the new parking facilities and ground access improvements between the Williams Road access point and both the proposed and existing terminal facilities. This location also connects the proposed parking area with the existing parking lot. Locating the additional parking area at an alternative location would cause traffic patterns to pass the currently proposed location and add distance between the proposed parking lot and the terminal facility. Therefore, no feasible alternative was determined for the location of the parking facility and ground access improvements.

3.0 AFFECTED ENVIRONMENT

This section describes existing environmental conditions for resources potentially affected by the Proposed Action and Alternatives. This section provides information to serve as a baseline from which to identify and evaluate environmental changes that may result from the Proposed Action and Alternatives. Baseline conditions represent current conditions. In compliance with CEQ guidelines, the description of the affected environment focuses on those resources and conditions potentially subject to impacts. FAA Order 1050.1E identifies 18 resource areas that can be considered for environmental impacts. Not all of these resource areas are present or applicable to this Proposed Action. This EA assesses only those resources that are present at NFIA and applicable to the Proposed Action (Table 1-2).

3.1 SAFETY

3.1.1 Definition of Resource

This section addresses ground and flight safety associated with operations conducted at the NFIA. These operations include activities at the NFIA as well as in-flight activities undertaken as part of commercial and private flights en route to and from the NFIA. Ground safety is affected by the risk involved in operations and maintenance activities that support routine activities at the base, but also include non-routine activities such as fire and crash response.

For personnel and aircraft safety, the FAA has established siting criteria in FAA Advisory Circulars (AC) 150/5360-9, *Planning and Design Guidelines for Airport Terminal Facilities at Non-Hub Location*, and AC 150/5360-13, *Planning and Design Guidelines for Airport Terminal Facilities* for commercial airport terminals. These siting criteria are considered when evaluating the potential impact of a Proposed Action.

3.1.2 Existing Conditions

Day-to-day operations and maintenance activities conducted by the NFIA are performed in accordance with applicable FAA safety regulations and standards prescribed by the Occupational Health and Safety Administration (OSHA).

The United States Air Force fire department provides fire and crash response at NFIA. The unit has a sufficient number of trained and qualified personnel, and possesses all equipment necessary to respond to aircraft accidents. All airport facilities that require automatic fire suppression capability are so equipped. The current airport layout plan meets all applicable FAA guidelines outlined in FAA AC 150/5360-9 and AC 150/5360-13.

3.2 AIR QUALITY

3.2.1 Definition of Resource

Air quality in a given location is determined by the concentration of designated pollutants in the atmosphere. The *Clean Air Act* (CAA) of 1970 and the *CAA Amendments* (CAAA) of 1990 established national standards for all areas in the United States that are regulated by the United States Environmental Protection Agency (USEPA). These standards are referred to as National Ambient Air Quality Standards (NAAQS) and include emission limits for the following pollutants: ozone (O_3), carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO_2), particulate matter equal to or less than 10 microns in diameter (PM_{10}), and lead (Pb). The NAAQS were established to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. The State of New York has adopted all of the NAAQS.

The USEPA places the responsibility to achieve and maintain compliance with NAAQS on each state and requires the approval of a state-developed plan, referred to as a SIP, to accomplish this objective. A SIP is a compilation of goals, strategies, schedules, standards, and enforcement actions that will lead to compliance with, or the maintenance of, NAAQS. Areas are described as being in attainment if they are in compliance with NAAQS and the objective of the SIP is to maintain this compliance status. Areas not in

compliance with NAAQS are classified as nonattainment areas. If the nonattainment areas achieve attainment following a nonattainment designation, they are designated as maintenance areas. In the 1990 CAAA, Congress classified nonattainment levels in terms of the lowest to highest level of severity: marginal, moderate, serious, severe, and extreme. These classifications are most frequently used as descriptors for ozone nonattainment areas, but are sometimes applied to areas that are in nonattainment for CO and PM_{10}.

Potential emissions from new and modified sources in attainment areas are evaluated through the Prevention of Significant Deterioration (PSD) program. The goal of the PSD program is to ensure that emissions from major sources do not degrade air quality. If a new source or modification does not trigger the PSD, then it is assumed not to have a significant impact on ambient air quality.

The 1990 CAA Amendments include provisions that require states to regulate major sources. These major source operating permits are called Title V permits, referring to the section of the CAA that requires them. A major stationary source is a facility (i.e., factory, base or other non-mobile activity) that emits more than the established amount of any criteria pollutant or hazardous air pollutants (HAPs). The major source thresholds in the SIP become smaller the more severe the air quality designation.

Section 162 of the CAA further established the goal of preserving the air quality in national parks that exceed 5,000 acres in size and national wilderness areas that exceed 5,000 acres in size if these areas were in existence on August 7, 1977. These areas were defined as mandatory Class I areas, while all other attainment or unclassifiable areas were defined as Class II areas. The PSD requirements include evaluation of impacts to Class I areas from construction of new major stationary sources, or modifications to existing stationary sources, that occur within 62 miles (100 kilometers) of a Class I area.

The General Conformity requirements of Section 176(c) of the CAA establish certain statutory requirements for federal agencies with proposed federal actions to demonstrate conformity of the proposed actions with the applicable state SIP for attainment of the NAAQS. Federal activities must not (a) cause or contribute to any new violation; or (b)

delay timely attainment of any standard, interim emission reductions or milestones in conformity to a SIP's purpose of eliminating or reducing the severity and number of NAAQS violations or achieving attainment for NAAQS. General conformity applies only to non-attainment and maintenance areas. If the emissions from a federal action proposed in a non-attainment area exceed annual thresholds identified in the General Conformity rule, a conformity determination is required for that action. The thresholds become more restrictive as the severity of the non-attainment status of the region increases.

3.2.2 Existing Conditions

3.2.2.1 Climate

NFIA is located near the mean position of the polar front, which is the area between the influence of the polar and tropical air masses. Niagara Falls is also situated adjacent to two of the Great Lakes, Erie and Ontario. The combination of these factors results in highly variable weather in terms of cloud cover and precipitation.

The lakes moderate the cold temperatures during the winter and provide a cooling effect during the summer months. Days with temperatures below 0^{o}Farenheit (F) are limited to about three to five annually and temperatures of 90^{o}F and above are infrequent. Winds blow off of Lake Erie, which lies to the southwest. The lake results in a relatively consistent wind direction and increases wind velocity throughout the year.

Precipitation is distributed relatively evenly throughout the year with approximately 36 inches of rainfall annually. Most months receive between 2.5 and 3.5 inches of precipitation with autumn and winter being dryer than spring and summer. Cloud cover is more prevalent during cold months (McFarland-Johnson, 1994).

3.2.2.2 Local Air Quality

NFIA is located in Niagara County. Niagara County is an attainment area for all criteria air pollutants except ozone. The USEPA classifies Niagara County as a marginal nonattainment area for ozone. The NAAQS ozone threshold value is 0.08 parts per

million (ppm), measured as 8-hour average concentration. An area meets the 8-hour ozone standard if the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured yearly at each monitor within an area does not exceed the 0.08 ppm threshold. As of June 15, 2005 EPA revoked the 1-hour ozone standard in all areas except fourteen ozone nonattainment Early Action Compact (EAC) areas. Niagara County is not among the fourteen EAC areas; therefore the 1-hour ozone standard does not apply.

3.2.2.3 Emissions at Niagara Falls International Airport

Stationary Sources

The NFIA is not a major source of air emissions and is therefore not required to have a Title V permit to operate. The major source thresholds for Title V status are 100 tons per year (tpy) of any criteria pollutant, 10 tpy of any single hazardous air pollutant (HAP), or 25 tpy of any combination of HAPs.

The terminal has one boiler (stationary source) that is used to heat the air traffic control tower only and has a 400,000 British thermal unit per hour (Btu/hr) rating. The boiler is connected to natural gas and water is circulated through the pipes. Stationary source emission estimates in tons per year of all the criteria pollutants due to the operations at the NFIA do not exceed the thresholds for Title V status (Table 3-1).

Table 3-1. Summary of Boiler Emission Estimates from Existing Terminal

Criteria Pollutant	Boiler size	Annual Hours of Operation	Emission Factor	Heating Value of Natural Gas	Emission Estimates		
	MBtu/hr	Hrs/yr	lbs./M cu.ft.	Btu/cu.ft.	lbs./hr	lbs./yr	tpy
CO	0.4	8760	84	1020	0.033	289	0.14
NOx	0.4	8760	100	1020	0.039	344	0.17
SOx	0.4	8760	0.6	1020	0.0002	2	0.001
VOC	0.4	8760	5.5	1020	0.002	19	0.009
PM	0.4	8760	7.6	1020	0.003	26	0.013

Note:
1. Emission Factors were taken from EPA's Compilation of Emission Factors (AP-42), Section 1.4/ Tables 1.4-1 and 1.4-2.
2. Calculation of Emissions in lbs./yr = (Boiler size in Mbtu/hr) x (Emission Factors in lbs./M cu.ft) x (Operating Hours/year) / (Heating Value of natural Gas in Btu/cu.ft)
3. HAP emissions were not calculated; however, these emissions (i.e. HAPs) are not expected to be significant based on the negligible emissions of the criteria pollutants.

Mobile Sources

Currently, there are 2,311 commercial aircraft operations at NFIA. The total operations include 50 percent arrivals (approach and taxi/idle mode) and 50 percent departures (takeoff and climbout mode). The landing and takeoff (LTO) cycle per aircraft includes approach, taxi/idle, takeoff, and climbout modes (i.e. both arrival and departure); therefore, total LTO cycles for 2007 is half the total aircraft operations i.e., approximately 1,156 LTO cycles. Most of the commercial aircrafts are B-737-400s and B-727-200s with two and three engines, respectively. Table 3-2 presents a summary of aircraft emission estimates from the existing terminal.

Table 3-2. Summary of Aircraft Emission Estimates from Existing Terminal

Aircraft type	LTO cycles per year	Total Emissions Per Aircraft (lbs/LTO cycle)[1]					Total Aircraft Emissions (tons/year)				
		THC	CO	NOx	SO_2	VOC^2	THC	CO	NOx	SO_2	VOC^2
B-737-400	612	1.59	16.42	26.18	1.06	1.74	0.49	5.02	8.00	0.32	0.53
B-727-200	544	16.88	57.63	26.45	1.74	18.48	4.59	15.68	7.19	0.47	5.03
Total	**1,156**						**5.1**	**20.7**	**15.2**	**0.8**	**5.6**

Notes:
1. Total emissions per aircraft in pounds per LTO cycle was calculated in accordance with *EPA's Procedures for Emission Inventory Preparation, Volume IV: Mobile Sources (1992).*There were no particulate emission factors available for the commercial aircraft engines
2. $VOC_{commercial} = THC_{commercial} \times 1.0947$ (from *EPA's Procedures for Emission Inventory Preparation, Volume IV: Mobile Sources (1992)).*
THC is total hydrocarbon.

The parking facility at NFIA has 257 parking spaces. Employee parking (or daily parking) is approximately 20 percent of the total parking spaces. The other 80 percent parking spaces are assumed to be constantly occupied and each vehicle is assumed to park for an average of 3 days. Sixty percent of the total vehicles are assumed to be light duty gasoline vehicles (LDGV) and the remaining 40 percent are assumed to be light duty gasoline trucks (LDGT1) with less than 6,000 gross vehicle weight. Each vehicle is assumed to drive an average of 4 miles (in and out) at 15 miles per hour around the parking lot. Table 3-3 presents a summary of current (2007) vehicle emissions from the existing parking facility.

Table 3-3. Summary of Vehicle Emission Estimates from Existing Parking Facility

Vehicle Type	Criteria Pollutants (tons per year)[1]				
	CO	NOx	VOC	PM	SO_2
Employee Parking					
LDGV	0.92	0.039	0.059	0.0015	NA
LDGT1	0.68	0.021	0.036	0.099	NA
Passenger/Rental Parking					
LDGV	1.24	0.052	0.080	0.0020	NA
LDGT1	0.92	0.029	0.048	0.0013	NA
Total Vehicle Emissions	**3.77**	**0.14**	**0.22**	**0.10**	**NA**

Note:
1. Emission estimates were based on EPA's MOBILE6.2 emission factors for Erie County in 2007 (NYSDOT-EAB website). Emission factors for SO_2 were not available.

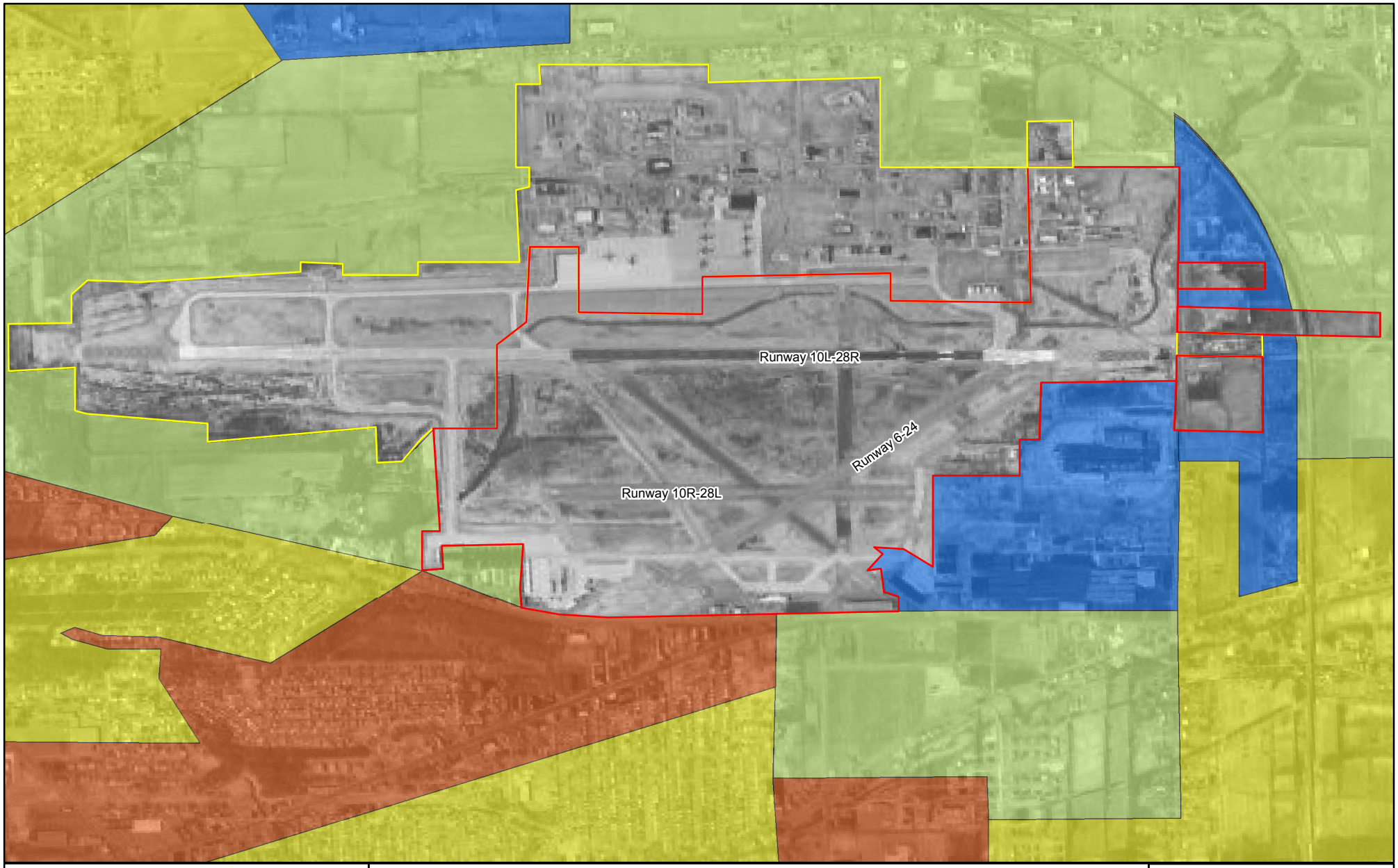
3.3 NOISE

3.3.1 Definition of Resource

Noise is defined as unwanted sound, and can be any sound that is undesirable because it interferes with communication, has enough intensity to damage hearing, or is otherwise inconsistent with a designated use. Human response to noise varies on the type and characteristics of the noise, distance between the noise source and receptor, receptor sensitivity, and time of day.

3.3.2 Existing Conditions

The noise associated with the terminal facility at NFIA is characteristic of the noise at most airports with commercial/military flying facilities. During the periods of no aircraft activity, noise results primarily from maintenance and shop operations, ground traffic movement, occasional construction, and similar sources. This noise is almost entirely restricted to the facility itself, and is consistent with noise levels typical of a urban/industrial area. There are no noise sensitive receptors at, or immediately adjacent to, the NFIA. The surrounding area is a mix of commercial and industrial facilities and agricultural fields. The closest residential facilities are south of Route 62 and west of Williams Road (Figure 3-1). These homes are approximately 0.3 mile from the proposed terminal location and are separated from the NFIA by a variety of commercial facilities.



Legend

- NFIA Property
- USAF Property
- Agricultural
- Commercial
- Industrial
- Residential

Figure 3-1. Land Use in the Vicinity of the NFIA Niagara Falls International Airport

Source: 1994 Airport Master Plan

0 0.15 0.3 0.6 0.9 1.2 Miles

N
W E
S

3.4 LAND USE

3.4.1 Definition of Resource

Land use refers to both natural and "human modified" conditions occurring at a particular location. Examples of human-modified land use categories include residential, industrial, transportation, communications and utilities, agricultural, institutional, recreational, and other developed areas. Management plans and zoning regulations determine the type and extent of land use allowable in specific areas and are often intended to protect specially designated or environmentally sensitive areas.

The Federal Coastal Zone Management Act (CZMA) of 1972, as amended (16 United States Code [U.S.C.] §§ 1451, *et seq.* encourages coastal states and territories to develop comprehensive coastal management programs. The program is administered by the Secretary of Commerce, who in turn has delegated this responsibility to the National Oceanic and Atmospheric Administration's (NOAA) National Ocean Service. Section 307 of the CZMA requires that federal actions within or outside the coastal zone that affect any land or water use or natural resource of the coastal zone shall be carried out in a manner with is consistent with the enforceable policies of approved state coastal management programs (15 CFR 930). This concept is known as "federal consistency," and is a benefit available only to these states that have a federally approved coastal management program (NOAA, 1997). New York State currently has an approved Coastal Zone Management Plan (CZMP).

3.4.2 Existing Conditions

3.4.2.1 Regional Land Use

The NFIA is located in Niagara County, New York. Land uses adjacent to the airport are primarily industrial, commercial, and agricultural in character with some residential subdivisions (Figure 3-1). The 107 ARW and 914th NYANG are located north and west of NFIA. Military residences and trailer parks are located southwest of the airport. Predominantly undeveloped or agricultural lands lie east of the airport. The region around the airport lies within Niagara County Agricultural District No. 7, but none of the land

adjacent to the NFIA is currently cultivated or considered Prime Farmland as defined by 7 CFR Part 657. Also, there are no publicly owned parks, recreation areas, or wildlife refuges within or immediately adjacent to the airport property (Panamerican Environmental, Inc, 1999).

3.4.2.2 Land Use at Niagara Falls International Airport

The existing 11,500 square foot passenger terminal building at NFIA is located along the southern boundary of the airport (Figure 2-1). The terminal building contains facilities to handle domestic and international air carrier and charter flights. The United States (US) Customs and Immigration building is attached to the east side of the terminal and enables customs inspections on a 24-hour basis. To the west of the terminal building are the general aviation itinerant apron, fixed base operator (FBO) building/hangar, airport administration building, and service vehicle garage. The itinerant apron provides parking for transient and FBO aircraft. A second general aviation area (the west ramp) is located west of Runway 6. This area contains hangars and tie-downs for based aircraft and aviation organizations. The maintenance garage and service garage performs routine maintenance of the service vehicles including fluid changes and lubrication.

NFIA's airfield system includes three runways and twelve taxiways. The primary-use runway, Runway 10L-28R, is 9,130 feet long. The second runway, Runway 6-24, at a length of over 5,000 feet, is used by small and large aircraft for crosswind operations and is also used by the military for some training activities. The third runway, Runway 10R-28L, runs parallel to the primary-use runway, is just under 4,000 feet long and is used by small general aviation aircraft.

Several military installations and private industries are located on or adjacent to the airport and have direct airport access. The USAF has the largest installation to the north and the NYANG Base is located to the west of the USAF property. The US Army hangar is located west of the west end maintenance garage. Other industrial facilities adjacent to the airport include Bell Aerospace and Carborundum.

3.4.2.3 Coastal Zone

The NFIA is entirely outside the New York State designated Coastal Zone. The nearest designated Coastal Zone is associated with the Little River, a tributary of the Niagara River, and occurs 1.5 miles south-southwest of the airport.

3.5 GEOLOGICAL RESOURCES

3.5.1 Definition of Resource

Geological resources are surface and subsurface materials and their properties. Principal geologic factors influencing structural development potential are soil stability and topography. Soils are unconsolidated materials overlying bedrock or other parent material. Soil depth, structure, elasticity, strength, shrink-well potential, and erodibility influence suitability for structures and facilities. Soil is described in terms of series or type, slope, and physical characteristics. Topography is defined as the surface elevation contours of the natural and/or man-made features (exclusive of buildings and temporary features) of an area that describe the configuration of its surface. Topography is influenced by many factors, including human activity, underlying geological material, seismic activity, climate conditions, and erosion.

3.5.2 Existing Conditions

3.5.2.1 Geology

Primary bedrock formations in Niagara County include the Queenston shale, Lockport dolomitic limestone, and the Rochester shale. The soils of Niagara County are formed from glacial till and are also strongly influenced by the bedrock formations upon which they rest. Large amounts of lake sediments including reddish colored glacial till (comparable to Munsell Soil Color Chart description “strong brown”) were deposited when the area was covered by glacial Lake Lundy during the Pleistocene Epoch. The project area was inundated by the waters of glacial Lake Tonawanda during the recession of the last (Wisconsin) glacier, where olive and brownish sediments were left behind (Panamerican, 2004).

3.5.2.2 Soils

The soils found at the NFIA are either hydric soils or soils with hydric inclusions (Panamerican, 1999). The principal soil series that comprises the project site is the Lakemont silty clay loam (US Department of Agriculture, 1971). Fonda mucky silt loam is commonly associated with basin areas immediately surrounding flood plains and cutoff meanders such as those adjacent to the NFIA property along Cayuga Creek.

Lakemont silty clay loam soils are characteristic of old glacial lake basins. The soil does not drain efficiently making good tilth difficult to maintain. The Fonda Mucky silt loam soil is commonly associated with the dominant soil types in this area and has characteristically poor permeability. The clay-like soil composition and poor drainage result in a low erosive potential for all soils within the project area.

Although the soils can still be identified, the majority of the surface at the NFIA has been disturbed through previous construction activities including development of airport runways and taxiways, airport-related buildings, and creation of impervious surface.

3.5.2.3 Topography

The NFIA is located within the Huron Plain, part of the Erie-Ontario Lake Plain physiographic province. The fairly level and uniform Lake Plain surface slopes gently westward and is punctuated by irregular ridges. Most of the NFIA is flat or slightly sloping to accommodate the runways, taxiways and general facilities associated with the airport. The elevation of the NFIA is approximately 590 ft (180 m) above mean sea level (Panamerican, 2004).

3.6 WATER RESOURCES

3.6.1 Definition of Resource

Water resources include surface water, groundwater, wastewater, and drinking water. Surface water resources include lakes, rivers, and streams, which are important for economic, ecological, recreational, and human health reasons. Groundwater is subsurface water that is issued for potable water consumption, agricultural irrigation, and

industrial applications. Groundwater properties are described in terms of depth to aquifer, aquifer or well capacity, water quality, and surrounding geologic composition. Biological aquatic resources are discussed in terms of the fish species that are likely to be found at NFIA. Aquatic resources include aquatic habitats and the biological resources supported by them.

Other issues relevant to water resources include watershed areas affected by existing and potential runoff and hazards associated with 100-year floodplains. Floodplains are areas of low ground present on one or both sides of a stream channel that are subject to either periodic or infrequent inundation by floodwater. Inundation hazards associated with the floodplains have prompted federal, state, and local legislation that limits development in these areas largely to recreation and preservation activities.

3.6.2 Existing Conditions

3.6.2.1 Surface Water Resources

The NFIA lies in the Lake Erie-Niagara River Basin. Cayuga Creek, its tributaries, and the wetland on the western portion of the NFIA are the only surface water features on the airport. Wetlands are discussed in Section 3.7 of this EA. Cayuga Creek enters the northeastern corner of NFIA near Walmore Road. It flows south for approximately 1,800 feet until it turns west immediately north of Runway 6-24. It flows west for approximately 7,300 feet parallel to the Runway 10-24 before turning south again at the eastern boundary of the NFIA. From the eastern boundary of the NFIA, Cayuga Creek flows approximately 3,500 feet south to the southeastern boundary of the NFIA at Porter Road, and then off the airport toward the City of Niagara Falls (Figure 3-2).

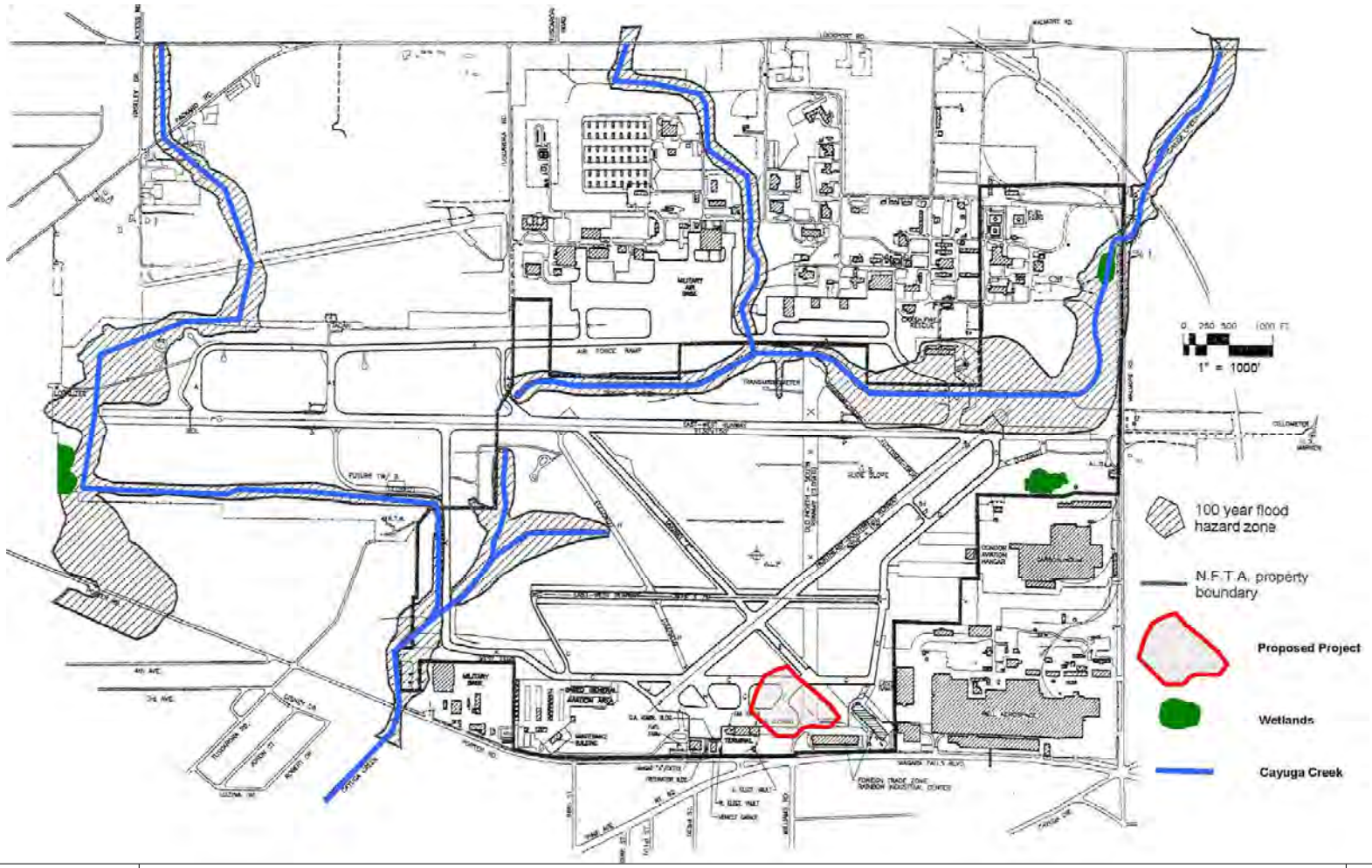


Figure 3-2.
Surface Water, Floodplains, and Wetlands at NFIA

3.6.2.2 Use Classification

Cayuga Creek is a small, low gradient tributary to the Niagara River. New York State Department of Environmental Conservation (NYSDEC) classifies surface waters of the state according to their "best usages" (NYSDEC, 1998). Uses for which surface waters have been classified by NYSDEC include culinary purposes, food processing, drinking water, bathing, fishing, fish propagation and survival, and primary and secondary-contact recreation. The NYSDEC has designated Cayuga Creek as a Class C stream. According to 6 NYCRR Part 701.8, "the best usage of Class C waters is fishing. These waters shall be suitable for fish propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use of these purposes." Attainment of these uses is currently impacted by airport security measures that preclude public access to Cayuga Creek within the airport grounds.

3.6.2.3 Floodplains

The 100-year floodplain associated with Cayuga Creek follows the creek through the center of the NFIA (Figure 3-2). The floodplain is confined by the banks of the artificially straightened reach between Taxiway A3 and the old North-South Runway. The floodplain widens between the culvert under the old North-South Runway and the culvert under Walmore Road. Based on the shape of the floodplain at the culverts under Walmore Road, Taxiway A3, and the old North-South Runway, the culvert at the old North-South Runway may act as a hydrologic control on downstream flow during high-volume flow events, and may have a backwatering effect on the reach between the old North-South Runway and Walmore Road.

3.6.2.4 Aquatic Habitat in Cayuga Creek

The aquatic habitat in Cayuga Creek at NFIA ranges from fair in the upper portion of the reach near Walmore Road to poor in the artificially channelized reach near the runway. The upper section of the creek between Walmore Road and the runway follows a moderately sinuous course and has alternating riffle/glide habitat. Glides are the dominant habitat type in this reach, and the riffles are infrequent and short. The lack of

riffle development in this reach is likely due to a combination of low gradient, scarcity of coarse substrate, and low flow velocity. The formation of small, sandy point bars at the meanders increase the cross-sectional depth diversity in the channel. Fish habitat in this reach is mostly associated with undercut banks on meanders and emergent aquatic vegetation at the water's edge. Small patches of pebble-sized substrate likely provide spawning habitat for fish in this reach, which is otherwise dominated by sandy substrate.

The channelized reach of Cayuga Creek adjacent to the runway lack significant meanders and cross-sectional depth diversity. The lack of significant meanders in his reach precludes the formation of undercut banks, bars, or other physical habitat features. Virtually no macrohabitat diversity exists in this reach: the reach forms one long glide between culverts at the taxiways. Emergent and overhanging vegetation provides some marginal fish habitat, and the substrate is mostly sand. This reach lacks sufficient velocity and substrate diversity to support spawning activity by lithophillic species (species that require or prefer gravel substrate to reproduce).

3.6.2.5 Aquatic Biological Community in Cayuga Creek

The New York State Department of Environmental Conservation (NYSDEC) maintains a database of freshwater fish collections in New York and has created distribution maps for the most common species throughout the State. Based on collections taken from the Niagara River and several tributaries to the Niagara River near Cayuga Creek, and observations of the aquatic habitat in Cayuga Creek at NFIA (ERM, 2003), the fish community in Cayuga Creek is likely comprised of common species that are tolerant or moderately tolerant of degraded conditions.

No data on benthic macroinvertebrates exists for Cayuga Creek; however, based on the condition of the instream habitat at the NFIA, the benthic community at the NFIA is likely comprised of organisms that are tolerant of poor habitat conditions including certain species of chironomids (midges), coleopterans (beetles), hemipterans (beetles), and/or odonates (dragonflies and damselflies). The benthic community also likely includes aquatic worms and some species of gastropods (snails). It is unlikely that significant numbers of sensitive families such as mayflies, or stoneflies occur in Cayuga

Creek due to its lack of coarse substrate and high turbidity, especially in the reach parallel to the runway.

3.6.2.6 Groundwater Resources

Groundwater in this region of New York is found in three primary bedrock aquifers: the Onondaga Limestone/Akron Dolomite/Bertie Limestone aquifer, the Camillus aquifer, and the Lockport aquifer. The Lockport Aquifer occurs under the NFIA. The Lockport aquifer consists entirely of the Lockport Dolomite formation, and has a maximum thickness of approximately 150 feet. Horizontal bedding-plane joints or zones of such joints are the principal water-yielding openings in the Lockport aquifer. Seven such water-yielding zones have been identified in the continuous bedrock in the vicinity of the NFIA. The extensive fractures in the weathered upper stratum of the Lockport aquifer form an eighth water-yielding zone near the surface of the formation.

Groundwater flow patterns within the Lockport aquifer have been extensively modified by human activities. An unlined intake conduit that extends northward from the Niagara Falls to the Forebay Canal functions was constructed below the water table and functions as a line of discharge for the aquifer (USGS, 2002). The Lewiston Pump-Storage Reservoir and Forebay Canal, which convey water westward from the reservoir through two powerplants to the Niagara River downstream from the falls, have also altered the groundwater budget in the Lockport aquifer. The reservoir occurs above the water table and functions as an artificial recharge area for the aquifer (USGS, 2002).

3.7 BIOLOGICAL RESOURCES

3.7.1 Definition of the Resource

Biological resources are defined as native or naturalized plants and animals and the habitats in which they exist. This section discusses terrestrial biological resources. Aquatic biological resources are discussed in Section 3.6 of this EA (Water Resources). The following sections describe the existing conditions of terrestrial biological resources within the NFIA, including vegetation communities, wetlands, wildlife, and threatened and endangered species.

3.7.2 Existing Conditions

3.7.2.1 Vegetation Communities

The NFIA lies within the Southern Great Lakes Forests ecoregion (WWF, 2001). This ecoregion covers much of the industrial heartland of North America, including southern Michigan, much of Ohio and Indiana, extreme southwestern Ontario, and western New York State. Historically, this ecoregion was covered by deciduous forests of sugar maple and beech. Now, the small patches of intact forest that remain in the ecoregion are dominated by oaks and hickories on drier sites and elms, ashes, and red maple in wet areas. Urban and suburban development have eliminated or significantly degraded forests and other natural habitats in the ecoregion, and less than five percent of the ecoregion remains as intact habitat (Ricketts et al., 2001).

Large-scale land alterations including the development of runways, airport-related buildings, and extensive paved areas have significantly altered the NFIA from its natural state. Much of the native vegetation has been removed and over 60 percent of the airport consists of developed land (i.e., paved land or buildings). Managed grassland is the second most common land cover, encompassing roughly 30 percent of the airport. Wetlands, small stands of deciduous trees and shrubs, and landscaping around buildings comprise the remaining 10 percent of vegetation at the airport. Table 3-4 lists the dominant plant species found at the NFIA.

Managed grassland occurs adjacent to runways, on roadway medians, and on landscaped areas around buildings and parking areas. These areas are mowed regularly and contain wild carrot and common landscape grasses including tall fescue, orchard grass, red clover, and bermudagrass.

Small, fragmented stands of deciduous upland forest and shrublands are found in the west and northwest portions of the airport. The dominant tree species in these forest stands include red maple, butternut hickory, and white oak with black cherry and box elder interspersed throughout. Most of the trees are relatively young (< 25 yr.) with diameters

less than 12 inches diameter at breast height (dbh); however, older trees with diameters exceeding 20 inches dbh are scattered throughout the forest stands. Common shrub and herbaceous species that comprise the understory in these areas include honeysuckle, poison ivy, blackberry, common greenbrier, southern arrowwood, multiflora rose, and Virginia creeper.

Table 3-4. Common Vegetation Species at Niagara Falls International Airport

Common Name	Scientific Name
Redtop	*Agrositis alba*
Tall fescue	*Festuca arundinacea*
Wild carrot	*Daucus carota*
Evening primrose	*Oenothera biennis*
Goldenrod species	*Solidago sp.*
Japanese honeysuckle	*Lonicera japonica*
Velvet grass	*Holcus lanatus*
Orchard grass	*Dactylis glomerata*
Red clover	*Trifolium pratense*
Bermudagrass	*Cynodon spp.*
Swamp rose	*Rosa palustris*
Multiflora rose	*Rosa multiflora*
Common greenbrier	*Smilax rotundifolia*
Southern arrowwood	*Viburnum dentatum*
Virginia creeper	*Vitaceae parthenocissus quinquefolia*
Blackberry	*Rubus spp.*
Dandelion	*Taraxacum officinale*
Bedstraw	*Galium sp.*
Downy chess	*Bromus tectorum*
Redtop	*Agrostis alba*
Brome grass	*Bromus ciliates*
Shallow sedge	*Carex lurida*
Bristlebract sedge	*Carex tribuloides*
Red-panicled dogwood	*Cornus foemina*
Teasel	*Dipsacus sylvestris*
Green ash	*Fraxinus pennsylvanica*
White ash	*Faxinus americana*
Red maple	*Acer rubrum*
Box elder	*Acer negundo*
Soft rush	*Juncus effuses*
Birdsfoot trefoil	*Lotus corniculatus*
Purple loosestrife	*Lythrum salicaria*
Eastern cottonwood	*Populus deltoids*
Pussy willow	*Salix discolor*
Poison ivy	*Toxicodendron radicans*
Cattail	*Typha latifolia*

Source: USFWS, 2004 and ERM, 2003

3.7.2.2 Wetlands

The United States Army Corps of Engineers (USACE) and USEPA define 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" (33 CFR 328). Wetlands play an important role in maintaining environmental quality because of the diverse biologic and hydrologic functions they perform. These functions include, but are not limited to, water quality improvement, groundwater recharge, sediment and toxicant retention, nutrient cycling, plant and animal habitat, and floodwater attenuation and storage. Because of their importance, Federal and state regulations protect wetlands from alteration or destruction. Wetlands are protected at the Federal level as a subset of the "Waters of the United States" under Section 404 of the Clean Water Act (CWA). Freshwater wetlands are protected at the state level by the NYSDEC under Article 24 of the Freshwater Wetlands Act (FWA). The FWA protects those wetlands larger than 12.4 acres (5 hectares) in size, and certain smaller wetlands of unusual local importance.

Three wetlands occur at NFIA, encompassing a total of 8.4 acres. One narrow emergent/scrub-shrub wetland borders Cayuga Creek and another large wetland lie in the western portion of the site, immediately west of Runway 10L (Figure 3-2). The third wetland lies in the eastern portion of the site and consists of a small pond that is hydrologically connected to Cayuga Creek (Figure 3-1). The wetland that borders Cayuga Creek is limited to the banks of the creek (no more than 5 feet on each side of the creek) by the surrounding topography and the presence of the airfield (frequently mowed grassland). Parts of this wetland contain nearly monotypic stands of purple loosestrife, an invasive species that reduces wetland functions and values because it outcompetes native plants and reduces vegetative species diversity. Soils in this wetland are very dark grey and black silty clay loams with reddish brown mottles and greenish-grey gley below 5 inches. Hydrologic features of this wetland include surface soil saturation throughout, occasional depressions containing several inches of standing water, and oxidized root channels. This wetland is not mapped by NYSDEC and, therefore, is not subject to

NYSDEC regulation. This wetland is considered a water of the US and so is subject to Federal regulation.

The large emergent/scrub-shrub/forested wetland complex located in the western portion of the site continues offsite to the west encompassing roughly 73 acres. Onsite portions of this wetland encompass over six acres. This wetland is mapped as a Class II wetland by the NYSDEC. Class II wetlands are of high quality and exotic or invasive plant species comprise less than two thirds of the covertype (NYSDEC, 2002). The NYSDEC regulates a 100-foot buffer around Class II wetlands and requires a permit for ground-disturbing activities conducted within the wetland or its buffer. Soils in this wetland contain a black muck layer that is underlain by black and dark grey silty clays that have sulfidic odor and distinct greenish-blue gley. Hydrologic features of this wetland include surface soil saturation throughout and extensive areas of standing water greater than 6 inches deep.

3.7.2.3 Wildlife

The NFIA property is predominately covered with runways, taxiways, parking lots, buildings, and other impervious surfaces that offer little, if any, wildlife habitat value. Wildlife species that are tolerant of urban environments such as American crow, European starling, American robin, rock dove, mourning dove, barn swallow, house sparrow, and various rodents seek shelter and sometimes nest in the airport hangars and buildings. Aside from developed areas, the dominant wildlife habitat at the NFIA is mowed grassland. This habitat offers limited wildlife habitat value because it is fragmented by roads and airport-related development and is frequently disturbed by aircraft operations, human activity, and mowing. Birds and mammals common to this habitat include killdeer, ring-billed gull, Canada goose, little brown bat, coyote, meadow vole, and whitetail deer. Several species of raptors also frequent this habitat where they forage for small mammals. Raptors observed on the NFIA runways include red-tailed hawk, American kestrel, Cooper's hawk, Northern harrier, sharp-shinned hawk, and rough-legged hawk (USDA, 1997). Table 3-5 lists the wildlife known and/or expected to occur at the NFIA.

The wetlands located along Cayuga Creek and in the western portion of the site contain the most significant wildlife habitat at the NFIA. These wetlands contain valuable wildlife habitat features such as snags and downed wood and juxtaposition of open water with forest, shrub, and emergent habitats. Cayuga Creek provides open water habitat for waterfowl and other waterbirds such as mallards, green-winged teal, blue-winged-teal, black duck, great-blue heron, green heron, and belted kingfisher. Red-winged blackbirds, tree swallows, yellow warbler, and song sparrows likely nest in the wetland vegetation that borders the creek. Muskrat are common aquatic mammals that occur in and along the banks of Cayuga Creek.

The large wetland located in the western portion of the site provides the most complex and valuable wildlife habitat at the NFIA. Wildlife sign, including mammal prints and scat, woodpecker borings, and old bird nests, were observed throughout this wetland during field visits conducted in fall 2003 (ERM, 2003). Breeding birds observed and/or expected to occur in this wetland include Northern cardinal, yellow warbler, downy woodpecker, rufous-sided towhee, red-eyed vireo, ruby-crowned kinglet, song sparrow, red-winged blackbird, common flicker, black-capped chickadee, gray catbird, and veery. Common mammal species expected to occur in the wetland includes muskrat, whitetail deer, deer mouse, masked shrew, short-tailed shrew, chipmunk, eastern gray squirrel, raccoon, and red fox. Amphibians expected to occur in this wetland include leopard frog,

Several species of wildlife listed by NYSDEC as threatened or Special Concern Species have been observed in this during recent surveys conducted by the USFWS (See section 3.7.2.4) (USFWS, 2004). These species occasionally use this wetland for foraging or stopover while en route to other habitats, but no breeding has been documented or is expected to occur there due to lack of suitable habitat.

Table 3-5. Common Wildlife Species Known or Expected to Occur at Niagara Falls International Airport

Common Name	***Scientific Name***
Mammals	
Coyote	*Canis latrans*
Red fox	*Vulpes vulpes*
Whitetail deer	*Odocoileus virginianus*
Raccoon	*Procyon lotor*
Muskrat	*Ondatra zibethicus*
Cottontail rabbit	*Sylvilagus floridanus*
Meadow vole	*Microtus pennsylvanicus*
Short tail shrew	*Blarina brevicarda*
Deer mouse	*Peromyscus maniculatus*
Masked shrew	*Sorex cinereus*
Birds	
Canada goose	*Brants Canadensis*
Blue-winged teal	*Anus discors*
Green-winged teal	*Anus crecca*
Mallard	*Anus platryhynchos*
Ring-billed gull	*Larus delawarensis*
Northern harrier	*Circus cyaneus*
Red-tailed hawk	*Buteo jamaicensis*
Red-shouldered hawk	*Buteo lineatus*
American kestrel	*Falco sparverius*
Sharp-shinned hawk	*Accipiter straitus*
Killdeer	*Charadrius vociferous*
Mourning dove	*Zenaida macroura*
Rock dove	*Columba livia*
Common flicker	*Colaptes auratus*
Eastern kingbird	*Tyrannus tyrannus*
Barn swallow	*Hirundo rustica*
American crow	*Corvus brachrhynchos*
Blue jay	*Cyanocitta cristata*
Black-capped chickadee	*Parus atricapillus*
American robin	*Turdus migratorius*
Veery	*Catharus fuscescens*
European starling	*Sturnus vulgaris*
Gray catbird	*Dumetella carolinensis*
Bobolink	*Dolichonyx oryzivorous*
Common yellowthroat	*Geothlypis trichas*
Yellow warbler	*Dendroica petchia*
Brown-headed cowbird	*Molothrus ater*
Common grackle	*Quisicala quisicula*
Red-winged blackbird	*Agelaius phoeniceus*
Northern oriole	*Icterus galbula*
American goldfinch	*Carduelis tristi*
Belted kingfisher	*Ceryle alcyon*
Black-crowned night heron	*Nycticorax nycticorax*
Great blue heron	*Ardea herodias*
Green-backed heron	*Butorides striatus*
House finch	*Carpodacus mexicanus*
Song sparrow	*Melospiza melodia*
Field sparrow	*Spizella pusilla*

Common Name	*Scientific Name*
Chipping sparrow	*Spizella passerine*
Ruby-crowned kinglet	*Regulus calendula*
Rufous-sided towhee	*Pipilo erythrophtlamus*
Red-eyed vireo	*Vireo olivaceus*

Source: USDA, 1997 and ERM, 2003

3.7.2.4 Threatened and Endangered Species

The United States Fish and Wildlife Service (USFWS) and the NYSDEC maintain lists of threatened and endangered species in New York. Threatened and endangered species are protected from death, harm, or harassment under the federal Endangered Species Act (ESA) (16 U.S.C. 1536). Under the 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. Section 7(a)(2) of the ESA requires Federal agencies to ensure that their actions are not likely to jeopardize listed species or result in the destruction or adverse modification of designated critical habitat.

The USFWS documented that no federally-listed threatened or endangered species occur at or in the vicinity of the NFIA (Appendix A). The NYSDEC documented that 14 state-listed threatened or endangered species or state-listed species of concern occur in the vicinity of the NFIA (Appendix A). Of these 14 state-listed species, seven are plants that have specific habitat requirements that do not occur at the NFIA. The remaining seven species potentially occur at the NFIA based on species life history requirements and habitat availability at the site. Table 3-6 lists these seven species and the following sections describe their habitat preferences and potential or documented use of the NFIA.

Table 3-6. State-listed Threatened, Endangered and Species of Concern That Potentially Occur at NFIA

Common Name ***Scientific Name***	**Breeding Season**	**Federal/ State Status**	**Habitat**	**Potential to Occur at NFIA**
Short-eared owl *Strix occidentalis lucida*	March – April	Federal: None State: Endangered	Breeds in marshes and grasslands.	Wintering use only. Could occasionally forage in grasslands on the airfield during winter.
Northern harrier *Haliacetus leucocephalus*	November-February	Federal: None State: Threatened	Breed in marshes, grasslands, and cultivated fields, particularly in coastal areas.	No breeding habitat exists at NFIA. Could occasionally forage in grasslands and wetlands at NFIA.
Upland sandpiper *Rana chiricahuensis*	Year-round	Federal: None State: Threatened	Breed in pastures, meadows, fallow fields.	Could occasionally forage in grasslands on the airfield. Unlikely breeder at NFIA because of frequent mowing.
Grasshopper sparrow *Charadrius montanus*	April - August	Federal: None State: Special Concern	Breeds in open fields, prairie and rangelands.	Could occasionally forage in grasslands and wetlands at NFIA. Unlikely breeder at NFIA due to frequent mowing.
American bittern *Ovis Canadensis*	April – May	Federal: None State: Special Concern	Breeds in emergent wetlands.	Could occasionally forage in the wetland in the western portion of the site.
Horned lark *Accipiter gentiles*	June – August	Federal: None State: Special Concern	Breeds in large open areas that are barren, sandy, or have sparse grass cover. Breeding documented in grasslands at airports.	Could occasionally forage in grasslands on the airfield. Unlikely breeder at NFIA due to frequent mowing.
Box turtle *Terrapene Carolina*	May – July	Federal: None State: Special Concern	Open woodlands, pastures, and marshy meadows.	Could occur in the wetland in the western portion of the site.

T = Threatened E = Endangered SC = Special Concern Species

Short-eared Owl

The NYSDEC lists the short-eared owl as an endangered species. Short-eared owls are the most diurnal of all the northeastern owls: they are most active at dawn, late afternoon,

and dusk. This species breeds in marshes and grasslands and feeds primarily on small mammals, especially meadow voles (NYSDEC, 2004). In New York, short-eared owls are more common as winter residents than as breeders. Breeding is limited to the St. Lawrence and Lake Champlain Valleys, the Great Lakes plains, and the marshes of Long Island's south shore. In winter, short-eared owls gather throughout the state in open habitats that support large numbers of voles. Significant numbers of short-eared owls winter in the Lake Ontario plain and so could forage at NFIA in the grasslands adjacent to the runways. However, heavy snow and ice often reduces the availability of prey at NFIA during winter, reducing the potential for use by this species.

Northern Harrier

The NYSDEC lists the northern harrier as a threatened species. This species breeds in expansive marshes, grasslands, meadows, and cultivated fields, preferring coastal areas. Nesting occurs on the ground in a structure made from sticks and grass and prey consists of rodents and small birds. This species was observed by the USFWS during recent surveys at the Niagara Falls Air Reserve Station (USFWS, 2004). Disturbance from frequent mowing precludes nesting by northern harriers at the NFIA; however, this species potentially forages in the grasslands adjacent to the NFIA runways and Cayuga Creek or in the wetland located in the western portion of the site.

Upland Sandpiper

The NYSDEC lists the upland sandpiper as a threatened species. Upland sandpipers nest in open grasslands, pastures, meadows, prairies, and wetland clearings. Prey consists of insects and occasionally grains and grass seeds. This species was documented by the USFWS on recent surveys at the Niagara Falls Air Reserve Station (USFWS, 2004). While breeding has been documented in managed grasslands at airports, this species prefers to nest in grasslands that are mowed less frequently such as pastures and meadows. Frequent mowing likely precludes upland sandpipers from nesting at NFIA. However, this species potentially forages in the grasslands adjacent to the NFIA runways.

Grasshopper Sparrow

The NYSDEC lists the grasshopper sparrow as a Special Concern Species. This species inhabits open grasslands and prairies with patches of bare ground where they build nests on the ground that are made of grass. They feed on insects, mainly grasshoppers. This species was documented by the USFWS on recent surveys at the Niagara Falls Air Reserve Station (USFWS, 2004). Frequent mowing precludes grasshopper sparrows from nesting at NFIA. However, this species potentially forages in the grasslands adjacent to the NFIA runways.

American Bittern

The NYSDEC lists the American bittern as a Special Concern Species. This species inhabits dense reed beds where nesting occurs on the ground or slightly elevated in reeds and marsh grasses. Diet consists of small fish, amphibians, and aquatic invertebrates. This species was documented by the USFWS on recent surveys at the Niagara Falls Air Reserve Station (USFWS, 2004). No breeding habitat for American bittern (i.e., dense reed beds) exists at NFIA. The wetland in the western portion of the site contains suitable foraging habitat for American bittern so it is possible that individuals occasionally occur there.

Horned Lark

The NYSDEC lists the horned lark as a Special Concern Species. This species inhabits large fields, open areas, shoreline beaches, and agricultural areas. Nests are constructed on the ground with dry grasses and plant stems. This species feeds on waste grains, weed seeds, and insects. This species was documented by the USFWS on recent surveys at the Niagara Falls Air Reserve Station (USFWS, 2004). Frequent mowing precludes horned larks from nesting at NFIA. However, this species potentially forages in the grasslands adjacent to the NFIA runways.

Box Turtle

The NYSDEC lists the box turtle as a Special Concern Species. Habitat for box turtles consists mainly of woodlands with areas of open water, but this species also can be found in pastures and wet meadows. Diet consists of vegetation, insects, small fish, and crustaceans. Surveys conducted by the USFWS at the Niagara Falls Air Reserve Station reported a possible observation of a single box turtle; however, the species was not confirmed (USFWS, 2004). It is possible that this species occurs in the wetland located in the western portion of the site.

3.8 GROUND TRANSPORTATION

3.8.1 Definition of Resource

Transportation refers to the movement of vehicles throughout a road and highway network. Primary roads, such as major interstates, are principal arterials designed to move traffic and not necessarily to provide access to all adjacent areas. Secondary roads are feeder arterials that collect traffic from common areas and transfer it to primary roads.

The Highway Capacity Manual (McFarland-Johnson Inc., 2004) evaluates road capacity in terms of the ratio of demand flow rate to capacity (V/C ratio) for lane groups and intersection approaches. A V/C ratio greater than 1.0 is an indication of actual or potential breakdown of traffic management efficiency and that the overall signal and geometric design of the roadway provides inadequate capacity for the given vehicular traffic flows.

Level of Service (LOS) is evaluated on the basis of control delay attributed to traffic signal operation. The control delay includes deceleration delay, queue move-up time, stopped delay, and final acceleration delay. LOS at intersections is a qualitative measure describing operational conditions within a traffic stream such as traffic interruptions, comfort, and convenience utilizing letter designations, from A to F. The LOS is defined by a grading system of A-F with A representing the best operating condition and F representing the worst. An intersection LOS below D is generally considered

unacceptable at signalized intersections as this indicates that the average signal delay per vehicle traveling through the intersection will exceed 55 seconds.

3.8.2 Existing Conditions

The NFIA falls within the regional road network of the Niagara Falls metropolitan area where state routes, U.S. highways, and interstates are designed to facilitate rapid travel between the airport, the surrounding metropolitan areas, Niagara Falls, and Canada. Interstate 190 and NY Route 62 are the principal routes serving the NFIA.

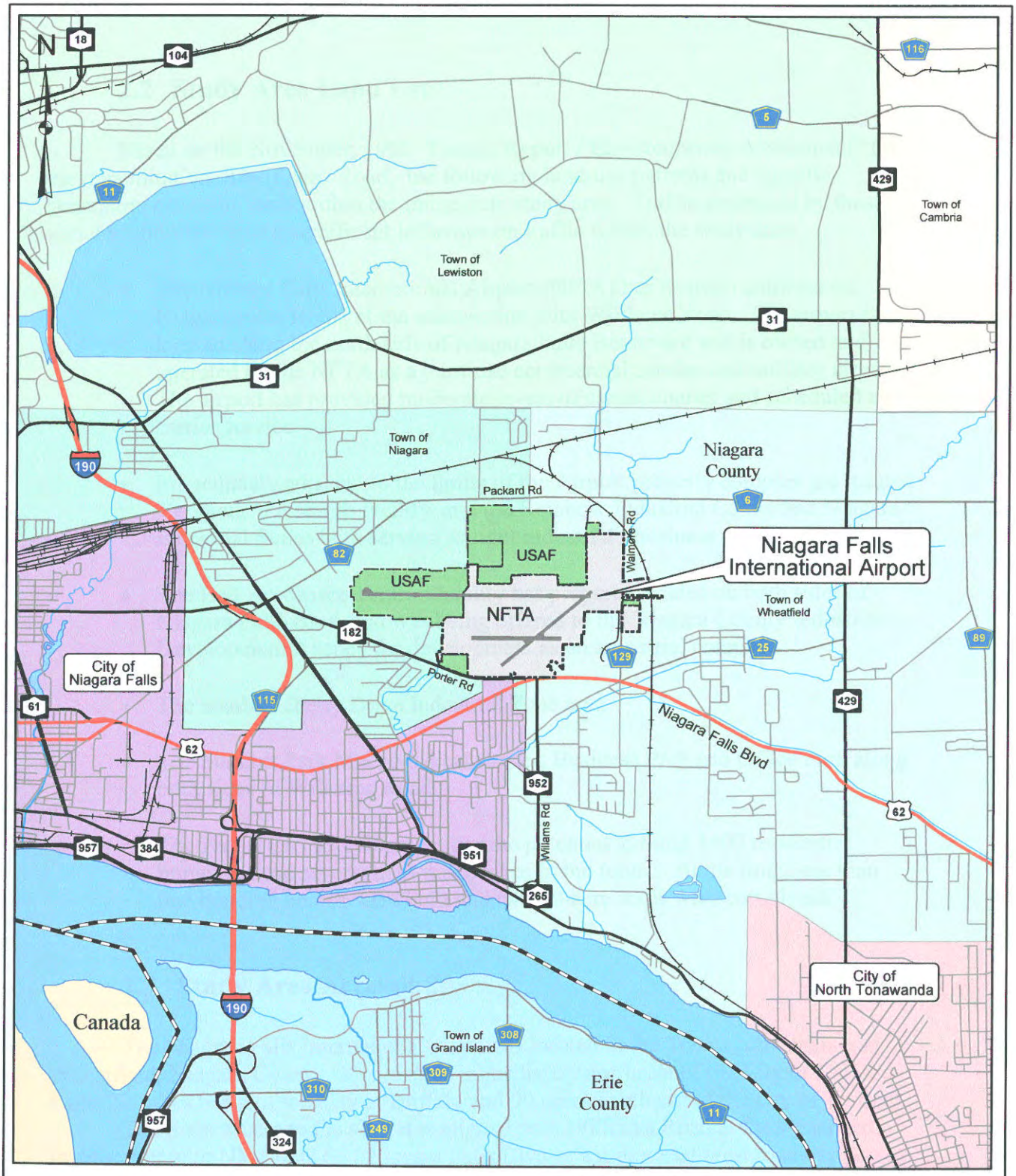
The main access to the airport is aligned with Williams Road at the signalized intersection with NY Route 62 (Niagara Falls Boulevard [Blvd]): the major east-west roadway south of the airport. The other major roadways adjacent to the airport are NY Route 182 (Porter Road), which runs east-west to the north of the airport; Walmore Road, which runs north-south and is located east of the airport; and county road 82, which connects Porter Road and Packard Road west of the airport (Figure 3-3).

Several studies have been conducted since 2001 to determine the average annual daily traffic volumes (AADT) along the major traffic routes in the vicinity of the NFIA (Figure 3-3). Current traffic volumes are highest along Niagara Falls Boulevard east of Williams Road. The most recent traffic volumes are presented in Table 3-7.

Table 3-7. Two-Way Average Daily Traffic Volumes in the Vicinity of the NFIA

Location	Direction	Two-Way AADT Volumes	Year
Niagara Falls Blvd			
East of Williams Rd	East – West	22,017	2003
West of Williams Rd	East – West	17,038	2003
Porter Road			
West of Williams Rd	East – West	8,971	2003
Williams Road			
North of Cayuga Dr	North – South	7,460	2003
Walmore Road			
Route 62 Intersection	North – South	1,048	2001
Niagara Road			
Route 62 Intersection	Northeast - Southwest	3,691	2001

Source: McFarland-Johnson, Inc., October 2004



NIAGARA FALLS INTERNATIONAL AIRPORT
NIAGARA COUNTY, NEW YORK

Figure 3-3. Major Traffic Routes in the Vicinity of the Niagara Falls International Airport

SCALE :	DATE :	
AS SHOWN	AUGUST 2004	

Source: McFarland-Johnson, Inc. 2004

The Route 62/Williams Rd/Airport Access Drive signalized intersection is at the entrance to the NFIA and a study was undertaken to determine the current capacity and LOS for this intersection (McFarland-Johnson, Inc., 2004). This intersection currently supports an acceptable capacity (V/C=0.88) and offers a LOS generally acceptable for signalized intersections to minimize vehicular delays and driver annoyance (LOS C).

3.9 VISUAL RESOURCES

3.9.1 Definition of Resource

Visual resources are defined as areas of unique beauty derived from the combined characteristics of the natural aspects of land and the human aspects of land use. The assessment of visual and aesthetic value involves a characterization of existing resources in the study area. Changes in visual character are influenced by social considerations, including public value placed on the resource, public awareness of the area, and general community concern for visual resources in the area.

3.9.2 Existing Conditions

The aesthetic value of the NFIA and potential for light emissions and visual impacts from project is defined relative to the perspective of adjacent properties and travelers along perimeter routes. In the immediate vicinity of the NFIA, industrial, commercial, and transportation land uses influence visual resources. Office buildings, maintenance shops, and roadways dominate the landscape in the western part of the airport. Small grass lawns, interspersed with industrial facilities, are present throughout the airport. Although the dates of construction for on-site facilities vary greatly, the majority of the facilities maintain a consistent theme and appearance. At the airport, the general architectural style is institutional. Most of the buildings on the airport are block or metal.

3.10 CULTURAL RESOURCES

3.10.1 Definition of Resource

Cultural resources represent and document activities, accomplishments, and traditions of previous civilizations and link current and former inhabitants of an area. Depending on

their condition and historic use, these resources may provide insight to living conditions in previous civilizations and may retain cultural and religious significance to modern groups. Traditional cultural resources primarily include archaeological and architectural resources, but can also include prominent topographic features, habitats, plants, animals, and minerals that Native Americans or other groups consider essential for the preservation of traditional culture. Archaeological resources comprise areas where prehistoric or historic activity measurably altered the earth or where deposits of physical artifacts (e.g., arrowheads, pottery) have been discovered. Architectural resources include standing buildings, districts, neighborhoods, dams, and other structures of historic or aesthetic significance.

The National Register of Historic Places (NRHP) (36 CFR Section 60.4) is an inventory of culturally significant resources identified in the United States. In order for a cultural resource to be considered for inclusion in the NRHP, it must meet one or more of the following four criteria:

> "The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and: (1) that are associated with events that have had a significant contribution to the broad patterns of our history; or (2) that are associated with the lives of persons significant in our past; or (3) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or (4) that have yielded, or may be likely to yield, information important in prehistory or history."

Architectural resources generally must be more than 50 years old to be considered for inclusion in the NHRP; however, more recent structures, such as Cold War-era resources,

may warrant inclusion if they have the potential to gain significance in the future and are considered extraordinary in nature.

Several laws and regulations have been established to manage cultural resources including the National Historic Preservation Act (1966), the Archaeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archaeological Resource Protection Act (1979), and the Native American Graves Protection and Repatriation Act (1990).

3.10.2 Existing Conditions

3.10.2.1 Archaeological Resources

The results of the background research and field investigation indicate that portions of the NFIA, particularly the areas bordering Cayuga Creek, are sensitive for prehistoric cultural resources. The proximity of a major water source increases the project area's sensitivity for prehistoric archaeological sites. A previous survey conducted at NFIA did not find any prehistoric cultural materials (Panamerican, 2004). The New York SHPO will be consulted regarding concurrence with these findings. The SHPO was previously contacted regarding the Proposed Action; however, they indicated they preferred to postpone their determination until they can review the completed EA (Appendix A).

3.10.2.2 Architectural Resources

There are three extant buildings associated with the airport within the viewshed of the proposed terminal construction. The existing airport terminal, first built in the late 1920s, is located south of the runways along Niagara Falls Boulevard. Hangars previously associated with the Carborundum Company are located approximately 1,000 feet south of the Project area, along Walmore Road. The former Bell Aerospace Company hangar is located east roughly 1,500 feet southeast of the airport.

The airport terminal and the Carborundum Company hangars do not appear to meet the eligibility requirements for inclusion in the NRHP. The Bell Aerospace Hangar meets the eligibility requirements for NRHP inclusion under Criterion A, notably for nationally important activities that took place at the plant (Panamerican, 2004). The New York

SHPO will be consulted regarding concurrence with these findings. The SHPO was previously contacted regarding the Proposed Action; however, they indicated they preferred to postpone their determination until they can review the completed EA (Appendix A).

3.11 SOCIOECONOMICS

3.11.1 Definition of Resource

Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly population and economic activity. Regional birth and death rates as well as net in- or out-migration affect the human population. Economic activity typically comprises employment, personal income, and industrial growth. Impacts on these two fundamental socioeconomic indicators can influence other components such as housing availability and public services.

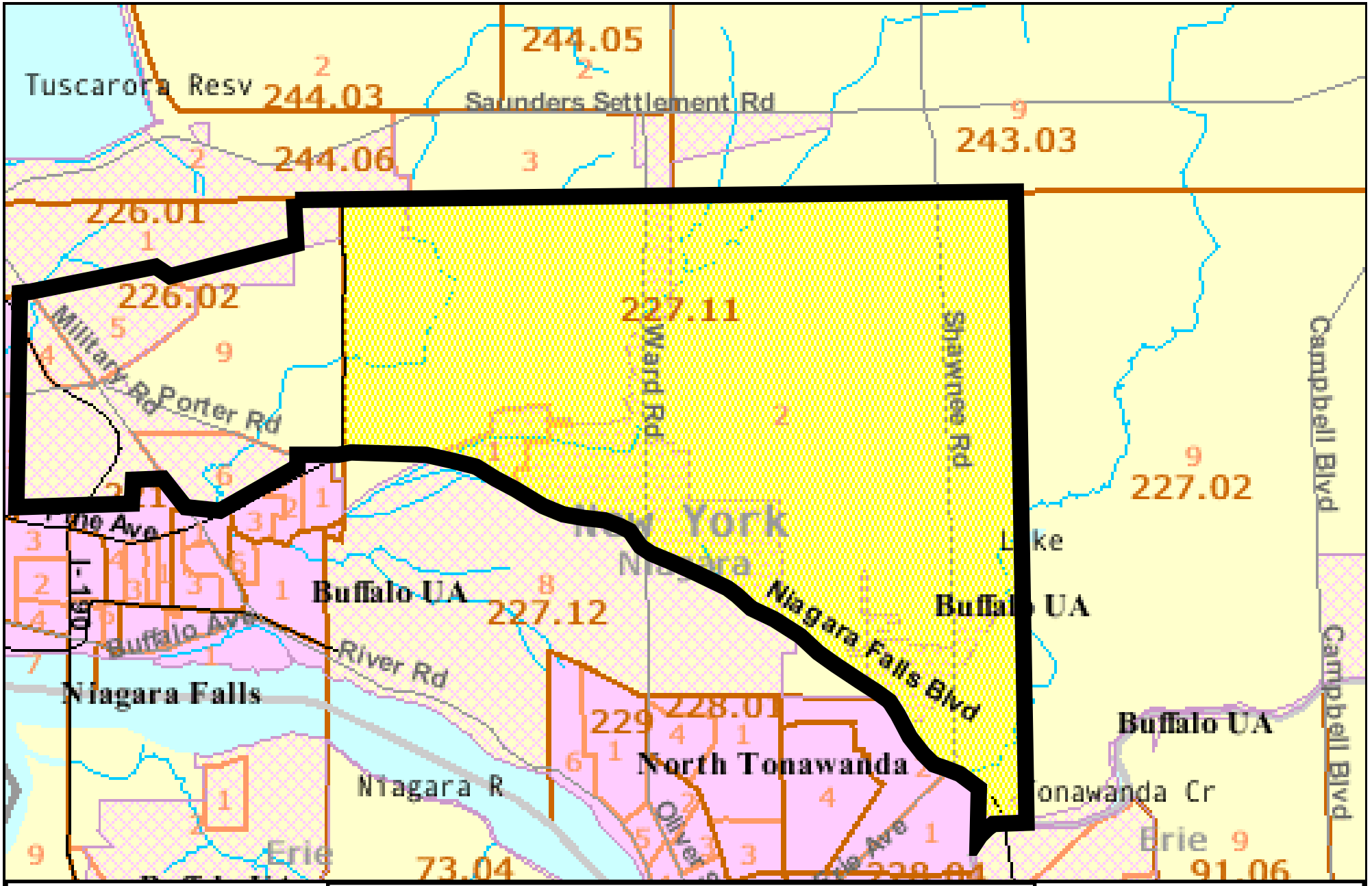
In 1994, Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, was issued to focus attention of federal agencies on human health and environmental conditions in minority and low-income communities and to ensure that disproportionately high and adverse human health or environmental effects on these communities are identified and addressed. Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, was issued in 1997 to focus attention of federal agencies on assessing environmental health risks and safety risks that may disproportionately affect children and ensure that such risks are addressed.

3.11.2 Existing Conditions

According to 2000 Census data, the population of the four block groups (30226.02.5, 30226.02.6, 30226.9, and 30227.11.2) that encompass the NFIA and surrounding area (Figure 3-4) was 12,246, an increase of approximately 44 percent from 1990 (Table 3-8). The 44 percent increase was greater than the population growth experienced by Niagara County (-0.4 percent) and the State of New York (5.2 percent).

The Project vicinity is home to a smaller proportion of ethnic and racial minorities (4.5 percent) than Niagara County (9.3 percent) of New York State (32.1 percent). As of 2000, Niagara County and the Project vicinity were home to a significantly greater percentage of persons classified as white (90.7 and 95.5 percent respectively) than in the State of New York (67.9 percent).

The Project vicinity and Niagara County were similar to the rest of the state in terms of the age of residents. In each of the three areas, people between the ages of 18 and 64 made up more than 60 percent of the population. Children constituted a lower of proportion of the population of the Project vicinity (7.3 percent) than Niagara County (9.2 percent) or New York State (12.9 percent).



Legend

Project Vicinity

Figure 3-4.
Census Block Groups Included in the Project Vicinity

Table 3-8. Regional Population Data

	New York		Niagara County		Project Vicinity	
2000 Estimated Population	18,976,457		219,846		12,246	
Percent Change (1990-2000)	5.2%		-0.4%		44.1%	
2000 Ethnic Composition	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
White	12,893,689	67.9%	199,404	90.7%	11,700	95.5%
African American	3,014,385	15.9%	13,520	6.1%	236	1.9%
Native American	82,461	0.4%	20,69	0.9%	92	0.8%
Asian	1,044,976	5.5%	1,267	0.6%	82	0.7%
Pacific Islander	8,818	--	51	--	5	--
Other[2]	1,341,946	7.1%	876	0.4%	20	0.2%
Two or more races	590,182	3.1%	2,659	1.2%	111	0.9%
2000 Age Composition						
Under 18	4,690,107	24.7%	54,237	24.7%	2,809	22.9%
18 to 64	11,837,998	62.4%	145,468	66.2%	8,549	69.8%
65 and over	2,448,352	12.9%	20,141	9.2%	888	7.3%
2000 Income						
Median Household Income	$43,939		$38,136		$29,929 to $60,545	
Percent of individuals below poverty level	14.2%		10.4%		5.4%	

*For the purposes of the Census, the U.S. Census Bureau does not consider Hispanic/Latino as a specific race and they are considered "white."
Source: U.S. Census Bureau, 2000

3.11.2.1 Income and Employment

As of 2000, the mean income for residents in the four block groups that comprise the Project vicinity ranged from approximately $30,000 to $60,000. The mean income for Niagara County ($38,136) and New York ($43,393) fall within the median income range for the Project Vicinity, but more residents in both jurisdictions (Niagara County and New York State) were living below the poverty level. The proportion of the Project Vicinity's population living below the poverty level was approximately five percent, significantly lower than Niagara County (10.4 percent) and New York (14.2 percent).

The largest segment (44 percent) of the Project vicinity's working population was employed in the professional science, management, administrative, and waste management industries. The second largest employment sector was manufacturing, accounting for approximately 13 percent of jobs in the area, followed by retail trade (10.4 percent) and educational, health, and social services (9.3 percent). Together, these four employment sectors account for 76.3 percent of jobs in the area. The job market

structure in the Project vicinity differs significantly from Niagara County and New York, where the largest job sectors are educational, health, and social services; retail trade; and manufacturing (Tables 3-9 and 3-10).

Table 3-9. Jobs by Employment Sector in New York, Niagara County, and the Project Vicinity Year 2000.

Industry	New York		Niagara County		Project Vicinity	
	Number	Percent	Number	Percent	Number	Percent
Agriculture, forestry, fishing, hunting, and mining	54,372	0.6%	919	0.9%	42	1.0%
Construction	433,787	5.2%	5,058	5.0%	136	3.2%
Manufacturing	839,425	10.0%	21,043	20.9%	543	12.6%
Wholesale trade	283,375	3.4%	3,461	3.4%	71	1.6%
Retail trade	877,430	10.5%	12,892	12.8%	447	10.4%
Transportation, warehousing, and utilities	460,485	5.5%	5,404	5.4%	155	3.6%
Information	340,713	4.1%	2,285	2.3%	73	1.7%
Finance, insurance, real estate, rentals, and leasing	736,687	8.8%	4,598	4.6%	132	3.1%
Professional, scientific, management, administrative, and waste management	849,125	10.1%	6,813	6.8%	1,899	44.0%
Educational, health, and social services	2,039,182	24.3%	21,592	21.4%	401	9.3%
Arts, entertainment, recreation, accommodation, and food services	611,280	7.3%	8,095	8.0%	184	4.3%
Other services	423,756	5.1%	4,813	4.8%	141	3.3%
Public administration	433,372	5.2%	3,837	3.8%	93	2.2%

Source: U.S. Census Bureau, 2000

Table 3-10. Major Employers in Niagara County

Employer (Rank)	Employees
Delphi Harrison Thermal Systems	4,500
Niagara Falls Joint Air Reserve Station	2,936
Seneca Niagara Casino	2,300
Niagara County	1,800
Niagara Falls School District	1,265
TeleTech	800
City of Niagara Falls	860
North Tonawanda City School District	825
Lockport City School District	690
Mount St. Mary's Hospital	750
Niagara Falls Memorial Medical Center	532

Source: Center for Economic Development, Niagara County, 2004

3.12 HAZARDOUS WASTE

3.12.1 Definition of Resource

Hazardous waste is defined as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that may cause an increase in mortality, a serious irreversible illness, an incapacitating illness, or may pose a substantial threat to human health or the environment. Hazardous materials may be a solid, liquid, contained gaseous, or semisolid material, or any combination of materials that pose a substantial present or potential hazard to human health or the environment.

Issues associated with hazardous materials and waste typically relate to maintenance-related activities, underground storage tanks (USTs), aboveground storage tanks (ASTs), and the storage, transport, and use of fuels. When such resources are improperly used, they can threaten the health and well being of wildlife species, habitats, soil systems, water resources, and human beings.

3.12.2 Existing Conditions

3.12.2.1 Hazardous Materials Storage Facility

The NFIA utilizes a number of hazardous materials to conduct aircraft and vehicle operations and maintenance, including petroleum, oils, lubricants (POL), and other hazardous substances. These materials are stored in various containers, with large volumes contained in ten aboveground storage tanks. These tanks are located in the Fuel Farm area west of the existing terminal building and contain a variety of POLs including unleaded gasoline, diesel fuel, aviation gasoline, and Jet A fuel (Table 3-11).

Table 3-11. Aboveground Storage Tanks at NFIA

Container ID	Capacity (gal.)	Container Material	Secondary Containment	Contents
1	5,000	Steel	Double Wall	Unleaded Gasoline
2	5,000	Steel	Double Wall	Diesel Fuel
3	10,000	Steel	Double Wall	Aviation Gasoline
4	10,000	Steel	Double Wall	Jet A Fuel
5	10,000	Steel	Double Wall	Jet A Fuel
6	10,000	Steel	Double Wall	Jet A Fuel
7	275	Steel	Double Wall	Waste Aviation Gasoline
8	275	Steel	Double Wall	Waste Jet A Fuel
9	275	Steel	Double Wall	Used Oil
10	275	Steel	Double Wall	Diesel Fuel

Source: Spill Pollution Control and Countermeasure Plan, 2004.

3.12.2.2 Oil/Water Separators

Oil/water separators (OWSs) are utilized by the NFIA to prevent potential pollution sources from entering the sanitary or storm sewer system. The three OWSs at the NFIA each have a 1,200-gallon capacity, are constructed of steel, and have corrosion and cathodic protection. The OWSs are located in the maintenance garage and are inspected annually.

3.12.2.3 Site Remediation Program

There is one hazardous waste site at the NFIA currently undergoing remediation. The site is an old fire-training pit located to the northwest of the 24 end of Runway 6-24. The

pit was in use from 1955 to 1963. Materials burned in the pit included fuels, oils and solvents. The current contaminant of concern is trichloroethylene (TCE). The groundwater remediation system pumps the water through an on-site air stripper prior to discharge to the sanitary sewer system (Pers. Comm. Jerry Hermoa).

4.0 ENVIRONMENTAL CONSEQUENCES

This section of the EA describes the potential environmental consequences of the Proposed Action and alternatives. Potential impacts are addressed by resource area as described in Section 3.0, Affected Environment.

4.1 SAFETY

4.1.1 Significance Criteria

The elements of the Proposed Action that have the potential to affect safety are evaluated relative to the degree to which the Proposed Action increases or decreases safety risks to aircrews, the public, and property. Ground, fire, and crash safety are assessed for the potential to increase risk and the capability to manage that risk by responding to emergencies and suppressing fire. When new or altered risks arising from the Proposed Action are considered individually and collectively, the adequacy of disaster response planning is assessed, and any additional or modified requirements that may be necessary as a result of the Proposed Action are discussed.

4.1.2 Potential Impacts of the Proposed Action

The Proposed Action would not adversely affect safety at the NFIA. Construction and operation of the proposed new terminal facility and the associated landside and airside improvements would not increase the presence of safety hazards at NFIA. In fact, the Proposed Action could improve safety in the long term by improving traffic flow at the entrance to NFIA, providing additional parking, and creating a circularized traffic pattern (see Section 4.8). Nevertheless, in the event of an emergency, the USAF provides crash response and fire suppression services to NFIA with the capability to handle any emergencies or fire that could occur during construction or operation of the facilities associated with the Proposed Action. Potential impacts to worker safety during the construction phase would be temporary and mitigated by adherence to all applicable Occupational Safety and Health Act (OSHA) regulations. Therefore, the Proposed Action would have no adverse effect safety at NFIA.

4.1.3 Potential Impacts of the Expansion and Renovation of the Existing Terminal Building

Expanding and renovating the existing terminal building would have a significant adverse effect on safety at the NFIA. This alternative would increase the safety risks associated with the terminal facility and aircraft apron. Renovation of the existing terminal as a single-story building would require a shift of the existing apron. This would place aircraft within 500 feet of the centerline of Runway 6-24 and would not comply with FAR Part 77. The renovation of the existing terminal as a two-story building would also increase safety risks, as the current building is not structurally designed to support a second level. The necessary modifications to structurally support a second level would disrupt the effective utilization of the terminal and require the demolition and reconstruction of the existing building. The aircraft parking apron would still need to be reduced in order to fully comply with FAR Part 77 therefore limiting future flexibility with regards to the size and simultaneous docking of aircraft. Therefore, this alternative would have an adverse effect on safety at the NFIA.

4.1.4 No-Action Alternative

Under the No Action Alternative, there would be no construction or demolition activities at the NFIA. The existing terminal building and current airport operations would be maintained and there would be no change to airport safety risks. Consequently, the No-Action Alternative would have no effect on safety at the NFIA.

4.2 AIR QUALITY

4.2.1 Significance Criteria

Section 176(c) of the CAA (implemented by EPA's General Conformity Rule 40 CFR Part 51 Subpart W) provides the framework for ensuring that federal actions conform to the SIP. Before any Federal agency engages in, supports, licenses, permits, or approves any activity, that agency has a responsibility to ensure that the activity would conform to the applicable SIP.

The proposed project would generate air emissions during construction and operational activities. Per guidance from the USEPA, construction-related emissions are not considered in determining whether a source is subject to PSD review (USEPA, 1978). However, they are presented in this EA to document the expected emissions, complete a general conformity analysis, and to support the conclusion that the Proposed Action would have no permanent, adverse impact on air quality.

Niagara Falls (Niagara County) is currently designated a nonattainment area for 8-hour ozone standard (Subpart 1). Therefore, a conformity determination is required only if NOx or VOC emissions (ozone precursors) exceeds federal conformity applicability thresholds of 100 tpy for NOx and 50 tpy for VOC. The Project region is in attainment for all other criteria pollutants.

To assess potential impacts on air quality as a result of the Proposed Action, air emissions (CO, NOx, SOx, VOCs, and dust) resulting from the construction of the terminal (including the boilers) and associated facilities; increased aircraft operations; and the addition of 230 parking spaces in the new parking lot were calculated and compared with applicable federal and state air pollution standards and regulations. The results of the calculations were compared to regulatory limits to determine if the emissions associated with the Proposed Action would exceed *de minimis* limits.

Air quality impacts from a Proposed Action would be significant if they:

- Increase ambient air pollution concentrations above any NAAQS;
- Contribute to an existing violation of any NAAQS; or
- Interfere with, or delay, timely attainment of NAAQS.

4.2.2 Potential Impacts of the Proposed Action

Pollutant emissions associated with construction activities at the NFIA would include combustion emissions from vehicles and heavy-duty equipment used for construction of new facilities, as well as PM_{10} generated during vegetation removal and related site

preparation activities. These emissions would be temporary, occurring only during construction. The temporary pollutant emissions that would be expected are reported in Table 4-1. These emissions assume the use of heavy machinery for a period of 24 hours per day, seven days a week during the construction period. The majority of PM_{10} generated from construction activities would occur from vegetation removal and grading. These activities would generate approximately 6 tons of dust per month assuming the construction took six months to complete (or 3 tons of dust per month for 12 months) and the facilities were constructed simultaneously. The NFIA would perform demolition, excavation and construction activities in a manner to minimize fugitive dust emissions (PM_{10}).

There would be five new boilers with a total rated capacity of 7.5 MBtu/hr added to the facility which would increase NFIA's stationary source emissions. Three of the boilers would be modular boilers for heating the buildings with each having a rated capacity of 2,000,000 Btu/hr for a total of 6,000,000 Btu/hr. The other two boilers are for snow/ice melt systems with rated capacities of 1,000,000 Btu/hr and 5,000,000 Btu/hr, respectively. The new stationary source emissions, when combined with all remaining existing emissions sources, would still be below the Title V operating threshold limits. Table 4-2 presents the anticipated emissions resulting from new stationary sources as a result of the Proposed Action (e.g., new natural gas boilers). Table 4-3 presents the total anticipated stationary source emissions.

NFIA's projection of commercial aircraft activity indicates that aircraft operations are expected to increase by 18 percent as a result of the Proposed Action from its current 2,311 operations to approximately 2,718 operations by 2011. The aircraft operations include 50 percent arrivals (approach and taxi/idle mode) and 50 percent departures (takeoff and climbout mode). The landing and takeoff (LTO) cycle per aircraft includes approach, taxi/idle, takeoff, and climbout modes (i.e. both arrival and departure); therefore, total LTO cycles for 2011 is half the total aircraft operations i.e., approximately 1,359 LTO cycles. Most of the commercial aircrafts would be B-737-400s and B-727-200s with two and three engines, respectively. Table 4-4 presents a summary of aircraft emission estimates from the proposed terminal in 2011.

The Proposed Action would add 230 additional parking spaces to the existing 257 parking spaces at NFIA for a total of 487 on-site parking spaces. Employee parking (or daily parking) would be approximately 20 percent of the total parking spaces. It is assumed that the other 80 percent parking spaces would be constantly occupied and each vehicle would park for an average of 3 days. Sixty percent of the total vehicles are assumed to be light duty gasoline vehicles (LDGV) and the remaining 40 percent are assumed to be light duty gasoline trucks (LDGT1) with less than 6,000 gross vehicle weight. It is also assumed that each vehicle would drive an average of 4 miles (in and out) at 15 miles per hour around the proposed parking facility. Table 4-5 presents a summary of future (2011) vehicle emissions associated with the total 487 parking spaces. Details on the emissions calculations are available in Appendix B.

Table 4-1. Construction Emissions under the Proposed Action

Emission Source	Carbon Monoxide (Tons/Year)	Nitrogen Oxides (Tons/Year)	Sulfur Oxides (Tons/Year)	Volatile Organic Compounds (Tons/Year)	Particulate Matter (Tons/Year)
Excavation/Bulldozing	--	--	--	--	0.194
Grading	--	--	--	--	36.0
Architectural Coatings	--	--	--	0.09	--
Equipment Operation and Commuting	9.6	44.1	2.94	3.0	1.6
Total	**9.6**	**44.1**	**2.94**	**3.09**	**37.8**

Table 4-2. Emissions Due to New Stationary Sources Associated with the Proposed Action

Criteria Pollutant	Boiler size	Annual Hours of Operation.	Emission Factor	Heating Value of Natural Gas	Emission Estimates		
	MBtu/hr	Hrs/yr	lbs./M cu.ft.	Btu/cu.ft.	lbs./hr	lbs./yr	tpy
CO	7.5	8760	84	1020	0.62	5411	2.71
NOx	7.5	8760	100	1020	0.74	6441	3.22
SOx	7.5	8760	0.6	1020	0.004	39	0.0193
VOC	7.5	8760	5.5	1020	0.040	354	0.18
PM	7.5	8760	7.6	1020	0.056	490	0.24

Note:
1. Emission Factors were taken from EPA's Compilation of Emission Factors (AP-42), Section 1.4/ Tables 1.4-1 and 1.4-2.
2. Calculation of Emissions in lbs./yr = (Boiler size in Mbtu/hr) x (Emission Factors in lbs./M cu.ft) x (Operating Hours/year) / (Heating Value of natural Gas in Btu/cu.ft
3. HAP emissions were not calculated; however, these emissions (i.e. HAPs) are not expected to be significant based on the negligible emissions of the criteria pollutants.

Table 4-3. Total Stationary Source Emissions from Six Boilers (Existing and New Sources)

Criteria Pollutant	Boiler size	Annual Hours of Operation.	Emission Factor	Heating Value of Natural Gas	Emission Estimates		
	MBtu/hr	Hrs/yr	lbs./M cu.ft.	Btu/cu.ft.	lbs./hr	lbs./yr	tpy
CO	7.9	8760	84	1020	0.651	5699	2.85
NOx	7.9	8760	100	1020	0.775	6785	3.39
SOx	7.9	8760	0.6	1020	0.0046	41	0.020
VOC	7.9	8760	5.5	1020	0.043	373	0.187
PM	7.9	8760	7.6	1020	0.059	516	0.258

Note:
1. Emission Factors were taken from EPA's Compilation of Emission Factors (AP-42), Section 1.4/ Tables 1.4-1 and 1.4-2.
2. Calculation of Emissions in lbs./yr = (Boiler size in Mbtu/hr) x (Emission Factors in lbs./M cu.ft) x (Operating Hours/year) / (Heating Value of natural Gas in Btu/cu.ft)
3. HAP emissions were not calculated; however, these emissions (i.e. HAPs) are not expected to be significant based on the negligible emissions of the criteria pollutants.

Table 4-4. Total Aircraft Emission Estimates in 2011 from the Proposed Terminal

Aircraft type	LTO cycles per year	Total Emissions Per Aircraft (lbs/LTO cycle)[1]					Total Aircraft Emissions (tons/year)				
		THC	CO	NOx	SO_2	VOC^2	THC	CO	NOx	SO_2	VOC^2
B-737-400	731	1.59	16.42	26.18	1.06	1.74	0.58	6.00	9.56	0.39	0.63
B-727-200	629	16.88	57.63	26.45	1.74	18.48	5.30	18.11	8.31	0.55	5.81
Total	**1,156**						**5.9**	**24.1**	**17.9**	**0.94**	**6.4**

Notes:
1. Total emissions per aircraft in pounds per LTO cycle was calculated in accordance with *EPA's Procedures for Emission Inventory Preparation, Volume IV: Mobile Sources (1992).*There were no particulate emission factors available for the commercial aircraft engines
2. $VOC_{commercial} = THC_{commercial} \times 1.0947$ (from *EPA's Procedures for Emission Inventory Preparation, Volume IV: Mobile Sources (1992)).*
THC is total hydrocarbon.

Table 4-5. Total Vehicle Emission Estimates in 2011 from the Proposed Parking Facility

Vehicle Type	Criteria Pollutants (tons per year)[1]				
	CO	NOx	VOC	PM	SO_2
Employee Parking					
LDGV	1.40	0.049	0.073	0.0019	NA
LDGT1	0.96	0.027	0.044	0.19	NA
Passenger/Rental Parking					
LDGV	1.88	0.065	0.98	0.0025	NA
LDGT1	1.29	0.036	0.059	0.0025	NA
Total Vehicle Emissions	**5.53**	**0.18**	**0.27**	**0.19**	**NA**

Note:
1. Emission estimates were based on EPA's MOBILE6.2 emission factors for Erie County in 2007 (NYSDOT-EAB website). Emission factors for SO_2 were not available.

As shown in Table 4-1, total NOx and VOC emissions from construction activities would be below the conformity applicability thresholds. Tables 4-2, 4-3, 4-4, and 4-5 also indicates that both NOx and VOC emissions from the stationary and mobile sources during operations would be negligible compared to the conformity applicability thresholds. Therefore, a conformity determination is not required for NOx or VOCs. Table 4-3 also indicates that total stationary source emission estimates of each criteria pollutant in tons per year associated with the proposed project operations at the NFIA do

not exceed the major source thresholds for Title V status. Therefore, a Title V operating permit is not required for the proposed project.

The increased criteria pollutants resulting from construction of the Proposed Action would have minor, short-term, adverse impacts that would be mitigated through best management practices such as soil stabilization, watering exposed soils, and worker ride sharing. Fugitive construction emissions would cease upon completion of construction. Therefore, long-term impacts to air quality would not occur and the Proposed Action would not prevent the State of New York from conforming to the SIP and maintain NAAQS.

4.2.3 Potential Impacts of the Expansion and Renovation of the Existing Terminal Building

The expansion and renovation alternative would have a similar short-term, adverse effect on air quality at the NFIA. These impacts would include combustion emissions from vehicles and heavy-duty equipment used for construction of new facilities, as well as fugitive dust generated during vegetation removal and related site preparation activities. These emissions would cease upon completion of the proposed construction activities. Stationary and mobile source emissions during operations would be the same as for the Proposed Action. The emissions that would be expected during project construction are shown in Table 4-6.

Table 4-6. Construction Emissions under the Expansion and Renovation Alternative

Emission Source	Carbon Monoxide (Tons/Year)	Nitrogen Oxides (Tons/Year)	Sulfur Oxides (Tons/Year)	Volatile Organic Compounds (Tons/Year)	Particulate Matter (Tons/Year)
Excavation/Bulldozing	--	--	--	--	0.134
Grading	--	--	--	--	36.0
Architectural Coatings	--	--	--	0.12	--
Equipment Operation and Commuting	6.6	30.3	2.0	2.1	1.1
Total	**6.6**	**30.3**	**2.02**	**2.19**	**37.2**

As shown in Table 4-6, total NOx and VOC emissions from construction activities would be below the conformity applicability thresholds. Tables 4-2, 4-3, 4-4, and 4-5 also

indicates that both NOx and VOC emissions from the stationary and mobile sources during operations would be negligible compared to the conformity applicability thresholds. Therefore, a conformity determination is not required for NOx or VOCs. Table 4-3 also indicates that a Title V operating permit would not be required for this alternative.

Similar to the Proposed Action, these impacts would be mitigated through best management practices such as soil stabilization, watering exposed soils, and worker ride sharing. Therefore, long term impacts would not occur and so this alternative would not prevent the state of New York from conforming to the SIP and maintain NAAQS.

4.2.4 No-Action Alternative

Under this alternative, there would be no construction or demolition activities at the NFIA. Current airport operations would be maintained and there would be no change in air emissions. Consequently, the No-Action Alternative would have no effect on air quality at the NFIA.

4.3 NOISE

4.3.1 Significance Criteria

Based on numerous sociological surveys and recommendations of federal interagency councils, the most commonly-accepted benchmark used in noise analyses is a DNL of 65 dB (e.g., Federal Interagency Committee on Noise, 1992). This threshold is often used to determine residential land use compatibility around airports or highways and, by extension, it is often used as a criterion in airspace planning. Public annoyance is the most common impact associated with exposure to elevated noise levels. When subjected to a DNL of 65 dB, approximately 12 percent of persons so exposed will be "highly annoyed" by the noise. At levels below 55 dB, the percentage of annoyance is less than three percent. The percentage of people annoyed by noise never drops to zero, but at levels below 55 dB it is reduced enough to be essentially negligible.

Use of heavy equipment for site preparation and development (e.g. earth removal, grading, and backfill) would generate noise above normal ambient levels at NFIA. Such noise generation, however, would be typical of construction activities, would only last for the duration of construction activities, and would be reduced through the use of equipment sound mufflers and restriction of construction activity to normal working hours (i.e., no nighttime construction).

According to FAA Order 1050.1E, the Area Equivalent Method (AEM) computer model can be used for proposed actions involving a single airport which result in a general overall increase in daily airport operations as long as there are not changes in ground tracks or flight profiles. If the AEM calculations indicate that the Proposed Action would result in less than a 17 percent (approximately 1dB) increase in the DNL 65 dB contour area, it may be concluded that there would be no significant impact over noise sensitive areas and that no further noise analysis is required. The aircraft operations noise analysis for this EA was completed using AEM Version 6.0c as available from the FAA website. For a full description of the AEM Version 6.0c computer model and the output from the impact analysis, refer to Appendix C.

4.3.2 Potential Impacts of the Proposed Action

4.3.2.1 Construction Activities

The Proposed Action would have minor, short-term, adverse effects on the noise environment in the immediate vicinity of the NFIA. Use of heavy equipment for site preparation and development (e.g. earth removal, grading, and backfill) would generate noise above normal ambient levels at the airport. Such noise generation, however, would be typical of construction activities, would only last the duration of construction activities, and would be reduced through the use of equipment sound mufflers and restriction of construction activity to normal working hours (i.e., no nighttime construction).

Although noise ranges are generally similar for all construction phases, the grading phase tends to involve the most equipment. According to the U.S. Environmental Protection

Agency (EPA), the noisiest equipment types operating at construction sites typically range from 88 dBA to 91 dBA L_{max} at 50 feet (Table 4-7). Typical operating cycles may involve 2 minutes of full power, followed by 3 or 4 minutes at lower settings. Average noise levels at construction sites typically range from approximately 65 to 89 dBA L_{eq} at a reference distance of 50 feet ($L_{eq(ref)}$), depending on the activities performed (EPA 1971).

Table 4-7. Construction Equipment Noise Levels

Type of Equipment	Typical Noise Level (dBA) at 50 feet	
	Without Feasible Noise Control	With Feasible Noise Control[1]
Dozer or Tractor	80	75
Excavator	88	80
Compactor	82	75
Front-end Loader	79	75
Backhoe	85	75
Grader	85	75
Crane	83	75
Generator	78	75
Truck	91	75

Note: dBA = A-weighted decibels

[1] Feasible noise control includes the use of intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturer's specifications.

Source: EPA 1971

During each construction phase, several pieces of construction equipment would be spread throughout the project site. It is expected that the construction equipment would be located no closer than approximately 1,600 feet away from the closest noise sensitive area (NSA). Based on a 6 dB reduction in sound level achieved per doubling of distance (assuming hard non-absorptive ground conditions), typical noise levels of 89 dBA L_{eq} at 50 feet from construction activities will be heard as approximately 59 dBA at 1,600 feet. The noise level heard by the receiver at the closest NSA is not expected to result to public annoyance since it would be below the 65 dBA noise threshold identified in FAA Order 1050.1E. As indicated earlier, construction noise would be temporary and would occur during daylight hours when occasional loud noises are more tolerable.

Minimal off-site noise impacts associated with the proposed construction activities would be expected. These impacts would be limited to the increased traffic due to the arrival and departure of construction workers. Noise produced by construction activities associated with the Proposed Action would not significantly affect any sensitive off-site receptors. After completion of the Proposed Action, noise levels would be similar to existing conditions and consistent with noise levels typical of the surrounding environment.

4.3.2.2 Aircraft Operations

The AEM determines the DNL noise contour area in square miles for a mix and number of aircraft types by using linear regressions that relate DNL noise contour area as a function of the number of annual daily average operations (Table 4-8). Based on the annual daily average operations for the NFIA, the Proposed Action would result in a 4.6 percent increase in the 65 dB DNL noise contour area (Table 4-9). The change in the noise contour would be less than the significance threshold (17 percent) identified in FAA Order 1050.1E; therefore, the Proposed Action would have no significant impact on noise relative to aircraft operations.

Table 4-8. Annual Daily Average Aircraft Operations at the NFIA[1]

Flight Type	Aircraft Type	Daily Operations (Day)		Daily Operations (Night)	
		2007	2011	2007	2011
Commercial/Air Cargo	727-200 (Kitty Hawk)	3.01	0.60	3.25	0.65
	737-200 (Kitty Hawk)[2]	3.00	0	3.25	0
	737-400 (Myrtle Beach Direct)	0.47	0	0.83	0
	747-400 (Vista)	0	0	0.57	0
General Aviation	PA-28[3]	92.72	0	96.46	0
Military	C-130	33.91	10.17	33.91	10.17

[1] – These numbers are based on the forecasts approved by the FAA in February 2007.
[2] – In the AEM, the 737-200 series identified several different aircraft types for the analysis. This analysis was completed using the loudest aircraft (the most conservative noise estimate), the 737.
[3] – In the AEM, there were two aircraft classes identified for the PA-28 series aircraft (GASEPF and GASEPV). The GASEPV class is louder, and therefore was used to provide a conservative estimate of noise from GA aircraft.

Table 4-9. Results of the AEM Computer Model for the 65 dB DNL Noise Contour

Contour Area	Area (square miles)
2007 Baseline Area	2.7
2011 Alternative Area	2.8
Change in Area	0.1
Percent Change	**4.6%**

Overall, the noise levels at the NFIA from the Proposed Action would be influenced by construction activities and the predicted change in aircraft operations. These impacts negligible and would not significantly affect the noise environment.

4.3.3 Potential Impacts of the Expansion and Renovation of the Existing Terminal Building

The potential impacts associated with the expansion and renovation of the existing terminal building would be similar to those for the Proposed Action, however the effects would be less severe. This alternative involves modifications to an existing structure therefore there would be minor, short-term noise impacts associated with the renovation.

No off-site noise impacts associated with this alternative would be expected. After completion of the renovation, noise levels would be similar to existing conditions and consistent with noise levels typical of the surrounding environment. The potential impacts associated with this alternative would be short-term and negligible and would not significantly affect the noise environment.

4.3.4 No-Action Alternative

Under this alternative, there would be no construction or demolition activities at the NFIA. Current airport operations would be maintained and there would be no change to noise levels from the baseline conditions. Consequently, the No-Action Alternative would have no significant effect on noise at the NFIA.

4.4 LAND USE

4.4.1 Significance Criteria

The significance of impacts caused by changes in land use is based on the level of land use sensitivity in areas likely to be affected by the Proposed Action and compatibility of the Proposed Action with other nearby land uses. Land use impacts would be considered significant if they:

- are inconsistent or non-compliant with current land use plans or policies applying to the area;
- preclude the viability of existing land use;
- preclude the continued use or occupation of an area;
- are incompatible with adjacent or nearby land use to the extent that public health or safety is threatened; or
- conflict with planning criteria established to ensure the safety and protection of human life and property.

4.4.2 Potential Impacts of the Proposed Action

The Proposed Action would have no impact on land use because:

- The proposed construction activities are included in the 1994 airport master plan, and consequently, are inherently consistent with airport master planning policies and guidelines. The proposed location for the new terminal building, aircraft apron, and parking and ground access facilities were identified in the master plan as the preferred location to maximize future flexibility and redevelopment potential on the airport property. The projects would not preclude the viability or continuation of current land use policies and planning.

- The projects are consistent with the current land use policies; therefore, they are compatible with adjacent or nearby land uses and do not conflict with planning criteria established for the safety and protection of human life and property.

Construction activities would have no adverse effects on land use patterns in the vicinity of NFIA because these activities would be confined to the airport and would not cause a change in the existing regional land use pattern. These projects would have no effect on coastal resources because the proposed activities are entirely outside New York's coastal management zone.

4.4.3 Potential Impacts of the Expansion and Renovation of the Existing Terminal Building

This alternative would not change the current land use patterns at the NFIA. The construction activities would be limited to an existing structure and airport operations would continue to be supported by the existing facilities. This alternative would also be consistent with the goals and strategies of the airport master plan. Therefore, there would be no significant impacts to land use at the NFIA under this alternative. Further, the alternative would have no effect on land use in the vicinity of the NFIA because the activities would be confined to the airport and would not require a change to the existing regional land use pattern.

4.4.4 No-Action Alternative

Under this alternative, there would be no construction or demolition activities at the NFIA. Current airport operations would be maintained and there would be no change in land use practices. Consequently, the No-Action Alternative would have no effect on land use at the NFIA.

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 impacts of proposed actions on geological resources. Impacts can often be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering design are incorporated into project development.

4.5.2 Potential Impacts of the Proposed Action

The Proposed Action would not significantly affect geologic resources at the NFIA. The project area underwent significant disturbance during the initial airport construction and subsequent airport development projects. No unique or undisturbed soils occur in the project area; however, implementation of sediment and erosion control measures during construction would limit further potential impacts to soils. No soils classified as Prime Farmlands by the USDA occur at the NFIA so there would be no effect on prime farmland soils. No substantial alterations to regional or local topographic or physiographic features would be required for construction of the new terminal building or the proposed parking and access improvements. In addition, no alterations to the underlying geology at the NFIA would be required. Therefore, the Proposed Action would have no significant effect on geological resources at the NFIA.

4.5.3 Potential Impacts of the Expansion and Renovation of the Existing Terminal Building

The expansion and renovation alternative would not significantly affect the geological resources at the NFIA. The proposed construction activities would involve modifications to an existing structure sited on previously disturbed land. No unique or undisturbed soils occur in the project area. There would be no significant alterations to regional or local topographic, physiographic or underlying geologic features at the NFIA. Therefore, there would be no significant effect to the geological resources at the NFIA as a result of this alternative.

4.5.4 No-Action Alternative

Under this alternative, there would be no construction or demolition activities at the NFIA. Current airport operations would be maintained and there would be no change to the geologic features of the airport. Consequently, the No-Action Alternative would have no significant effect on geological resources at the NFIA.

4.6 WATER RESOURCES

4.6.1 Significance Criteria

Water availability, quality, and use; existence of flood plains; and associated regulations form the basis for the significance criteria for water resources. A potential effect to water resources would be significant if it:

- reduces the availability or supply of water to existing users;
- creates or contributes to the overdraft of groundwater, or exceeds the safe annual yield of water supply sources;
- adversely affects water quality or endangers public health by creating or worsening health hazard conditions;
- threatens or damages unique hydrological characteristics;
- results in new construction in an area with a high probability of flooding; or
- violates established laws or regulations that protect or manage water resources of an area.

4.6.2 Potential Impacts of the Proposed Action

4.6.2.1 Surface Water Resources

The Proposed Action would have no direct effect on NFIA's surface water resources since the closest surface water resource, Cayuga Creek, lies over 2,000 feet west and north of the affected area (Figure 3-2). No alteration of Cayuga Creek's hydrology, instream habitat, or riparian vegetation would occur under the Proposed Action; therefore, no impacts on the biological productivity or habitat value of Cayuga Creek would occur. Erosion and sediment control measures would be implemented during construction to mitigate any potential indirect effects from sedimentation on Cayuga Creek or its tributaries. The stormwater runoff from the additional impervious surface would be managed using the existing stormwater system and would not violate the NFIA's current National or State Discharge Pollution Elimination System permits.

Use Classification

The Proposed Action would have no effect on attainment of the Class C usages for which Cayuga Creek has been designated. The construction activities would occur on currently disturbed land and developed land, and would not require the modification or disruption of any waterways on the property. Under the Class C designation, the "best usages" for Cayuga Creek are fishing and recreation. The Proposed Action would not result in significant impacts to the fish community in Cayuga Creek. The Proposed Action would not affect the suitability of Cayuga Creek to support fishing. However, airport security measures preclude the public from accessing the section of Cayuga Creek that occurs on NFIA property.

Floodplain Resources

The area that would be affected by the Proposed Action is entirely outside Cayuga Creek's 100-year floodplain (Figure 3-2). Therefore, the Proposed Action would have no effect on hydrological characteristics of the 100-year floodplain at NFIA.

4.6.2.2 Groundwater Resources

The Proposed Action would not have a significant effect on groundwater resources. Construction of the terminal building, aircraft apron, and parking lot would result in a 475,000 square foot increase in impervious surfaces on the NFIA property. Impervious surfaces reduce the area available for groundwater recharge. However, the increase in impervious surface associated with the Proposed Action is small compared to the total area of impervious surface at NFIA, and would have no measurable effect on groundwater recharge. There would be no effect on the quantity or quality of available groundwater as a result of the Proposed Action.

Construction BMPs would be implemented for all projects associated with the Proposed Action to ensure the minimization of stormwater and sediment runoff to Cayuga Creek. Necessary stormwater management and sediment and erosion control permits would be obtained from NYSDEC prior to construction.

4.6.3 Potential Impacts of the Expansion and Renovation of the Existing Terminal Building

The expansion and renovation alternative would have no significant effect on water resources at NFIA. The alternative would affect surface water resources, use classification, floodplains and coastal zone resources in the Project area in a manner similar to that described for the Proposed Action. The primary difference between the Proposed Action and the expansion and renovation alternative with respect to water resources is the total impervious surface created. Because the alternative would use the existing footprint for the terminal building and aircraft parking apron, the additional impervious surface footprint would be limited to the additional parking and ground access facilities (280,500 square feet) and therefore less than under the Proposed Action (453,000 square feet). There would be no effect on the quantity or quality of available surface water or groundwater as a result of the alternative.

4.6.4 No-Action Alternative

Under this alternative, there would be no construction or demolition activities at the NFIA. Current airport operations would be maintained and there would be no change to surface water features, groundwater, or floodplains. Consequently, the No-Action Alternative would have no significant effect on water resources at the NFIA.

4.7 BIOLOGICAL RESOURCES

4.7.1 Significance Criteria

The significance criteria for assessing impacts to biological resources are based on four major elements:

- The *importance* of the resource, in legal, commercial, recreational, ecological, or scientific terms;
- The *proportion* of the resource that would be affected, relative to its abundance in the region;
- The *sensitivity* of the resource to proposed activities; and

- The *duration* of the ecological consequences.

Impacts to biological resources would be significant if:

- rare, threatened, or endangered species (as defined by state or federal natural resource agencies and projected under the State and Federal Endangered Species Acts) would be jeopardized;
- a large proportion of an important (rare, threatened, or endangered) species or habitat (vegetation communities or wetlands) within a region is adversely affected; or
- if disturbances cause significant reductions in population size or distribution of an important (rare, threatened, or endangered) species.

The duration of an impact also affects its significance level. For example, temporary impacts (i.e., noise associated with construction) are typically considered less significant than permanent impacts (land conversion).

Federal agencies, under the ESA, are required to provide documentation that ensures that agency actions will not adversely affect the existence of any threatened or endangered species. Section 7 of the ESA requires that all federal agencies avoid "taking" endangered or threatened species including jeopardizing their habitats. No threatened or endangered species are known to occur at NFIA. Thus, no effects on such species would occur as a result of the Proposed Action or Alternatives.

Determination of the significance of potential impacts on wetlands is based on the functions and values of the particular wetland(s). A wetland analysis evaluates the functions (physical, biological, and chemical processes) and values (processes or attributes valuable to society) of a wetland. Potential physical impacts affecting a wetlands' ability to perform its functions and values are evaluated to determine the level of significance of potential impacts.

4.7.2 Potential Impacts of the Proposed Action

4.7.2.1 Vegetation

Vegetation is the primary biological resource that would be affected by the Proposed Action. Roughly 30,000 square feet of managed grassland and landscape plantings located next to the existing terminal building and parking areas would be replaced with impervious surface (i.e., paved areas and buildings). No other vegetation communities would be affected by the Proposed Action. Affected areas do not contain unique or rare plant species or provide important wildlife habitat. Moreover, the loss of managed vegetation is small compared to the total area of managed vegetation at NFIA, and would have no significant effect on the total vegetation cover at NFIA or the limited wildlife use that it supports. Thus, the Proposed Action would not have a significant impact on vegetation at NFIA.

4.7.2.2.1 Wetlands

No wetlands occur in the vicinity of the Proposed Action. Erosion and sediment control measures would be implemented during construction of the terminal building and parking facilities to prevent erosion and sedimentation in wetlands located downgradient from the Proposed Action (Cayuga Creek). Thus, the Proposed Action would not have a significant impact on wetlands at NFIA.

4.7.2.2.2 Wildlife

Wildlife use of NFIA is extremely limited, particularly in the areas that would be affected by the Proposed Action. Affected areas provide limited habitat for locally common wildlife species that are adapted to developed environments and human activity. During construction, wildlife using the affected area would be displaced and forced to move to other unaffected areas of NFIA or offsite. Developed environments and managed grasslands such as those that would be affected by the Proposed Action are prevalent throughout the NFIA and the surrounding region so displaced wildlife would have ample available habitat to choose from. Thus, the Proposed Action would not have a significant impact on wildlife at NFIA.

4.7.2.3 Threatened and Endangered Species

No federally-listed threatened or endangered species or their habitats occur at or in the vicinity of the NFIA (USFWS, 2004; Appendix A). Thus, no effects on federally-listed species would occur as a result of the Proposed Action. Two state-listed threatened species and five state-listed Special Concern Species have the potential to occasionally occur at NFIA, particularly while foraging or while en route to other sites. The portions of the NFIA that have the potential to support foraging or transient state-listed species include the large wetland in the western portion of the site, the wetland along Cayuga Creek, and the expanses of managed grassland adjacent to the airport runways. The area that would be affected by the Proposed Action is located in the immediate vicinity of the existing terminal building and associated parking areas and does not provide suitable habitat for state-listed species. Thus, the Proposed Action is not likely to adversely effect state-listed threatened or endangered species at NFIA.

4.7.3 Potential Impacts of the Expansion and Renovation of the Existing Terminal Building

The expansion and renovation alternative would have no significant impact on biological resources at the NFIA. The primary difference between the Proposed Action and the expansion and renovation alternative with respect to biological resources is the amount of vegetation that would be replaced by impervious surfaces. Because this alternative would use the existing terminal building footprint, the amount of vegetation loss would be negligible and significantly less than under the Proposed Action. Furthermore, no wetlands or threatened or endangered species or their habitats occur in the vicinity of the projects associated with this alternative. Thus, this alternative would have negligible effects on vegetation and no effect on wetlands or threatened or endangered species.

4.7.4 No-Action Alternative

Under the No-Action alternative, there would be no construction or demolition activities at the NFIA. Current airport operations would be maintained and there would be no change to biological resources, including vegetation, wildlife, wetlands, or threatened or

endangered species. Consequently, the No-Action Alternative would have no have effect on biological resources at the NFIA.

4.8 GROUND TRANSPORTATION

4.8.1 Significance Criteria

Potential impacts on transportation 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 may 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 direct or indirect work force and 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.

4.8.2 Potential Impacts of the Proposed Action

The Proposed Action would have a short-term, adverse effect on transportation at the NFIA during construction, such as increased traffic congestion and rerouted traffic patterns associated with construction workers and their equipment. This effect would be minimized through carpooling and limiting the transport of the heavy equipment to the start-up and shutdown phases of the project. The construction activities would avoid high traffic periods to minimize the construction effect. These effects would be temporary and short-term, ceasing upon completion of the construction operations.

The Proposed Action would also affect traffic in the area surrounding the NFIA during its operational phase as a result of the proposed increase in parking capacity. The Route 62/Williams Rd/Airport Access Drive intersection in the vicinity of the NFIA would be the primary intersection affected as additional vehicles will access the NFIA. A traffic study was conducted (McFarland-Johnson, Inc., 2004) using projected 2026 vehicular traffic volumes. Table 4-10 presents the results of the study. The Route 62/Williams Rd/Airport Access Drive intersection would further approach, but not exceed, capacity and would still provide an acceptable Level of Service (LOS).

Table 4-10. Capacity and LOS Study Results for the Route 62/Williams Rd/ Airport Access Drive Intersection

Intersection	Volume to Capacity ratio			Level of Service		
	2004	2026 without Airport Traffic	2026 with Airport Traffic	2004	2026 without Airport Traffic	2026 with Airport Traffic
Route 62/Williams Road/Airport Access Drive	0.88	0.92	0.93	C	C	D

Source: McFarland-Johnson, Inc., October 2004

4.8.3 Potential Impacts of the Expansion and Renovation of the Existing Terminal Building

Similar to the Proposed Action, the alternative would have a short-term, adverse effect on transportation at the NFIA associated with construction workers and their equipment. These impacts would cease upon completion of the construction activities. Similar to the Proposed Action, the potential increase in vehicular traffic flow generated by the alternative would increase traffic at the signalized intersections in the vicinity of the NFIA. The Route 62/Williams Rd/Airport Access Drive intersection would further approach capacity causing a similar decline in the LOS (Table 4-5). Therefore, the alternative would have a minor adverse affect on transportation in the vicinity of the NFIA.

4.8.4 No-Action Alternative

Under this alternative, there would be no construction or demolition activities at the NFIA. Current airport operations would be maintained and there would be no change to traffic volumes or patterns. Consequently, the No-Action Alternative would have no significant effect on transportation at the NFIA.

4.9 VISUAL RESOURCES

4.9.1 Significance Criteria

Impacts to Visual and Aesthetic resources would be considered significant if implementation of the Preferred Alternative would cause substantial adverse alterations to an existing visual setting. These impacts include, but are not limited to:

- construction or modification of structures, landforms, or other features that interfere with the existing visual landscape;
- demolition of structures, landforms, or other features that define the visual landscape; or
- construction, modification, or demolition of structures, landforms, or other features that would adversely impact the eligibility of adjacent structures or districts for the State or National Registers of Historic Places.

4.9.2 Potential Impacts of the Proposed Action

The Proposed Action would have no significant impact on visual resources because:

- There would be no construction or modification of structures, landforms, or other features that interfere with the existing visual landscape. The visual character of the airport is typical of a civilian airfield and visual sensitivity of the area is low. There new terminal facility would be an additional vertical structure; however, it would be within the context of a civilian airfield and would not alter the overall visual landscape.

- There would be no demolition of structures, landforms, or other features that define the visual landscape.

- There would be no construction, modification, or demolition of structures, landforms, or other features that would adversely impact the eligibility of adjacent structures for the National or State Registers of Historic Places. The proposed activities are consistent with the visual character of the airport and would not alter the overall visual landscape.

Minor adverse visual impacts would occur during construction, created by both the construction itself and the associated increase in traffic, dust, and machinery. These impacts, however, would be short-term in nature. Therefore, this action would have no significant, permanent impact on visual resources at or in the vicinity of NFIA.

4.9.3 Potential Impacts of the Expansion and Renovation of the Existing Terminal Building

The expansion and renovation alternative would be visually consistent with the existing conditions at the airport. The proposed expansion and renovation of the existing terminal facility would create a two-story facility; however, the construction would be consistent with the surrounding structures and the NFIA Master Plan. Therefore, the proposed alternative would create no significant effect on visual resources on or in the vicinity of NFIA.

Minor, short-term, adverse impacts to visual resources at the NFIA would occur during construction activities because staging areas and equipment would disrupt the visual landscape from that typical of a civilian airfield. These impacts would be minor and short-term and would cease upon completion of the construction activities.

4.9.4 No-Action Alternative

Under this alternative, there would be no construction or demolition activities at the NFIA. Current airport operations would be maintained and there would be no change to the visual context of the airport or its surroundings. Consequently, the No-Action Alternative would have no significant effect to visual resources on or in the vicinity of the NFIA.

4.10 CULTURAL RESOURCES

4.10.1 Significance Criteria

Both Federal and State laws regulate the management and control of cultural resources. Section 106 of the *National Historic Preservation Act* (NHPA) empowers the Advisory Council on Historic Preservation to comment on federally initiated, licensed, or permitted projects affecting cultural sites listed or eligible for inclusion on the NRHP. Ordinarily, determinations of eligibility for National Register listing (made in consultation between federal agencies and the SHPO are used as a means to distinguish properties that possess significance regarding American history, architecture, archaeology, engineering, or culture

from those of lesser importance. Properties must possess one of the following criteria to be deemed eligible for listing in the National Register:

A. Are associated with events that have made a significant contribution to the broad patterns of our history
B. Are associated with the lives of persons significant in our past
C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant distinguishable entity whose components may lack individual distinction
D. Have yielded or may be likely to yield, information important in prehistory or history.

Direct impacts are assessed by considering the proximity of construction activities to known cultural resource sites. Indirect impacts result primarily from the effects of project-induced population increases and the resulting need to develop new housing areas, utilities services, and other support functions necessary to accommodate population growth. These activities and their subsequent use have the potential to affect cultural resources. An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. This alteration may occur through:

- physical alterations, damage or destruction of all or part of a resource;
- alteration of the environmental setting of the cultural resource;
- addition of visual, audible, or atmospheric disturbances that are out of character with the property or its setting; or,
- neglect of the resource resulting in its destruction or deterioration.

Impacts to Native American resources would be considered significant if the effect of a proposed action has the potential to significantly affect protected tribal resources, tribal rights, or Indian lands.

4.10.2 Potential Impacts of the Proposed Action

The Proposed Action would have no adverse affect on historic resources at or in the vicinity of the NFIA because:

- There are no structures at the NFIA listed on the NRHP. Therefore, the Proposed Action would not physically alter, damage or destroy all or part of any listed resources.

- The Bell Aerospace hanger is within the veiwshed of the NFIA and is eligible for listing (Panamerican, 2004); however, the proposed construction activities are consistent with the other structures at the airport and would not alter the environmental setting of the eligible resource.

- The Proposed Action is consistent with the visual appearance of a civilian airfield; therefore, the Proposed Action would not introduce visual, audible, or atmospheric disturbances that are out of character with the property or its setting.

The entire project area has been previously disturbed for construction of its airport and related facilities. Therefore, the probability of finding any intact archaeological artifacts is very low. In the event that cultural materials (unusual amounts of shell or non-native stone), other related materials, or human remains were found during construction, all activity within a 50-foot radius would cease; a qualified archeologist would be contacted for management recommendations; and the New York SHPO would be contacted for further consultation. Testing and mitigation measures required under the National Historic Preservation Act (16 USC 470) would be implemented. Therefore, the Proposed Action would have no adverse effect on archaeological resources.

In a letter dated September 5, 2007, the New York SHPO concurred with a No Effect determination on cultural resources (Appendix A).

4.10.3 Potential Impacts of the Expansion and Renovation of the Existing Terminal Building

This Alternative would have no adverse affect on cultural resources at or in the vicinity of the NFIA for the reasons similar to the Proposed Action. There are no structures at the NFIA listed on the NRHP. The existing terminal building was first constructed in the late 1920's; however, extensive modifications completed during the 1960's have precluded the building from eligibility on the NRHP (Panamerican, 2004). In the event that cultural materials (unusual amounts of shell or non-native stone), other related materials, or human remains were found during construction, all activity within a 50-foot radius would cease; a qualified archeologist would be contacted for management recommendations; and the New York SHPO would be contacted for further consultation. Testing and mitigation measures required under the National Historic Preservation Act (16 USC 470) would be implemented. Therefore, the alternative would have no significant affects on archaeological resources. In a letter dated September 5, 2007, the New York SHPO concurred the project, as described, would have No Effect on cultural resources (Appendix A).

4.10.4 No-Action Alternative

Under this alternative, there would be no construction or demolition activities at the NFIA. Current airport operations would be maintained and there would be no change to any structures or previously undisturbed areas at the airport. Consequently, the No-Action Alternative would have no significant effect on cultural resources at the NFIA.

4.11 SOCIOECONOMICS

4.11.1 Significance Criteria

The significance of population and expenditure impacts are assessed in terms of their direct effects on the local economy and related indirect effects on other socioeconomic resources (e.g., housing). The magnitude of potential impacts can vary greatly depending on the location of a proposed action. For example, implementation of an action that creates 10 employment positions may be unnoticed in an urban area, but may have

significant impacts in a more rural region. Socioeconomic impacts would be significant if the Proposed Action would result in:

- extensive relocation of residents and sufficient replacement housing is unavailable;
- extensive relocation of community businesses that would create severe economic hardship for the affected communities;
- disruptions of local traffic patterns that substantially reduce the levels of service of the roads; or
- a substantial loss in community tax base.

Environmental Justice issues would exist if adverse effects would be predominately borne by a minority population and/or low-income population or would be suffered by the minority and/or low-income population and would be appreciably more severe or greater in magnitude than the adverse effects that would be suffered by the non-minority or non-low-income population.

4.11.2 Potential Impacts of the Proposed Action

The Proposed Action would have no impact on socioeconomics at the NFIA because the project would not require relocation of residents or local businesses, disrupt local traffic patterns resulting in a significantly decreased level of service, or reduce the community tax base. The Proposed Action would also not result in any change in the number of personnel at the airport; therefore, there would be no impact to local employment. The proposed activities would result in a small increase in local construction employment, but such increases would be minor and temporary due to the limited nature and extent of the project.

Temporary, positive economic impacts are expected to result from the Proposed Action. These impacts would be induced by a temporary increase in spending supported by the minor direct economic benefits from new construction employment associated with the Proposed Action. This spending would include construction materials purchased from local vendors as well as meals, gasoline, and other amenities to support the construction

workers during this period. This increased spending would be temporary during construction and would not support additional development in the region.

The Proposed Action would not cause adverse social or socioeconomic impacts on communities surrounding the airport. Since the Proposed Action involves construction that is located entirely within the airport property, the proposed projects would not result in the relocation of residences or disrupt established communities or planned development. Impacts on recreational areas, community facilities, social services, surface transportation patterns, and emergency vehicle response times would not be significant.

Environmental Justice and Protection of Children

In order to comply with Executive Order 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Population*) ethnicity and poverty status in the vicinity of the airport were compared to county and state data to determine if any minority or low-income communities could potentially be disproportionately affected by implementation of the Proposed Action. The area around NFIA contains a lower percentage of minority and low-income persons compared to Niagara County and the State of New York. Therefore, the percentage of the population in the study area that is relevant to the environmental justice concerns is relatively low. Further, since no significant adverse environmental impacts would occur as a result of the Proposed Action, no populations (minority, low-income, or otherwise) would be disproportionately affected by implementation of the Proposed Action, and no significant effect with respect to environmental justice would result. Therefore, the Proposed Action would comply with Executive Order 12898.

Children comprise a similar share of the population near the NFIA compared to Niagara County, thereby reducing the potential for disproportionate health and safety risks occurring to children from implementation of the Proposed Action. Implementation of the Proposed Action would not result in any health and safety risks. Therefore, the Proposed Action would not result in increased health and safety risks to any population, including children, and the Proposed Action would comply with Executive Order 13045.

4.11.3 Potential Impacts of the Expansion and Renovation of the Existing Terminal Building

The proposed alternative would not cause adverse social or socioeconomic impacts on communities surrounding the NFIA similar to the Proposed Action. The alternative would not require relocation of residents or local businesses, disrupt local traffic patterns resulting in a significantly decreased level of service, or reduce the community tax base. This Alternative would also not result in any change in the number of personnel at the airport; therefore, there would be no impact to local employment. The proposed activities would result in a small increase in local construction employment, but such increases would be minor and temporary due to the limited nature and extent of the project.

The alternative would not disproportionately affect any populations (minority, low-income or otherwise) or present a disproportionate health and safety risk to children. Therefore, the alternative complies with Executive Orders 12898 and 13045.

4.11.4 No-Action Alternative

Under this alternative, there would be no construction or demolition activities at the NFIA. Current airport operations would be maintained and there would be no change to the amount of employment or business activity at the airport. Consequently, the No-Action Alternative would have no significant effect on socioeconomics in the vicinity of the NFIA.

4.12 HAZARDOUS MATERIAL AND WASTE

4.12.1 Significance Criteria

Numerous local, state and federal laws exist to regulate the storage, handling, disposal, and transportation of hazardous materials and wastes. The primary objective of these regulations is to protect the environment and public health. Potential impacts associated with hazardous substances would be significant if their storage, use, transportation, and disposal substantially increased the risk to human health or environmental exposure.

4.12.2 Potential Impacts of the Proposed Action

The Proposed Action would not alter the storage, handling, disposal, or transportation of hazardous materials and wastes at the NFIA. All hazardous materials are currently housed in the maintenance facility and fuel farm area, which would not be impacted as part of the proposed construction activities. The Proposed Action would have no effect on the TCE remediation site northwest of Runway 6-24. The proposed terminal and landside improvements are located to the south of the runway system. The remediation site, and surrounding area, are located to the north of the NFIA runway system and would not be disturbed as a result of the Proposed Action; therefore, there would be no effect on the groundwater remediation site.

4.12.3 Potential Impacts of the Expansion and Renovation of the Existing Terminal Building

This Alternative would not alter the storage, handling, disposal, or transportation of hazardous materials and wastes at the NFIA. All materials are currently housed in the maintenance facility and fuel farm area, which would not be impacted as part of the expansion and renovation activities.

4.12.4 No Action Alternative

Under this alternative, there would be no construction or demolition activities at the NFIA. Current airport operations would be maintained and there would be no change to the amount of employment or business activity at the airport. Consequently, the No-Action Alternative would have no effect on socioeconomics in the vicinity of the NFIA.

5.0 CUMULATIVE IMPACTS

Cumulative impacts on environmental resources result from incremental effects of the Proposed Action, when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative impacts can result from minor, but collectively substantial, actions undertaken over a period of time by various agencies (federal, state, and local) or individuals. NEPA requires an assessment of cumulative impacts resulting from the Proposed Action combined with projects that are proposed, under construction, recently completed, or anticipated to be implemented in the near future. The following sections document potential cumulative effects associated with the Proposed Action and other recent, current, and future projects in the region.

5.1 METHODS FOR CUMULATIVE IMPACTS ANALYSIS

This cumulative impacts analysis (CIA) included three major tasks, as per the guidelines cited above:

1. Determine the scope of the cumulative analysis, including geographic extent, time frame, and relevant resources;

2. Conduct the cumulative effects analysis; and

3. Determine the cumulative impacts to relevant resources.

5.1.1 Scope of Cumulative Analysis

Geographical Extent of Analysis

The geographic area of concern for a cumulative impacts analysis is typically defined by the extent of the influence of a potential action and its alternatives (CEQ, 1997). The extent of influence of the Proposed Action and its Alternatives for this cumulative impacts analysis is limited to NFIA and the immediately adjacent properties.

Time Frame for Analysis

CEQ guidelines require that potential cumulative impacts be considered over a specified time period (i.e., from past through future). In order to assess the influence of a given action, a cumulative impact analyses should be conducted using existing, readily available data and the scoping of the cumulative impact analysis should be defined, in part, by data availability. The appropriate time for considering past, present, and reasonably foreseeable future projects can be the design life of a project, or future time frames used in local master plans and other available predictive data.

The impacts of past actions have been considered in the analysis of this EA in establishing the baseline against which the Proposed Action is compared. The timeline for the Proposed Action is short and construction would be expected to be completed within four months. Therefore, the appropriate future time frame for this analysis would be the duration of the proposed construction activities at NFIA (four months) or other projects that would occur in the immediate vicinity of NFIA within one year of commencement the construction period for the Proposed Action.

Identification of Relevant Resources

Resources identified for consideration in the cumulative impacts analysis were those that would be affected by the Proposed Action or Alternatives. If the Proposed Action or Alternatives did not result in direct or secondary impacts on a resource, then that resource was eliminated from the cumulative impact evaluation (CEQ, 1997). Resources that would be impacted temporarily were only considered if the synergistic effects of two or more concurrent temporary impacts have the potential to constitute a significant impact on a particular resource. Table 5-1 provides a summary of the decision-making process conducted to identify the relevant resources to be considered in this cumulative impacts analysis.

Non-Project Related Actions

The City of Niagara Falls Planner, Tom DeSantis, indicated that there are several development actions currently planned in the vicinity of NFIA (Pers. Comm. Tom

DeSantis, 2005). These projects include: (1) a 5-acre independent living community for senior citizens on Williams Road adjacent to the LaSalle Highway arterial; (2) a 30,000 square foot expanded research facility at the Veridian complex adjacent to the NFIA; and (3) a 1,000,000 square foot Wal-Mart and Sam's Club joint shopping center to be located on Military Road (Pers. Comm. Tom DeSantis, 2005). In addition, the NFIA has proposed a shift in Runway 6-24 to comply with the FAA standards for runway safety areas (RSAs). The project would shift the runway 450 to the northeast, away from the proposed terminal building, and relocate Cayuga Creek around the northeast end of the runway.

The NFIA has also proposed a 6,000 square foot Niagara Falls International Transportation Center (NFITC) located on Factory Outlet Drive (approximately 2.5 miles southwest of NFIA); however, detailed information regarding the specific location and design of this project was not available (Pers. Comm. Kim Minkel, 2005). Therefore, this project was not considered a reasonably foreseeable future action and was not considered in detail in this analysis.

Table 5-1. Consideration of Resources and Cumulative Impacts Analysis for the Proposed Action and Ongoing Development Projects

Resource Area	Proposed Action	Cumulative Analysis Required	Overall Cumulative Impacts
Safety	No effect	No	No impact
Air Quality	No significant impact	Yes	No significant impact – maintain conformance with SIP
Noise	Temporary adverse impact	No	No impact
Land Use	No effect	No	No impact
Geological Resources	No effect	No	No impact
Water Resources	No effect	No	No impact
Terrestrial Resources	No effect	No	No impact
Transportation	Slight adverse effect	Yes	Slight adverse impact
Visual Resources	No effect	No	No impact
Cultural Resources	No adverse effect	No	No impact
Socioeconomics	Beneficial impact	Yes	Beneficial impact
Hazardous Materials and Waste	No effect	No	No impact

There are various development projects in the vicinity of the NFIA that have the potential, in combination with the Proposed Action, to cumulatively affect resources. The development projects include: (1) a 5 acre independent living community for senior citizens on Williams Road adjacent to the LaSalle Highway arterial; (2) a 30,000 square foot expanded research facility at the Veridian complex adjacent to the NFIA; and (3) a 1,000,000 square foot Wal-Mart and Sam's Club joint shopping center located on Military Road. Detailed information regarding the specific location and design parameters of the NFITC and Wal-Mart/Sam's Club shopping center are currently not available (Pers. Comm., Kim Minkel and Tom DeSantis, 2005).

The Proposed Action, in combination with the regional ongoing development projects, would have minor adverse cumulative effects on air quality. Cumulatively, these projects would increase emissions in Niagara County; however, these projects would not delay attainment with the New York SIP and NAAQS.

The Proposed Action, in combination with the regional ongoing development projects, would have minor adverse cumulative effects on transportation. Cumulatively, these projects would increase traffic flow in the vicinity of the airport, and cause a declining LOS at the intersections in the vicinity of the airport.

The Proposed Action, in combination with the ongoing regional development projects, would result in a cumulative beneficial effect to socioeconomics. Cumulatively, these projects would have the potential to increase traffic, travel, and consumer appeal in the region surrounding the NFIA.

5.2 CUMULATIVE EFFECTS ON AIR QUALITY

The Proposed Action, when considered with other development projects in the region, would not adversely affect air quality in the vicinity of the NFIA or Niagara County as a whole. The Proposed Action does not require a general conformity determination and does not generate emissions in a significant quantity that would require regulation under Title V. NOx and VOCs, the precursors to ozone, would increase during operation of the Proposed Action; however, the impact would be negligible when compared to the

conformity applicability thresholds. Therefore, the cumulative impact of the Proposed Action and other development projects would not contribute to the degradation of local or regional air quality that would prevent New York State from conforming to its SIP and maintaining the NAAQS.

5.3 CUMULATIVE EFFECTS ON TRANSPORTATION

The Proposed Action, when considered with the other development projects in the region, would not adversely affect transportation on NFIA property. However, the Proposed Action, when considered with the other development projects in the region, would have an adverse impact on transportation in the immediate vicinity of the NFIA. The projects would increase the demand for access along the major roadways in the vicinity of the NFIA. The incremental increase in traffic flow from the Proposed Action and ongoing development projects would affect the two signalized intersections in the vicinity of the airport. The Route 62/Williams Rd/Airport Access Drive intersection would further approach capacity and provide a lower LOS than would be expected without the additional vehicular traffic. The Route 62/Walmore Rd/Cayuga Rd/Niagara Rd intersection would continue to operate above capacity and provide a LOS below generally acceptable limits. Therefore, there would be an adverse cumulative impact to transportation from the Proposed Action and the other development projects.

5.4 CUMULATIVE EFFECTS ON SOCIOECONOMICS

The Proposed Action, when considered with the other development projects in the region, would result in a beneficial cumulative effect on local socioeconomics. The goal of the project is the socioeconomic revitalization of the Niagara Falls region. The projects are designed to increase commercial, residential, and recreational opportunities and will provide a more developed transportation system to support local tourism, increase employment at the Veridian complex, and provide ready access to shopping centers previously unavailable in the area. Therefore, there would be a beneficial cumulative impact to socioeconomics from the Proposed Action and the other ongoing development projects.

6.0 SUMMARY OF FINDINGS

This EA evaluated the potential environmental effects associated with the Proposed Action on twelve resource areas. The following sections present a summary of findings according to resource area.

6.1 SUMMARY OF POTENTIAL EFFECTS OF THE PROPOSED ACTION

6.1.1 Safety

The Proposed Action would not adversely affect safety at the NFIA. Construction and operation of the proposed new terminal facility and the associated landside and airside improvements would not increase the presence of safety hazards at NFIA. In fact, the Proposed Action could improve safety in the long term by improving traffic flow via the circularized traffic pattern and providing additional parking. Nevertheless, in the event of an emergency, the USAF provides crash response and fire suppression services to NFIA with the capability to handle any emergencies or fire that could occur during construction or operation of the facilities associated with the Proposed Action. Potential impacts to worker safety during the construction phase would be temporary and mitigated by adherence to all applicable OSHA regulations. Therefore, the Proposed Action would have no adverse effect on safety at NFIA.

6.1.2 Air Quality

The NFIA is not a major source of air emissions and therefore is not required to have a Title V permit to operate. The Proposed Action would have a minor short-term, localized adverse effect on air quality by causing a temporary increase in air pollutant emissions, primarily PM_{10} and NOx during construction. Both NOx and VOC emissions from the stationary (boilers) and mobile sources (aircraft and vehicles) during operations would be negligible compared to the conformity applicability thresholds. The air emissions analysis completed for the Proposed Action determined that the new emissions would not exceed *de minimus* limits for conformity or the regionally significant emission levels for local pollutants. The Proposed Action does not create a situation where the State of New

York would not comply with the SIP or achieve NAAQS. Therefore, the Proposed Action would have no significant, adverse effects on air quality.

6.1.3 Noise

Under the Proposed Action, the use of heavy equipment for site preparation and development would generate noise exposure above ambient levels during the construction period. Noise produced, however, would be short-term and would not affect any noise-sensitive receptors on- or off-site. Noise levels from the long-term operation of the new terminal facility would be consistent with noise levels typical of a civilian airfield. The AEM computer model indicated that the predicted growth in operations would not cause a significant increase in the 65dB contour area. There are no noise sensitive receptors at, or immediately adjacent to the NFIA. Therefore, the Proposed Action would have no significant, permanent adverse effect on noise.

6.1.4 Land Use

Each construction component of the Proposed Action is consistent with the Airport Layout Plan. The Proposed Action would improve land use at the NFIA because it would consolidate terminal-related land uses and associated parking facilities. The proposed construction activities would have no adverse effects on off-site land use patterns because the activities would be confined to the airport and would not require a change to the existing regional land use pattern.

6.1.5 Geological Resources

The Proposed Action would occur on disturbed or developed land where alterations to local geology and soils have already occurred. Implementation of best management practices would reduce further impacts on geological resources in affected areas. Therefore, the Proposed Action would have no significant adverse effect on geological resources.

6.1.6 Water Resources

The Proposed Action could result in minor soil erosion and slight increases in storm water runoff from affected areas; however, the proposed activities occur on previously disturbed or developed land, which minimizes the potential for these effects. Implementation of best management practices during construction activities would ensure that the Proposed Action would have no significant adverse effect on water resources.

6.1.7 Biological Resources

The Proposed Action would have no significant adverse affect on biological resources. The Proposed Action occurs primarily on paved land and would require removal of less than one acre of mowed grassland. The plant species found in affected areas are regularly disturbed by mowing, are common in the region, and do not provide significant wildlife habitat. No wetlands occur at or in the vicinity of the Proposed Action. Therefore, the Proposed Action would not have a significant effect on vegetation, wetlands, or wildlife. Due to the developed nature of the NFIA and the surrounding land use, state- or federally-listed threatened or endangered species do not regularly occur at or in the vicinity of the NFIA, although such species could occasionally forage or rest at NFIA. The portion of the NFIA that would be affected by the Proposed Action does not provide suitable foraging or resting habitat for such species. Therefore, the Proposed Action would have no effect on federally-listed threatened and endangered species. The USFWS will be consulted regarding concurrence with these findings.

6.1.8 Transportation

The Proposed Action would have a slight adverse effect on transportation in the vicinity of the NFIA. There would be a minor increase in traffic during construction operations as construction workers travel to and from the NFIA; however, this increase would cease upon completion of the proposed construction activities. The proposed traffic circle, additional parking lot, and access road would improve the efficiency of on-site traffic flow and provide on-site access to the adjacent businesses. The Route 62/Williams Rd/Airport Access Drive intersection would continue to operate below capacity and

would provide a generally acceptable LOS; however, the intersection would be closer to capacity and the LOS would be less than without the potential airport traffic. Therefore, the Proposed Action would have a minor adverse effect on transportation.

6.1.9 Visual Resources

The Proposed Action would be visually consistent with existing structures at the airport. The visual environment of the NFIA is characteristic of military and civilian airfields and regional visual sensitivity is low due to the prevalence of industrial and commercial development. Therefore, the Proposed Action would have no effect on visual resources.

6.1.10 Cultural Resources

The Proposed Action would not affect any structures that are eligible for the National Register of Historic Places. The Phase 1A Cultural Resources Study for NFIA (Panamerican, 2004) determined that the Bell Aerospace hanger was the only building that is eligible for listing on the NRHP within the vicinity of the NFIA (Panamerican, 2004). The Proposed Action is consistent with the overall character of the NFIA and surrounding region and would not adversely affect the status of the Bell Aerospace hanger.

No cultural artifacts or Native American resources have been identified at the NFIA; however, portions of the NFIA, particularly along Cayuga Creek, are considered culturally sensitive. The area proposed for construction is previously disturbed land with a low probability of intact archaeological resources. If such resources were discovered during construction and demolition, all activities within a 50-foot radius would cease and contacts with the New York SHPO and other appropriate parties would be made. Therefore, the Proposed Action would have no significant effect on cultural resources. In a letter dated September 5, 2007, the New York SHPO concurred with a No Effect determination on cultural resources.

6.1.11 Socioeconomics

The Proposed Action would not cause adverse social or socioeconomic impacts on communities surrounding the airport. The proposed projects would not result in the relocation of residences, disrupt established communities or planned development, or result in any change in the number of personnel at the airport or require the relocation of personnel. Therefore, the Proposed Action would not produce a direct, permanent impact on area population or employment. The Proposed Action does not disproportionately disadvantage any populations or children.

The Proposed Action would have positive, short-term economic impacts locally and regionally, associated with the proposed construction activities and the temporary increase in construction employment. The benefits would include construction materials purchased from local vendors as well as meals, gasoline, and other amenities to support the construction workers during this period. These benefits would cease upon completion of the proposed construction activities.

6.1.12 Hazardous Waste

The Proposed Action would not significantly alter the storage, handling, disposal, or transportation of hazardous materials and wastes at the NFIA. All materials are currently housed in the maintenance facility and fuel farm area, which would not be impacted as part of the proposed construction activities. The Proposed Action would also have no impact on the ongoing groundwater remediation program because the proposed construction activities are no located on, or adjacent to, the remediation site. The potential increase in flight operations at the NFIA would increase the handling of materials such as POLs; however, continued implementation of the Spill Pollution Control and Countermeasure (SPCC) plan would minimize the potential impacts of increased handling.

6.2 SUMMARY OF ALTERNATIVES

This section compares the environmental effects of each of the alternatives with the Proposed Action.

6.2.1 The Expansion and Renovation of the Existing Terminal Building

This alternative would include an expansion and renovation of the existing terminal building, modifications to the existing aircraft parking apron, and an expansion of the existing parking facilities and ground access. The existing terminal facility would be demolished and reconstructed as a two-story structure to minimize safety risks, and the existing aircraft apron would be reduced to maintain compliance with the runway safety regulations in FAR Part 77 *Objects Affecting Navigable Airspace*. This alternative affects resources in a manner similar to the Proposed Action with the exception of safety and biological resources. This alternative would result in less impervious surface and removal of less managed grassland and landscape vegetation than the Proposed Action because it would use the existing footprint of the terminal building, rather than disturbing undeveloped ground. However, this difference is inconsequential and would not result in a significant adverse effect on vegetation, wildlife, or stormwater runoff volume or velocity at the airport. This alternative would have a significant adverse effect on safety at the NFIA compared to the Proposed Action. This alternative would increase the safety risks associated with the terminal facility and aircraft apron. Renovation of the existing terminal as a single-story building would require a shift of the existing apron. This would place aircraft within 500 feet of the centerline of Runway 6-24 and would not comply with FAR Part 77. The renovation of the existing terminal as a two-story building would also increase safety risks, as the current building is not structurally designed to support a second level. The necessary modifications to structurally support a second level would disrupt the effective utilization of the terminal and require the demolition and reconstruction of the existing building. The aircraft parking apron would still need to be reduced in order to fully comply with FAR Part 77 therefore limiting future flexibility with regards to the size and simultaneous docking of aircraft.

6.2.2 No-Action Alternative

The No-Action Alternative would avoid the minor adverse effects to air quality and transportation associated with the other two alternatives. These effects are minimal and, therefore, the environmental benefits associated with this alternative relative to the Proposed Action are minimal. This alternative, however, would not meet the defined project purpose and need.

Table 6-1. Comparison of Alternatives

Resource Area	Proposed Action	Expansion and Renovation of the Existing Terminal	No-Action Alternative
Achieve Project Purpose	Yes	Partially	No
Safety	No effect	No effect	No effect
Air Quality	Slight adverse effect – maintain conformance with SIP	Slight adverse effect - maintain conformance with SIP	No effect
Noise	Temporary adverse effect	Temporary adverse effect	No effect
Land Use	No effect	No effect	No effect
Geological Resources	No effect	No effect	No effect
Water Resources	No effect	No effect	No effect
Biological Resources	No effect	No effect	No effect
Transportation	Slight adverse impact	Slight adverse impact	No effect
Visual Resources	No effect	No effect	No effect
Cultural Resources	No adverse effect	No adverse effect	No effect
Socioeconomics	Temporary beneficial effect	Temporary beneficial effect	No effect
Hazardous Materials and Waste	No effect	No effect	No effect

7.0 SPECIAL PROCEDURES

The proposed activities would not result in any significant adverse effects that would require mitigation. However, NFIA would take the following special procedures to minimize the potential minor impacts from the Proposed Action.

Air Quality. The NFIA would perform demolition, excavation, and construction activities in a manner to minimize fugitive dust emissions.

Water Resources. Construction BMPs would be implemented for all projects associated with the Proposed Action to ensure the minimization of stormwater and sediment runoff to Cayuga Creek. Necessary stormwater management and sediment and erosion control permits would be obtained from NYSDEC prior to construction.

Cultural Materials. In the event that cultural materials (unusual amounts of shell or non-native stone), other related materials, or human remains were found during construction and demolition, all construction / demolition within a 50-foot radius would cease; a qualified archeologist would be contacted for management recommendations; and the New York State Historic Preservation Office would be contacted for further consultation. Testing and mitigation measures required under the National Historic Preservation Act (16 USC 470) would be implemented.

Transportation. Construction activities would avoid high traffic periods (morning and evening rush hour) to minimize the potential traffic disruption from the construction equipment.

Waste Generation. Wastes generated from the proposed construction activities, including construction, demolition, and land clearing debris, would be properly disposed of at a permitted solid waste facility or recycled if possible.

8.0 LITERATURE CITED

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Personal Communication. Tom DeSantis, Niagara Falls City Planner. January 4, 2005.

Personal Communication. Jerry Hermoa, U.S. Air Reserve Remediation Office. January 5, 2005.

Personal Communication. Mark Clark, Senior Aviation Planner, Buffalo Niagara International Airport, NFTA. January 4, 2005.

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9.0 LIST OF PREPARERS

ERM prepared this EA in cooperation with the NFTA. Members of the professional staff are listed below.

Niagara Frontier Transportation Authority

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Stacy L. Weber, *Architectural Hist*

Appendix A

Agency Consultation Letters and Responses

New York State Department of Environmental Conservation
Division of Fish, Wildlife & Marine Resources
New York Natural Heritage Program
625 Broadway, 5th floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **FAX:** (518) 402-8925
Website: www.dec.state.ny.

Erin M. Crotty
Commissioner

April 15, 2004

William Sadlon
Environmental Resources Management
200 Harry S Truman Pkwy, Suite 400
Annapolis, MD 21401

Dear Mr. Sadlon:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the proposed Niagara Falls International Airport Runway Expansion, area as indicated on the map you provided, located in the City of Niagara Falls, Niagara County.

Enclosed is a report of rare or state-listed animals and plants, significant natural communities, and other significant habitats, which our databases indicate occur, or may occur, on your site or in the immediate vicinity of your site. The information contained in this report is considered sensitive and may not be released to the public without permission from the New York Natural Heritage Program.

The presence of rare species may result in this project requiring additional permits, permit conditions, or review. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, at the enclosed address.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,
Charlene Houle
Charlene Houle, Information Services

Encs.
cc: Reg. 9, Wildlife Mgr.
Reg. 9, Fisheries Mgr.

Natural Heritage Report on Rare Species and Ecological Communities

Prepared 15 April 2004 by NY Natural Heritage Program, NYS DEC, Albany, New York

This report contains SENSITIVE information that should be treated in a sensitive manner -- Please see cover letter. Refer to the Users' Guide for explanations of codes, ranks, and fields.
We do not always provide maps of locations of species most vulnerable to disturbance, nor of some records whose locations and/or extents are not precisely known or are too large to display.

* **County**
** **Town**

Scientifc Name, COMMON NAME, & Group Name	NY Legal Status, Heritage Ranks, & Federal Status	EO Rank & Last Seen	Detailed Location	General Habitat and Quality	Office Use
* NIAGARA					
** CITY OF NIAGARA FALLS					
Draba arabisans ROCK-CRESS Vascular Plant	THREATENED G4 S2	H 1872-06	NIAGARA FALLS Niagara falls.		4307911
Poa sylvestris WOODLAND BLUEGRASS Vascular Plant	ENDANGERED G5 S1	E 1988-06-17	NIAGARA FALLS Top of a gorge, in a seep, south of Lewiston.	Identified from a specimen. Quantity uncertain.	4307921
Solidago ohioensis OHIO GOLDENROD Vascular Plant	THREATENED G4 S2	H 1843	NIAGARA FALLS Niagara falls.		4307911
Triglochin palustris MARSH ARROW-GRASS Vascular Plant	THREATENED G5 S2	H 1875-08-20	NIAGARA FALLS Niagara falls.	Wet places.	4307911
Valeriana uliginosa MARSH VALERIAN Vascular Plant	ENDANGERED G4Q S1S2	H NO DATE	NIAGARA FALLS Niagara falls.		4307911

Natural Heritage Report on Rare Species and Ecological Communities

Prepared 15 April 2004 by NY Natural Heritage Program, NYS DEC, Albany, New York

This report contains SENSITIVE information that should be treated in a sensitive manner -- Please see cover letter. Refer to the Users' Guide for explanations of codes, ranks, and fields.
We do not always provide maps of locations of species most vulnerable to disturbance, nor of some records whose locations and/or extents are not precisely known or are too large to display.

* **County**
** **Town**

Scientifc Name, COMMON NAME, & Group Name	NY Legal Status, Heritage Ranks, & Federal Status	EO Rank & Last Seen	Detailed Location	General Habitat and Quality	Office Use
* NIAGARA					
** CITY OF NIAGARA FALLS, NIAGARA					
Aster oolentangiensis SKY-BLUE ASTER Vascular Plant	ENDANGERED G5 S1	H NO DATE	LASALLE Lasalle, at the mouth of Cayuga creek.		4307818
** CITY OF NIAGARA FALLS, NIAGARA, WHEATFIELD					
Arabis drummondii DRUMMOND'S ROCK CRESS Vascular Plant	ENDANGERED G5 S1S2	H 1898-05-31	NIAGARA FALLS [niagara reservation or whirlpool].		4307911

7 Records Processed

USERS GUIDE TO NY NATURAL HERITAGE DATA

New York Natural Heritage Program, 625 Broadway, Albany, NY, 12233-4757 (518) 402-8935

NATURAL HERITAGE PROGRAM: The Natural Heritage Program is an ongoing, systematic, scientific inventory whose goal is to compile and maintain data on the rare plants and animals native to New York State, and significant ecological communities. The data provided in the report facilitate sound planning, conservation, and natural resource management and help to conserve the plants, animals and ecological communities that represent New York's natural heritage.

DATA SENSITIVITY: The data provided in the report are ecologically sensitive and should be treated in a sensitive manner. The report is for your in-house use and should not be released, distributed or incorporated in a public document without prior permission from the Natural Heritage Program.

NATURAL HERITAGE REPORTS (may contain any of the following types of data):

COUNTY NAME: County where the occurrence of a rare species or significant ecological community is located.
TOWN NAME: Town where the occurrence of a rare species or significant ecological community is located.
USGS 7 ½' TOPOGRAPHIC MAP: Name of 7.5 minute US Geological Survey (USGS) quadrangle map (scale 1:24,000).

SIZE (acres): Approximate acres occupied by the rare species or significant ecological community at this location. A blank indicates unknown size.
SCIENTIFIC NAME: Scientific name of the occurrence of a rare species or significant ecological community.
COMMON NAME: Common name of the occurrence of a rare species or significant ecological community.
ELEMENT TYPE: Type of element (i.e. plant, animal, significant ecological community, other, etc.)

LAST SEEN: Year rare species or significant ecological community last observed extant at this location.

EO RANK: Comparative evaluation summarizing the quality, condition, viability and defensibility of this occurrence. Use with LAST SEEN.
A-E = Extant: A=excellent, B=good, C=fair, D=poor, E=extant but with insufficient data to assign a rank of A - D.
F = Failed to find. Did not locate species, but habitat is still there and further field work is justified.
H = Historical. Historical occurrence without any recent field information.
X = Extirpated. Field/other data indicates element/habitat is destroyed and the element no longer exists at this location.
? = Unknown.
Blank = Not assigned.

NEW YORK STATE STATUS (animals): Categories of Endangered and Threatened species are defined in New York State Environmental Conservation Law section 11-0535. Endangered, Threatened, and Special Concern species are listed in regulation 6NYCRR 182.5.

E = Endangered Species: any species which meet one of the following criteria:
1) Any native species in imminent danger of extirpation or extinction in New York.
2) Any species listed as endangered by the United States Department of the Interior, as enumerated in the Code of Federal Regulations 50 CFR 17.11.

T = Threatened Species: any species which meet one of the following criteria:
1) Any native species likely to become an endangered species within the foreseeable future in NY.
2) Any species listed as threatened by the U.S. Department of the Interior, as enumerated in the Code of the Federal Regulations 50 CFR 17.11.

SC = Special Concern Species: those species which are not yet recognized as endangered or threatened, but for which documented concern exists for their continued welfare in New York. Unlike the first two categories, species of special concern receive no additional legal protection under Environmental Conservation Law section 11-0535 (Endangered and Threatened Species).

P = Protected Wildlife (defined in Environmental Conservation Law section 11-0103): wild game, protected wild birds, and endangered species of wildlife.

U = Unprotected (defined in Environmental Conservation Law section 11-0103): the species may be taken at any time without limit; however a license to take may be required.

G = Game (defined in Environmental Conservation Law section 11-0103): any of a variety of big game or small game species as stated in the Environmental Conservation Law; many normally have an open season for at least part of the year, and are protected at other times.

NEW YORK STATE STATUS (plants): The following categories are defined in regulation 6NYCRR part 193.3 and apply to NYS Environmental Conservation Law section 9-1503.

E = Endangered Species: listed species are those with:
1) 5 or fewer extant sites, or
2) fewer than 1,000 individuals, or
3) restricted to fewer than 4 U.S.G.S. 7 ½ minute topographical maps, or
4) species listed as endangered by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.

T = Threatened: listed species are those with:
1) 6 to fewer than 20 extant sites, or
2) 1,000 to fewer than 3,000 individuals, or
3) restricted to not less than 4 or more than 7 U.S.G.S. 7 and ½ minute topographical maps, or
4) listed as threatened by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.

R = Rare: listed species have:
1) 20 to 35 extant sites, or
2) 3,000 to 5,000 individuals statewide.

V = Exploitably vulnerable: listed species are likely to become threatened in the near future throughout all or a significant portion of their range within the state if causal factors continue unchecked.

U = Unprotected; no state status.

continued on next page

NEW YORK STATE STATUS (communities): At this time there are no categories defined for communities.

FEDERAL STATUS (plants and animals): The categories of federal status are defined by the United States Department of the Interior as part of the 1974 Endangered Species Act (see Code of Federal Regulations 50 CFR 17). The species listed under this law are enumerated in the Federal Register vol. 50, no. 188, pp. 39526 - 39527.

(blank) = No Federal Endangered Species Act status.
LE = The element is formally listed as endangered.
LT = The element is formally listed as threatened.
E/SA = The element is treated as endangered because of similarity of appearance to other endangered species or subspecies.
PE = The element is proposed as endangered.
PT = The element is proposed as threatened.
C= The element is a candidate for listing.
(LE) = If the element is a full species, all subspecies or varieties are listed as endangered; if the element is a subspecies, the full species is listed as endangered.
(LE-LT) = The species is formally listed as endangered in part of its range, and as threatened in the other part; or, one or more subspecies or varieties is listed as endangered, and the others are listed as threatened.
(LT-C) = The species is formally listed as threatened in part of its range, and as a candidate for listing in the other part; or, one or more subspecies or varieties is listed as threatened, and the others are candidates for listing.
(LT-(T/SA)) = One or more subspecies or populations of the species is formally listed as threatened, and the others are treated as threatened because of similarity of appearance to the listed threatened subspecies or populations.
(PS) = Partial status: the species is listed in parts of its range and not in others; or, one or more subspecies or varieties is listed, while the others are not listed.

GLOBAL AND STATE RANKS (animals, plants, ecological communities and others): Each element has a global and state rank as determined by the NY Natural Heritage Program. These ranks carry no legal weight. The global rank reflects the rarity of the element throughout the world and the state rank reflects the rarity within New York State. Infraspecific taxa are also assigned a taxon rank to reflect the infraspecific taxon's rank throughout the world. ? = Indicates a question exists about the rank. Range ranks, e.g. S1S2, indicate not enough information is available to distinguish between two ranks.

GLOBAL RANK:

G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences), or very few remaining acres, or miles of stream) or especially vulnerable to extinction because of some factor of its biology.
G2 = Imperiled globally because of rarity (6 - 20 occurrences, or few remaining acres, or miles of stream) or very vulnerable to extinction throughout its range because of other factors.
G3 = Either rare and local throughout its range (21 to 100 occurrences), or found locally (even abundantly at some of its locations) in a restricted range (e.g. a physiographic region), or vulnerable to extinction throughout its range because of other factors.
G4 = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.
G5 = Demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery.
GH = Historically known, with the expectation that it might be rediscovered.
GX = Species believed to be extinct.

STATE RANK:

S1 = Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.
S2 = Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.
S3 = Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.
S4 = Apparently secure in New York State.
S5 = Demonstrably secure in New York State.
SH = Historically known from New York State, but not seen in the past 15 years.
SX = Apparently extirpated from New York State.
SZ = Present in New York State only as a transient migrant.

SxB and SxN, where Sx is one of the codes above, are used for migratory animals, and refer to the rarity within New York State of the breeding (B) populations and the non-breeding populations (N), respectively, of the species.

TAXON (T) RANK: The T-ranks (T1 - T5) are defined the same way as the Global ranks (G1 - G5), but the T-rank refers only to the rarity of the subspecific taxon.
T1 through T5 = See Global Rank definitions above.
Q = Indicates a question exists whether or not the taxon is a good taxonomic entity.

OFFICE USE: Information for use by the Natural Heritage Program.

OFFICE OF PARKS · RECREATION · HISTORIC PRESERVATION
NEW YORK STATE
Bernadette Castro
Commissioner

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189 518-237-8643

June 24, 2004

William Sadlon
Environmental Resources Management
200 Harry S. Truman Parkway, Suite 400
Annapolis, Maryland 21401

Re: FAA
Niagara Falls International Airport New
Terminal Building/Niagara Falls Boulevard
Niagara/Niagara Falls, Niagara County
04PR02853

Dear Mr. Sadlon:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP) concerning your project's potential impact/effect upon historic and/or prehistoric cultural resources. Our staff has reviewed the documentation that you provided on your project. Preliminary comments and/or requests for additional information are noted on separate enclosures accompanying this letter. A determination of impact/effect will be provided only after ALL documentation requirements noted on any enclosures have been met. Any questions concerning our preliminary comments and/or requests for additional information should be directed to the appropriate staff person identified on each enclosure.

In cases where a state agency is involved in this undertaking, it is appropriate for that agency to determine whether consultation should take place with OPRHP under Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law. In addition, if there is any federal agency involvement, Advisory Council on Historic Preservation's regulations, "Protection of Historic and Cultural Properties" 36 CFR 800 requires that agency to initiate Section 106 consultation with the State Historic Preservation Officer (SHPO).

When responding, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Ruth L. Pierpont
Director

RLP:bsa

REQUEST FOR ADDITIONAL INFORMATION
BUILDINGS/STRUCTURES/DISTRICTS

PROJECT NUMBER 04PR02853

(Niagara Falls International Airport New Terminal Building/Niagara Falls Boulevard, Niagara Falls, New York/T/NIAGARA /C/NIAGARA FALLS)

In order for us to complete our evaluation of the historic signification of all buildings/structures/districts within or adjacent to your project area we will need the following additional information

- ☐ Full project description showing area of potential effect.
- ☑ Clear, original photographs of buildings/structures 50 years or older.

  ☑ within or ☑ immediately adjacent to the project area
  ** *key all photographs to a site map*

- ☑ Clear, original photographs of the surroundings looking out from the project site in all direction, *keyed to a site map.*
- ☑ Date of construction.
- ☐ Brief history of property.
- ☑ Clear, original photographs of the following:

  Photos of the existing Terminal Building from all sides. Is the proposed Concept Site Plan different from the origianl Master Plan?
- ☐ Other:

  Note: the Bel Aerospace Company Complex was determined National Register Eligible on 01/06/03.

Please provide only the additional information checked above. If you have any question concerning this request for additional information, please call Claire Ross at 518-237-8643. ext 3259

PLEASE BE SURE TO REFER TO THE PROJECT NUMBER NOTED ABOVE WHEN RESPONDING TO THIS REQUEST

RESOURCE EVALUATION

DATE: 01/06/03 STAFF: C. L. Ross

PROPERTY: Bell Aerospace Co. Complex MCD: Tn. Of Wheatfield

ADDRESS: Niagara Falls Blvd. COUNTY: Niagara County

PROJECT REF: 02 PR 05154 USN:

I. ☐ Property is individually listed on SR/NR:
name of listing:

☐ Property is a contributing component of a SR/NR district:
name of district:

II. ☒ Property meets eligibility criteria.

☐ Property contributes to a district which appears to meet eligibility criteria.

Pre SRB: ☐ Post SRB: ☐ SRB date

Criteria for Inclusion in the National Register:

A. ☒ Associated with events that have made a significant contribution to the broad patterns of our history;

B. ☐ Associated with the lives of persons significant in our past;

C. ☐ Embodies the distinctive characteristics of a type, period or method of construction; or represents the work of a master; or possess high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction;

D. ☐ Have yielded, or may be likely to yield information important in prehistory or history.

STATEMENT OF SIGNIFICANCE:

Based on information provided and information on file at the State Historic Preservation Office the Bell Aerospace Company Complex including the modification Hanger Building (former Bell Aircraft Company) is historically significant for its association with World War II, the Cold War and the development of aviation technology.

Bell Aircraft was incorporated in ca. 1935 with Lawrence D. Bell as president. In ca. 1940, Bell built a large plant on Niagara Falls Blvd. in the Town of Wheatfield, next to the Niagara Falls Municipal Airport. At the height of wartime production, Bell Aircraft turned out more than 10,000 P-39 Aircobras in this plant. The P-39 design modification became the P-63 Aircobras including another model called the King cobras. The famous P-39 Aircobra was a small, fast, cannon-bearing Bell fighter that saw wide use on the battlefronts of World War II. The modification Hanger Building is an essential component to the complex, where design modifications were made to the airplanes.

Lawrence D. Bell and his company scored many impressive firsts. Among Bell's significant aviation achievements was the nation's first jet-propelled airplane in 1947. In October of 1947,

from the Niagara Falls Municipal Airport, Air Force Captain Charles E. Yeager, flew an experimental aircraft called the X-1 and was the first man to fly faster than the speed of sound. The supersonic aircraft was designed and manufactured in the Niagara Falls Boulevard plant of Bell Aircraft Corporation. The modification Hanger building was also used to store the experimental plane. Bell's X-1, is now on display in the National Air and Space Museum of the Smithsonian Institution in Washington, D. C. This Cold War aviation development was a very significant contribution to the nation.

The modification Hanger Building within the Bell Aircraft Complex is a contributing building even though the hanger bays have been in-filled with pressboard siding.

If you have any questions concerning this Determination of Eligibility, please call Claire L. Ross at (518) 237-8643, ext. 3259.

OFFICE OF PARKS · RECREATION · HISTORIC PRESERVATION
NEW YORK STATE
Bernadette Castro
Commissioner

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189 518-237-8643

February 18, 2005

William Sadlon
Environmental Resources Management
200 Harry S. Truman Parkway, Suite 400
Annapolis, Maryland 21401

Re: FAA
Niagara Falls International Airport New
Terminal Building/Niagara Falls Boulevard
Niagara Falls, Niagara County
04PR02853

Dear Mr. Sadlon:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP) concerning your project's potential impact/effect upon historic and/or prehistoric cultural resources. Our staff has reviewed the documentation that you provided on your project. Preliminary comments and/or requests for additional information are noted on separate enclosures accompanying this letter. A determination of impact/effect will be provided only after ALL documentation requirements noted on any enclosures have been met. Any questions concerning our preliminary comments and/or requests for additional information should be directed to the appropriate staff person identified on each enclosure.

In cases where a state agency is involved in this undertaking, it is appropriate for that agency to determine whether consultation should take place with OPRHP under Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law. In addition, if there is any federal agency involvement, Advisory Council on Historic Preservation's regulations, "Protection of Historic and Cultural Properties" 36 CFR 800 requires that agency to initiate Section 106 consultation with the State Historic Preservation Officer (SHPO).

When responding, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Ruth L. Pierpont
Director

RLP:bsa
Enclosure

REQUEST FOR ADDITIONAL INFORMATION
BUILDINGS/STRUCTURES/DISTRICTS

PROJECT NUMBER 04PR02853

(Niagara Falls International Airport New Terminal Building/Niagara Falls Boulevar d/T/NIAGARA /C/NIAGARA FALLS)

In order for us to complete our evaluation of the historic signification of all buildings/structures/districts within or adjacent to your project area we will need the following additional information

- [ ] Full project description showing area of potential effect.
- [ ] Clear, original photographs of buildings/structures 50 years or older.
  - [ ] within or [ ] immediately adjacent to the project area
  - ** *key all photographs to a site map*
- [ ] Clear, original photographs of the surroundings looking out from the project site in all direction, *keyed to a site map.*
- [x] Date of construction. Carborundum Hangers
- [x] Brief history of property. Original owner of the hangers
- [x] Clear, original photographs of the following:

  Good photos of the exterior and interior keyed to site plan and a consideration of the integrity and relative rarity of the hangers. Was the Carborundum property originally owned by Bell Aerospace? What is the date of construction of the Carborundum Building?
- [x] Other:

  We do not concur that the hangers are not eligible without an asessment of the date of construction.

Please provide only the additional information checked above. If you have any question concerning this request for additional information, please call Claire Ross at 518-237-8643. ext 3259

PLEASE BE SURE TO REFER TO THE PROJECT NUMBER NOTED ABOVE WHEN RESPONDING TO THIS REQUEST

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island Resource Center, PO Box 189, Waterford, NY 12188-0189 (Mail)
Delaware Avenue, Cohoes 12047 (Delivery)
(518) 237-8643

PROJECT REVIEW COVER FORM

Rev. 10-04

Please complete this form and attach it to the top of ***any and all information submitted to this office*** *for review.*
Accurate and complete forms will assist this office in the timely processing and response to your request.

This information relates to a previously submitted project.

PROJECT NUMBER ____PR_____

COUNTY _____

☐ If you have checked this box and noted the previous Project Review (PR) number assigned by this office you do not need to continue unless any of the required information below has changed.

---

2. This is a new project. ☐ If you have checked this box you will need to complete ALL of the following information.

Project Name _____

Location _____
You MUST include street number, street name and/or County, State or Interstate route number if applicable

City/Town/Village _____
List the correct municipality in which your project is being undertaken. If in a hamlet you must also provide the name of the town.

County _____
If your undertaking* covers multiple communities/counties please attach a list defining all municipalities/counties included.

TYPE OF REVIEW REQUIRED/REQUESTED (Please answer both questions)

A. Does this action involve a permit approval or funding, now or ultimately from any other governmental agency?

☐ No ☐ Yes

If Yes, list agency name(s) and permit(s)/approval(s)

Agency involved	Type of permit/approval	State	Federal
		☐	☐
		☐	☐
		☐	☐

B. Have you consulted the NYSHPO web site at http://www.nysparks.state.ny.us/shpo to determine the preliminary presence or absence of previously identified cultural resources within or adjacent to the project area? If yes: ☐ Yes ☐ No

Was the project site wholly or partially included within an identified archeologically sensitive area? ☐ Yes ☐ No

Does the project site involve or is it substantially contiguous to a property listed or recommended for listing in the NY State or National Registers of Historic Places? ☐ Yes ☐ No

CONTACT PERSON FOR PROJECT

Name _____ **Title** _____

Firm/Agency _____

Address _____ **City** _____ **STATE** _____ **Zip** _____

Phone (____)_____ **Fax** (____)_____ **E-Mail** _____

OFFICE OF PARKS, RECREATION & HISTORIC PRESERVATION
NEW YORK STATE
Bernadette Castro
Commissioner

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189 518-237-8643

In an effort to better serve the public and other agencies, the New York State Historic Preservation Office (SHPO) is introducing its **On Line Resource Center**. This tool is part of our new web site. Simply go to www.nysparks.state.ny.us/shpo and select **On Line Resources** from the menu. Here users will discover links to three new web based programs:

Geographic Information System (GIS)
A map based program that allows the user to select a community and view the boundaries of properties listed in the State and National Registers of Historic Places in New York State. The site also allows the user the ability to see a graphic depiction of areas that may be archeologically sensitive. These two components will provide most users with a comprehensive initial overview of the cultural resources of a specific location within the state.

National Register Document Imaging Program
This program contains the images of New York's more than 4,400 State and National Registers of Historic Places documents. An easy search program allows the user to select listed resources by community, type, style, materials, or historic use.

SPHINX (**S**tate **P**reservation **H**istoric **I**nventory **N**etwork E**x**change)
This system provides access to the State Historic Preservation Office's program-wide database for bureau records. This database includes information on more than 250,000 addresses in the state. (requires a password signup)

We are requesting that you utilize these applications to determine the ***general*** presence or absence of cultural resources in your community or project area **prior** to submitting a request for this data to our office. It is expected that these on-line tools should eliminate your need to submit information queries where only the State Environmental Quality Review Act (SEQRA) is involved. Consultation with the SHPO is mandatory when there is any state or federal involvement in a project.

If you should have questions regarding these new programs please do not hesitate to contact John Bonafide at (518) 237-8643, ext. 3263

Thank you for your assistance in helping us to streamline our process and to better meet your needs.

ATTENTION

Please find attached a REVISED *Project Review Cover Form*. This new version replaces the one currently in circulation. Please include this form with ALL submissions to this office.

Rev. 8-04

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Lower Great Lakes Fishery Resources Office
405 North French Road, Suite 120A
Amherst, New York 14228

In Reply Refer To:
~~FWS/Region 5/LGLFRO~~

MAR 19 2004

William Sadlon
Environmental Resources Management
200 Harry S Truman Pkwy
Suite 400
Annapolis, MD 21401

Dear Mr. Sadlon,

Thank you for your letter of March 11, 2004, requesting information on federally-listed rare, threatened or endangered species or habitats on the Niagara Fall International Airport, Niagara Falls, NY. Our office conducted an inventory of natural resources, habitat, and threatened and endangered species on the Niagara Falls Air Reserve Station in 1997-98. This property is adjacent to the Niagara Falls International Airport. That inventory found no federally listed species on the Niagara Falls Air Reserve Station property, but did find and confirm several New York State listed species. The New York State listed species included the following birds: the short-eared owl (endangered), northern harrier (threatened), upland sandpiper (threatened), grasshopper sparrow (special concern), American bittern (special concern), and horned lark (special concern). In addition, a suspect box turtle (special concern) was observed on one day, but not confirmed. All the New York State listed bird species except horned lark were more recently observed in a bird survey conducted in 2003.

The proposed project to extend Runway 24 over Cayuga Creek will impact fish and wildlife in the creek and the surrounding area and should be reviewed by our Ecological Services Field Office. The address is: Field Supervisor, Fish and Wildlife Service, 3817 Luker Road, Cortland, NY 13045.

If you have any questions or need additional information, please contact me at the above address or at 716-691-5456 ext. 22. Thank you.

Sincerely,

Betsy Trometer
Fishery Biologist

cc: Dave Stilwell, USFWS, New York Field Office, Cortland, NY
Jim Mathews, Niagara Falls Air Reserve Station, Niagara Falls, NY

OFFICE OF PARKS · RECREATION · HISTORIC PRESERVATION
NEW YORK STATE

New York State Office of Parks, Recreation and Historic Preservation

Historic Preservation Field Services Bureau • Peebles Island, PO Box 189, Waterford, New York 12188-0189
518-237-8643
www.nysparks.com

Eliot Spitzer
Governor

Carol Ash
Commissioner

September 05, 2007

William Sadlon
Environmental Resources Management
200 Harry S. Truman Parkway, Suite 400
Annapolis, Maryland 21401

Re: FAA
Niagara Falls International Airport New Terminal Building
Niagara Falls Boulevard/NIAGARA FALLS,
NiagaraNIAGARA, Niagara County
04PR02853

Dear Mr. Sadlon:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966.

Based upon this review, it is the SHPO's opinion that your project will have No Effect upon cultural resources in or eligible for inclusion in the National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont

Ruth L. Pierpont
Director

BUILDINGS/STRUCTURES/DISTRICTS EVALUATION COMMENTS

PROJECT NUMBER 04PR02853

(Niagara Falls International Airport New Terminal Building/Niagara Falls Boulevard/T/NIAGARA /C/NIAGARA FALLS)

☐ Based upon a review of the information submitted and the scope of the project described, the NYS Office of Parks, Recreation and Historic Preservation has no concerns regarding historic buildings/structures/districts within your project area.

☑ The following State/National Registers of Historic Places listed/eligible property/district is located within or adjacent to your project area. However, given the scope of the project, the NYS Office of Parks, Recreation and Historic Preservation has no concerns regarding historic buildings/structures/districts within your project area.

The Bell Hangar is National Register Eligible (NRE); the Carborundum hangar/buildings MAY be NRE, but the current submission does not contain enough information to make an official determination. However, based on the understanding that the new terminal building will have NO PHYSICAL impact on the aforementioned buildings, SHPO has no concerns based on the current scope of the project. If and/or when the aforementioned buildings will be physically impacted in the future, SHPO staff should be contacted. There are NO archeological concerns with the project as it is currently proposed.

* ~~Archaeology comments will be provided in a separate attachment.~~

If you have any questions concerning this information, please call Nancy Todd

PLEASE BE SURE TO REFER TO THE PROJECT NUMBER NOTED ABOVE WHEN RESPONDING TO THIS REQUEST

FAA Comment Response Matrix
Commenter: Ralph Thompson, FAA
Document Date: 3/30/07

Comment Number	Location	Comment	Response
1	Section 1.1	The Purpose and Need section needs to be updated. According to the ADO, P&N is now focused on the existing and potential future air carrier activity at IAG, not accommodation of overflow charter activity from BUF as it currently reads.	The text has been revised to remove any reference to overflow accommodation and focus on the increasing air carrier activity at the NFIA.
2	Section 1.1	The forecast used in the EA must be the most recent one approved by the NY ADO on 2/21/07	The forecast numbers were revised to reflect the most recently-approved NY ADO forecasts.
3	General	Material from the "old master plan" needs to be removed	All references will be removed.
4	Section 3.2 and 4.2	The noise sections needs to be revised to reflect the current assumptions as included in the approved forecast which shows a somewhat faster rate of growth in air carrier activity than was used in the EA. We believe that use of the Area Equivalent model (AEM) will be satisfactory. Based on the AEM results, it is possible that INM will have to be used. In either case we believe the noise impacts will be less than significant	The noise section has been revised to perform the AEM on the base case (2007) and future (2011) operations.
5	Sections 3.3 and 4.3	Likewise, the air quality section needs revision to include the current and forecast air carrier activity. In addition, the air quality assessment needs to reflect the impact of the addition of 230 parking spots in the new parking lot.	The air quality section has been revised and emissions do not exceed the NAAQS.
6	General	The EA should use a consistent citation to FAA Orders 5050.4B and 1050.1E	All references to 5050.4A have been changed to 5050.4B

FAA Comment Response Matrix
Commenter: Ralph Thompson, FAA
Document Date: 3/30/07

Comment Number	Location	Comment	Response
7	Figures	Some of the graphics use a scale too small to read (e.g., ALP). It would be helpful to improve on those graphics.	Figures have been improved wherever possible based on available data.
8	Section 4.12	Will the proposed project have an effect on the ongoing groundwater remediation project (trichloroethylene)?	The TCE remediation is located to the north of the runway system. The proposed construction projects would occur south of the runways and would not influence the remediation activities.

Appendix B

Air Emissions Calculations

Emission Estimates of One Boiler From the Existing Terminal Building Used the Heat the Tower Only

Criteria Pollutant	Boiler size	Annual Hours of Operation.	Emission Factor	Heating Value of Natural Gas	Emission Estimates		
	MBtu/hr	Hrs/yr	lbs./M cu.ft.	Btu/cu.ft.	lbs./hr	lbs./yr	tpy
CO	0.4	8760	84	1020	0.033	289	0.14
NOx	0.4	8760	100	1020	0.039	344	0.17
SOx	0.4	8760	0.6	1020	0.0002	2	0.001
VOC	0.4	8760	5.5	1020	0.002	19	0.009
PM	0.4	8760	7.6	1020	0.003	26	0.013
				Total Emissions	**0.078**	**679**	**0.34**

Note:

1. Emission Factors were taken from EPA's Compilation of Emission Factors (AP-42), Section 1.4/ Tables 1.4-1 and 1.4-2.

2. Calculation of Emissions in lbs./yr = (Boiler size in Mbtu/hr) x (Emission Factors in lbs./M cu.ft) x (Operating Hours/year) / (Heating Value of natural Gas in Btu/cu.ft)

Table 4-2. Emissions Due to New Stationary Sources Associated with the Proposed Action

Construction Activities

Boiler # 1 - Modular Boiler Used for Heating the Building

Criteria Pollutant	Boiler size	Annual Hours of Operation.	Emission Factor	Heating Value of Natural Gas	Emission Estimates		
	MBtu/hr	Hrs/yr	lbs./M cu.ft.	Btu/cu.ft.	lbs./hr	lbs./yr	tpy
CO	2	8760	84	1020	0.16	1443	0.72
NOx	2	8760	100	1020	0.20	1718	0.86
SOx	2	8760	0.6	1020	0.001	10	0.0052
VOC	2	8760	5.5	1020	0.011	94	0.05
PM	2	8760	7.6	1020	0.015	131	0.07
				Total	**0.39**	**3396**	**1.70**

Boiler # 2 - Modular Boiler Used for Heating the Building

Criteria Pollutant	Boiler size	Annual Hours of Operation.	Emission Factor	Heating Value of Natural Gas	Emission Estimates		
	MBtu/hr	Hrs/yr	lbs./M cu.ft.	Btu/cu.ft.	lbs./hr	lbs./yr	tpy
CO	2	8760	84	1020	0.16	1443	0.72
NOx	2	8760	100	1020	0.20	1718	0.86
SOx	2	8760	0.6	1020	0.001	10	0.0052
VOC	2	8760	5.5	1020	0.011	94	0.05
PM	2	8760	7.6	1020	0.015	131	0.07
				Total	**0.39**	**3396**	**1.70**

Boiler # 3 - Modular Boiler Used for Heating the Building

Criteria Pollutant	Boiler size	Annual Hours of Operation.	Emission Factor	Heating Value of Natural Gas	Emission Estimates		
	MBtu/hr	Hrs/yr	lbs./M cu.ft.	Btu/cu.ft.	lbs./hr	lbs./yr	tpy
CO	2	8760	84	1020	0.16	1443	0.72
NOx	2	8760	100	1020	0.20	1718	0.86
SOx	2	8760	0.6	1020	0.001	10	0.0052
VOC	2	8760	5.5	1020	0.011	94	0.05
PM	2	8760	7.6	1020	0.015	131	0.07
				Total	**0.39**	**3396**	**1.70**

Boiler # 4 - For Snow/Ice Melt Systems

Criteria Pollutant	Boiler size	Annual Hours of Operation.	Emission Factor	Heating Value of Natural Gas	Emission Estimates		
	MBtu/hr	Hrs/yr	lbs./M cu.ft.	Btu/cu.ft.	lbs./hr	lbs./yr	tpy
CO	1	8760	84	1020	0.08	721	0.36
NOx	1	8760	100	1020	0.10	859	0.43
SOx	1	8760	0.6	1020	0.001	5	0.0026
VOC	1	8760	5.5	1020	0.005	47	0.02
PM	1	8760	7.6	1020	0.007	65	0.03
				Total	**0.19**	**1698**	**0.85**

Boiler # 5 - For Snow/Ice Melt Systems

Criteria Pollutant	Boiler size	Annual Hours of Operation.	Emission Factor	Heating Value of Natural Gas	Emission Estimates		
	MBtu/hr	Hrs/yr	lbs./M cu.ft.	Btu/cu.ft.	lbs./hr	lbs./yr	tpy
CO	0.5	8760	84	1020	0.04	361	0.18
NOx	0.5	8760	100	1020	0.05	429	0.21
SOx	0.5	8760	0.6	1020	0.000	3	0.0013
VOC	0.5	8760	5.5	1020	0.003	24	0.01
PM	0.5	8760	7.6	1020	0.004	33	0.02
				Total	**0.10**	**849**	**0.42**

Total Emission Estimates For the Five New Boilers

Criteria Pollutant	Boiler size	Annual Hours of Operation.	Emission Factor	Heating Value of Natural Gas	Emission Estimates		
	MBtu/hr	Hrs/yr	lbs./M cu.ft.	Btu/cu.ft.	lbs./hr	lbs./yr	tpy
CO	7.5	8760	84	1020	0.62	5411	2.71
NOx	7.5	8760	100	1020	0.74	6441	3.22
SOx	7.5	8760	0.6	1020	0.004	39	0.0193
VOC	7.5	8760	5.5	1020	0.040	354	0.18
PM	7.5	8760	7.6	1020	0.056	490	0.24
				Total Emissions	**1.45**	**12734**	**6.37**

Note:

1. Emission Factors were taken from EPA's Compilation of Emission Factors (AP-42), Section 1.4/ Tables 1.4-1 and 1.4-2.

2. Calculation of Emissions in lbs./yr = (Boiler size in Mbtu/hr) x (Emission Factors in lbs./M cu.ft) x (Operating Hours/year) / (Heating Value of natural Gas in Btu/cu.ft)

New Stationary Source Emissions From Six Boilers (Total)

Criteria Pollutant	Boiler size	Annual Hours of Operation.	Emission Factor	Heating Value of Natural Gas	Emission Estimates		
	MBtu/hr	Hrs/yr	lbs./M cu.ft.	Btu/cu.ft.	lbs./hr	lbs./yr	tpy
CO	7.9	8760	84	1020	0.651	5699	2.85
NOx	7.9	8760	100	1020	0.775	6785	3.39
SOx	7.9	8760	0.6	1020	0.0046	41	0.020
VOC	7.9	8760	5.5	1020	0.043	373	0.187
PM	7.9	8760	7.6	1020	0.059	516	0.258
				Total Emissions	**1.53**	**13413**	**6.71**

Note:

1. Emission Factors were taken from EPA's Compilation of Emission Factors (AP-42), Section 1.4/ Tables 1.4-1 and 1.4-2.

2. Calculation of Emissions in lbs./yr = (Boiler size in Mbtu/hr) x (Emission Factors in lbs./M cu.ft) x (Operating Hours/year) / (Heating Value of natural Gas in Btu/cu.ft)

Fugitive Emissions Due to Complex Demolition
Terminal Construction - Niagra Falls Internationl Airport

Source	Type	Area SF	Notes
Option 1 - Demolish Complex			
		0	- Terminal
	Building	0	- Parking Apron
		0	- Parking Facilities
	Pavement	0	
Total Building =		0	SF
Total Pavement =		0	SF
Demolition (Buildings) =		0	SF
Demolition (Pavement) =		19,250	SF
Total Construction and Demolition =		19,250	SF
Total Construction and Demolition (+ 20%) =		23,100	SF
Particulate Emissions due to Grading			
Total Construction and Demolition (+ 20%) = 23,100			
USAF Emissions Factor (lbs per acre) = 26.4		14	Lbs. 0.007 tons
Particulate Emissions due to Excavation			
Total Building SF = 0			
USAF Emissions Factor (lbs per SF) = 1.7		0	Lbs. 0.0 tons
Architectural Coatings (VOCs)			
Surface Area= 16 ft. high (avg)X sq root of area			
Total Building SF = 0			
USAF Emissions Factor (Lb. Per SF of Bldg. Surface Area) = 0.0525		0	Lbs. 0.0 tons

Construction Equipment and Commuting					
USAF Energy Use Factor (MMBtu/sf) = 0.082					
Total Construction and Demolition (+ 20%) = 23,100	*Criteria Pollutnats*				
	CO	NOx	SOx	VOC	PM
Emission Factors (Lbs/MMBtu)	0.735	3.38	0.225	0.23	0.12
Total Construction Equipment and Commuting Emissions (tpy)	0.70	3.20	0.21	0.22	0.11

	Summary of All Fugitive Emissions (tpy)				
	CO	NOx	SOx	VOC	PM
Grading	0	0	0	0	0.0070
Excavation	0	0	0	0	0
Architectural Coatings	0	0	0	0	0
Construction Equipment and Commuting	0.70	3.20	0.21	0.22	0.11
Total	0.70	3.20	0.21	0.22	0.12

Notes:
(Emision factors are from USAF Air Conformity Applicability Model 2.0 Technical Documentation)

Fugitive Emissions Due to Complex Renovation
Terminal Construction - Niagra Falls Internationl Airport

Source	Type	Area SF	Notes
Option 2 - Renovate Complex			
	Building	42,400	- Terminal
	Pavement	473,000	aircraft apron and parking facilities
Total Building =		42,400	SF
Total Pavement =		473,000	SF
Demolition (Buildings) =		0	SF
Demolition (Pavement) =		19,250	SF
Total Construction and Demolition =		534,650	SF
Total Construction and Demolition (+ 20%) =		641,580	
Particulate Emissions due to Grading			
Total Construction and Demolition (+ 20%) = 641,580			
USAF Emissions Factor (lbs per acre) = 26.4		389	Lbs. 0.194 tons
Particulate Emissions due to Excavation			
Total Building SF = 42,400			
USAF Emissions Factor (lbs per SF) = 1.7		72080	Lbs. 36.04 tons
Architectural Coatings (VOCs)			
Surface Area= 16 ft. high (avg)X sq root of area			
Total Building SF = 42,400			
USAF Emissions Factor (Lb. Per SF of Bldg. Surface Area) = 0.0525		173	Lbs. 0.09 tons

Construction Equipment and Commuting

USAF Energy Use Factor (MMBtu/sf) =	0.082
Construction Months =	6
Construction Weeks =	26
Weekly Construction Hours =	50
Total Hours of Construction (6 months) =	1290
Total Hours of Construction (Annual) =	2600
Total Construction and Demolition (+ 20%) =	641,580

	Criteria Pollutnats				
	CO	NOx	SOx	VOC	PM
Emission Factors (Lbs/MMBtu)	0.735	3.38	0.225	0.23	0.12
Total Construction Equipment and Commuting Emissions for 12 Months (tpy)	19.3	88.9	5.92	6.05	3.16
Total Construction Equipment and Commuting Emissions for 6 months (tpy)	9.6	44.1	2.9	3.0	1.6

Summary of All Fugitive Emissions (tpy)

	CO	NOx	SOx	VOC	PM
Grading	0	0	0	0	0.194
Excavation	0	0	0	0	36.0
Architectural Coatings	0	0	0	0.09	0
Construction Equipment and Commuting	9.6	44.1	2.9	3.0	1.6
Total	9.6	44.1	2.94	3.09	37.8

Notes:
(Emision factors are from USAF Air Conformity Applicability Model 2.0 Technical Documentation)

Fugitive Emissions Due to Complex Demolition
Terminal Construction - Niagra Falls Internationl Airport

Source	Type	Area SF	Notes
Option 1 - Demolish Complex			
		0	- Terminal
	Building	0	- Parking Apron
		0	- Parking Facilities
	Pavement	0	
Total Building =		0	SF
Total Pavement =		0	SF
Demolition (Buildings) =		0	SF
Demolition (Pavement) =		19,250	SF
Total Construction and Demolition =		19,250	SF
Total Construction and Demolition (+ 20%) =		23,100	SF
Particulate Emissions due to Grading			
Total Construction and Demolition (+ 20%) = 23,100			
USAF Emissions Factor (lbs per acre) = 26.4		14	Lbs. 0.007 tons
Particulate Emissions due to Excavation			
Total Building SF = 0			
USAF Emissions Factor (lbs per SF) = 1.7		0	Lbs. 0.0 tons
Architectural Coatings (VOCs)			
Surface Area= 16 ft. high (avg)X sq root of area			
Total Building SF = 0			
USAF Emissions Factor (Lb. Per SF of Bldg. Surface Area) = 0.0525		0	Lbs. 0.0 tons

Construction Equipment and Commuting					
USAF Energy Use Factor (MMBtu/sf) = 0.082					
Total Construction and Demolition (+ 20%) = 23,100	*Criteria Pollutnats*				
	CO	NOx	SOx	VOC	PM
Emission Factors (Lbs/MMBtu)	0.735	3.38	0.225	0.23	0.12
Total Construction Equipment and Commuting Emissions (tpy)	0.70	3.20	0.21	0.22	0.11

	Summary of All Fugitive Emissions (tpy)				
	CO	NOx	SOx	VOC	PM
Grading	0	0	0	0	0.0070
Excavation	0	0	0	0	0
Architectural Coatings	0	0	0	0	0
Construction Equipment and Commuting	0.70	3.20	0.21	0.22	0.11
Total	0.70	3.20	0.21	0.22	0.12

Notes:
(Emision factors are from USAF Air Conformity Applicability Model 2.0 Technical Documentation)

Appendix C

AEM User's Guide and Model Results

AEM

Area Equivalent Method
Version 6.0c

User's Guide

November 2001

Federal Aviation Administration
Office of Environment and Energy
Washington, DC 20591

1. Introduction

The Area Equivalent Method (AEM) is a screening procedure used to simplify the assessment step in determining the need for further analysis with the Integrated Noise Model (INM) as part of Environmental Assessments and Impact Statements (EA/EIS) and Federal Aviation Regulations (FAR) Part 150 studies. AEM is a mathematical procedure that provides an estimated change in noise contour area for an airport given the types of aircraft and the number of operations for each aircraft. The noise contour area is a measure of the size of the landmass enclosed within a level of noise as produced by a given set of aircraft operations.

The noise contour metric is the Day-Night Average Sound Level (DNL), which provides a single quantitative rating of a noise level over a 24-hour period. This rating involves a 10-dBA penalty to aircraft operations during the nighttime (between 10 PM and 7 AM) to account for the increased annoyance in the community.

The AEM produces noise contour areas (in square miles) for the DNL 65 dBA noise level and the purpose of AEM is to screen for significant impact within the DNL 65 dBA contour area. The user may specify other contour levels to obtain supplemental information. The AEM is used to develop insight into the potential increase or decrease of noise resulting from a change in aircraft operations.

This version of the model has been developed in a spreadsheet format using Microsoft Excel 2000 and is based upon Version 6.0c of the INM and its database of 132 aircraft.

The following text will provide a more detailed explanation of the AEM as well as instructions for its use.

1.1. Installation

AEM 6.0c is designed for use on Microsoft Windows 95/98/2000 PC operating systems under Microsoft Excel 97 & 2000. There is no formal installation. Only a requirement that the user have a copy of Microsoft Excel 97 or later on their machine.

2. Description

2.1. Background

According to FAA Order 1050.lD, “Policies and Procedures for Considering Environmental Impacts,” an assessment must be made to determine the noise impact of a proposed airport action. This assessment compares the present noise impact on the environment with that of the proposed change. If the noise impact is significant, DNL 1.5 dBA increase at noise sensitive areas, then the FAA requires an Environmental Impact Statement (EIS). If the increase of noise impact on the community is not significant then the FAA prepares a Finding of No Significant Impact (FONSI), which briefly outlines the specifications of the change in airport operations for that particular airport.

The aircraft noise analysis for an EIS is a detailed process that requires use of an airport noise computer model such as the INM (Reference 1). The INM can produce a DNL noise contour area based on flight track locations, operations (e.g., a specific mix of aircraft) and takeoff procedures and plots the contour relative to runway configuration. The INM is a useful model for airport planners, airport operators, and local governments in assessing the noise impact to the community around an airport. The INM offers the capability to analyze several operational controls beyond simply changing aircraft mix and number of operations. The INM is the most appropriate tool for EIS's and other federally funded airport environmental studies.

The old Civil Aeronautics Board (CAB) developed the Noise Screening Methodology to decide whether the noise impact due to a change is significant. CAB promulgated this noise screening procedure in 14 CFR 312, Appendix I. It was commonly called the "CAB Procedure." CAB established a decision criterion of 17% increase in cumulative noise contour area. A 17% increase in cumulative noise contour area translates into a one-decibel increase in the airport noise. If the percentage difference due to the change is less than 17%, no further study is necessary. The AEM is an outgrowth of the CAB Procedure. The FAA applies the same decision criterion to AEM as the CAB did with the Noise Screening Methodology.

The AEM is a screening procedure used to simplify the assessment step in determining the need for an EIS or further analysis with the INM. The purpose of the AEM is to show change in airport DNL noise contour area relative to a change in aircraft mix and number of operations. AEM determines the DNL noise contour area in square miles for a mix and number of aircraft types by using linear regressions that relate DNL noise contour area as a function of the number of annual daily average operations. These AEM parameters are derived from INM and generated for each aircraft. A process developed from a Civil Aeronautics Board procedure allows AEM to combine the areas of individual aircraft in order to obtain a single contour for the airport under examination. These are general relationships that relate contour area to number of operations. It is to be used when the analysis can assume similar runway and flight track utilization between the baseline case and the alternative case.

In their report dated August 1992, the Federal Interagency Committee on Noise (FICON) (Reference 2) along with 1050.1D, recommended the use of AEM as a screening tool to determine the need for additional environmental noise analysis. FICON, which was composed of representatives from several Federal Government agencies, as chartered to review specific elements of federal agency procedures for the assessment of airport noise impacts and to make appropriate recommendations. In Volume 2, paragraph 3.3.1.1, of their report, they recommend the use of screening to determine the extent of noise analysis required. As with 1050.1D, FICON also established an increase of 17 percent or more in contour area as the threshold of significance for AEM within a DNL 65 dBA contour. A 17 percent increase indicates that the proposed action could result in a DNL 1.5 dBA or greater increase at a noise sensitive area and that further analysis is required. Conversely, if the screening process shows less than a 17 percent increase, it may be concluded that there are no significant

impacts on a noise sensitive area.

The Office of Environment and Energy (AEE) has had four previous releases of the AEM which are listed in the Appendix (Reference 3, 4, 5, 6)

2.2. How AEM Works

AEM is a method to predict contour area or noise level changes that correlate highly with INM predictions. The activity at airports can be expressed in terms of equivalent aircraft operations and reasonable estimates of impact area can be obtained without the use of more sophisticated and expensive computer modeling. Many studies, particularly those dealing with national impacts, have used variations of the "equivalency" approach. The basic hypothesis of AEM is that while equivalencies can be developed the nature of the relationship changes with the distance between the aircraft and the observation point. This assumption can be illustrated by considering noise versus distance curves--a basic input to models like INM--for two hypothetical aircraft as shown in Figure 2.1.

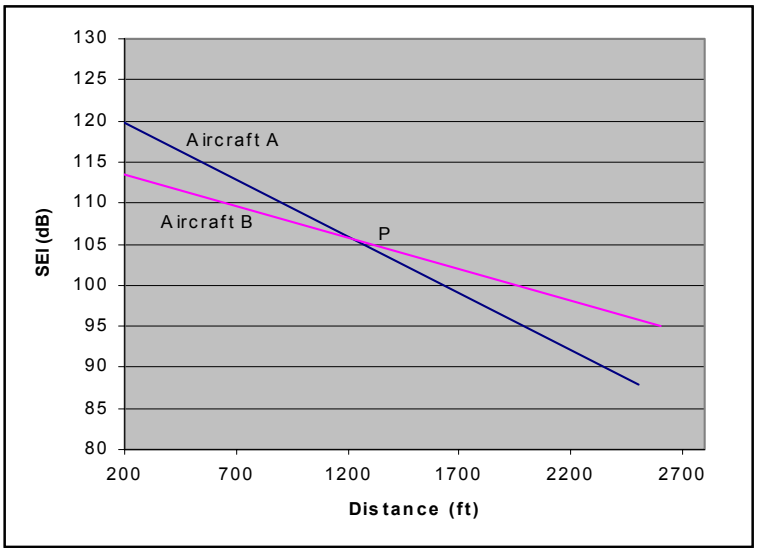


Figure 2.1 Noise versus Distance

The curves for both aircraft A and B are at constant thrust level and noise for both decreases with distance. Note that at a distance from the aircraft of less than P, aircraft A is noisier while beyond P, aircraft B is noisier. At P, both aircraft emit the same noise levels and the equivalence between them is 1.0.

Theoretically, a mathematical proof for AEM could be developed, but this would require the set of equations used within INM to develop contour area estimates. Instead, J. Watson Noah, Inc. developed an iterative process for using AEM and aircraft mix to estimate area and compared AEM estimates to available INM estimates for 30 NEF (DNL 65 dBA). AEM estimates were based on single direction traffic on a single runway.

2.3. Using AEM Effectively

AEM is a screening tool for the INM and a quick way to assess the impact of changes in aircraft mix or number of operations as part of an EA, FONSI, or other environmental noise study. *If there is a 17% increase in DNL 65 dB contour area then further analysis is necessary using the INM.*

AEM calculations are developed on the basis of a single runway, one-way traffic flow configuration-arrivals in and departures out in the same direction. AEM does not produce contours, only an estimate (in square miles) of the area impacted. This does not mean, however, that AEM usage and analysis are limited only to airports that have single runway, single flight track configurations. Airports with multiple runways and multiple flight tracks can also be assessed using AEM that models all operations on a single runway, single flight track configuration.

Whether an AEM-proposed screening analysis is appropriate depends upon the changes under study in the airport vicinity. *AEM use is limited to changes in fleet mix and number of operations.* It cannot be used to evaluate new procedures, alternative track load, or any other changes to airspace structure or utilization that would alter the location of aircraft flights, corresponding noise, and the general shape of the contour.

AEM is most often used prior to INM analysis to determine if the INM is required for the specified type of changes, but it can also be used after initial INM evaluation in certain circumstances to refine analysis. Whether AEM results are acceptable depends both on the threshold of 17 percent area increase (an increase of approximately DNL 1.5 dBA distributed proportionately with no change in contour shape) and the level of public controversy surrounding the study project. Particular attention should be paid to the possibility of additional noise impact to sensitive locations, in which case it may be better to use or rerun the INM to develop contours.

3. Development

3.1. Description

The AEM determines the DNL noise contour area (in square miles) for a specific case of aircraft operations, given the mix of aircraft types and the number of *landing-takeoff cycles* (LTO's) per aircraft. In order to create the AEM, aircraft specific parameters relating DNL noise contour areas to LTO's were derived from INM output for DNL 65 dBA. These parameters, represented by the variables ***a*** and ***b***, are constants that produce the DNL 65 dBA contour area due to a specific number of operations of an aircraft from the following equation:

$$A = a * N * b$$

The constant ***a*** is the noise contour area in square miles of a single LTO for an aircraft. The constant ***b*** is a scaling parameter that determines the change in contour area, relative to a change in number of effective LTO's for an aircraft. The noise contour area ***A*** is the result of applying the parameters ***a*** and ***b*** to ***N***, the number of effective LTO's. The

number of effective LTO's is the sum of the daytime LTO's and the nighttime LTO's of an aircraft. The nighttime LTO's are weighted by a multiple of 10 to account for the increase in annoyance to the community during the nighttime hours between 10 p.m. and 7 a.m.

Contour values other than DNL 65 dBA are estimated by logarithmically scaling the LTO cycle input file to estimate mathematically equivalent contour values (for example, a ten-fold increase in LTO cycles converts the DNL 65 dBA contour into the DNL 75 dBA contour).

3.2. Calculation of Parameters and Coefficients

The INM Version 6.0c was used to produce aircraft noise contour areas for specific numbers of LTO's. INM was run for each of the 114 aircraft, which contain representative takeoff and approach procedures. The parameters ***a*** and ***b*** were determined from the linear regression equation:

$$\log A = \log a + b * \log N$$

By taking the antilog of both sides of this equation it converts to, the form $A = (\text{antilog } a) N^b$. By convention the expression (***antilog a***) is designated simply as ***a***, providing the more useful equation $A = aNb$, where ***a*** is actually the antilog of the value of ***log a*** in the deriving regression equation.

The parameters ***a*** and ***b*** were calculated based on running the INM only once for each aircraft type, using 100 LTO cycles, and requesting contour areas for eight contour intervals. The eight contour intervals equate to DNL 65 dBA for 100 LTO's at different values of LTO's cycles. The result of this exercise was the area of the DNL 65 dBA contour as a function of LTO cycles at eight intervals over a range covering a 100-fold increase in LTO cycles. Areas that are less than 1.4 square miles are excluded from the regression sample to obtain the best possible predictive value for areas that are off airport property. The exception to this threshold is that an aircraft have at least 3 data points.

An example of producing the ***a*** and ***b*** AEM parameters for the 707120 is shown below.

Step 1. Create an INM input file with one runway, traffic in one direction, 100 LTO's (100 takeoffs and 100 arrivals) per aircraft, and requesting contour areas for eight contour intervals.
Step 2. Run the INM Version 6.0c to find corresponding contour areas for each aircraft type.
Step 3. Using the equation derived above and regression analysis, determine the parameters ***a*** and ***b***. For example, the AEM parameters for the 707120 were obtained in the following manner:

First, the INM run produced the following contour areas:

DNL (dBA)	Equivalent LTO's for DNL 65 dBA (N)	DNL 65 dBA Contour Area (A)
55	1000.0	37.232
58	501.187	24.804
62	199.526	14.470
65	100.0	9.283
68	50.119	6.094
72	19.953	3.165
75	10.0	1.827
85	1.0	0.325

Table 3.1 Example INM Results

Because the contour area for DNL 85 dBA is less than 1.4 square miles, it was discarded.

Next, the logarithm base 10 of ***N*** and ***A*** resulted in:

Log N	Log A
3.0	1.570920
2.7	1.394516
2.3	1.160470
2.0	0.967681
1.7	0.784899
1.3	0.500438
1.0	0.261771

Table 3.2 Example Log Results

Finally, using regression analysis, the parameters ***a*** and ***b*** were produced for the 707120:

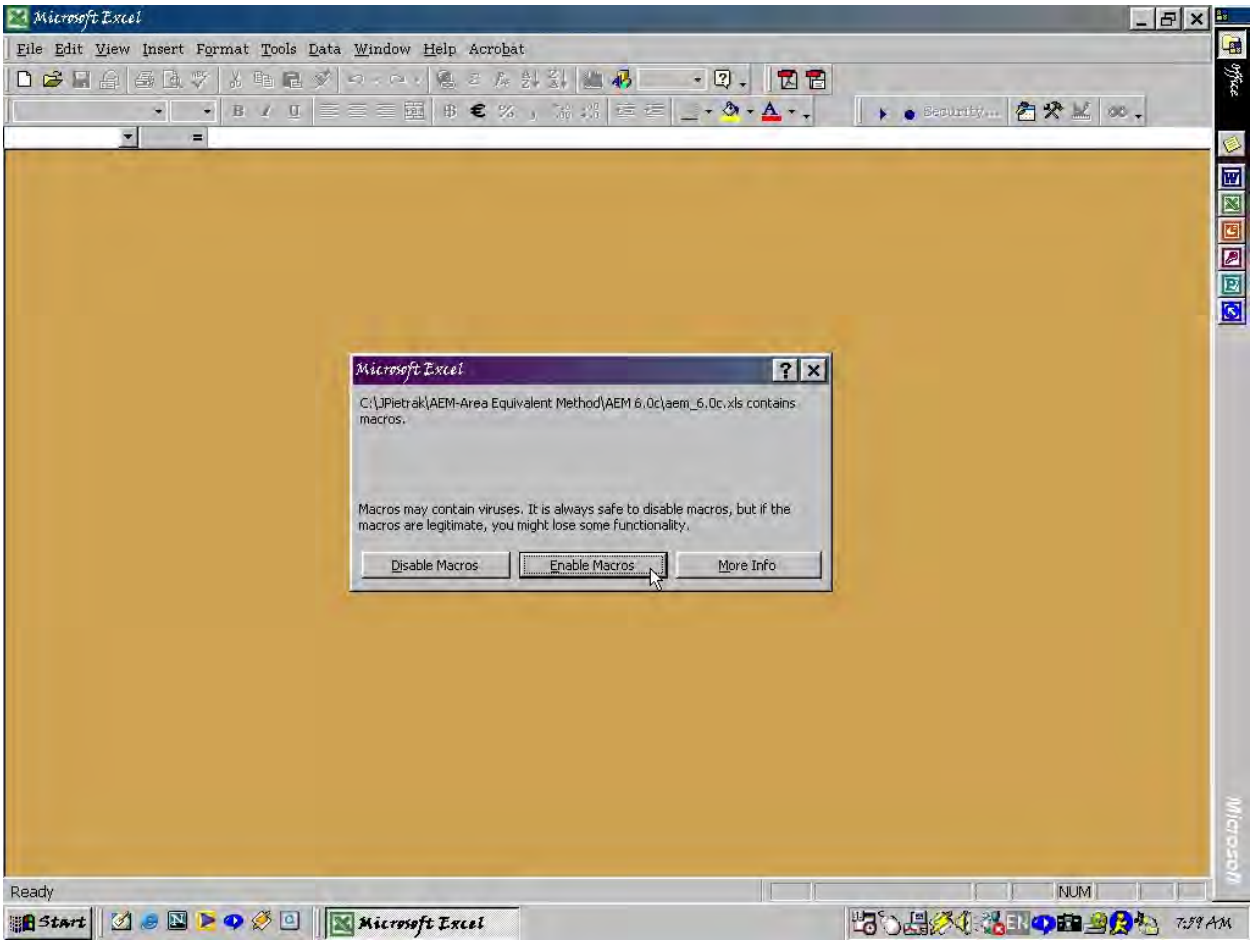
a = 0.449443 and ***b*** = 0.647998.

4. Example AEM Analysis

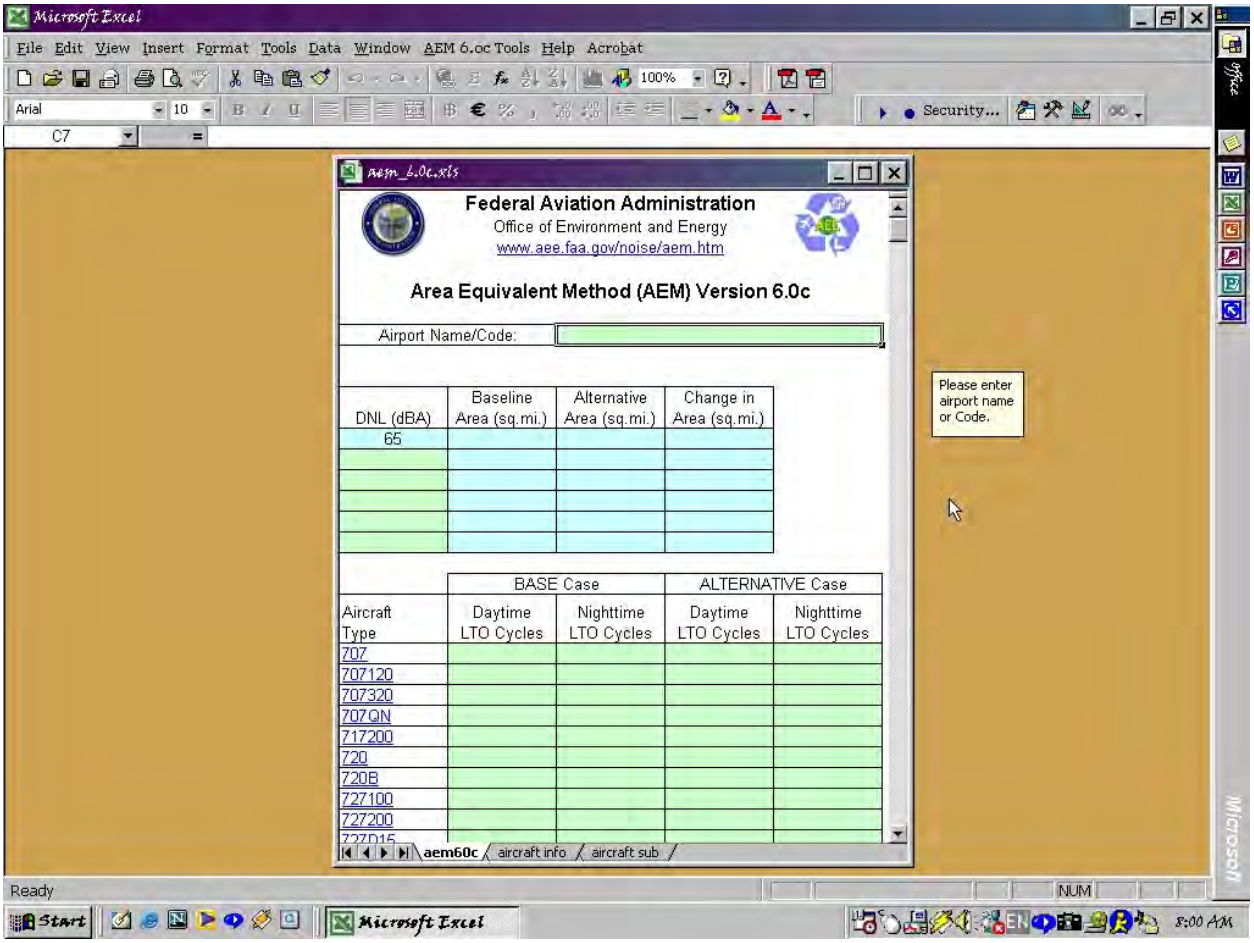
4.1. Download and save the Excel spreadsheet to your PC.

4.2. Go to the folder where you saved the file and double-click on AEM_6.0c.xls icon.

4.3. When Microsoft Excel opens a pop-up window will appear asking you to enable macros. Click on the [Enable Macros] button. The spreadsheet will then open.



4.4. You can now enter the appropriate information/data manually into the fields highlighted in GREEN. (Note: Data entry is restricted to the GREEN fields.) Results will be displayed in the fields highlighted in BLUE, which cannot be altered even though the cells can be selected. Navigating through the spreadsheet is accomplished by simply using the tab key, arrow keys, vertical scroll bar, pageup/pagedown keys or mouse. The message window, shown to the right of the spreadsheet in the example screenshot above, will prompt the user to enter values within the appropriate ranges. Typically the message window appears initially near the cell where the data is being entered, but can easily be dragged with the mouse to wherever the user wishes.



4.5. For those who are "cutting and pasting" information into the spreadsheet from another workbook you must use **[PASTE SPECIAL]** and specify **[VALUE]** otherwise the entire field is overwritten. When this occurs simply click "undo" and the field will be restored. Although the spreadsheet is formatted to validate data, data validation is only accurate with manual entry. If you AutoFill, copy drag, or drag an invalid value to a cell with data validation restrictions, the data validation restrictions are removed from the cell. Microsoft has confirmed this to be a problem in Microsoft Excel 97 and 2000. **Therefore the user must use extra CAUTION to ensure that all data entered are within the specified ranges**.

4.6. There are three new features with AEM 6.0c. A new utility called “AEM 6.0c Tools” has been added to the menu toolbar, which allows the user to hide (and unhide) those aircraft not used in the study. Also, two additional worksheets has been added to the workbook called “aircraft info” and “aircraft sub”, which provides the user with a ready reference to Appendix B (AEM 6.0c aircraft list) of the AEM User’s Guide and INM 6.0c’s aircraft substitution list respectively. The new reference worksheets can be accessed by clicking on their tabs as shown in the above screenshot. The “aircraft info” worksheet can also be accessed by clicking on the aircraft of interest.

4.7. Note in the example that the first DNL field is shaded BLUE indicating that the data cannot be changed and that the value has been fixed at 65 dBA.

4.8. If the model detects a 17% increase in contour area, the top row DNL 65 dBA "Change in Area" will become highlighted by turning RED thus alerting the user that the proposed action could result in a significant impact. At this stage, the comparison of baseline to alternative is beyond the scope of a simple model and a more detailed analysis using the INM would be required.

Appendix A - References

1. FAA, ATAC and Volpe Center, INM Integrated Noise Model Version 6.0, User's Guide, DOT/FAA/EE/99-03, September 1999.
2. Federal Interagency Committee on Noise, Federal Agency Review of Selected Airport Noise Analysis Issues, August 1992.
3. Connor, T.L., and Fortescue, D.N., Area Equivalent Method on VISICALC, FAA-E-84-8, February 1984.
4. Warren, D.G., Area Equivalent Method on LOTUS l-2-3, FAA-EE-84-12, July 1984.
5. Nguyen, N.C., AEM - Area Equivalent Method, Version 2, User's Manual, FAA-EE-90-O 1, November 1989.23
6. Studholme, E.D., Grimsley, G., Plante, J.A., Warren, D.G., AEM - Area Equivalent Method, Version 3, User's Guide, DOT/FAA/EE-96-04, September 1996.

Appendix B - Aircraft Reference

Aircraft Type	Aircraft Description	Takeoff Weight (lbs)	Stage
707	B707-120/JT3C	245,000	1
707120	B707-120B/JT3D-3	245,000	1
707320	B707-320B/JT3D-7	312,000	1
707QN	B707-320B/JT3D-7QN	312,000	2
717200	717-200 / BR 715	112,700	3
720	B720/JT3C	180,000	1
720B	B720B/JT3D-3	200,000	1
727100	B727-100/JT8D-7	150,000	1
727200	B727-200/JT8D-7	174,000	1
727D15	B727-200/JT8D-15	189,000	1
727D17	B727-200/JT8D-17	180,000	2
727EM1	FEDX 727-100/JT8D-7	150,000	3
727EM2	FEDX 727-200/JT8D-15	189,000	3
727Q15	B727-200/JT8D-15QN	189,000	2
727Q7	B727-100/JT8D-7QN	150,000	2
727Q9	B727-200/JT8D-9	150,000	2
727QF	UPS 727100 22C 25C	150,000	3
737	B737/JT8D-9	92,000	1
737300	B737-300/CFM56-3B-1	108,000	3
7373B2	B737-300/CFM56-3B-2	111,000	3
737400	B737-400/CFM56-3C-1	121,000	3
737500	B737-500/CFM56-3B-1	111,000	3
737700	737700/CFM56-7B	134,800	3
737D17	B737-200/JT8D-17	100,000	2
737N17	B737-200/JT8D-17 Nordam B737 LGW Hushkit	100,000	3
737N9	B737/JT8D-9 Nordam B737 LGW Hushkit	92,000	3
737QN	B737/JT8D-9QN	92,000	2
747100	B747-100/JT9DBD	625,000	2
74710Q	B747-100/JT9D-7QN	625,000	3
747200	B747-200/JT9D-7	725,000	3
74720A	B747-200/JT9D-7A	675,000	3
74720B	B747-200/JT9D-7Q	725,000	3
747400	B747-400/PW4056	788,000	3
747SP	B747SP/JT9D-7	560,000	3
757PW	B757-200/PW2037	206,000	3
757RR	B757-200/RB211-535E4	193,000	3
767300	B767-300/PW4060	355,900	3
767CF6	B767-200/CF6-80A	303,300	3
767JT9	B767-200/JT9D-7R4D	306,900	3
767400	767-400ER with CF6-80C2B(F) Engines	380,906	3
777200	Boeing 777-200 GE90-76B	484,600	3
777300	777-300 with Trent 892 Engines	564,500	0

A300	A300B4-200/CF6-50C2	324,000	3
A310	A310-300/CF6-80C2A2	302,000	3
A319	Airbus A319-131 / V2522-A5 Engines	140,200	3
A320	A320-211 CFM56-5A1	158,300	3
A32023	Airbus A320-232 / V2527-A5 Engines	158,600	3
A330	Airbus A330-301 / CF6-80 E1A2	441,000	3
A340	A340-211/CFM 56-5C2	544,500	3
A7D	A-7D,E/TF-41-A-1	36,000	0
BAC111	BAC111/SPEY MK511-14	79,000	2
BAE146	BAE146-200/ALF502R-5	84,000	3
BAE300	BAE146-300/ALF502R-5	88,000	3
BEC58P	BARON 58P/TS10-520-L	5,500	0
C130	C-130H/T56-A-15	132,000	3
C130E	C-130E/T56-A-7	132,000	0
CIT3	CIT 3/TFE731-3-100S	20,000	3
CL600	CL600/ALF502L	36,000	3
CL601	CL601/CF34-3A	43,100	3
CNA172	Cessna 172R / Lycoming IO-360-L2A	2,450	0
CNA206	Cessna 206H / Lycoming IO-540-AC	3,300	0
CNA20T	Cessna T206H / Lycoming TIO-540-AJ1A	3,300	0
CNA441	CONQUEST II/TPE331-8	9,850	0
CNA500	CIT 2/JT15D-4	14,700	3
CNA55B	Cessna 550 Citation Bravo / PW530A	14,800	0
CNA750	Citation X / Rolls Royce Allison AE3007C	35,700	3
COMJET	1985 BUSINESS JET	19,200	1
COMSEP	1985 1-ENG COMP	2,440	0
CONCRD	CONCORDE/OLY593	400,000	0
CVR580	CV580/ALL 501-D15	54,000	0
DC1010	DC10-10/CF6-6D	420,000	3
DC1030	DC10-30/CF6-50C2	517,000	3
DC1040	DC10-40/JT9D-20	502,000	3
DC3	DC3/R1820-86	26,000	0
DC6	DC6/R2800-CB17	95,000	0
DC820	DC-8-20/JT4A	250,000	1
DC850	DC8-50/JT3D-3B	255,000	1
DC860	DC8-60/JT3D-7	305,000	1
DC870	DC8-70/CFM56-2C-5	305,000	3
DC8QN	DC8-60/JT8D-7QN	305,000	2
DC910	DC9-10/JT8D-7	78,000	1
DC930	DC9-30/JT8D-9	103,000	1
DC93LW	DC9-30/JT8D-9 w/ ABS Lightweight hushkit	103,000	3
DC950	DC9-50/JT8D-17	107,000	2
DC95HW	DC9-50/JT8D17 w/ ABS Heavyweight hushkit	107,000	3
DC9Q7	DC9-10/JT8D-7QN	78,000	2
DC9Q9	DC9-30/JT8D-9QN	103,000	2
DHC6	DASH 6/PT6A-27	12,500	0
DHC6QP	DASH 6/PT6A-27 Raisbeck Quiet Prop Mod	12,500	0

DHC7	DASH 7/PT6A-50	38,950	3
DHC8	DASH 8-100/PW121	31,000	3
DHC830	DASH 8-300/PW123	38,700	3
EMB120	Embraer 120 ER/ Pratt & Whitney PW118	22,475	3
EMB145	Embraer 145 ER/Allison AE3007	41,800	3
EMB14L	Embraer 145 LR / Allison AE3007A1	46,300	3
F10062	F100/TAY 620-15	86,000	3
F10065	F100/TAY 650-15	88,000	3
F16A	GENERAL DYNAMICS FALCON PW200 NM	25,000	0
F16GE	GENERAL DYNAMICS FALCON F110-GE-100 NM	25,000	0
F16PW0	GENERAL DYNAMICS FALCON F100-PW-220 NM	25,000	0
F16PW9	GENERAL DYNAMICS F FALCON F100-PW-229 NM	25,000	0
F28MK2	F28-2000/RB183MK555	58,000	2
F28MK4	F28-4000/RB183MK555	66,000	2
F4C	F-4C/J79-GE-15	52,000	0
FAL20	FALCON 20/CF700-2D-2	28,660	2
GASEPF	1985 1-ENG FP PROP	2,200	0
GASEPV	1985 1-ENG VP PROP	3,000	0
GII	Gulfstream GII/SPEY 511-8	56,000	2
GIIB	GIIB/SPEY MK511-8	65,500	2
GIV	GIV/TAY 611	71,700	3
GV	Gulfstream GV/BR 710	76,925	3
HS748A	HS748/DART MK532-2	46,500	2
IA1125	ASTRA 1125/TFE731-3A	23,500	3
KC135	KC135A/J57-P-59W	285,000	0
KC135B	KC135B/JT3D-7	285,000	0
KC135R	KC135R/CFM56-2B-1	308,000	0
L1011	L1011/RB211-22B	400,000	3
L10115	L1011-500/RB211-224B	441,000	3
L188	L188C/ALL 501-D13	102,000	0
LEAR25	LEAR 25/CJ610-8	15,000	2
LEAR35	LEAR 36/TFE731-2	18,300	3
MD11GE	MD-11/CF6-80C2D1F	535,000	3
MD11PW	MD-11/PW 4460	535,000	3
MD81	MD-81/JT8D-209	126,000	3
MD82	MD-82/JT8D-217A	132,000	3
MD83	MD-83/JT8D-219	141,000	3
MD9025	MD-90/V2525-D5	151,107	3
MD9028	MD-90/V2528-D5	151,107	3
MU3001	MU300-10/JT15D-4	14,100	3
SABR80	NA SABRELINER 80	28,660	2
SD330	SD330/PT6A-45AR	21,800	3
SF340	SF340B/CT7-9B	24,548	3

Area Equivalent Method (AEM) Version 6.0c

Airport Name/Code:	Niagara Falls International Airport

DNL (dBA)	Baseline Area (sq.mi.)	Alternative Area (sq.mi.)	Change in Area (sq.mi.)
65	2.7	2.8	4.6%

	BASE Case		ALTERNATIVE Case	
Aircraft Type	Daytime LTO Cycles	Nighttime LTO Cycles	Daytime LTO Cycles	Nighttime LTO Cycles
707				
707120				
707320				
707QN				
717200				
720				
720B				
727100				
727200	3.01	0.60	3.25	0.65
727D15				
727D17				
727EM1				
727EM2				
727Q15				
727Q7				
727Q9				
727QF				
737	3.00		3.25	
737300				
7373B2				
737400	0.47		0.83	
737500				
737700				
737D17				
737N17				
737N9				
737QN				
747100				
74710Q				
747200				
74720A				
74720B				
747400			0.57	
747SP				

	BASE Case		ALTERNATIVE Case	
Aircraft Type	Daytime LTO Cycles	Nighttime LTO Cycles	Daytime LTO Cycles	Nighttime LTO Cycles
757PW				
757RR				
767300				
767CF6				
767JT9				
767400				
777200				
777300				
A300				
A310				
A319				
A320				
A32023				
A330				
A340				
A7D				
BAC111				
BAE146				
BAE300				
BEC58P				
C130	33.91	10.17	33.91	10.17
C130E				
CIT3				
CL600				
CL601				
CNA172				
CNA206				
CNA20T				
CNA441				
CNA500				
CNA55B				
CNA750				
COMJET				
COMSEP				
CONCRD				
CVR580				
DC1010				
DC1030				
DC1040				
DC3				
DC6				
DC820				
DC850				
DC860				
DC870				
DC8QN				
DC910				
DC930				

	BASE Case		ALTERNATIVE Case	
Aircraft Type	Daytime LTO Cycles	Nighttime LTO Cycles	Daytime LTO Cycles	Nighttime LTO Cycles
DC93LW				
DC950				
DC95HW				
DC9Q7				
DC9Q9				
DHC6				
DHC6QP				
DHC7				
DHC8				
DHC830				
EMB120				
EMB145				
EMB14L				
F10062				
F10065				
F16A				
F16GE				
F16PW0				
F16PW9				
F28MK2				
F28MK4				
F4C				
FAL20				
GASEPF				
GASEPV	92.72		96.46	
GII				
GIIB				
GIV				
GV				
HS748A				
IA1125				
KC135				
KC135B				
KC135R				
L1011				
L10115				
L188				
LEAR25				
LEAR35				
MD11GE				
MD11PW				
MD81				
MD82				
MD83				
MD9025				
MD9028				
MU3001				
SABR80				

	BASE Case		ALTERNATIVE Case	
Aircraft Type	Daytime LTO Cycles	Nighttime LTO Cycles	Daytime LTO Cycles	Nighttime LTO Cycles
SD330				
SF340				
Total LTO's	133.11	10.77	138.27	10.82

Flight Type	Aircraft Type	Annual Operations 2007	Annual Operations 2011	Annual Operations Day/Night 2007	Annual Operations Day/Night 2011	Daily Operations (Day) 2007	Daily Operations (Day) 2011	Daily Operations (Night) 2007	Daily Operations (Night) 2011
Myrtle Beach Direct									
	737-400	170	304	170/0	304/0	0.47	0.83	0.00	0.00
Vista									
	747-400	0	208	0/0	208/0	0.00	0.57	0.00	0.00
Kitty Hawk									
	727-200	1097	1187	877/220	949/238	3.01	3.25	0.60	0.65
	737-200	1096	1186	1096/0	1096/0	3.00	3.25	0.00	0.00
General Aviation									
	PA-28	33841	35208	33180/0	34528/0	92.72	96.46	0.00	0.00
Military	C-130	12377	12377	8664/3713	8664/3713	33.91	33.91	10.17	10.17
Totals	**N/A**	**48581**	**50470**	**44614/3915**	**46337/4041**	**133.10**	**138.27**	**10.78**	**10.82**