

Chapter Three

Affected Environment

3.0 INTRODUCTION

The purpose of this chapter is to describe the character of the environment in which the alternatives, being evaluated, would occur. Characteristics of the surrounding area are described to familiarize the reader with the geography, land use, demographics, and general environmental conditions potentially affected by the alternatives.

The description of the affected environment is presented in the following sections:

- ◆ 3.1 Airport Location
- ◆ 3.2 Land Use and Zoning
- ◆ 3.3 Demographics and Socioeconomic Profile
- ◆ 3.4 Inventory of the Natural Environment

To minimize duplication of information in this document, the affected environment inventory for most of the environmental resources, including noise, air quality, water quality, Department of Transportation 4(f) lands, cultural resources, natural resources and energy supply, and solid waste are included in **Chapter Four - Environmental Consequences**. Additionally, since there are no coastal resources or wild and scenic rivers in the project area, these resources are not addressed in this EA.

3.1 AIRPORT LOCATION

The Lansing Municipal Airport (Airport) is located in northeastern Illinois, south of the Greater Chicago Metropolitan Area on the south side of Lansing. The Airport lies in the east-southeastern part of Cook County, just south of Glenwood Lansing Road and east of Burnham Avenue. A map, of the vicinity of the Airport area, is depicted on **Exhibit 1-1: Location Map in Appendix A**.

3.1.1 Political Jurisdictions

The Village of Lansing (Sponsor) owns the Airport and therefore the cost of airport capital improvements, operations, and maintenance is borne by the Sponsor. It is the intent of the Sponsor to seek federal and state funding for the proposed improvements considered in this study. The Airport is located in the Villages of Lansing and Lynwood, Illinois within the southeastern portion of Cook County, along the Illinois/Indiana border.

3.2 LAND USE AND ZONING

3.2.1 Existing Land Uses

The existing land use surrounding the airfield consists of industrial, residential, and rural lands. The area south of the Airport is wooded with residential subdivisions. Residential areas are also located southwest, northwest, and northeast of the Airport. Industrial/commercial use areas and some residential development are located north of the Airport. Residential areas and some commercial and industrial-uses are east of the Airport. The area west of the Airport consists of scattered commercial uses and some manufacturing. These areas can be seen in the aerial image on **Exhibit 2-1**.

3.2.2 Future Land Uses

The Village of Lansing Comprehensive Plan was completed in 1995 and included planned public/institutional and airport technical uses immediately north of Glenwood-Lansing Road with single family residential uses planned beyond that. Most other areas around the Airport have been developed. The undeveloped land around the Airport lies primarily to the west in Village of Lynwood. The Lynwood: Year 2000 Plan was completed in 1979. That plan indicates agricultural and single family detached residential land uses to the west of the existing Airport property.

3.2.3 Zoning

The areas surrounding the Airport are primarily zoned residential with single-family residence districts to the south and to the west as shown on **Exhibit 3-1: Village of Lynwood Zoning Map**. The northern section of the Airport falls within the Village Lansing jurisdiction, as shown in **Exhibit 3-2: Village of Lansing Zoning Map**, which is combatable with the proposed development. The southern portion of the Airport is located in the Village of Lynwood's boundary and is zoned light manufacturing district and one-family residence district, as shown in **Exhibit 3-1**. The areas to the west are primarily zoned highway business, manufacturing and residential as shown on **Exhibit 3-3: Town of Munster Zoning Map**.

3.3 DEMOGRAPHICS AND SOCIOECONOMIC PROFILE

The 2000 census revealed that there were 28,332 people, 11,416 households, and 7,774 families residing in Lansing and 7,377 people, 2,620 households, and 1,985 families residing in Lynwood. The racial makeup of Lansing was approximately 52% White, 39% African American, 1% Asian, 2% from other races, and 1% from two or more races, while Lynwood was approximately 50% White, 45% African American, 1% Asian, 1.5% from other races, and 2% from two or more races. . Hispanic or Latino of any race was approximately 6% of the population in Lansing and 4.5% in Lynwood.

Of the 11,416 households in Lansing, approximately 30% had children under the age of 18 living with them. Approximately 53% were married couples living together, 11% had a single female head of household, 32% were non-families, and while approximately 28% of all households were made up of individuals, 13% had someone living alone who was 65 years of age or older.

Of the 2,620 households in Lynwood, approximately 40% had children under the age of 18 living with them. Approximately 54% were married couples living together, 18% had a single female head of household, 24% were non-families, and while approximately 21% of all households were made up of individuals, 5% had someone living alone who was 65 years of age or older. In Lansing, the average household size was 2.48 and the average family size was 3.06. Lynwood had an average household size of 2.82 and the average family size was 3.27.

In Lansing the population varied in ages with approximately 24% under the age of 18, 8% from 18 to 24, 29% from 25 to 44, 23% from 45 to 64, and 16% who were 65 years of age or older. The median age was 38 years. In Lynwood the population varied in ages with approximately 30% under the age of 18, 8% from 18 to 24, 31% from 25 to 44, 24% from 45 to 64, and 7.5% who were 65 years of age or older. The median age was 35 years.

The median income for a household in Lansing was \$47,554, and the median income for a family was \$56,901. The median income for a household in Lynwood was \$59,954, and the median income for a family was \$77,967. The per capita income for Lansing was \$22,547 while Lynwood's was \$22,650. Approximately 3.5% of families and 5% of the population were below the poverty line, including approximately 8% of those under age 18 and 4% of those ages 65 or over in Lansing. Lynwood had approximately 4% of families and 6% of the population below the poverty line, including approximately 8% of those under age 18.

3.4 INVENTORY OF THE NATURAL ENVIRONMENT

The Airport is located within the Cook County, Illinois, in part of Sections 7, 8, and 17, of Township 35 North, Range 15 East and Section 25 of Township 36 North, Range 10 West. According to the U.S. Census Bureau, Cook County has a total area of 946 square miles of land and 689 square miles of water. The county is located in the northeastern part of the state and borders Lake Michigan. The airport environs are not unique in comparison to natural resources in the county.

This section contains some information relating to air quality, ecological communities, and water resources. Additional environmental information can be found in **Chapter Four - Environmental Consequences**.

3.4.1 Air Quality

The air quality provisions that are applicable to the proposed activities at IGQ include the *Clean Air Act* (CAA), the 1977 CAA Amendments, and the 1990 CAA Amendments. The air pollutants within National Ambient Air Quality Standards (NAAQS) are carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter (measured as particulate matter less than 10 microns in size [PM10] and particulate matter less than 2.5 microns in size [PM2.5]), ozone, and lead.

3.4.1.1 Attainment Status

Under the authority of the CAA, the USEPA designates all areas of the United States with respect to the NAAQS as attainment, non-attainment, maintenance, or unclassifiable areas.⁵ IGQ is located in Cook County, Illinois. USEPA publishes the Green Book Nonattainment Areas for Criteria Pollutants. This document identifies areas of non-attainment within the State of Illinois. From this report it was determined that Cook County is in nonattainment for PM2.5 and moderate for 8-Hr Ozone. Cook County is designated as in attainment for all other pollutants.

3.4.1.2 Climate Change/Greenhouse Gases

Of growing concern is the impact of proposed projects on climate change. Greenhouse gases are those that trap heat in the earth's atmosphere. Both naturally occurring and anthropogenic (man-made) greenhouse gases include water vapor (H₂O), carbon dioxide (CO₂),⁶ methane (CH₄), nitrous oxide (N₂O), and ozone (O₃).⁷

Research has shown that there is a direct link between fuel combustion and greenhouse gas emissions. Therefore, sources that require fuel or power at an airport are the primary sources that would generate greenhouse gases. Aircraft jet engines, like many other vehicle engines, produce carbon dioxide (CO₂), water vapor (H₂O), nitrogen oxides (NO_x), carbon monoxide (CO), oxides of sulfur (SO_x), unburned or partially combusted hydrocarbons (also known as volatile organic compounds (VOCs)), particulates, and other trace compounds.

According to most international reviews, aviation emissions comprise a small but potentially important percentage of anthropogenic (human-made) greenhouse gases and other emissions that contribute to global warming. The Intergovernmental Panel on Climate Change (IPCC) estimates that global aircraft emissions account for about 3.5 percent of the total quantity of greenhouse gas from human activities.⁸ In terms of U.S. contribution, the U.S. General Accounting Office (GAO) reports that aviation accounts “for about 3 percent of total U.S. greenhouse gas emissions from human sources” compared with other industrial sources, including the remainder of the transportation sector (23 percent) and industry (41 percent).⁹

⁵ Attainment areas are areas in which the ambient (outdoor) concentrations of the NAAQS-regulated pollutants are below the NAAQS; non-attainment areas are areas where the NAAQS have been/are being exceeded; maintenance areas are former non-attainment areas; and areas designated as unclassifiable have insufficient monitoring data to make a determination.

⁶ All greenhouse gas inventories measure carbon dioxide emissions, but beyond carbon dioxide different inventories include different greenhouse gases (GHGs).

⁷ Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. For example, chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) are halocarbons that contain chlorine, while halocarbons that contain bromine are referred to as bromofluorocarbons (i.e., halons) or sulfur (sulfur hexafluoride: SF₆).

⁸ IPCC Report as referenced in U.S. General Accounting Office (GAO) *Environment: Aviation's Effects on the Global Atmosphere Are Potentially Significant and Expected to Grow*; GAO/RCED-00-57, February 2000, p. 4.

⁹ *Ibid*, p. 14; GAO cites available EPA data from 1997.

The scientific community is developing areas of further study to enable them to more precisely estimate aviation's effects on the global atmosphere. The Federal Aviation Administration (FAA) is currently leading several efforts intended to clarify the role that commercial aviation plays in greenhouse gases and climate change. The most comprehensive and multi-year program geared towards quantifying climate change effects of aviation is the Aviation Climate Change Research Initiative (ACCRI) funded by FAA and NASA. ACCRI will reduce key scientific uncertainties in quantifying aviation-related climate impacts and provide timely scientific input to inform policy-making decisions. FAA also funds Project 12 through the Partnership for Air Transportation Noise & Emissions Reduction (PARTNER) Center of Excellence research initiative to quantify the effects of aircraft exhaust and contrails on global and U.S. climate and atmospheric composition. Finally, the Transportation Research Board's (TRB) Airport Cooperative Research Program (ACRP) has developed a guidebook¹⁰ on preparing airport greenhouse gas emission inventories.

Airport development has the potential to both affect climate change and to be affected by it. Changes in resource categories such as air quality, natural resources, and energy supply can potentially contribute to climate change by increasing the amount of greenhouse gases emitted. Conversely, some airport projects may be impacted by the potential effects of climate change, such as rising sea levels. At this time, there is no consistent scientific indication of when and how the climate will change.

3.4.2 Ecological Communities

3.4.2.1 Biotic Resources

The Airport is located in an urbanized section of the Chicago metropolitan area. The majority of the surrounding area is urban with residential, commercial/manufacturing uses and some agricultural areas. The proposed construction projects would be almost entirely on existing airport property. Existing habitat in the airport area is comprised mainly of cultivated fields and existing airport facilities. It is likely that the proposed project area supports limited vegetation and wildlife species adapted to urban areas due to the existing airport facilities and mowing operations.

3.4.2.2 Federally-Listed Endangered and Threatened Species

There are a total of nine (9) federally-listed endangered and threatened species known to occur in Cook County. Through the Illinois Department of Natural Resources (IDNR) Ecological Compliance Assessment Tool (EcoCAT), the IDNR stated that the Illinois Natural Heritage Database contains no record of State-listed threatened or endangered species in the vicinity of the project. Additional information can be found in **Sections 4.10 - Biotic Resources** and **4.11 - Federally-Listed Endangered and Threatened Species**.

¹⁰ *Guidebook on Preparing Airport Greenhouse Gas Emissions Inventories*. Airport Cooperative Research Program, Report 11, Transportation Research Board, 2009.

3.4.2.3 Water Resources

The Lansing Ditch and Tributary A of North Creek are located on the Airport. These drainage ditches flow from south to the north through Sauk Village and the Mary Woodland Reservoir before entering the airport property. A diversion weir on the north side of 202nd Street diverts a portion of the Lansing Ditch flows to the Lynwood Tributary. The remaining flows are carried through the airport property in a man-made ditch. The runoff from IGQ is collected and conveyed offsite by the Lansing Ditch, eventually discharging into the Calumet River. Further information regarding water quality is presented in **Section 4.7 - Water Quality**.

Wetlands

A field study to delineate existing wetlands and Waters of the United States was conducted by ENCAP, Inc. in November and December, 2009. The Wetland Delineation Report indicated the presence of one wetland regulated by the U.S. Army Corps of Engineers (USACE), three wetlands not regulated by the USACE, and one wetland that may be under USACE jurisdiction within the proposed project area. The USACE and IDNR took jurisdiction over two of the five wetland areas. Additionally, the FAA would require mitigation of any impacts to the other three non-regulated wetlands. These resources can be found on **Exhibit 4-6, Appendix A**. Further information regarding wetlands is presented in **Section 4.12 - Wetlands and Waters of the United States**.

Additionally, Wetland #1 is a drainage ditch with four tributaries on the Airport. The total length of the main ditch wetland (approximately 7,230 linear feet) and its four tributaries (approximately 3,410 linear feet), on the Airport, is approximately 10,640 linear feet.

Floodplains

The base floodplain is the area that would be inundated by the floodwaters of a 100-year flood event. The existing floodplain limits, as defined by the Federal Emergency Management Agency (FEMA), in the airport area are depicted on **Exhibit 4-7, Appendix A**. Further information regarding floodplains is presented in **Section 4.13 - Floodplains**.