4. Environmental Overview

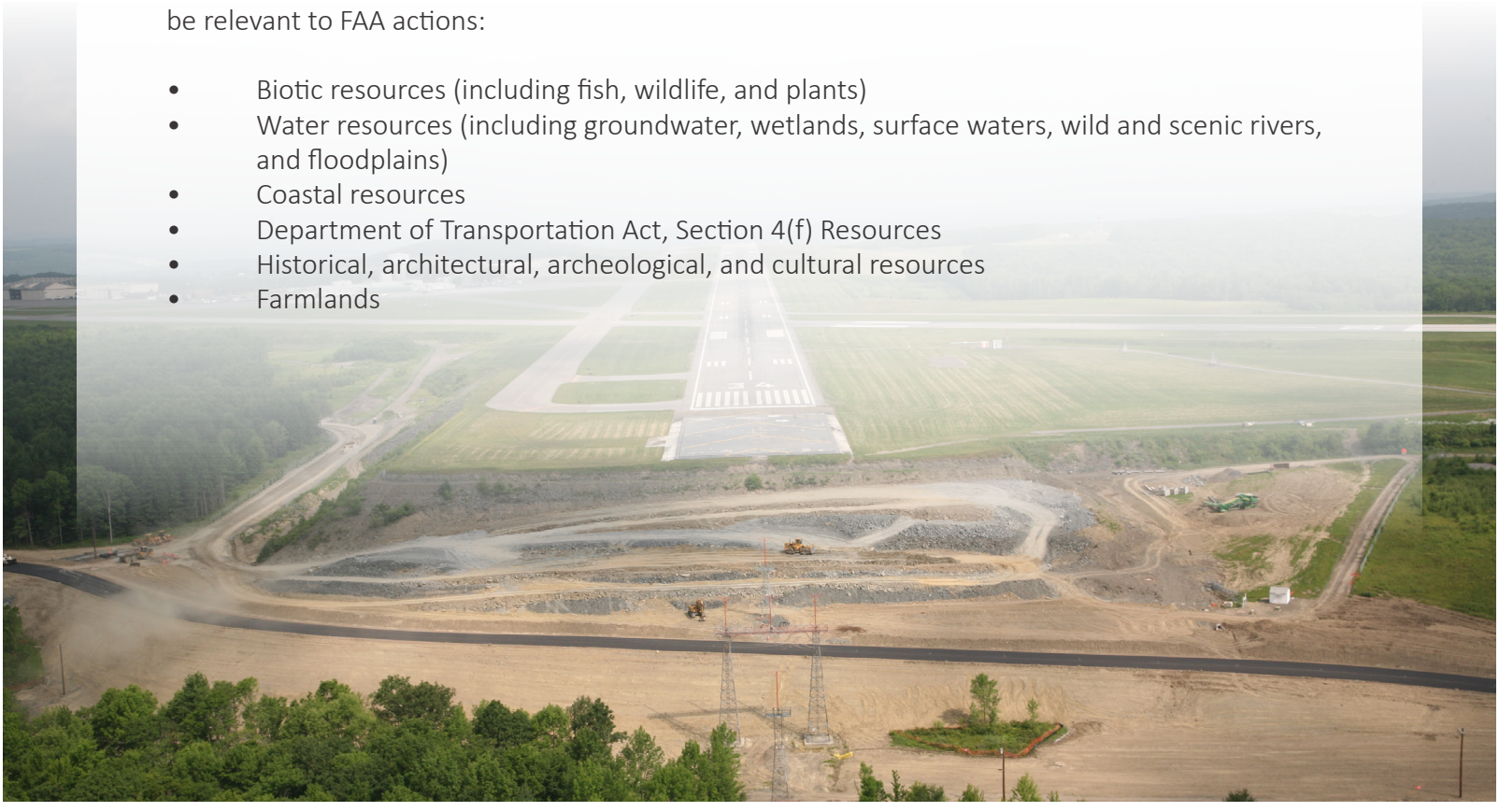
4.1. INTRODUCTION

The operation and development of an airport has the potential to affect neighboring land-uses and natural and human environments, which are of fundamental concern in the airport planning process. Therefore, it is imperative to identify the resources and potential impacts to the environment and surrounding community during the initial stages of the planning process. This allows airport planners and engineers to incorporate measures in accordance with federal, state, and local rules and regulations to avoid, minimize, or mitigate potential impacts to the environment.

The National Environmental Policy Act (NEPA) of 1969 requires that all federal agencies consider the potential impacts their projects and policies have on the environment. The Federal Aviation Administration (FAA), an agency of the United States Department of Transportation (USDOT), has issued Order 1050.1F, Environmental Impacts: Policies and Procedures (effective date July 17, 2015), which ensures all FAA actions comply with NEPA. The FAA has also issued Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions (effective date April 28, 2006). FAA Order 5050.4B guides NEPA compliance specifically for major federal actions at public-use airports.

FAA Orders 1050.1F and 5050.4B identify environmental categories that must be considered in relation to a proposed action to determine whether a significant impact would result and determine what actions would be appropriate to avoid or minimize an impact's effect. FAA Order 1050.1F specifies the threshold of significance for each of the categories addressed.
The following is a list of environmental impact categories, identified in Order 1050.1F, that may be relevant to FAA actions:

- Biotic resources (including fish, wildlife, and plants)
- Water resources (including groundwater, wetlands, surface waters, wild and scenic rivers, and floodplains)
- Coastal resources
- Department of Transportation Act, Section 4(f) Resources
- Historical, architectural, archeological, and cultural resources
- Farmlands



- Land use
- Noise and noise-compatible land use
- Visual effects (including light emissions)
- Air quality
- Hazardous materials, solid waste, and pollution prevention
- Energy supplies and natural resources
- Climate
- Socioeconomics, environmental justice, and children's environmental health and safety risks

This chapter provides a summary of the environmental conditions and constraints at the Greater Binghamton Airport (BGM or the Airport). The information provided in this chapter will be carefully considered as part of the alternatives analysis that will be completed for this Master Plan Update (MPU). Future airport development proposed in this MPU will be reviewed in further detail in the subsequent environmental documentation to satisfy the requirements of NEPA. The information provided in this chapter is based on information obtained from the Airport and appropriate federal, state, and local agencies.

4.2. BIOTIC RESOURCES

Biotic resources refer to the various types of flora (plants) and fauna (fish, birds, reptiles, amphibians, mammals, etc.), including state and federally listed threatened and endangered species, in a particular area. It also encompasses the habitats supporting the various flora and fauna including rivers, lakes, wetlands, forests, and other ecological communities. Airport projects can affect these ecological communities and thereby affect vegetation and wildlife populations.

4.2.1. Ecological Communities

Most of the Airport and adjacent areas have been disturbed by airport and commercial development, or past quarry, agricultural or forestry operations. The major ecological community cover types on Airport property consist of maintained grassland, scrub/ shrubland, mixed forest, quarry lands, and paved/ gravel surfaces. All habitats identified at the Airport are common and secure within the region.

There are no habitats located on the site that are designated as "critical habitat" for any state or federally listed threatened or endangered species, or species of special concern. State or federally listed threatened or endangered species or species of special concern are discussed in Section 4.2.2.1. Further information regarding state and federally regulated waterways and wetlands is presented in Section 4.3.2 and Section 4.3.3.

4.2.2. Flora and Fauna

The Airport property is comprised of predominately maintained grasslands that are dominated by cool season grasses and forbs such as Kentucky bluegrass (*Poa pratensis*), red fescue (*Festuca rubra*), meadow fescue (*Schedonorus pratensis*), quack grass (*Elymus repens*), perennial ryegrass (*Lolium perenne*), common dandelion (*Taraxacum officinale*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), hedge bedstraw (*Galium mollugo*), English plantain (*Plantago lanceolata*), and birdsfoot trefoil (*Lotus corniculatus*). The undeveloped portions of Airport

property consist primarily of mixed forest dominated by northern red oak (*Quercus rubra),* white oak (*Quercus alba*), red maple (*Acer rubrum*), sugar maple (*Acer saccharum*), white ash (*Fraxinus americana*), green ash (*Fraxinus pennsylvanica*), eastern hemlock (*Tsuga canadensis*), white pine (*Pinus strobes*), red pine (*Pinus resinosa*), white spruce (*Picea glauca*), Norway spruce, (*Picea abies*), quaking aspen (*Populus tremuloides*), and eastern cottonwood (*Populus deltoides*) with interspersed streams and forested, scrub-shrub, and emergent wetlands. Additional habitats include maintained grasslands and old field communities.

Based on a review of the Airport's 2005 *Wildlife Hazard Assessment* (WHA) conducted by the US Department of Agriculture- Wildlife Services, the most common bird species found on Airport property were American crow (*Corvus brachyrhynchos*), European starling (*Sturnus vulgaris*), barn swallow (*Hirundo rustica*), tree swallow (*Tachycineta bicolor*), mourning dove (*Zenaida macroura*), and killdeer (*Charadrius vociferus*), while observed mammals included striped skunk (*Mephitis mephitis*), woodchuck (*Marmota monax*), eastern cottontail (*Sylvilagus floridanus*), and red fox (*Vulpes vulpes*). Based on onsite observations, the Airport's unfenced outparcels support the same species, as well as other common mammal species such as white-tailed deer (*Odocoileus virginianus*), eastern grey squirrel (*Sciurus carolinensis*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), beaver (*Castor canadensis*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), fisher (*Pekania pennant*), and many species of rodents. The Airport's outparcels contain a mix of habitats that are supportive of a variety of grassland, shrubland and woodland bird species.

Information on potential rare, threatened, and endangered species on, or in the vicinity of, the Airport is provided in the following sub-section.

4.2.2.1. Threatened and Endangered Species

The Endangered Species Act (ESA) directs all federal agencies to work to conserve federally listed endangered and threatened species and to use their authorities to further the purposes of the ESA. Section 7 of the ESA, titled "*Interagency Cooperation*," is the mechanism by which federal agencies ensure the actions they take, including those they fund or authorize, do not jeopardize the existence of any federally listed species. Endangered species are those which are in danger of extinction throughout their range or a significant portion of its range. Threatened species are those which are likely to become endangered within the foreseeable future throughout all or a significant portion of their range. Candidate species are species for which the United States Fish and Wildlife Service (USFWS) has sufficient information on the biological vulnerability and threats to support issuance of a proposal list, but issuance of a proposed rule is currently precluded by higher priority listing actions. Candidate species do not receive substantive or procedural protection under the ESA. However, USFWS does encourage federal agencies and other appropriate parties to consider these species in the planning process.

New York State regulation 6 NYCRR Part 182 prohibits the take or engagement in any activity that is likely to result in a take of any state-listed threatened or endangered species. Species listed as endangered in New York are native species in imminent danger of extirpation or extinction in New York, or are species listed as threatened or endangered by the USFWS. Species listed as threatened in New York are native species that are likely to become an endangered species within the foreseeable future in New York. Species listed as species of special concern are native species that are at risk of becoming threatened in New York. Fauna classified as species of special concern do

not qualify as either endangered or threatened but have been determined by the New York State Department of Environmental Conservation (NYSDEC) to require some measure of protection to ensure that the species does not become threatened in the future. Species of special concern are considered "protected wildlife" under Article 11 of the Environmental Conservation Law (ECL).

In accordance with FAA CertAlert No. 06-07, *Requests by State Wildlife Agencies to Facilitate and Encourage Habitat for State-Listed Threatened and Endangered Species and Species of Special Concern on Airports*, the Airport should not consider any request by state agencies to adopt habitat management techniques that may increase wildlife hazards and be inconsistent with safe Airport operations.

McFarland Johnson conducted a review of the NYSDEC Environmental Resource Mapper on January 15, 2019. The review did not indicate any known state or federally listed threatened or endangered species, or species of special concern, in the vicinity of the Airport.

An Official Species List from the USFWS was obtained on November 1, 2019 and is included in Appendix D. The list indicates that there are no threatened, endangered, or candidate species within the area.

As specific Airport development alternatives are identified and considered, the potential to affect State or federally listed rare, threatened, and endangered species will be re-assessed on an individual basis and in consultation with the NYSDEC, USFWS, and FAA.

4.3. WATER RESOURCES

This section discusses potential affects to water resources including groundwater, wetlands, surface waters (streams, rivers, ponds, and lakes), and floodplains.

4.3.1. Groundwater

Groundwater serves as an important potable water supply for many individual households, small communities, and larger municipalities. Potential impacts from airport development projects can include reduced groundwater recharge and potential contamination through chemical, toxin, or other pollutant releases.

The Environmental Protection Agency (EPA) Sole Source Aquifer (SSA) program was established under the Safe Drinking Water Act (SDWA). According to the EPA, an SSA is defined as one that supplies at least 50 percent of the drinking water for its service area, and wherein there is no reasonably available alternative drinking water sources should the aquifer become contaminated. The SSA program allows for EPA review of federally funded projects that have the potential to affect designated SSAs and their source areas.

New York has several programs designed to protect groundwater, most notably the Water Quality Standards Program (6 NYCRR Parts 700-706) and the Aquifer Vulnerability Assessment requirement under New York's State Environmental Quality Review Act (SEQR). In addition, the NYSDEC protects designated Primary and Principal Aquifers as defined under Section 2.1.3 of the Division of Water Technical & Operational Guidance Series. A Primary Aquifer is one that is highly

productive and is currently being utilized as a source of water supply by a major municipal water supply system. A Principal Aquifer is defined as an aquifer that is or could potentially be highly productive but is not currently intensely used as a source of water for a major municipal water system.

The Airport is situated over the "Clinton Street Ballpark Aquifer," an EPA designated sole-source aquifer pursuant to Section 1424(e) of the SDWA. The Airport does not overly any state designed Primary or Principle Aquifers as defined by the NYSDEC under Section 2.1.3 of the Division of Water Technical & Operational Guidance Series.

Future proposed projects will take measures in design and construction to avoid, minimize or mitigate any possible adverse impacts to these groundwater aquifers. Future projects at the Airport that have the potential to affect groundwater resources, including federally designated aquifers, will be evaluated in coordination with the EPA and FAA.

4.3.2. Wetlands

The United States Army Corps of Engineers (USACE) regulates activities in wetlands that have a significant nexus to Traditional Navigable Waters of the United States (TNWs) under Section 404 of the Clean Water Act (CWA). The USACE requires that an area have hydrophytic vegetation primacy, hydric soils, and wetland hydrology present in order to be considered a wetland.

The NYSDEC also regulates certain wetlands within New York State under Article 24 of the Environmental Conservation Law (ECL), often referred to as the "Freshwater Wetlands Act." The NYSDEC regulates those wetlands within the state that are larger than 12.4 acres (5 hectares) in size, and certain smaller wetlands of unusual local importance. The NYSDEC also regulates an adjacent area of 100 feet to provide protection for the wetland. The Freshwater Wetlands Act requires the NYSDEC to map those wetlands protected by the state on New York State Freshwater Wetland Maps in order to be provided protection.

In addition, Executive Order (EO) 11990 - *Protection of Wetlands*, states that federal agencies shall provide leadership and shall act to the destruction, loss, or degradation of wetlands, and to preserve and enhance natural and beneficial values of wetlands in carrying out the agency's responsibilities. Under EO 11990, wetlands are defined as those areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.

Review of the New York State Freshwater Wetland mapping of the Airport and adjacent lands indicates there are no wetlands regulated by the NYSDEC under Article 24 of the Environmental Conservation Law located on or immediately adjacent Airport property.

A wetlands and surface waters delineation of Airport owned property was performed by McFarland Johnson over a period of time from the fall of 2017 to the spring of 2019. The wetlands were delineated through field investigations of vegetation, soils, and hydrology in accordance with the 1987 *United States Army Corps of Engineers Wetlands Delineation Manual* (1987 USACE Manual) and 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (2012 Regional Supplement).

Numerous wetlands and surface waters were identified during the delineation effort. The overall location of wetlands and streams on Airport owned property is shown as **Figure 4-1**. Also, the approximate locations of the identified wetland and surface water resources are shown in **Figure 4-2A**, **Figure 4-2B**, and **Figure 4-2C**, Delineated Wetlands and Waterways Maps.

The jurisdictional statuses and boundaries for all wetlands will need to be determined by the USACE. However, it is the opinion of McFarland Johnson that majority of the identified wetlands would likely be considered to have significant nexuses to a TNW and are likely jurisdictional under Section 404 of the CWA.

Future proposed projects will take measures in design and construction to avoid, minimize, or mitigate any possible adverse impacts to wetland resources to the degree possible. The use of Best Management Practices (BMPs) during construction projects will minimize indirect impacts to wetland resources. Projects that have no practicable alternatives to avoid direct impacts to federally regulated wetlands will require a Section 404 permit from the USACE and Section 401 WQC from the NYSDEC. In addition, when impacts to wetlands cannot be avoided, an EO 11990 "Wetland Finding" must be prepared to document compliance with the order and that the wetland impacts are justified.

Compensatory wetland mitigation may be required as a permit condition depending on the specific details of the proposed project(s). Mitigation is required by the USACE when impacts to federally regulated wetlands exceed 0.10 acres. Wetland mitigation can come in the form of restoration, establishment, enhancement, and/or preservation of wetlands. Typical mitigation ratios recommended by the USACE are shown in **Table 4-1**.

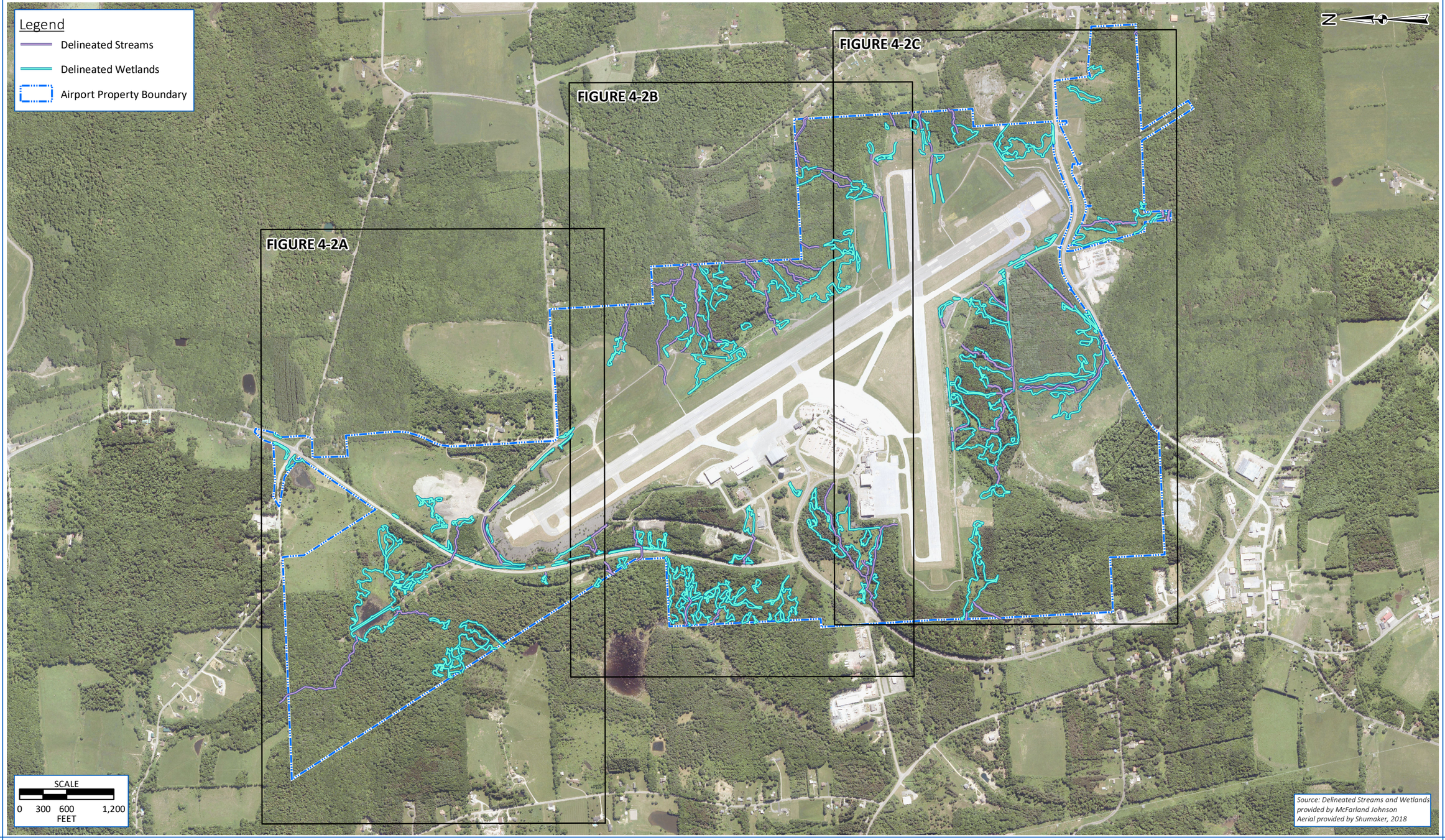
Table 4-1: Typical USACE Recommended Wetland Mitigation Ratios

Wetland Type	Restoration (Re-Establishment)	Creation (Establishment)	Enhancement (Rehabilitation)	Preservation (Protection/ Management)
Open Water (PUB)	1:1	1:1	Project Specific	Project Specific
Emergent (PEM)	2:1	2:1 to 3:1	3:1 to 10:1	15:1
Scrub-Shrub (PSS)	2:1	2:1 to 3:1	3:1 to 10:1	15:1
Forested (PFO)	2:1 to 3:1	3:1 to 4:1	5:1 to 10:1	15:1

Source: Excerpted from USACE's "New England District Compensation Mitigation Guidance" dated July 20, 2010

Based on regulations promulgated by the Department of Defense and Environmental Protection Agency in *Mitigation for Losses of Aquatic Resources; Final Rule* (Fed. Reg. Vol. 73, No. 70, April 10, 2008) a graphic presenting the hierarchy of preferred wetland mitigation options for impacts to federally regulated wetlands is presented as **Figure 4-3**.

Figure 4-1: Overall Wetlands and Streams Delineation Map



Document Path: K:\BING\T-18241.02 Master Plan Update\Draw\GIS\BGM-WetlandOverall11x17.mxd

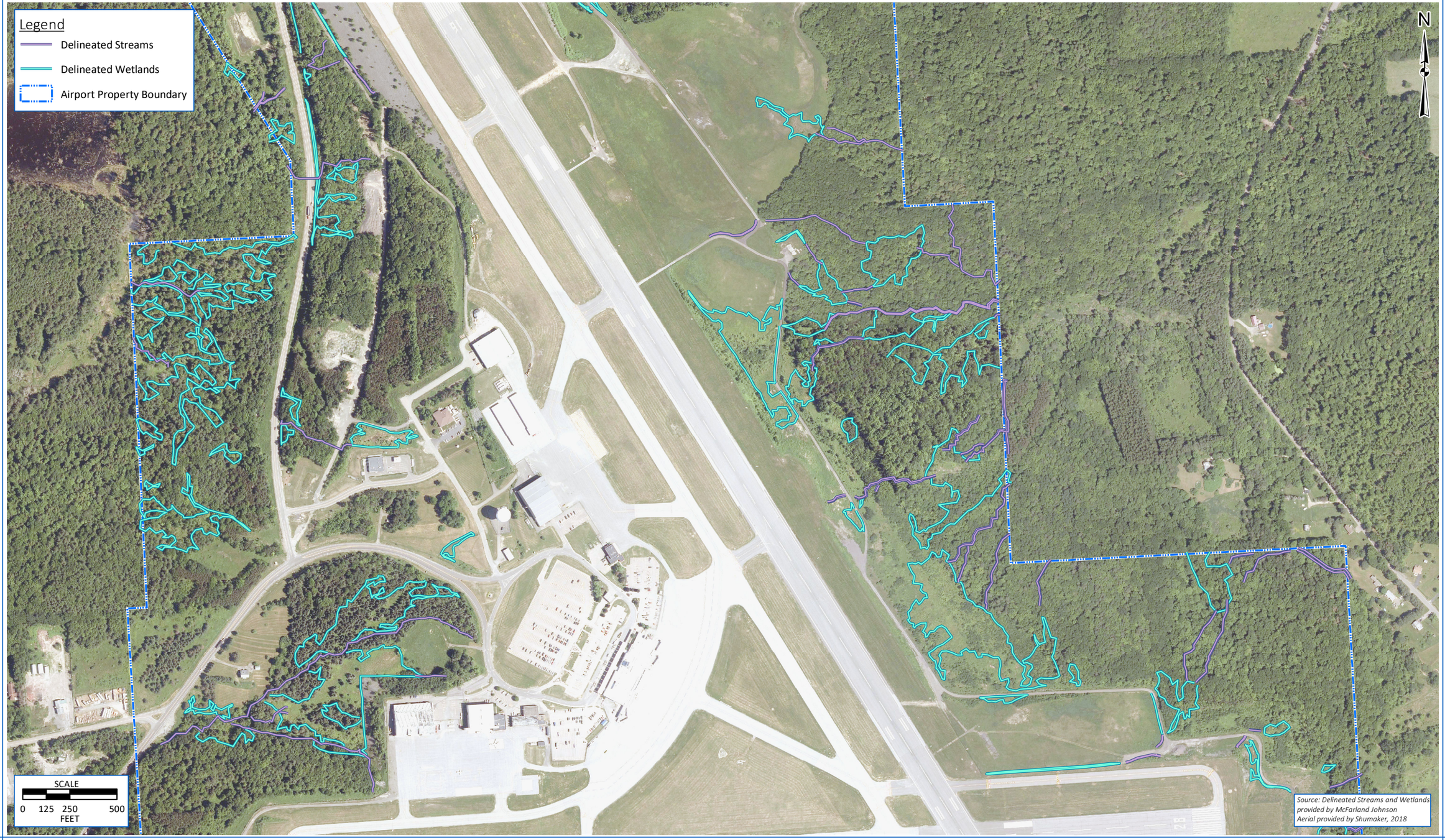
This page intentionally left blank.

Figure 4-2A: Wetlands and Streams Delineation Map

Document Path: K:\BING\T-18241.02 Master Plan Update\Draw\GIS\A-BGM-WetlandOverall11x17.mxd

This page intentionally left blank.

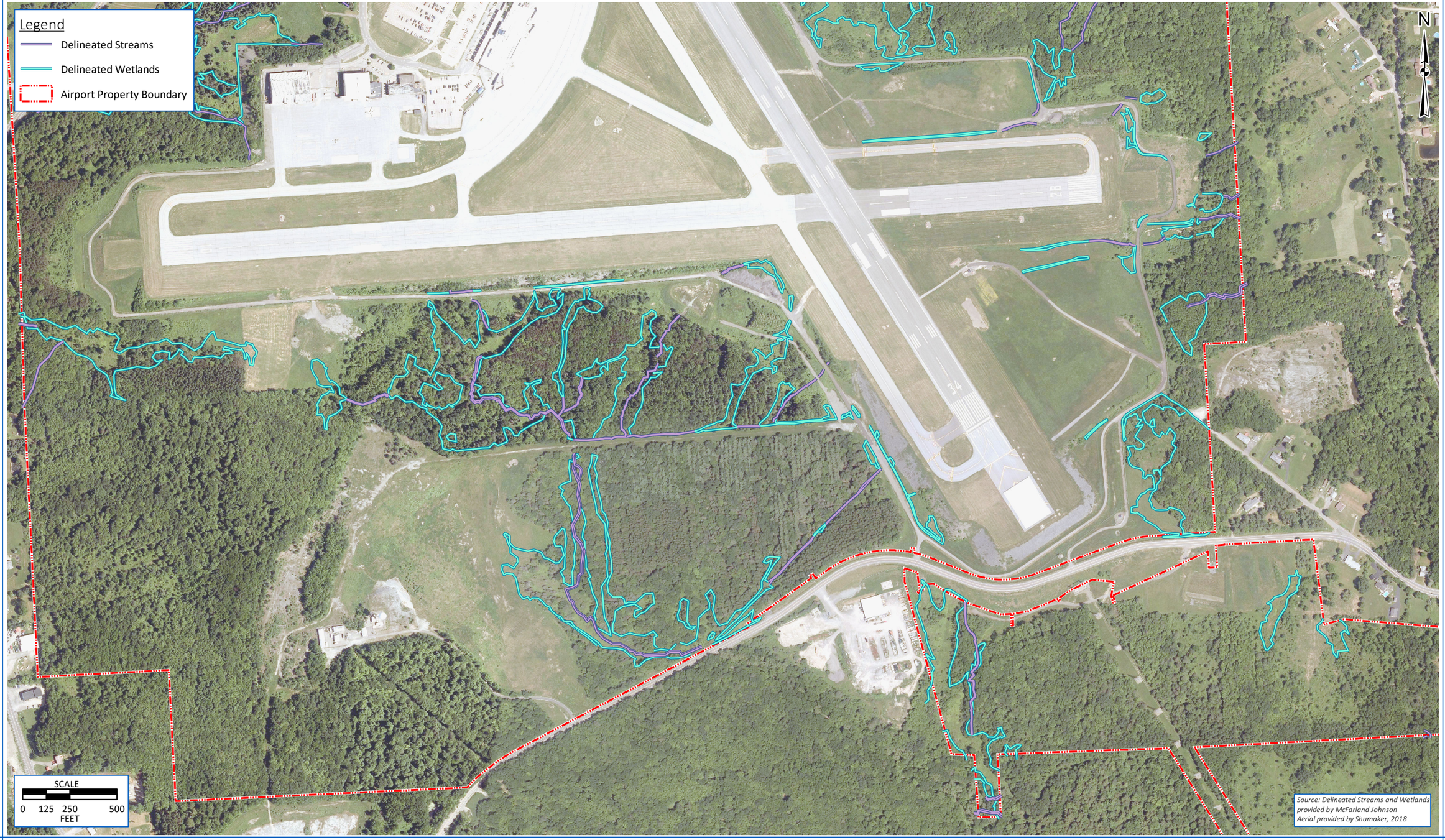
Figure 4-2B: Wetlands and Streams Delineation Map



Document Path: K:\BINGT-18241.02 Master Plan Update\Draw\GIS\B-BGM-WetlandOverall11x17.mxd

This page intentionally left blank.

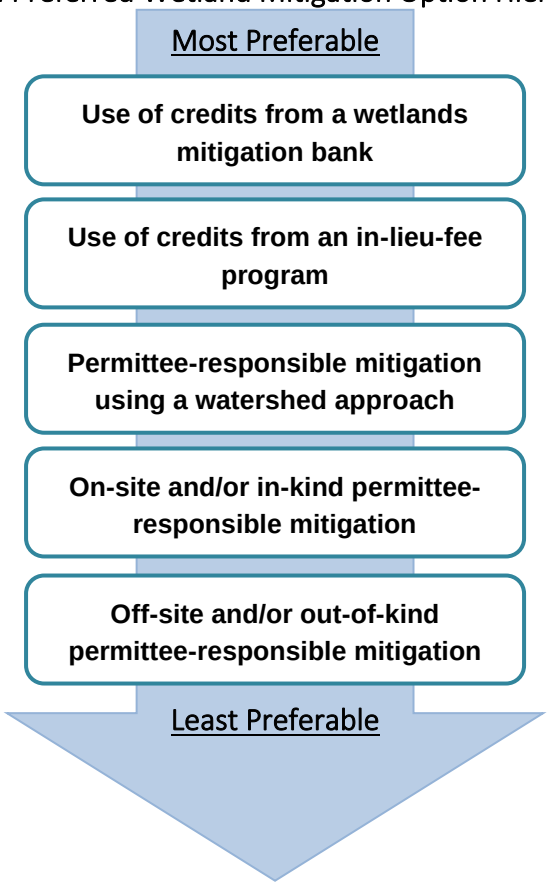
Figure 4-2C: Wetlands and Streams Delineation Map



Document Path: K:\BING\T-18241.02 Master Plan Update\Draw\GIS\C-BGM-WetlandOverall11x17.mxd

This page intentionally left blank.

Figure 4-3: Preferred Wetland Mitigation Option Hierarchy



Five federal agencies, including the FAA and USACE, signed a Memorandum of Agreement (MOA) in July 2003 to facilitate interagency cooperation on aircraft-wildlife strikes related issues, including wetland management at airports. As part of the MOA, the signatory agencies are required to diligently consider the siting criteria recommendations as stated in FAA Advisory Circular (AC) 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports*.

FAA AC 150/5200-33B recommends separation distances between the AOA and potential wildlife hazards, including proposed wetland mitigation sites. These siting distances are:

- 5,000 feet of a runway that serves piston-powered aircraft
- 10,000 feet of a runway that serves turbine-powered aircraft
- 5 statute miles if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace

The above siting criteria will also be taken into consideration when considering potential wetland mitigation options and site selection.

4.3.3. Surface Waters

The USACE regulates surface waters under Section 10 of the Rivers and Harbors Appropriation Act (RHA) that are considered to be a TNW as defined specifically there within. The USACE also

regulates surface water bodies through Section 404 of the CWA that have a significant nexus to a TNW as defined in Section 10 of the RHA or a TNW as defined Section 404 of the CWA. A significant nexus is generally defined as having more than an insubstantial or speculative effect on the chemical, physical, or biological integrity of a downstream TNW. Surficial open waterbodies, including streams, ponds, and lakes, are delineated by their Ordinary High-Water Mark (OHWM) as defined in Title 33, Code of Federal Regulations, Part 328 (33 CFR 328).

The NYSDEC regulates activities in water bodies that are considered to be “protected streams” or "Navigable Waters of the State" under the Article 15 of the ECL. Waters in New York State are assigned a classification based on their existing or expected best usage. The classification of AA or A is assigned to waters used as a source of drinking water. Classification B indicates a best usage for swimming and other contact recreation, but not for drinking water. Classification C is for waters supporting fisheries. The lowest classification is D. Waters with a classification of A, B, or C may also have a standard of (T) or (TS), indicating the capacity to support trout or trout spawning. Streams and small water bodies located in the course of a stream that are designated as C(T) or higher (i.e., C (T), C(TS), B, or A) are collectively referred to as “protected streams.” “Navigable Waters of the State” are defined as all lakes, rivers, streams and other bodies of water in the state that are navigable in fact or upon which vessels with a capacity of one or more persons can be operated notwithstanding interruptions to navigation by artificial structures, shallows, rapids or other obstructions, or by seasonal variations in capacity to support navigation. NYSDEC regulated waters protected under the Article 15 of the ECL are delineated by their Mean High-Water Mark (MHWM) as defined in in Title 6 of the Codes, Rules, and Regulations of the State of New York, Part 608, Use and Protection of Waters (6 NYCRR 608).

Section 401 of the CWA provides states with the authority to ensure that federal agencies do not issue permits or licenses that violate their water quality standards. The NYSDEC implements Section 401 compliance through a certification process called Water Quality Certification (WQC). The NYSDEC has issued blanketed WQC for many of the NWPs, providing certain special conditions are met. Individual WQCs are required from the NYSDEC for USACE LOPs, Standard Permits, and for those NWPs where the NYSDEC as not issued blanketed WQCs, and on projects qualifying for an NWP, but where the blanket WQC special conditions cannot be met.

As previously mentioned, a wetlands and surface waters delineation of Airport owned property was performed by McFarland Johnson over a period of time from the Fall of 2017 to the Spring of 2019. Surface waters identified on Airport property included numerous ephemeral, intermittent and perennial streams. The approximate locations of these identified streams are shown in **Figure 4-2A**, **Figure 4-2B**, and **Figure 4-2C**, Delineated Wetlands and Waterways Maps.

The jurisdictional statuses and regulatory limits for all identified streams will need to be determined by the USACE. However, it is the opinion of McFarland Johnson that majority of the identified streams would likely be considered to have significant nexuses to a TNW and are likely jurisdictional under Section 404 of the CWA.

All the identified streams are considered to have a NYSDEC water classification of C or D, and therefore none are considered protected streams under Article 15 of the ECL. In addition, none of the identified streams are considered navigable by NYSDEC standards, and therefore none are considered "Navigable Waters of the State" under Article 15 of the ECL.

Future proposed projects will take measures in design and construction to avoid, minimize, or mitigate any possible adverse direct impacts to regulated surface water resources to the degree possible. The use of Best Management Practices (BMPs) during construction projects will minimize indirect impacts to regulated surface water resources at the Airport.

4.3.4. Wild and Scenic Rivers

The National Wild and Scenic Rivers Act (Public Law 90-542) provides protection for several of the nation's free-flowing rivers that exhibit exceptional natural, cultural, and recreational values.

New York State's Wild, Scenic and Recreational Rivers Act provides for protection of rivers of the state that possess outstanding scenic, ecological, recreational, historic, and scientific values as defined in Article 15 of the ECL.

There are no state or federally designated wild, scenic, or recreational rivers on or adjacent to Airport property.

4.3.5. Floodplains

Floodplains are low lying land areas typically associated with bodies of water that are likely to become inundated during a flooding event. Floodplains serve an important function in retaining storm waters to protect against downstream flooding, property damage, and potential loss of life.

EO 11988, *Floodplain Management,* directs all federal agencies to avoid the direct and indirect support of floodplain development wherever there is a practicable alternative.

The area or magnitude of a floodplain will vary according to the magnitude of the storm event as determined by the storm interval occurrences. For example, a five-year storm has a magnitude that can be expected once every five years. The Federal Emergency management Agency (FEMA) utilizes a 100-year storm interval for flood preparation. Flooding related to a 100-year storm statistically has a one-percent chance of occurring during any given year. The 100-year period has been selected as having special significance for floodplain management because it is the maximum level of flooding that can reasonably be expected and planned for during a project's expected life span.

According to the most current FEMA Flood Insurance Rate Maps (FIRM), there are no mapped 100-year floodplain areas located on Airport property.

4.4. COASTAL RESOURCES

The federal Coastal Barrier Resources Act provides for review of federally funded projects undertaken within the Coastal Barrier Resources System (CBRS). The CBRS contains undeveloped coastal barriers along the coasts of the Atlantic Ocean, the Gulf of Mexico, and the Great Lakes.

The Coastal Zone Management Act is a federal program that provides for management and protection of all of the nation's ocean and Great Lakes coasts. In New York State the management authority has been delegated to the NY Department of State (NYDOS). New York's Coastal Management Program is implemented under Executive Law Article 42, Waterfront Revitalization of Coastal Areas and Inland Waterways. The NYDOS is tasked with establishing a coastal program,

develop coastal policies, define the coastal boundaries, and establish state consistency requirements. Executive Law Article 42 also provides for additional protection of certain inland waterways in communities who have adopted local waterfront revitalization programs. All federal actions must undergo consistency reviews to ensure they comply with the New York's Coastal Management Program.

The Airport is not located within a CBRS or Coastal Zone Management Area. As a result, Coastal Zone Management Act and Coastal Barrier Resources Act will not apply to any proposed improvements at the Airport.

4.5. DEPARTMENT OF TRANSPORTATION SECTION 4(F) RESOURCES

Section 4(f) of the Department of Transportation Act of 1966 protects publicly owned parks, recreation areas, wildlife and waterfowl refuges, and historic sites of national, state, or local significance from development unless there are no feasible alternatives.

There are no publicly owned parks, recreation areas, or wildlife and waterfowl refuges on or immediately adjacent to Airport property.

An impact to historic sites of national, state, or local significance on or near the Airport may be considered a use under Section 4(f). The State Historic preservation office (SHPO) receives new data on a continual basis, any future proposed projects at BGM will require new consultations to evaluate potential impacts to avoid historic or cultural resources.

When a specific airport development is proposed, the required documentation, including detailed descriptions and pictures of structures to be affected, will be sent to SHPO for a determination of that project's potential effect on historic resources or other resources protected under Section 4(f) as part of future studies to comply with NEPA.

4.6. HISTORIC, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

According to 36 CFR Part 800, a historic property is "any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places (NHRP)". Section 106 of The National Historic Preservation Act (NHPA) requires that federal agencies, such as the FAA, consider the effects of their actions on historic properties via consultation with SHPO.

These consultations identify historic or cultural resources they may be impacted by a specific project. As previously mentioned, SHPO receives new data on a continual basis, any future proposed projects at BGM will require new consultations to evaluate potential impacts to avoid historic or cultural resources.

When a specific airport development is proposed, the required documentation, including detailed descriptions and pictures of structures to be affected, will be sent to SHPO for a determination of that project's potential effect on historic or cultural resources as part of future studies to comply with NEPA.

4.7. FARMLANDS

The Farmland Protection Policy Act (FPPA), 7 CFR Part 658, requires federal agencies to consider project alternatives that will minimize unnecessary and irreversible conversion of farmland to nonagricultural uses. For the purposes of the FPPA, farmland refers to soils classified as prime farmland, unique farmland, and farmland of statewide or local importance.

According to the U.S. Natural Resource Conservation Service (NRCS) *Web Soil Survey,* accessed on November 1, 2019, approximately 66.1 percent (722.3 acres) of Airport property is classified as Farmland of Statewide Importance. The remaining soils on Airport property are identified as not prime farmland.

The FPPA does not apply to lands already committed to "urban development or water storage" (i.e. airport developed areas). Current Airport property has already been previously committed to urban development or current airport utilization and development, has been subject to FPPA review, and would not be subject to the FPPA regulations. Any future land acquisitions would be subject to FPPA regulations and will be evaluated as part of the NEPA documentation process.

4.8. LAND USE

When considering improvement projects that meet an airport's development goals, it is important early in the planning process to identify potential impacts to existing land uses on airport property and in the surrounding area and to determine how potential airport projects will affect future land use and development patterns. This will enable the project to incorporate measures into the future design and layout of airport developments that will avoid or minimize land use conflicts as well as improve on existing conflicts when practicable.

Some land uses that are considered more susceptible to impacts from airport development include, but are not limited to, residential areas, public schools, religious institutions, hospitals, and certain public places such as parks, recreational areas, and cemeteries, where quiet is an expected part of the user experience.

The area surrounding the Airport is mostly consists predominately of undeveloped lands with scattered residential and commercial land uses.

There are currently no parks, public schools, religious institutions, hospitals, or cemeteries located adjacent the Airport. However, there are adjacent residential properties located in the vicinity of the Airport that may be considered noise sensitive.

Alternatively, there are some land uses that can negatively impact the operation of the Airport and are considered incompatible with Airport activity. These land uses can include park and recreational areas, golf courses, landfills, open water areas, and other land uses that have the potential to serve as wildlife attractants, and commercial and industrial facilities that generate high-voltage electricity, utilize bright lights, or create a significant amount of glare, smoke, or steam.

FAA AC 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports*, provides guidance on certain land uses that have the potential to attract hazardous wildlife on or near airports. Potential wildlife attractants and congregation areas can include areas such as shopping malls, agricultural fields,

livestock operations, golf courses, parks, waste handling facilities, waterbodies, wetlands, and water management facilities.

As future improvements are considered as part of this MPU, the presence of incompatible land uses within the vicinity of the Airport will be considered as part of the NEPA documentation process.

4.9. NOISE AND NOISE-COMPATIBLE LAND USE

Aircraft noise emissions, inherent to the operation of an airport, can adversely impact land use compatibility between an airport and surrounding properties, particularly in the presence of noise-sensitive receptors. Churches, hospitals, schools, amphitheaters, and residential districts are receptors that are sensitive to elevated noise levels. Recreational areas and some commercial uses are moderately sensitive to elevated noise levels. Therefore, it is important to predict any change in noise levels associated with airport development, to determine the significance, if any, of the impact to noise sensitive land-uses. Then, abatement measures can be incorporated into airport development plans to avoid or minimize the impacts.

In order to evaluate the noise impacts of aviation activity on surrounding areas, the FAA has developed the Aviation Environmental Design Tool (AEDT), Version 3C. The noise modeling component within AEDT identifies locations that are exposed to specific levels of aircraft-generated noise and is based on algorithms which use aircraft specific data to estimate noise accounting for specific operation mode, thrust setting, and source-receiver geometry, acoustic directivity and other environmental factors. Inputs into AEDT can include aviation activity forecasts and runway configurations for various scenarios, as well as terrain and weather information. This computer model calculates cumulative aircraft noise at ground level expressed in decibels (dB), using the Day-Night Average Level (DNL). The DNL is the yearly day-night average sound level. All operations that occur between 10:00 pm and 6:59 am, also known as nighttime operations, incur an additional 10 dB weight within the model. Decibels are measured in A-weighted units, which approximate the range of human hearing. The FAA considers the 65 dB DNL level to be the threshold of impact for noise-sensitive areas. In order to help put the 65 dB DNL into perspective, the typical ambient noise level in suburban residential areas is 55 dB DNL. Table 4-2 shows the typical noise levels associated with specific areas commonly encountered every day. Table 4-3 presents the day-night average noise levels (DNL, dB), that are used by the FAA to evaluate land use compatibility with respect to airports.

Table 4-2: Typical Outdoor Day-Night Noise Levels

DNL Day-Night Noise Level (dB)	Location
50 dB	Small town residential area or quiet suburban area
55 dB	Suburban residential area
60 dB	Urban residential
65 dB	Noisy urban residential area
70 dB	Very noisy urban residential area
80 dB	City noise (downtown of a major metropolitan area)
80 dB	3rd floor apartment in a major city next to a freeway

Source: Noise Fundamentals Training Document, Highway Noise Fundamentals, U.S. Department of Transportation, Federal Highway Administration

A review of aerial photography, along with land use maps of the area, indicates that much of the land surrounding the Airport would not be considered noise sensitive, as much of these lands are vacant, categorized as agricultural land use, or are developed with commercial uses. There are several noise sensitive land uses, predominately scattered residential land uses, along Booth Road, Kolb Road, Brigham Road, Flint Road, and Airport Road in the vicinity of the Airport.

A noise analysis will be completed as part of the Land Use Plan included in the Airport Layout Plan (ALP) set. This analysis will include the forecasted number of future operations and will utilize a fleet mix anticipated to occur at the Airport, as well as account for the final infrastructure improvements recommended as part of this MPU. The Land Use Plan will identify land uses of adjacent properties and the noise contours generated will be utilized to identify any potential impacts associated with the proposed development.

4.10. VISUAL EFFECTS

A visual effect refers to the potential effects due to light emissions, as well as the potential effects to visual resources and character.

4.10.1. Light Emissions

Airport improvements may include the installation of additional lighting or change the location of lighting on airport property to accommodate the construction of the infrastructure improvements. These installations can alter the existing lighting conditions both on-airport and in the vicinity of an airport. Light emissions are typically one of the greatest concerns for residents in neighborhoods, as well as users of other incompatible land uses, adjacent to an airport that could be directly impacted by a change in lighting.

Further analysis will be required during the NEPA evaluation process to ensure that potential light emission effects of Airport development projects do not significantly negatively affect adjacent landowners.

Table 4-3: Land Use Compatibility

Land Use	Yearly Day-Night Average Noise Level (DNL, dB)		
	Compatible Below 65	Compatible Between 65 and 70	Compatible Between 70 and 75
Residential	YES	NO*	NO*
Mobile Home Parks	YES	NO	NO
Transient Lodgings	YES	NO*	NO*
Schools	YES	NO*	NO*
Hospitals/Nursing Homes	YES	YES*	YES*
Churches/Auditoriums	YES	YES*	YES*
Governmental Services	YES	YES	YES*
Transportation/Parking	YES	YES*	YES*
Offices/Business/Professional	YES	YES	YES*
Wholesale and Retail	YES	YES	YES*
Utilities	YES	YES	YES*
Communications	YES	YES	YES*
Manufacturing	YES	YES	YES*
Photographic/Optical	YES	YES	YES*
Agriculture and Forestry	YES	YES*	YES*
Livestock Farming	YES	YES*	YES*
Mining/Fishing	YES	YES	YES
Outdoor Sports Arenas	YES	YES*	YES*
Outdoor Music Shells	YES	NO	NO
Nature Exhibits/Zoos	YES	YES	NO
Amusements/Parks/Camps	YES	YES	YES
Golf Courses/Stables	YES	YES	YES*

Source: 14 CFR 150, Airport Noise Compatibility Planning

**Measures must be incorporated into the design of the structure or use that will allow this activity to continue at the indicated noise exposure level*

4.10.2. Visual Resources and Character

The Airport is located within an area of undeveloped land, light commercial land uses, and residential development. There are no buildings, sites, traditional cultural properties, or other natural or manmade landscape features that are visually important or have unique characteristics in the vicinity of the Airport. Any potential development at the Airport would be in character with the existing surrounding area land uses and would not negatively affect the visual character of the surrounding area.

4.11. AIR QUALITY

An increase in vehicle exhaust emissions, caused by development related increases in aircraft activity and automobile traffic, may affect air quality. However, the air quality impact attributable to potential development is expected to be negligible at the Airport.

Under Section 176(c) of the Clean Air Act (CAA) Amendments of 1977, the FAA is responsible for ensuring that federal airport actions conform to the State Implementation Plan (SIP), which protects against regional air pollution impacts. The criteria and procedures for implementing this conformity are detailed in Title 40 CFR, Part 93, *Determining Conformity of Federal Actions to State or Federal Implementation Plans.* Many federal actions on an airport are considered to be general conformity actions. Presently, the general conformity rules only apply in areas that have been determined by the United States EPA to be in nonattainment or maintenance for the CAA's National Ambient Air Quality Standards (NAAQS) of the six priority pollutants (ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter, and lead). Under NEPA, the FAA may be required to prepare detailed air quality analysis for proposed projects whose air quality emissions have the potential to cause violations of the NAAQS for the six criteria pollutants.

The EPA does not currently list Broome County as an area of nonattainment or maintenance for NAAQS. Most Airport projects will not cause or create a reasonably foreseeable emission increase, which can be sufficiently documented and disclosed through a qualitative air quality assessment to satisfy the requirements of the CAA and NEPA. If large scale projects are proposed that may create an increase in emissions, a full emissions inventory will be required.

4.12. HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

4.12.1. Hazardous Waste

A Hazardous Waste/Contaminated Material (HWCM) desktop screening was conducted to determine the potential for the presence of HWCM on or within ¼ mile of Airport property. The screening involved the review of online governmental databases and the Environmental Radius Database Report (ERDR) provided by National Environmental Title Research, LLC (NETR) through their Online Environmental Database Network. An environmental regulatory agency records review of this nature is based on publicly available information from state and federal agencies.

Review of the USEPA Envirofacts Database or NYSDEC Remedial Site Database did not indicate the potential for the release of chemical, hazardous, or petroleum materials at or in the immediate vicinity of the Airport. The ERDR indicated eight NYSDEC spill files associated with Airport property. Subsequent review of the NYSDEC Spills Database indicates that in addition to the eight spill files identified in the ERDR report, and additional 14 spill files are associated with the Airport property. The NYSDEC Spills Database indicates that all 22 spill files associated with the Airport property have been closed. According to the NYSDEC, closed spill files can be because either; a) the records and data submitted indicate that the necessary cleanup and removal actions have been completed and no further remedial activities are necessary, or b) the case was closed for administrative reasons (e.g., multiple reports of a single spill consolidated into a single spill number). The NYSDEC however reserves the right to require additional remedial work in relation to the spill, if in the future it determines that further action is necessary.

It is possible that there were incidents on or near the Airport property involving chemical, hazardous, or petroleum related materials that were not reported. If previously unidentified chemical, hazardous, or petroleum related wastes are encountered during the construction of any future proposed projects, direct consultation will occur with the NYSDEC and the wastes will be handled and disposed of in accordance with all applicable federal, state, and local regulations.

4.12.2. Solid Waste

Currently, Airport generated municipal solid waste is transported approximately 0.7 miles north to the Broome County Sanitary Landfill (BCSL), a NYSDEC Part 360, and USEPA and RCRA Subtitle D landfill. According to the Broome County Draft Solid Waste Management Plan Update dated February 2010, the BCSL is a County owned and operated landfill and has been in operation since 1969. The landfill is currently the primary disposal site for the County's solid waste. The landfill is located in the Towns of Nanticoke, Barker, and Maine and occupies an area of approximately 1,300 acres.

According to the NYSDEC, the BCSL is permitted to accept up to 232,000 tons per year of residential/institutional and commercial municipal solid waste (MSW), construction and demolition debris, asbestos (friable), petroleum contaminated soil. As of December 2015, the BCSL had an estimated remaining capacity of 9,712,275 tons.

Based the permitted annual intake limit, the anticipated life span of the landfill is approximately 39.9 years, while based on the 2015 intake (186,426 tons), the estimated life span of the landfill is approximately 50.1 years. Based on the permitted landfill capacity and estimated landfill life span, adequate space for the disposal of solid waste attributable to any Airport development is available.

Further however, airports generate various types of solid waste that could be reduced, reused, or recycled. Increased recycling and the reduction in the amount of solid waste produced is an important consideration when exploring future growth at an airport. Presently, the Airport does provide several recycling bins in the commercial passenger terminal and throughout other Airport buildings. However, the recycling containers within the terminal are generally located within offices, with only three located on the first floor within areas typically accessed by passengers.

Although a waste audit was not prepared for this study, the 2016 *Sustainable Management Plan* was reviewed and referenced. It is most likely that the type of recyclable waste generated at the Airport is similar to that which would be generated in a residential community and in volumes that would not be excessive or put undue burden on the Broome County Landfill. However, a number of recommendations were included within the 2016 *Sustainable Management Plan* related to waste management, which include:

- Establish a Formal Waste Management & Recycling Program
    - Establish a formalized program with procedures and protocols for Airport staff. Include monitoring/measurement forms for use by Airport staff. Include calculation of baseline measurement of trash and recycling volumes generated by the Airport that can be monitored and measured over time.
- Identify Airport Staff Person as Waste Management & Recycling Program Lead
    - Ensure commitment of/engagement with Airport staff to reach performance targets. Collaborate as liaison with all Airport tenants.

- Consider Centralized Recycling Tracking for All On-Airport Tenants
    - Encourage and/or incentivize non-terminal (general aviation and other) Airport tenants to participate in coordinated recycling monitoring, measurement, and tracking programs.
- Expanded Recycling Education Efforts
    - Educate passengers, employees, contractors, and tenants via posted placards and regular (i.e. quarterly) diversion reporting to encourage participation.
- Initiate Contractor Recycling Monitoring & Reporting
    - Encourage contractors to monitor and report materials diverted from the landfill. Establish procedures and requirements to be included and followed and incorporate into the Waste Management & Recycling Program.

4.12.3. Pollution Prevention

The Clean Water Act authorizes the EPA and states, which are delegated the authority by EPA, to regulate point sources that discharge pollutants into waters of the United States through the National Pollutant Discharge Elimination System (NPDES) permit program. So-called "point sources" are generated from a variety of municipal and industrial operations, including treated wastewater, process water, cooling water, and stormwater runoff from drainage systems. In New York, the NPDES program is delegated to NYSDEC. See Section 4.12.4 for further information specific to stormwater discharges.

The Airport maintains six aboveground petroleum storage tanks in accordance with NYSDEC petroleum Bulk Storage Regulations (6NYCRR Part 613). Regular inspections are performed by the Airport to ensure compliance with 6 NYCRR Part 613. The regular inspections and compliance with 6 NYCRR Parts 612-614 minimizes potential risks of accidental spills.

Pollution may also arise during construction activities. Construction activities may produce temporary environmental impacts such as dust, soil erosion, and negative effects on water quality. Potential pollution sources during construction can be effectively mitigated through the incorporation of appropriate erosion and sediment control, stormwater management, and fuel/ chemical storage and handling best management practices during design and construction of the project.

4.12.4. Stormwater

Airport development projects may potentially affect surface and groundwater quality. The implementation of stormwater management measures, designed to avoid or minimize the impacts to water quality during a project's construction and operation phase, is required for many types of development projects. The specific stormwater management measures required are dependent upon the magnitude of the impact.

Turbidity is the water quality parameter that is of the greatest concern during the construction period. NYSDEC regulations do not allow an increase in the visible turbidity of water when compared to preconstruction conditions. If one or more acres of land are disturbed during construction, a State Pollutant Discharge Elimination System (SPDES) General Permit for Construction Activities, issued by the NYSDEC, is required. During the construction period, erosion and sediment control measures would be implemented, as prescribed in a Stormwater Pollution

Prevention Plan (SWPPP), to avoid or minimize impacts to water quality. As part of the SWPPP, all SPDES permit sites must develop an Erosion and Sediment Control Plan (ESCP) to control stormwater discharge during the construction phase.

The ESCP consists of temporary and permanent BMPs intended to reduce erosion, control siltation and sedimentation, and ensure that sediment-laden water does not leave the site. As each proposed project is progressed to the final design phase, an ESCP will be developed for implementation during construction to address water quality concerns and avoid significant impacts on water quality. The plans will incorporate acceptable BMPs, which will serve to protect the water quality of wetlands and other bodies of water in the area.

If the ground disturbance is greater than five acres, a full SWPPP including a Water Quality and Quantity Control plan must be implemented for the project. The Water Quality and Quantity Control portion of the SWPPP consists of permanent BMPs intended to enhance water quality and provide water quantity control through peak flow attenuation. To meet the goal of no net increase in peak stormwater runoff from pre-project conditions, BMPs must compensate for the increase in runoff resulting from additional impervious surfaces.

The full SWPPP would be implemented during construction and then properly maintained thereafter. This would ensure that water quality standards are met. The increase in runoff resulting from the expansion or creation of impervious surfaces during development would be mitigated by the SWPPP. Any proposed BMPs would be designed to accommodate an increase in stormwater volume. BMPs designed to accommodate an increase in quantity of runoff, generally meet water quality objectives by default. The SWPPP will comply with FAA Order 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports.*

4.13. ENERGY SUPPLIES AND NATURAL RESOURCES

Use of energy supplies and natural resources is closely linked to construction of airport improvements and operations. Anticipated growth and development at the Airport are likely to increase the use of energy and natural resources. However, energy and natural resources are relatively abundant in Southern Tier of New York State and planned growth at the Airport is not of sufficient magnitude to alter regional energy demand or limit natural resource availability.

Each proposed project, including those that will lead to an increase in aircraft operations, will be evaluated for the potential effect upon these resources and methods to reduce potential energy uses will be developed and considered during the review process.

4.14. CLIMATE

Climate change is a global phenomenon that has been attributed to increasing concentrations of greenhouse gases (GHGs) in the atmosphere. GHGs include carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6).

Under EO 13693, *Planning for Federal Sustainability*, federal agencies must make efforts to measure, report, and reduce their GHGs emissions from direct and indirect activities.

The FAA has not identified a significance threshold for GHG emissions as there is no current accepted method of determining the level of significance applicable to airport projects given the

small percentage of emissions they contribute. Any increase in emissions of GHGs as the result of a proposed action at the Airport would be considered negligible in comparison with U.S. annual emissions and therefore would not have a significant impact on global climate change.

4.15. SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Under the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR Part 1502.1), federal agencies are required to consider the effects to the area population's health, safety risks to children, and socioeconomic impacts. Under 40 CFR 1508.14, the CEQ requires that the human environment be considered for federal projects to address the relationship of people with their natural and physical environments.

4.15.1. Socioeconomics

Principal impacts to be considered include the displacement of families or businesses, effects to neighborhood characteristics, dividing or disrupting established communities, changing ground transportation patterns, disruption of orderly planned community developments, or creating measurable changes in employment. If land acquisition were necessary for proposed Airport development alternatives, it would be accomplished in accordance with 49 CFR Part 24, *Uniform Relocation Assistance and Real Property Acquisition Policies Act* (Uniform Act), and FAA AC 150/5100-17, *Land Acquisition and Relocation Assistance for Airport Improvement Program Assisted Projects*. The Uniform Act standardizes real property acquisition policies and requires the uniform and equitable treatment of persons relocated due to a federally assisted project.

Proposed projects will be evaluated for the potential effects to the community economy, social structure, and necessary community health and safety services as specific alternatives are developed during the design process.

4.15.2. Environmental Justice

EO 12898 - *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* directs federal agencies to consider the potential effects of federal actions, including those involving federally obligated airports, to cause a disproportionate and adverse effect upon low-income or minority populations.

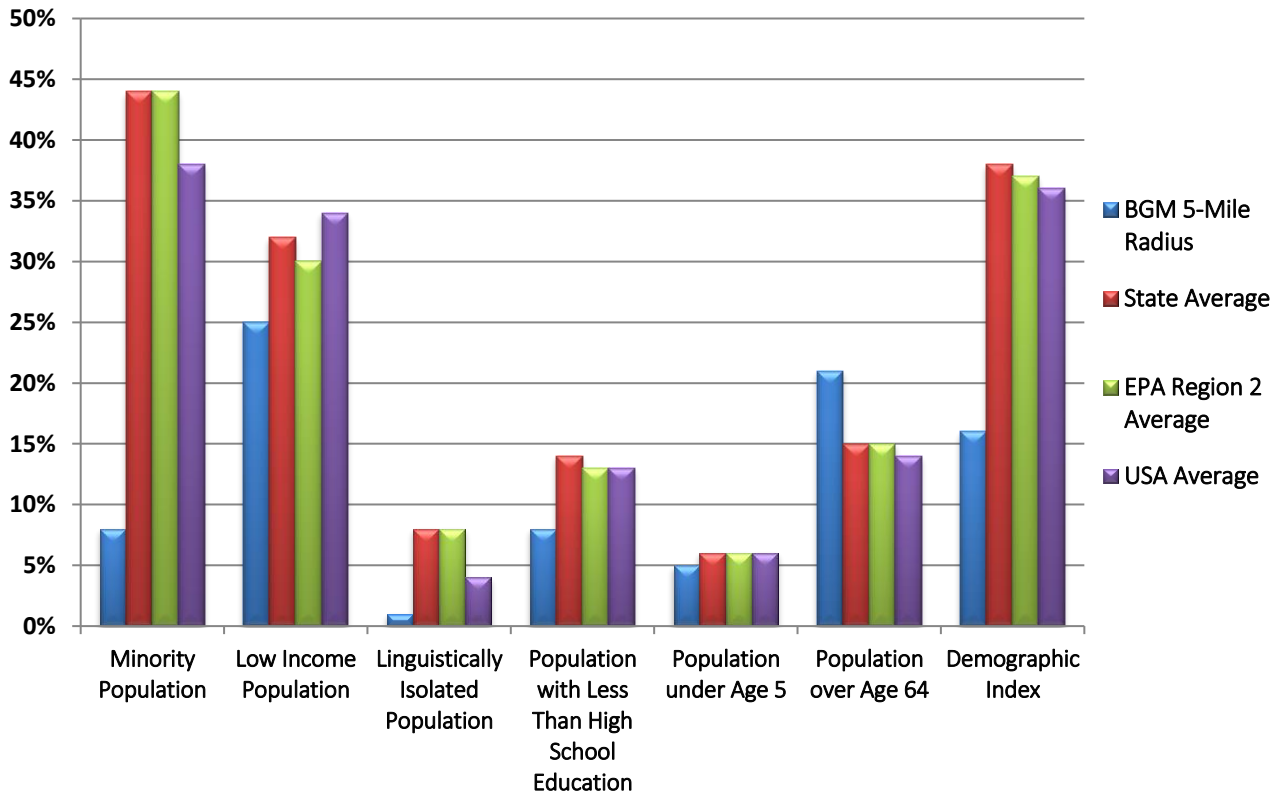
An environmental justice (EJ) screening of the area within a 5-mile radius centered on the Airport was conducted using the EPA's EJ mapping and screening tool EJSCREEN. EJSCREEN evaluates seven select demographic indicators calculated from the Census Bureau's American Community Survey 2008-2012. These demographic indicators include:

- Percent Minority - Percent minority as a fraction of population, where minority is defined as all but Non-Hispanic White Alone.
- Percent Low-income - Percent of individuals whose ratio of household income to poverty level in the past 12 months was less than 2 (as a fraction of individuals for whom ratio was determined).
- Percent Less Than High School Education - Percent of individuals age 25 and over with less than high school degree.

- **Percent in Linguistic Isolation -** Percent of households in which no one age 14 and over speaks English "very well" or speaks English only (as a fraction of households).
- **Percent Over Age 64 -** Percent of individuals over age 64 as a fraction of the population.
- **Percent Under Age 5 -** Percent of individuals under age 5 as a fraction of population.
- **Demographic Index -** The Demographic Index in EJSCREEN is a combination of percent low-income and percent minority, the two demographic factors that were explicitly named in EO 12898 on EJ. For each census block group, these two numbers are simply averaged together. The formula is as follows: Demographic Index = (percent minority + percent low-income) / 2.

Review of the EJSCREEN data indicates the area within a 5-mile radius of the Airport has lower percentages of minority population, low income population, linguistically isolated population, population with less than high school education, and population under age 5 compared to EPA Region 2, State, and United States of America (USA) averages. The exception is that the area within a 5-mile radius of the Airport has a higher population over 64 percentage in comparison to EPA Region 2, State, and USA averages. The lower minority population and low-income population percentages have a positive correlation with the demographic index, which is also much lower than EPA Region 2, State, and USA averages. A graphical presentation of the comparison of the data of the area from within a 5-mile radius of the Airport to EPA Region 2, State, and USA data is shown in **Figure 4-4**, Demographic Profile Comparison Graph.

Figure 4-4: Demographic Profile Comparison Graph



Source: EPA EJSCREEN, Accessed January 15, 2019

The NYSDEC has mapped potentially environmental justice areas for Broome County based on the presence of minority or low-income communities per the 2000 U.S. Census data and pursuant to NYSDEC Commissioner Policy 29. Review of the NYSDEC Potential Environmental Justice Areas Mapping for Broome County indicated that nearest potential environmental justice area is located greater than 8 miles from Airport owned property.

Based on the aforementioned information, Airport development is not likely to result in a disproportionately high and adverse human health or environmental effect to children, low income or minority populations. Further analysis will be required during the NEPA evaluation process to ensure that Airport development projects do not significantly adversely affect elderly populations in the vicinity of the Airport.

4.15.3. Children's Environmental Health and Safety Risks

Pursuant to EO 13045 - *Protection of Children from Environmental Health Risks and Safety Risks*, federal agencies are directed to make identification and assessment of environmental health and safety risks that may disproportionately affect children a high priority. Federal agencies are encouraged to ensure that their policies, programs, and activities address any disproportionate risks children may incur from environmental health and safety risks. These risks are generally attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products they might use or to which they may be exposed.

The Airport development alternatives under consideration will not disproportionately affect children or products and substances they are likely to come in contact with.