

**FINAL**

**ENVIRONMENTAL ASSESSMENT**

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**NIAGARA FALLS INTERNATIONAL  
AIRPORT  
RUNWAY 6-24 SAFETY AREA  
IMPROVEMENTS**

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

August 2009

## ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit	NOAA	National Oceanic and Atmospheric Association
AC	Advisory Circular	NO <sub>x</sub>	Nitrogen Oxides
ARW	Air Reserve Wing	NRCS	National Resource Conservation Service
ASDA	Accelerate-Stop Distance	NRHP	National Register of Historic Places
AST	Aboveground Storage Tank	NYANG	New York Air National Guard
BAM	Bird Avoidance Model	NYCRR	New York Code of Rules and Regulations
BASH	Bird-Aircraft Strike Hazard	NYSDEC	New York State Department of Environmental Conservation
BMP	Best Management Practice	NYSDOT	New York State Department of Transportation
BNIA	Buffalo-Niagara International Airport	O <sub>3</sub>	Ozone
Btu	British Thermal Unit	OSHA	Occupational Safety and Health Act
CAA	Clean Air Act	OWS	Oil/water Separator
CAAA	Clean Air Act Amendments	PAPI	Precision Approach Pathway Indicator
CEQ	Council on Environmental Quality	Pb	Lead
CFR	Code of Federal Regulations	PM <sub>10</sub>	Particulate Matter (10 microns)
CIA	Cumulative Impacts Analysis	POL	Petroleum, Oils and Lubricants
CO	Carbon Monoxide	ppm	Parts Per Million
CWA	Clean Water Act	PSD	Prevention of Significant Deterioration
CZMA	Coastal Zone Management Act	RPZ	Runway Protection Zone
CZMP	Coastal Zone Management Plan	RSA	Runway Safety Area
dB	Decibel	SEL	Sound Exposure Level
dbh	Diameter at Breast Height	SEQRA	State Environmental Quality Review Act
DNL	Day-Night average sound level	SIP	State Implementation Plan
DoD	Department of Defense	SO <sub>x</sub>	Sulfur Oxides
EA	Environmental Assessment	TCE	Trichloroethane
EIS	Environmental Impact Statement	TODA	Take-off Distance
EMAS	Emergency Material Arresting System	TORA	Take-off Run
ESA	Endangered Species Act	tpy	Tons Per Year
FAA	Federal Aviation Administration	USACE	United States Army Corps of Engineers
FAR	Federal Aviation Regulations	USAF	United States Air Force
FBO	Fixed Base Operator	U.S.C.	United States Code
FONSI	Finding of No Significant Impact	USEPA	United States Environmental Protection Agency
FWA	Freshwater Wetlands Act	USFWS	United States Fish and Wildlife Service
HAP	Hazardous Air Pollutant	UST	Underground Storage Tank
HUD	Department of Housing and Urban Development		
LDA	Landing Distance		
LF	Linear Feet		
NAAQS	National Ambient Air Quality Standards		
NAVAIDS	Navigational Aid System		
NEPA	National Environmental Policy Act		
NFIA	Niagara Falls International Airport		
NFTA	Niagara Frontier Transportation Authority		

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## EXECUTIVE SUMMARY

The Niagara Frontier Transportation Authority (NFTA) prepared this Environmental Assessment (EA) to evaluate the environmental effects of proposed modifications to Runway 6-24 at the Niagara Falls International Airport (NFIA) in Niagara Falls, New York. The modifications involve shifting NFIA Runway 6-24 to comply with Federal Aviation Administration (FAA) Runway Safety Area (RSA) standards.

A RSA study conducted at NFIA in 2002 by the New York State Department of Transportation (NYSDOT) concluded that the RSA for Runway 6-24 at the NFIA is inconsistent with FAA runway safety design standards as defined in FAA Advisory Circular (AC) 150/5300-13 (NYSDOT, 2002). Both ends of Runway 6-24 are inconsistent with RSA standards. The NYSDOT study (2002) and FAA determined that the most practical way to meet the RSA standards would be to shift Runway 6-24 to the northeast. Further analysis of this option determined that this shift would not result in full compliance with the RSA requirements.

A second RSA Study (McFarland-Johnson, 2004) determined that the most practicable way to meet the RSA standards would be to add 450 feet to the end of Runway 24, remove 450 feet from the end of Runway 6, and displace the Runway 6 landing threshold 80 feet to the northeast. This would maintain the Runway 6-24 usable runway length for take-off operations at 5,188 feet while establishing the required RSA at each end of the runway. In addition, portions of Taxiway J and the existing Runway 6 pavement southwest of Taxiway C would be removed to establish the new RSA at the 6 end of the runway. Approximately 2,240 feet of Cayuga Creek would also be relocated to the northwest around the RSA at the 24 end of the runway.

The primary goal of the Proposed Action is to reconfigure Runway 6-24 to comply with the FAA's RSA standards in the most cost effective, practical, and environmentally sensitive manner. Two additional projects are included in the Proposed Action:

1. Relocation and rehabilitation of Taxiway K to provide housing areas and support facilities for individual and corporate aircraft. The current facilities cannot accommodate the potential future demand; and
2. One property acquisition on the east side of Walmore Road. The Proposed Action would extend the RSA onto approximately five acres of this property. In addition to providing for the RSA, acquisition of this property would preserve the unobstructed approach and departure flight paths for Runway 6-24 and Runway 10L-28R.

This EA considers two alternatives to the Proposed Action for the runway modifications:

- Culvert Cayuga Creek alternative – Shift the runway 450 feet to the northeast and apply declared distances, but culvert Cayuga Creek in place rather than relocating the creek outside the RSA; and
- Standard RSAs for both Runway 6 and Runway 24 alternative– Shift the runway 450 feet to the northeast, but shorten the runway by 80 feet to establish standard RSAs rather than applying declared distances.

The Taxiway K improvements and property acquisition are site-specific actions with no viable alternatives other than the No-Action Alternative.

This EA evaluates the potential effects of the Proposed Action, the Culvert Cayuga Creek alternative, and the Standard RSAs for both Runway 6 and Runway 24 alternative on eleven resource areas at, and in the vicinity of, the NFIA. The EA concludes that the Proposed Action would have no permanent adverse effect on Land Use, Visual Resources, Cultural Resources, and Hazardous Materials and Waste.

The Proposed Action would improve safety by bringing the RSAs for Runway 6-24 into compliance with FAA AC 150/5300-13 and providing an unobstructed area large enough to halt aircraft in the event of an overrun or undershoot with minimal risk to people and property. Relocating Cayuga Creek around the RSA would decrease the BASH potential at the 24 end of the Runway and the Taxiway K expansion would increase available space for T-hangers, other aircraft storage areas and the maneuverable area for general

aviation aircraft moving between the aircraft parking area and the runways. The property acquisition would provide the approximately 5 acres necessary for the standard RPZ at the 24 end of the runway. The property acquisition would also decrease the potential for vertical encroachment into the low-altitude approach and departure vectors for Runway 6-24, as well as prevent lateral encroachment into the Runway 10-28 RPZ from the north. Therefore, the Proposed Action would have a beneficial effect on safety.

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<sub>10</sub>) and nitrogen oxides (NO<sub>x</sub>) during construction; however, these emissions would cease upon completion of the construction activities. Further, the air emissions analysis determined that the Proposed Action would not exceed *de minimis* levels, would not prevent, or contribute to, the State of New York meeting the NAAQS and complying with the SIP, or impair visibility within a PSD Class 1 area.

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; however, these impacts would be short-term and would not permanently affect any noise-sensitive receptors on- or off-site. The area experiencing noise levels at 65 dB would also shift 450 ft northeast. The number of operations would not change; therefore, the total area of the 65 dB contour would not change. The Proposed Action would increase the off-site area at the 24 end and decrease the off-site area at the 6 end of the runway subject to noise levels at 65 dB. The off-site noise impacts at the 24 end would be contained within the property acquisition proposed in this EA and there are no sensitive noise receptors on that property.

The Proposed Action would have minor, temporary impacts on geological resources from the construction activities, but these impacts would be minimized through use of best management practices (e.g., erosion control) and would cease upon completion of construction. Thus, this project would have no significant, long-term impact on geologic resources.

The Proposed Action would have a temporary, localized effect on water resources through the relocation of Cayuga Creek. The reconstructed creek would mimic the stream morphology of the natural channel in order to minimize long-term hydrological effects within, upstream, and downstream of the affected reach. The Proposed Action would require a Section 404 permit from the USACE. NFTA has consulted with the USACE regarding a mitigation plan for the Project that includes reconstructing the creek channel with bioengineered shore protection and fish habitat enhancements to minimize the impact of filling the existing creek bed. In addition, NFTA is considering additional bioengineered shore protection approximately 200-300 feet downstream. The Proposed Action would result in approximately a 0.5-acre net increase in the area of impervious surface at the NFIA. However, due to the small area affected (less than 1 % of the land area at NFIA) and the abundance of pervious surfaces (grassland) on the airfield that would retain their full absorptive capacity, these effects would not be significant.

The Proposed Action would have no permanent adverse effect on biological resources. The Proposed Action occurs primarily on paved land and result in approximately a 0.5-acre net increase in the area of impervious surface at the NFIA; however, due to the small area affected (less than 1 % of the land area at NFIA) these effects would not be significant.. The plant species found in the affected areas are regularly disturbed by mowing, are common in the region, and do not provide significant wildlife habitat. Relocation of Cayuga Creek would cause the temporary loss of wetland and aquatic habitat, but this habitat would be re-constructed within the relocated reach. Re-colonization of the re-constructed reach by aquatic flora and fauna would not be immediate, so this action would cause a temporary negative effect on the ecology of Cayuga Creek. Therefore, construction would have a short-term impact on vegetation and wildlife. Due to the developed nature of the NFIA and surrounding land use, threatened or endangered species do not occur at or in the vicinity of the airport. Therefore, the Proposed Action would have no long-term impact on threatened and endangered species.

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.

# 1.0 INTRODUCTION

## 1.1 PURPOSE AND NEED

The Niagara Frontier Transportation Authority (NFTA) prepared this Environmental Assessment (EA) to evaluate the environmental effects of proposed modifications to Runway 6-24 at the Niagara Falls International Airport (NFIA) in Niagara Falls, New York (Figures 1-1 and 1-2). The modifications involve shifting NFIA Runway 6-24 to comply with Federal Aviation Administration (FAA) Runway Safety Area<sup>1</sup> (RSA) standards. This EA was prepared in accordance with FAA Orders 5050.4B and 1050.1E, the *National Environmental Policy Act* (NEPA), and New York State *Environmental Quality Review Act* (SEQRA) standards.

The NFIA holds an Airport Operating Certificate pursuant to 14 Code of Federal Regulations (CFR) Part 139, which requires that the airport adhere to specific FAA operational and safety standards. These standards define the length and width of RSAs based on the classification of each runway, which is determined by the type of aircraft assigned to the runway. Runway 6-24 is classified as a C-III runway, which requires a RSA of 1,000 feet in length and 500 feet in width beyond each end of the runway. The standards require that the RSA be capable of supporting aircraft and rescue vehicles and be free of materials, topographic features, or structures that could cause damage to aircraft (FAA, 2002).

A RSA study conducted at NFIA in 2002 by the New York State Department of Transportation (NYSDOT) concluded that the RSA for Runway 6-24 at the NFIA is inconsistent with FAA runway safety design standards as defined in FAA Advisory Circular (AC) 150/5300-13 (NYSDOT, 2002) (Appendix A). Both ends of Runway 6-24 are inconsistent with RSA standards. The RSA at the Runway 6 end extends beyond the NFIA property boundary and contains an uncontrolled airport perimeter road, a public

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<sup>1</sup> A runway safety area is a defined surface (dimensions are dependent upon the design aircraft for the runway) surrounding the runway that is prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway surface. ([http://www.flylansing.com/airport\\_info/property\\_dev/master\\_plan.html](http://www.flylansing.com/airport_info/property_dev/master_plan.html)). Accessed 25 June 2006.

roadway (Porter Road), and the airport security fence (Figure 1-3). The RSA at the Runway 24 end is intersected by Cayuga Creek approximately 500 feet from the end of the runway (Figure 1-3).

The NYSDOT and FAA study (2002) determined that the most practical way to meet the RSA standards would be to shift Runway 6-24 to the northeast. Further analysis of this option determined that this shift would not result in full compliance with the RSA requirements because the airport property does not extend far enough from each end of Runway 6-24 to establish simultaneous standard RSAs within the property boundary. A second RSA Study (McFarland-Johnson, 2004) determined that the most practicable way to meet the RSA standards would be to shift Runway 6-24 450 feet to the northeast and displace the Runway 6 landing threshold<sup>2</sup> 530 feet to the northeast. This would maintain the Runway 6-24 usable runway length at 5,188 feet while establishing the required RSA at each end of the runway. This would also require that a portion of Cayuga Creek be realigned or culverted.

The primary goal of the Proposed Action is to reconfigure Runway 6-24 to comply with the FAA's RSA standards in the most cost effective, practical, and environmentally sensitive manner. Two additional projects are included in the Proposed Action:

1. Relocation and rehabilitation of Taxiway K to provide housing areas and support facilities for individual and corporate aircraft. The 1994 Master Plan identified a deficit in the availability of hangars for the current and predicted future based aircraft (McFarland-Johnson, 1994). The Master Plan identified the permanent hangar deficit as the primary impediment to increasing the number of GA aircraft based at the NFIA. NFIA currently has 66 based aircraft (APO TAF, 2007) with only 42 hangar spaces (McFarland-Johnson, 2005).
2. Acquisition of one property on the east side of Walmore Road provide space for a portion of the RSA (i.e., the Proposed Action would extend the RSA onto

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<sup>2</sup> A runway threshold is a line, at right angles to the runway centerline and extending for the full width of the runway, for the purpose of identifying the beginning of the runway area that is available and suitable for the landing of aircraft (<http://www.dot.wisconsin.gov/travel/air/docs/apt-standards.doc>). Accessed 23 June 2006.

approximately five acres of this property) and a standard runway protection zone (RPZ)<sup>3</sup>. In addition to providing space for the RSA, acquisition of this property would prevent vertical encroachment by preserving the unobstructed approach and departure flight paths for Runway 6-24 and Runway 10L-28R.

Section 2.1 of this document provides a detailed description of the Proposed Action.

## 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 (GA) and military airport serving local and transient GA traffic as well as military aircraft (NYSDOT, 2002). The NFIA hosts the United States Air Force (USAF) 107<sup>th</sup> Air Wing (AW) and 914<sup>th</sup> AW of the New York Air National Guard (NYANG). The United States Army National Guard occupies a small area southwest of the NFIA adjacent to the NFIA maintenance garage. The NFIA has 79 based aircraft, including the military aircraft owned and operated by the NYANG (Edwards and Kelcey, 2002).

According to the 1994 Master Plan, the NFIA currently has the capacity to support 160,200 operations (i.e., either a take-off or landing) per year. In 2004, the airport handled 47,030 operations (NFIA Aviation Projections, 2006). This included 508 commercial airline operations, with the remaining operations comprised of air taxi, GA, and military aircraft (Table 1-1).

**Table 1-1. Distribution of Airport Operations at the NFIA in 2004**

Type of Aircraft	Number of Operations
Commercial (Air Carrier, Air Taxi and Commuter)	2,126
General Aviation	32,527
Military	12,377
<b>Total</b>	<b>47,030</b>

Source: APO Terminal Area Forecast, 2007

<sup>3</sup> An area off the runway end delineated to enhance the protection of people and property on the ground. The Runway Protection Zones Plans and Profiles are used to identify physical features, which may affect the approach surface of each runway end. (<http://www.marana.com/Planning/NorthwestAreaPlan/12-Airport%20Element.pdf>). Accessed 25 June 2006.

**Insert Figure 1-1 Site Location Map**

**Figure 1-2 Niagara Falls International Airport Property Boundary**

**Figure 1-3. Current Runway 6-24 Layout, including Runway Safety Area**

### **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**

The NEPA requires that federal agencies consider 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 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 (e.g., *the Safe Drinking Water Act*, *Endangered Species Act*, and *National Historic Preservation Act*) in addition to NEPA, and to assess potential environmental impacts, the EA and, subsequently, the decision-making process for the Proposed Action, involve a thorough examination of all environmental issues pertinent to the project.

### **1.3.2 Federal Aviation Administration Regulations**

The FAA is responsible for managing navigable airspace for public safety and ensuring efficient use for commercial air traffic, general aviation, and national defense, including Special Use Aircraft (SUA) utilized by the Department of Defense (DoD). To identify and manage potentially significant environmental and social impacts of airspace proposals, the FAA established several policies including:

- Order 7400.2, Procedures for Handling Airspace Matters; and
- Order 1050.1E, Environmental Impacts: Policies and Procedures

Order 7400.2F, specifically Chapter 32, prescribes the policy, criteria, guidelines, and procedures applicable to the operation, planning, programming, safety, and standards associated with SUA management. FAA Order 1050.1 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 in FAA Order 1050.1 identifies 18 environmental resources that should be considered during the NEPA process. This EA considers each of the resources as prescribed by FAA Order 1050.1. Table 1-2 contains the location where each of these resources is discussed in the EA or the rationale for excluding a detailed discussion of a specific resource.

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

<b>Resource</b>	<b>Location in the EA, or Rationale for Exclusion</b>
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 in the EA.
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 in the EA
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 in the EA.
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 in the EA.

### **1.3.3 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 factors of all actions they have the discretion to approve, fund, or directly undertake. The NFTA has cooperated with federal and state agencies to the fullest extent possible to reduce duplication between NEPA and SEQRA requirements.

### **1.3.4 Interagency and Public Consultation**

This process requires that project proponents notify relevant government agencies and the general public prior to making a statement of potential environmental impacts relative to their proposed project. Accordingly, the NFIA notified relevant federal, state, and local

agencies as well as the general public of the proposed Project and allowed them 30 days to communicate their environmental concerns specific to the Project. The Notice of Availability of the draft EA and solicitation of public comments was published in the Buffalo News on April 23, 2009. The public comment period was open for thirty days (closing May 23, 2009). Comments were received from three federal agencies and one state agency; however, only two agencies offered substantive comments on the EA. The U.S. Department of the Air Force was concerned with the potential creation of additional migration pathways for groundwater contamination due to relocation of Cayuga Creek near a known groundwater remediation site. The U.S. Army Corps of Engineers concerns were limited to Federal wetland permitting issues regarding the relocation and design of Cayuga Creek. These concerns are addressed in the EA. The remaining agencies either acknowledged that no further consultation was needed (U.S. Fish and Wildlife Service) or concurred with the findings of the EA (New York State Historic Preservation Office). Appendix B contains the full text of all comments received on the EA.

### **1.3.5 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 Action and presents the alternatives to the Proposed Action that have been considered.

### **2.1 PROPOSED ACTION**

The Proposed Action includes three distinct projects (Figure 2-1):

1. Runway 6-24 Shift;
2. Relocation and Rehabilitation of Taxiway K; and
3. Property Acquisition.

#### **2.1.1 Shift Runway 6-24 and Relocate Cayuga Creek**

Under the Proposed Action, Runway 24 would be shifted northeast by 450 feet and the Runway 6 threshold would be displaced 530 feet towards Runway 24 (Figure 2-2). This would maintain a standard RSA for Runway 24 and require an 80-foot displaced threshold and declared distances to establish a standard RSA on the Runway 6 end. Declared distances establish a standard RSA at both ends of the runway while maintaining the maximum usable runway length for the greatest possible number of operations. The usable runway length would continue to be 5,188 feet for takeoff run (TORA) and takeoff distance (TODA) operations, but would decrease to 5,108 feet for all landing distances (LDA) and accelerate-stop distances (ASDA). The airport property does not extend far enough from each end of Runway 6-24 to establish simultaneous standard RSAs within the property boundary. Reducing the usable runway length by 80 feet for landing operations would establish standard RSAs at both ends of the runway and maintain the maximum available runway length to be used for TORA and TODA operations.

There are several additional modifications that would be required to implement the proposed runway shift. At the Runway 24 end, the property fence would be shifted and approximately 2,240 feet of Cayuga Creek would be relocated outside the new RSA.

Taxiway J between Taxiway C, Runway 6, and the existing Runway 6 pavement southwest of Taxiway C would be removed to establish the new Runway 6 RSA. Upon completion of these activities, the new RSAs would be filled, graded, paved, and threshold markings would be added to each end of the 6-24 Runway for clarity.

As a result of the Runway 6-24 shift, vertical obstructions (i.e., trees) would be removed from the low-altitude approach and departure paths to reduce the likelihood of inadvertent collisions with stationary objects. This would provide an unobstructed approach/departure path large enough on both ends of the runway to accommodate aircraft in the event of an overrun or undershoot with minimal risk to people and property.

Approximately 2,240 linear feet (LF) of Cayuga Creek would be relocated around the proposed RSA and this portion of the existing creek channel would be filled and leveled to grade. The relocated creek channel (approximately 1,950 feet in length) would begin just south of the USAF property and follow the fence west approximately 520 feet towards the Crash and Fire Rescue facility then turn south (approximately 1,000 feet), and continue south (approximately 430 feet) to join the existing creek channel east of the Taxiway A3 culvert (Figure 2-3).

### **2.1.2 Relocation and Rehabilitation of Taxiway K**

Taxiway K is located in the southwest corner of the airport adjacent to the West Ramp (Figure 2-1). The Proposed Action would extend Taxiway K approximately 670 feet east allowing for an additional 10,000 square yards of apron space for based and itinerant aircraft. Expansion of the taxiway would include paving of approximately 90,000 square feet north of the intersection of Taxiways K and I. This space would be used for conventional, private, and T-hangers, support facilities for individual and corporate aircraft (refer to Section 5.0), and to increase the wing span clearance associated with the existing GA hanger parallel to the south edge of the taxiway.

### **2.1.3 Property Acquisition**

The Proposed Action includes acquisition of an approximately 30-acre parcel of land on the east side of Walmore Road across from the end of Runway 24 (Figure 2-1). The acquisition would allow NFIA to own the necessary space for the standard RPZ at the end of Runway 24 following the runway shift. The RPZ associated with Runway 6-24 begins approximately 200 feet from the end of the runway (FAA AC 150/5300-1B) and would initially be 500 feet wide and extend 1000 feet away from the runway and would be 700 feet wide at the end (Figure 2-3). The property acquisition would prevent vertical encroachment along the low-altitude approach/departure paths of Runway 6-24 by preventing potential private development on this parcel. The parcel borders the Runway 10-28 RPZ to the north and would also prevent any lateral encroachment into the Runway 10-28 approach/departure paths.

**Insert Figures 2-1. Proposed Action, Niagara Falls International Airport**

**Figure 2-2. Runway 6-24 with shift and displaced threshold**

**Figure 2-3. Proposed Cayuga Creek Relocation**

## **2.2 ALTERNATIVES TO THE PROPOSED ACTION**

As part of the EA process, three potential alternatives to the Proposed Action (including no action) were evaluated and compared to the Proposed Action. The alternatives considered in this section are related solely to the Runway 6-24 shift. Alternative alignments for the relocation and rehabilitation of Taxiway K were evaluated in the 1994 Master Plan; however, the alignment included in the Proposed Action was determined to be the only viable option in order to meet the project purpose. The property acquisition is a site-specific action with no viable alternative other than the No-Action Alternative.

### **2.2.1 Shift Runway 6-24 and Culvert Cayuga Creek**

This alternative is the same as the Proposed Action except that the portions of Cayuga Creek within the RSA would be placed in a culvert rather than relocated. This alternative would require removal of Taxiway J between Taxiway C and Runway 6, removal of the existing portion of Runway 6 southwest of Taxiway C, and relocation of the fence at the end of the Runway 24 RSA. Taxiway C and D would become the new access point to Runways 6 and 24, respectively. Approximately 1,800 LF of Cayuga Creek would be culverted.

Under this alternative, the relocation and rehabilitation of Taxiway K and the property acquisition would occur as described under the Proposed Action.

### **2.2.2 Standard Runway Safety Area for Both Runway 6 and Runway 24**

This alternative would establish a standard RSA at the ends of Runway 6 and Runway 24 by shifting Runway 24 to the northeast by 450 feet and relocating the Runway 6 threshold 530 feet in the direction of Runway 24. This alternative differs from the Proposed Action in that it does not include the 80-foot displaced threshold on Runway 6. As such, it would reduce the usable length of Runway 6-24 by 80 feet for take-off (TORA, TODA) and landing (LDA, ASDA) operations as opposed to only landing operations as under the Proposed Action. A runway length analysis demonstrated that

Runway 6-24 is currently not long enough to accommodate all NFIA users (McFarland-Johnson, Inc., 2005). Reducing the runway length under this alternative would further reduce the runway's operational efficiency.

This alternative would require removal of Taxiway J between Taxiway C and Runway 6, removal of the existing portion of Runway 6 southwest of Taxiway C, relocation of the fence at the end of the Runway 24 RSA, and relocating or culverting a portion of Cayuga Creek. The decision to relocate or culvert Cayuga Creek under this alternative has not been made; therefore, the potential effects of this alternative are evaluated considering both potential creek adjustments. Taxiways C and D would become the new access point to Runways 6 and 24, respectively.

Under this alternative, the relocation and rehabilitation of Taxiway K and the property acquisition would occur as described under the Proposed Action.

### **2.2.3 No-Action Alternative**

Under the No-Action Alternative, there would be no modifications to the Runway 6-24 RSA or Taxiway K, and the proposed property acquisition would not occur. The Runway 6-24 RSA would continue to violate FAA AC 150/5300-13 and limit operational efficiency at the NFIA by failing to provide adequate overrun protection.

## **2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED**

### **2.3.1 EMAS at Runway 24 End / Standard RSA at Runway 6 End**

This alternative involved the use of the Engineered Materials Arresting System (EMAS) extending northeast from Runway 24. EMAS is a cellular cement material that crushes under an aircraft to provide controlled deceleration in the event that an aircraft overruns the runway. Under this alternative, the Runway 6 threshold would be shifted 600 feet northeast towards Runway 24. The Runway 24 pavement would be extended 600 feet northeast and the EMAS bed (275 feet by 170 feet) would be installed at the end of the extension. Shoulder strength pavement (325 feet) would be added between the Runway 24 threshold and the EMAS bed for undershoot protection. Taxiways J, C, and D as well

as Cayuga Creek would be modified similar to the Standard RSA Alternative (Section 2.2.2).

This alternative would maintain the current runway length (5,188 feet) and provide direct access to the Runway 24 threshold through the Taxiway D extension. This alternative is the most costly of all the alternatives considered (\$8.8 million, more than twice the cost of the Proposed Action) (McFarland-Johnson, 2005). There would be additional maintenance costs associated with the EMAS, and in the event of an aircraft overrun, the NFIA would be required to divert funds from current projects to repair or replace the EMAS.

From an operations perspective, repair to the EMAS system would require the runway to be taken out of service while the work was completed. The repair time for the EMAS versus a standard grassland RSA (as in the Proposed Action) would be longer and thus result in longer runway downtime in the event of an overrun. Additionally, FAA Order 5200.8 states that the EMAS should be considered as an additional level of safety only when it is “not practicable to obtain a safety area that meets current standards.” It is possible to establish a standard RSA at both ends of without the use of EMAS. Because it is possible to obtain standard RSAs without EMAS and implementation of the EMAS alternative would be more costly than the Proposed Action, the EMAS does not constitute a cost effective or practical alternative for the proposed runway modification. Therefore, this alternative would not fulfill the Project purpose and was eliminated from further consideration.

### **2.3.2 EMAS at Runway 6 End / Standard RSA at Runway 24 End**

This alternative also involves the construction of an EMAS bed (300 feet by 170 feet) extending southwest from Runway 6. Shoulder strength pavement (300 feet) would provide undershoot protection between Runway 6 and the EMAS bed. No taxiways would be modified under this alternative; however, a portion of Cayuga Creek would be relocated or culverted to establish the standard RSA for Runway 24. Although less costly (\$6.8 million for initial construction) than the other EMAS option (Section 2.3.1) because the 600-foot runway shift would not be required (McFarland-Johnson, 2005), this

alternative was eliminated from further consideration for the reasons described in Section 2.3.1.

### **2.3.3 Declared Distances at Runway 6 End / Standard RSA at Runway 24 End**

According to FAA AC 150/5300-13, declared distances may be used where existing constraints eliminate the possibility of providing a RSA in accordance with FAA regulations. Under this alternative, the Runway 6 threshold would be displaced by 530 feet and a portion of Cayuga Creek would be relocated or culverted to allow a standard RSA for Runway 24. The TODA and TORA area would not be affected, but the displaced threshold would impact the usable runway area at both the 6 and 24 ends for LDA and ASDA. The LDA and ASDA declared distances would be 4,658 feet.

Although cost effective (\$1.1 million), this alternative would further reduce the usable runway length for LDA and ASDA, providing less overrun protection than is currently available. According to the FAA, declared distances are only acceptable when a standard RSA is not possible. Since it is possible to establish a standard RSA at both ends of Runway 6-24, this alternative was eliminated from further consideration.

### **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 as well as in-flight operations undertaken as part of commercial and private flights en route to and from the NFIA. Ground safety involves routine ground-based operations and maintenance activities at the airport as well as non-routine activities such as fire and crash response. The primary concern with regard to flight safety is the potential for aircraft accidents. Such mishaps may occur as a result of mid-air collisions, collisions with manmade structures or terrain, weather-related accidents, mechanical failure, pilot error, or bird-aircraft collisions.

FAA AC 150/5300-13, *Airport Design*, describes the design criteria for RSAs in order to provide adequate space for the aircraft to stop in the event of an overrun. The standard RSA dimensions are based on both aircraft design group and aircraft approach categories. RSAs below the minimum design criteria endanger the aircraft, crew, passengers, and those persons and structures located beyond the RSAs.

### 3.1.2 Existing Conditions

Day-to-day operations and maintenance activities conducted at the NFIA are performed in accordance with applicable FAA safety regulations and standards prescribed by the Occupational Health and Safety Association (OSHA). Following a RSA compliance review, the FAA determined that the 6-24 runway did not provide a 500-foot by 1,000-foot RSA at each end of the runway and, therefore, does not comply with FAA AC 150/5300-13 (*Airport Design*). Additionally, Cayuga Creek is currently within the RSA for Runway 24 and creates a “potentially hazardous surface variation” as described in FAA AC 150/5300-13. Additionally, there are several small stands of trees southwest of the Runway 6 terminus with the potential to create obstruction hazards in the approach/departure pathways for Runway 6.

The USAF fire department provides fire and crash response at NFIA. The 914<sup>th</sup> ARW has a sufficient number of trained and qualified personnel and possesses all equipment necessary to respond to aircraft accidents at NFIA. 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.

The NFIA is located within the Atlantic Migratory Bird Flyway and Cayuga Creek provides resting and foraging habitat for local and migratory waterfowl (US Fish and Wildlife Service [USFWS], 2006). Cayuga Creek currently underlies the approach and departure vectors for Runway 24 and use of the creek by waterfowl increases the bird-aircraft strike hazard (BASH). According the USAF Bird Avoidance Model (BAM), the year-round risk of bird strikes is “moderate” for the area surrounding the NFIA. Between 1990 and 2005, 153 bird strikes were reported at NFIA, or approximately 2.4 strikes per 10,000 aircraft movements. Of the identified bird strikes, raptors and gulls were the most commonly struck species (NFTA, 2006).

The NFIA Wildlife Hazard Management Plan identifies management approaches to minimize the bird strike risk at the airport. Some of the current measures include maintaining a NYSDEC Airport Air Strike Hazard permit, aggressive (lethal and

nonlethal) deterrence of wildlife, management of vegetation (including short grass length and minimal woody vegetation) to minimize the airports attractiveness to wildlife, maintain infrastructure to minimize wildlife intrusion (maintain security fences and modify operational structures to deter perching).

## **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<sub>3</sub>), carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter equal to or less than 10 microns in diameter (PM<sub>10</sub>), 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<sub>10</sub>.

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 100 miles 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 Great Lakes moderate the cold temperatures during the winter and provide a cooling effect during the summer months. Days with temperatures below 0 degrees Fahrenheit (°F) are limited to about three to five annually and temperatures of 90°F and above are infrequent. Winds blow off of Lake Erie, which lies to the southwest. The presence of the lake results in a relatively consistent wind direction 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, and autumn and winter are 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 0.12 parts per million (ppm), measured as 1-hour average concentration. An area meets the ozone NAAQS if there is no more than one day per year when the highest hourly value exceeds the threshold. An area that is designated as a marginal non-attainment area has ozone concentrations between 0.121 and 0.138 ppm.

### 3.2.2.3 Emissions at Niagara Falls International Airport

The NFIA is not a major source of air emissions and is therefore not required to have a Title V permit to operate. The 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 majority of the emissions at the NFIA are from aircraft; however, mobile sources, including aircraft, are not included in the Title V calculations and do not contribute to violations of the NAAQS or the New York SIP.

The NFIA's only stationary source of air emissions is a boiler that is used to heat the air traffic control tower 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. 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 Emission Estimates**

Criteria Pollutant	Boiler size	Annual Hours of Operation	Emission Factor	Heating Value of Natural Gas	Emission Estimates		
	MBtu/hr	Hrs/yr	lbs/million (M) cubic feet (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 <sub>10</sub>	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)

## 3.3 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 according to the type

and characteristics of the noise, distance between the noise source and receptor, receptor sensitivity, and time of day.

### *Sound Metrics*

Due to the wide range in sound levels, sound is expressed in decibels (dB), a unit of measure based on a logarithmic scale. A 10 dB increase in noise level corresponds to a 100-percent increase (or doubling) in perceived loudness. As a general rule, a 5 dB change is necessary for noise increases to be noticeable to humans (USEPA 1974). Sound measurement is further refined by using an A-weighted decibel scale to emphasize the range of sound frequencies that are most audible to the human ear (i.e., between 1,000 and 8,000 cycles per second). Therefore, unless otherwise noted, all decibel measurements presented in this EA are A-weighted (dBA).

The day-night average sound level (DNL) is a noise metric that averages A-weighted sound levels over a 24-hour period, with an additional 10-dB penalty added to noise events occurring between 10:00 p.m. and 7:00 a.m. This penalty is intended to compensate for generally lower background noise levels at night and the additional annoyance of nighttime events. DNL is the most widely used descriptor for assessing noise compatibility with existing or proposed land use or developments, and is the preferred noise metric of the U.S. Department of Housing and Urban Development (HUD), the U.S. Department of Transportation (DOT), FAA, USEPA, Veterans' Administration, and DoD.

The Integrated Noise Model (INM) is the noise model program required by the FAA to measure baseline and future conditions at civilian airports. The noise analysis in this EA used INM to calculate DNL and sound exposure level (SEL) above 65 dB. The current noise environment was established using operations forecasts approved in February 2007.

### **3.3.2 Existing Conditions**

The noise associated with aircraft operations at NFIA is characteristic of the noise at most airports with commercial/military air traffic. During periods with 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 airport itself and is comparable to sounds that occur in adjacent communities. It is during periods of aircraft ground or flight activity that the noise environment changes. For these reasons, the noise analysis for this EA was limited to aircraft operations.

The noise exposure area was defined as the area predicted to experience a DNL of 65 dB or greater, as per the threshold described in FAA Order 1050.1E. The total area exposed to noise levels  $DNL \geq 65$  dB from operations on Runway 6-24 would be confined to NFIA property (Figure 3-1).

**FIGURE 3-1 EXISTING NOISE CONTOURS AT NFIA**

## **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 *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**

Land uses adjacent to NFIA are primarily industrial, commercial, and agricultural in character with some residential subdivisions (Figure 3-2). The 107 ARW and 914<sup>th</sup> 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. There are no publicly owned parks, recreation areas, or wildlife refuges 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 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) lies west of Runway 6, which contains hangars and tie-downs for based aircraft and aviation organizations. The maintenance garage and service garage, located in the southeast corner of the West Ramp, perform routine maintenance of the service vehicles including fluid changes and lubrication (Figure 2-1).

NFIA's airfield system includes three runways and twelve taxiways. The primary-use runway, Runway 10L-28R, is 9,829 feet long and is used by large military and commercial aircraft. The second runway, Runway 6-24, at a length of over 5,188 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 (Figure 2-1).

Several military installations and private industries are located on or adjacent to NFIA 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 the former Bell Aerospace and Carborundum facilities. The Carborundum facilities are now owned and operated by St. Gobain (Figure 2-1).

Figure 3-2. Land Use Surrounding the NFIA.

#### 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, which 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. Soils are unconsolidated materials overlying bedrock or other parent material. Soil is described in terms of series or type, slope, and physical characteristics. Soil depth, structure, elasticity, strength, shrink-well potential, and erodibility influence site suitability for structures and facilities. 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

Most of the soils at the NFIA have been disturbed through previous construction activities including development of airport runways and taxiways, airport-related buildings, and creation of impervious surface. However; sufficient native soil characteristics remain in the soils at NFIA to permit classification.

The soils found at the NFIA are either hydric soils or upland soils with hydric inclusions (Panamerican, 1999). The principal soil series at the airport is Lakemont silty clay loam (National Resource Conservation Service [NRCS], 1971). Lakemont silty clay loam soils are characteristic of old glacial lake basins and do not drain efficiently. Fonda mucky silt loam is commonly associated with basin areas immediately surrounding floodplains and cutoff meanders such as those adjacent to the NFIA property along Cayuga Creek. Fonda Mucky silt loam soil is commonly associated with the dominant soil types in this area and usually has poor permeability. Clay-like texture and poor drainage result in a low erosive potential for all soils within the Project area.

### 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 feet (180 m) above mean sea level (Panamerican, 1999).

## 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. Aquatic resources include aquatic habitats and the biological resources supported by them, and are discussed in this section because the physiochemical characteristics of surface water resources at NFIA are the primary factors driving aquatic biodiversity at the airport.

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 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 a wetland located on the western portion of NFIA are the only surface water features on the airport. Section 3.7 of this EA presents a discussion of wetlands at NFIA. 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 10-28R before turning south again at the NFTA/USAF property boundary. From the eastern boundary of NFIA, Cayuga Creek flows approximately 3,500 feet south to the southeastern boundary of NFIA at Porter Road, and then off the airport toward the City of Niagara Falls . Two small, channelized drainage ditches convey stormwater from the east side of Walmore Road and intersects Cayuga creek at the point where it runs parallel to Runway 10-28R (Figure 3-2).

### 3.6.2.2 Use Classification

Cayuga Creek is a small, low gradient tributary to the Niagara River. The 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 designated Cayuga Creek as a Class C stream. According to 6 New York State Codes, Rules, and Regulations (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 on NFIA is currently impaired by airport security measures that preclude public access to portions of 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 NFIA (Figure 3-3). The floodplain is confined by the banks of the artificially straightened reach between Taxiway A3 and the former North-South Runway. The floodplain widens between the culvert under the former North-South Runway and the culvert under Walmore Road (Figure 3-3). 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 former North-South Runway and Walmore Road.

### 3.6.2.4 Aquatic Habitat in Cayuga Creek

The quality of 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 lacks significant meanders and cross-sectional depth diversity. The lack of significant meanders in this reach precludes the formation of undercut banks, bars, or other physical habitat features. Virtually no macrohabitat diversity exists in this reach: the reach consists of a single 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 (i.e., species that require or prefer gravel substrate to reproduce).

#### 3.6.2.5 Stream Morphology

The portion of Cayuga Creek that lies within NFIA has been extensively modified. Cayuga Creek was channelized to accommodate construction of runways at NFIA and for flood control purposes (Panamerican Environmental, Inc. 1999). The creek has been culverted three times where it flows under Taxiway A, and once where it flows under Taxiway K (Figure 3-2). It has also been culverted twice immediately adjacent to the NFIA boundary where it flows under Walmore Road and Porter Road. Most of the reach flowing parallel to Runway 6-24 (within the area of the proposed runway expansion) has been artificially straightened. Upstream and downstream of this reach, Cayuga Creek retains a more natural, meandering course.

Streams may be classified according to their longitudinal profiles and cross-sectional morphologies. Stream morphology is governed by several variables including channel width, depth, velocity, discharge, channel slope, channel roughness, sediment load, and sediment size. Changes to one or more of these parameters can cause changes to others,

resulting in alteration of the channel pattern (Rosgen, 1992). The Rosgen stream classification protocol identifies stream types on the basis of the following “delineative criteria”: entrenchment, width/depth ratios, sinuosity, slope range, and channel material. Table 3-2 shows the mean values for each variable as documented in November 2003 on the reach of Cayuga Creek that would be affected by the runway shift (ERM, 2003). According to the Rosgen classification system, the portion of Cayuga Creek at NFIA is a B5/6c stream, which implies moderate entrenchment and sinuosity with a moderate width-to-depth ratio and a sandy substrate.

**Table 3-2. Morphological Data for Cayuga Creek at NFIA**

Variable	Observed Value	Range for a B5/6c stream
Entrenchment Ratio (Bankfull width/wetted width)	1.2	1.4-2.2*
Width/Depth Ratio (Bankfull width/depth)	22.2	>12
Sinuosity (Length of channel/length of stream valley)	1.05	>1.2*
Slope Range	>0.02	>0.02
Channel Material	Sand/Silt	Sand (B5c); Silt/Clay (B6c)**

\*Values for entrenchment and sinuosity can vary by +/- 0.2 units as a function of the continuum of physical variables with streams. Therefore, the observed values for Cayuga Creek are within the accepted range for the B5/6c stream type.

\*\*Sand is typical of a B5c stream type; silt/clay is typical of a B6c stream type. At the NFIA, Cayuga Creek has features indicative of both types.

### 3.6.2.5 Aquatic Biological Community in Cayuga Creek

The 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 lack of coarse substrate and vegetation and the general homogeneity of the benthic habitat in Cayuga Creek, the benthic community in Cayuga Creek at 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 macroinvertebrates that are sensitive to disturbance or degraded habitat conditions 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.

**Figure 3-3. Surface water, Floodplains, and Wetlands at the NFIA**

### 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 NFIA. The Lockport aquifer consists entirely of the Lockport Dolomite geologic 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 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 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 Niagara 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. Section 3.6 of this EA (Water Resources) discusses aquatic biological resources. The following sections describe the existing conditions of terrestrial biological resources within 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 land at 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 3-3 lists the dominant plant species found at 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.

Access to the land parcel proposed for acquisition was not available; however, the vegetation communities are consistent with upland vegetation communities throughout the region. The vegetative cover is a mix of fragmented deciduous forest stands and shrublands similar in species composition to those at the NFIA.

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

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

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 3-2). 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 coertype (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 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 NFIA runways include red-tailed hawk, American kestrel, Cooper's hawk, Northern harrier, sharp-shinned hawk, and rough-legged hawk (USDA, 1997). Table 3-4 lists the wildlife known and/or expected to occur at NFIA.

The wetlands located along Cayuga Creek and in the western portion of the site contain the most significant wildlife habitat at NFIA. These wetlands contain valuable wildlife habitat features such as snags and downed wood juxtaposed with open water and 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 signs, 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, such as leopard frogs, would be expected to occur in this wetland.

Several species of wildlife listed by NYSDEC as threatened or Special Concern Species were observed in this wetland during 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 breeding habitat.

**Table 3-4. Common Wildlife Species Known or Expected to Occur at Niagara Falls International Airport**

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

Common Name	Scientific Name
Chipping sparrow	<i>Spizella passerine</i>
Ruby-crowned kinglet	<i>Regulus calendula</i>
Rufous-sided towhee	<i>Pipilo erythrophthalmus</i>
Red-eyed vireo	<i>Vireo olivaceus</i>

Source: USDA, 1997 and ERM, 2003

### 3.7.2.4 Threatened and Endangered Species

The 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 does not specifically list any federally-listed threatened or endangered species that are known to occur in Niagara County; however, three species are known to occur statewide: small whorled pogonia (*Isotria medeoloides*), Indiana Bat (*Myotis sodalis*), and eastern Cougar (*Felix concolor cougar*) (USFWS, 2009a). The 2008 5-year review of small whorled pogonia did not identify any known occurrences in Niagara County (USFWS, 2008) and no known Indiana Bat colonies occur within the county (NYNHP, 2009). Eastern Cougar are current thought to be extinct in the wild and their preferred habitat (marshes, forests, and mountains) do not occur in the vicinity of the NFIA (USFWS 2009b).

The NYSDEC documented that 14 state-listed threatened or endangered species or state-listed species of concern occur in the vicinity of NFIA (Appendix B). Of these 14 state-listed species, seven are plants that have specific habitat requirements that do not occur at NFIA. The remaining seven species potentially occur at NFIA based on species life history requirements and habitat availability at the site. Table 3-5 lists these seven

species and the following sections describe their habitat preferences and potential or documented use of NFIA.

**Table 3-5. State-listed Threatened, Endangered, and Species of Concern That Potentially Occur at NFIA**

Common Name <i>Scientific Name</i>	Breeding Season	Federal/ State Status	Habitat	Potential to Occur at NFIA
Short-eared owl <i>Strix occidentalis lucida</i>	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 <i>Haliaeetus leucocephalus</i>	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 <i>Rana chircahuensis</i>	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 <i>Charadrius montanus</i>	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 <i>Ovis canadensis</i>	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 <i>Accipiter gentiles</i>	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 <i>Terrapene carolina</i>	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.

### *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, cultivated fields, and prefers 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 surveys at the Niagara Falls Air Reserve Station (USFWS, 2004). Disturbance from frequent mowing precludes nesting by northern harriers at NFIA; however, this species potentially forages in the grasslands adjacent to the 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 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 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 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 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 NFIA.

## **3.8 VISUAL RESOURCES**

### **3.8.1 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.

### **3.8.2 Existing Conditions**

The aesthetic value of NFIA and potential for light emissions and visual impacts from the Proposed Action is defined relative to the perspective of adjacent properties and travelers along perimeter routes. In the immediate vicinity of 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 age of on-site facilities varies greatly, the majority of the facilities maintain a consistent theme and appearance. At the airport, the general architectural style is institutional and most of the buildings are of block or metal construction.

## **3.9 CULTURAL RESOURCES**

### **3.9.1 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 are comprised of 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).

### **3.9.2 Existing Conditions**

The Area of Potential Effect (APE) for the proposed Project includes the NFIA and its adjacent properties. This includes but is not limited to the USAF property, Carborundum, and Bell Aerospace facilities. Concurrence with the NY SHPO concerning the APE is pending.

#### 3.9.2.1 Archaeological Resources

The results of the background research and field investigation indicate that portions of NFIA, particularly the areas bordering Cayuga Creek, could contain prehistoric cultural resources. However, a previous archaeological survey conducted at NFIA did not find any prehistoric cultural materials (Panamerican, 2004).

#### 3.9.2.2 Architectural Resources

There are three extant buildings associated with the airport within the viewshed (the area within sight of a given point) of Runway 6-24. 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). Consultation with the New York State Historic Preservation Office (SHPO) regarding these findings is currently ongoing.

### **3.10 SOCIOECONOMICS**

#### **3.10.1 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.

#### **3.10.2 Existing Conditions**

The Project Vicinity (Figure 3-3) for the Proposed Action includes the four block groups (30226.02.5, 30226.02.6, 30226.9, and 30227.11.2) that encompass NFIA and the immediately surrounding area. According to 2000 census data, the population of the project vicinity was 12,246, an increase of approximately 44 percent from 1990 (Table 3-

6). 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 proportion of the population of the Project vicinity (7.3 percent) than Niagara County (9.2 percent) or New York State (12.9 percent).

**Table 3-6. Regional Population Data**

	New York		Niagara County		Project Vicinity	
<b>2000 Estimated Population</b>	18,976,457		219,846		12,246	
<b>Percent Change (1990-2000)</b>	5.2%		-0.4%		44.1%	
<b>2000 Ethnic Composition</b>	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>
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 <sup>2</sup>	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%
<b>2000 Age Composition</b>						
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%
<b>2000 Income</b>						
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

Figure 3-4 Project Vicinity Related to Socioeconomic Resources

### 3.10.2.1 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 median income for Niagara County (\$38,136) and New York state (\$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 state (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 state, where the largest job sectors are educational, health, and social services; retail trade; and manufacturing (Tables 3-7 and 3-8).

**Table 3-7. 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 3-8. 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

## **3.11 HAZARDOUS WASTE**

### **3.11.1 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.

### **3.11.2 Existing Conditions**

#### **3.11.2.1 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 10 ASTs that are located in the Fuel Farm area west of the existing terminal building. These ASTs contain a variety of POLs including unleaded gasoline, diesel fuel, aviation gasoline, and Jet A fuel (Table 3-9).

**Table 3-9. 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.

### 3.11.2.2 Oil/Water Separators

Oil/water separators (OWSs) are used at NFIA to prevent potential pollution sources from entering the sanitary or storm sewer system. The three OWSs at 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.

### 3.11.2.3 Site Remediation Program

There is one hazardous waste site at NFIA currently undergoing remediation by the USAF. The site, Environmental Remediation Program (ERP) Site 10, is a former 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). Groundwater quality and quantity at the remediation site are monitored via eleven monitoring wells radially spaced around ERP Site 10. Data from these wells were used to develop a groundwater hydraulic model to estimate the potential impacts of the Proposed Action on ERP Site 10 (see Section 4.11). The groundwater remediation system pumps the water through an on-site air stripper prior to discharge to the sanitary sewer system (Pers. Comm. Gerry Hromowyk, 2005).

## **4.0 ENVIRONMENTAL CONSEQUENCES**

This section of the EA describes the potential environmental consequences of the Proposed Action and Alternatives. Potential effects 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**

##### Project 1: Shift Runway 24 and Relocate Cayuga Creek

This project would have a beneficial effect on safety at NFIA. The runway shift and declared distances would fulfill the requirements of FAA AC 150/5300-13 and establish a standard RSA (1,000 feet by 500 feet) at each end of Runway 6-24. The relocation of Cayuga Creek would move the creek outside the RSA at the Runway 24 end and the use of declared distances would relocate the RSA within the NFIA boundary at the Runway 6 end. This would improve safety by bringing the RSAs for Runway 6-24 into compliance with FAA standards.

As a result of the Runway 6-24 shift, vertical obstructions, including several trees southwest of Runway 6, would be removed from the low-altitude approach and departure paths to reduce the likelihood of inadvertent collisions. This would improve safety by providing an unobstructed approach/departure path large enough to accommodate aircraft

on both ends of the runway in the event of an overrun or undershoot with minimal risk to people and property.

Realignment of Cayuga Creek would decrease the BASH-related hazards associated with the use of Runway 6-24 compared to current conditions. Waterfowl and other birds that use Cayuga Creek as a feeding or resting point would be relocated from the direct flight path of incoming and outbound aircraft, thereby decreasing the likelihood of a bird-aircraft collision. While relocating Cayuga Creek away from Runway 6-24 would not eliminate BASH-related hazards at the runway, it would decrease the likelihood of foraging and migratory waterfowl occurring in the direct flight path of Runway 6-24. The ongoing mitigation measures identified in the Wildlife Hazard Management Plan (see section 3.1.2) would continue to minimize of the bird-strike risk at the NFIA.

Therefore, the proposed project would have a beneficial effect on safety.

#### Project 2: Relocation and Rehabilitation of Taxiway 'K'

This project would have a beneficial effect on safety at NFIA because it would increase the wing span clearance from the existing GA hanger located parallel to the south edge of the taxiway.

#### Project 3: Property Acquisition

The property acquisition would have a beneficial effect on safety at NFIA because it would provide the land needed to accommodate the standard RPZ for Runway 24 and establish a buffer area between the Runway 24 RSA and offsite industrial or residential land use. Acquisition of this property would eliminate the potential for future development of the property, which could compromise the unobstructed approach and departure vectors for Runway 6-24. Walmore Road would continue to intersect the RPZ between NFIA and the proposed property acquisition; however, acquiring this property would maximize NFIA ownership of the lands within the RPZ.

#### **4.1.3 Potential Impact of Shifting Runway 6-24 and Culverting Cayuga Creek Alternative**

This alternative involves the same runway shift as the Proposed Action; however, under this alternative Cayuga Creek would remain in place and the portions within the RSA would be culverted. Similar to the Proposed Action, this alternative would establish a RSA at each end of the runway and reduce the BASH-related hazard by eliminating bird habitat in the direct path of incoming and outbound aircraft on Runway 6-24. However, under this alternative, Cayuga Creek would still flow through the direct flight path of Runway 6-24. Therefore, the BASH-related hazards would not decrease as much under this alternative compared to the Proposed Action.

The potential effects associated with the relocation and rehabilitation of Taxiway K and the property acquisition would be the same as that described under the Proposed Action.

#### **4.1.4 Potential Impact of Standard Runway Safety Areas for Runway 6 and Runway 24 Alternative**

Establishing standard RSAs for both Runway 6 and 24 would reduce the usable length of Runway 6-24 by 80 feet. This alternative would have an adverse impact on safety because it would shorten the overall length of the runway and reduce the space available for take-off and landing operations, as opposed to just landing distance as under the Proposed Action.

The potential effects associated with the relocation and rehabilitation of Taxiway K and the property acquisition would be the same as that described under the Proposed Action.

#### **4.1.5 No-Action Alternative**

Under this option, no adjustments would be made to Runway 6-24 and it would continue to be in violation of FAA AC 150/5300-13 due to the lack of sufficient RSAs. The BASH-related hazards would also continue as waterfowl and other birds using Cayuga Creek would remain in the direct flight vector of approaching or departing aircraft on

Runway 6-24. This alternative would not address the current safety hazard at NFIA and, therefore, would have an adverse effect on safety.

## **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.

Since the three projects that comprise the Proposed Action would not create permanent air emissions, the only emissions that can be considered in this EA are those generated during construction of the projects. 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 and to support the conclusion that the Proposed Action would have no permanent, adverse impact on air quality.

To assess potential impacts on air quality as a result of the Proposed Action, air emissions (CO, NO<sub>x</sub>, SO<sub>x</sub>, VOCs, and dust) resulting from the shift of Runway 6-24, associated taxiway modifications, and Taxiway K expansion were calculated and compared with applicable federal and state air pollution standards and regulations. The property acquisition would have no effect on air quality, as there are no development plans for the property and the property would not support any mobile or stationary air emissions sources. Two assumptions were made to estimate the temporary air emissions generated by shifting Runway 6-24 and associated taxiway modifications and Taxiway K expansion: (1) one grader, one excavator, and three general pieces of construction equipment would be used; and (2) the construction period would take place over four months at 30 days per month. The air emissions calculations are conservative because crews would not actually work 30 days per month. This conservative approach provided a margin of error for the analysis. 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**

The total estimated temporary emissions for the Proposed Action were calculated using AP-42 emissions factors for heavy construction and the Off-Road Mobile Source Emissions Factors (for construction equipment) from the South Coast Air Quality Management Division (Appendix C). The estimated emissions would not increase ambient air pollution concentrations above any NAAQS (Table 4-1), would not contribute to an existing violation of any NAAQS, would not interfere with, or delay, the State of New York meeting the NAAQS and complying with the SIP, or impair visibility within a PSD Class 1 area. Thus, the Proposed Action would have no significant impact on air quality.

Further, the temporary increase in air emissions would be minimized through best management practices such as soil stabilization, watering exposed soils, worker ride sharing, and seasonal scheduling of construction. The majority of dust generated from construction activities would occur from vegetation removal, grading, and construction/paving. Stabilizing and watering exposed soils would reduce the amount of dust generated during construction. Temporary emissions of CO, NO<sub>x</sub>, SO<sub>x</sub>, and VOCs would occur from the operation of construction equipment and construction workers commuting to and from the work site. Worker ride sharing and seasonal scheduling of construction would reduce these emissions by limiting the number of vehicles traveling to and from the construction site.

**Table 4-1. Temporary Fugitive Emissions Due to the Proposed Action**

	<i>Summary of Temporary Fugitive Emissions (tons/year)</i>				
	CO	NOx	SOx	VOC	PM <sub>10</sub>
Shift Runway 6-24 and Relocate Cayuga Creek	1.55	3.84	0.20	0.64	17.09
Relocation and Rehabilitation of Taxiway K	1.32	3.25	0.17	0.52	4.56
Property Acquisition	0	0.0	0.0	0.0	0.0
<b>TOTAL</b>	<b>2.87</b>	<b>7.09</b>	<b>0.37</b>	<b>1.16</b>	<b>21.65</b>
<i>De minimis</i> levels	100	100	100	50	100

Source: ERM, 2006. Appendix C provides detailed inventories of the emissions associated with each project, along with the rationale and methodology used to develop the emissions calculations.

**4.2.3 Potential Impact of Shifting Runway 6-24 and Culverting Cayuga Creek Alternative**

Similar to the Proposed Action, air emissions were calculated using AP-42 emissions factors for heavy construction and the Off-Road Mobile Source Emissions Factors (for construction equipment) from the South Coast Air Quality Management Division (Appendix C). This alternative would not increase ambient air pollution concentrations above any NAAQS (Table 4-2), would not contribute to an existing violation of any NAAQS, would not interfere with, or delay, the State of New York meeting the NAAQS and complying with the SIP, or impair visibility within a PSD Class 1 area. The emissions under this alternative would be less than under the Proposed Action because Cayuga Creek would be culverted in place rather than relocated. This would involve less construction to install the culvert as opposed to relocating the creek. Short-term construction emissions would be mitigated through best management practices and would cease upon completion of the projects.

The potential effects associated with the relocation and rehabilitation of Taxiway K and the property acquisition would be the same as that described under the Proposed Action.

Therefore, the effects of this alternative on air quality would be negligible.

**Table 4-2. Temporary Fugitive Emissions Due to the Runway Shift and Culverting Cayuga Creek Alternative**

	<i>Summary of Temporary Fugitive Emissions (tons/year)</i>				
	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>SO<sub>x</sub></b>	<b>VOC</b>	<b>PM<sub>10</sub></b>
Shift Runway 6-24 and Culvert Cayuga Creek	1.5	3.8	0.20	0.64	15
Relocation and Rehabilitation of Taxiway K	1.32	3.25	0.17	0.52	4.56
Property Acquisition	0	0.0	0.0	0.0	0.0
<b>TOTAL</b>	<b>2.82</b>	<b>7.05</b>	<b>0.37</b>	<b>1.16</b>	<b>19.56</b>
<i>De minimis</i> levels	100	100	100	50	100

Source: ERM, 2006. Appendix C provides detailed inventories of the emissions associated with each project, along with the rationale and methodology used to develop the emissions calculations.

#### **4.2.4 Potential Impact of Standard Runway Safety Areas for both Runway 6 and Runway 24 Alternative**

Establishing standard RSAs for both ends of Runway 6-24 would require similar construction operations as the Proposed Action and Culverting Cayuga Creek alternative; however, this alternative would involve an additional 80-linear foot demolition at the 6 end of the Runway. The temporary emissions associated with this alternative are summarized in Table 4-3. Establishment of standard RSAs at the Runway 6 and Runway 24 ends alternative were calculated using AP-42 emissions factors for heavy construction and the Off-Road Mobile Source Emissions Factors (for construction equipment) from the South Coast Air Quality Management Division (Appendix C). The estimated emissions would not increase ambient air pollution concentrations above any NAAQS (Table 4-3), would not contribute to an existing violation of any NAAQS, would not interfere with, or delay, the State of New York meeting the NAAQS and complying with the SIP, or impair visibility within a PSD Class 1 area. Short-term construction emissions would be mitigated through best management practices and would cease upon completion of the projects.

The potential effects associated with the relocation and rehabilitation of Taxiway K and the property acquisition would be the same as that described under the Proposed Action. Therefore, the effects of this alternative on air quality would be negligible.

**Table 4-3. Temporary Fugitive Emissions Due to the Standard RSAs at both Runway 6 and Runway 24 Alternative**

	<i>Summary of Temporary Fugitive Emissions (tons/year)</i>				
	CO	NOx	Sox	VOC	PM <sub>10</sub> (shift/culvert)*
Runway Shift/Declared Distances	1.5	3.8	0.20	0.64	18/15
Relocation and Rehabilitation of Taxiway K	1.32	3.25	0.17	0.52	4.56
Property Acquisition	0	0.0	0.0	0.0	0.0
<b>TOTAL</b>	<b>2.82</b>	<b>7.05</b>	<b>0.37</b>	<b>1.16</b>	<b>22.56/19.56</b>
<i>De minimis</i> levels	100	100	100	50	100

\* This alternative has not determined whether the runway shift would be accomplished through shifting or culverting Cayuga Creek. Therefore, the emissions for both are presented with the shift first, and the culvert in parentheses.

Source: ERM, 2006. Appendix C provides detailed inventories of the emissions associated with each project, along with the rationale and methodology used to develop the emissions calculations.

#### 4.2.5 No-Action Alternative

The No-Action Alternative would maintain current conditions and so would have no effect on air quality.

### 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, a significant noise impact would occur if the Proposed Action caused an increase in noise of DNL 1.5 dB or more, raising noise levels to or above DNL 65 dB, when compared to existing conditions. For example, an increase from 63.5 dB to 65 dB would be considered a significant impact.

#### **4.3.2 Potential Impacts of the Proposed Action**

The Proposed Action would not create any new permanent sources of noise, but the area exposed to aircraft noise would change slightly, and new temporary noise sources would be created during construction of the RSAs and taxiways. Thus, the analysis of potential noise impacts includes changes in noise levels associated with construction activities and aircraft operations on Runway 6-24. Characteristics of expected noise impacts such as the nature, duration, and expected levels of noise were considered.

##### Project 1: Shift Runway 24 and Relocate Cayuga Creek

Shifting Runway 6-24 and establishing declared distances would shift the 65 dB contour 450 feet to the northeast (Figure 4-1). At the 24 end of the runway, this project would increase the area within the 65 dB contour; however, this increase would be completely contained within the NFIA property and there are no noise-sensitive receptors on or immediately adjacent to this property. At the 6 end of the runway, there would be a corresponding shift in the 65 dB contour (Figure 4-1). Because the size of the 65 dB contour would not change and the shift would not impact off-site property or sensitive noise receptors, this project would have no significant effect on noise. In this analysis, the difference in operations between the baseline and 5-year forecasts (Table 4-4) did not present a discernible difference in the 65 dB contour. The contours in Figure 4-1 represent the 65 dB contour for the base case and 5-year forecasts.

**Table 4-4. Predicted Operations on Runway 6-24.**

<b>Flights</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>
<b>General Aviation</b>						
Runway 6	2,927	2,986	3,005	3,024	3,045	3,065
Runway 24	24,810	25,306	25,471	25,636	25,811	25,978
<b>Military</b>						
Runway 6	84	84	84	84	84	84
Runway 24	756	756	756	756	756	756
<b>Total</b>						
<b>Runway 6</b>	<b>3,011</b>	<b>3,070</b>	<b>3,089</b>	<b>3,108</b>	<b>3,129</b>	<b>3,149</b>
<b>Runway 24</b>	<b>25,566</b>	<b>26,062</b>	<b>26,227</b>	<b>26,392</b>	<b>26,567</b>	<b>26,734</b>

Project 2: Relocation and Rehab of Taxiway ‘K’

Implementation of this project would have minor, short-term, adverse effects on the noise environment in the immediate vicinity of Taxiway K. After completion of the proposed activities, noise levels would be similar to existing conditions. 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). No off-site noise impacts associated with this project would be expected. Due to the temporary nature of the noise and the application of appropriate noise reduction procedures, there would be no significant noise impacts associated with the project.

Project 3: Property Acquisition

Acquisition of the property north of Runway 28R would not involve construction or noise generating activities; therefore, this project would have no effect on noise.

**Figure 4-1. Proposed Noise Contour Shift**

### **4.3.3 Potential Impact of Shifting Runway 6-24 and Culverting Cayuga Creek Alternative**

The impacts on noise associated with this alternative would be the same as the Proposed Action.

### **4.3.4 Potential Impact of Standard Runway Safety Areas for Runway 6 and Runway 24 Alternative**

This alternative involves the same shift of Runway 6-24 as the Proposed Action and Culverting Cayuga Creek alternative; however, under this alternative the runway would be shortened by 80 feet to accommodate a standard RSA at both ends. The potential effects associated with the relocation and rehabilitation of Taxiway K and the property acquisition would be the same as that described under the Proposed Action. The shortening of the runway would cause a slight reduction in the area of the 65 dB noise contour (Figure 4-1), as overall runway length would shorten. Therefore, this alternative would have a slightly less impact on noise.

### **4.3.5 No-Action Alternative**

The No-Action Alternative would maintain current conditions (Figure 4-1) and so would have no effect on noise.

## **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**

None of the projects associated with the Proposed Action would impact land use because:

- The projects are consistent with the 1994 Master Plan and current land use planning at the NFIA (Figure 4-1).
- 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. Further, the Runway 6-24 shift is intended to benefit public health and safety by providing standard RSAs at each end of Runway 6-24.
- The proposed property acquisition is intended to provide adequate space for the Runway 6-24 RSA and provide a buffer against potential future industrial or residential encroachment. As a result, the acquired property would not be developed, modified, or require a change in its zoning and would persist in its current vacant state.

Construction activities associated with these projects 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.

### Project 3: Property Acquisition

This project would consist solely of a property transfer and not be developed or modified from existing conditions. Therefore, this project would have no effect on land use.

#### **4.4.3 Potential Impact of Shifting Runway 6-24 and Culverting Cayuga Creek**

Similar to the Proposed Action, this alternative would have no impact on land use.

#### **4.4.4 Potential Impact of Standard Runway Safety Areas for both Runway 6 and Runway 24**

Similar to the Proposed Action, this alternative would have no impact on land use.

#### **4.4.5 No-Action Alternative**

Under the No-Action Alternative, land use at, and surrounding, the airport would not change and existing conditions would be maintained. Thus, the No-Action Alternative would have no effect on land use.

### **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 the proposed actions on geological resources. Geological impacts can often be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering design are incorporated into project development. Impacts to geological resources would be significant if they alter unique or protected geological features such as mineral deposits or prominent topographic features, or are located near faults or other geological hazards.

## **4.5.2 Potential Impacts of the Proposed Action**

### Project 1: Shift Runway 24 and Relocate Cayuga Creek

Shifting Runway 6-24 and relocating Cayuga Creek would require the conversion of approximately 1.5 acres of currently maintained grassland to impervious service as well as excavation of the new realignment of Cayuga Creek. The proposed activities would also involve convert approximately three acres of runway at the 6 end of Runway 6-24 and Taxiway J to grassland. None of the proposed construction activities would occur on undisturbed land, and only land that has already been paved or otherwise altered by previous construction activities would be affected.

Construction activities would remove existing ground cover, exposing and disturbing soils. Exposed soils are more susceptible to erosion than soils with intact ground cover; however, implementation of sediment and erosion control measures during construction would limit the potential for erosion. Realignment of Cayuga Creek would result in a physiographic change to the creek channel on the east side of NFIA, but no substantial alterations to site topography would be required for creek reconstruction. The construction activities would not change the hydric characteristics or soil composition at NFIA. Removal of the trees southwest of Runway 6 would disturb soils immediately surrounding the base of the trees; however, the area would be returned to its natural state following tree removal.

This project would have minor, temporary impacts on soils but these impacts would be minimized through use of best management practices (e.g., erosion control) and would cease upon completion of construction. Thus, this project would have no significant, long-term impact on geologic resources.

### Project 2: Relocation and Rehabilitation of Taxiway 'K'

The relocation and rehabilitation of Taxiway 'K' would result in clearing and grading of approximately 90,000 square feet that would remove existing ground cover and expose and disturb soils. None of the proposed construction activities associated with this project would occur on undisturbed land, and only land that has already been paved or

altered by previous construction activities would be affected. This project would have minor, temporary impacts on geological resources but these would be minimized through use of best management practices (e.g., erosion control) and the impacts would cease upon completion of construction. Thus, this project would have no significant, long-term effects on geological resources.

### Project 3: Property Acquisition

The acquired property would not be developed or modified from its existing conditions. Thus, the property acquisition would have no impact on geological resources.

#### **4.5.3 Potential Impact of Shifting Runway 6-24 and Culverting Cayuga Creek Alternative**

This alternative would involve the same runway shift as the Proposed Action; however, Cayuga Creek would be culverted rather than relocated. This would reduce the soil disturbance compared to the Proposed Action because Cayuga Creek would remain in its current channel. This alternative would cause some disturbance to the creek channel; however, the disturbance would be less than if a new channel was excavated, as under the Proposed Action. Similar to the Proposed Action, this alternative would involve clearing and grading that would expose and disturb soils; however, sediment and erosion control measures during construction would limit the potential impacts of this alternative. None of the proposed construction activities would occur on undisturbed land, and only land that has already been paved or altered by previous construction activities would be affected. Thus, this alternative would have no significant, long-term effects on geological resources.

#### **4.5.4 Potential Impact of Standard Runway Safety Areas for Runway 6 and Runway 24 Alternative**

This alternative would involve the same ground-disturbing activities as the Proposed Action and Culverting Cayuga Creek alternative and thus the same minor, temporary effects on geological resources. The potential effects associated with the relocation and rehabilitation of Taxiway K and the property acquisition would be the same as that

described under the Proposed Action. This alternative would have no significant, long-term effects on geological resources.

#### **4.5.5 No-Action Alternative**

Under the No-Action alternative, there would be no ground-disturbing activities or alterations of existing geology or soils at NFIA. Thus, the No-Action Alternative would have no effect on geological resources.

### **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 impact to water resources would be significant if it:

- reduced the availability or supply of water to existing users;
- created or contributed to the overdraft of groundwater, or exceeded the safe annual yield of water supply sources;
- adversely affected water quality or endangered public health by creating or worsening health hazard conditions;
- threatened or damaged unique hydrological characteristics;
- resulted in new construction in an area with a high probability of flooding; or
- violated established laws or regulations that protect or manage water resources of an area.

#### **4.6.2 Potential Impacts of the Proposed Action**

##### Project 1: Shift Runway 24 and Relocate Cayuga Creek

Shifting Runway 6-24 and establishing declared distances would require relocation of Cayuga Creek and would have direct, but temporary, effects on water quality, and minor permanent effects on hydrological characteristics of the stream.

Approximately 2,240 feet of Cayuga Creek, including an approximately 0.28-acre riparian emergent wetland, would be relocated outside the footprint of the Runway 6-24 RSA (Figure 4-2). In a meeting between NFTA and the USACE on March 22, 2005, the USACE claimed jurisdiction over the filling of Cayuga Creek and indicated that a Section 404 permit under the Clean Water Act would be required. As part of the permit conditions, stream/wildlife enhancement would be required within the same watershed, although likely off the airport property to avoid creating wildlife attractants. The mitigation would also require coordination with the Niagara County Soil and Water Conservation District and the NYSDEC Regional Permit Administrator. The USACE indicated that, based on the Proposed Action impacting Cayuga Creek in two areas, relocating the creek may be the appropriate course of action. (Appendix B).

The NFTA's proposed mitigation plan involves constructing an approximately 1,950-foot new stream bed with bioengineered shore erosion features and fish habitat enhancements outside of the Runway 6-24 RSA. In addition, the NFTA would also consider using bioengineered erosion protection on 200-300 feet of Cayuga Creek downstream of the proposed relocation area. During a meeting on July 1, 2008, the USACE indicated that the Proposed Action with mitigation could be seriously considered as part of a Section 404 permit application. Refer to Appendix B for meeting minutes from the July 1, 2008 meeting between the NFTA and USACE. Subsequent to this meeting the NFTA has investigated potential off-site mitigation in cooperation with a local conservation group; however, final mitigation plans would be developed as part of the Section 404 permit process.

The Proposed Action would isolate, but not remove, the reach of Cayuga Creek that is currently located south of the southern boundary of the proposed safety area. The Proposed Action would eliminate inflow to this reach from the upstream portion of Cayuga Creek, but would not affect inflow from the storm drain or outfall ditch that intersect this reach of Cayuga Creek. Eliminating inflow from the upstream portion of Cayuga Creek would eliminate the natural stream current and significantly reduce inflows to this reach. These alterations would cause the isolated riverine stream channel

to develop into a linear, “oxbow”-like feature within the boundaries of the existing Cayuga Creek channel, with a wetland fringe at the toe of the existing stream bank.

Based on the hydrological changes this area would experience and the current condition of other lacustrine habitats in the immediate vicinity, the reach of Cayuga Creek that is currently located south of the southern boundary of the proposed safety area would likely become dominated by *Phragmites* shortly after being isolated. Isolated *Phragmites*-dominated aquatic habitats are generally less attractive to most wildlife than free-flowing stream channels with natural vegetation, so it is unlikely that the isolated portion of the original Cayuga Creek channel that would remain south of the proposed safety area would cause significant impacts to safety related to wildlife.

Relocation and reconstruction would likely result in minor temporary declines in water quality due to the temporary effects on flow and sediment transport downstream. However, these effects would not be expected to violate the NFIA’s existing state multi-sector general permit for stormwater discharges associated with industrial activity (general permit number P-06-102). Erosion and sediment control measures would be implemented during construction to minimize any effects on Cayuga Creek or its tributaries from sedimentation.

The re-located reach would be re-constructed to mimic the stream morphology of the natural channel in order to minimize long-term effects on hydrology and sediment-transport within, upstream, and downstream of the affected reach (Figure 4-3). The current disturbed condition of Cayuga Creek upstream and downstream of the relocation would render the permanent effects of the Proposed Action on water resources insignificant. No unique hydrological characteristics would be lost as a result of the Proposed Action, but some minor long-term effects would occur due to the unavoidable changes that relocation and bank stabilization would have on the natural geomorphic process that drive evolution of the stream channel. Localized bank erosion and/or scour could occur as the channel equilibrates hydrologically to its newly constructed alignment; however, the potential for bank erosion would be minimized through the use of

bioengineered shoreline erosion controls. The availability or quality of surface water resources would not be permanently impaired.

### *Use Classification*

Under the Class C designation, the “best usages” for Cayuga Creek are fishing and recreation. The biological community in Cayuga Creek is characteristic of a highly modified system, so further perturbation associated with shifting Runway 6-24 and establishing declared distances would not result in significant impacts to the fish community in Cayuga Creek or the creek’s recreational value. The airport security measures that preclude the public from accessing the affected section of Cayuga Creek would remain in place; therefore, shifting Runway 6-24 would have no effect on attainment of the Class C usages for which Cayuga Creek has been designated.

### *Floodplain Resources*

Shifting Runway 6-24 and establishing declared distances would convert approximately 1.5 acres of Cayuga Creek’s 100 year floodplain from grassland to runway. This would have a minor affect on the absorptive capacity of the floodplain. However; because the new section of runway would be constructed at ground level and would not pose an impediment to water flow, shifting Runway 6-24 would not significantly affect the floodplain’s primary hydrological function as an auxiliary hydrological conduit to move floodwaters downstream. Therefore, shifting Runway 6-24 would have no significant effect on the hydrological function of the 100-year floodplain at NFIA.

Figure 4-2. Proposed Cayuga Creek Stream Relocation

Figure 4-3. Cross Section of Reconstructed Cayuga Creek Stream Channel

### *Groundwater Resources*

Although shifting Runway 6-24 would add approximately 1.5 acres of impervious surface at the 24 end of the runway, the demolition activities at the 6 end of the runway would convert approximately 3 acres of impervious surface to grassland. Therefore, this project would result in approximately a 1.5-acre overall reduction in impervious surfaces on NFIA property. Therefore this project would cause a minor increase in groundwater recharge potential at NFIA.

#### Project 2: Relocation and Rehabilitation of Taxiway 'K'

Relocating and Rehabilitating Taxiway K would convert 90,000 square feet of managed grassland to pavement, thereby increasing impervious surface and runoff volume and velocity. This project, combined with the runway shift, would result in approximately a 0.5-acre net increase in the area of impervious surface at NFIA. However, due to the small area affected (less than one percent of the land area at NFIA) and the abundance of pervious surfaces (grassland) on the airfield that would retain their full absorptive capacity, these effects would not be significant. 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. This project would also temporarily increase erosion potential in and around the vicinity of Taxiway K, but these effects would be mitigated through erosion and sediment control and other appropriate BMPs. This project would convert approximately 90,000 square feet of grassland to pavement; however, this area is not located within the 100-year floodplain and therefore would have no impacts on use classification or floodplain resources. Therefore, this project would have no significant impact on water resources.

#### Project 3: Property Acquisition

This project would consist solely of a property transfer and would have no effect on water resources.

### **4.6.3 Potential Impact of Shifting Runway 6-24 and Culverting Cayuga Creek**

#### *Surface Water Resources*

The substantive difference between this alternative and the Proposed Action is that 1,800 feet of Cayuga Creek would be culverted in place rather than relocated as it would under the Proposed Action. While the long term effects of the Proposed Action and the culverting alternative would be similar from a basin-wide perspective, culverting the creek would likely have a more significant adverse impact on aquatic habitats in Cayuga Creek than the Proposed Action. Culverting the creek would further confine Cayuga Creek's channel within the culverted reach, while the Proposed Action (relocation of the channel) would retain the connection between Cayuga Creek and its floodplain. Culverting Cayuga Creek would likely increase erosive potential and downcutting downstream of the proposed culvert. Culverting the creek would also displace the channel's natural substrate. The design of the culvert would influence the degree to which this alternative would permanently affect currents and sediment transport within the culverted reach, but the effects of this alternative would likely be more significant than relocating the creek and maintaining it as an open channel. Furthermore, regardless of the culvert design, the culverted section would be permanently shaded which would cause a reduction in primary productivity within the affected reach.

Disturbance of Cayuga Creek's channel in the immediate vicinity of the culvert could cause localized changes in the creek's channel morphology including deepening, scour, or velocity increases in the vicinity of the culvert. Because the Proposed Action and the culverting alternative would both artificially alter the morphology and temporarily affect sediment transport within a relatively short reach of Cayuga Creek, and Cayuga Creek is currently heavily impacted by channel alterations upstream and downstream of the Project area, the Proposed Action and culverting alternative would likely have similar impacts on the overall hydrology of the Cayuga Creek system. However, because culverting the creek has the potential to cause more severe restriction of the channel than the Proposed Action and would shade the affected reach, the culverting alternative would have an adverse impact on Cayuga Creek within the boundaries of NFIA. Culverting the stream and/or mitigation of impacts to instream habitat would require temporary

disturbance of the existing stream channel, which could potentially cause minor temporary effects on flow and sediment transport downstream. In a meeting on March 22, 2005, the USACE indicated that relocating Cayuga Creek would be preferable to the culverting alternative (Appendix B).

### *Use Classification*

Similar to the Proposed Action, this alternative would not affect the suitability of Cayuga Creek to support fishing because the existing airport security measures that preclude the public from accessing Cayuga Creek within the airport boundaries would remain in place. Therefore, this alternative would have no effect on attainment of the Class C usages for which Cayuga Creek has been designated.

### *Floodplain Resources*

The culverts would be appropriately sized to safely accommodate the volume associated with the 100-year storm. This alternative would have no effect on hydrological characteristics of the 100-year floodplain, but it would effectively disconnect the stream from its floodplain within the affected reach.

### *Groundwater Resources*

As under the Proposed Action relocating and rehabilitating Taxiway K would convert 90,000 square feet of managed grassland to pavement, thereby increasing the impervious surface and runoff volume and velocity. Combined with the Culverting Cayuga Creek alternative, this would result in a 0.5-acre net increase in the area of impervious surface at NFIA. However, due to the small area affected (less than 1 % of the land area at NFIA) and the abundance of pervious surfaces (grassland) on the airfield that would retain their full absorptive capacity, these effects would not be significant. The stormwater runoff from the additional impervious surface would be managed using the existing stormwater system. This project would also temporarily increase erosion potential in and around the vicinity of Taxiway K, but these effects would be mitigated through erosion and sediment control and other appropriate BMPs. This project would have no effects on use

classification or floodplain resources. Therefore, it would have no significant impact on water resources.

#### **4.6.4 Potential Impact of Standard Runway Safety Areas for both Runway 6 and Runway 24**

The establishment of standard RSAs for both Runway 6 and Runway 24 would have similar effects on surface water resources as the Proposed Action and Culverting Cayuga Creek alternative. The final decision has not been made regarding whether Cayuga Creek would be relocated or culverted under this alternative. Culverting the creek would impact surface water features similar to the Culverting Cayuga Creek alternative; however, if the creek was relocated the impacts would be similar to those described under the Proposed Action. Under this alternative, an additional 80 linear feet of runway would be demolished at the 6 end. This would further reduce the impervious surface at NFIA by 1 acre and result in an overall decrease in impervious surface by 0.4 acre. The potential effects associated with the relocation and rehabilitation of Taxiway K and the property acquisition would be the same as that described under the Proposed Action. Therefore, the effects of this alternative would include a slight beneficial effect on groundwater recharge potential, and would otherwise be similar to the effects of the Proposed Action or Culverting Cayuga Creek alternative.

#### **4.6.5 No-Action Alternative**

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

##### Project 1: Shift Runway 24 and Relocate Cayuga Creek

The proposed runway shift would replace approximately 67,500 square feet (approximately 1.5 acres) of mowed grassland at the northern end of Runway 6-24 with paved runway. This could potentially impact foraging habitat for bird species that may forage adjacent to the runways, including the state-listed northern harrier, upland sandpiper, grasshopper sparrow, short-eared owl, and horned lark. However, the amount of grassland that would be converted to impervious surface under this action is not sufficiently large (less than 1% of the total land area at NFIA) to constitute a significant loss of habitat for these species at the airport or in the region. Additionally, the conversion of approximately 3 acres of impervious surface to grassland at the 6 end of the runway would offset the loss at the 24 end. There are no federally-listed species known to occur at the NFIA; therefore, this project would have no effect on rare, threatened, or endangered species. In correspondence dated July 17, 2009, the USFWS acknowledged that no further consultation under Section 7 of the Endangered Species Act were required (Appendix B).

Relocation of Cayuga Creek would cause the temporary loss of aquatic habitat within the affected reach of the creek, but this habitat would be re-constructed within the relocated reach. Re-colonization of the re-constructed reach by aquatic flora and fauna would not be immediate, so this action would cause a temporary negative effect on the ecology of Cayuga Creek. The re-constructed reach would mimic the natural morphological and hydrological characteristics of the original reach. NFTA also proposes fish enhancements within the reconstructed creekbed. Specific enhancement measures would be developed through consultation with the USFWS as part of the Section 404 permit application process. Therefore, the lost habitat functions would gradually become re-established in the constructed reach, flora and fauna would colonize the constructed

reach, and no permanent adverse impacts on aquatic resources would be incurred as a result of this project.

Relocation of Cayuga Creek would impact approximately 0.28 acre of riparian wetlands as well as the buffer areas, currently characterized as mowed grassland, along the upland boundary of the wetlands. These impacts would be mitigated by re-creating riparian wetlands and buffers along the re-located section of Cayuga Creek northeast of the 24 end of Runway 6-24 (Figure 2-1). Refer to Section 4.6.2 for a detailed discussion of the proposed creek relocation and mitigation plan.

As a result of the Runway 6-24 shift, vertical obstructions, including several trees, would need to be removed from runway's low-altitude approach and departure paths to reduce the likelihood of inadvertent collisions. The removal of several trees southwest of Runway 6 would potentially remove habitat for some locally common wildlife (no federal or state-listed species use these trees for nesting or other significant activity). This very minor habitat loss would have no significant effect on wildlife at NFIA, as there are many trees in the vicinity of NFIA where displaced individuals could relocate. Wildlife disturbance associated with tree removal would be minimized if conducted during winter, outside the wildlife breeding season.

#### Project 2: Relocation and Rehab of Taxiway 'K'

The impacts of relocating and rehabilitating Taxiway 'K' would be similar to the impacts of shifting Runway 6-24. This project would involve losses of approximately 2.07 acres of mowed grassland that could potentially be used as foraging habitat by several species of grassland birds, but these losses would not be significant because they would not jeopardize the continued presence of these species at the airport, or cause a measurable decrease in the regional populations of these species. There are no federally-listed species known to occur at the NFIA; therefore, this project would have no effect on rare, threatened, or endangered species. In correspondence dated July 17, 2009, the USFWS acknowledged that no further consultation under Section 7 of the Endangered Species Act were required (Appendix B).

### Project 3: Property Acquisition

The addition of the 32-acre parcel to the airport property and maintenance of portions of that parcel as a RPZ would require that no structures be built on the parcel and that the parcel be protected from future development. To the extent that this action would preserve wildlife habitat on this parcel, this project would have a beneficial effect on terrestrial biological resources, and would offset the losses of mowed grassland habitat associated with relocation and rehab of Taxiway K and shifting Runway 6-24. There are no federally-listed species known to occur at the NFIA; therefore, this project would have no effect on rare, threatened, or endangered species. In correspondence dated July 17, 2009, the USFWS acknowledged that no further consultation under Section 7 of the Endangered Species Act were required (Appendix B).

#### **4.7.3. Potential Impacts of Shifting Runway 6-24 and Culverting Cayuga Creek**

The effects of this alternative would be similar to the Proposed Action, except that Cayuga Creek would be culverted in place rather than relocated around the RSA. The potential effects associated with the relocation and rehabilitation of Taxiway K and the property acquisition would be the same as that described under the Proposed Action. The permanent effects on biological resources would be greater under this alternative than the Proposed Action. However, this alternative would not affect rare, threatened, or endangered species at the NFIA.

Culverting Cayuga Creek would have permanent, localized, negative impacts on riparian wetland habitat along the creek bank (3,500 square feet) and on the aquatic ecology of the creek. Culverting the creek would preclude wetland and aquatic vegetation from re-colonizing the affected area after construction was complete by blocking sunlight from the channel, and would likely interfere with the natural sediment transport mechanisms of the creek by constricting the channel and altering flow velocities in the vicinity of the culvert.

Culverting Cayuga Creek would require approval from NYSDEC and USFWS regarding potential impacts to federal and state-listed species and wetlands. During the culvert

design, the NFTA would work with the NYSDEC and USFWS to comply with the applicable regulations during, and following, construction. During the NFTA-USACE meeting dated 22 March 2005, the USACE specified that no federal permitting would be required to culvert Cayuga Creek; however, culverting Cayuga Creek would only be the preferred option if impacts were localized to one area of the creek (Appendix A). Relocating Runway 6-24 would require impacts in multiple areas of the creek; therefore, culverting the creek is not the preferred option.

#### **4.7.4 Potential Impact of Standard Runway Safety Areas for both Runway 6 and Runway**

This alternative would involve the same runway shift as under the Proposed Action and Cayuga Creek alternative. The final decision has not been made regarding whether Cayuga Creek would be relocated or culverted under this alternative. Culverting the creek would impact aquatic species and wetlands similar to the Culverting Cayuga Creek alternative; however, if the creek was relocated the impacts would be similar to those described under the Proposed Action. The potential effects associated with the relocation and rehabilitation of Taxiway K and the property acquisition would be the same as that described under the Proposed Action. However, under this alternative an additional 80 linear feet of runway would be demolished at the 6 end. This would further reduce the impervious surface at NFIA by 1 acre and result in an overall decrease in impervious surface by 0.4 acre. This would slightly increase the amount of potential foraging habitat available to grassland birds and other wildlife at NFIA. However, this increase in habitat would be so minor that it would not affect wildlife use of NFIA. Therefore, this project would not affect rare, threatened, or endangered species at the NFIA.

#### **4.7.5 No-Action Alternative**

Under the No Action Alternative, the biological communities currently present at NFIA would remain unchanged. Thus, the No-Action Alternative would have no effect on terrestrial biological resources.

## **4.8 VISUAL RESOURCES**

### **4.8.1 Significance Criteria**

Visual sensitivity has been defined as the quality and value of the resource based on public perception. The visual sensitivity of an area dictates the significance of impacts to visual resources. Impacts to visual 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.

### **4.8.2 Potential Impacts of the Proposed Action**

#### Project 1: Shift Runway 24 and Relocate Cayuga Creek

Shifting Runway 6-24 and establishment of declared distances would be designed to be visually consistent with the existing runway at the airport. 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 would be no addition of vertical structures that could alter the existing visual horizon. Diverting Cayuga Creek would alter the view of a portion of the creek. However, since visual sensitivity of the area is low, only a small portion of the creek would be diverted, and the overall stream character would be restored after diversion, this impact would be minor and temporary.

- There would be no demolition of structures, landforms, or other features that define the visual landscape.
- As a result of the Runway 6-24 shift, vertical obstructions, including several trees southwest of Runway 6, would need to be removed from runway's low-altitude approach and departure paths to reduce the likelihood of inadvertent collisions with stationary objects. The removal of several trees southwest of Runway 6 would not affect the overall visual character of the site.
- 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.

#### Project 2: Relocation and Rehabilitation of Taxiway 'K'

The relocation and rehabilitation of Taxiway 'K' (including the apron expansion) would have no significant effect on visual resources at the NFIA because:

- There would be no construction or modification of structures, landforms, or other features that interfere with the existing visual landscape. This project would convert mowed grass areas to paved impervious surfaces; however, the area surrounding the proposed Taxiway 'K' is made up of runways, tarmac, aprons, and mowed grass areas and would be overall visually consistent with existing taxiways at NFIA.
- There would be no demolition of structures, landforms, or other features that define the visual landscape. The project would remove a portion of the grassed

areas and increase the amount of paved surfaces within the viewshed; however, these activities would be consistent with the overall 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.

Adverse visual impacts are anticipated 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 and minimized through the use of dust abatement procedures and noise minimization methods (including restricting work to daytime hours). Therefore, this action would have no significant, permanent impact on visual resources at or in the vicinity of NFIA.

#### Project 3: Property Acquisition

The proposed property acquisition would have no impact on visual resources at, or in the vicinity of, the NFIA. No development or modifications of the property would occur so there would be no change to the visual character of the acquired property.

#### **4.8.3 Potential Impacts of Shifting Runway 6-24 and Culverting Cayuga Creek**

This alternative would be similar to the Proposed Action, except that Cayuga Creek would be culverted in place rather than relocated around the RSA. Culverting Cayuga Creek would have an adverse impact on the visual character of the creek; however, the creek is highly channelized with maintained banks and overall visual sensitivity of low so the impacts would be minor. The potential effects associated with the relocation and rehabilitation of Taxiway K and the property acquisition would be the same as that described under the Proposed Action. Similar to the Proposed Action, this alternative would be designed to be visually consistent with the existing runway at NFIA. Therefore, this alternative would have no significant, permanent impact on visual resources at, or in the vicinity of NFIA.

#### **4.8.4 Potential Impact of Standard Runway Safety Areas for both Runway 6 and Runway 24**

This alternative would be similar to the Proposed Action, except that the usable runway length would be reduced by 80 feet. The potential effects associated with the relocation and rehabilitation of Taxiway K and the property acquisition would be the same as that described under the Proposed Action. Similar to the Proposed Action, this alternative would be designed to be visually consistent with the existing runway at NFIA. Therefore, this alternative would have no significant, permanent impact on visual resources at or in the vicinity of NFIA.

#### **4.8.5 No-Action Alternative**

Under this alternative, there would be no construction or demolition activities at 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 impact to visual resources at or in the vicinity of NFIA.

### **4.9 CULTURAL RESOURCES**

#### **4.9.1 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.

#### **4.9.2 Potential Impacts of the Proposed Action**

##### Project 1: Shift Runway 24 and Relocate Cayuga Creek

There is one structure within the Project area that is eligible for listing on the NRHP: the Bell Aerospace Hanger. This building is adjacent to NFIA and within the viewshed of the Runway 6-24 (Figure 2-1). Shifting Runway 6-24 and establishing declared distances would be consistent with the character of the area and will not alter the character of the region. This project would not (1) physically alter, damage, or destroy of all or part of any listed or eligible resource; (2) alter the environmental setting of any listed or eligible cultural resource; (3) add visual, audible, or atmospheric disturbances that are out of character with a listed or eligible property or its setting; or (4) neglect a listed or eligible resource resulting in its destruction or deterioration. Therefore this project would have no adverse effect on architectural resources. In a letter dated April 28, 2009 the New York SHPO concurred that the project will have No Effect on architectural resources in or eligible for inclusion in the National Register of Historic Places.

Previous surveys conducted for archaeological resources within the Project area concluded that the area is sensitive for prehistoric cultural resources (Panamerican, 2004); however, Panamerican concluded that because the area has been disturbed by previous construction, the presence of intact cultural resources is highly unlikely and the Proposed Action would have no adverse effect on archaeological resources. In a letter dated April 28, 2009 the New York SHPO concurred that the project will have No Effect on cultural resources in or eligible for inclusion in the National Register of Historic Places (Appendix B).

#### Project 2: Relocation and Rehab of Taxiway 'K'

This project is consistent with the other structures in the APE and would not (1) physically alter, damage, or destroy of all or part of any listed or eligible resource; (2) alter the environmental setting of any listed or eligible cultural resource; (3) add visual, audible, or atmospheric disturbances that are out of character with a listed or eligible property or its setting; or (4) neglect a listed or eligible resource resulting in its destruction or deterioration. Therefore this action would have no adverse effect on architectural resources.

Previous surveys conducted for archaeological resources within the APE concluded that the area is sensitive for prehistoric cultural resources; however, the area has been disturbed by previous construction and the likelihood of finding intact cultural resources is unknown (Panamerican, 2004). Therefore this action would have no adverse effect on archaeological resources. In a letter dated April 28, 2009 the New York SHPO concurred that the project will have No Effect on cultural resources in or eligible for inclusion in the National Register of Historic Places (Appendix B).

### Project 3: Property Acquisition

The property acquisition would have no adverse effect on cultural resources. This project would only result in a change in property ownership and no alteration to the property would occur. Therefore, there would be no adverse effect on cultural resources as a result of this action.

#### **4.9.3 Potential Impacts of Shifting Runway 6-24 and Culverting Cayuga Creek**

The potential effects of this alternative are similar to the Proposed Action, except that Cayuga Creek would be culverted rather than relocated around the RSA. The potential effects associated with the relocation and rehabilitation of Taxiway K and the property acquisition would be the same as that described under the Proposed Action. There would be slightly less ground-disturbance associated with this alternative because Cayuga Creek would be culverted in place; therefore, the likelihood of disturbance to intact cultural resources, while still unknown, would be slightly less than under the Proposed Action. This alternative would have no adverse effect on cultural and historic resources.

#### **4.9.4 Potential Impact of Standard Runway Safety Areas for both Runway 6 and Runway 24**

Under this alternative, Runway 6-24 would be shifted similar to the Proposed Action; however, the usable length of the runway would be reduced. The potential effects associated with the relocation and rehabilitation of Taxiway K and the property acquisition would be the same as that described under the Proposed Action. The impacts associated with the runway shift would be the same as under the Proposed Action;

therefore, there would be no adverse effect on architectural resources within the Project Area. The likelihood of disturbing intact archaeological resources is unknown, however the area was subject to disturbance by previous construction activities and the likelihood of intact cultural resources occurring in the area that would be disturbed is remote. Therefore, this alternative would have no adverse effect on archaeological resources within the Project Area.

#### **4.9.5 No-Action Alternative**

Under this alternative, there would be no construction or demolition activities at 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 effect on cultural resources at NFIA.

### **4.10 SOCIOECONOMICS**

#### **4.10.1 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.

#### **4.10.2 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 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.

##### *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 Populations*) ethnicity and poverty status in the vicinity of the base 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 Actions. The Proposed Action would be limited to the NFIA; therefore, no populations (minority, low-income, or otherwise) would be disproportionately affected by implementation of the Proposed Action and no significant impact with respect to environmental justice would result. As a result, the Proposed Action would comply with Executive Order 12898.

Implementation of the Proposed Action would not result in any permanent 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.

### *Induced Economic Impacts*

Minor, temporary, positive induced economic effects are expected to result from the Proposed Action. These effects 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 workers during the construction period. This increased spending would be temporary during construction and would not support additional development in the region.

#### **4.10.3 Potential Impacts of Shifting Runway 6-24 and Culverting Cayuga Creek**

This alternative is similar to the Proposed Action, except that Cayuga Creek would be culverted rather than relocated around the RSA. The potential impacts of this alternative would be the same as that described under the Proposed Action. This alternative would not require relocation of residents or local businesses, disrupt local traffic patterns resulting in a 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 on area population or employment. There would be a small increase in local construction employment, but such increases would be minor and temporary due to the limited nature and extent of this alternative. The potential impacts of this alternative related to EOs 12898 and 13045 would be the same as the Proposed Action.

#### **4.10.4 Potential Impacts of Standard Runway Safety Areas for Runway 6 and Runway 24**

This alternative is similar to the Proposed Action, except that the usable length of Runway 6-24 would be reduced by 80 feet. The potential impacts of this alternative would be the same as that described under the Proposed Action. This alternative would not require relocation of residents or local businesses, disrupt local traffic patterns resulting in a 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 on area population or 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 proposed activities. The potential effects of this alternative related to EOs 12898 and 13045 would be the same as the Proposed Action.

#### **4.10.5 No-Action Alternative**

Under this alternative, there would be no construction or demolition activities at 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 NFIA.

### **4.11 HAZARDOUS MATERIAL AND WASTE**

#### **4.11.1 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.

#### **4.11.2 Potential Impacts of the Proposed Action**

##### Project 1: Shift Runway 24 and Relocate Cayuga Creek

Shifting Runway 6-24 and establishing declared distances would not entail activities in the vicinity of any storage tanks or OWS, and would have no impact on hazardous materials and waste associated with these storage units. The proposed shift of Runway 6-24 would occur in the vicinity of ERP Site 10. A groundwater model (Ecology and Environment, 2008) was developed to simulate groundwater flow in the vicinity of ERP Site 10 to determine how the planned relocation of Cayuga Creek might impact groundwater flow at Site 10. The groundwater hydraulics model was calibrated to current site conditions and evaluated the influence of the creek relocation on groundwater flow and quantity in the vicinity of ERP Site 10. The modeling indicates that the

Proposed Action would not divert contaminated water into the relocated stream channel; however, the relocated creek would divert “clean” groundwater away from the collection system thereby reducing dilution of the collected contaminants (Ecology and Environment, 2008). Therefore, ground disruption associated with the proposed construction activities would not adversely affect ERP Site 10. The potential effects would be further minimized by implementing best management practices during creek relocation and consulting with ERP Site 10 remediation specialists during the Final Design phase, to be completed as part of the Section 404 permit process.

#### Project 2: Relocation and Rehabilitation of Taxiway ‘K’

The relocation and rehabilitation of Taxiway ‘K’ would have no effect on hazardous materials and waste at NFIA. The proposed activity does not occur in the vicinity of storage tanks, OWSs, or ERP Site 10; therefore, it would have no effect on hazardous materials and waste.

#### Project 3: Property Acquisition

The property acquisition would have no impact on hazardous materials and waste at NFIA. This project would only result in a change in property ownership and no alteration to the property would occur. Therefore, there would be no impact to hazardous materials and waste as a result of this project.

#### **4.11.3 Potential Impacts of Shifting Runway 6-24 and Culverting Cayuga Creek**

This alternative includes the same runway shift as the Proposed Action; however, Cayuga Creek would be culverted rather than relocated outside the RSA. The potential effects associated with the relocation and rehabilitation of Taxiway K and the property acquisition would be the same as that described under the Proposed Action. The impacts to hazardous materials and waste under this alternative would be similar to that described for the Proposed Action. Minimizing the potential for impacts to ERP Site 1 would be accomplished in a manner similar to that described for the Proposed Action.

#### **4.11.4 Potential Impacts of Standard Runway Safety Areas for Runway 6 and Runway 24**

This alternative also involves the same runway shift as the Proposed Action; however, this alternative results in an 80-foot reduction in the usable runway length. The potential effects associated with the relocation and rehabilitation of Taxiway K and the property acquisition would be the same as that described under the Proposed Action. This project does not occur in the vicinity of storage tanks, OWSs, or ERP Site 1. Therefore, this alternative would have no effect on hazardous materials and waste at NFIA.

#### **4.11.5 No Action Alternative**

Under this alternative, there would be no construction or demolition activities at NFIA, current airport operations would be maintained, and there would be no change to the areas in the vicinity of hazardous waste and material storage at the airport. Consequently, the No-Action Alternative would have no impact on hazardous materials and waste at 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. 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 of the Proposed Action and other recent, current, and future projects in the region.

### **5.1 METHODS FOR CUMULATIVE IMPACTS ANALYSIS**

This cumulative impacts analysis 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 any other known projects planned in the immediate vicinity of NFIA.

### *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*

There are currently several ongoing and planned development projects at the NFIA with the potential for additive and synergistic effects when combined with the Proposed Action including a new terminal facility, relocation of navigational aid system

(NAVAIDS) for Runway 6-24, and maintenance to Runway 10L-28R. The new 66,625 square foot terminal facility is under currently construction and includes a revised aircraft parking apron (192,500 square feet) and additional 230 vehicle parking spaces (92,500 square feet). The NAVAIDS relocation would shift the precision approach path indicators (PAPIs) for Runway 6-24 to accommodate the Runway shift. This would be completed concurrently with, and within the footprint of, the Proposed Action. The action is a partial reconstruction of the Runway 10L-28R runway to update and maintain the existing runway pavement. This project would be completed approximately one year following the Proposed Action. Staging areas for the NAVAIDS and 10L-28R project would be located in existing paved areas and would not impact previously undisturbed land at the airport. The 1994 Airport Master Plan identifies the construction of new conventional and private hangars and T-hangers on the West Ramp following expansion; therefore, this expansion is considered reasonably foreseeable and included in this analysis. The hangars would provide additional capacity for private and corporate aircraft at the NFIA.

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).

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 for the Cumulative Impacts Analysis**

<b>Resource Area</b>	<b>Proposed Action</b>	<b>Cumulative Analysis Required</b>	<b>Rationale for Inclusion or Exclusion</b>
Safety	Beneficial effect	Yes	Permanent effects on safety from one or more alternatives of the project
Air Quality	Temporary adverse impact	Yes	Temporary impacts from the Proposed Action and non-Project-related actions could be additive if they occur concurrently.
Noise	Temporary adverse impact	No	The potential additive effects of the Proposed Action and non-project related actions would not exceed the 65 dB threshold
Land Use	No effect	No	The Proposed Action would have no effect on Land Use; therefore, by definition there cannot be a cumulative effect.
Geological Resources	Temporary adverse impact	No	The footprints of the Proposed Action and non-project related actions would not overlap
Water Resources	Localized adverse impact	Yes	Adverse impact on water resources from the Proposed Action and non-project related actions.
Terrestrial Resources	Temporary adverse impact	Yes	Temporary impacts from the Proposed Action and non-Project-related actions would be close enough in proximity to affect the same ecosystems and wildlife populations
Visual Resource	No effect	No	The Proposed Action would have no effect on Visual Resources; therefore, by definition there cannot be a cumulative effect.
Cultural Resources	No effect	No	The Proposed Action would have no effect on Cultural Resources; therefore, by definition there cannot be a cumulative effect.
Socioeconomics	Temporary beneficial effect	Yes	Temporary effects from the Proposed Action and non-Project-related actions could be additive if they occur concurrently
Hazardous Waste	No effect	No	The Proposed Action would have no effect on Hazardous Waste; therefore, by definition there cannot be a cumulative effect.

### **5.1.2 Cumulative Impacts Analysis**

#### Safety

The Proposed Action would have a beneficial effect on safety by establishing a standard RPZ for Runway 24, reducing the BASH hazard associated with birds that inhabit Cayuga Creek and adjacent habitats, and providing additional wing clearance for aircraft on the West Ramp. None of the actions planned by the NFTA or City of Niagara Falls would have the potential to affect safety at NFIA; therefore, the Proposed Action would not contribute to significant cumulative impacts on safety.

### Air Quality

The Proposed Action would have temporary adverse impacts to air quality resulting from construction equipment emissions. To the extent that these emissions could occur concurrently with other similar construction-related emissions from other non-Project related actions, they could contribute to negative cumulative effects on air quality. The Proposed Action and the non-Project related actions would temporarily emit relatively small quantities of criteria pollutants over a localized area; however, the small quantities of concurrent emissions would not likely prevent the State of New York from meeting the NAAQS and complying with the SIP. Therefore the Proposed Action and non-Project related actions would not contribute to significant cumulative impacts on air quality.

### Water Resources

The Proposed Action could potentially contribute to cumulative impacts on water resources through the following effects:

- temporary disturbance of in-stream habitat during stream re-location or culverting;
- permanent loss and/or perturbation of instream habitat in culverted reaches;
- potential for localized erosion and/or scour to increase sedimentation during equilibration after relocation of Cayuga Creek, and
- reduction in groundwater recharge potential.

The Proposed Action would cause the temporary loss of approximately 2,240 linear feet of aquatic habitat within Cayuga Creek's existing channel, although this habitat would be replaced within the relocated channel. Additionally, the Proposed Action would have the potential to temporarily increase sedimentation in Cayuga Creek, although bioengineered erosion controls would be used to minimize sedimentation within Cayuga Creek and construction best management practices would limit erosion and sedimentation outside the creek during construction..

The actions planned by the City of Niagara Falls and NFTA may have the potential to affect erosion, sedimentation, and aquatic habitat in Cayuga Creek or its tributaries, although these impacts would presumably be minimized through the use of best management practices and the proposed mitigation plan for the relocation of Cayuga Creek. The proposed NFIA terminal facility and associated improvements would be located further than 2,000 feet from Cayuga Creek and no significant impacts would be expected. The construction of new hangars on the West Ramp would occur on impervious surface and therefore would not contribute to increased run-off or sedimentation. The Proposed Action and future non-Project related actions would not have significant effects on water resources, and therefore, would not contribute to significant cumulative impacts on water resources.

### Terrestrial Biological Resources

The Proposed Action would result in a small net increase in grassland habitat at NFIA, as well as temporary losses of wetland and riparian vegetation along the re-located portions of Cayuga Creek, although impacts to wetland habitats would be offset through the proposed mitigation plan. The actions planned by the City of Niagara Falls have the potential to affect terrestrial biological resources depending on the location and orientation of each project. However, these projects would be located in previously developed areas and unavoidable impacts would presumably be minimized through environmentally sensitive site planning. Neither the Proposed Action, including the proposed mitigation plan, nor the non-Project-related actions would have significant effects on terrestrial biological resources. The proposed mitigation plan would restore and enhance the aquatic habitat impacted during stream location and the non-Project related activities are located in previously disturbed areas and would not affect the quality of regional habitat or other regional biological resources. Therefore, there would be no significant additive or synergistic cumulative effects on these resources.

### Socioeconomics

The Proposed Action would have temporary beneficial effects on socioeconomics from the economic activity of construction workers in the vicinity of NFIA. To the extent that

this activity could occur concurrently with other non-Project related actions, it could contribute to cumulative beneficial effect on socioeconomics. Because the economic activity associated with the Proposed Action and the non-Project related actions would be relatively small and occur over a short period, the Proposed Action nor the non-Project related actions would generally not contribute to short-term, beneficial cumulative effects on socioeconomics in the Project vicinity. Occupation of the additional hangars on the West Ramp would increase revenue at the NFIA; contributing to beneficial cumulative socioeconomic effects.

### 5.1.3 Conclusions of the Cumulative Impacts Analysis

This EA concludes that the Proposed Action would have significant beneficial effects on safety, and minor and/or temporary impacts on air quality, noise, geological resources, water resources, and terrestrial biological resources, as well as temporary beneficial effects on socioeconomics (Table 5-2). No reasonably foreseeable future federal or local actions currently proposed in the vicinity of NFIA would have significant synergistic effects on these resources when combined with the effects of the Proposed Action. Therefore, the Proposed Action would not contribute to cumulative effects on these resources.

**Table 5-2 Summary of Results of the Cumulative Impacts Analysis**

<b>Resource Area</b>	<b>Overall Cumulative Impacts</b>
Safety	Beneficial cumulative effect
Air Quality	No significant cumulative impact – maintains conformity with SIP and NAAQS
Noise	No cumulative effect
Land Use	No cumulative effect
Geological Resources	No cumulative effect
Water Resources	No cumulative effect – proposed mitigation plan would enhance and stabilize the stream channel following construction
Terrestrial Resources	No cumulative effect
Visual Resource	No cumulative effect
Cultural Resources	No cumulative effect
Socioeconomics	Temporary beneficial cumulative effect
Hazardous Waste	No cumulative effect

## **6.0 SUMMARY OF FINDINGS**

This EA evaluated the potential environmental effects associated with the Proposed Action and three alternatives on twelve resource areas. The following section presents a summary of findings by resource area.

### **6.1 SUMMARY OF POTENTIAL EFFECTS OF THE PROPOSED ACTION**

#### **6.1.1 Safety**

The Proposed Action would enable Runway 6-24 to comply with the FAA AC 150/5300-13 that requires a 500-foot by 1,000-foot RSA beyond each end of the runway. This would improve safety by bringing the RSAs for Runway 6-24 into compliance with FAA standards and providing an unobstructed area large enough to halt aircraft in the event of an overrun or undershoot with minimal risk to people and property. Relocating Cayuga Creek around the RSA would decrease the BASH potential at the 24 end of the Runway. The removal of several trees southwest of Runway 6 would remove potential vertical intrusions from the aircraft approach and departure routes.

The Taxiway K expansion would increase available space for T-hangers, other aircraft storage areas and the maneuverable area for general aviation aircraft moving between the parking area and the runways. The property acquisition would provide the approximately 5 acres necessary for the standard RPZ at the 24 end of the runway. The property acquisition would also decrease the potential for vertical encroachment into the low-altitude approach and departure vectors for Runway 6-24, as well as prevent lateral encroachment into the Runway 10-28 RPZ from the north. Therefore, the Proposed Action would have a beneficial effect on safety.

#### **6.1.2 Air Quality**

The NFIA is not a major source of air emissions and is therefore not required to have a Title V permit to operate. 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 PM<sub>10</sub> and NO<sub>x</sub> during construction; however, the Proposed Action would not

increase ambient air pollution concentrations above any NAAQS, would not contribute to an existing violation of any NAAQS, would not interfere with, or delay, the State of New York meeting the NAAQS and complying with the SIP, or impair visibility within a PSD Class 1 area. Further, the temporary increase in air emissions could be minimized through best management practices such as soil stabilization, watering exposed soils, worker ride sharing, and seasonal scheduling of construction. Therefore, the Proposed Action would have no significant impact on air quality.

### **6.1.3 Noise**

Under the Proposed Action, the area experiencing noise levels at 65 dB would shift 450 ft to the northeast. The number of operations would not change. The total area of the 65 dB contour would not change; however, the area at the 24 end of the runway that is subject to noise levels greater than 65 dB would increase, and the area at the 6 end of the runway that is subject to noise levels greater than 65 dB would correspondingly decrease. There would be no off-site noise impacts at the 24 end of the runway and there are no sensitive noise receptors on that property. The use of heavy equipment for site preparation and development would generate noise exposure above ambient levels during the construction period; however, this would be short-term. The Proposed Action would have no significant impact on noise.

### **6.1.4 Land Use**

The Proposed Action consists of a modification of existing facilities and would be consistent with current land use policies at and adjacent to the NFIA, would not preclude the viability or continuation of current land use, and would not conflict with planning criteria established for the safety and protection of human life and property. Further, the Runway 6-24 shift is intended to benefit public health and safety by providing standard RSAs at each end of Runway 6-24. The expansion of Taxiway K is included in the current master plan for NFIA and, as an aviation-related project, is inherently consistent with the overall land use at the NFIA. The proposed property acquisition would not result in a change in the current use, or zoning, of the parcel. Therefore, the Proposed

Action would have no adverse impact on land use patterns at, or in the vicinity of, the NFIA.

### **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 BMPs such as erosion and sedimentation control and dust abatement would minimize the temporary impacts on soils in affected areas. Thus, the Proposed Action would have no significant impact on geological resources.

### **6.1.6 Water Resources**

Shifting Runway 6-24 would have a temporary, localized effect on water resources through the relocation of Cayuga Creek. The reconstructed creek would mimic the stream morphology of the natural channel in order to minimize long-term hydrological effects within, upstream, and downstream of the affected reach. The Proposed Action would isolate and reduce inflows to the reach south of the southeastern boundary of the proposed RSA. These impacts would cause the isolated reach to develop into a *Phragmites*-dominated, linear, “oxbow”-like feature within the boundaries of the existing channel, with a wetland fringe at the toe of the existing stream bank.

The Proposed Action would require a Section 404 permit from the USACE and NFTA has consulted with the USACE regarding a mitigation plan for the Project. The proposed mitigation plan includes reconstructing the creek channel with bioengineered shore protection and fish habitat enhancements to minimize the impact of filling the existing creek channel. In addition, NFTA is considering additional bioengineered shore protection approximately 200-300 feet downstream and an off-site restoration project. No unique hydrological characteristics would be lost as a result of the Proposed Action, nor would the availability or quality of surface water resources be permanently impaired. The Proposed Action could result in minor soil erosion and slight increases in storm water runoff; however, the proposed mitigation plan includes bioengineered shoreline erosion controls to minimize sedimentation downstream.

The Proposed Action would result in approximately a 0.5-acre net increase in the area of impervious surface at the NFIA. However, due to the small area affected (less than 1 % of the land area at NFIA) and the abundance of pervious surfaces (grassland) on the airfield that would retain their full absorptive capacity, these effects would not be significant. Implementation of best management practices erosion and sedimentation control, bank stabilization, construction during no-flow and low-flow periods, and minimizing riparian disturbance during construction during construction activities would ensure that the Proposed Action would have no significant adverse impact on water resources. Cayuga Creek would maintain its current hydrologic characteristics (including flow rate) throughout the construction period.

### **6.1.7 Biological Resources**

The Proposed Action would have no significant adverse effect on biological resources. The Proposed Action would occur primarily on paved land and result in approximately a 0.5-acre net increase in the area of impervious surface at the NFIA; however, due to the small area affected (less than 1 % of the land area at NFIA) these effects would not be significant.. The plant species found in the affected areas are regularly disturbed by mowing, are common in the region, and do not provide significant wildlife habitat. Relocation of Cayuga Creek would cause the temporary loss of wetland and aquatic habitat within the affected reach of the creek, but this habitat would be re-constructed within the relocated reach. Re-colonization of the re-constructed reach by aquatic flora and fauna would not be immediate, so this action would cause a temporary negative effect on the ecology of Cayuga Creek. Therefore, construction would have a short-term impact on vegetation and wildlife. No Federal or State-listed threatened or endangered species occur at or in the vicinity of the NFIA; however, several state-listed species are known to forage in the area. The Proposed Action would have no effect on Federally-listed species and since less than one percent of the land area at NFIA would be affected, the Proposed Action is not likely to adversely affect state-listed threatened and endangered species. In correspondence dated July 17, 2009, the USFWS acknowledged that no further consultation under Section 7 of the Endangered Species Act were required (Appendix B).

A meeting between NFTA and the USACE on March 22, 2005 identified the Proposed Action, relocation of Cayuga Creek, may be the preferred alternative. On July 1, 2008, the USACE indicated that the proposed mitigation plan would be something they could seriously consider as a mitigation approach during the Section 404 permit process (Appendix B).

### **6.1.8 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 in the area. The Proposed Action would not involve construction, modification, or demolition of structures, landforms, or other features that would interfere with the existing visual landscape or adversely impact the eligibility of adjacent structures for the National or State Registers of Historic Places. Therefore, the Proposed Action would have no significant impact on visual resources.

### **6.1.9 Cultural Resources**

The Proposed Action would not impact any structures that are eligible for the NRHP. The Proposed Action will not (1) physically alter, damage, or destroy of all or part of any listed or eligible resource; (2) alter the environmental setting of any listed or eligible cultural resource; (3) add visual, audible, or atmospheric disturbances that are out of character with the listed or eligible property or its setting; or (4) neglect the listed or eligible resource resulting in its destruction or deterioration. In addition, no cultural artifacts or Native American resources have been identified at the NFIA. The Proposed Action is consistent with the current local and regional setting and would not affect the eligibility of any adjacent potential sites. Therefore, the Proposed Action would have no impact on cultural resources. In a letter dated April 28, 2009 the New York SHPO concurred that the project will have No Effect on cultural resources in or eligible for inclusion in the National Register of Historic Places (Appendix B).

#### **6.1.10 Socioeconomic Resources**

The Proposed Action would not cause adverse social or socioeconomic impacts on communities surrounding the airport. 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 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 Action would result in a temporary increase in construction employment; however, this would cease upon completion of the proposed construction activities. The Proposed Action would have positive, short-term local and regional economic effects associated with purchases of supplies from local vendors as well as meals, gasoline, and other amenities to support the construction workers during this period. The Proposed Action would not disproportionately disadvantage any populations or children. Therefore, the Proposed Action would have a temporary, beneficial effect on Socioeconomic Resources.

#### **6.1.11 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 Action. The proposed relocation of Runway 6-24 occurs in the vicinity of ERP Site 10; however, groundwater modeling indicates the relocated stream would likely not affect groundwater flow within the area of contaminations and that the stream relocation would also potentially reduce infiltration of clean groundwater into the contaminated area. The potential for the Proposed Action to impact ERP Site 10 will be further reviewed during Final Design as part of the Section 404 permit process for the Proposed Action. Therefore, the Proposed Action would have no impact on hazardous waste.

## **6.2 SUMMARY OF ALTERNATIVES**

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

### **6.2.1 Shifting Runway 6-24 and Culverting Cayuga Creek**

This alternative includes the same runway shift as the Proposed Action; however, Cayuga Creek would be culverted in place, rather than relocated around the RSA. The impacts associated with this alternative would be similar to the Proposed Action on a watershed scale, but culverting Cayuga Creek would have negative effects that would not be incurred under the Proposed Action. Constriction of Cayuga Creek's channel would be more severe under this alternative, and culverting the creek would result in a permanent reduction of primary productivity in the vicinity of the culvert by precluding aquatic vegetation from re-colonizing the affected area after construction. This alternative would also likely interfere with the natural sediment transport mechanisms of the creek to a greater extent than the Proposed Action, although the severity of this impact would be somewhat controlled by the culvert design. This alternative would result in a 0.5-acre net increase in impervious surface at NFIA. However, due to the small area affected (less than 1 % of the land area at NFIA) and the abundance of pervious surfaces (grassland) on the airfield that would retain their full absorptive capacity, these effects would not be significant. During a meeting on March 22, 2005, the USACE indicated that the relocation of Cayuga Creek is preferable when compares to the culverting alternative (Appendix B).

There would be short-term, adverse impacts associated with air quality and noise; however, these impacts would cease upon completion of the proposed activities. This alternative would not increase ambient air pollution concentrations above any NAAQS, would not contribute to an existing violation of any NAAQS, would not interfere with, or delay, the State of New York meeting the NAAQS and complying with the SIP, or impair visibility within a PSD Class 1 area. This alternative would not significantly alter the storage, handling, disposal, or transportation of hazardous materials and wastes at NFIA and therefore would have no impact on hazardous waste. This alternative would also

result in a short-term increase in employment and spending in the vicinity of NFIA. This increase would be for the duration of the construction activities, but there would be no permanent increases in personnel or spending at the airport as a result of this alternative.

### **6.2.2 Standard Runway Safety Areas for both Runway 6 and Runway 24**

This alternative also involves the same runway shift as the Proposed Action and the Culverting Cayuga Creek Alternative. A final decision has not been made regarding whether Cayuga Creek would be relocated or culverted under this alternative. Culverting the creek would impact surface water features, aquatic species, and wetlands similar to the Culverting Cayuga Creek Alternative; however, if the creek were relocated the impacts would be similar to those described under the Proposed Action.

For the purposes of this analysis, we assume that the impacts of this alternative on Cayuga Creek would be similar to impacts that would occur under the Proposed Action. This alternative would not utilize declared distances, however, and would result in an 80-foot reduction in the length of Runway 6-24. This would have an adverse impact on safety because the current runway is not long enough to support all aircraft that utilize the NFIA. Reducing the total runway length, as opposed to the usable length, would decrease operational efficiency and provide less space for aircraft take-offs and arrivals, as opposed to only impacting arrivals as described under the Proposed Action. The establishment of standard RSAs for both Runway 6 and Runway 24 would have no significant impacts on surface water resources. The additional reduction in runway length would further reduce the impervious surface at NFIA by one acre compared to the Proposed Action and the Shifting Runway 6-24 and Culverting Cayuga Creek Alternative, and result in an overall decrease in impervious surface by 0.4 acre from existing conditions. This alternative could potentially cause minor decreases in runoff from the vicinity of the current Taxiway J, but this decrease would be too small to affect surface water quality in Cayuga Creek.

There would be short-term, adverse impacts associated with air quality and noise as a result of this alternative; however, these impacts would cease upon completion of the construction activities. This alternative would decrease the area of the 65 dB contour at

the 6 end of the runway corresponding with the 80-foot reduction in runway length. This alternative would not increase ambient air pollution concentrations above any NAAQS, would not contribute to an existing violation of any NAAQS, would not interfere with, or delay, the State of New York meeting the NAAQS and complying with the SIP, or impair visibility within a PSD Class 1 area. This alternative would increase the amount of potential foraging habitat available to state-listed bird species at NFIA (0.4 acre increase in grassland). This alternative would not significantly alter the storage, handling, disposal, or transportation of hazardous materials and wastes at the NFIA and therefore would have no impact on hazardous waste. This alternative would also result in a short-term increase in employment and spending, but there would be no permanent addition of personnel or spending under this alternative.

### **6.2.3 No-Action Alternative**

The No-Action Alternative would avoid the temporary negative impacts to air quality, noise, geology and soils, water resources, and terrestrial resources. The adverse effects of the Proposed Action are minimal; therefore, the environmental benefits associated with this alternative relative to the Proposed Action are minimal. This alternative, however, would have an adverse impact on safety as the Runway 6-24 RSA would not comply with FAA safety regulations (AC 5300/13) and would also not meet the defined purpose and need of the project.

**Table 6-1. Comparison of Alternatives**

<b>Resource Area</b>	<b>Proposed Action</b>	<b>Shift Runway 6-24 and Culvert Cayuga Creek</b>	<b>Standard RSA for Runway 6 and Runway 24</b>	<b>No-Action Alternative</b>
Achieve Project Purpose	Yes	Yes	Partially	No
Safety	Beneficial effect	Beneficial effect	Adverse impact	Adverse impact
Air Quality	Temporary adverse effect	Temporary adverse impact	Temporary adverse impact	No effect
Noise	Temporary adverse effect	Temporary adverse impact	Temporary adverse impact	No effect
Land Use	No effect	No effect	No effect	No effect
Geological Resources	No adverse impact	No adverse impact	No adverse impact	No effect
Water Resources	No significant impact	Localized adverse impact	Minor adverse impact	No effect
Biological Resources	No effect	No effect	No effect	No effect
Visual Resources	No effect	No effect	No effect	No effect
Cultural Resources	No adverse effect	No adverse effect	No adverse effect	No effect
Socioeconomics	Temporary beneficial effect	Temporary beneficial effect	Temporary beneficial effect	No effect
Hazardous Waste	No effect	No effect	No effect	No effect

## 7.0 SPECIAL PROCEDURES

The proposed activities would not result in any significant adverse effects. Mitigation measures and special procedures will be incorporated into the design and construction of the selected alternative. A summary of these measures follows.

**Safety.** The NFIA has an active Wildlife Management program in place to limit the potential safety risks associated with wildlife (specifically birds) aircraft strikes. These procedures would continue to be implemented under the Proposed Action.

**Air Quality.** Temporary increases in air emissions would be minimized through best management practices such as soil stabilization, watering exposed soils, worker ride sharing, and seasonal scheduling of construction.

**Geology and Soils.** Construction BMPs, such as erosion and sediment control and watering dry soils, should be implemented for all projects associated with the Proposed Action to ensure the minimization of erosion and sediment control in Cayuga Creek.

**Water Resources.** Construction BMPs, such as erosion and sedimentation control, bank stabilization, limiting construction to no-flow and low-flow periods, and minimizing riparian disturbance during construction, should be implemented for all projects associated with the Proposed Action to ensure the minimization of storm water and sediment runoff to Cayuga Creek. Necessary stormwater management and sediment and erosion control permits would be obtained from NYSDEC prior to construction. The Project also requires a Section 404 permit from the USACE.

**Cultural Materials.** In the event that cultural materials (unusual amounts of shell or non-native stone), other related materials, or human remains are 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.

**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.

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