ENVIRONMENTAL CONDITIONS

The purpose of considering environmental factors in airport master planning is to assist GCIAA in evaluating current environmental conditions and future airport development, as well as providing information that will help expedite subsequent environmental processing. FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, N*ational Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, are the FAA's environmental guidance for aviation projects/actions to comply with NEPA. It is important to note that the environmental analysis included in this Master Plan Update is not, in and of itself, a NEPA document.

FAA Order 1050.1F identifies the following environmental impact categories:

- Air Quality
- Biological Resources
- Climate
- Coastal Resources
- Department of Transportation Act, Section 4(f) Resources
- Farmlands
- Hazardous Materials, Solid Waste, and Pollution Prevention
- Historical, Architectural, Archeological, and Cultural Resources
- Land Use
- Natural Resources and Energy Supply
- Noise and Noise-Compatible Land Use
- Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks
- Visual Effects
- Water Resources (including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)

A.1 Air Quality

Responsibility for protecting and improving the nation's air quality rests with the U.S. Environmental Protection Agency (USEPA). Section 109 of the Clean Air Act establishes National Ambient Air Quality Standards (NAAQS) to protect public health and environmental welfare. The USEPA identifies the following six criteria pollutants for which NAAQS apply: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide. The USEPA considers geographic areas that are in violation of one or more NAAQS nonattainment areas. Section 110 of the Clean Air Act requires states with nonattainment areas to

develop a state implementation plan (SIP) that demonstrates how the area will reach attainment of the NAAQS within a specific timeframe.

According to the Indiana Department of Environmental Management (IDEM), the Airport property is located in a nonattainment area (Lake County) for the 2008 8-hour ozone standard.[1] The timeline of actions taken by IDEM since Lake County was designated as a nonattainment area follows:[2]

- December 5, 2012: IDEM submitted a redesignation petition and maintenance plan to the USEPA.
- December 10, 2014: USEPA denied the redesignation petition and maintenance plan.
- May 4, 2016: USEPA determines that Lake County did not meet the attainment standard based on the 2012-2014 ozone monitoring data by the applicable attainment date (July 20, 2015). The USEPA reclassified Lake County as a "moderate" nonattainment area, with a new attainment date of July 20, 2018.
- June 15, 2016: IDEM submitted a final redesignation petition and maintenance plan, which was based on ozone monitoring data from 2013-2015.

Partial preliminary ozone monitoring data for 2014-2015 indicates that the nonattainment area is above the 2009 standard. IDEM is beginning to prepare an attainment demonstration and technical support document for Lake County. The Airport is also in a maintenance area for carbon monoxide, particulate matter, and sulfur dioxide.[3] IDEM has redesignation and maintenance plans in place for Lake County for those pollutants.

A.2 Biological Resources

Biological resources include terrestrial and aquatic plant and animal species; game and non-game species; special status species; and environmentally sensitive or critical habitats. Provisions have been set forth in NEPA for the protection of biological resources. The following are relevant federal laws, regulations, Executive Orders (EOs), and guidance[4] that protect biotic communities:

[1] IDEM. (2016, September 9). *Current Nonattainment Areas*. Retrieved September 2016, from Nonattainment Status for Indiana Counties: http://www.in.gov/idem/airquality/files/nonattainment_areas_map.pdf

[2] IDEM. (2016, September 13). *Current and Historical List of Nonattainment Areas by County*. Retrieved September 2016, from Nonattainment Status for Indiana Counties: http://www.in.gov/idem/airquality/files/nonattainment_county_list.pdf

[3] IDEM. (2016, September 13). *Current and Historical List of Nonattainment Areas by County*. Retrieved September 2016, from Nonattainment Status for Indiana Counties: http://www.in.gov/idem/airquality/files/nonattainment_county_list.pdf

[4] Due to the number of federal laws and EOs, this section presents only the legal citations or references for those requirements in lieu of summarizing their requirements. See FAA Order 1050.1F Desk Reference for more information.

- Endangered Species Act (ESA) (16 U.S.C. §§ 1531-1544)
- Bald and Golden Eagle Protection Act (16 U.S.C. §§ 668 *et seq.*)
- Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 *et seq.*)
- Fish and Wildlife Coordination Act (16 U.S.C. § 661-667d)
- EO 13112, *Invasive Species* (64 FR 6183)
- Marine Mammal Protection Act (16 U.S.C. § 1361 *et seq.*)
- Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§ 703 *et seq.*)
- EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds (66 FR 3853)
- Council on Environmental Quality (CEQ) Guidance on Incorporating Biodiversity Considerations into Environmental Impact Analysis under NEPA
- Memorandum of Understanding to Foster the Ecosystem Approach

Although the Endangered Species Act does not protect state-protected species or habitats, NEPA documentation ensures that environmental analysis prepared for airport actions addresses the potential effects to state-protected resources.

Habitat characteristics of the Airport property are primarily cleared or developed areas (e.g., terminal, hangars, runways, roads, parking, etc.). The developed areas of the Airport, aside from the airfield development (e.g., runways and taxiways) are mostly in the northeast portion of the Airport property. The undeveloped land around those areas has been primarily cleared of dense vegetation. Airport personnel regularly mow and maintain grasses in these areas. There is a rare dune and swale ecosystem around the Airport that is unique to Northwest Indiana and considered a globally threatened habitat.[5] This ecosystem consists of upland dune ridges alternating with low-relief wetlands. There are ditches that run through the cleared/grassland areas that are part of the Airport's stormwater management system.

The Authority has a Wildlife Hazard Management Plan in place at the Airport, which addresses the responsibilities, policies, and procedures necessary to reduce wildlife hazards at the Airport.[6] The Wildlife Hazard Management Plan includes habitat management as a way to reduce wildlife hazards on, or near, the Airport. The long-range goal is to actively reduce attractive wildlife habitat on property under the control of the Authority. The Authority is currently coordinating with the U.S. Department of Agriculture to update the Wildlife Hazard Assessment and Wildlife Hazard Management Plan.

Table 1 lists the federally threatened and endangered species that the U.S. Fish and Wildlife Service (USFWS) identifies as having a potential to occur in Lake County.

[5] Cardno JFNEW. (2012, December 20). Gary Airport Conservation and Economic Development Plan, Lake County, Indiana. Walkerton : Cardno JFNew.

[6] Gary/Chicago International Airport Authority. (2005, June 9). *Gary/Chicago International Airport Certification Manual, Exhibit 14, Wildlife Hazard Management Plan*. Gary : Gary/Chicago International Airport Authority.

Table A- 1 – Federally Listed Species with the Potential to Occur in Lake County

Common Name (Scientific Name)	Federal Status
Birds	
Piping Plover (Charadrius melodus)	Threatened
Red knot *(Calidris canutus rufa)*	Threatened
Insects	
Karner blue butterfly *(Lycaeides Melissa samuelis)*	Endangered
Mammals	
Indiana bat *(Myotis sodalist)*	Endangered
Plants	
Mead's milkweed (*Asclepias meadii*)	Threatened
Pitcher's thistle *(Cirsium pitcher)*	Threatened

Source: USFWS. (2016, September). Lake, Indiana. Retrieved September 2016, from Species by County Report: https://ecos.fws.gov/ecp0/reports/species-by-current-range-county?fips=18089; Prepared by: RS&H, 2016

Table 2 lists the stated threatened and endangered species that the Indiana Department of Natural Resources (DNR) identifies as having the potential to occur in Lake County, Indiana. The dune and swale ecosystem is considered an important ecosystem for wildlife species and over 60 protected species have been previously observed in the area.[7]

Table A- 2 – State Listed Species with the Potential to Occur in Lake County

Common Name (Scientific Name)	State Status
Amphibian	
Northern cricket frog (*Acris blanchardi*)	Species of Special Concern
Blue-spotted salamander (*Ambystoma laterale*)	Species of Special Concern
Northern leopard frog (*Lithobates pipiens*)	Species of Special Concern
Common mudpuppy (*Necturus maculosus*)	Species of Special Concern
Birds	
Henslow's sparrow (*Ammodramus henslowii*)	Endangered
Great egret (*Ardea alba*)	Species of Special Concern

[7] Cardno JFNEW. (2012, December 20). Gary Airport Conservation and Economic Development Plan, Lake County, Indiana. Walkerton : Cardno JFNew.

Common Name (Scientific Name)	State Status
Upland sandpiper *(Bartramia longicauda)*	Endangered
American bittern *(Botaurus lentiginosus)*	Endangered
Red-shouldered hawk (*Buteo lineatus*)	Species of Special Concern
Piping plover *(Charadrius melodus)*	Endangered
Black tern *(Chlidonias niger)*	Endangered
Marsh wren *(Cistothorus palustris)*	Endangered
Sedge wren *(Cistothorus platensis)*	Endangered
Trumpeter swan (*Cygnus buccinator*)	Endangered
Peregrine falcon (*Falco peregrinus*)	Species of Special Concern
Common moorhen *(Gallinula chloropus)*	Endangered
Bald eagle *(Haliaeetus leucocephalus)*	Species of Special Concern
Least bittern *(Ixobrychus exilis)*	Endangered
Loggerhead shrike (*Lanius ludovicianus*)	Endangered
Black rail *(Laterallus jamaicensis)*	Endangered
Yellow-crowned night-heron (*Nyctanassa violacea*)	Endangered
Black-crowned night-heron (*Nycticorax nycticorax*)	Endangered
Wilson's phalarope (*Phalaropus tricolor*)	Species of Special Concern
King rail *(Rallus elegans)*	Endangered
Virginia rail (*Rallus limicola*)	Endangered
Barn owl (*Tyto alba*)	Endangered
Yellow-headed blackbird *(Xanthocephalus xanthocephalus)*	Endangered
Fishes	
Lake Sturgeon *(Acipenser fulvescens)*	Endangered
Insects	
Leafhopper *(Cicadula straminea)*	Threatened
Two-lined cosmotettix (*Cosmotettix bilineatus*)	Threatened
Two-lined cosmotettix (*Dorydiella kansana*)	Threatened
Indiangrass Flexamia (*Flexamia reflexus*)	Threatened
Indiangrass Flexamia (*Limotettix divaricatus*)	Threatened
Spittle Bug *(Paraphilaenus parallelus)*	Threatened
Spittle Bug *(Paraphlepsius lobatus)*	Threatened
Peppered Paraphlepsius Leafhopper (*Paraphlepsius maculosus*)	Threatened

Common Name (Scientific Name)	State Status
Prairie Panic Grass Leafhopper (*Polyamia herbida*)	Threatened
Kansas Prairie Leafhopper (*Prairiana kansana*)	Endangered
Dusted Skipper *(Atrytonopsis hianna)*	Threatened
Silver-bordered fritillary (*Boloria selene myrina*)	Threatened
Mottled Duskywing (*Erynnis martialis*)	Threatened
Persius dusky wing *(Erynnis persius persius)*	Endangered
Olympia marble (*Euchloe Olympia*)	Threatened
Two-spotted skipper (*Euphyes bimacula*)	Threatened
Silvery blue *(Glaucopsyche lygdamus couperi)*	Endangered
Ottoe skipper (*Hesperia ottoe*)	Endangered
Karner blue *(Lycaeides Melissa samuelis)*	Endangered
Great copper *(Lycaena xanthoides)*	Endangered
Big broad-winged skipper (*Poanes viator viator*)	Threatened
Bunchgrass skipper (*Problema byssus*)	Threatened
Regal fritillary (*Speyeria idalia*)	Endangered
Funerary dagger moth (*Aethes patricia*)	Endangered
Funerary dagger moth (*Agrotis stigmosa*)	Threatened
Noctuid moth (*Apamea burgessi*)	Threatened
Noctuid moth (*Capis curvata*)	Threatened
Noctuid moth *(Eucoptocemis fimbriaris)*	Threatened
Noctuid moth *(Loxagrotis acclivis)*	Threatened
Noctuid moth *(Macrochilo louisiana)*	Threatened
Noctuid moth (*Oligia obtusa*)	Endangered
Black-dashed apamea (*Apamea laeta*)	Threatened
Sweet fern underwing (*Catocala antinympha*)	Endangered
Many-lined cordgrass moth (*Chortodes enervata*)	Threatened
Tufted sedge moth (*Chortodes inquinata*)	Threatened
Prairie sedge moth (*Crambus murellus*)	Threatened
Marsh fern moth (*Fagitana littera*)	Threatened
Pine streak *(Faronta rubripennis)*	Threatened
Starry campion moth (*Hadena ectypa*)	Threatened
Grote's black-tipped quaker (*Loxagrotis grotei*)	Threatened
Newman's brocade *(Meropleon ambifuscum)*	Threatened

Common Name (Scientific Name)	State Status
Four-lined cordgrass borer (*Mesapamea stipata*)	Endangered
Barrens metarranthis moth (*Metarranthis apiciaria*)	Endangered
Dune oncocnemis moth (*Oncocnemis riparia*)	Threatened
Multicolored huckleberry moth (*Pangrapta decoralis*)	Threatened
Beer's blazing star borer moth (*Papaipema beeriana*)	Threatened
Golden borer moth (*Papaipema cerina*)	Threatened
Columbine borer *(Papaipema leucostigma)*	Threatened
Giant sunflower borer moth (*Papaipema maritima*)	Threatened
Culver's root borer (*Papaipema sciata*)	Threatened
Silphium borer moth (*Papaipema silphii*)	Threatened
Royal fern borer moth (P*apaipema speciosissima*)	Threatened
Ernestine's moth *(Phytometra ernestinana)*	Endangered
Rare sand quaker *(Platyperigea meralis)*	Threatened
Aureolaria Seed Borer (*Rhodoecia aurantiago*)	Threatened
Phlox moth *(Schinia Indiana)*	Endangered
Pearly indigo borer (*Sitochroa dasconalis*)	Threatened
Included cordgrass borer (*Spartiniphaga includes*)	Threatened
Northern cordgrass borer (*Spartiniphaga panatela*)	Threatened
Marked Noctuid (*Tricholita notata*)	Threatened
Grasshopper *(Paroxya atlantica)*	Threatened
Large-headed grasshopper (*Phoetaliotes nebrascensis*)	Threatened
Dune Locust *(Trimerotropis maritima)*	Threatened
Plants and Lichens	
Earleaf foxglove (*Agalinis auriculata*)	Threatened
Pale false foxglove (*Agalinis skinneriana*)	Threatened
Running serviceberry (*Amelanchier humilis*)	Endangered
Western rockjasmine (*Androsace occidentalis*)	Threatened
Bristly sarsaparilla (*Aralia hispida*)	Endangered
Lake cress *(Armoracia aquatica)*	Endangered
Mead's milkweed (*Asclepias meadii*)	Endangered
Gray Birch *(Betula populifolia)*	Endangered
Beck water-marigold (*Bidens beckii*)	Threatened

Common Name (Scientific Name)	State Status
Least grape-fern (*Botrychium simplex*)	Endangered
Bluehearts *(Buchnera americana)*	Endangered
Oklahoma grass-pink (*Calopogon oklahomensis*)	Endangered
Bebb's sedge (*Carex bebbii*)	Threatened
Brownish sedge (*Carex brunnescens*)	Endangered
Prairie gray sedge (*Carex conoidea*)	Threatened
Crawe sedge (*Carex crawei*)	Threatened
Clustered sedge (*Carex cumulata*)	Endangered
Little prickly sedge (*Carex echinata*)	Endangered
Elk sedge *(Carex garberi)*	Threatened
Mud sedge (*Carex limosa*)	Endangered
Richardson sedge (*Carex richardsonii*)	Threatened
Straw sedge *(Carex straminea)*	Threatened
Prairie redroot (Ceanothus herbaceus)	Endangered
Hill's thistle (*Cirsium hillii*)	Endangered
Dune thistle *(Cirsium pitcheri)*	Threatened
Clinton Lily *(Clintonia borealis)*	Endangered
Long-bract Green Orchis *(Coeloglossum viride var. virescens)*	Threatened
Silky Dogwood *(Cornus amomum ssp. amomum)*	Endangered
Bunchberry *(Cornus Canadensis)*	Endangered
Pale corydalis *(Corydalis sempervirens)*	Threatened
Toothed sedge (*Cyperus dentatus*)	Endangered
Capitate spike-rush (*Eleocharis geniculata*)	Threatened
Black-fruited spike-rush (*Eleocharis melanocarpa*)	Threatened
Fireweed *(Epilobium angustifolium)*	Endangered
Variegated horsetail (*Equisetum variegatum*)	Endangered
Slender cotton-grass (*Eriophorum gracile*)	Threatened
Downy gentian *(Gentiana puberulenta)*	Threatened
Bicknell northern crane's-bill (*Geranium bicknellii*)	Endangered
Small floating manna-grass (*Glyceria borealis*)	Endangered
Drummond hemicarpha (*Hemicarpha drummondii*)	Endangered
Sand-heather *(Hudsonia tomentosa)*	Threatened
Jointed rush *(Juncus articulatus)*	Endangered

Common Name (Scientific Name)	State Status
Brown-fruited rush (*Juncus pelocarpus*)	Endangered
Scirpus-like rush (*Juncus scirpoides*)	Threatened
Beach peavine *(Lathyrus maritimus var. glaber)*	Endangered
Smooth veiny pea (*Lathyrus venosus*)	Threatened
Cattail gay-feather (*Liatris pycnostachya*)	Threatened
Globe-fruited false-loosestrife (*Ludwigia sphaerocarpa*)	Endangered
Northern bog clubmoss (*Lycopodiella inundata*)	Endangered
Green Adder's-mouth (*Malaxis unifolia*)	Endangered
Climbing hempweed (*Mikania scandens*)	Endangered
Smaller forget-me-not (*Myosotis laxa*)	Threatened
Clustered broomrape (*Orobanche fasciculata*)	Endangered
Leiberg's witchgrass (*Panicum leibergii*)	Threatened
Eastern eulophus (*Perideridia americana*)	Endangered
Heart-leaved plantain (*Plantago cordata*)	Endangered
Yellow-fringe orchis (*Platanthera ciliaris*)	Endangered
Leafy northern Green Orchis (*Platanthera hyperborea*)	Threatened
Prairie white-fringed orchid (*Platanthera leucophaea*)	Endangered
Carey's smartweed (*Polygonum careyi*)	Threatened
Prairie parsley (*Polytaenia nuttallii*)	Endangered
Balsam poplar (*Populus balsamifera*)	Endangered
Spotted pondweed (*Potamogeton pulcher*)	Endangered
Straight-leaf pondweed (*Potamogeton strictifolius*)	Threatened
Silverweed (*Potentilla anserina*)	Threatened
Globe beaked-rush (*Rhynchospora recognita*)	Endangered
Southern dewberry (*Rubus enslenii*)	Endangered
Small bristleberry (*Rubus setosus*)	Endangered
Heartleaf willow (*Salix cordata*)	Threatened
Calamint (*Satureja glabella var. angustifolia*)	Endangered
Hall's bulrush (*Schoenoplectus hallii)*	Endangered
Smith's bulrush (*Schoenoplectus smithii*)	Endangered
Reticulated nutrush (*Scleria reticularis*)	Threatened
Ledge spike-moss (*Selaginella rupestris*)	Threatened
Strict blue-eyed-grass (*Sisyrinchium montanum*)	Endangered

Common Name (Scientific Name)	State Status
Sticky goldenrod (*Solidago simplex var. gillmanii*)	Threatened
Great plains ladies'-tresses (*Spiranthes magnicamporum*)	Endangered
Slick-seed wild-bean (*Strophostyles leiosperma*)	Threatened
Prairie fame-flower (*Talinum rugospermum*)	Threatened
Northern white cedar (*Thuja occidentalis*`)	Endangered
Horned bladderwort (*Utricularia cornuta*)	Threatened
Lesser bladderwort (*Utricularia minor*)	Threatened
Northeastern bladderwort (*Utricularia resupinata*)	Endangered
Zigzag bladderwort (*Utricularia subulata*)	Threatened
Velvetleaf blueberry (*Vaccinium myrtilloides*)	Endangered
Goose-foot corn-salad (*Valerianella chenopodiifolia*)	Endangered
Highbush-cranberry (*Viburnum opulus var. americanum*)	Endangered
Prairie violet (*Viola pedatifida*)	Threatened
Mammals	
Eastern red bat (*Lasiurus borealis*)	Species of Special Concern
Hoary bat (*Lasiurus cinereus*)	Species of Special Concern
Franklin's ground squirrel (*Spermophilus franklinii*)	Endangered
American badger (*Taxidea taxus*)	Species of Special Concern
Mollusks	
Sheepnose (*Plethobasus cyphyus*)	Endangered
Reptiles	
Spotted turtle (*Clemmys guttata*)	Endangered
Kirtland's snake (*Clonophis kirtlandii*)	Endangered
Blanding's turtle (*Emydoidea blandingii*)	Endangered
Smooth green snake (*Opheodrys vernalis*)	Endangered
Eastern massasauga (*Sistrurus catenatus catenatus*)	Endangered
Ornate box turtle *(Terrapene ornate ornate*)	Endangered
Western ribbon snake (*Thamnophis proximus proximus*)	Species of Special Concern

Source: DNR. (2016, February). Lake County. Retrieved September 2016, from List of Endangered, Threatened, & Rare Species by County: http://www.in.gov/dnr/naturepreserve/files/np_lake.pdf ; Prepared by: RS&H, 2016

A.3 Climate

Relevant federal laws, regulations, and EOs that relate to climate include:

- CAA (42 U.S.C. §§ 7408, 7521, 7571, 7661 *et seq.*)
- EO 13514, Federal Leadership in Environment Energy and Economic Performance (74 FR 52117)
- EO 13653, Preparing the United States for the Impacts of Climate Change (78 FR 66817)
- EO 13693, Planning for Federal Sustainability (80 FR 15869)

Greenhouse gases (GHG) are gases that trap heat in the earth's atmosphere. Both naturally occurring and man-made GHGs primarily include water vapor, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Activities that require fuel or power are the primary stationary sources of GHGs at airports. Aircraft and ground access vehicles which are not under the control of an airport, typically generate more GHG emissions than airport-controlled sources.

Research has shown there is a direct correlation between fuel combustion and GHG emissions. In terms of U.S. contributions, the Government Accountability Office reports that "domestic aviation contributes about three percent of total carbon dioxide emissions, according to [US]EPA data," compared with other industrial sources, including the remainder of the transportation sector (20%) and power generation (41%).[8] The International Civil Aviation Organization estimates that GHG emissions from aircraft account for roughly three percent of all anthropogenic GHG emissions globally.[9]

A.4 Coastal Resources

The primary statutes, regulations, and EOs that protect coastal resources include:

- Coastal Barrier Resources Act (16 U.S.C. § 3501 *et seq.*)
- Coastal Zone Management Act (16 U.S.C. § 1451-1466)
- National Marine Sanctuaries Act (16 U.S.C. §1431 *et seq.*)
- EO 13089, *Coral Reef Protection* (63 FR 32701)
- EO 13547, Stewardship of the Ocean, Our Coasts, and the Great Lakes (75 FR 43021-43027)

[8] U.S. Government Accountability Office. (2009). Aviation and Climate Change: Aircraft Emissions Expected to Grow, but Technologicals and Operational Improvements and Government Polices Can Help Control Emissions. Washington, DC: GAO. Retrieved February 2016, from http://www.gao.gov/news.items/d09554.pdf

[9] Melrose, A. (2010). European ATM and Climate Change Adaptation: A Scoping Study. In ICAO Environmental Branch, *ICAO Environmental Report 2010: Aviation and Climate Change* (pp. 195-198). Montreal: ICAO. Retrieved June 2016, from http://www.icao.int/environmental-protection/Documents/Publications/ENV_Report_2010.pdf

The Coastal Zone Management Act and the National Oceanic and Atmospheric Administration provide procedures for ensuring that an action is consistent with approved coastal zone management programs. The DNR manages the Indiana Lake Michigan Coastal Program. According to the DNR, the purpose of the program is to "enhance the State's role in planning for managing natural and cultural resources in the coastal region and to support partnerships between federal, state, and local agencies and organizations."[10] The Indiana Lake Michigan Coastal Program is based on a watershed approach; the boundary for the program includes areas that drain into Lake Michigan.[11] The Airport is within the inland program boundary of the Indiana Lake Michigan Coastal Program.[12] The closest Coastal Barrier Resources System unit, Sadony Bayou (Unit MI-22), is about 130 miles northeast of the Airport.[13]

A.5 Department of Transportation Act, Section 4(f) Resources

Relevant federal laws, regulations, and EOs that protect Section 4(f) resources include:

- U.S. Department of Transportation (USDOT) Act – Section 4(f) (49 U.S.C. § 303.)
- Land and Water Conservation Fund (LWCF) Act of 1965 (16 U.S.C. §§ 4601-4604 *et seq.*)
- Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) – Section 6009 (49 U.S.C. § 303.)
- U.S. Department of Defense Reauthorization (Public Law (P.L.) 105-185, Division A, Title X, Section 1079, November 18, 1997, 111 Stat. 1916).

The USDOT Act, Section 4(f) provides that no project that requires the use of any land from a public park or recreational area, wildlife and waterfowl refuge, or historic site be approved by the Secretary of the Interior unless there is no viable alternative and provisions to minimize any possible harm are included in the planning. Similarly, the LWCF Act prevents the conversion of lands purchased or developed with LWCF funds to non-recreation uses, unless the Secretary of the Interior, through the National Park Service, approves the conversion. Conversion may only be approved if it is consistent with the comprehensive statewide outdoor recreation plan in force when the approval occurs. Additionally, the converted property

[10] DNR. (2016). *Lake Michigan Coastal Program*. Retrieved September 2016, from Indiana Department of Natural Resources: http://www.in.gov/dnr/lakemich/

[11] DNR. (2016). Coastal Program Area. Retrieved September 2016, from Programs Information: http://www.in.gov/dnr/lakemich/6039.htm

[12] DNR. (2002, April). United States Department of Commerce Combined Coastal Program Document and Final Environmental Impact Statement for the State of Indiana. Retrieved September 2016, from History of Indiana Coastal Program Development: http://www.in.gov/dnr/lakemich/files/feis-i-iich1-4.pdf

[13] USFWS. (2016, May 6). *Coastal Barrier Resources System Mapper*. Retrieved September 2016, from Coastal Barrier Resources Systems: http://www.fws.gov/CBRA/Maps/Mapper.html

must be replaced with other recreation property of reasonably equivalent usefulness and location, and at least equal fair market value.

The closest Section 4(f) property to the Airport is Ivanhoe Nature Preserve, about 3,000 feet south of the Airport.[14] Other Section 4(f) properties near the Airport are Brunswick Park (southeast of the Airport), Gibson Woods Nature Preserve (southwest of the Airport), Washington Park (northwest of the Airport), and Sunnyside Park (northwest of the Airport), all about 2 miles away.[15] Gibson Woods Nature Preserve is also the closest LWCF site to the Airport.[16] See the Historic, Architectural, Archaeological, and Cultural Resources section for a description of historic resources at and around the Airport.

A.6 Farmlands

Farmlands are agricultural areas that are considered important and protected by federal, state, and local regulations. Important farmlands can include all pasturelands, croplands, and forests considered prime, unique, or of statewide or local importance. The following statutes, regulations, and guidance pertain to farmlands:

- Farmland Protection Policy Act (7 U.S.C. §§ 4201-4209)
- CEQ Memorandum on the Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing the National Environmental Policy Act (45 FR 59189)

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, a majority of the Airport property is urban land. There are areas with Adrian muck (0 to 1 percent slopes) that the NRCS classifies as farmland of statewide importance.[17] The 2010 U.S. Census identifies the entire Airport property as an "urbanized area."[18] Under Section 523(10)(B) of the Farmland Protection Policy Act, land identified as urbanized areas on U.S. Census Bureau maps are not subject to the provisions of the Farmland Protection

[14] The Nature Conservancy. (2016). Indiana Ivanhoe Dune & Swale. Retrieved October 2016, from Indiana: http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/indiana/placesweprotect/ivanhoe-dune.xm l

[15] Lake County. (2014). 2014-2018 Lake County Parks and Recreation Master Plan. Retrieved October 2016, from Lake County Parks: http://www.lakecountyparks.com/pdf_documents/LCPRD%20Open%20Space%20Plan%201_109.pdf

[16] NPS. (2016). Lake County Indiana. Retrieved October 2016 from Detailed Listing of Grants Grouped by County: http://waso-lwcf.ncrc.nps.gov/public/index.cfm

[17] NRCS. (2016, September). *Soil Data Explorer*. Retrieved September 2016, from Web Soil Survey: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

[18] U.S. Census Bureau. (2010). *2010 Census Urban Area Reference Map Chicago, IL-IN*. Retrieved October 2016, from The U.S. Census Bureau: http://www2.census.gov/geo/maps/dc10map/UAUC_RefMap/ua/ua16264_chicago_il--in/DC10UA16264.pdf

Policy Act. Therefore, there are no prime, unique, state, or locally important farmland soils on the Airport property.

A.7 Hazardous Materials, Solid Waste, and Pollution Prevention

Federal laws, regulations, and EOs that relate to hazardous materials, solid waste, and pollution prevention include:

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. §§ 9601-9765)
- Emergency Planning and Community Right to Know Act (42 U.S.C. §§ 11001-11050)
- Federal Facilities Compliance Act (42 U.S.C. § 6961)
- Hazardous Materials Transportation Act (49 U.S.C. §§ 5101-5128)
- Oil Pollution Prevention Act of 1990 (33 U.S.C. §§ 2701-2762)
- Pollution Prevention Act (42 U.S.C. §§ 13101-13109)
- Toxic Substances Control Act (TSCA) (15 U.S.C. §§ 2601-2697)
- Resource Conservation and Recovery Act (RCRA) (42 U.S.C. §§ 6901-6992k)
- EO 12088, Federal Compliance with Pollution Control Standards (43 FR 47707)
- EO 12580, *Superfund Implementation* (52 FR 2923), (63 CFR 45871), and (68 CFR 37691)
- EO 13423, Strengthening Federal Environmental, Energy, and Transportation Management (72 FR 3919)
- EO 13514, Federal Leadership in Environmental, Energy, and Economic Performance (74 FR 52117)

In a regulatory context, the terms "hazardous wastes," "hazardous substances," and "hazardous materials" have very precise and technical meanings:

Subpart C of the RCRA defines hazardous wastes (sometimes called characteristic wastes) as solid wastes that are ignitable, corrosive, reactive, or toxic. Examples include waste oil, mercury, lead or battery acid. In addition, Subpart D of RCRA contains a list of specific types of solid wastes that the USEPA has deemed hazardous (sometimes called listed wastes). Examples include degreasing solvents, petroleum refining waste, or pharmaceutical waste.

Section 101(14) of the CERCLA defines the hazardous substances broadly. It includes hazardous wastes, hazardous air pollutants, or hazardous substances designated as such under the Clean Water Act and TSCA and elements, compounds, mixtures, or solutions, or substances listed in 40 CFR Part 302 that pose substantial harm to human health or environmental resources. Pursuant to CERCLA, hazardous substances do not include any petroleum or natural gas substances and materials. Examples include ammonia, bromine, chlorine, or sodium cyanide.

According to 49 CFR Part 172, hazardous materials are any substances commercially transported that pose unreasonable risk to public health, safety, and property. These substances include hazardous wastes and hazardous substances as well as petroleum and natural gas substances and materials. As a result, hazardous materials represent hazardous wastes and substances. Examples include household batteries, gasoline, or fertilizers.

Aircraft fuel constitutes the largest quantity of hazardous substances stored and consumed at the Airport. The USEPA does not identify any hazardous waste sites under RCRA at or around the Airport.[19] According to the USEPA, there is a National Priorities List site, Midco II, north of the Airport.[20] Midco II includes a seven-acre disposal area with contaminated groundwater and an additional four acres of contaminated sediments and additional groundwater contamination. The USEPA continuously monitors groundwater and is conducting the final phase of site cleanup.[21]

There are no open landfills in Lake County.[22] There is a closed landfill directly west of the Airport, located east of State Road 912 and north of the Grand Calumet River. This land remain undeveloped since the landfill was closed. Solid waste from Lake County is transferred to Liberty Landfill and Newtown County Landfill. Based on the most recent USEPA data, Liberty Landfill is not expected to reach capacity until 2029 and Newton County Landfill is not expected to reach capacity until 2050.[23]

A.8 Historical, Architectural, Archeological, and Cultural Resources

The National Historic Preservation Act (NHPA) (54 U.S.C. §§300101 et seq.) establishes the Advisory Council on Historic Preservation (ACHP). The ACHP oversees federal agency compliance with the NHPA. The NHPA also established the National Register of Historic Places (NRHP), which the National Park Service (NPS) oversees. Other applicable statues and EOs include:

- American Indian Religious Freedom Act (42 U.S.C. § 1996)

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[19] USEPA. (2016). *NEPAssist*. Retrieved October 2016, from https://nepassisttool.epa.gov/nepassist/nepamap.aspx?wherestr=gary%2C+indiana

[20] USEPA. (2016). *Cleanups in My Community*. Retrieved October 2016, from https://ofmpub.epa.gov/apex/cimc/f?p=CIMC:73::::71:P71_WELSEARCH:IN%7CState%7CMI%7C%7C%7Ctrue%7Ctrue%7Ctrue%7Ctrue%7Ctrue%7Ctrue%7C%7C-1%7Csites%7CN%7Cbasic

[21] USEPA. (2016, September 17). *EPA Superfund Program: MIDCO II, Gary, IN*. Retrieved October 2016, from USEPA: https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0501800

[22] USEPA. (2016, July). Landfill-level data. Retrieved October 2016, from Landfill Gas Energy Project Data and Landfill Technical Data: https://www.epa.gov/lmop/landfill-gas-energy-project-data-and-landfill-technical-data#states

[23] USEPA. (2016, July). Landfill-level data. Retrieved October 2016, from Landfill Gas Energy Project Data and Landfill Technical Data: https://www.epa.gov/lmop/landfill-gas-energy-project-data-and-landfill-technical-data#states

- Antiquities Act of 1906 (54 U.S.C. §§320301-320303)
- Archeological and Historic Preservation Act (54 U.S.C. §§ 312501-312508)
- Archeological Resources Act (16 U.S.C. §§ 470aa-470mm)
- Department of Transportation (USDOT) Act, Section 4(f) (49 U.S.C. § 303)
- Historic Sites Act of 1935 (16 U.S.C. §§ 461-467)
- Native American Graves Protection and Repatriation Act (25 U.S.C. §§ 3001-3013)
- Public Building Cooperative Use Act (40 U.S.C. §§ 601a, 601a1, 606, 611c, and 612a4)
- EO 11593, Protection and Enhancement of the Cultural Environment (36 FR 8921)
- EO 13006, Locating Federal Facilities on Historic Properties in Our Nation's Central Cities (61 FR 26071)
- EO 13007, *Indian Sacred Sites* (61 FR 26771)
- EO 13175, Consultation and Coordination with Indian Tribal Governments (65 FR 67249)
- Executive Memorandum, Government-to-Government Relations with Native American Tribal Governments (April 29, 1994), Executive Memorandum on Tribal Consultation (Nov. 5, 2009) (65 FR 67249)
- DOT Order 5650.1, Protection and Enhancement of the Cultural Environment

The closest NRHP-listed resource is the West Fifth Avenue Apartments Historic District, about two miles southeast of the Airport.[24] The closest Indiana historical marker is the St. John's Lutheran Church Tolleston, about two miles southeast of the Airport.[25] No archaeological sites were recorded in the northwest and southeast portions of the Airport during the 2004 Environmental Impact Statement for the Airport.[26]

A.9 Land Use

Various statutes, regulations, and ordinances relevant to land use include:

- Airport and Airway Improvement Act of 1982, and subsequent amendments (49 U.S.C. 47107(a)(10))
- Airport Improvement Program (49 U.S.C. 47106(a)(1)
- Airport Safety, Protection of Environment, Criteria for Municipal Solid Waste Landfills (40 CFR § 258.10)

[24] USEPA. (2016). *NEPAssist*. Retrieved October 2016, from https://nepassisttool.epa.gov/nepassist/nepamap.aspx?wherestr=gary%2C+indiana

[25] Indiana Historical Bureau. (2016). *St. John's Lutheran church Tolleston*. Retrieved October 2016, from Find a Marker: http://in.gov/history/markers/179.htm

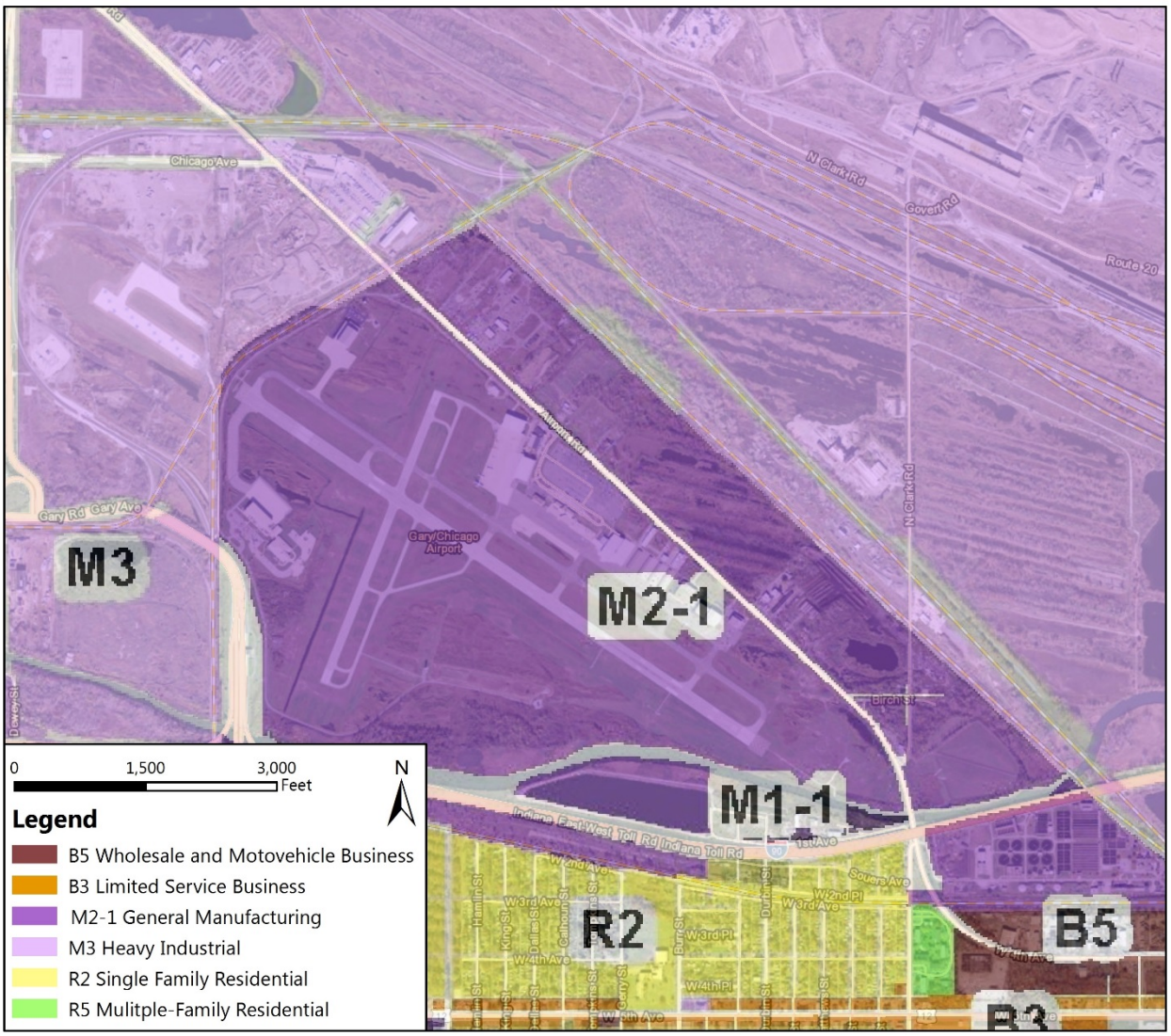
[26] FAA. (2004, October). Final Environmental Impact Statement for Master Plan Development Including Runway Safety Area Enhancements/Extension of Runway 12-30, and Other Improvements. Des Plaines: FAA.

- State and local rules and regulations

The Airport property is within the limits of the City of Gary. The City of Gary classifies the Airport as general manufacturing within its zoning code as depicted in Exhibit A-1.[27] The areas in the immediate vicinity of the Airport are zoned as heavy manufacturing. Land uses in the area include rail lines, trucking and transportation service companies, high voltage power line towers, major electrical substations, tank farms, chemical processing facilities, sewage treatment, and freeways. The closest residential area to the Airport is about 1,500 feet south, on the opposite side of the Indiana Toll Road.

[27] City of Gary. (2016). Zoning Map. Retrieved October 2016, from Zoning Department: http://www.gary.in.us/zoning/pdf/Zoning_Map_2013.pdf

Exhibit A- 1 – 101 Zoning



Sources: City of Gary, 2016; Esri, 2016; Prepared by: RS&H, 2016

The Airport and surrounding areas are within an airport development zone, as established by Indiana Code 8-22-3.5-14. Under this code, businesses located in an airport development are treated as if they are located in an enterprise zone.

A.10 Natural Resources and Energy Supply

Statutes and EOs that are relevant to natural resources and energy supply include:

- Energy Independence and Security Act (42 U.S.C. § 17001 et seq.);
- Energy Policy Act (42 U.S.C. § 15801 et seq.);
- EO 13423, Strengthening Federal Environmental, Energy, and Transportation Management (72 FR 3919)
- EO 13514, Federal Leadership in Environmental, Energy, and Economic Performance (74 FR 52117)

Natural resource (e.g., water, asphalt, aggregate, etc.) and energy use (e.g., fuel, electricity, etc.) at an airport is a function of the needs of aircraft, support vehicles, airport facilities, support structures, and terminal facilities. Water is the primary natural resource used at the Airport on a daily basis (see the Water Resources section for further details). Asphalt, aggregate, and other natural resources have also been used in various construction projects at the Airport. None of the natural resources that the Airport uses, or has used, are in rare or short supply. Indiana American Water Company provides water services and the Gary Sanitary District provides sewer services to the Airport. Energy use at the Airport is primarily in the form of electricity required for the operation of Airport-related facilities (e.g., terminal building, hangars, airfield lighting) and fuel for aircraft, aircraft support vehicles/equipment, and Airport maintenance vehicles/equipment. Northern Indiana Public Service Company supplies electricity services to the Airport. According to the Airport, there are underground utility lines in the northwest portion of the Airport property. These utilities are underground to avoid penetrating the Runway 12/30 runway protection zone.

A.11 Noise and Noise-Compatible Land Use

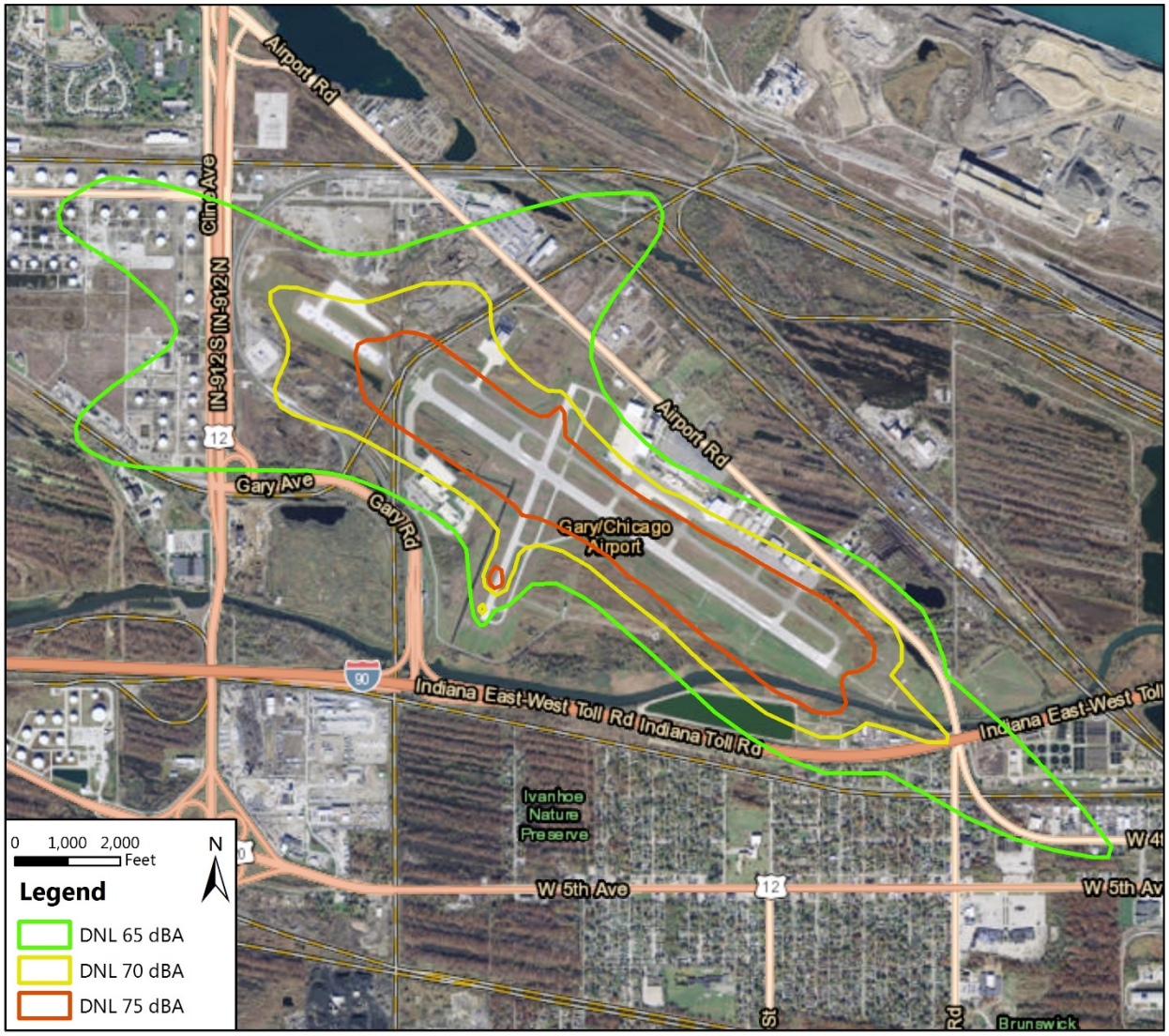
Noise is the most apparent environmental effect from an airport, and at most airports, accounts for the majority of comments from nearby residents. Statutes and EOs relevant to noise and noise-compatible land use include:

- The Control and Abatement of Aircraft Noise and Sonic Boom Act of 1968 (49 U.S.C. § 44715);
- The Noise Control Act of 1972 (42 U.S.C. §§ 4901-4918)
- Aviation Safety and Noise Abatement Act of 1979 (49 U.S.C. § 47501 et seq.)
- Airport and Airway Improvement Act of 1982 (49 U.S.C. § 47101 et seq.)
- Airport Noise and Capacity Act of 1990 (49 U.S.C. §§ 47521-47534, §§ 106(g)
- Section 506 of the FAA Modernization and Reform Act of 2012, Prohibition on Operating Certain Aircraft Weighting 75,000 Pounds of Less Not Complying with Stage 3 Noise Levels (49 U.S.C. §§ 47534)

As the previous section describes, there are residential land uses near the Airport. These areas may be sensitive to aircraft noise associated with the Airport. The Airport's aviation noise contours were updated in 2000 as part of the Airport's 2004 Final Environmental Impact Statement. Exhibit A-2 shows the Year 2000 aviation noise contours developed by that analysis. Note that since the time these contours were

produced, the Authority extended Runway 12/30 and associated taxiways to the northwest by about 1,900 feet and relocated the Runway 30 threshold by about 900 feet.[28] Select portions of residential land south of the Airport are subject to an avigation easement.

Exhibit A- 2- GYY Noise Contours (Year 2000)



Sources: FAA, 2004; Esri, 2016; Prepared by: RS&H, 2016

[28] The 2004 Final Environmental Impact Statement analyzed the potential noise effects from these extensions.

A.12 Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks

The primary considerations of a socioeconomics analysis within NEPA documentation are the economic activity, employment, income, population, housing, public services, and social conditions of the area. The Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970 (42 U.S.C. § 61 et seq.), implemented by 49 CFR Part 24, is the primary statute related to socioeconomic impacts. EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (62 FR 19885) is the primary EO related to Children's Environmental Health and Safety Risks. Statutes, EOs, memorandums, and guidance that are relevant to environmental justice include:

- Title VI of the Civil Rights Act, as amended (42 U.S.C. §§ 2000d-2000d-7)
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (59 FR 7629)
- Memorandum of Understanding on Environmental Justice and EO 12898
- USDOT Order 5610.2(a), Environmental Justice in Minority and Low-Income Populations (77 FR 27534)
- CEQ Guidance: Environmental Justice: Guidance Under the National Environmental Policy Act
- Revised USDOT Environmental Justice Strategy (77 FR 18879)

Table 3 presents the socioeconomic and environmental justice characteristics of the area around the Airport. This data is from the U.S. Census Bureau 2010-2014 American Community Survey at the tract level (the tract that the Airport is in and the adjacent tracts).

Table A-3 – Socioeconomic Characteristics

Characteristics	Datum
Total Population	16,049
Percent Minority	88.36%
Percent Living Below the Poverty Level	30.77%
Percent of the Population below 18 Years of Age	27.55%
Percent Unemployed (above 16 Years of Age)	21.24%
Total Housing Units	7,132
Vacant Housing Units	1,237

Source: U.S. Census Bureau American Community Survey 2010-2014 (Census Tracts 103.04, 307.00, 210.00, 103.02, 110.00 and 102.03); Prepared by: RS&H, 2016

With regards to children's environmental health and safety risks, the closest school to the Airport is the West Side Leadership Academy, about one mile south of Airport.

A.13 Visual Effects

Aesthetic effects are generally more difficult to quantify because of the subjective nature of annoyances associated with light emissions and visual impacts. Various landside lighting illuminates current Airport facilities such as the airfield (e.g., runways and taxiways), buildings, access roadways, automobile parking areas, and apron areas. As previously described, the Airport is zoned as a manufacturing district. The Airport is developed in a manner that is consistent with this zoning. Structures at the Airport include, but are not limited to, the terminal building, FBO, hangars, and maintenance buildings.

Vegetation (e.g., trees and shrubs) helps to reduce light emissions from the Airport to nearby residential areas and block a direct line of sight from most residential areas to the Airport. Manufacturing land uses have a direct line of sight to the Airport; however, the visual effects of the Airport to commercial or industrial land uses are not typically considered a nuisance.

A.14 Water Resources

Water resources are considered wetlands, floodplains, surface waters (including wild and scenic rivers), and groundwater. These resources typically function as a single, integrated natural system that are important in providing drinking water and in supporting recreation, transportation and commerce, industry, agriculture, and aquatic ecosystems. Statutes and EOs that are relevant to water resources include:

- EO 11990, *Protection of Wetlands* (42 FR 26961)
- Clean Water Act (33 U.S.C. §§ 1251-1387)
- Fish and Wildlife Coordination Act (16 U.S.C. § 661-667d)
- USDOT Order 6660.1A, Preservation of the Nation's Wetlands
- EO 11988, *Floodplain Management* (42 FR 26951)
- National Flood Insurance Act (42 U.S.C. § 4001 *et seq.*)
- USDOT Order 5650.2, Floodplain Management and Protection
- Clean Water Act (33 U.S.C. §§ 1251-1387)
- Fish and Wildlife Coordination Act (16 U.S.C. § 661-667d)
- Rivers and Harbors Act (33 U.S.C. § 401 and 403)
- Safe Drinking Water Act (42 U.S.C. §§ 300(f)-300j-26)

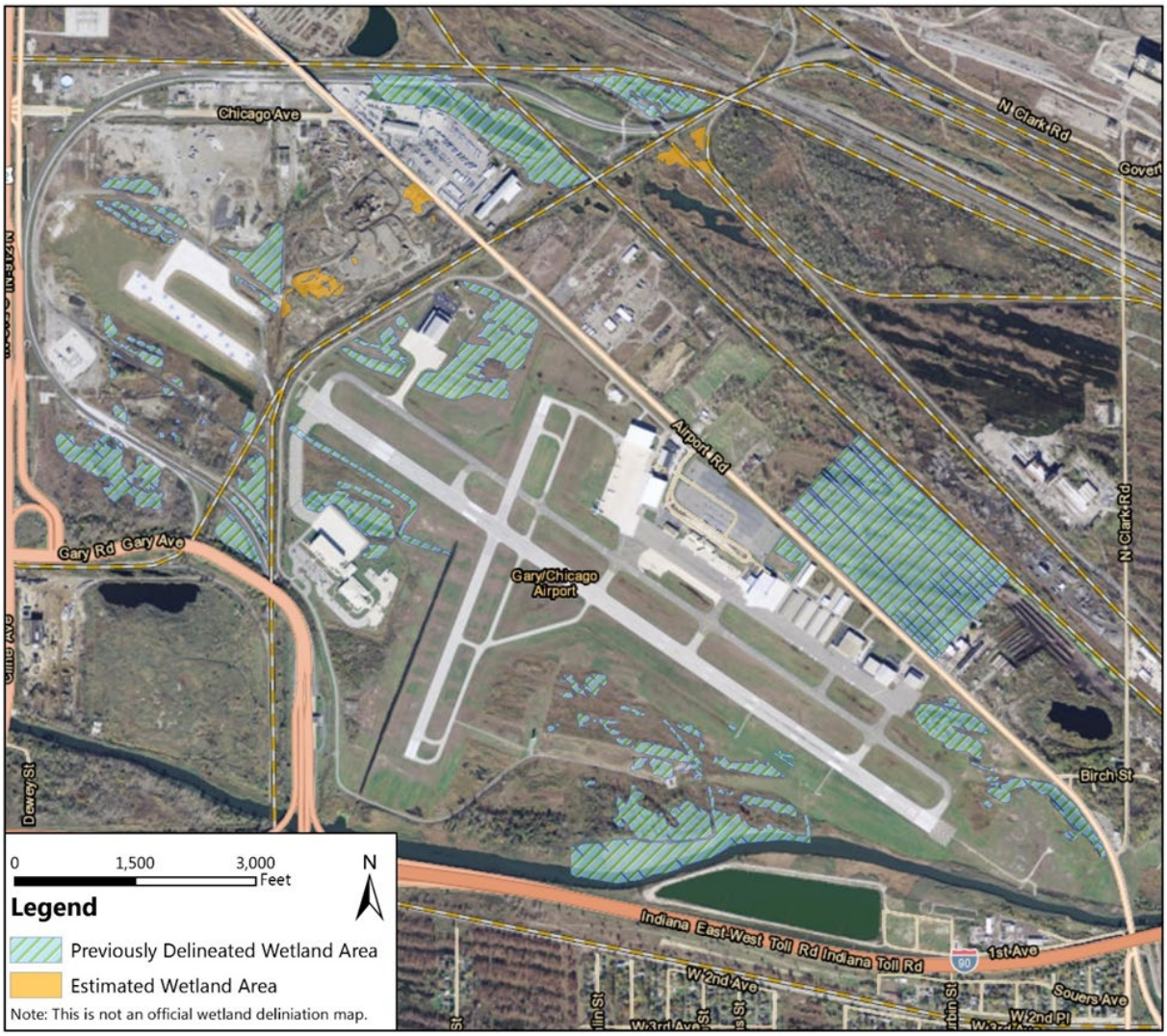
- Safe Drinking Water Act (42 U.S.C. §§ 300(f)-300j-26)
- Wild and Scenic Rivers Act (16 U.S.C. §§ 1271-1278)
- State and local rules and regulations

A.14.1 Wetlands

There are various water resources in and around the Airport property. The Airport property was previously surveyed for wetlands.[29,30] Exhibit A-3 shows the location of the wetlands, as well as areas that are anticipated to be wetland areas but were not formally delineated. Wetlands present at the Airport include freshwater forested/shrub wetlands and freshwater emergent wetlands.

[29] FAA. (2004, October). Final Environmental Impact Statement for Master Plan Development Including Runway Safety Area Enhancements/Extension of Runway 12-30, and Other Improvements. Des Plaines : FAA.
[30] DLZ Indiana, LLC. (2015 November 16). Gary/Chicago International Airport Wetland Review Boeing and B Coleman Sites. Indiana : Aviation Facilities Company, Inc.

Exhibit A-3– Wetlands



Sources: Gary/Chicago International Airport Authority, 2013; DLZ Indiana, LLC, 2015; Esri, 2016; Prepared by: RS&H, 2016

A.14.2 Floodplains and Floodways

According to current FEMA Flood Insurance Rate Maps for the Airport area, there are 100-year floodplains and floodways on and around the Airport property.[31] **Exhibit A-4** shows the location of floodplains and floodways.

[31] FEMA. (2012, January 18). *Panels 18089C0043E, 18089C0044E, 18089C0131E, and 18089C0132E*. Retrieved October 2016, from FEMA Flood Map Service Center: Search by Address - Gary, Indiana: https://msc.fema.gov/portal/search?AddressQuery#searchresultsanchor

Exhibit A- 4– Floodplains and Floodways

Source: FEMA, 2012; Esri, 2016; Prepared by: RS&H, 2016

The Grand Calumet River is directly south of the Airport and Lake Michigan is about 1.5 miles north/northeast of the Airport. The USEPA identifies the Grand Calumet River as impaired due to the presence of pathogens (E. coli), polychlorinated biphenyls, impaired biota, and oil and grease in the water.[32] The Ralston Street Lagoon is directly south of the Grand Calumet River and in close proximity to the

[32] USEPA. (2010). *2010 Waterbody Report for Grand Calumet River*. Retrieved September 2016, from Waterbody Quality Assessment Report: https://ofmpub.epa.gov/waters10/attains_waterbody.control?p_list_id=INK0346_04&p_cycle=2010

southern end of Runway 12-30. The lagoon covers 19 acres and was previously used for municipal sewage sludge disposal by the Gary Sanitary District. Studies have documented that the sludge is contaminated with hazardous polychlorinated biphenyls. The lagoon is no longer in use. The shoreline of Lake Michigan is impaired due to the presence of mercury and polychlorinated biphenyls in the water. [33] For the same reasons, the USEPA classifies Lake Michigan as impaired.[34]

With regards to Wild and Scenic Rivers, Pere Marquette River, in Michigan and about 175 miles northeast of the Airport, is the closet Wild and Scenic River segment.[35]

The Airport is in the Southwestern Lake Michigan watershed (Hydrologic Unit Code: 4040001).[36] As previously described, Indiana American Water Company provides water services and the Gary Sanitary District provides sewer services to the Airport. Sanitary wastewater and indoor floor drains flow to the Gary Sanitary District. Similarly, drainage from the deicer pad also drains to the Gary Sanitary District. There are no drinking water wells on Airport property.[37] The Airport works to balance the groundwater and surface water levels in order to keep existing contamination in place. The Airport property has a high water table, and when combined with a strong north fetch on Lake Michigan, the Airport's water table rises.

There are four stormwater drainage areas as the Airport, all of which discharge to the Grand Calumet River as depicted in **Exhibit A-5**.[38] Four conveyance points are located along the southern boundary of the Airport and receive stormwater runoff from the majority of the Airport. Surface drainage from these areas generally flow from north to south and into the stormwater drainage system, which is a series of piping and open ditches. The fifth conveyance point is located in the northwestern corner of the facility and receives stormwater runoff from the northwestern portion of the Airport. Currently, one conveyance point (004) is plugged with sediment and does not exhibit visible flow. The Authority has no plans to allow flow through that outfall. According to the Authority, there are no stormwater system issues.

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[33] USEPA. (2010). *2010 Waterbody Report for Michigan, Lake*. Retrieved September 2016, from Waterbody Quality Assessment Report: https://ofmpub.epa.gov/waters10/attains_waterbody.control?p_list_id=INC0163G_G1074&p_cycle=2010

[34] USEPA. (2010). *2010 Waterbody Report for Lake Michigan*. Retrieved September 2016, from Waterbody Quality Assessment Report: https://ofmpub.epa.gov/waters10/attains_waterbody.control?p_list_id=INM00G1000_00&p_cycle=2010

[35] National Wild and Scenic Rivers System (2016). *Michigan*. Retrieved September 2016, from Explore Designated Rivers: https://www.rivers.gov/rivers/pere-marquette.php

[36] USEPA. (2016). *NEPAssist*. Retrieved October 2016, from https://nepassisttool.epa.gov/nepassist/nepamap.aspx?wherestr=gary%2C+indiana

[37] Gary/Chicago International Airport Authority. (2016, February). *Stormwater Pollution Prevention Plan (SWPPP)*. Gary : Gary/Chicago International Airport Authority

[38] Gary/Chicago International Airport Authority. (2016, February). *Stormwater Pollution Prevention Plan (SWPPP)*. Gary : Gary/Chicago International Airport Authority

Exhibit A- 5– Stormwater Drainage

Source: DLZ Indiana, LLC., 2015; Esri, 2016; Prepared by: RS&H, 2016

The Authority maintains a Stormwater Pollution Prevention Plan (SWPPP) for the Airport. As the SWPPP describes, stormwater from the Airport is considered discharge from an industrial activity. As such, stormwater discharge at the Airport is permitted under the Indiana Department of Environmental Management (IDEM) Permit-by Rule for Stormwater Discharged Exposed to Industrial Activity – Rule 6 (327 IAC 15-6) (Permit No. INRM00650).39 The SWPPP identifies potential sources of pollutants in stormwater and stormwater control measures to reduce the ability of pollutants entering the stormwater runoff. The

[39] Gary/Chicago International Airport Authority. (2016, February). *Stormwater Pollution Prevention Plan (SWPPP)*. Gary: Gary/Chicago International Airport Authority

Authority regularly monitors stormwater runoff, including meeting the appropriate reporting requirements, and conducts quarterly visual facility inspections.