

## 1.0 Introduction

The purpose of this analysis is to prepare updated Noise Exposure Maps (NEMs) for the Buffalo Niagara International Airport (BNIA). This update of the NEMs for BNIA includes the creation of NEMs for existing (2008) and future (2013) operations at the Airport. Land use has also been considered for parcels that are located within close proximity of BNIA.

BNIA is a public use airport located in Cheektowaga, New York. This noise study update was completed using FAA's Integrated Noise Model (INM) Version 7.0b. Data to create the updated NEMs was obtained from the Niagara Frontier Transportation Authority (NFTA) and airport management. Additional information was obtained from the Federal Aviation Administration's (FAA) New York Airports District Office (NYADO), the Fixed Base Operator (FBO), Prior Aviation, Mercy Flight, and the Buffalo Air Traffic Control Tower (ATCT). In addition, records including FAA Terminal Area Forecasts (TAF), ATCT monthly operation counts, the 2003 Federal Aviation Regulation (FAR) Part 150 Study, and airline schedules were utilized to fully understand the fleet mix and operations schedule at BNIA. The NEMs for BNIA have been prepared in accordance with FAA guidelines per 14 CFR 150, *Airport Noise Compatibility Planning*.

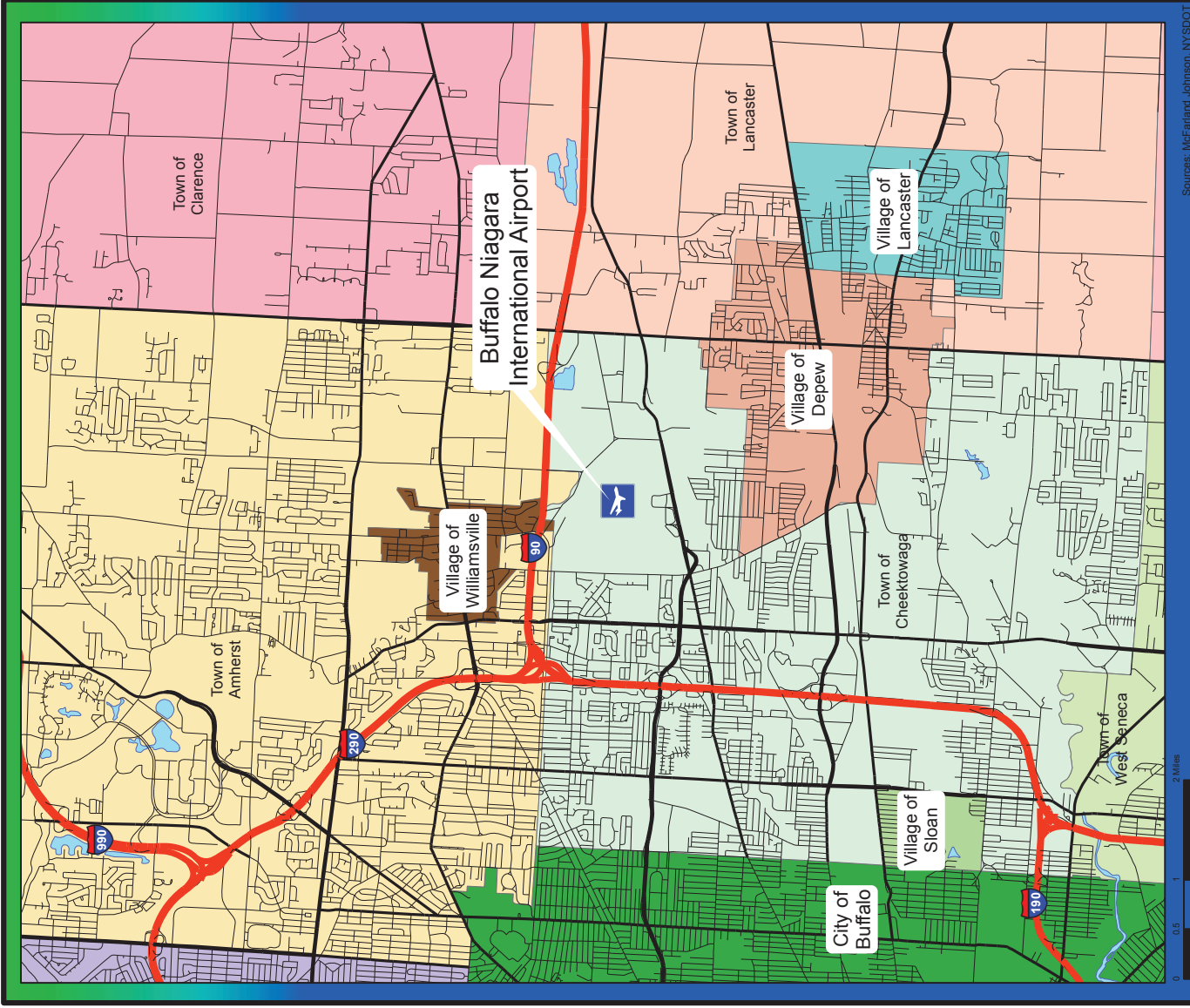
### 1.1 Airport Description

BNIA is located approximately five miles northeast of the City of Buffalo. Major highways in the vicinity of the airport include Interstate 90 (the New York State Thruway) adjacent to the Runway 23 end, as well as Interstate 290 and State Route 33 (Kensington Expressway). The Airport is located approximately five miles north of the Buffalo Airfield, six miles west of the Buffalo-Lancaster Regional Airport, and 15 miles southeast of the Niagara Falls International Airport. The area surrounding BNIA is displayed in **Figure 1**. BNIA is categorized in the National Plan of Integrated Airport Systems (NPIAS) as a Commercial Service-Medium Hub airport as a result of the number of annual enplanements.

BNIA contains two runways. Runway 5-23 is oriented in a southwest to northeast direction and measures 8,827' in length and 150' in width. Runway 14-32 is oriented in an east southeast to west northwest direction and measures 7,161' in length by 150' in width. The passenger terminal at the airport is located south of the runway intersection, while the cargo apron and associated uses are located to the west of the intersection. The Airport, and the ATCT, is open for operations 24 hours daily.

### 1.2 FAR Part 150 and Land Use Compatibility at BNIA

FAR Part 150 is a federal program that airports can voluntarily participate in to study land use compatibility with neighboring parcels and noise impacts caused by the



Sources: McFarland Johnson, NYSDOT

**NOISE EXPOSURE  
MAP UPDATE**

LOCATION MAP

**Legend**

- Interstate Highway
- Major Road
- Local Road

**FIGURE**

1

Date: APRIL 2011

McFarland Johnson

NFTA  
Niagara Falls Transit Authority  
Serving Buffalo Region

BUFFALO NIAGARA

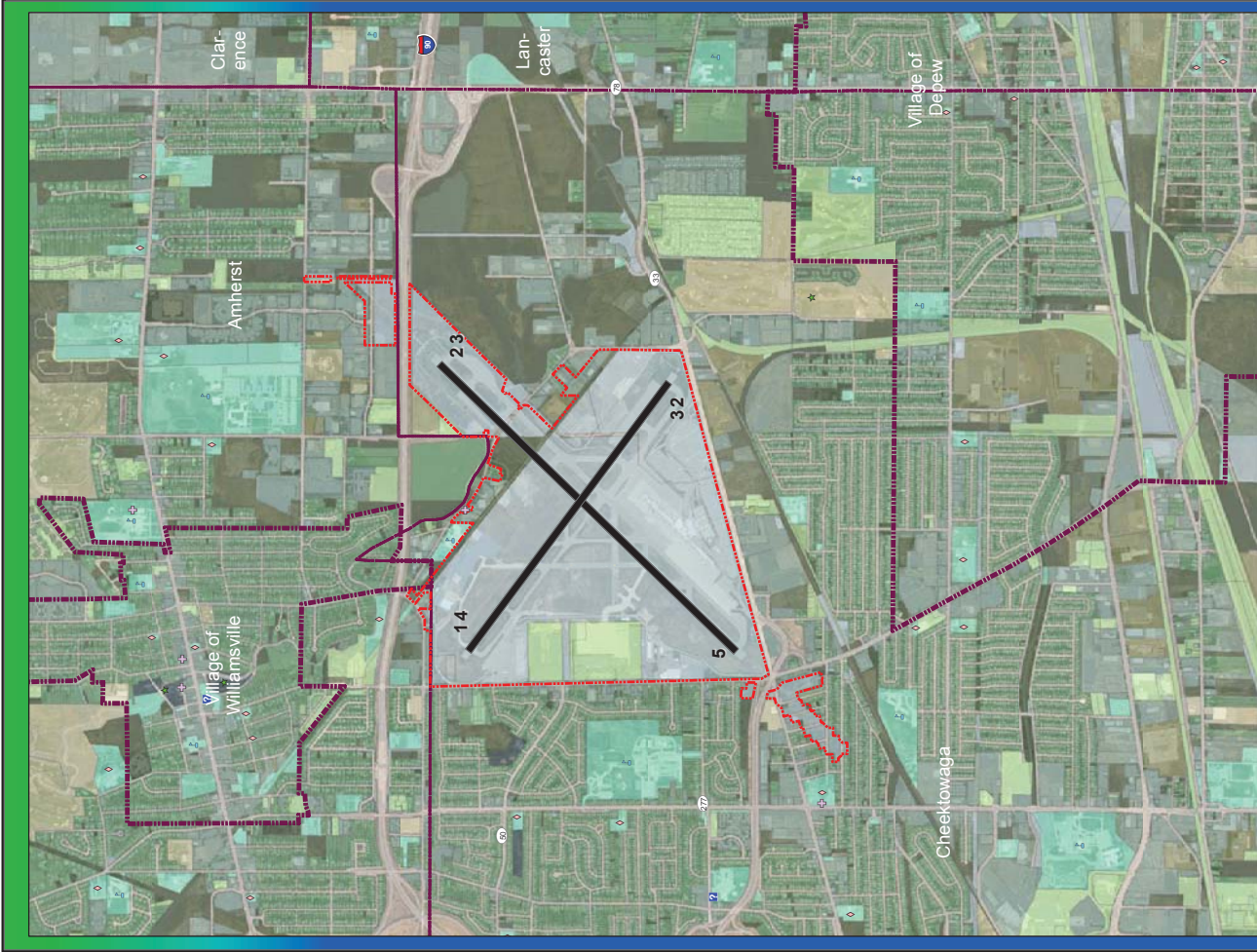
Airport. The results of a Part 150 study typically include the development of NEMs and a Noise Compatibility Program (NCP). A result of the 2003 Part 150 Study established the BNIA Noise Compatibility Program, formally known as QuieterHome Buffalo. QuieterHome Buffalo provides sound and noise insulation for residential properties as part of the NCP. Land uses surrounding BNIA are depicted in **Figure 2**. Since 2003, sound attenuation has been achieved through the construction of noise mitigation at residential households off the ends of Runway 5-23, southwest and northeast of the Airport. In addition, the construction of noise mitigation has occurred at the Maryvale Primary School, off the Runway 5 end.

### 1.3 Methodology

The FAA's Office of Environment and Energy (OEE) developed the INM for evaluating aircraft noise impacts in the vicinity of airports. The most recent version of INM is Version 7.0b, which was released in September 2009 and is utilized in this study. INM is designed to estimate noise impacts for the existing environment, long-term conditions, or proposed airport changes. The model can assess alterations in noise impacts resulting from changes in aircraft operations or fleet mix, or new development such as runway extensions or alterations in flight tracks. An airport's physical and operational characteristics are entered into INM and noise contours and detailed noise reports are produced. The physical characteristics that are entered into INM include runway configuration, runway end points, and airport elevation. Operational characteristics include the airport fleet mix, the number of arrival, departure, and touch-and-go operations for each type of aircraft, and runway usage.

Once data is entered into the INM, cumulative aircraft noise at ground levels are calculated and expressed in decibels (dB) using the yearly average day-night sound level (DNL). Decibels are measured in A-weighted units, which approximate the range of human hearing. Through the use of DNL, INM uses an average noise level to determine noise impacts and is designed to estimate long-term conditions.

Operations entered into the INM model are divided into daytime or nighttime operations. Nighttime operations are defined in FAR Part 150 as occurring between the hours of 10:00pm and 6:59am. Operations that occur during the defined nighttime hours are penalized an additional 10 dB due to the increased annoyance of operations during these hours on nearby residents.



Source: McFarland Johnson, NFTA, NYSDOT, NYS  
Data: Security and Critical Infrastructure Coordination

**NOISE EXPOSURE  
MAP UPDATE**

**LAND USE MAP**

0 1,250 2,500 5,000 Feet

**Legend**

Lanemark	Vacant Land
Church	Commercial
Historic Register	Recreation & Entertainment
Library	Community Services
Priority	Industrial
School	Public Services
<b>Tax Parcel Land Use</b>	Parks & Conservation Areas
Agricultural	Other
Residential	Municipal Boundaries
	Airport Property

FIGURE  
**2**

Date: APRIL 2011