3. Environmental Overview

3.1. INTRODUCTION

The operation and development of an airport has the potential to affect neighboring land-uses, 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:

- Biological resources (including fish, wildlife and plants)
- Water resources (including wetlands, surface waters, wild and scenic rivers, floodplains, and groundwater)
- Coastal resources
- Department of Transportation Act, Section 4(f)
- 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
- Natural resources and energy supply
- Climate
- Socioeconomics, environmental justice, and children's environmental health and safety risks

This chapter provides a summary of the environmental conditions and constraints at AVP and its environs. 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 appropriate federal, state, and local agencies along with data collected during field investigations.

3.2. 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.

3.2.1. Ecological Communities

Most of the Airport and adjacent areas have been significantly disturbed by past airport construction, timber harvesting, and surface coal mining activities. The majority of the habitat within the Airport Operations Area (AOA) consists of maintained grassland interspersed with paved airfield surfaces. The dominant ecological community present on undeveloped portions of the Airport property is most characteristically described as successional mixed-hardwood forest. All ecological communities present on Airport property are considered common within the region and the State. Further information regarding flora and fauna species associated with these ecological communities is presented in Section 3.2.2.

There are no habitats located on Airport owned property 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 3.2.2.1. Further information regarding state and federally regulated waterways and wetlands is presented in Sections 3.3.2 and 3.3.3.

3.2.2. Flora and Fauna

The AOA consists primarily of grasslands dominated by grasses and forbs typical of northeastern US airports. Common grass species included multiple bluegrass (*Poa spp.*) and fescue (*Festuca spp.*) species, along with broad leaved plants such as clover (*Trifolium spp.*) and plantain (*Plantago spp.*) species. Based on a review of the Airport’s most recent Wildlife Hazard Assessment Report (July 2011) (WHA), common bird species utilizing the AOA include barn swallow (*Hirundo rustica*), American robin (*Turdus migratorius*), European starling (Sturnus vulgaris), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), killdeer (*Charadrius vociferus*), and American kestrel (*Falco sparverius*). It should be noted that the Airport has documented marked increases in mourning dove numbers since the WHA was completed. Land’s outside of the AOA primarily consist of successional or secondary growth forest that has been impacted by past timber harvesting and surface coal mining operations. The forested areas are generally dominated by northern red oak (*Quercus rubra*) and red maple (*Acer rubrum*). Other Common tree species

included grey birch (*Betula populifolia*), black birch (*Betula lenta*), white oak (*Quercus alba*), chestnut oak (*Quercus montana*), and big-tooth aspen (*Populus grandidentata*). These forested lands are supportive of a variety of birds that prefer edge and successional woodland habitat, such as black-capped chickadee (*Poecile atricapillus*), gray catbird (*Dumetella carolinensis*), dark-eyed junco (*Junco hyemalis*), tufted titmouse (*Baeolophus bicolor*), and blue jay (*Cyanocitta cristata*). Based on the WHA, common mammal species observed within and adjacent the AOA included eastern cottontail (*Sylvilagus floridanus*), feral cat (*Felis catus*), white-tailed deer (*Odocoileus virginianus*), woodchuck (*Marmota monax*), striped skunk (*Mephitis mephitis*), and red fox (*Vulpes vulpes*).

Further information on potential rare, threatened and endangered species is provided in the following sub-section.

3.2.2.1. 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.

Commonwealth of Pennsylvania's threatened and endangered species program, protects all federally listed threatened and endangered species, as well as state listed threatened and endangered species. In Pennsylvania, there are three state agencies that are primarily responsible for administering the State's threatened and endangered species program. The Pennsylvania Game Commission (PGC) is responsible for wild birds and mammals under Game and Wildlife Code 34 Pa. C.S.A. §§ 101 *et seq.* The Pennsylvania Fish and Boat Commission (PFBC) is responsible for fish, reptiles, amphibians, and aquatic organisms under Fish and Boat Code 30 Pa. C.S.A. §§ 101 *et seq*. The Department of Conservation and Natural Resources (DCNR) is responsible for native wild plants, terrestrial invertebrates, and significant natural communities under Wild Resources Conservation Act 32 P.S. §§ 5301 *et seq.*

Consultations with the USFWS and the Pennsylvania Natural Heritage Program (PNHP) were initiated to determine the existence of any recorded observations of federal or State-listed threatened or endangered species in the vicinity of the Airport.

McFarland Johnson conducted a review of PNHP's Pennsylvania Natural Diversity Inventory (PNDI) on October 28, 2015 (Appendix 3-A - Agency Correspondence). The PNDI report indicated that the State or federally listed endangered Indiana bat (*Myotis sodalis*) is known to occur in the

vicinity of the Airport. The PNDI report also indicated that complying with a seasonal restriction on tree cutting and prescribed burning between October 1 and March 31 would result in no further coordination requirements with the USFWS.

An Official Species List from the USFWS was obtained on July 5, 2016, and is also included in Appendix 3-A. The list, as shown in **Table 3-1**, indicates that there are three listed species under the Federal Endangered Species Act within the vicinity of the Airport, the federally-listed threatened northern long-eared bat (*Myotis septentrionalis*), and the federally-listed endangered Indiana bat and northeastern bulrush (*Scirpus ancistrochaetus*). The correspondence also indicated that there are no critical habitats within the project area (Airport property).

Table 3-1 Threatened and Endangered Species in the Vicinity of the Airport

Common Name	Scientific Name	State/Federal Status
Northern Long-Eared Bat	*Myotis septentrionalis*	Not Listed/Threatened
Indiana Bat	*Myotis sodalis*	Endangered/ Endangered
Northeastern Bulrush	*Scirpus ancistrochaetus*	Endangered/ Endangered

Source: USFWS Official Species List- Consultation Code: 05E2PA00-2016-SLI-1103

During summer months, northern long-eared bats and Indiana bats roost singly or in colonies beneath bark, in cavities, or in crevices of both live and dead trees, typically greater than three inches in diameter. Potential suitable roosting habitat for northern long-eared bats and Indiana bats is present in the forested and treed areas on Airport owned property. Northern long-eared bats and Indiana bats may also transit other portions of Airport property for foraging or other transient purposes.

Northeastern bulrush is a perennial hydrophytic plant that according to the PNHP occurs on the edges of seasonal pools, wet depressions, beaver ponds, wetlands, and small ponds. Potential habitats for northeastern bulrush, in the form of seasonal pools, wet depressions, wetlands, and small ponds, are known to occur on Airport owned property, however detailed plant surveys have not been conducted.

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 PGC, DCNR, USFWS, and FAA.

3.3. WATER RESOURCES

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

3.3.1. 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, a SSA is defined as one that supplies at least 50 percent of the drinking water for its service area, and wherein which there is no reasonably available alternative drinking water source 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.

According to the EPA, Airport property is not located over a SSA and therefore potential projects are not subject to EPA Section 1424(e) of the Safe Drinking Water Act.

All future proposed projects will take measures in design and construction to avoid, minimize or mitigate any possible adverse impacts to groundwater in accordance with Best Management Practices (BMPs) and in accordance with all local, state and federal guidelines and regulations.

3.3.2. 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 Commonwealth of Pennsylvania also regulates impacts to wetlands wholly or partly within the state under the Dam Safety and Encroachments Act (P.L. 704, No 204, as amended). The regulatory provisions designed to implement the Dam Safety and Encroachments Act are outlined in 25 Pa. Code Chapter 105. The Pennsylvania Department of Environmental Protection (PADEP) utilizes the same criteria as the USACE in delineation of its regulated wetlands, however all wetlands are considered under the jurisdiction of the PADEP regardless of connectivity or isolation.

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 PADEP implements Section 401 compliance through a certification process called Water Quality Certification (WQC). The PADEP has integrated WQCs with its other approval and permitting authorizations, including Chapter 105 permitting requirements.

In addition, Executive Order (EO) 11990- *Protection of Wetlands*, states that federal agencies shall provide leadership and shall take action 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.

National Wetlands Inventory (NWI) mapping prepared by the USFWS did not indicate the potential for wetlands to exist on Airport property. NWI mapping does not have any regulatory consequence, but rather indicates areas that may meet federal wetland criteria as identified by the USFWS using aerial photography.

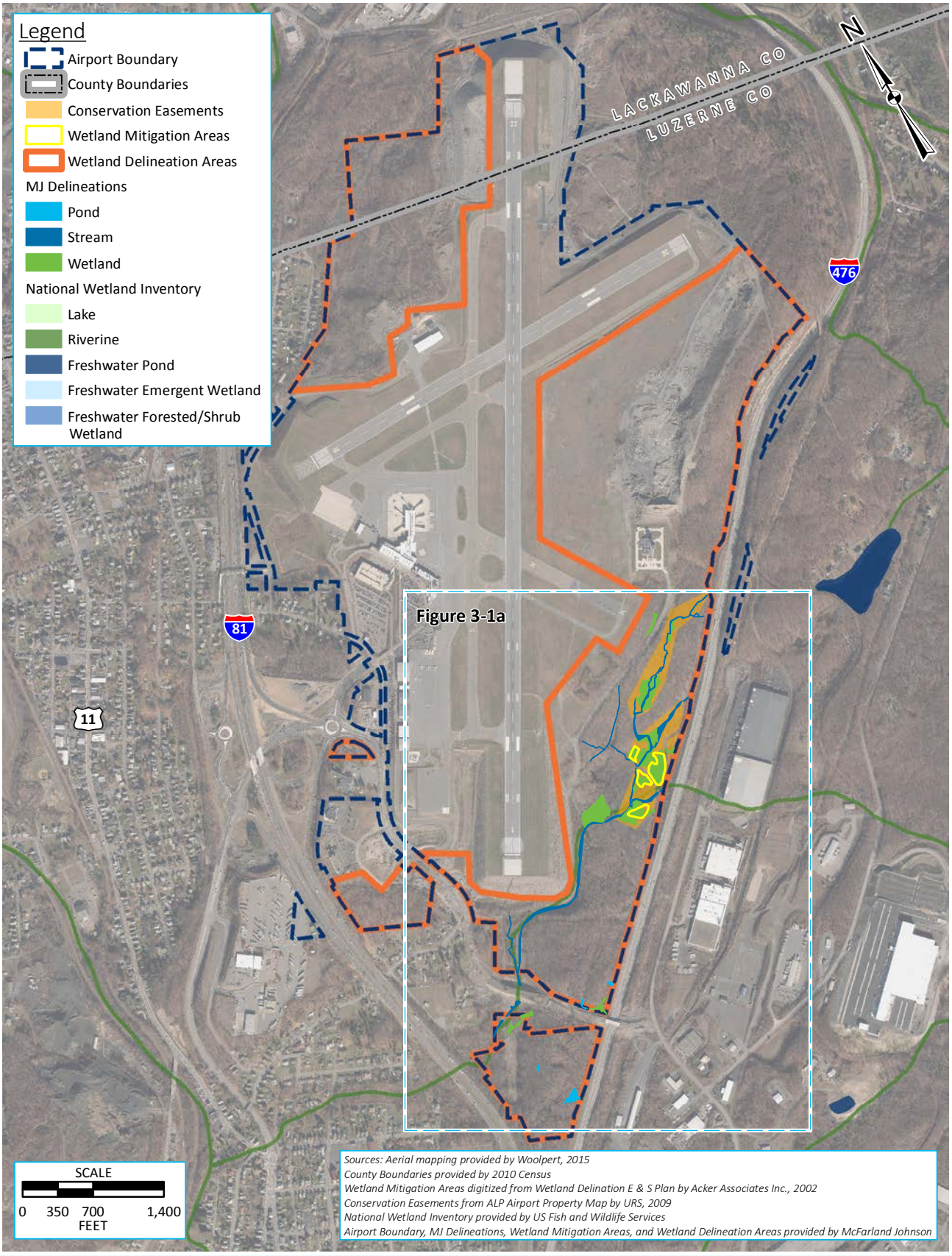
Wetlands and waterways delineations of the undeveloped portions of Airport owned property was performed by McFarland Johnson in late October and early November of 2015. The wetland delineation was conducted through field investigations of vegetation, soils and hydrology in accordance with the 1987 *United 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).

A total of ten wetlands, Wetlands A through J, were identified during the wetlands and waterways delineation. Further information regarding the delineated wetlands has been included in the Wetlands and Waterways Delineation Letter Report included in **Appendix C**. The locations of the delineated wetlands, along with NWI mapped wetlands are shown in **Figure 3-1**, Wetlands and Surface Waters Map.

Portions of Wetlands B, C, D and E consist of created wetlands. According to collective information located in the PADEP Bulletin and PADEP eFACTS Database, under PADEP Permit No. E40-533, issued on June 12, 2001, the Airport was required to create 1.56 acres of wetlands as compensatory mitigation for wetland impacts associated with a previous terminal expansion consisting of a parking garage and an access roadway, and other miscellaneous commercial development at the Airport. In addition, as part of the permitting requirements under PADEP Permit No. E40-533, much of the area surrounding Wetlands B, C, D, E, F, H, and I have had permanent conservation easements placed over them. The approximate location of the conservation easements and approximate design plan locations of the four wetland mitigation areas are shown in **Figure 3-1**, Wetlands and Surface Waters Map.

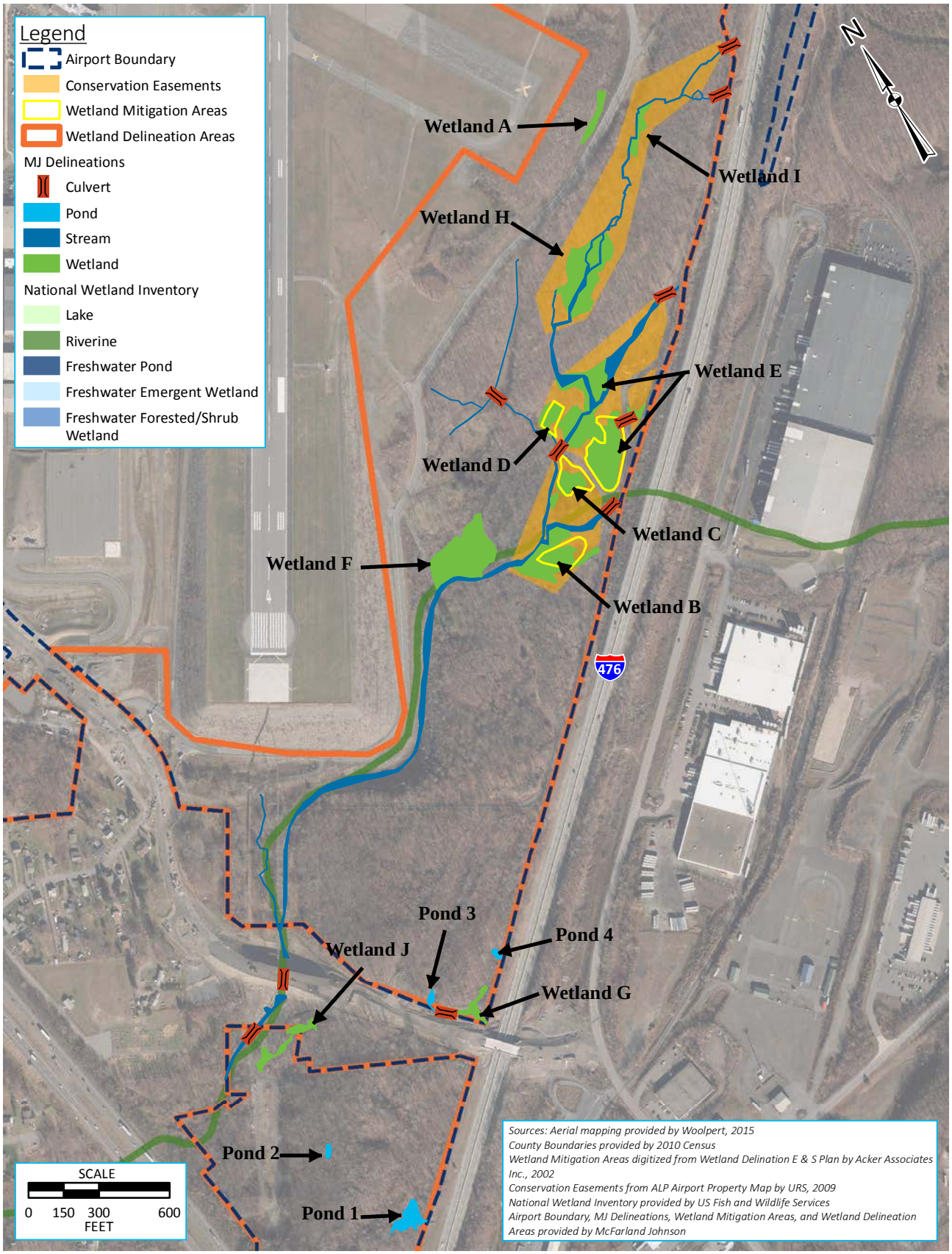
The jurisdictional statuses and boundaries for all wetlands will need to be determined by the PADEP and USACE. However, it is the opinion of McFarland Johnson that all delineated wetlands, except Wetlands A, G and J, possess a hydrologic connection to a TNW and are jurisdictional under Section 404 of the CWA. Wetlands A, G and J have no significant nexus to a TNW and should not be considered jurisdictional. All wetlands delineated by McFarland Johnson are subject to the regulations of the PADEP and the provisions of EO 11990. Furthermore, any future proposed construction within the vicinity of the mitigation wetlands will require detailed deed and survey review to ensure that no impacts to these areas occur.

Figure 3-1: Wetland and Surface Water Resources Map



Document Path: \\mjcolo-dc-x64\K\WB Scranton\T-18085.00 Master Plan Update\Draw\GIS\Environmental\3-1 AVP Wetlands.mxd

Figure 3-1a: Wetland and Surface Water Resources Map



Document Path: \\mjcolo-dc-x64\K\WB Scranton\T-18085.00 Master Plan Update\Draw\GIS\Environmental\3-1a AVP Wetlands Inset.mxd

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 State regulated wetlands will require a Chapter 105 permit from the PADEP, while impacts to federally regulated surface waters will require a Section 404 permit from USACE and Section 401 WQC from the PADEP. 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 exceeds 0.10 acres, while the PADEP requires mitigation when impacts to State-regulated wetlands exceed 0.05 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 3-2**. PADEP mitigation requirements generally mirror those of the USACE.

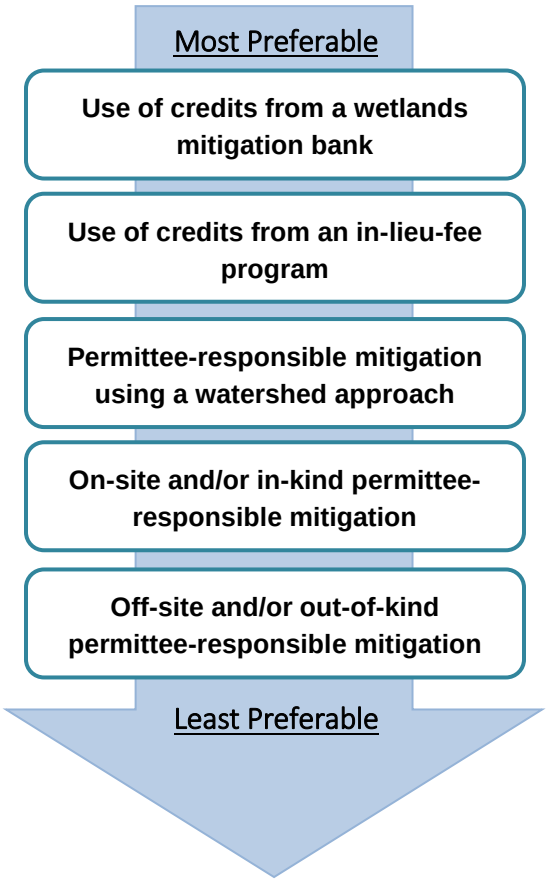
Based on regulations promulgated by the Department of Defense and Environmental Protection Agency in *Mitigation for Losses of Aquatic Resources; Final Rule* (Fed. Reg. Vol. 73, No. 70, April 10, 2008) a graphic presenting the hierarchy of preferred wetland mitigation options for impacts to federally regulated wetlands is presented as **Figure 3-2**.

Table 3-2. 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

Figure 3-2: 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 MOU, the signatory agencies are required to diligently consider the siting criteria recommendations as stated in FAA Advisory Circular (AC) 150/5200-33 *Hazardous Wildlife Attractants On or Near Airports*.

FAA AC 150/5200-33B recommends separation distances between an airport's air operations area (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.

3.3.3. 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 surfaces 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 Commonwealth of Pennsylvania regulates impacts to watercourses and their floodways, and other surface waters wholly or partly within the state under the Dam Safety and Encroachments Act (P.L. 704, No 204, as amended). The regulatory provisions designed to implement the Dam Safety and Encroachments Act are outlined in 25 Pa. Code Chapter 105. Waterbodies are defined by their normal pool elevation and waterways are delineated by their "top of bank" or first defined break in slope. Floodway boundaries are those as designated by the Federal Emergency Management Agency (FEMA). In areas where a FEMA floodway has not identified, the floodway is considered to be 50 feet landward from the top of the bank of any watercourse with perennial or intermittent flow.

As previously mentioned, wetlands and waterways delineations of the undeveloped portions of Airport owned property was performed by McFarland Johnson in late October and early November of 2015. The USACE OHWM for any streams or other water bodies located within the project study areas were field delineated in accordance the definitional criteria as presented in 33 CFR 328.

A total of eight streams, Streams 1 through 8, and four freshwater ponds, Pond 1 through 4, were identified during the wetlands and surface waters delineation. Further information regarding the delineated surface waters has been included in the Wetlands and Waterways Delineation Letter Report included in **Appendix C**. The locations of the identified surface water resources are shown in **Figure 3-1**, Wetlands and Surface Waters Map.

The jurisdictional statuses and boundaries for all surface waters will need to be determined by the PADEP and USACE. However, it is the opinion of McFarland Johnson that all delineated streams possess a hydrologic connection to a TNW and are jurisdictional under Section 404 of the CWA. All identified ponds are considered isolated surface mine impoundments, and should not be considered regulated under Section 404 of the CWA. Furthermore, it is believed all identified streams and ponds are considered "Waters of the Commonwealth" and are regulated under 25 Pa. Code Chapter 105.

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 project will minimize indirect impacts to wetland resources. Projects that have no practicable alternatives to avoid direct impacts to State

regulated surface waters will require a Chapter 105 permit from the PADEP, while impacts to federally regulated surface waters will require a Section 404 permit from USACE.

As previously mentioned, all applicants for a federal license or permit must obtain a 401 WQC if the proposed activity may result any discharge in navigable waters, including all wetlands, watercourses, and natural and man-made ponds.

3.3.4. 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.

The Pennsylvania Scenic Rivers Act (P.L. 1277, Act No. 283, as amended) provides for protection of the State's free-flowing rivers, or sections thereof, and related adjacent land areas, that possess outstanding current or potential future aesthetic and recreational values to the citizens of Pennsylvania.

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

3.3.5. 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.

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

The Pennsylvania Flood Plain Management Act (P.L. 851, Act No. 166, as amended) provides for additional protections for floodplains located within the Commonwealth of Pennsylvania. The Flood Plain Management Act specifically regulates activities conducted by, or performed on property owned or maintained by other Commonwealth agencies, political subdivisions including local governments and public utilities when located in a floodplain area. The regulatory provisions designed to implement the Flood Plain Management Act are outlined in 25 Pa. Code Chapter 106.

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. FEMA utilizes a 100-year storm interval for flood preparation. Flooding related to a 100-year storm statistically has a 1-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.

Review of the most current FEMA Flood Insurance Rate Mapping (FIRM) of the Airport property, shows portions of the current and former flow path of Lidy Creek has a designated 100-year floodplain associated with it. The most current mapping for the portion of Lidy Creek on Airport Property, dated November 2, 2012, does reflect the relocated path of Lidy Creek that was

completed during the Runway 4 Extension Project. It is assumed that the floodplain would follow the same elevation marks along the relocated section of Lidy Creek. **Figure 3-3**, FEMA Floodplain Map, shows the location of currently mapped FEMA flood zones in the vicinity of the Airport.

As specific Airport developments are identified and analyzed as part of this MPU and through future NEPA documentation requirements, their potential to encroach upon a FEMA designated floodplains will be evaluated.

3.4. 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, Gulf of Mexico, and Great Lakes.

The Airport is not located within a CBRS and the Coastal Barrier Resources Act will not apply to any proposed improvements at the Airport.

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 Pennsylvania the management authority has been delegated to the DEP's Water Planning Office. Under Pennsylvania's Coastal Resources Management Program (CRMP), the PADEP develops coastal policies and establishes state consistency requirements.

Based on PADEP mapping, the Airport is not located within, or adjacent to, a designated Coastal Zone and CRMP policies and regulations will not apply to any proposed improvements at the Airport.

3.5. 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, wildlife and waterfowl refuges, on or immediately adjacent to Airport property.

A review of the Pennsylvania Bureau of Historic Preservation (PBHP) Cultural Resources Geographic Information System (CRGIS) was conducted on December 28, 2016. CRGIS indicated that Airport property is not located within a known archeological sensitive area.

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). As specific developments are identified, and analyzed as part of this MPU and through future NEPA documentation requirements, their potential to effect historic resources or other resources protected under Section 4(f) will be assessed on an individual basis.

Figure 3-3: FEMA Floodplain Map

Document Path: \\mjcolo-dc-x64\K\WB Scranton\T-18085.00 Master Plan Update\Draw\GIS\Environmental\3-3 AVP FEMA.mxd

3.6. HISTORIC, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULUTRAL 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 the State Historic Preservation Office (SHPO).

As previously mentioned, Airport property is not located within a known archeological sensitive area. However, all future proposed projects at the Airport will require project specific consultation with the PBHP. When a specific airport development is proposed, the required documentation, including detailed descriptions and pictures of structures to be affected, will be sent to the PBHP for a determination of that project's potential effect on historic or cultural resources as part of future studies to comply with NEPA.

3.7. 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 land of statewide or local importance. According to the U.S. Natural Resource Conservation Service (NRCS) *Web Soil Survey* accessed on December 28, 2016, approximately 4.4% (32.8 acres) of the Airport is classified as prime farmland and 3.9% (19.1 acres) is classified as farmland of statewide importance.

The FPPA does not apply to land already committed to "urban development or water storage". Airport property has already been previously committed to urban development or current airport utilization and development and would not be subject to the FPPA regulations.

In the Commonwealth of Pennsylvania, local municipalities also have the authority to regulate certain activities in agriculture zones under the Municipalities Planning Code (P.L. 805, Act No. 247, as amended). However, there are no zoned agricultural areas in the vicinity of the Airport.

3.8. LAND USE

When considering improvement projects that meet airport 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, 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. There are parks, schools, churches, cemeteries, and many residences

in the vicinity of the airport that are 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.

The Airport is located adjacent a densely developed area associated with cities of Wilkes-Barre and Scranton. The Airport is surrounded to the north, west and south by a mix of residential, transformational, industrial, and commercial land uses. Lands located to the east of the Airport consist primarily of light residential and forested lands. The Land Use Map from Chapter 1, *Inventory* is included as Figure 3-4.

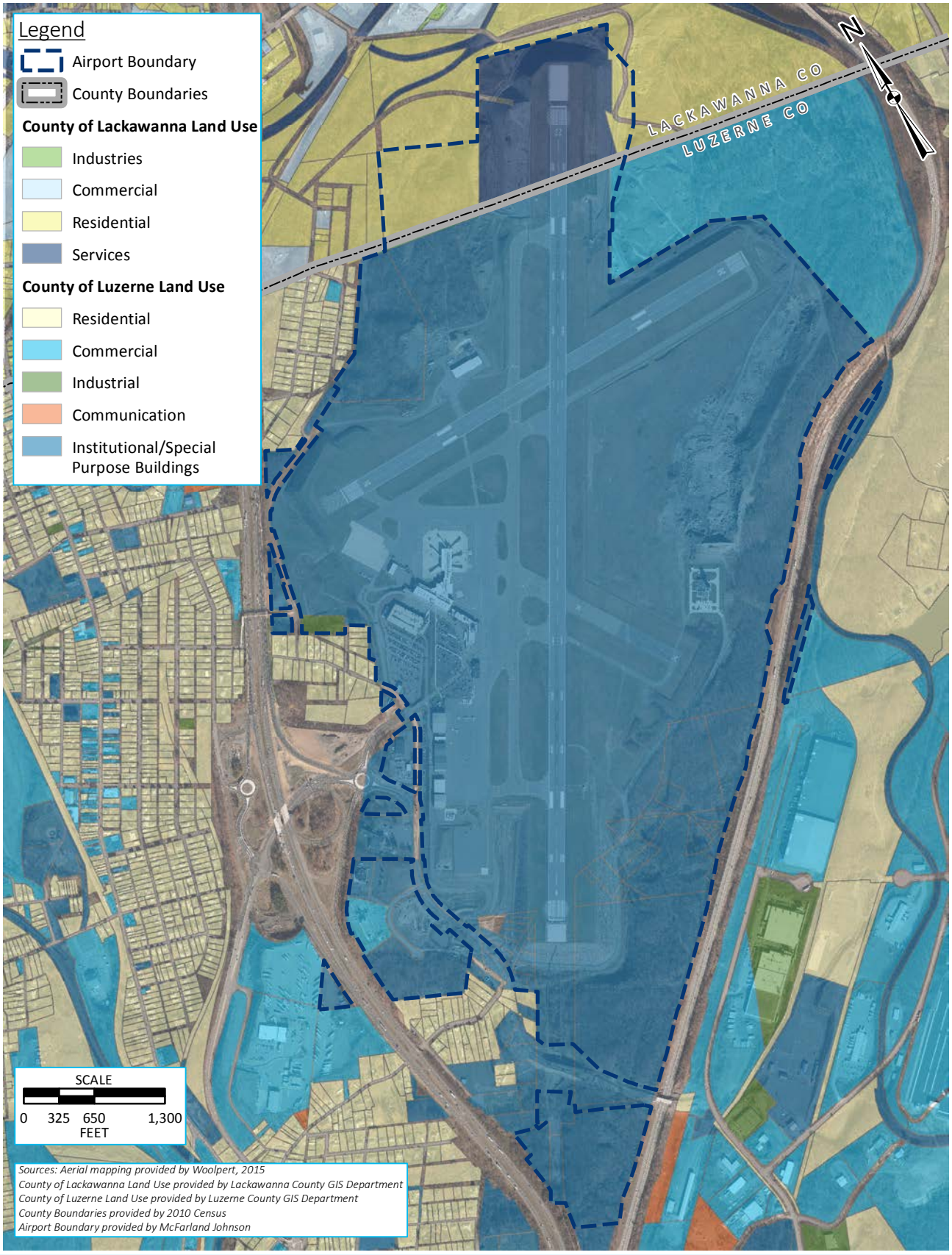
FAA Advisory Circular (AC) 150/5200-33B Hazardous Wildlife Attractants On or Near Airports provides guidance on certain land uses that have the potential to attract hazardous wildlife on or near public-use airports. Potential wildlife attractants and congregation areas can include areas such as shopping malls, agricultural fields, livestock operations, golf courses, parks, waste handling facilities, waterbodies, wetlands, and water management facilities.

A yearlong Wildlife Hazard Assessment (WHA) was completed at the Airport by USDA Wildlife Services between February 2010 to January 2011. The WHA identified several surface water wildlife attractants located within a 5-mile radius of the Airport, including the several large ponds, lakes and reservoirs, as well as the Susquehanna and Lackawanna River corridors. The WHA identified these wildlife attractants as primarily attracting a variety of gulls and waterfowl that could be hazardous to aircraft operations. Additional potential wildlife attractants identified in the WHA included Glenmaura Meadow National Golf Club located approximately 0.5 miles to the northeast of the airport, and the Alliance Sanitary Landfill, located approximately 3.1 miles to the northwest of the Airport. According to the WHA, the Alliance Sanitary Landfill staffs a full-time USDA Wildlife Services' biologist is association with an executed 2006 Bird Advisory Plan with the landfill to assist in alleviating potential damage caused by wildlife.

FAA AC 150/5300-13A- *Airport Design,* identifies several land uses that are compatible with an airport's Runway Protection Zone (RPZ), the area off the runway ends. The RPZ functions to enhance the protection of people and property on the ground and the area is maintained clear of incompatible objects and activities. Land uses incompatible with the RPZ include buildings and structures (including residences, schools, churches, hospitals, and industrial buildings), recreational areas, transportation facilities (including roads), fuel and hazardous materials storage facilities, wastewater treatment facilities, and above-ground utility infrastructure.

Although an avigation easement is in place near the Runway 28 end to allow for Airport control over 11.6 acres of the Runway 28 RPZ which exist outside the Airport's boundary, portions of the remaining runway's RPZ at AVP fall outside of airport property and are not controlled through easements. Specifically, 26.4 acres of the Runway 4 RPZ, 6.7 acres of the Runway 10 RPZ, and 39.5 acres of the Runway 22 RPZ extend into properties not owned or controlled by the Airport.

Figure 3-4: Land Use Map



Document Path: \\mjcolo-dc-x64\K\WB Scranton\T-18085.00 Master Plan Update\Draw\GIS\Environmental\3-4 AVP Land Use.mxd

As a result, a number of incompatible land uses can be identified within the Airport's RPZ. Only the Runway 28 RPZ is free of developments or activities incompatible with airport activity.

As future improvements are considered as part of this Master Plan Update, the presence of incompatible land uses within the vicinity of the Airport will be considered.

3.9. 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 due to the potential for speech and sleep interference. 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 and 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 2B. 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 and is not indicative of a single day or single event. All operations that occur between 10:00pm and 6:59am, also known as nighttime operations, incur an additional 10 dB weight within the model as a result of the amplified perception of noise during these hours. 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 3-3 shows the typical noise levels associated with specific areas commonly encountered every day. Table 3-4 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 3-3. 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	Noise 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.

Table 3-4. 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*

A review of aerial photography, along with land use and zoning maps of the area, indicates that some of the land to the south and east of the Airport would be considered noise sensitive, though the Airport is surrounded by two major highway systems (I-81 and I-476) and all such properties are outside those roadways.

3.9.1. Noise Modeling

Data and assumptions relative to Airport operations and fleet mix as detailed in Chapter 2, Forecast, form the foundation for the development of noise contours and the noise exposure maps for AVP. The data inputs and resultant noise exposure model (for both the existing and future conditions) are discussed in the following sections.

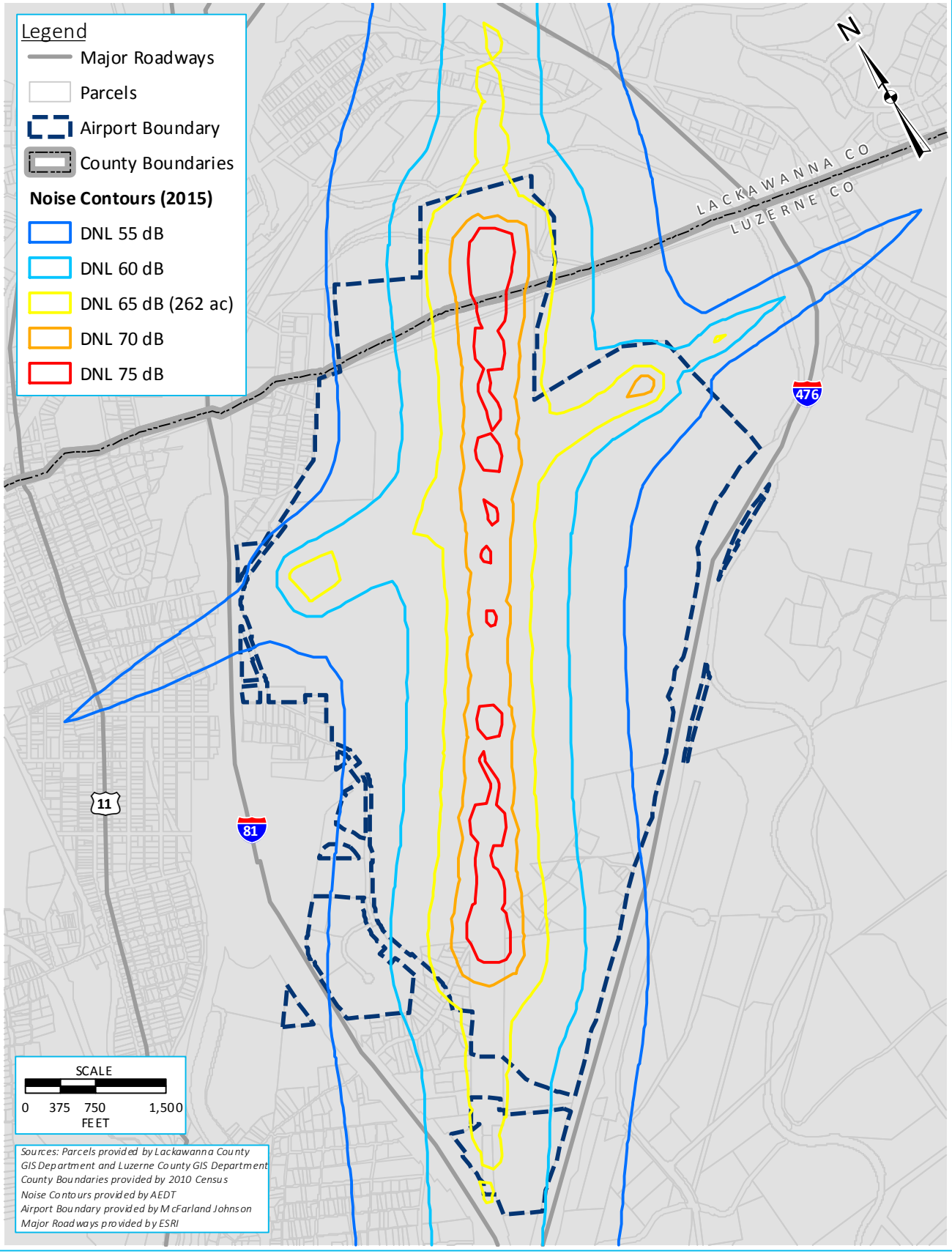
Existing Noise Contours

The existing noise contours were developed based on 2015 operational activity and the current facility layout and utilization characteristics of the AVP airfield. This includes a concise fleet mix intended to adequately represent all aircraft making use of AVP and daily operational counts, which when annualized approximate the current use characteristics of the airfield. Further, this activity is allocated to a single approach, departure, and, for small GA aircraft, a terminal airspace pattern track for each runway end. Figure 3-5 depicts the results of the analysis.

Future Noise Contours

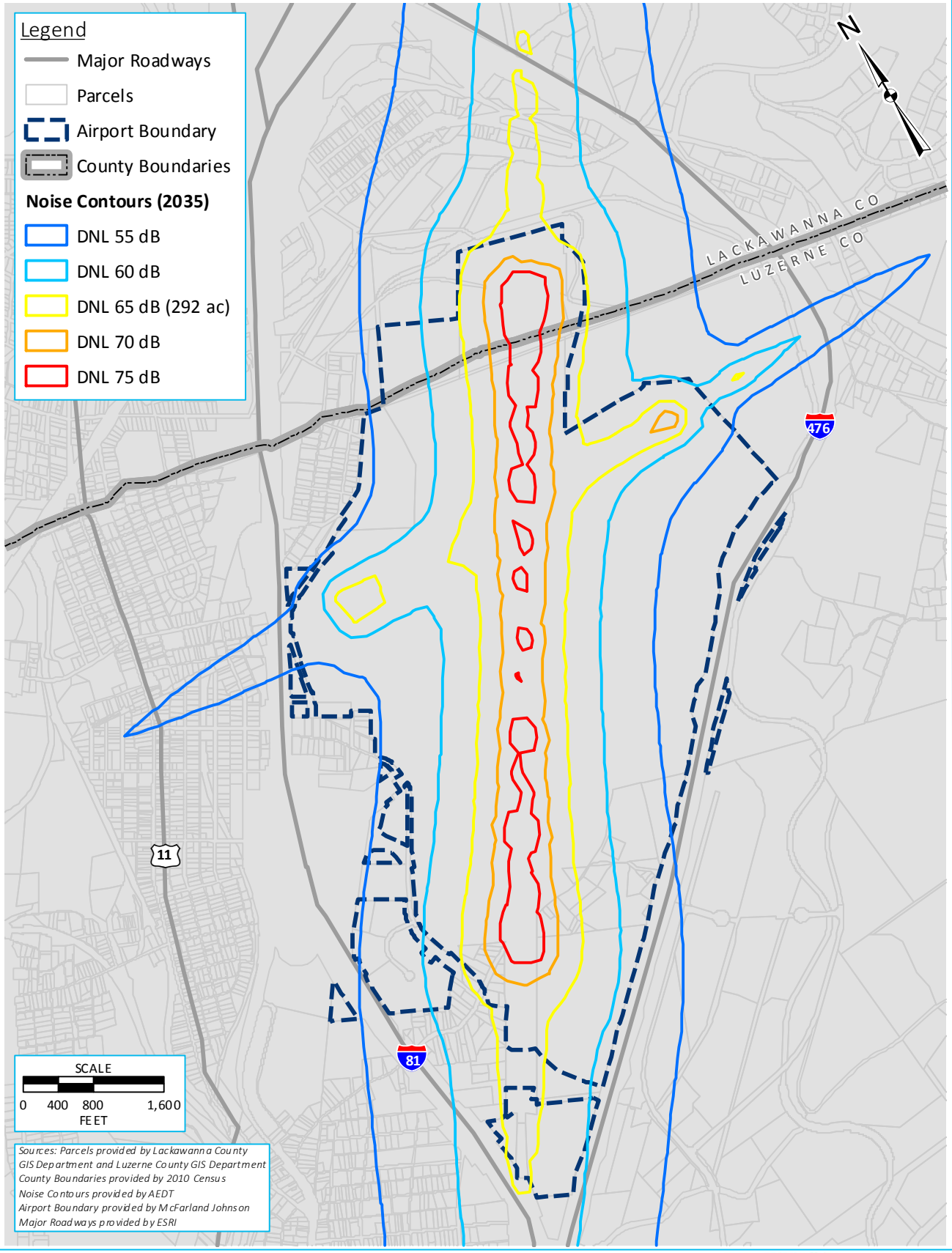
Future noise contours were developed based on forecasted operational activity in 2035 and the proposed facility layout as depicted in the Airport Layout Plan (ALP). Airfield utilization characteristics are not anticipated to change in any substantive way over the planning period and as such were not revised for the preparation of future noise contours. Figure 3-6 shows the anticipated annualized noise exposure for AVP in 2035.

Figure 3-5: Existing Noise Exposure Map (2015)



Document Path: \\mjcolo-dc-x64\K\WB Scranton\T-18085.00 Master Plan Update\Draw\GIS\Environmental\3-5 AVP Noise.mxd

Figure 3-6: Future Noise Exposure Map (2035)



Document Path: \\mjcolo-dc-x64\K\WB Scranton\T-18085.00 Master Plan Update\Draw\GIS\Environmental\3-6 AVP Noise 2035.mxd

3.10. 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.

3.10.1. Light Emissions

The Airport is classified as a Part 139 Class I (scheduled Large Air Carrier Aircraft Airport) and is required to follow the Airport Safety guidelines as stated in 14 CFR 139. These guidelines include lighting and signage utilized both on the ground and in the air as well as other airport procedures. Airport improvements may include the installation of additional lighting or change the location of lighting on airport property to meet the requirements of 14 CFR 139 or to accommodate the construction of the infrastructure improvement. These installations can alter the existing lighting conditions both on-airport and in the vicinity of the 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.

Given the airport's size, location, history, and surrounding land use, an increase in light emissions is unlikely to be significant for the installation or replacement of lighting on airport, with the exception of the installation of approach lighting systems on runways where the technology is not currently available. In some instances, these lighting systems could extend beyond airport property into neighborhoods where impacts to residential land uses could occur and would require further analysis during the completion of required NEPA documentation prior to installation. Additionally, if obstruction removal (i.e. tree clearing) is proposed, resulting visual changes and potential impacts would also be considered and evaluated.

3.10.2. Visual Resources and Character

The Airport is located in a densely developed area consisting of a mix of residential, transformational, industrial, and commercial land uses. There are no buildings, sites, traditional cultural properties, and 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 surrounding area and would not negatively affect the visual character of the surrounding area.

3.11. 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 of the Code of Federal Regulations, 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 Environmental Protection Agency (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 Airport is located in Counties of Luzerne and Lackawanna, Pennsylvania. The EPA does not currently list either Luzerne or Lackawanna Counties in 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.

3.12. HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION

3.12.1. Hazardous Waste

A Hazardous Waste/Contaminated Material (HWCM) desktop screening was conducted to determine the potential for the presence of HWCM on or in the vicinity of Airport property. The screening involved the review of on-line governmental databases and an Environmental Database Report provided by NETROnline Environmental Database Network (NETROnline). An environmental regulatory agency records review of this nature is based on publically available information from State and federal agencies.

Review of the Environmental Database Report indicated that there are two locations that are listed under the PA Leaking Underground Storage Tank Database and one location listed under the national Emergency Response Notification System (ERNS) within a 1-mile radius from the approximate center of Airport property. All three of these record locations are located west and down gradient of the Airport and do not pose a potential risk of contamination to Airport Property.

Review of the USEPA Envirofacts Database and PADEP eFACTS Database did not indicate the potential for the release of chemical, hazardous, or petroleum materials at, or in the immediate vicinity of the Airport.

Review of the PADEP Bureau of Environmental Cleanup and Brownfields Regulated Storage Tank Cleanup Incidents Database revealed that a spill was reported (Incident ID: 9339) with the closure of an UST used to store AvGas at the Airport in 1989. The report indicated that cleanup was completed in 1994 and no further remedial actions were required.

As projects are proposed, they will be evaluated for their specific potential to encounter chemical, petroleum, or hazardous materials in direct consultation with PADEP and EPA. In the event that previously unidentified chemical, hazardous or petroleum related wastes are encountered during

the construction of any future proposed projects, the wastes will be handled and disposed of in accordance with all applicable federal, state, and local regulations.

3.12.2. Solid Waste

Currently, the Airport has a contract for recycling and municipal waste management services with Waste Management, Inc., a commercial waste management company. All solid waste is transported approximately 2.3 miles northwest to the Alliance Sanitary Landfill located at 398 South Keyser Ave, Taylor, Pennsylvania. Alliance Sanitary Landfill is a commercial landfill owned and operated by Waste Management, Inc. The Alliance Sanitary Landfill is permitted to accept non-hazardous household, commercial and industrial waste, including special wastes. Alliance does not accept infectious, hazardous, radioactive, unprocessed medical, or liquid wastes.

According to personal communication with John Hambrose on January 12, 2017, the Community Relations Coordinator at Alliance Sanitary Landfill, the landfill had an original permitted capacity of 62 million cubic yards, and currently has remaining capacity of approximately 28.8 million cubic yards. The permitted maximum daily volume is 5,500 tons per day, with a current average daily volume of approximately 825 tons per day. Based on current operational data, the anticipated life span of the landfill is approximately 76 years.

Based on the permitted landfill capacity and landfill life span, adequate space for the disposal of solid waste attributable to 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 AVP provides recycling bins and provides for separate recycling pickup in all facilities it owns and operates, including the commercial passenger terminal.

Although a waste audit was not prepared for this study, 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 contracted waste disposal company. As such, a number of initiatives could easily be implemented which would likely reduce the overall waste stream from the airport by redirecting recyclables appropriately. These include:

- Continue to provide strategically located recycling receptacles within the terminal and around the airport property.
- Place signs directly adjacent that to recycling receptacles that clearly identifies what can and cannot be recycled.
- Continue to provide used oil receptacle and coordinate with recycler for pick-up and disposal.
- Encourage the recycling of aluminum, glass, plastics, paper, newspapers, magazines, phone books, and corrugated cardboard.
- Stockpile recyclables not regularly picked up for annual event.

Additionally, the reuse of materials is regularly incorporated during construction projects when applicable to reduce the amount of solid waste being exported to landfills.

3.12.3. Pollution Prevention

The Clean Water Act authorizes the EPA and individual 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 Pennsylvania, the NPDES program is delegated to PADEP. In Luzerne or Lackawanna Counties, the NPDES permits for stormwater discharges associated with construction activities are administered by their respective County Conservation Districts (CCD). The Airport presently holds an approved NPDES General Permit for stormwater discharges. See Section 3.12.4 for further information specific to stormwater discharges.

Under the Oil Pollution Prevention Act amendment to the Clean Water Act, owners of non-transportation related aboveground storage tank (AST) facilities with a total aboveground capacity greater than 1,320 gallons are required to maintain a Spill Prevention, Control and Countermeasure (SPCC) plan. A SPCC plan describes the operational procedures that have been developed for preventing, containing and controlling a spill or release to a navigable water.
The FBO is the sole provider of fuel on the Airport. The Airport owns and the FBO operates the six fuel tanks located south between the South General Aviation and General Aviation ramps. The fuel farm has four aviation fuel tanks and two tanks for automobile fuels:

- One 20,000-gallon AST Jet A tank
- Two 15,000-gallon AST Jet A tanks
- One 12,000-gallon AST AvGas tank
- One 1,000-gallon AST automobile fuel tank
- One 1,000-gallon AST diesel tank

In accordance with federal regulations, the Airport maintains a SPCC plan for preventing, containing and controlling a spill or release to a navigable water.

Pennsylvania's Storage Tank and Spill Prevention Act (P.L. 169- Act 32, as amended) requires owners of ASTs with a capacity greater than 250 gallons and underground storage tanks (USTs) with a capacity greater than 110 gallons to register and permit each tank with the PADEP. Act 32 required all registered and permitted tanks to comply with technical requirements promulgated under 25 Pa. Code Chapter 245- *Administration of Storage Tank and Spill Prevention Program*. The major components of 25 Pa. Code Chapter 245 are the requirements of periodic tank tightness testing on USTs and tank inspections on ASTs to minimize the potential accidental releases of tanks products. In addition, owners of AST facilities with a total aboveground capacity greater than 21,000 gallons of regulated substances to develop and submit a Spill Prevention Response (SPR) Plan to the PADEP. A SPR plan describes the procedures that have been developed for preventing, containing and controlling a spill or release, along will protocols for notification of the PADEP, local emergency agencies, and all municipalities and predetermined water uses within 20 miles downstream of facility. The Airport owns six petroleum ASTs that have a combined capacity greater than 21,000 gallons. As a result, the Airport maintains a PADEP approved SPR Plan.

3.12.4. 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.

If one or more acres of earth are disturbed during construction, an Individual NPDES or General NPDES Permit for Stormwater Construction Activities (General Permit PAG-02) issued by the PADEP, is required. The Commonwealth of Pennsylvania issues NPDES stormwater permits under the Clean Stream Law (P.L. 1987- No 394, as amended). The regulatory provisions designed to implement the Dam Safety and Encroachments Act are outlined in 25 Pa. Code Chapter 102. The issuance of a NPDES permit for stormwater discharges associated with construction activities requires the preparation of an Erosion and Sediment Control (ESC) Plan and a Post Construction Stormwater Management (PCSM) Plan. The ESC Plan identifies the Best Management Practices (BMPs) to control stormwater discharge during the construction phase, while the PCSM Plan identifies the BMPs to manage and treat stormwater discharges post-construction.

Earth disturbances that will result in the disturbance of greater than 5,000 square feet are also regulated under Chapter 102. Earth disturbances greater than 5,000 square feet only require the preparation and approval by the ECCD of a site specific ESC Plan.

Future projects that could result in the disturbance of greater than 5,000 square feet of earth disturbances will require coordination with PADEP, and Lackawanna and Luzerne CCDs to determine the level of specific stormwater management measures and permits required.

3.13. 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 is likely to increase the use of energy and natural resources. However, energy and natural resources are relatively abundant in Northeastern Pennsylvania 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.

3.14. 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 Executive Order 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.

3.15. 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 federally funded projects to address the relationship of people with their natural and physical environments.

3.15.1. Socioeconomics

Principal socioeconomic impacts to be considered under CEQ regulations 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 Advisory Circular 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.

3.15.2. Environmental Justice

Executive Order 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.

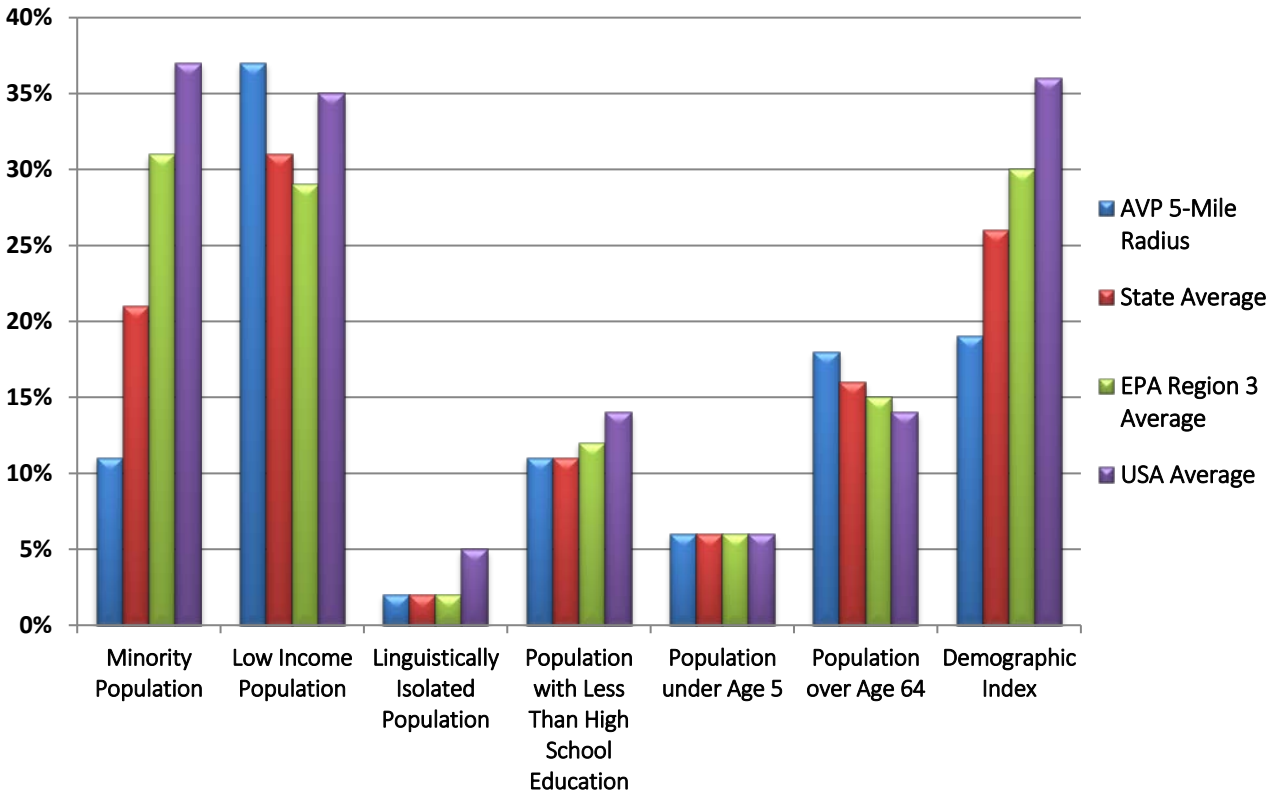
An environmental justice (EJ) screening of the area within a 5-mile radius of the Airport property was conducted using the EPA's environmental justice mapping and screening tool EJSCREEN. EJSCREEN evaluates seven select demographic indicators calculated from the Census Bureau's American Community Survey 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 Executive Order 12898 on Environmental Justice. For each Census block group, these two numbers are simply averaged together. The formula is as follows: Demographic Index = (% minority + % low-income) / 2.

Review of the EJSCREEN data indicates the area within a 5-mile radius of the Airport has a significantly lower minority population percentage compared to EPA Region 3, State and USA averages. The lower minority percentage has a positive correlation with the demographic index, which is also significantly lower than EPA Region 3, State and USA averages. All other demographic indices are generally aligned with EPA Region 3, State and USA data 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 3, State and USA data is shown in **Figure 3-7**, Demographic Profile Comparison Graph.

Figure 3-7: Demographic Profile Comparison Graph

Source: EPA EJSCREEN, Accessed January 2, 2017



The PADEP Environmental Justice Areas Mapping of the Airport vicinity indicated that no Airport owned property is located in or immediately adjacent to a potential environmental justice area.

Based on the EJ screening and review of PADEP Environmental Justice Areas Mapping, proposed Airport development is not likely to have a disproportionately adverse human health or environmental effect on children, elderly, minority or low-income populations.

3.15.3. Children's Environmental Health and Safety Risks

Pursuant to Executive Order 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.