Appendix H

Noise Analysis

DRAFT

Baseline Conditions and Future Alternatives Noise Analysis

Supplemental EIR for Rehabilitation of Runway 8R-26L and Associated Improvements at ONT

April 11, 2022

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1 Introduction

The Ontario International Airport Authority (OIAA) is preparing a Supplemental Environmental Impact Report (SEIR) to evaluate the potential environmental effects associated with the proposed rehabilitation of Runway 8R-26L and associated airfield improvements at Ontario International Airport (ONT).

This technical memorandum summarizes the assumptions and methodologies used to develop noise contours for the ONT Runway 8R-26L Rehabilitation and Associated Airfield Improvements Supplemental EIR. Noise contours were developed for Baseline Conditions and the following alternatives:

- Baseline Conditions (2019/2020 Hybrid)
- No Project Alternative (2023)
- Proposed Project (2023)
- Two-Year Program Alternative (2023)
- No Project Alternative (2024)
- Proposed Project / Two-Year Program Alternative (2024)
- No Project Alternative (2025)
- Proposed Project (2025)

In addition, cumulative noise impacts with the proposed rehabilitation of Runway 8R-26L and associated airfield improvements and the proposed South Air Cargo Complex (SACC) operations were also evaluated in the following alternatives:

- Proposed Project – Cumulative Impact (2024)
- Proposed Project – Cumulative Impact (2025)

2 Baseline Conditions

The term “Baseline Conditions” is applied for discussion of the existing noise environment used for the noise. This term is used instead of “Existing Condition,” which would indicate the use of the year 2021 in this case, which, due to the COVID-19 pandemic, do not represent activity levels that have been, or will be, typical of ONT or that are reasonably expected to exist during the timeframe for project implementation. The Baseline Conditions noise impacts were determined using a hybrid base year (2019/2020) approach. Per CEQA Guidelines Section 15125(a)(1), “where necessary to provide the most accurate picture practically possible of the project's impacts, a lead agency may define existing conditions by referencing historic conditions, or conditions expected when the project becomes operational, or both, that are supported with substantial evidence.” Thus, to more accurately represent historically consistent existing conditions at ONT, and to avoid a potentially misleading comparison of project impacts, noise is described and compared using a hybrid of 2019 and 2020 operations. The Baseline Conditions noise contour for this SEIR was developed using calendar year 2019 aircraft operations with modifications to reflect increased cargo operations experienced during 2020 and continuing into 2021.

Specifically, the hybrid base year (2019/2020) Baseline Conditions fleet mix was based on the ONT Airport Noise Monitoring System (ANOMS) radar data from 2019 and 2020, and FAA's Traffic Flow Management System Count (TFMSC). Passenger air carriers, air taxi, and General Aviation (GA) operations were obtained from the 2019 ANOMS data and the all-cargo operations were obtained from the 2020 ANOMS data. This approach represents a hybrid base year scenario which recognizes the reduction in passenger carrier and air taxi operations, and the increase in all-cargo operations, attributable to the COVID-19 pandemic. Noise impacts were evaluated in terms of the Community Noise Equivalent Level (CNEL) in decibels (dB). The CNEL is the noise metric adopted by the federal government to assess cumulative noise (i.e., multiple aircraft events) near airports in California. The CNEL is a cumulative metric with a 5- dB penalty applied to evening aircraft events (7:00 pm – 9:59 pm) and 10- dB penalty applied to nighttime aircraft events (10:00 pm – 6:59 am).

2.1 Noise Model Inputs

Inputs to the noise model include facilities and runways at the Airport, aircraft types and operations (fleet mix), stage length, day/evening/night split, engine maintenance run-up operations, runway use, track geometry and use, weather, and terrain. The following sections describe inputs of the noise model for the Baseline Conditions.

2.1.1 Facilities and Runways

ONT operates two parallel runways: Runway 8R-26L and Runway 8L-26R. Runway 8L-26R is the longer runway and is 150 feet wide and 12,197 feet long. Runway 8R-26L is the shorter runway and is 150 feet wide and 10,200 feet long. The Airport does not have a designated helipad but for noise modeling purposes, a helipad was defined at the parking area of the Airport Fixed Base Operator (FBO). **Figure 1** depicts the runways and assumed helipad location at the Airport.

2.1.2 Aircraft Types and Operations

Fleet mixes, including aircraft types, number and hours of operation, and flight distance, are the major components of modeling noise in the vicinity of an airport. The fleet mixes developed in *Attachment 1, Fleet Mix Development*, were applied in the modeling of the Baseline Conditions, No Project Alternative, Proposed Project, and Two-Year Program Alternative noise contours. The fleet mixes for years 2023, 2024 and 2025 are based on the hybrid base year (Baseline Conditions) fleet mix and supplemented with announced airline aircraft replacement and retirement plans, as well as announced new airlines and destinations. The future forecast of operations and enplanements in the 2020 Draft TAF were used as the future alternatives' base operations and enplanements numbers. Operations were grouped by passenger air carrier, all-cargo carrier, air taxi, General Aviation (GA), and military. In the noise model, operations are represented by the Average Annual Day (AAD) operations, which is equal to the total annual operations divided by 365.

For the Baseline Conditions, passenger air carriers and air taxi operations were obtained from the 2019 Airport Noise and Operations Monitoring System (ANOMS) data while all-cargo carrier operations were obtained from the 2020 ANOMS data. This approach represents a hybrid

Baseline Conditions fleet mix which recognizes the impact of the COVID-19 pandemic resulting in reduced passenger air carrier and air taxi operations, and increased all-cargo operations in 2020. This hybrid fleet mix normalizes operations for modeling the Baseline Conditions noise contour. The top 108 aircraft types, which accounted for more than 99.0% of operations in 2019 and 2020, were included in the Baseline Conditions fleet mix.

2.1.3 Stage Length

The departure stage length is a noise modeling term used to refer to nonstop trip distance for an aircraft departure from origin to destination and is a surrogate for aircraft weight. The trip distance influences the take-off weight (and therefore the thrust and performance) of the aircraft, as more fuel is required to fly longer distances and therefore adds weight to the aircraft. The noise model uses twelve stage length brackets in increments of 500 or 1,000 nautical miles (nm) as well as a stage length for the maximum departure weight. For the Baseline Conditions analysis, stage lengths were calculated based on the reported origin and destination included in the 2019 and 2020 ANOMS data. A small portion of the departure stage length performance model is not available in AEDT. In these cases, the closest stage lengths were applied. **Table 1** summarizes the distribution of the departure stage lengths in the Baseline Conditions. Approximately half of the departures have a stage length of less than 500 nautical miles. A small percentage of flights have a stage length of more than 2,500 nautical miles.

Table 1: Departure Stage Length Distribution

Stage Length	Range (nautical miles)	Percentage
1	0 - 500	54.2%
2	501 - 1,000	11.9%
3	1,001 - 1,500	15.4%
4	1,501 - 2,500	17.8%
5	2,501 - 3,500	0.0%
6	3,501 - 4,500	-
7	4,501 - 5,500	0.1%
8	5,501 - 6,500	0.6%
9	6,500 - 7,500	0.0%

Sources: 2019 and 2020 Radar Data and HNTB Analysis, 2022.

2.1.4 Day/Evening/Night Split

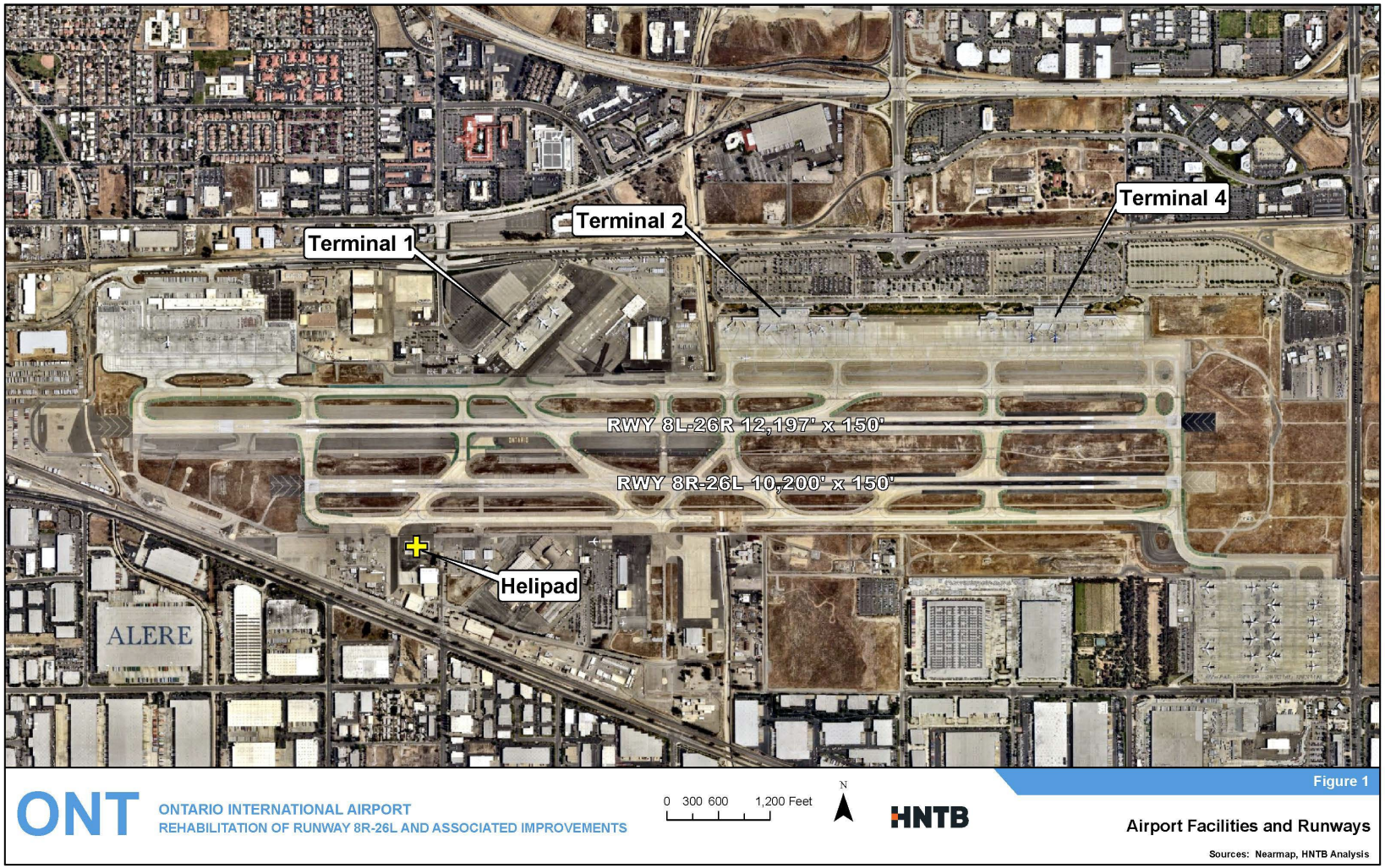
The CNEL metric takes into consideration the time of day of aircraft operations. In the noise analysis, daytime is defined as 7:00 am to 6:59 pm, evening is defined as 7:00 pm to 9:59pm, and nighttime is defined as 10:00 pm to 6:59 am. The 5-dB and 10-dB penalties during evening and nighttime hours are intended to account for the added intrusiveness of aircraft noise during time periods when ambient noise due to vehicle traffic and other sources is typically less than during the daytime, and when people are more likely to be resting. For the Baseline Conditions analysis, runway time (radar start time for departures and end time for arrivals) in the 2019 and 2020 radar data for each operation was used to identify daytime, evening, and nighttime distribution for the noise analysis (day/evening/night split). **Table 2** summarizes the day/evening/night split by operation groups. In the Baseline Conditions, approximately 60.1% of the arrivals occur during daytime hours, 19.3% during evening hours, and 20.6% during nighttime hours. For departures, approximately 57.0% of operations occur during daytime hours, 12.6% during evening hours, and 30.4% during nighttime hours.

Table 2: Baseline Conditions Day/Evening/Night Split

Operation Group	Arrival				Departure			
	Day	Evening	Night	Total	Day	Evening	Night	Total
Passenger Air	61.9%	19.7%	18.5%	100.0%	61.3%	12.8%	25.9%	100.0%
Air Taxi	64.5%	18.7%	16.9%	100.0%	75.8%	6.9%	17.3%	100.0%
All-Cargo Carrier	51.5%	20.7%	27.8%	100.0%	43.5%	13.1%	43.3%	100.0%
GA	78.8%	14.2%	7.0%	100.0%	80.2%	10.9%	8.9%	100.0%
Military	100.0%	0.0%	0.0%	100.0%	100.0%	0.0%	0.0%	100.0%
Total	60.1%	19.3%	20.6%	100.0%	57.0%	12.6%	30.4%	100.0%

Sources: 2019 and 2020 Radar Data and HNTB Analysis, 2021.

Figure 1: Airport Facilities and Runways



2.1.5 Run-up Operation

Aircraft maintenance engine run-ups can be modeled in AEDT 3d, and depending on their frequency and orientation, may influence the size and location of noise contours. The Airport provided detailed engine run-up logs for use in the engine run-up contour modeling. Based on the information provided by the OIAA planning staff, the duration of a run-up operation was assumed to be 25 minutes when the duration information is missing from the run-up logs. If the aircraft types are missing from the run-up logs, the operation was proportionally distributed to other aircraft types of the same airline in the run-up logs. As a result, there are fractional run-up operations in the model. **Table 3** summarizes the Baseline Conditions run-up input.

Table 3: Baseline Conditions Run-up Operations

AEDT Aircraft	Operations
737700	2.0
737800	0.5
747400	1.0
727EM2	6.0
757PW	8.6
757RR	8.4
7673ER	42.5
A300-622R	1.5
A320-211	1.0
A320-232	1.0
CNA750	2.5
FAL20	0.3
FAL900EX	2.1
MD11GE	6.0
MD11PW	11.5
Grand Total	**95.0**

Source: 2019 ONT Run-up logs.

2.1.6 Runway Use

Runway use represents how aircraft utilize the runways and helipads at an airport and is a primary factor in the determination of noise exposure. For the Baseline Conditions, runway use for each airline and aircraft combination was obtained from the 2019 and 2020 radar data and was used for the Baseline Conditions (shown in **Table 4**).

Table 4: Baseline Conditions Runway Use

Operation Type	Runway	Day	Evening	Night	Total
Arrival	8L	4.6%	4.9%	7.1%	5.2%
	8R	2.0%	0.9%	1.1%	1.6%
	26L	43.9%	39.4%	45.8%	43.4%
	26R	48.5%	54.4%	45.5%	49.0%
	H01	1.0%	0.4%	0.6%	0.8%
Arrival Total		100.0%	100.0%	100.0%	100.0%
Departure	8L	3.8%	3.6%	35.1%	13.3%
	8R	3.1%	3.0%	36.7%	13.3%
	26L	35.1%	38.4%	13.4%	28.9%
	26R	57.0%	54.2%	14.4%	43.7%
	H01	0.9%	0.8%	0.5%	0.8%
Departure Total		100.0%	100.0%	100.0%	100.0%

Source: 2019 and 2020 Radar Data and HNTB Analysis, 2021.

2.1.7 Track Geometry and Use

To determine projected noise levels on the ground, it is necessary to determine not only the frequency of aircraft operations, but also the altitude and location in which they fly. Flight routes to and from an airport are generally a function of the geometry of the airport's runways and the surrounding airspace structure near the airfield. To develop representative tracks and calculate track use, eight weeks of representative radar data were selected. The following weeks were used for the track geometry and track use calculation:

- January 6th to Jan 19th, 2019
- April 21st to May 4th, 2019
- July 7th to July 20th, 2019
- October 20th to November 2nd, 2019

Figure 2 and **Figure 3** depict the modeled arrival and departure flight tracks for the Baseline Conditions. Track use was calculated based on four aircraft groups including passenger, cargo, GA, and military as well as three aircraft types including jets, propellers, and helicopters. Detailed tracks by arrival and departure, runway, aircraft group, and aircraft types are shown in *Attachment 2, Flight Track Development.* **Table B-1** in Attachment 2 summarizes the track use.

Figure 2: Modeled Arrival Flight Tracks

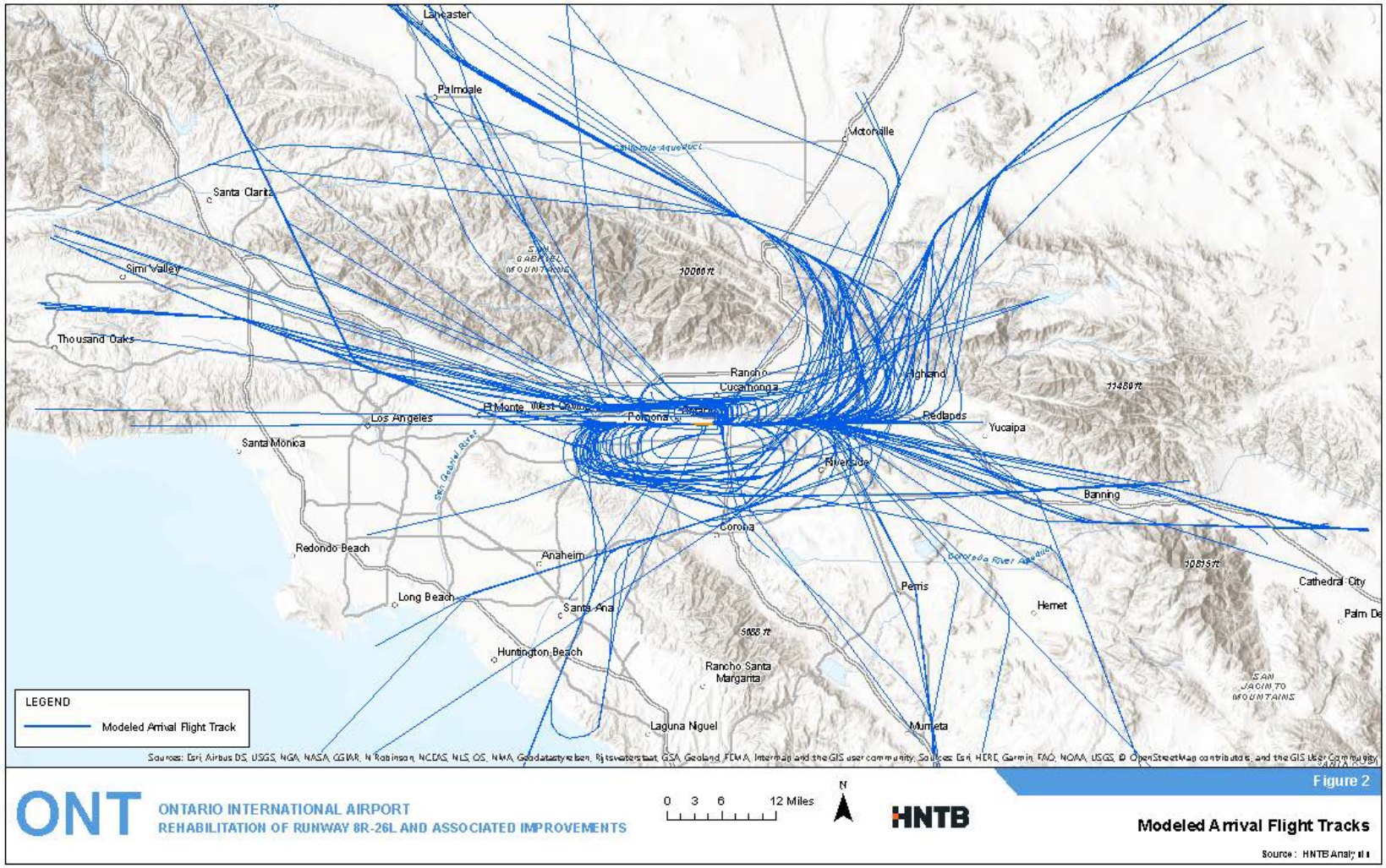
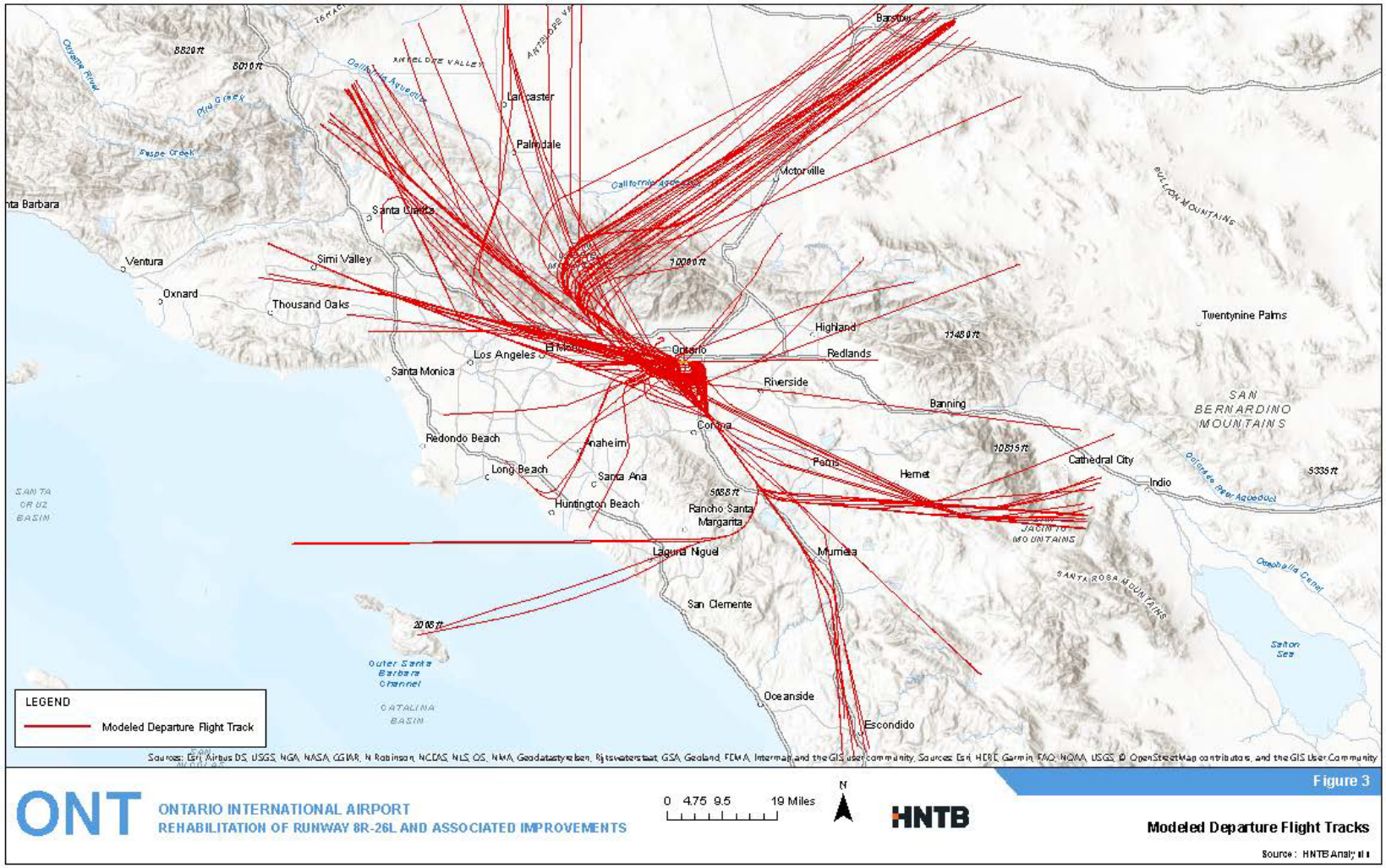


Figure 3: Modeled Departure Flight Tracks



2.1.8 Weather

AEDT allows for the modeling of atmospheric conditions in the calculation of noise exposure, taking into consideration temperature and humidity. For the Baseline Conditions, parameters in **Table 5** were applied based on the AEDT 10-year (2011 – 2020) average weather parameters for the Airport.

Table 5: Weather Parameters for the Baseline Conditions

Parameters	Baseline Conditions
Temperature (ºF)	65.6
Dew Point (ºF)	45.6
Pressure (millibar)	982.3
Humidity (%)	48.4
Wind (knots)	5.0

Sources: AEDT 3d and HNTB Analysis, 2022.

2.1.9 Terrain

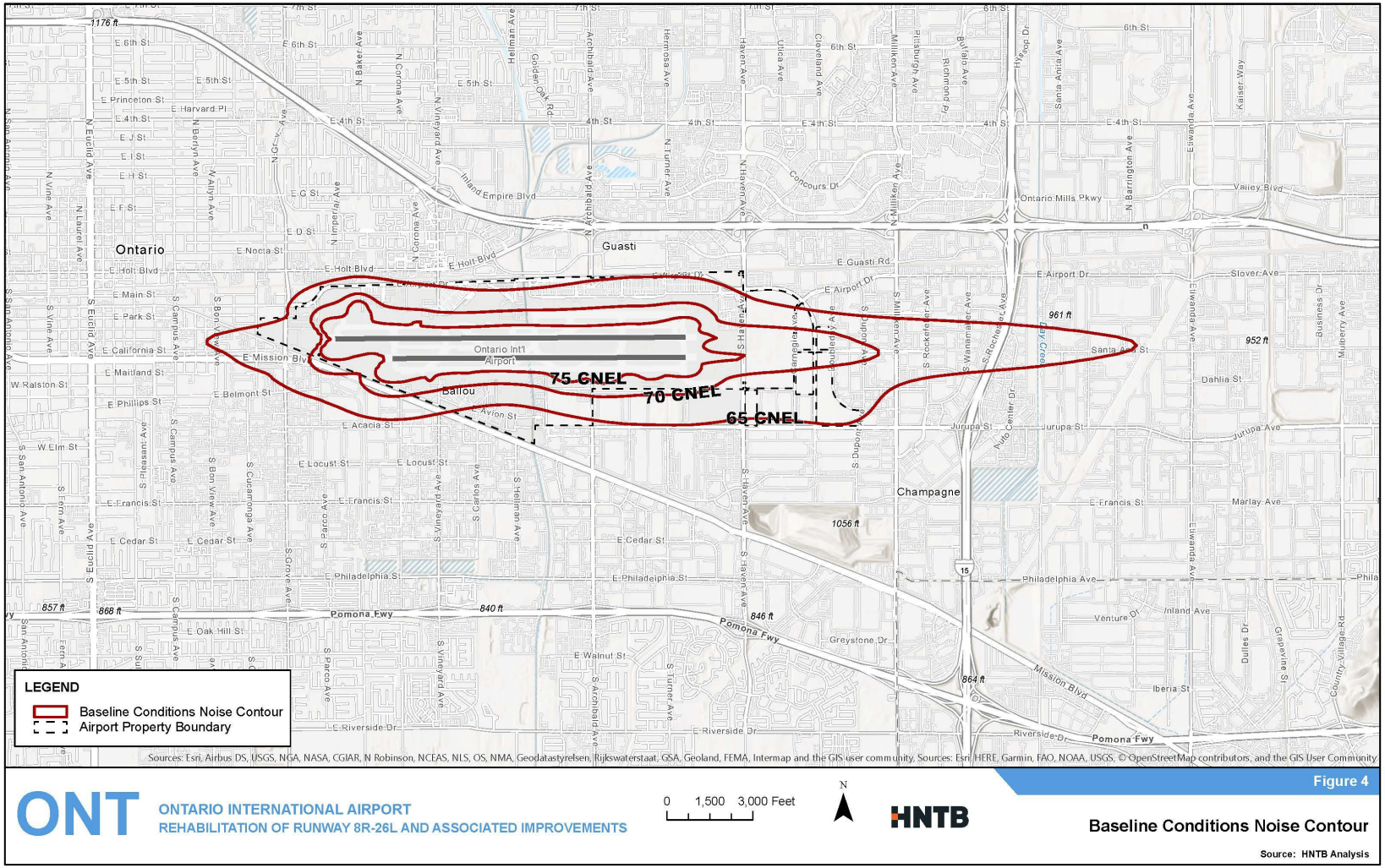
Terrain data is used to account for effects that variations in terrain have on noise propagation. Terrain data was obtained from The National Map (TNM) v2.0 developed by the United States Geological Survey (USGS) and was used in the noise modeling.

2.2 Baseline Conditions Noise Contour

Based on inputs described in Section 2.1, noise contours were modeled using AEDT 3d. **Figure 4** depicts the 65dB, 70dB, and 75dB CNEL noise contours for the Baseline Conditions. In general, the noise contours follow an east-west direction consistent with the runway orientation. The noise contour to the southeast of the Airport is primarily driven by departures from Runways 8L and 8R, especially at nighttime during the Contra Flow[1].

[1] During the nighttime hours, depending on wind condition, ONT operates contraflow where aircraft takes off to the east while still landing to the west. Contra Flow is utilized to alleviate noise impacts to the residential area to the west of the Airport.

Figure 4: Baseline Conditions Noise Contour



3 Future Alternatives

Runway use and flight patterns would be temporarily impacted during runway closures due to the lack of ability to operate in Contra Flow conditions. Therefore, noise impacts during construction in 2023, 2024 and 2025 were analyzed, encompassing the entire proposed construction periods. There are no noise impacts associated with the Proposed Project beyond the construction period. This study analyzed two alternatives including a three-year construction alternative (Proposed Project) and a two-year construction alternative (Two-Year Program Alternative).

The Proposed Project assumes the following runway closure and construction phasing:

- **2023** – maximum nine months of runway closure
  - Runway 8L-26R will be closed for four months (from mid-January to mid-May)
  - Runway 8R-26L will be closed for five months (from June to October)
- **2024** – maximum nine months of runway closure
  - Runway 8R-26L will be closed for nine months (from mid-January to mid-October)
- **2025** – maximum five months of runway closure
  - Runway 8L-26R will be closed for five months (from mid-January to mid-June)

The Two-Year Program Alternative assumes the following runway closure and construction phasing:

- **2023** – maximum nine months of runway closure
  - Runway 8L-26R will be closed for six months (mid-Jan to mid-July)
  - Runway 8R-26L will be closed for three months (mid-July to mid-October)
- **2024** – maximum nine months of runway closure
  - Runway 8R-26L will be closed for nine months (mid-Jan to mid-October)

In 2024, the Proposed Project construction phasing is identical to the Two-Year Program Alternative construction phasing. Therefore, the 2024 noise contours of both alternatives are expected to be identical.

Based on the phasing discussed above, this study analyzed the following future year alternatives:

- 2023 No Project Alternative
- 2023 Proposed Project
- 2023 Two-Year Program Alternative
- 2024 No Project Alternative
- 2024 Proposed Project (identical to 2024 Two-Year Program Alternative)
- 2025 No Project Alternative
- 2025 Proposed Project

The following sections discuss the inputs to the noise models and the noise model outputs. It is assumed that the fleet mixes of the No Project alternatives will be the same as the Proposed Project and Two-Year Program Alternative of the same year. Simulations using AirTOP were conducted to project runway use changes in the future alternatives. As required by CEQA, the noise levels associated with the Proposed Project in 2023, 2024 and 2025 were compared to the noise levels associated with the Baseline Conditions for the purpose of making a significance determination. For the Proposed Project, the future noise exposure would be influenced by factors that are not attributable to the Project itself, specifically from background operational growth that is projected to occur with or without the Proposed Project, as well changes in fleet mix that can impact overall noise levels. In order to remove the influence of background growth and differences in aircraft fleet noise levels, this analysis also compares noise exposure of the Proposed Project in a given year with the noise exposure from the No Project Alternative in the same year. *Thus, the No Project vs. Proposed Project in years 2023, 2024 and 2025 are included for informational purposes as well.*

3.1 2023 No Project Alternative

The 2023 No Project Alternative assumes both runways will be open for the full year.

3.1.1 Noise Model Inputs

The 2023 No Project Alternative fleet mix was developed as part of the fleet mix forecast in *Attachment 1, Fleet Mix Development.* Several parameters, such as the facility and runways, stage length, day/evening/night split, weather parameters and terrain were assumed to be the same as the Baseline Conditions. Other inputs are described in the following sections.

3.1.1.1 Runway Use

Runway use changes through AirTOP simulation were applied in the 2023 No Project Alternative as compared with the Baseline Conditions. For aircraft that are new in the fleet mix, their runway uses were assumed to be the same as the aircraft they are expected to replace or similar aircraft types. **Table 6** shows the 2023 No Project Alternative runway use.

Table 6: 2023 No Project Alternative Runway Use

Operation Type	Runway	Day	Evening	Night	Total
Arrival	8L	4.4%	4.7%	6.5%	4.9%
	8R	2.1%	0.9%	1.1%	1.7%
	26L	45.0%	42.7%	47.9%	45.1%
	26R	47.4%	51.2%	43.8%	47.4%
	H01	1.1%	0.5%	0.7%	0.9%
Arrival Total		100.0%	100.0%	100.0%	100.0%
Departure	8L	3.6%	4.5%	33.5%	12.3%
	8R	3.1%	3.1%	37.8%	13.1%
	26L	35.3%	39.0%	13.7%	29.5%
	26R	57.0%	52.5%	14.4%	44.2%

Operation Type	Runway	Day	Evening	Night	Total
	H01	1.0%	0.9%	0.6%	0.9%
Departure Total		100.0%	100.0%	100.0%	100.0%

Source: 2019 and 2020 Radar Data and HNTB Analysis, 2022.

3.1.1.2 Track Geometry and Use

An additional fourteen weeks of radar data in 2020 (eight weeks) and 2021 (six weeks[2]) were used to verify whether there were flight procedure changes from 2019 to 2021. The radar data sample included the following:

- January 5th to January 18th, 2020
- April 19th to May 2nd, 2020
- July 12th to July 25th, 2020
- October 18th to Oct 31st, 2020
- January 3rd to Jan 16th, 2021
- April 18th to May 1st, 2021
- July 11th to July 24th, 2021

It was determined that the majority of the flight paths remain the same except for the arrival flight paths over the San Bernardino Mountains. In 2019, traffic over the San Bernardino Mountains followed an east route and a west route. In 2020 and 2021, only the east route was used (shown in Figure 41 in *Attachment 2)*. Other flight tracks remain the same as in the Baseline Conditions.

3.1.1.3 Run-up Operations

The aircraft engine maintenance run-up operations in the No Project Alternative were based on the Baseline Conditions run-up operations with operations adjusted based on growth of each aircraft in the fleet mix from the Baseline Conditions to the No Project Alternative. **Table 7** summarizes the run-up operations applied in the 2023 No Project Alternative.

Table 7: 2023 No Project Alternative Run-up Operations

AEDT Aircraft	Operations
737700	1.7
737800	0.3
747400	1.0
727EM2	6.1
757PW	8.7
757RR	8.5

[2] At the time of this analysis, data was only available through Summer 2021.

AEDT Aircraft	Operations
7673ER	53.0
A300-622R	1.5
A320-211	0.4
A320-232	0.8
CNA750	3.4
FAL20	0.4
FAL900EX	2.3
MD11GE	4.2
MD11PW	7.3
Grand Total	**99.5**

Source: 2019 ONT Run-up logs and HNTB analysis, 2022.

3.1.2 Noise Model Outputs

Figure 5 depicts the No Project Alternative 65dB, 70dB, and 75dB CNEL noise contours and **Figure 6** compares the No Project Alternative and the Baseline Conditions noise contours. The No Project noise contour is slightly smaller than the Baseline Conditions noise contour due to the expected changes in the fleet mix. In 2024, operations by the Boeing 737 MAX and Airbus A320 NEO are expected to increase and replace a portion of the Boeing 737 New Generation (NG) and Airbus A320 CEO operations. Since the Boeing 737 MAX and Airbus A320 NEO have smaller noise footprints than the Boeing 737 NG and Airbus A320 CEO, the overall size of the noise contour is expected to slightly decrease. In addition, operations from older and noisier aircraft types, such as MD-11, are expected to decrease, which also contributes to the smaller No Project Alternative noise contour.

A case study was conducted to verify that the smaller 2023 No Project Alternative noise contours resulted from quieter aircraft types in the fleet mix. In the case study, the Boeing 737 MAX and Airbus A320 NEO operations were replaced by the Boeing 737 NG and Airbus A320 CEO operations with the rest of the operations remaining the same as the 2023 No Project Alternative. The case study noise contours were slightly larger than the Baseline Conditions, which verifies the quieter aircraft as the driver for the smaller 2023 No Project Alternative noise contour compared with the Baseline Conditions noise contour. **Figure 7** depicts the noise contour comparison between the Baseline Conditions and the 2023 No Project Alternative case study noise contour.

Figure 5: 2023 No Project Alternative Noise Contour

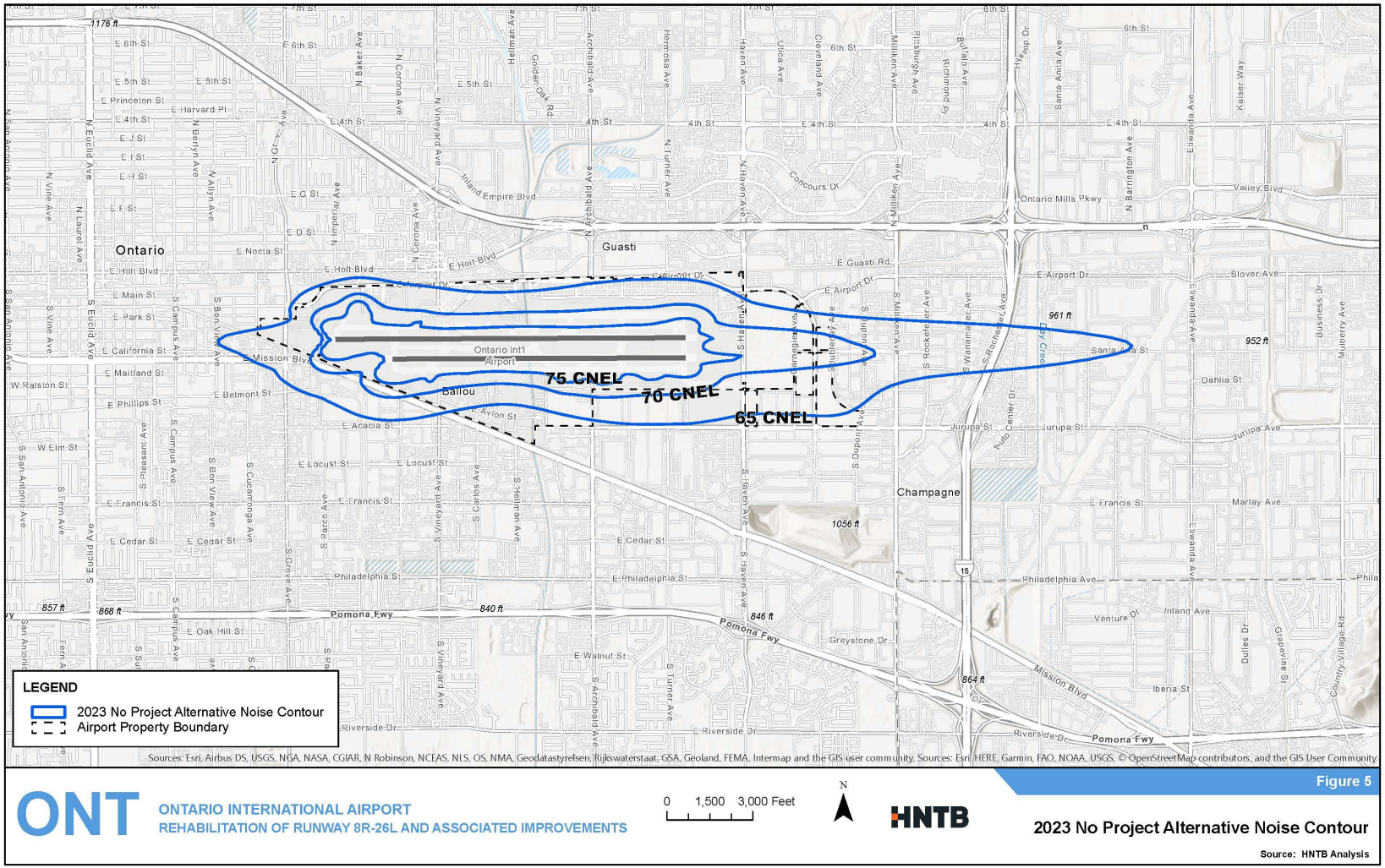


Figure 6: Baseline Conditions vs. 2023 No Project Alternative Noise Contours

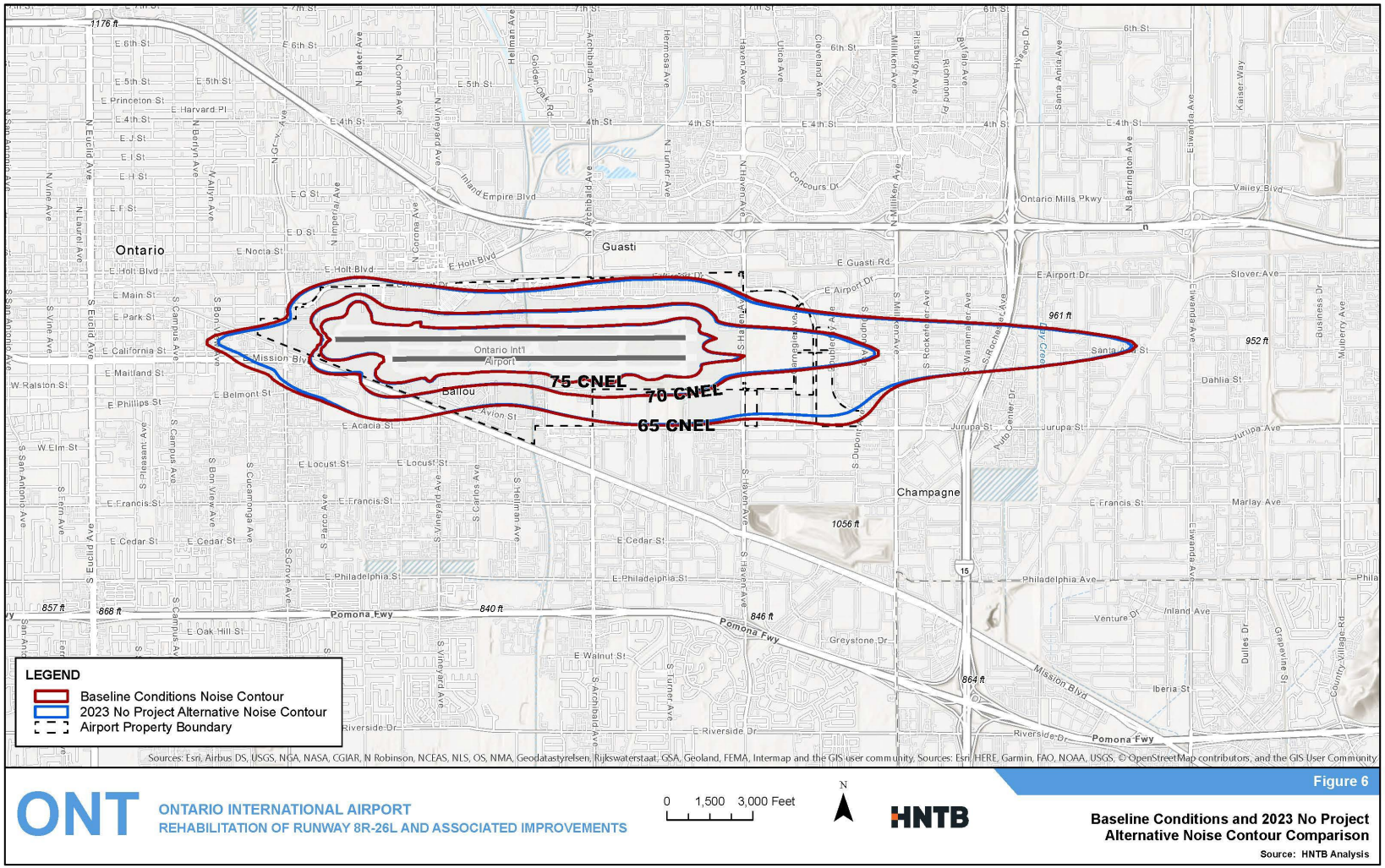
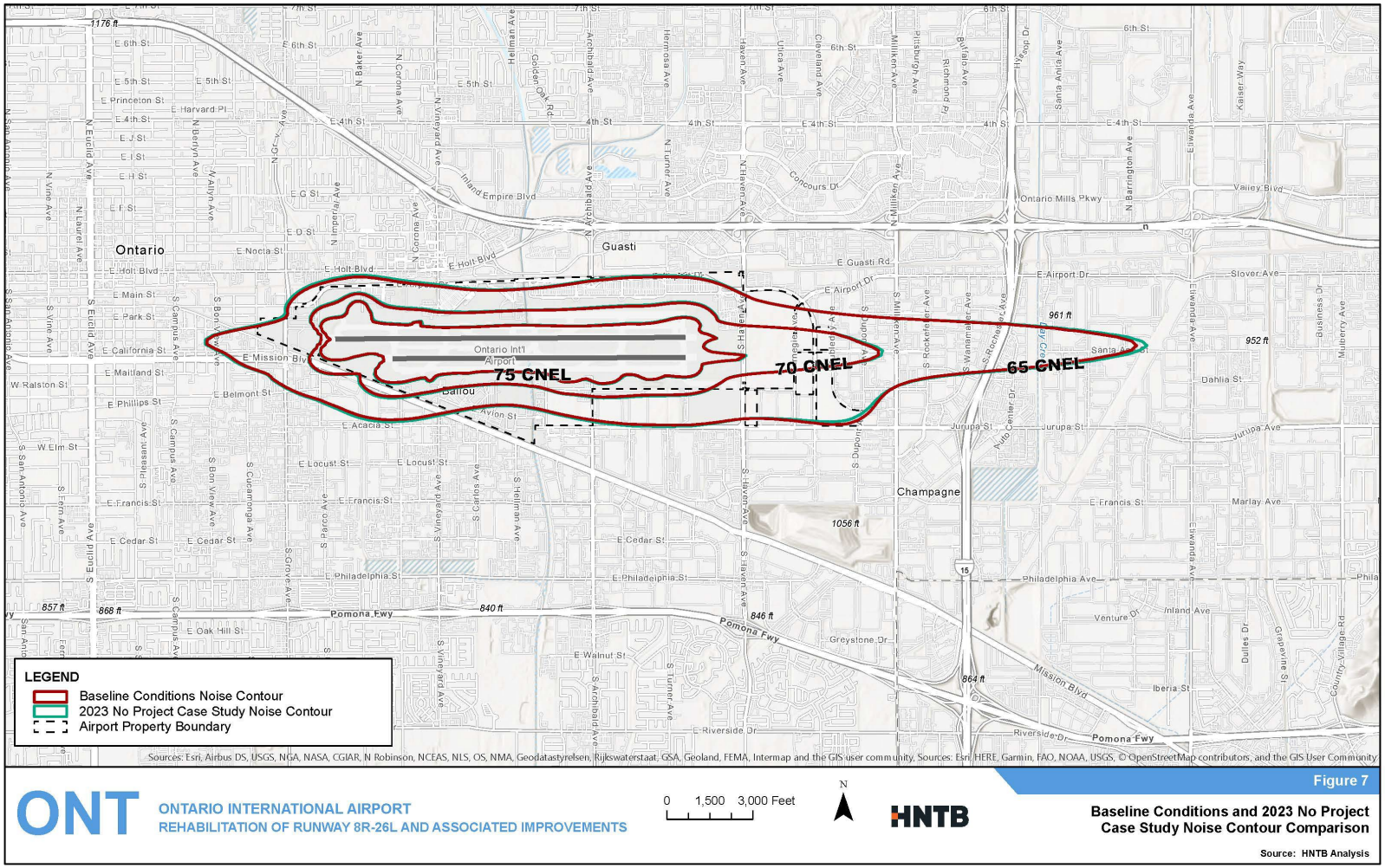


Figure 7: Baseline Conditions vs. 2023 No Project Alternative Noise Contours Case Study



3.2 2023 Proposed Project

The 2023 Proposed Project assumes Runway 8L-26R will be closed for four months from mid-January to mid-May and Runway 8R-26L will be closed for five months from June to October.

3.2.1 Noise Model Inputs

The 2023 Proposed Project fleet mix is identical to the 2023 No Project Alternative fleet mix. Most of the noise model input parameters, such as the facility and runways, stage length, day/evening/night split, weather parameters, terrain, track use, and run-up operations were assumed to be the same as the 2023 No Project Alternative.

3.2.1.1 Runway Use

Based on the proposed construction phasing, the Airport would operate with a single runway for nine months and two runways for the remaining three months. During the nighttime hours, depending on weather, ONT operates Contra Flow where aircraft takes off to the east while still landing to the west. Contra Flow is utilized to alleviate noise impacts to the residential area to the west of the Airport. During runway rehabilitation, however, Contra Flow would not be implemented, which in turn impacts the runway use and track use.

Table 8 summarizes the runway use in the 2023 Proposed Project, as compared with the Baseline Conditions. **Table 9** summarizes the runway use in the 2023 Proposed Project, as compared with the 2023 No Project Alternative.

Table 8: 2023 Proposed Project vs. Baseline Conditions Runway Uses

Operation Type	Runway	2023 Proposed Project				Baseline Conditions			
		Day	Evening	Night	Total	Day	Evening	Night	Total
Arrival	8L	3.5%	3.6%	4.0%	3.6%	4.6%	4.9%	7.1%	5.2%
	8R	2.4%	2.2%	2.2%	2.3%	2.0%	0.9%	1.1%	1.6%
	26L	42.3%	41.9%	43.2%	42.4%	43.9%	39.4%	45.8%	43.4%
	26R	50.7%	51.9%	49.9%	50.8%	48.5%	54.4%	45.5%	49.0%
	H01	1.1%	0.5%	0.7%	0.9%	1.0%	0.4%	0.6%	0.8%
Arrival Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Departure	8L	3.3%	3.5%	8.4%	4.8%	3.8%	3.6%	35.1%	13.3%
	8R	2.7%	2.7%	9.5%	4.6%	3.1%	3.0%	36.7%	13.3%
	26L	39.9%	40.9%	36.6%	39.1%	35.1%	38.4%	13.4%	28.9%
	26R	53.1%	52.0%	45.0%	50.6%	57.0%	54.2%	14.4%	43.7%
	H01	1.0%	0.9%	0.6%	0.9%	0.9%	0.8%	0.5%	0.8%
Departure Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2019 and 2020 Radar Data and HNTB Analysis, 2022.

Table 9: 2023 Proposed Project vs. 2023 No Project Alternative Runway Uses

Operation Type	Runway	2023 Proposed Project				2023 No Project Alternative			
		Day	Evening	Night	Total	Day	Evening	Night	Total
Arrival	8L	3.5%	3.6%	4.0%	3.6%	4.4%	4.7%	6.5%	4.9%
	8R	2.4%	2.2%	2.2%	2.3%	2.1%	0.9%	1.1%	1.7%
	26L	42.3%	41.9%	43.2%	42.4%	45.0%	42.7%	47.9%	45.1%
	26R	50.7%	51.9%	49.9%	50.8%	47.4%	51.2%	43.8%	47.4%
	H01	1.1%	0.5%	0.7%	0.9%	1.1%	0.5%	0.7%	0.9%
Arrival Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Departure	8L	3.3%	3.5%	8.4%	4.8%	3.6%	4.5%	33.5%	12.3%
	8R	2.7%	2.7%	9.5%	4.6%	3.1%	3.1%	37.8%	13.1%
	26L	39.9%	40.9%	36.6%	39.1%	35.3%	39.0%	13.7%	29.5%
	26R	53.1%	52.0%	45.0%	50.6%	57.0%	52.5%	14.4%	44.2%
	H01	1.0%	0.9%	0.6%	0.9%	1.0%	0.9%	0.6%	0.9%
Departure Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2019 and 2020 Radar Data and HNTB Analysis, 2022.

3.2.2 Noise Model Outputs

Figure 8 illustrates the 2023 Proposed Project 65dB, 70dB, and 75dB CNEL noise contours and **Figure 9** compares the 2023 Proposed Project with the Baseline Conditions noise contours. The 2023 Proposed Project would result in changes in noise exposure as compared to the Baseline Conditions. The change in Proposed Project noise conditions compared to the Baseline Conditions is attributable to three factors:

1. Background growth in passenger activity and aircraft operations that is anticipated at ONT with or without the Proposed Project.
2. Changes in fleet mix projected in future years that can impact overall noise levels. Generally, operations from older and noisier aircraft are expected to decrease in future years.
3. Runway closure periods associated with the Proposed Project construction that results in ONT operating on a single-runway without Contra Flow for periods in 2023, as compared to the Baseline Conditions where both runways are operational.

Figure 10 compares the 2023 Proposed Project with the 2023 No Project Alternative noise contours. Since Runway 8L-26R is scheduled to be closed for four months and Runway 8R-26L is scheduled to be closed for five months (one month longer than Runway 8L-26R), Runway 8L-26R is expected to be utilized more frequently than usual. Therefore, the Proposed Project contours to the east of the Airport are expected to shift slightly to the north as arrivals from the east would only utilize both runways for three months in 2023 and utilize Runway 26R solely for five months and Runway 26L solely for four months. To the southeast of the Airport, the departure noise contour from Runway 8L and 8R is expected to shift to the southwest of the Airport as Contra Flow would not be implemented for nine months during the rehabilitation. During normal operations, departures at nighttime use Runways 8L and 8R to the east under Contra Flow. During

the rehabilitation, however, jet departures at night use Runways 26L and 26R to the west in absence of Contra Flow. As shown in Table 9, nighttime departures from Runways 8L and 8R would decrease from 33.5% and 37.8% in the 2023 No Project Alternative to 8.4% and 9.5%, respectively in the 2023 Proposed Project. Nighttime departures from Runways 26L and 26R would increase from 13.7% and 14.4% in the 2023 No Project Alternative to 36.6% and 45.0% in the 2023 Proposed Project. Therefore, the noise contour driven by the nighttime departures is expected to shift from the southeast of the Airport to the southwest of the Airport under the 2023 Proposed Project.

Figure 8: 2023 Proposed Project Noise Contour

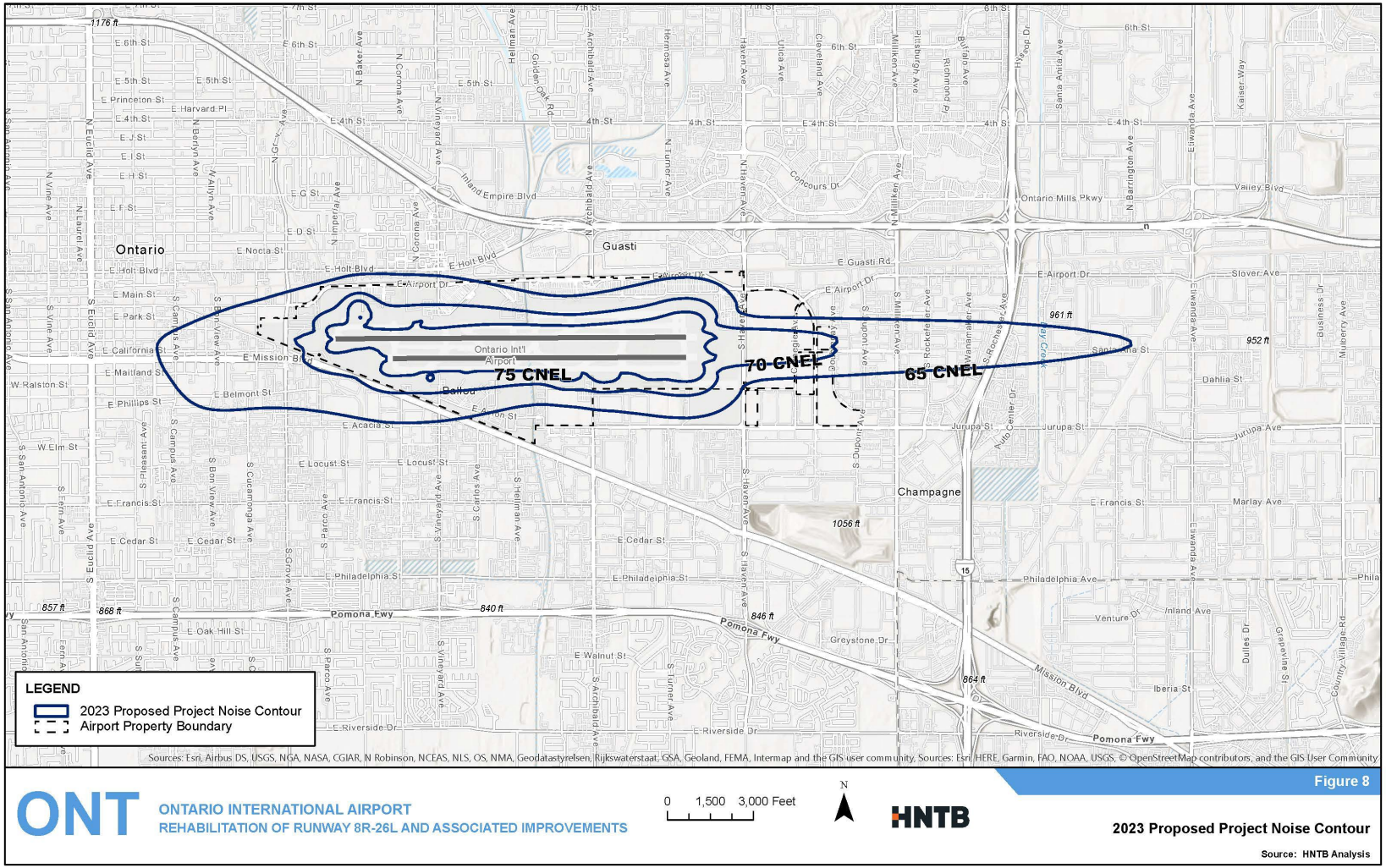


Figure 9: 2023 Proposed Project vs. Baseline Conditions Noise Contours

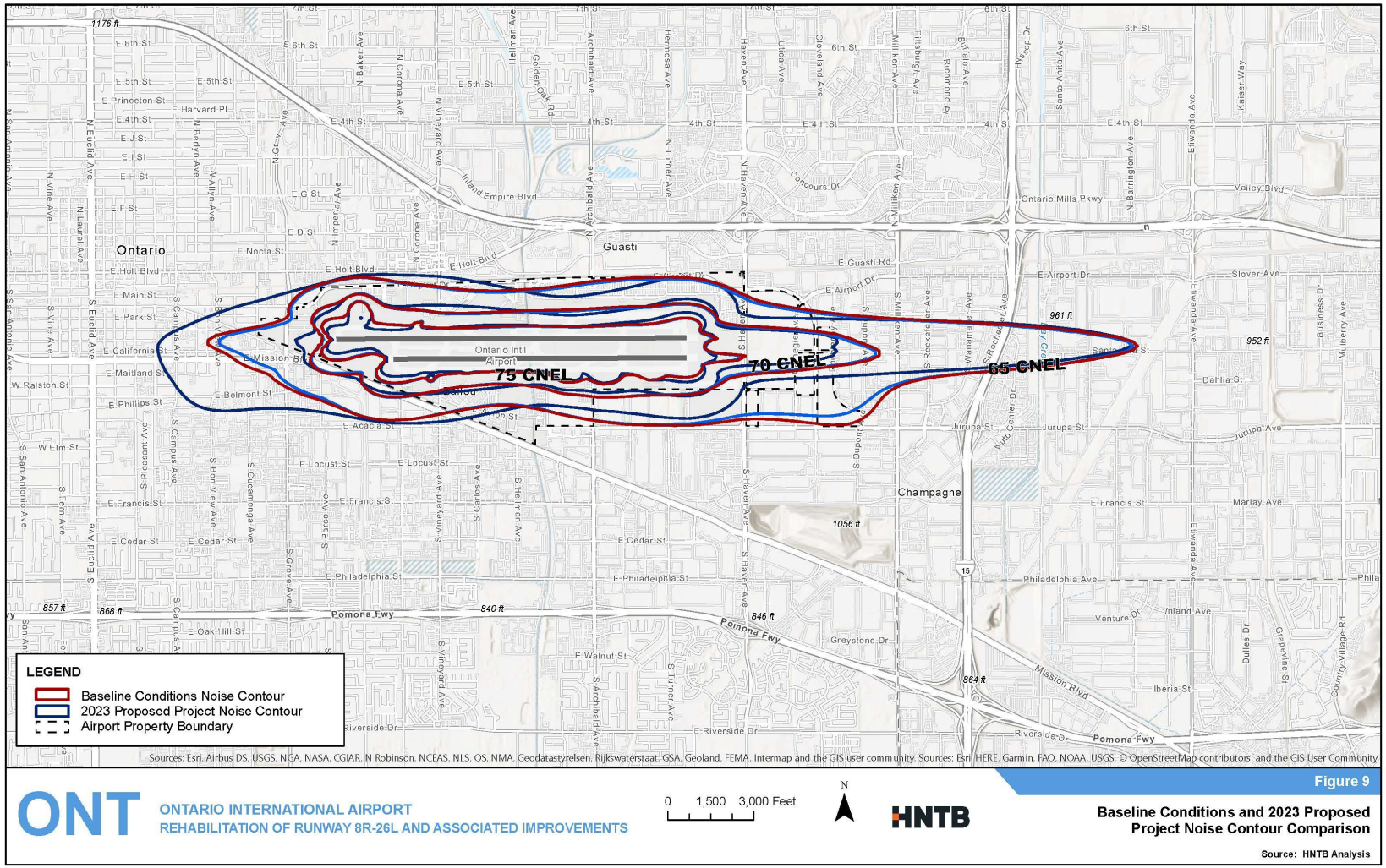
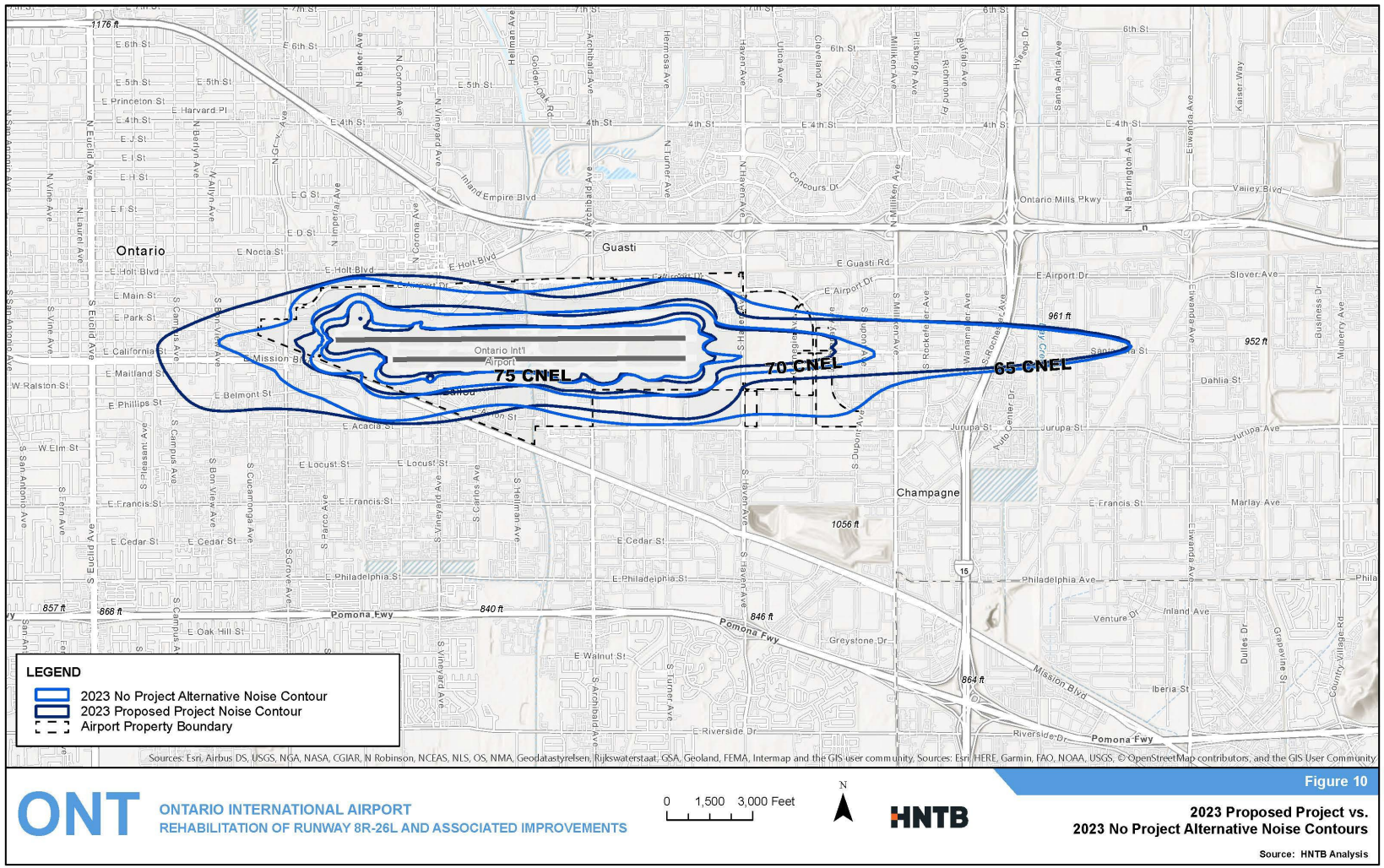


Figure 10: 2023 Proposed Project vs. 2023 No Project Alternative Noise Contours



3.3 2023 Two-Year Program Alternative

The 2023 Two-Year Program Alternative assumes Runway 8L-26R will be closed for six months from mid-January to mid-July as compared with four months from mid-January to mid-May in the 2023 Proposed Project. Runway 8R-26L will be closed for three months from mid-July to mid-October in the 2023 Two-Year Program Alternative as compared with five months from June to October in the 2023 Proposed Project.

3.3.1 Noise Model Inputs

The 2023 Proposed Project fleet mix is identical to the 2023 No Project Alternative fleet mix. Most of the noise model input parameters, such as the facility and runways, stage length, day/evening/night split, weather parameters, terrain, track use, and run-up operations were assumed to be the same as the 2023 No Project Alternative.

3.3.1.1 Runway Use

Table 10 compares the runway uses between the 2023 Two-Year Program Alternative and the Baseline Condition. **Table 11** compares the runway uses between the 2023 Two-Year Program Alternative and the Baseline Conditions.

Table 10: 2023 Comparison of Two-Year Program Alternative and Baseline Conditions Runway Uses

Operation Type	Runway	Two-Year Program Alternative				Baseline Conditions			
		Day	Evening	Night	Total	Day	Evening	Night	Total
Arrival	8L	2.5%	2.6%	3.1%	2.7%	4.6%	4.9%	7.1%	5.2%
	8R	3.4%	3.1%	3.2%	3.3%	2.0%	0.9%	1.1%	1.6%
	26L	57.8%	57.6%	58.8%	58.0%	43.9%	39.4%	45.8%	43.4%
	26R	35.2%	36.3%	34.3%	35.2%	48.5%	54.4%	45.5%	49.0%
	H01	1.1%	0.5%	0.7%	0.9%	1.0%	0.4%	0.6%	0.8%
Arrival Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Departure	8L	2.3%	2.6%	8.4%	4.1%	3.8%	3.6%	35.1%	13.3%
	8R	3.6%	3.6%	9.5%	5.3%	3.1%	3.0%	36.7%	13.3%
	26L	55.4%	56.4%	53.1%	54.9%	35.1%	38.4%	13.4%	28.9%
	26R	37.6%	36.5%	28.5%	34.8%	57.0%	54.2%	14.4%	43.7%
	H01	1.0%	0.9%	0.6%	0.9%	0.9%	0.8%	0.5%	0.8%
Departure Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2019 and 2020 Radar Data and HNTB Analysis, 2022.

Table 11: 2023 Comparison of Two-Year Program Alternative vs. 2023 No Project Alternative Runway Uses

Operation Type	Runway	Two-Year Program Alternative				2023 No Project Alternative			
		Day	Day	Day	Day	Day	Evening	Night	Total
Arrival	8L	2.5%	2.5%	2.5%	2.5%	4.4%	4.7%	6.5%	4.9%
	8R	3.4%	3.4%	3.4%	3.4%	2.1%	0.9%	1.1%	1.7%
	26L	57.8%	57.8%	57.8%	57.8%	45.0%	42.7%	47.9%	45.1%
	26R	35.2%	35.2%	35.2%	35.2%	47.4%	51.2%	43.8%	47.4%
	H01	1.1%	1.1%	1.1%	1.1%	1.1%	0.5%	0.7%	0.9%
Arrival Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Departure	8L	2.3%	2.3%	2.3%	2.3%	3.6%	4.5%	33.5%	12.3%
	8R	3.6%	3.6%	3.6%	3.6%	3.1%	3.1%	37.8%	13.1%
	26L	55.4%	55.4%	55.4%	55.4%	35.3%	39.0%	13.7%	29.5%
	26R	37.6%	37.6%	37.6%	37.6%	57.0%	52.5%	14.4%	44.2%
	H01	1.0%	1.0%	1.0%	1.0%	1.0%	0.9%	0.6%	0.9%
Departure Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2019 and 2020 Radar Data and HNTB Analysis, 2022.

Since Runway 8L-26R will be closed longer in the 2023 Proposed Project Alternative 2, the percentages of arrivals and departures to and from Runway 8L-26R is expected to decrease in the 2023 Two-Year Program Alternative as compared with the 2023 Proposed Project.

3.3.2 Noise Model Outputs

Figure 11 illustrates the 2023 Two-Year Program Alternative 65dB, 70dB, and 75dB CNEL noise contours, **Figure 12** compares the 2023 Two-Year Program Alternative noise contours with the Baseline Conditions noise contours. The 2023 Two-Year Program Alternative would result in changes in noise exposure as compared to the Baseline Conditions. The change in the 2023 Two-Year Program Alternative noise conditions compared to the Baseline Conditions is attributable to three factors:

1. Background growth in passenger activity and aircraft operations that is anticipated at ONT with or without the Two-Year Program Alternative.

2. Changes in fleet mix projected in future years that can impact overall noise levels. Generally, operations from older and noisier aircraft are expected to decrease in future years.

3. Runway closure periods associated with the 2023 Two-Year Program Alternative construction that results in ONT operating on a single-runway without Contra Flow for periods in 2023, as compared to the Baseline Conditions where both runways are operational.

Figure 13 compares the 2023 Two-Year Program Alternative noise contours with the 2023 No Project Alternative. The causes of the contour differences between the 2023 Two-Year Program Alternative noise contours with the 2023 No Project Alternative are very similar with the causes

of the contour differences between the 2023 Proposed Project Alternative with the 2023 No Project Alternative noise contours.

Figure 11: 2023 Two-Year Program Alternative Noise Contour

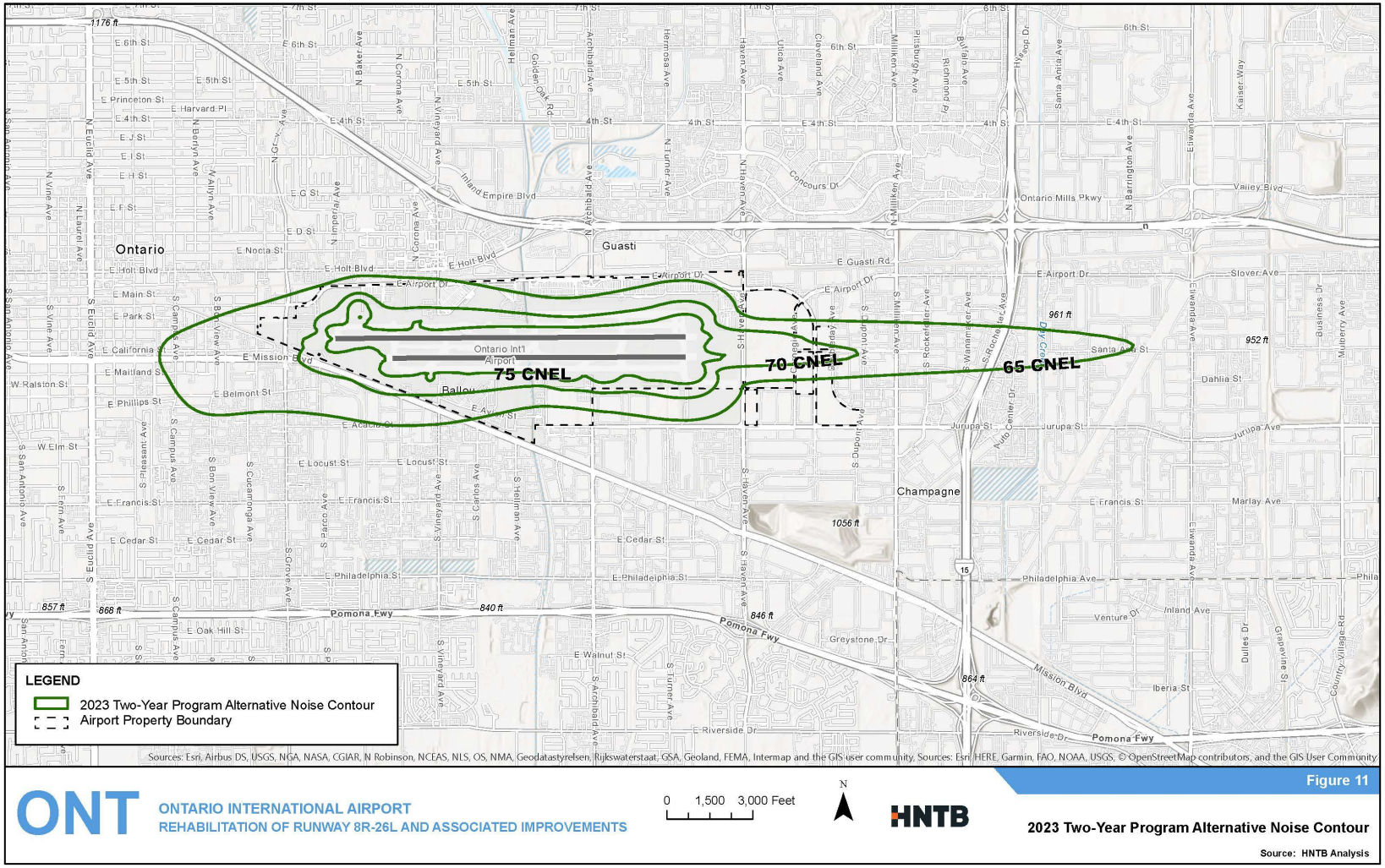


Figure 12: 2023 Two-Year Program Alternative vs. Baseline Conditions Noise Contours

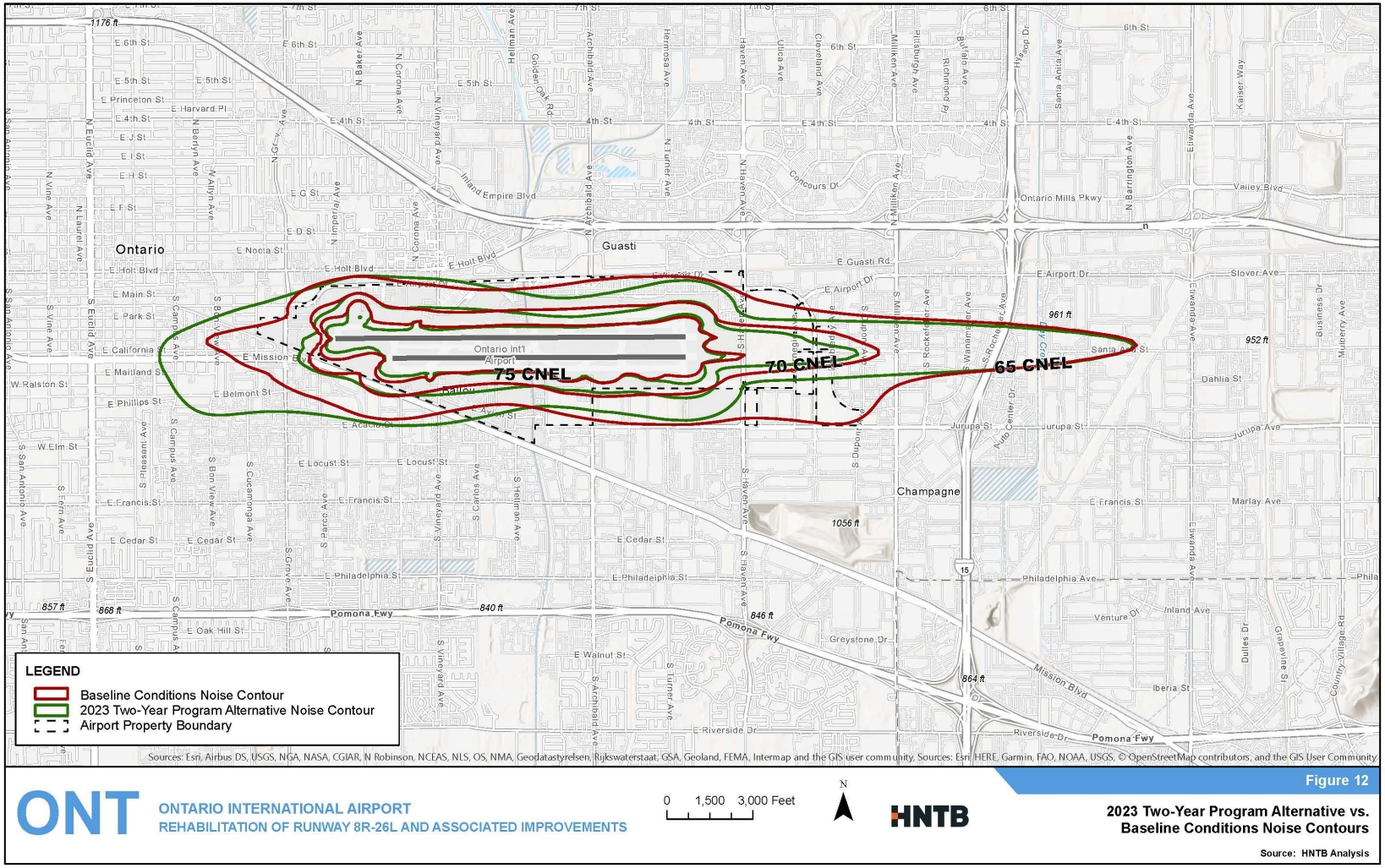
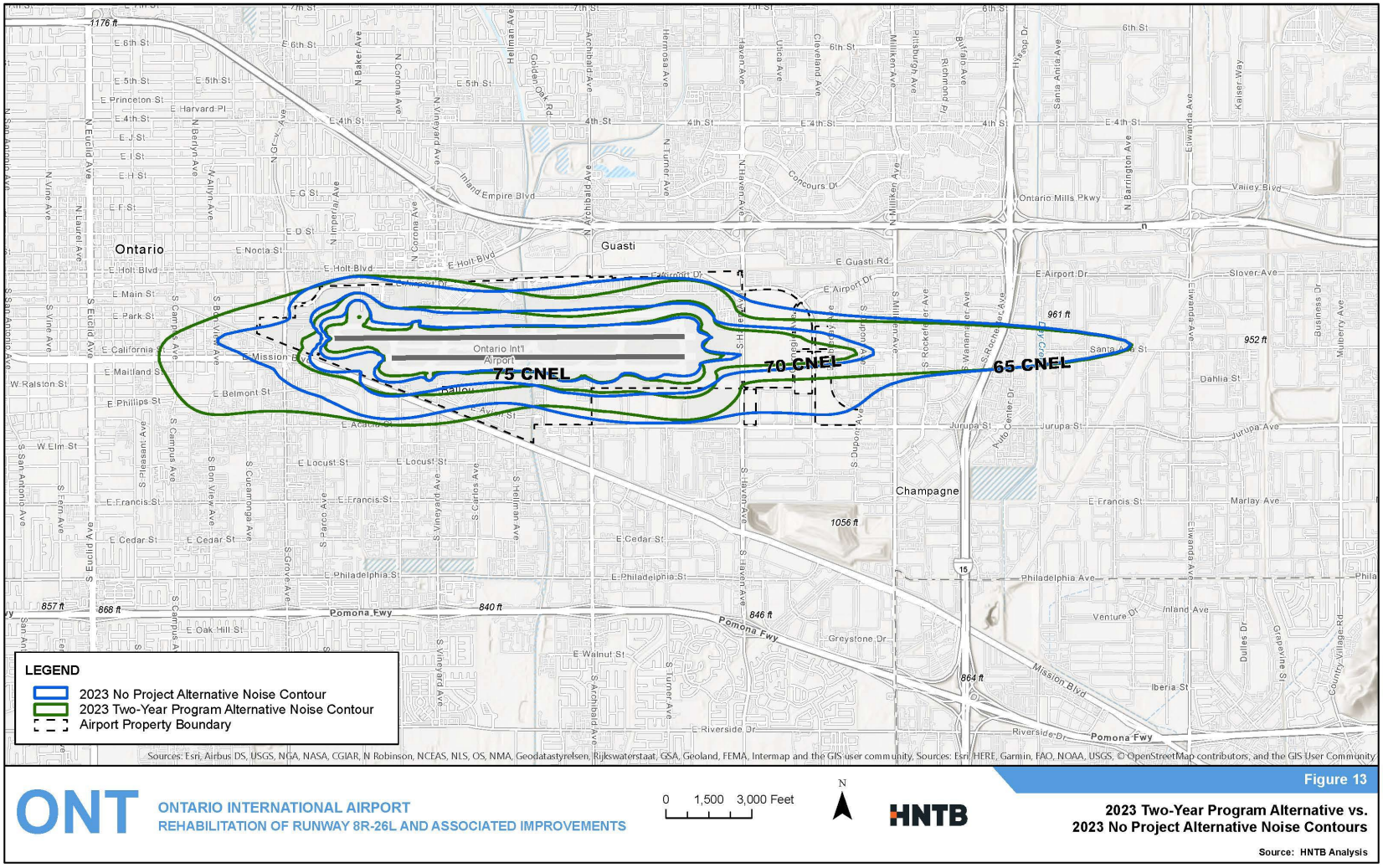


Figure 13: 2023 Two-Year Program Alternative vs. 2023 No Project Alternative Noise Contours



3.4 2024 No Project Alternative

The 2024 No Project Alternative assumes both runways will be open for the full year.

3.4.1 Noise Model Inputs

The 2024 No Project Alternative fleet mix was developed as part of the fleet mix forecast in *Attachment 1, Fleet Mix Development.* Several parameters, such as the facility and runways, stage length, day/evening/night split, weather parameters and terrain were assumed to be the same as the Baseline Conditions. Other inputs are described in the following sections.

3.4.1.1 Runway Use

Runway use changes through AirTOP simulation were applied in the 2024 No Project Alternative as compared with the Baseline Conditions. For aircraft that are new in the fleet mix, their runway uses were assumed to be the same as the aircraft they are expected to replace or similar aircraft types. **Table 12** shows the 2024 No Project Alternative runway use.

Table 12: 2024 No Project Alternative Runway Use

Operation Type	Runway	Day	Evening	Night	Total
Arrival	8L	4.4%	4.7%	6.5%	4.9%
	8R	2.1%	0.9%	1.1%	1.7%
	26L	44.9%	42.6%	47.9%	45.1%
	26R	47.6%	51.3%	43.8%	47.5%
	H01	1.0%	0.4%	0.7%	0.9%
Arrival Total		100.0%	100.0%	100.0%	100.0%
Departure	8L	3.6%	4.5%	33.6%	12.4%
	8R	3.1%	3.1%	37.8%	13.1%
	26L	35.2%	39.0%	13.7%	29.4%
	26R	57.1%	52.6%	14.4%	44.2%
	H01	1.0%	0.9%	0.6%	0.9%
Departure Total		100.0%	100.0%	100.0%	100.0%

Source: 2019 and 2020 Radar Data and HNTB Analysis, 2022.

3.4.1.2 Run-up Operations

The aircraft engine maintenance run-up operations in the 2024 No Project Alternative were based on the Baseline Conditions run-up operations with operations adjusted based on growth of each aircraft in the fleet mix from the Baseline Conditions to the 2024 No Project Alternative. **Table 13** depicts the run-up operations applied in the 2024 No Project Alternative.

Table 13: 2024 No Project Alternative Run-up Operations

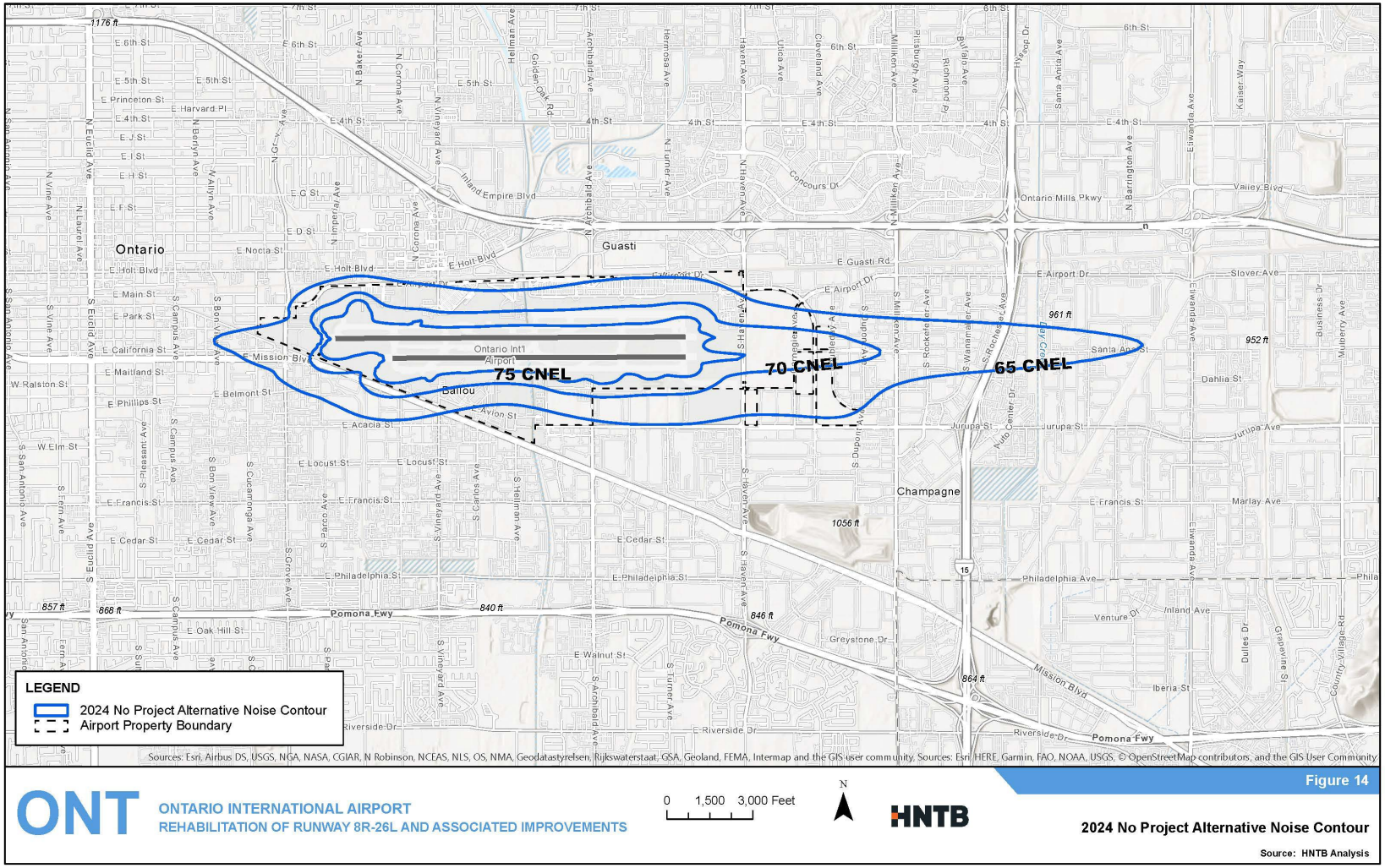
AEDT Aircraft	Operations
737700	1.7
737800	0.3
747400	1.1
727EM2	6.3
757PW	9.0
757RR	8.8
7673ER	55.0
A300-622R	1.5
A320-211	0.4
A320-232	0.9
CNA750	3.5
FAL20	0.4
FAL900EX	2.3
MD11GE	4.4
MD11PW	7.5
Grand Total	**103.2**

Source: 2019 ONT Run-up logs and HNTB analysis, 2022.

3.4.2 Noise Model Outputs

Figure 14 illustrates the 2024 No Project Alternative 65dB, 70dB, and 75dB CNEL noise contours.

Figure 14: 2024 No Project Alternative Noise Contour



3.5 2024 Proposed Project and Two-Year Program Alternative

The 2024 Proposed Project and Two-Year Program Alternative assume Runway 8R-26L will be closed for nine months for rehabilitation from mid-January to mid-October. Since the 2024 Proposed Project and Two-Year Program Alternative are identical, they will be referred to singularly as the 2024 Proposed Project in the following sections of this technical memorandum to reduce duplication of the exact same results.

3.5.1 Noise Model Inputs

The 2024 Proposed Project fleet mix is identical to the 2024 No Project Alternative fleet mix. Most of the noise model input parameters, such as the facility and runways, stage length, day/evening/night split, weather parameters, terrain, track use, and run-up operations were assumed to be the same as the 2024 No Project Alternative.

3.5.1.1 Runway Use

Under the 2024 Proposed Project, it was assumed that Runway 8R-26L will be closed for nine months for rehabilitation from mid-January to mid-October. Both runways would be open for the remaining periods. Therefore, the Airport would operate with a single runway for nine months and two runways for the remaining three months. During runway rehabilitation, Contra Flow would not be implemented, which would impact the runway use and track use.

Table 14 summarizes the runway use in the 2024 Proposed Project, as compared with the Baseline Conditions. **Table 15** compares the runway uses between the 2024 Proposed Project /Two Year Alternative and the 2024 No Project Alternative.

Table 14: 2024 Proposed Project / Two-Year vs. Baseline Conditions Runway Uses

Operation Type	Runway	2024 Proposed Project / Two Year				Baseline Conditions			
		Day	Evening	Night	Total	Day	Evening	Night	Total
Arrival	8L	5.4%	5.5%	6.0%	5.4%	4.6%	4.9%	7.1%	5.2%
	8R	0.5%	0.2%	0.3%	0.5%	2.0%	0.9%	1.1%	1.6%
	26L	11.2%	10.6%	12.0%	11.2%	43.9%	39.4%	45.8%	43.4%
	26R	81.8%	83.2%	81.1%	81.8%	48.5%	54.4%	45.5%	49.0%
	H01	1.0%	0.4%	0.7%	1.0%	1.0%	0.4%	0.6%	0.8%
Arrival Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Departure	8L	5.2%	5.4%	8.4%	5.2%	3.8%	3.6%	35.1%	13.3%
	8R	0.8%	0.8%	9.5%	0.8%	3.1%	3.0%	36.7%	13.3%
	26L	8.8%	9.7%	3.4%	8.8%	35.1%	38.4%	13.4%	28.9%
	26R	84.2%	83.2%	78.2%	84.2%	57.0%	54.2%	14.4%	43.7%
	H01	1.0%	0.9%	0.6%	1.0%	0.9%	0.8%	0.5%	0.8%
Departure Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2019 and 2020 Radar Data and HNTB Analysis, 2022.

Table 15: 2024 Proposed Project vs. 2024 No Project Alternative Runway Uses

Operation Type	Runway	2024 Proposed Project / Two Year				2024 No Project Alternative			
		Day	Evening	Night	Total	Day	Evening	Night	Total
Arrival	8L	5.4%	5.5%	6.0%	5.4%	4.4%	4.7%	6.5%	4.9%
	8R	0.5%	0.2%	0.3%	0.5%	2.1%	0.9%	1.1%	1.7%
	26L	11.2%	10.6%	12.0%	11.2%	44.9%	42.6%	47.9%	45.1%
	26R	81.8%	83.2%	81.1%	81.8%	47.6%	51.3%	43.8%	47.5%
	H01	1.0%	0.4%	0.7%	1.0%	1.0%	0.4%	0.7%	0.9%
Arrival Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Departure	8L	5.2%	5.4%	8.4%	5.2%	3.6%	4.5%	33.6%	12.4%
	8R	0.8%	0.8%	9.5%	0.8%	3.1%	3.1%	37.8%	13.1%
	26L	8.8%	9.7%	3.4%	8.8%	35.2%	39.0%	13.7%	29.4%
	26R	84.2%	83.2%	78.2%	84.2%	57.1%	52.6%	14.4%	44.2%
	H01	1.0%	0.9%	0.6%	1.0%	1.0%	0.9%	0.6%	0.9%
Departure Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2019 and 2020 Radar Data and HNTB Analysis, 2022.

3.5.2 Noise Model Outputs

Figure 15 illustrates the 2024 Proposed Project 65dB, 70dB, and 75dB CNEL noise contours and **Figure 16** compares the 2024 Proposed Project with the Baseline Conditions noise contours.

The 2024 Proposed Project would result in changes in noise exposure as compared to the Baseline Conditions. The change in the 2024 Proposed Project noise conditions compared to the Baseline Conditions is attributable to three factors:

1. Background growth in passenger activity and aircraft operations that is anticipated at ONT with or without the 2024 Proposed Project.

2. Changes in fleet mix projected in future years that can impact overall noise levels. Generally, operations from older and noisier aircraft are expected to decrease in future years.

3. Runway closure periods associated with the 2024 Proposed Project construction that results in ONT operating on a single-runway without Contra Flow for periods in 2024, as compared to the Baseline Conditions where both runways are operational.

Figure 17 compares the 2024 Proposed Project with the No Project Alternative noise contours.

As a result of the Runway 8R-26L closure for rehabilitation, the Proposed Project contours to the east of the Airport are expected to shift slightly to the north as arrivals from the east would only utilize both runways for three months in 2024 and utilize Runway 26R for nine months during the rehabilitation.

During normal operations when both runways are open, jet departures at nighttime would use Runways 8L and 8R for departure as part of the noise abatement measures to the west of the Airport (with Contra Flow). During the runway rehabilitation when there's only one runway open, jet departures would mostly utilize Runway 26R for safety reasons (without Contra Flow). Therefore, the departure noise contour to the southeast of the Airport from Runway 8L and 8R is expected to shift to the southwest of the Airport as Contra Flow would not be implemented for nine months during the runway rehabilitation.

Figure 15: 2024 Proposed Project Noise Contour

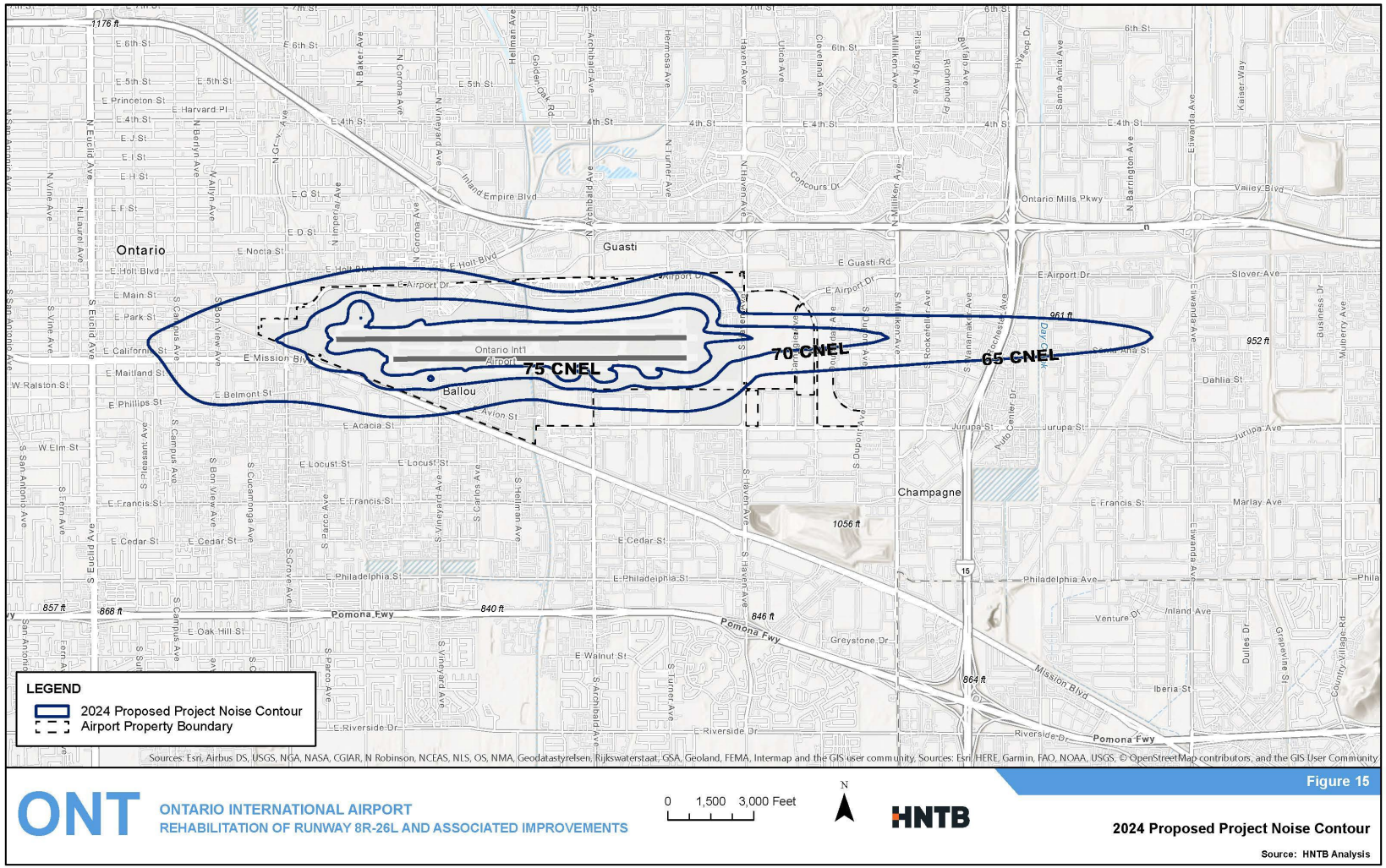


Figure 16: 2024 Proposed Project vs. Baseline Conditions Noise Contours

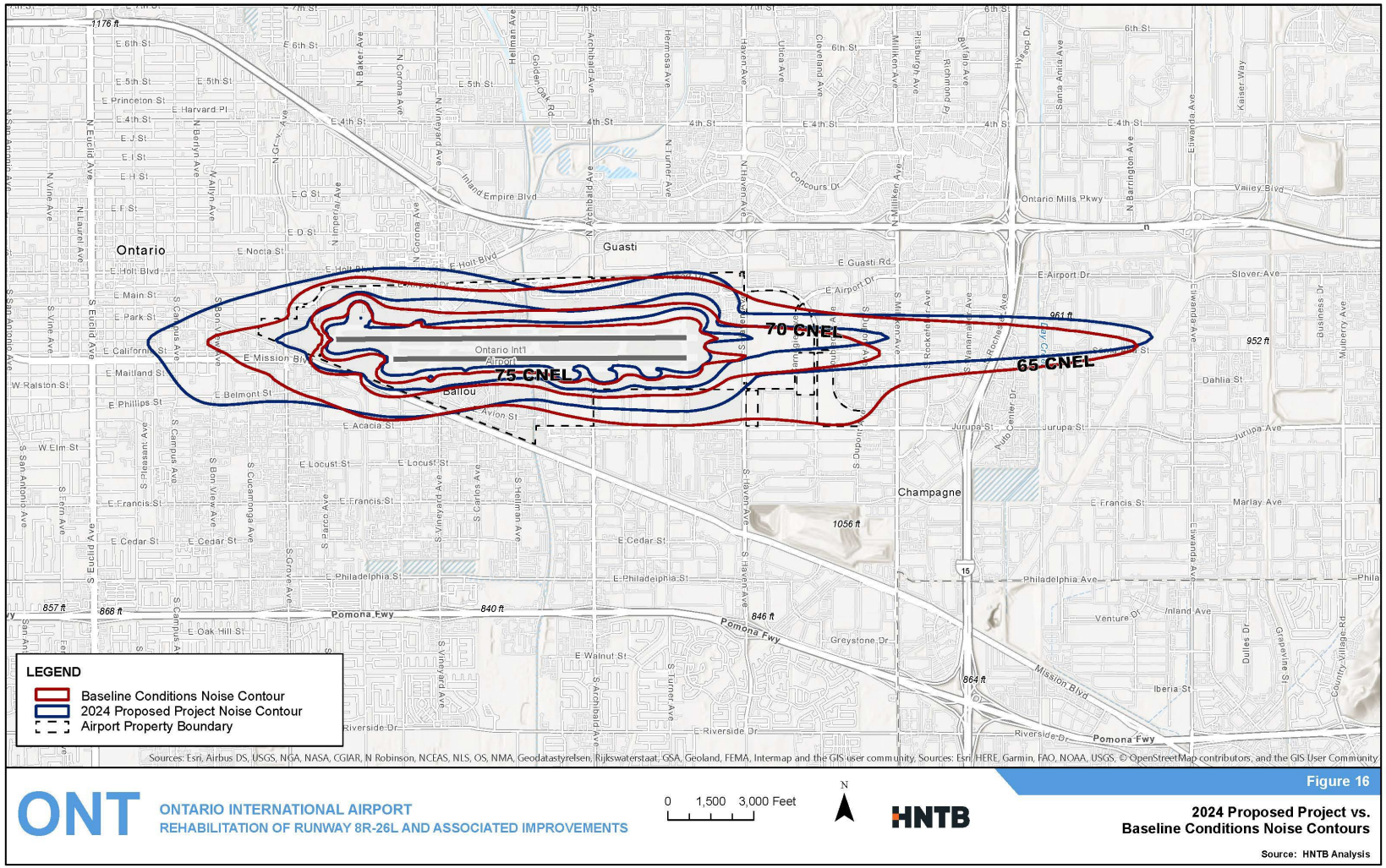
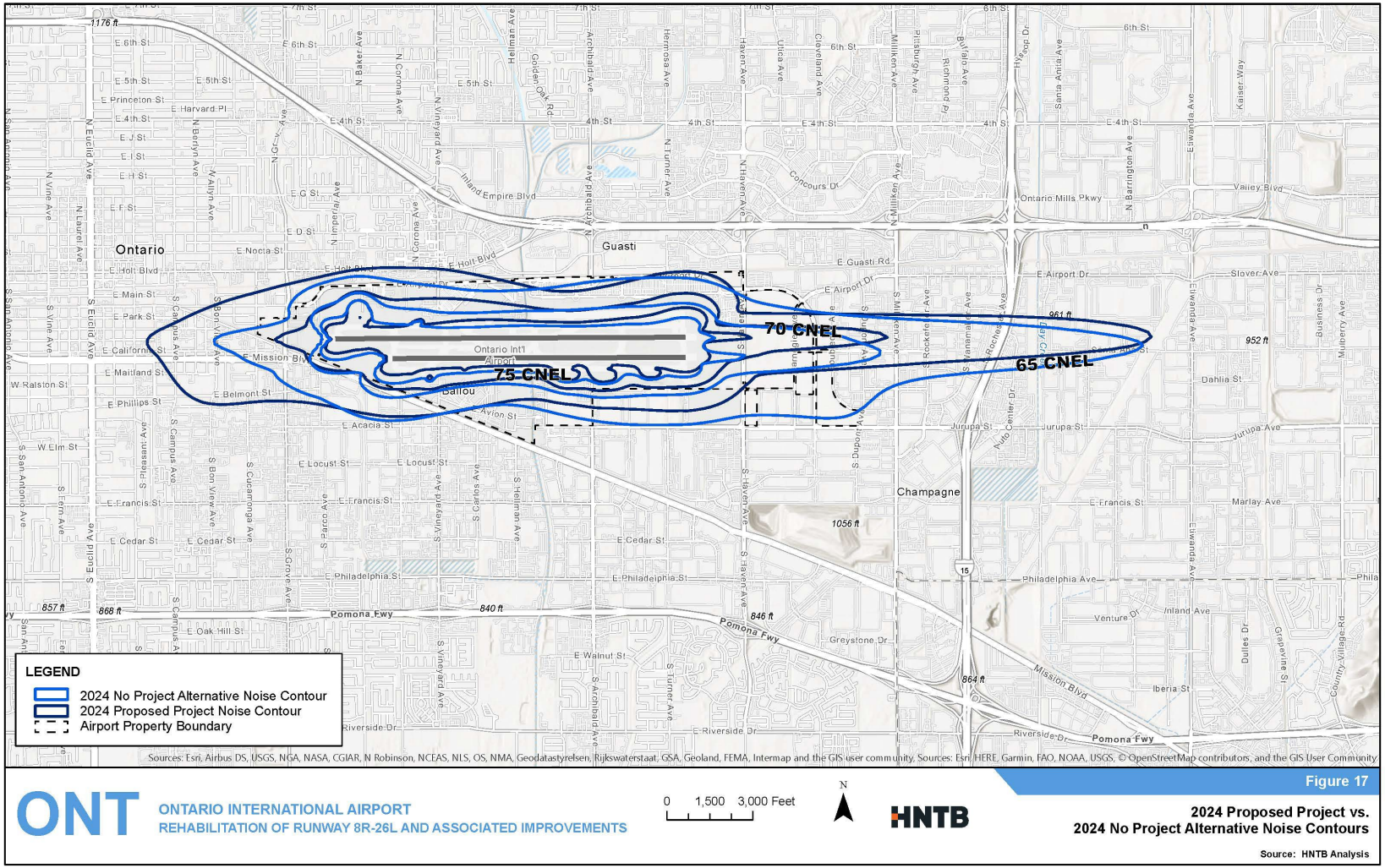


Figure 17: 2024 Proposed Project vs. 2024 No Project Alternative Noise Contours



3.6 2025 No Project Alternative

The 2025 No Project Alternative assumes both runways will be open for the full year.

3.6.1 Noise Model Inputs

The 2025 No Project Alternative fleet mix was developed as part of the fleet mix forecast in *Attachment 1, Fleet Mix Development.* Several parameters, such as the facility and runways, stage length, day/evening/night split, weather parameters and terrain were assumed to be the same as the Baseline Conditions. Other inputs are described in the following sections.

3.6.1.1 Runway Use

Runway use changes through AirTOP simulation were applied in the 2025 No Project Alternative as compared with the Baseline Conditions. For aircraft that are new in the fleet mix, their runway uses were assumed to be the same as the aircraft they are expected to replace or similar aircraft types. **Table 16** shows the 2025 No Project Alternative runway use.

Table 16: 2025 No Project Alternative Runway Use

Operation Type	Runway	Day	Evening	Night	Total
Arrival	8L	4.5%	4.8%	6.6%	4.9%
	8R	2.1%	0.9%	1.1%	1.7%
	26L	44.5%	42.3%	47.8%	44.8%
	26R	47.9%	51.6%	43.9%	47.8%
	H01	1.0%	0.4%	0.6%	0.8%
Arrival Total		100.0%	100.0%	100.0%	100.0%
Departure	8L	3.5%	4.4%	33.4%	12.3%
	8R	3.0%	3.0%	37.8%	13.1%
	26L	34.9%	38.8%	13.7%	29.2%
	26R	57.5%	52.9%	14.6%	44.5%
	H01	1.0%	0.8%	0.5%	0.8%
Departure Total		100.0%	100.0%	100.0%	100.0%

Source: 2019 and 2020 Radar Data and HNTB Analysis, 2022.

3.6.1.2 Run-up Operations

The aircraft engine maintenance run-up operations in the 2025 No Project Alternative were based on the Baseline Conditions run-up operations with operations adjusted based on growth of each aircraft in the fleet mix from the Baseline Conditions to the 2025 No Project Alternative. **Table 17** depicts the run-up operations applied in the 2025 No Project Alternative.

Table 17: 2025 No Project Alternative Run-up Operations

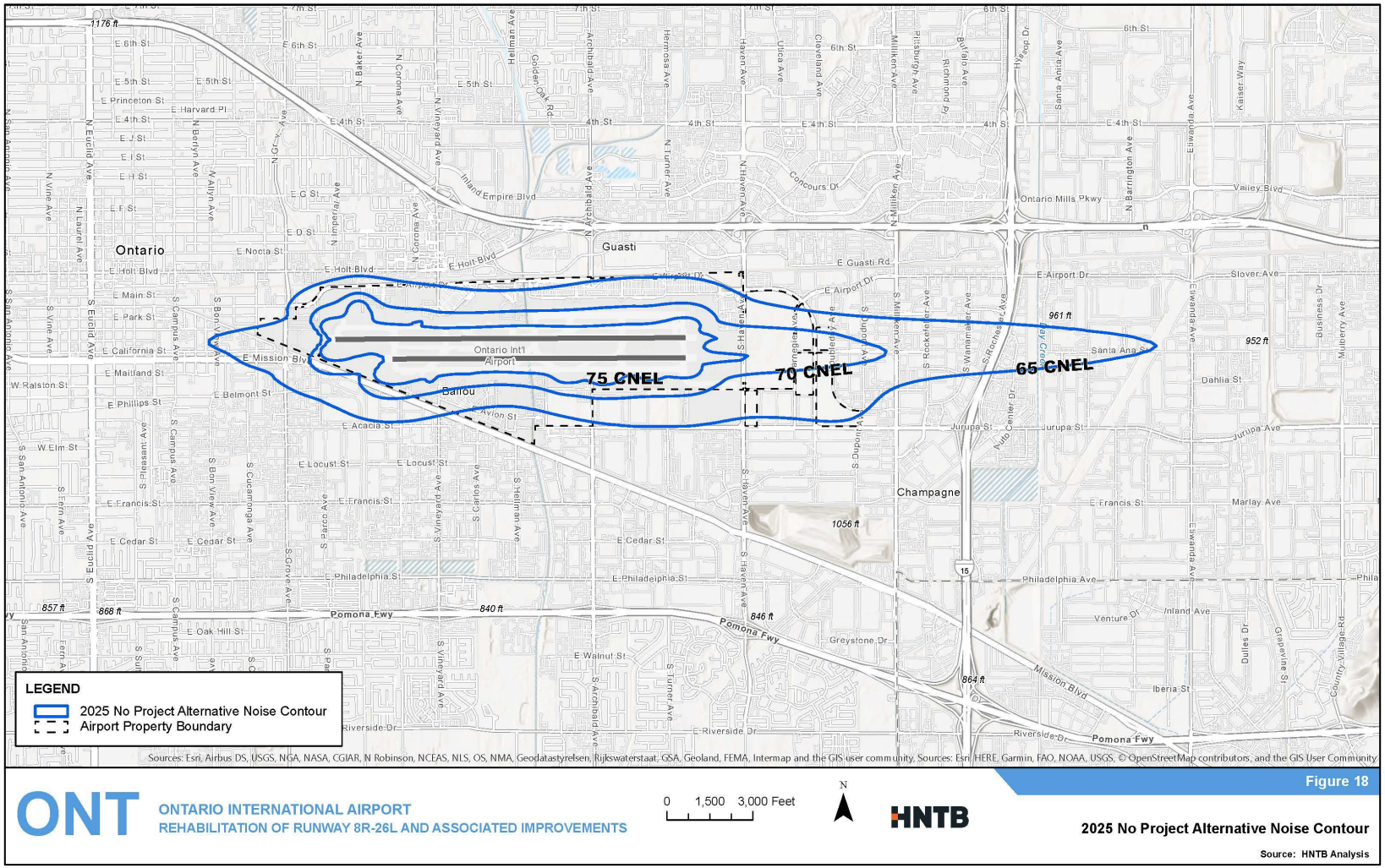
AEDT Aircraft	Operations
737700	1.8
737800	0.3
747400	1.1
727EM2	6.5
757PW	9.4
757RR	9.2
7673ER	57.1
A300-622R	1.6
A320-211	0.4
A320-232	0.9
CNA750	3.6
FAL20	0.4
FAL900EX	2.4
MD11GE	4.6
MD11PW	7.8
Grand Total	**107.2**

Source: 2019 ONT Run-up logs and HNTB analysis, 2022.

3.6.2 Noise Model Outputs

Figure 18 illustrates the 2025 No Project Alternative 65dB, 70dB, and 75dB CNEL noise contours.

Figure 18: 2025 No Project Alternative Noise Contour



3.7 2025 Proposed Project

The 2025 Proposed Project assumes Runway 8L-26R will be closed for five months for rehabilitation from mid-January to mid-June. Note that there would be no runway closures in 2025 with the Two-Year Program Alternative, as closures would be limited to 2023 and 2024.

3.7.1 Noise Model Inputs

The 2025 Proposed Project fleet mix is identical to the 2025 No Project Alternative fleet mix. Most of the noise model input parameters, such as the facility and runways, stage length, day/evening/night split, weather parameters, terrain, track use, and run-up operations were assumed to be the same as the 2025 No Project Alternative.

3.7.1.1 Runway Use

Under the 2025 Proposed Project, it was assumed that Runway 8R-26L will be closed for five months for rehabilitation from mid-January to mid-June. Both runways would be open for the remaining periods. Therefore, the Airport would operate with a single runway for five months and two runways for the remaining seven months. During runway rehabilitation, Contra Flow would not be implemented, which would impact the runway use and track use.

Table 18 summarizes the runway use in the 2025 Proposed Project, as compared with the Baseline Conditions. **Table 19** summarizes the runway use in the 2025 Proposed Project, as compared with the 2025 No Project Alternative.

Table 18: 2025 Proposed Project vs. Baseline Conditions Runway Uses

Operation Type	Runway	2025 Proposed Project				Baseline Conditions			
		Day	Evening	Night	Total	Day	Evening	Night	Total
Arrival	8L	2.6%	2.8%	3.8%	2.9%	4.6%	4.9%	7.1%	5.2%
	8R	3.6%	2.9%	3.0%	3.4%	2.0%	0.9%	1.1%	1.6%
	26L	64.8%	63.8%	66.9%	65.0%	43.9%	39.4%	45.8%	43.4%
	26R	28.0%	30.1%	25.6%	27.9%	48.5%	54.4%	45.5%	49.0%
	H01	1.0%	0.4%	0.6%	0.8%	1.0%	0.4%	0.6%	0.8%
Arrival Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Departure	8L	2.1%	2.6%	19.5%	7.2%	3.8%	3.6%	35.1%	13.3%
	8R	4.2%	4.2%	22.0%	9.4%	3.1%	3.0%	36.7%	13.3%
	26L	59.2%	61.6%	49.4%	56.7%	35.1%	38.4%	13.4%	28.9%
	26R	33.5%	30.8%	8.5%	25.9%	57.0%	54.2%	14.4%	43.7%
	H01	1.0%	0.8%	0.5%	0.8%	0.9%	0.8%	0.5%	0.8%
Departure Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2019 and 2020 Radar Data and HNTB Analysis, 2022.

Table 19: 2025 Proposed Project vs. 2025 No Project Alternative Runway Uses

Operation Type	Runway	2025 Proposed Project				2025 No Project Alternative			
		Day	Evening	Night	Total	Day	Evening	Night	Total
Arrival	8L	2.6%	2.8%	3.8%	2.9%	4.5%	4.8%	6.6%	4.9%
	8R	3.6%	2.9%	3.0%	3.4%	2.1%	0.9%	1.1%	1.7%
	26L	64.8%	63.8%	66.9%	65.0%	44.5%	42.3%	47.8%	44.8%
	26R	28.0%	30.1%	25.6%	27.9%	47.9%	51.6%	43.9%	47.8%
	H01	1.0%	0.4%	0.6%	0.8%	1.0%	0.4%	0.6%	0.8%
Arrival Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Departure	8L	2.1%	2.6%	19.5%	7.2%	3.5%	4.4%	33.4%	12.3%
	8R	4.2%	4.2%	22.0%	9.4%	3.0%	3.0%	37.8%	13.1%
	26L	59.2%	61.6%	49.4%	56.7%	34.9%	38.8%	13.7%	29.2%
	26R	33.5%	30.8%	8.5%	25.9%	57.5%	52.9%	14.6%	44.5%
	H01	1.0%	0.8%	0.5%	0.8%	1.0%	0.8%	0.5%	0.8%
Departure Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2019 and 2020 Radar Data and HNTB Analysis, 2022.

3.7.2 Noise Model Outputs

Figure 19 illustrates the 2025 Proposed Project 65dB, 70dB, and 75dB CNEL noise contours and **Figure 20** compares the 2025 Proposed Project with the Baseline Conditions noise contours.

The 2025 Proposed Project would result in changes in noise exposure as compared to the Baseline Conditions. The change in the 2025 Proposed Project noise conditions compared to the Baseline Conditions is attributable to three factors:

1. Background growth in passenger activity and aircraft operations that is anticipated at ONT with or without the 2025 Proposed Project.

2. Changes in fleet mix projected in future years that can impact overall noise levels. Generally, operations from older and noisier aircraft are expected to decrease in future years.

3. Runway closure periods associated with the 2025 Proposed Project construction that results in ONT operating on a single-runway without Contra Flow for periods in 2025, as compared to the Baseline Conditions where both runways are operational.

Figure 21 compares the 2025 Proposed Project with the 2025 No Project Alternative noise contours.

As a result of the Runway 8L-26R closure for rehabilitation, the 2025 Proposed Project contours to the east of the Airport are expected to shift slightly to the south as arrivals from the east would only utilize both runways for seven months in 2025 and utilize Runway 26L for five months during the rehabilitation.

During normal operations when both runways are open, jet departures at nighttime would use Runways 8L and 8R for departure as part of the noise abatement measures to the west of the Airport (with Contra Flow). During the runway rehabilitation when there's only one runway open, jet departures would mostly utilize Runway 26L for safety reasons (without Contra Flow). Therefore, the departure noise contour to the southeast of the Airport from Runway 8L and 8R is expected to shift to the southwest of the Airport as Contra Flow would not be implemented for nine months during the runway rehabilitation.

Figure 19: 2025 Proposed Project Noise Contours

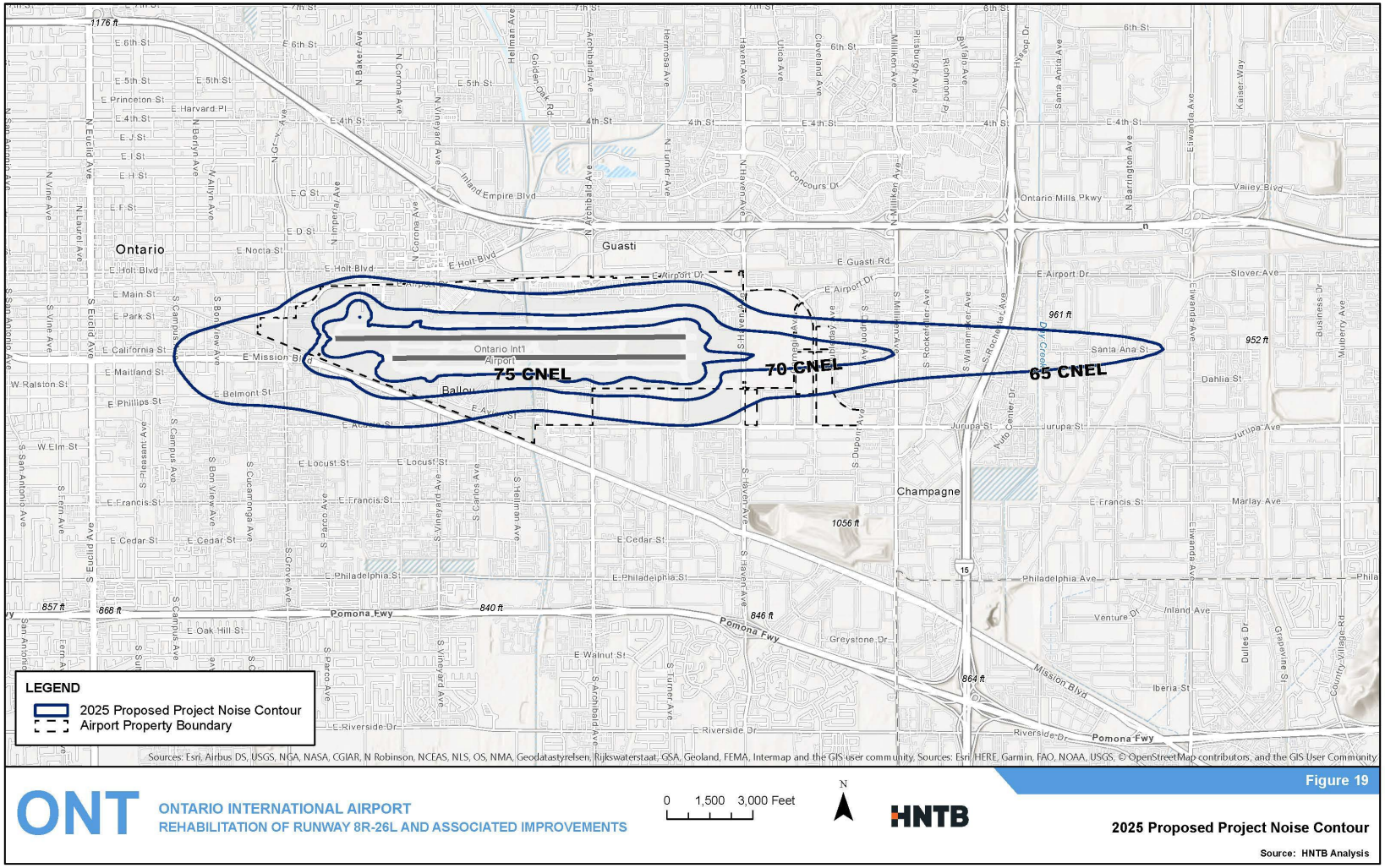


Figure 20: 2025 Proposed Project vs. Baseline Conditions Noise Contours

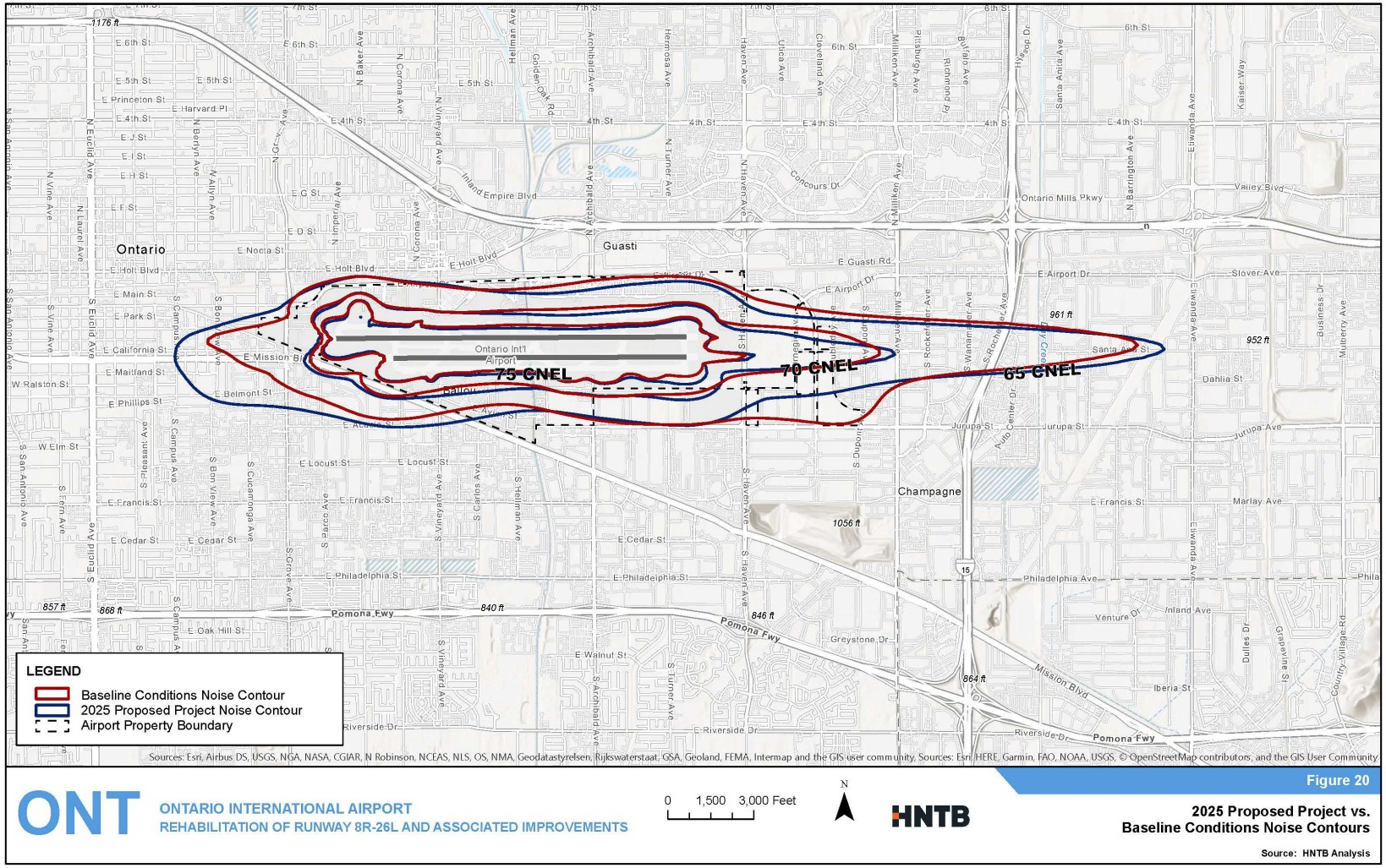
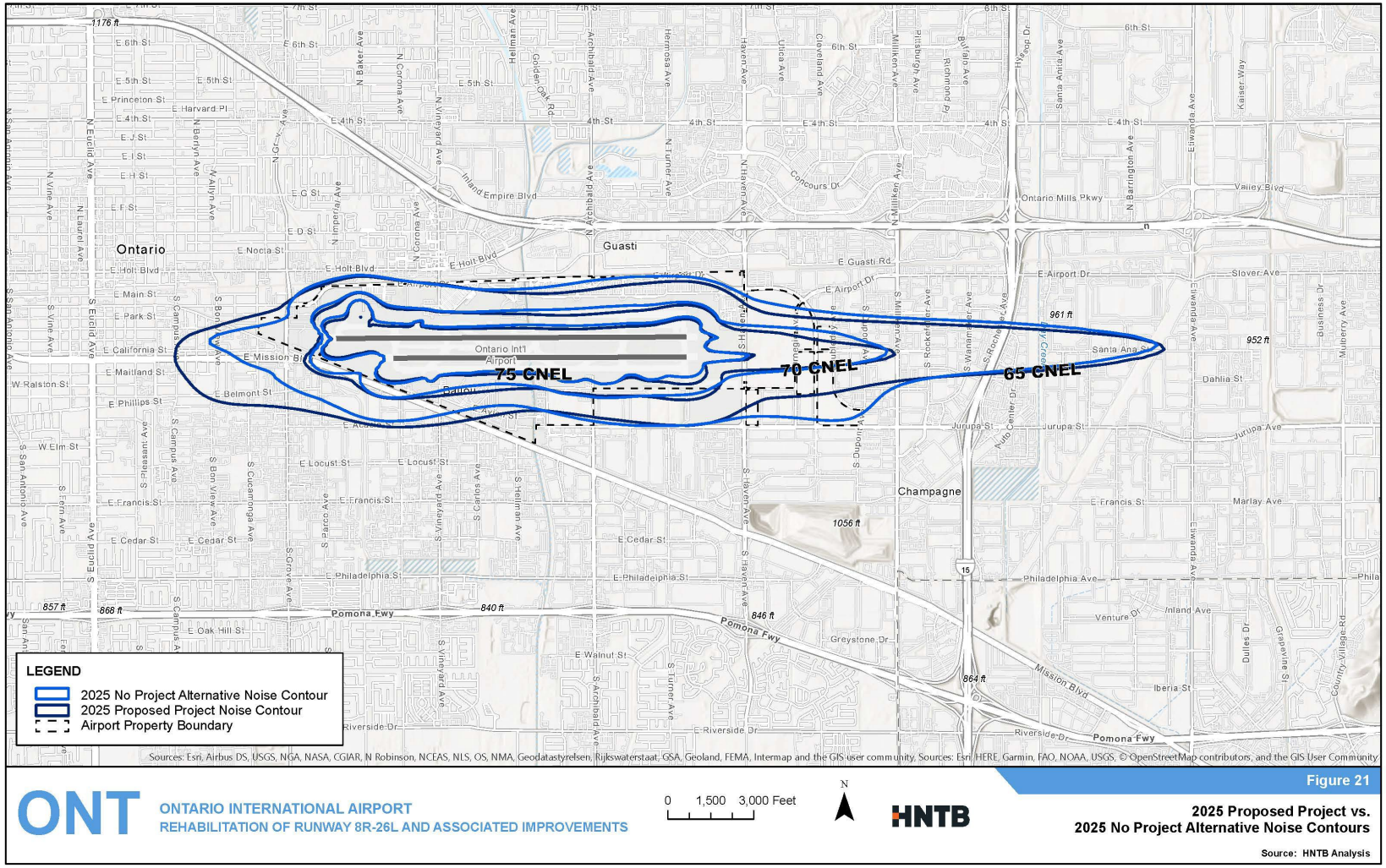


Figure 21: 2025 Proposed Project vs. 2025 No Project Alternative Noise Contours



4 Cumulative Impact Analysis

OIAA issued a Notice of Preparation (NOP) for a proposed South Airport Cargo Center (SACC) project on October 14, 2021. The SACC project includes the proposed relocation of the OIAA Administrative Offices and the South Airport South Secured Area Access Point (SAAP) to other locations at the Airport, demolition of the existing buildings, site improvements on the Project site, and development of an air cargo facility. The Project includes the development of a main cargo building, aircraft apron improvements, parking structure, roadway improvements, and site improvements, including landscaping and utility improvements.

As of March 2022, no environmental documentation beyond the NOP has been prepared. It is anticipated that SACC construction will begin in late 2022-2024, with associated cargo operations scheduled to begin in 2024. This potential timeframe overlaps with the Proposed Project construction in 2023 and 2024. Due to the overlap of proposed SACC operations with the analysis of Proposed Project noise levels in 2024 and 2025, two additional noise analyses were completed to model the combined noise levels of the Proposed Project and SACC operations, herein referred as the “Proposed Project – Cumulative Impact” noise levels. Noise impacts were modeled using the methodology detailed in Section 4.5.1.

The following additional alternatives were modeled:

- 2024 Proposed Project – Cumulative Impact
- 2025 Proposed Project – Cumulative Impact

The following section describes the noise model inputs and outputs for the four additional alternatives.

4.1 Noise Model Inputs

The following section describes the data sources, methodologies, and inputs applied to model the additional alternatives. Other parameters, such as the facility and runways, weather parameters, terrain, and run-up operations were assumed to be the same as the corresponding Proposed Project Alternatives.

4.1.1 Fleet Mix

Based on the proposed schedules provided by the SACC project team, **Table 20** depicts the anticipated SACC cargo operations in 2024 and 2025 with AEDT Airframe ID, engine ID, and stage length inputs to AEDT.

Table 20: Anticipated SACC Cargo Operations in 2024 and 2025

Aircraft ID	AEDT Airframe ID	AEDT Engine ID	Stage Length	Operation Type	2024			2025		
					Day	Evening	Night	Day	Evening	Night
Alice[1]	Raytheon Beech 1900-D	PT67D	1	A	208	-	-	624	-	-
Alice[1]	Raytheon Beech 1900-D	PT67D	1	A	-	104	312	-	312	936
B734	Boeing 737-400 Series Freighter	1CM004	1	A	208	104	104	624	312	312
B734	Boeing 737-400 Series Freighter	1CM004	2	D	208	-	104	624	-	312
B734	Boeing 737-400 Series Freighter	1CM004	3	D	-	-	104	-	-	312
B748	Boeing 747-8F	11GE139	1	A	104	104	-	312	312	-
B748	Boeing 747-8F	11GE139	8	D	104	104	-	312	312	-
B762	Boeing 767-200 Series Freighter	1GE010	1	A	208	-	208	624	-	624
B762	Boeing 767-200 Series Freighter	1GE010	4	D	-	-	208	-	-	624
B763	Boeing 767-300 ER Freighter	2GE054	1	A	104	-	208	312	-	624
B763	Boeing 767-300 ER Freighter	2GE054	1	D	-	-	104	-	-	312
B763	Boeing 767-300 ER Freighter	2GE054	2	D	-	-	104	-	-	312
B763	Boeing 767-300 ER Freighter	2GE054	3	D	104	-	-	312	-	-
B772	Boeing 777 Freighter	01P21GE216	1	A	-	-	728	-	-	2,184
B772	Boeing 777 Freighter	01P21GE216	4	D	208	-	104	624	-	312
B772	Boeing 777 Freighter	01P21GE216	5	D	-	-	104	-	-	312
B772	Boeing 777 Freighter	01P21GE216	7	D	104	-	-	312	-	-
B772	Boeing 777 Freighter	01P21GE216	8	D	-	-	104	-	-	312
B772	Boeing 777 Freighter	01P21GE216	9	D	104	-	-	312	-	-
Total					1,664	416	2,496	4,992	1,248	7,488

[1]: Alice represents an electric aircraft under development by Eviation, whose noise signature is not included in the AEDT database. The Raytheon Beech 1900-D was used as a substitute aircraft based on takeoff weight and engine thrusts.

Source: SACC and HNTB analysis, 2022.

4.1.2 Runway Use and Track Use

It was assumed that the SACC cargo operations would predominately utilize the south runway, Runway 8R-26L, due to its proximity to the proposed SACC site. It was also assumed that the SACC operations would utilize the same model flight tracks and the same pattern as other cargo operations. More specifically, the SACC jet operations would utilize model flight tracks and the same pattern as other cargo jet aircraft, and the SACC Eviation Alice operations would utilize model flight tracks and the same pattern as other cargo propeller aircraft.

4.2 Noise Model Outputs

Figure 22 compares the 2024 and 2025 Proposed Project - Cumulative Impact 65dB, 70dB, and 75dB CNEL noise contours with the Baseline Conditions noise contour.

Figure 23 compares the 2024 and 2025 Proposed Project - Cumulative Impact 65dB, 70dB, and 75dB CNEL noise contours with the No Project 2024 and 2025 noise contours.

Figure 22: 2024 / 2025 Proposed Project – Cumulative Impact vs. Baseline Conditions Noise Contours

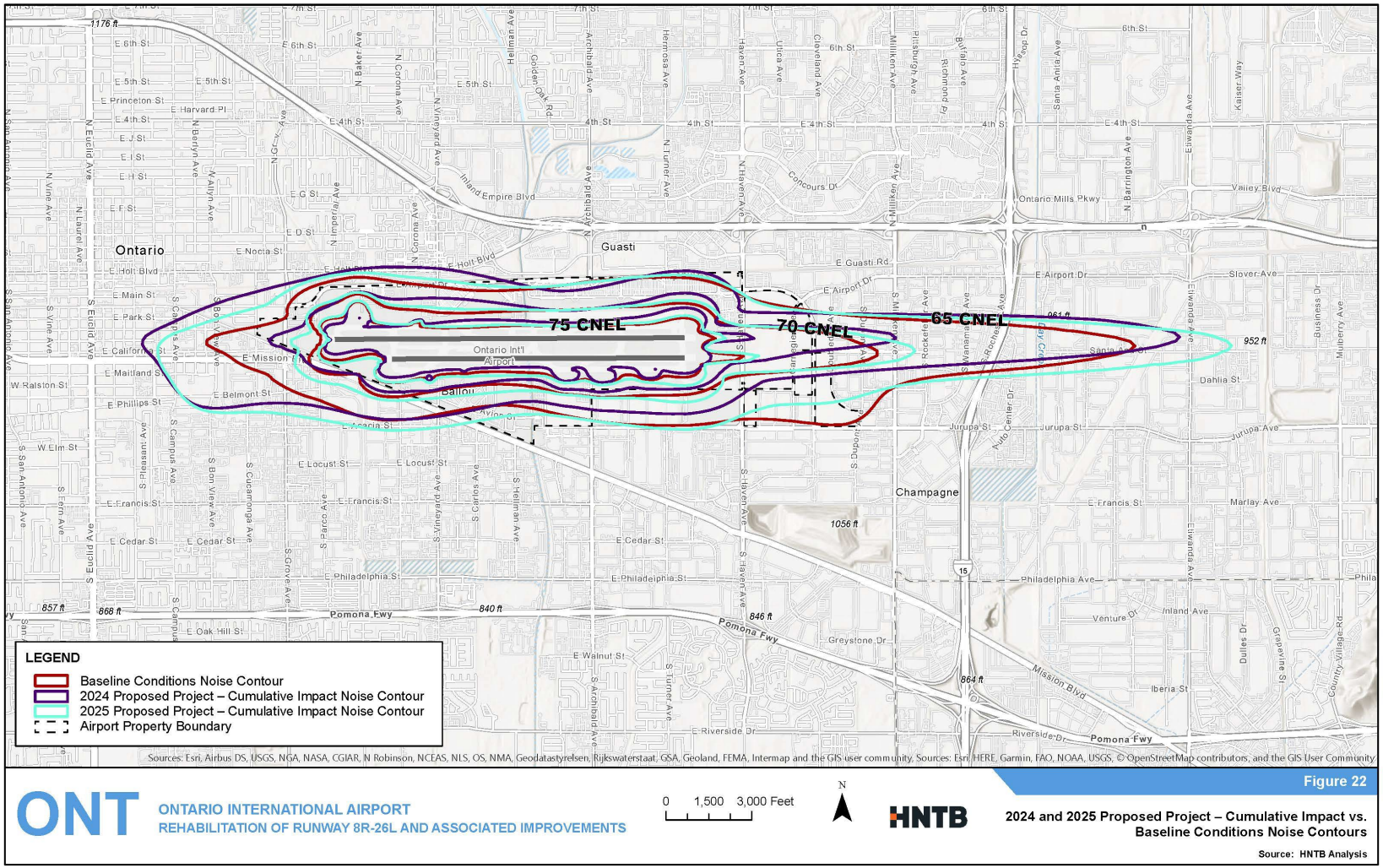
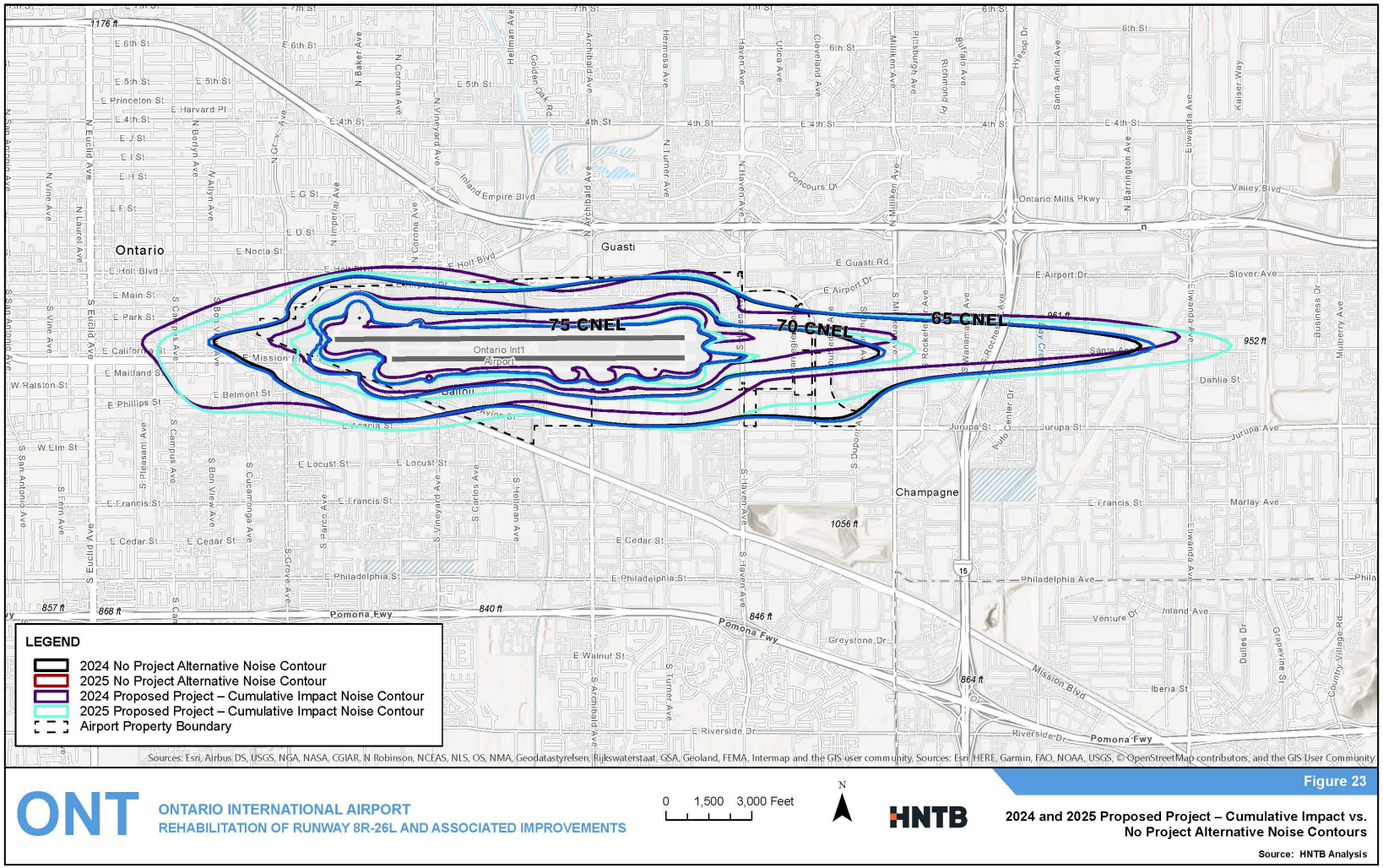


Figure 23: 2024 / 2025 Proposed Project – Cumulative Impact vs. No Project Noise Contours



5 Summary

As part of the Supplemental EIR for the Rehabilitation of Runway 8R-26L and Associated Improvements at ONT, noise contours were modeled for the following alternatives:

- Baseline Conditions (represents the 2019/2020 hybrid fleet mix)
- 2023 No Project Alternative
- 2023 Proposed Project
- 2023 Two-Year Program Alternative
- 2024 No Project Alternative
- 2024 Proposed Project Alternative (identical to Two-Year Program Alternative)
- 2025 No Project Alternative
- 2025 Proposed Project
- 2024 Proposed Project – Cumulative Impact
- 2025 Proposed Project – Cumulative Impact

Table 21 depicts operation inputs and noise contour outputs of the noise models for the alternatives listed above.

Table 21: Noise Inputs and Outputs for Baseline Conditions, No Project, Proposed Project, and Two-Year Program Alternatives

Alternatives	Aircraft Operations	Run-up Operations	Runway Closure	65 CNEL Noise Contour Area (acres)
Baseline Conditions	106,026	95.0	No closure	2,485
2023 No Project	110,368	99.5	No closure	2,371
2023 Proposed Project	110,368	99.5	8L-26R – 4 months 8R-26L – 5 months	2,472
2023 Two-Year Program	110,368	99.5	8L-26R – 6 months 8R-26L – 3 months	2,468
2024 No Project	113,826	103.2	No closure	2,439
2024 Proposed Project / 2024 Two-Year Program	113,826	103.2	8R-26L – 9 months	2,497
2025 No Project	117,625	107.2	No closure	2,513
2025 Proposed Project	117,625	107.2	8L-26R – 5 months	2,548
2024 Proposed Project / 2024 Two-Year Program – Cumulative Impact	118,402	103.2	8R-26L – 9 months	2,637
2025 Proposed Project – Cumulative Impact	131,353	107.2	8L-26R – 5 months	2,971

Source: HNTB analysis, 2022.

As compared to the Baseline Conditions contour, the Proposed Project contour areas range from 0.5% smaller (2023 Proposed Project) to 19.6% larger (2025 Proposed Project – Cumulative Impact).

Since Contra Flow would not be implemented during the runway rehabilitations there will be a higher percentage of nighttime jet departures from Runways 26L and 26R which is expected to temporarily increase the area of noise exposure to the west of the Airport. The proposed SACC operations are expected to result in additional cumulative noise impacts both east and west of the Airport.

Attachment 1
Fleet Mix Development

MEMORANDUM

HNTB

To
Nicole Walker, MPP
Environmental Planning Manager

Ontario International Airport

From
Yue Xu, HNTB

Kim Hughes, HNTB

Cc
Michelle Brantley, Ontario International Airport

Subject
Fleet Mixes for Use in Rehabilitation of Runway 8R-26L and Associated Improvements EIR

Date
October 5, 2021

HNTB is tasked with assisting the Ontario International Airport Authority (OIAA) to prepare a Supplemental Environmental Impact Report (EIR) which evaluates the potential environmental effects associated with the proposed rehabilitation of Runway 8R-26L and associated airfield improvements at Ontario International Airport (ONT).

This memorandum summarizes the methodologies and assumptions applied in developing the hybrid base year (2019/2020) and the future years (2023/2024/2025) scenario fleet mixes for the ONT Supplemental EIR. The fleet mix for the year 2024 was selected for analysis of potential noise and air quality impacts, as it will be the final year of construction for this multi-year rehabilitation program. The 2023 and 2025 fleet mixes were developed based on the Draft 2020 TAF growth factors as compared with 2024. These fleet mixes will be used in upcoming noise modeling efforts.

The hybrid base year (2019/2020) fleet mix was based on the ONT Airport Noise Monitoring System (ANOMS) radar data from 2019 and 2020, and FAA's Traffic Flow Management System Count (TFMSC). Passenger air carriers, air taxi, and General Aviation (GA) operations were obtained from the 2019 ANOMS data and the all-cargo operations were obtained from the 2020 ANOMS data. The military operations were obtained from the FAA TFMSC data. This approach represents a hybrid base year fleet mix which recognizes the reduction in passenger carrier and air taxi operations, and the increase in all-cargo operations, attributable to the COVID-19 pandemic. The future scenario (2024) fleet mix was based on the hybrid base year fleet mix and supplemented with announced airline aircraft replacement and retirement

plans. The 2024 forecast of operations and enplanements in the 2020 Draft Terminal Area Forecast (TAF) were used as the future scenario's (2024) operations and enplanements numbers. Aircraft operations were adjusted to match both the projected 2024 operation and enplanement growth. There may be more entries into the ONT market prior to construction of the project but these entries would not be expected to significantly change the fleet mix or operations. The fleet mix was developed based on industry information available through September 2021. The 2023 and 2025 fleet mixes were based on the 2024 fleet mix and was developed by extrapolating and interpolating the 2024 fleet mix based on the Draft 2020 TAF growth factors by operation category (air carrier, air taxi, GA, and military).

In addition, operations were categorized by the time of operation (day/evening/night split), including day (7:00am – 6:59pm), evening (7:00pm – 9:59pm), and nighttime (10:00pm – 6:59am). In the noise model, penalties will be applied to evening and nighttime operation to account for additional annoyance experienced when the ambient noise level is low, and people are at rest.

The following section describes the methodologies and assumptions applied in developing the hybrid base year (2019/2020) fleet mix, followed by the methodologies and assumptions for the future scenario (2023/2024/2025) fleet mixes. Detailed fleet mixes are included in **Appendices A** through **C**.

Hybrid Base Year (2019/2020) Fleet Mix

General

- The total 2019 and 2020 ANOMS operations were scaled up to match the 2019 and 2020 FAA OPSNET operations by category (Air Carrier and Air Taxi, General Aviation, and Military).

Passenger Air Carriers, All-Cargo, and Air Taxi

- Fleet mix and day/evening/night split by airline and aircraft type were obtained from ANOMS.
- ANOMS data were adjusted so that arrivals and departures by airline and aircraft type were balanced. Imbalances between arrivals and departures were corrected by using the lower number scaled to match the higher number.

General Aviation and Military

- Fleet mix and day/evening/night split by airline and aircraft type were obtained from ANOMS.
- ANOMS data were adjusted so that arrivals and departures by aircraft type were balanced. If there was an imbalance between arrivals and departures, the lower number was scaled upwards to match the higher number.
- Military operations were obtained from the FAA TFMSC data because the ANOMS data does not identify military operations whereas the FAA TFMSC does.

Future Scenario (2024) Fleet Mix

General

- The 2024 fiscal year operations forecast in the 2020 Draft TAF were converted to calendar year operations. The converted 2024 forecasted operations and enplanements were used as the future scenario (2024) forecast of operations and enplanements.
- The fleet mix was developed based on the hybrid base year (2019/2020) fleet mix and published fleet plans by the airlines serving ONT. It was subsequently adjusted to match both the 2020 Draft TAF aircraft operations and enplanements forecasts.
- The 2020 Draft TAF projects that enplanements will grow at a faster pace than operations, which implies a general aircraft up-gauging trend. Therefore, it was assumed that larger aircraft would replace some operations by smaller aircraft to accommodate additional passenger demand. Airline-specific up-gauging assumptions are listed below.
- Generally, operations in the existing fleet mix were assumed to grow at the same rate as the 2020 Draft TAF operation forecast from 2019 to 2024.
- Operations of four recent entrant airlines, including Hawaiian Airlines, Avianca, Norse Atlantic Airways, and Aha! were added to the fleet mix forecast. Their operations were considered to be in addition to the operations forecasted in the 2020 Draft TAF. No further new entrants were considered.
- The day/evening/night split by aircraft for scheduled passenger carriers was assumed to be the same as in 2019.
- The 2023 and 2025 fleet mixes were developed based on the Draft 2020 TAF growth factors as compared with 2024 by operation category (air carrier, air taxi, GA, and military).

Passenger Air Carriers

- American Airlines:
    - Retirement of the entire Boeing 757-200 fleet.
        - To be replaced by Airbus A321neo.
    - Some of the Boeing 737-800 operations are to be replaced by Boeing 737 MAX 8.
    - Some of the Airbus A321 operations to be replaced by Airbus A321neo.
    - Airbus A321 to be converted to 190-seat configuration by Spring 2022.
- Alaska Airlines:
    - Retirement of the entire Airbus A320 fleet.
        - To be replaced by Boeing 737 MAX 9.
    - Some of the Boeing 737-900 operations are to be replaced by Airbus A321neo and Boeing 737 MAX 9.
- Avianca:
    - Three flights each week using Airbus A319.
    - Future flights to follow the current schedule (11:30pm arrival and 1:15am departure).
- Mesa Airlines:
    - Retirement of the entire Bombardier CRJ-200 fleet.
        - To be replaced by Bombardier CRJ-900 and Embraer ERJ-175.

    - Some of the Bombardier CRJ-900 operations, as part of American Eagle, to be replaced by Airbus A319 in the American Airlines fleet.
    - Some of the Embraer ERJ-175 operations, as part of United Express, to be replaced by Airbus A319 in the United Airlines fleet.
- Delta Air Lines:
    - Boeing 717-200 to be phased out by 2025. Their operations are to be replaced by Airbus A220-100.
    - Introduction of some Airbus A321neos that are on order. They are expected to replace some of the Airbus A319, A320, and A321 operations.
    - Some of the Airbus A319 operations are to be replaced by Airbus A220-300.
    - Some of the Boeing 737-800 operations are to be replaced by Boeing 737-900 and Airbus A321neo.
    - Retirement of Boeing 767-300.
        - To be replaced by Airbus A330-900.
- Aha!:
    - As announced, Aha! will operate three flights per week using Embraer ERJ-145.
    - All flights were assumed to occur during daytime hours.
- Frontier Airlines:
    - Minimal Airbus A319 operations are to be replaced by Airbus A320neo operations.
    - Addition of Airbus A321neo operations to replace the Airbus A321 and A320 operations.
- Hawaiian Airlines:
    - Five flights each week during off-peak season.
    - Daily flights during peak season (between Memorial Day and Labor Day).
    - Future flights to follow the current schedule (9:35pm arrival and 9:05am departure).
- JetBlue:
    - Some of the Airbus A320 operations are to be replaced by the Airbus A321 and A321neo aircraft to accommodate additional passenger demand.
    - Some of the Airbus A321 operations are to be replaced by the Airbus A321neo aircraft.
- Norse Atlantic Airways
    - Detailed flight frequency from Oslo to ONT had not been released as of September 2021. It was assumed that the frequency, arrival, and departure times would be the same as the discontinued Norwegian Air Shuttle flights between Oslo Airport and Los Angeles International Airport.
        - Norse Atlantic Airways will operate two flights per week with a Boeing 787.
    - Arrivals were assumed to occur during daytime hours and departures were assumed to occur during evening hours.
- Skywest Airlines:
    - Transition of some Bombardier CRJ-200 operations to Bombardier CRJ-700, Bombardier CRJ-900, and Embraer ERJ-175.
- Southwest Airlines:
    - Some of the Boeing 737-700 operations are to be replaced by Boeing 737 MAX 8 operations.
- United Airlines:
    - Boeing 757-200 is to be replaced by Airbus A321XLR but not until 2025. Therefore, their operations remain in the 2024 forecast.

    - Some of the Airbus A319 operations are to be replaced by Boeing 737 MAX 9 operations.
    - Low Boeing 737-700 operations are to be replaced by Boeing 737-800 operations.
- Volaris:
    - Airbus A320neo aircraft to replace some of the Airbus A320 operations.
    - Minimal Airbus A319 operations are to be replaced by Airbus A320neo operations.

All-Cargo Carriers

- FedEx:
    - Decrease of Airbus A300-600RF operations.
        - Operations are to be replaced by Boeing 767-300ERF.
    - Decrease of Boeing MD-11F operations.
        - Operations are to be replaced by Boeing 767-300ERF.
    - Retirement of the entire Boeing MD-10 fleet.
        - To be replaced by Boeing 767-300ERF and Boeing 777F.
    - Retirement of the entire Airbus A310 fleet.
        - To be replaced by Boeing 767-300ERF.
- UPS:
    - Decrease of Boeing MD-11F operations.
        - Operations are to be replaced by Boeing 767-300F.

Air Taxi

- Operations were adjusted with the air carrier and air taxi growth factors forecast in the 2020 Draft TAF from 2019 to 2024.
- Total operations (along with passenger carriers and all-cargo) were scaled up on a prorated basis to match the total 2024 projected air carrier and air taxi operations in the 2020 Draft TAF.

General Aviation and Military

- GA operations were adjusted by the specific aircraft model production duration and rate, as well as the FAA's 2021-2041 Aerospace Forecast on flight hours by categories which include single engine pistons, multiple engine pistons, turboprops, helicopters, and jets.
- Military operations were adjusted with the military operations growth factors forecasted in the 2020 Draft TAF from 2019 to 2024.
- The total number of operations was adjusted on a prorated basis to sum to the total 2024 projected GA and military operations in the 2020 Draft TAF.

Summary

Table A-1 in **Appendix A** shows the detailed 2019/2020 hybrid base year fleet mix. **Tables B-1** in **Appendices B** shows the 2023, 2024, and 2025 fleet mixes. HNTB requests a review of the fleet mix development methodologies and assumptions. If you have any questions, please do not hesitate to reach me by email yxu@hntb.com.

Best Regards,

Yue Xu, Ph.D., P.E.
Aviation Environmental Planner
HNTB Corporation

Appendix A
Hybrid Base Year (2019/2020)
Fleet Mix

Table A-1: Base Year Fleet Mix

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival				Departure			
					Day	Evening	Night	Total	Day	Evening	Night	Total
Passenger Carrier	AAL	American Airlines	A21N	Airbus A321NEO Series	2	-	-	2	1	1	-	2
	AAL	American Airlines	A319	Airbus A319 series	226	239	40	504	217	57	231	504
	AAL	American Airlines	A320	Airbus A320 series	276	4	1	280	269	6	6	280
	AAL	American Airlines	A321	Airbus A321 series	25	118	86	229	30	10	189	229
	AAL	American Airlines	B38M	Boeing 737 MAX 8	1	-	-	1	1	-	-	1
	AAL	American Airlines	B738	Boeing 737-800	1,677	418	363	2,458	1,746	25	688	2,458
	AAL	American Airlines	B752	Boeing 757-200	1	-	-	1	-	1	-	1
	AAL Total				2,208	778	490	3,476	2,264	99	1,114	3,476
	ASA	Alaska Airlines	A21N	Airbus A321NEO Series	1	-	-	1	1	-	-	1
	ASA	Alaska Airlines	A320	Airbus A320 series	6	-	-	6	4	2	-	6
	ASA	Alaska Airlines	B737	Boeing 737-700	2	-	4	6	2	-	4	6
	ASA	Alaska Airlines	B738	Boeing 737-800	62	12	22	96	69	3	24	96
	ASA	Alaska Airlines	B739	Boeing 737-900	579	63	247	889	597	61	230	889
	ASA Total				650	75	273	998	674	66	258	998
	ASH	Mesa Airlines/American Eagle	CRJ2	Bombardier CRJ 200 Regional Jet	14	4	3	20	11	6	3	20
	ASH	Mesa Airlines/American Eagle	CRJ9	Bombardier CRJ 900 Regional Jet	724	62	3	789	481	303	5	789
	ASH	Mesa Airlines/United Express	E170	Embraer ERJ-170	1	42	102	144	12	-	133	144
	ASH	Mesa Airlines/United Express	E75L	Embraer ERJ-175	1	28	55	83	8	-	75	83
	ASH Total				740	135	162	1,037	512	309	216	1,037
	CAL	China Airlines	A359	Airbus A350-900	274	-	-	274	3	-	271	274
	CAL	China Airlines	B77W	Boeing 777-300ER	61	-	-	61	-	-	61	61
	CAL Total				335	-	-	335	3	-	332	335

Table A-1: Base Year Fleet Mix

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival				Departure			
					Day	Evening	Night	Total	Day	Evening	Night	Total
	DAL	Delta Air Lines	A319	Airbus A319 series	7	4	8	19	10	-	9	19
	DAL	Delta Air Lines	A320	Airbus A320 series	-	1	-	1	1	-	-	1
	DAL	Delta Air Lines	A321	Airbus A321 series	1	1	-	2	1	-	1	2
	DAL	Delta Air Lines	B712	Boeing 717-200 / Extended Range	-	5	22	27	4	-	23	27
	DAL	Delta Air Lines	B738	Boeing 737-800	205	188	286	679	212	-	467	679
	DAL	Delta Air Lines	B739	Boeing 737-900	59	18	2	79	60	-	18	79
	DAL	Delta Air Lines	B752	Boeing 757-200	1	-	6	6	2	-	5	6
	DAL	Delta Air Lines	B763	Boeing 767-300	2	2	6	9	1	-	8	9
	DAL Total				276	218	330	823	291	-	532	823
	FFT	Frontier Airlines	A20N	Airbus A320NEO Series	109	166	157	432	106	152	174	432
	FFT	Frontier Airlines	A319	Airbus A319 series	35	-	2	37	36	-	1	37
	FFT	Frontier Airlines	A320	Airbus A320 series	95	130	159	384	76	102	206	384
	FFT	Frontier Airlines	A321	Airbus A321 series	5	1	2	7	-	5	2	7
	FFT Total				244	296	320	861	219	260	383	861
	JBU	JetBlue Airways	A320	Airbus A320 series	4	208	181	393	5	1	388	393
	JBU	JetBlue Airways	A321	Airbus A321 series	6	15	2	22	6	-	16	22
	JBU Total				9	223	183	416	11	1	404	416
	QXE	Horizon Air	E75L	Embraer ERJ-175	319	139	72	530	257	206	68	530
	QXE Total				319	139	72	530	257	206	68	530
	SKW	SkyWest Airlines	CRJ2	Bombardier CRJ 200 Regional Jet	963	176	64	1,202	869	291	43	1,202
	SKW	SkyWest Airlines	CRJ7	Bombardier CRJ 700 Regional Jet	145	6	-	151	143	6	2	151
	SKW	SkyWest Airlines	CRJ9	Bombardier CRJ 900 Regional Jet	243	6	1	250	222	27	1	250
	SKW	SkyWest Airlines	E75L	Embraer ERJ-175	563	31	15	609	550	36	23	609

Table A-1: Base Year Fleet Mix

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival				Departure			
					Day	Evening	Night	Total	Day	Evening	Night	Total
	SKW Total				1,913	219	80	2,212	1,784	360	69	2,212
	SWA	Southwest Airlines	B38M	Boeing 737 MAX 8	21	11	18	50	35	-	15	50
	SWA	Southwest Airlines	B737	Boeing 737-700	7,312	1,839	1,505	10,656	7,336	1,623	1,697	10,656
	SWA	Southwest Airlines	B738	Boeing 737-800	780	461	483	1,724	1,143	203	378	1,724
	SWA Total				8,113	2,311	2,006	12,430	8,514	1,826	2,090	12,430
	UAL	United Airlines	A319	Airbus A319 series	28	55	103	185	48	1	136	185
	UAL	United Airlines	A320	Airbus A320 series	165	105	56	326	178	3	145	326
	UAL	United Airlines	B737	Boeing 737-700	1	-	-	1	1	-	-	1
	UAL	United Airlines	B738	Boeing 737-800	76	35	61	172	97	1	74	172
	UAL	United Airlines	B739	Boeing 737-900	62	222	38	322	143	-	179	322
	UAL	United Airlines	B752	Boeing 757-200	1	-	-	1	1	-	-	1
	UAL Total				332	417	258	1,007	468	5	533	1,007
	VOI	Volaris	A20N	Airbus A320NEO Series	-	-	20	20	-	-	20	20
	VOI	Volaris	A319	Airbus A319 series	-	-	3	3	-	-	3	3
	VOI	Volaris	A320	Airbus A320 series	2	3	319	324	1	-	323	324
	VOI Total				2	3	342	347	1	-	346	347
Passenger Carrier Total					15,142	4,814	4,516	24,472	14,997	3,130	6,344	24,472
All Cargo Carrier	AAH	Aloha Air Cargo	B733	Boeing 737-300	108	21	3	131	92	-	40	131
	AAH Total				108	21	3	131	92	-	40	131
	ABX	ABX Air	B762	Boeing 767-200	170	221	658	1,049	825	3	222	1,049
	ABX	ABX Air	B763	Boeing 767-300	-	10	-	10	-	-	10	10
	ABX Total				170	231	658	1,059	825	3	232	1,059
	AIP	Alpine Air Express	B190	Beechcraft 1900D	219	3	-	223	223	-	-	223
	AIP Total				219	3	-	223	223	-	-	223
	AJT	Amerijet International	B763	Boeing 767-300	5	45	3	53	43	-	10	53
	AJT Total				5	45	3	53	43	-	10	53

Table A-1: Base Year Fleet Mix

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival				Departure			
					Day	Evening	Night	Total	Day	Evening	Night	Total
	AMF	Ameriflight	BE99	Beechcraft Airliner Model 99	891	89	25	1,005	612	33	359	1,005
	AMF	Ameriflight	E120	Embraer EMB-120 Brasilia	240	1	3	244	242	-	2	244
	AMF	Ameriflight	PA31	Piper PA-31 Navajo	97	132	26	255	165	12	78	255
	AMF	Ameriflight	SW4	SA227 Metroliner	43	26	6	75	72	2	1	75
	AMF Total				1,272	248	59	1,579	1,091	48	441	1,579
	ATN	Air Transport International	B762	Boeing 767-200	68	1	-	69	-	1	68	69
	ATN	Air Transport International	B763	Boeing 767-300	611	407	70	1,088	133	326	629	1,088
	ATN Total				679	408	70	1,157	133	327	696	1,157
	CFS	Empire Airlines	AT43	Avions de Transport Régional ATR-43	261	1	-	262	244	-	17	262
	CFS Total				261	1	-	262	244	-	17	262
	CKS	Kalitta Air	B742	Boeing 747-200	4	2	1	7	3	-	4	7
	CKS	Kalitta Air	B744	Boeing 747-400	25	7	6	38	19	7	11	38
	CKS Total				29	9	7	45	23	7	15	45
	FDX	FedEx	A306	Airbus A300-600/622R	43	32	170	245	138	7	99	245
	FDX	FedEx	A30B	Airbus A300B4-600 Series	-	1	4	5	4	-	1	5
	FDX	FedEx	A310	Airbus A310 Series	106	18	30	154	103	18	33	154
	FDX	FedEx	B752	Boeing 757-200	209	66	117	392	78	222	92	392
	FDX	FedEx	B763	Boeing 767-300	426	93	225	744	139	267	337	744
	FDX	FedEx	B77L	Boeing 777F	5	1	127	133	35	4	94	133
	FDX	FedEx	DC10	McDonnell Douglas DC-10	247	13	267	527	75	191	261	527
	FDX	FedEx	MD11	McDonnell Douglas MD-11 (Mixed)	262	27	369	657	211	239	208	657
	FDX Total				1,298	250	1,309	2,857	784	949	1,125	2,857
	GTI	Atlas Air	B744	Boeing 747-400	3	1	29	33	23	-	10	33

Table A-1: Base Year Fleet Mix

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival				Departure			
					Day	Evening	Night	Total	Day	Evening	Night	Total
	GTI	Atlas Air	B763	Boeing 767-300	120	544	563	1,227	491	45	691	1,227
	GTI Total				123	545	592	1,259	513	45	701	1,259
	PCM	West Air	C208	Cessna 208 Caravan I	2,405	7	1	2,413	1,704	1	709	2,413
	PCM Total				2,405	7	1	2,413	1,704	1	709	2,413
	SCX	Sun Country Airlines	B737	Boeing 737-700	1	-	-	1	1	-	-	1
	SCX	Sun Country Airlines	B738	Boeing 737-800	300	39	71	410	262	69	80	410
	SCX Total				301	39	71	411	263	69	80	411
	SOO	Southern Air	B738	Boeing 737-800	12	42	31	85	1	35	49	85
	SOO Total				12	42	31	85	1	35	49	85
	SWQ	IAero Airways	B733	Boeing 737-300	25	6	1	32	30	-	2	32
	SWQ	IAero Airways	B734	Boeing 737-400	1	-	-	1	1	-	-	1
	SWQ	IAero Airways	B738	Boeing 737-800	1	-	-	1	1	-	-	1
	SWQ Total				27	6	1	34	32	-	2	34
	UPS	UPS	A306	Airbus A300-600/622R	1,190	665	639	2,493	994	255	1,245	2,493
	UPS	UPS	B744	Boeing 747-400	53	153	56	263	42	9	211	263
	UPS	UPS	B748	Boeing 747-800	28	305	68	400	30	7	363	400
	UPS	UPS	B752	Boeing 757-200	649	529	415	1,594	988	37	569	1,594
	UPS	UPS	B763	Boeing 767-300	1,094	533	1,102	2,729	695	610	1,424	2,729
	UPS	UPS	MD11	McDonnell Douglas MD-11 (Mixed)	804	290	729	1,824	348	350	1,126	1,824
	UPS Total				3,818	2,475	3,009	9,303	3,097	1,268	4,938	9,303
	WGN	Western Global Airlines	B744	Boeing 747-400	8	-	-	8	8	-	-	8
	WGN	Western Global Airlines	MD11	McDonnell Douglas MD-11 (Mixed)	75	6	15	96	59	5	32	96
	WGN Total				84	6	15	105	68	5	32	105
All Cargo Carrier Total					10,811	4,337	5,830	20,978	9,133	2,757	9,087	20,978

Table A-1: Base Year Fleet Mix

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival				Departure			
					Day	Evening	Night	Total	Day	Evening	Night	Total
Air Taxi	Air Taxi	Miscellaneous	A306	Airbus A300-600/622R	-	-	6	6	-	-	6	6
	Air Taxi	Miscellaneous	A319	Airbus A319 series	3	2	8	13	4	-	9	13
	Air Taxi	Miscellaneous	A320	Airbus A320 series	7	3	11	21	5	2	14	21
	Air Taxi	Miscellaneous	A321	Airbus A321 series	-	1	-	1	-	1	-	1
	Air Taxi	Miscellaneous	B38M	Boeing 737 MAX 8	1	2	-	3	3	-	-	3
	Air Taxi	Miscellaneous	B722	Boeing 727-200	7	0	1	8	7	1	-	8
	Air Taxi	Miscellaneous	B733	Boeing 737-300	6	-	-	6	6	-	-	6
	Air Taxi	Miscellaneous	B734	Boeing 737-400	14	-	-	14	13	-	1	14
	Air Taxi	Miscellaneous	B737	Boeing 737-700	39	12	6	56	56	-	-	56
	Air Taxi	Miscellaneous	B738	Boeing 737-800	19	10	12	42	33	-	8	42
	Air Taxi	Miscellaneous	B739	Boeing 737-900	5	2	-	6	5	2	-	6
	Air Taxi	Miscellaneous	B744	Boeing 747-400	11	2	1	14	4	3	7	14
	Air Taxi	Miscellaneous	B748	Boeing 747-800	-	-	1	1	1	-	-	1
	Air Taxi	Miscellaneous	B752	Boeing 757-200	16	17	19	51	24	8	19	51
	Air Taxi	Miscellaneous	B762	Boeing 767-200	5	7	2	14	3	2	8	14
	Air Taxi	Miscellaneous	B763	Boeing 767-300	20	10	9	39	24	5	10	39
	Air Taxi	Miscellaneous	B77L	Boeing 777-200LR	-	-	1	1	1	-	-	1
	Air Taxi	Miscellaneous	BE40	Beechcraft Beechjet 400	3	1	1	5	3	2	-	5
	Air Taxi	Miscellaneous	C56X	Cessna 560XL Citation Excel	22	3	-	25	24	1	-	25
	Air Taxi	Miscellaneous	C680	Cessna 680 Citation Sovereign	12	2	3	17	16	1	-	17
	Air Taxi	Miscellaneous	C68A	Cessna Citation Latitude	14	4	-	18	14	3	1	18
	Air Taxi	Miscellaneous	C750	Cessna 750 series/Citation X	10	2	-	12	11	1	-	12
	Air Taxi	Miscellaneous	CL30	Bombardier Challenger 300	40	8	-	48	46	-	2	48
	Air Taxi	Miscellaneous	CL35	Bombardier Challenger 350	15	3	1	19	18	1	-	19

Table A-1: Base Year Fleet Mix

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival				Departure			
					Day	Evening	Night	Total	Day	Evening	Night	Total
	Air Taxi	Miscellaneous	CL60	Canadair Bombardier CL600/610 Challenger Twin Jet	2	1	-	3	3	-	-	3
	Air Taxi	Miscellaneous	CRJ9	Bombardier CRJ 900 Regional Jet	14	1	-	15	14	1	-	15
	Air Taxi	Miscellaneous	E550	Embraer EMB550 Phenom 300	3	-	-	3	3	-	-	3
	Air Taxi	Miscellaneous	E55P	Embraer EMB550 Phenom 300	23	4	3	30	25	4	1	30
	Air Taxi	Miscellaneous	F2TH	Dassault Falcon 2000	1	-	-	1	1	-	-	1
	Air Taxi	Miscellaneous	GALX	IAI 1126 Astra Galaxy/Gulfstream 200	5	-	-	5	3	-	1	5
	Air Taxi	Miscellaneous	GL5T	Bombardier Global 5000 BD-700	11	1	1	13	12	-	1	13
	Air Taxi	Miscellaneous	GLEX	Bombardier BD-700 Global Express	6	3	2	10	8	-	2	10
	Air Taxi	Miscellaneous	GLF4	Gulfstream IV	9	2	1	11	11	-	-	11
	Air Taxi	Miscellaneous	MD11	McDonnell Douglas MD-11 (Mixed)	10	-	4	15	13	-	2	15
Air Taxi Total					350	101	91	542	411	37	94	542
General Aviation	GA	Miscellaneous	A109	Agusta / AgustaWestland A-109	9	2	-	11	8	-	3	11
	GA	Miscellaneous	A169	AgustaWestland AW169	2	-	-	2	2	-	-	2
	GA	Miscellaneous	AS50	Eurocopter AS-350	122	15	12	149	112	18	20	149
	GA	Miscellaneous	B350	Beechcraft Super King Air 350/300B	134	13	2	149	134	9	7	149
	GA	Miscellaneous	B407	Bell Helicopter 407	33	-	4	37	29	-	8	37
	GA	Miscellaneous	B412	Bell Helicopter 412 Sentinel	2	-	-	2	2	-	-	2
	GA	Miscellaneous	B505	Bell 505 Jet Ranger X	4	-	-	4	4	-	-	4

Table A-1: Base Year Fleet Mix

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival				Departure			
					Day	Evening	Night	Total	Day	Evening	Night	Total
	GA	Miscellaneous	BE20	Beechcraft Model 200 (Super) King Air 200	110	4	7	121	110	7	4	121
	GA	Miscellaneous	BE30	Beechcraft Super King Air 300	29	-	2	31	31	-	-	31
	GA	Miscellaneous	BE35	Beechcraft Model 35 Bonanza	31	2	-	33	26	5	2	33
	GA	Miscellaneous	BE40	Beechcraft Beechjet 400	46	-	2	48	46	2	-	48
	GA	Miscellaneous	BE99	Beechcraft Airliner Model 99	4	-	-	4	2	-	2	4
	GA	Miscellaneous	BE9L	Beechcraft Model 90 King Air	55	-	9	64	43	13	8	64
	GA	Miscellaneous	C150	Cessna 150 Single Engine SEPF	22	4	9	35	19	3	13	35
	GA	Miscellaneous	C152	Cessna 152 Single Engine SEPF	42	35	11	88	41	19	28	88
	GA	Miscellaneous	C172	Cessna 172 Single Engine SEPF	527	305	85	917	554	249	113	917
	GA	Miscellaneous	C180	Cessna 180 Skywagon	96	-	22	118	68	18	33	118
	GA	Miscellaneous	C182	Cessna 182 Skylane	90	7	2	99	76	18	5	99
	GA	Miscellaneous	C206	Cessna 206 Stationair	173	15	-	189	164	25	-	189
	GA	Miscellaneous	C208	Cessna 208 Caravan I	53	7	4	64	50	-	13	64
	GA	Miscellaneous	C210	Cessna 210 Centurion	136	-	-	136	136	-	-	136
	GA	Miscellaneous	C25A	Cessna CitationJet CJ2, 525A	26	2	4	33	33	-	-	33
	GA	Miscellaneous	C25B	Cessna CitationJet CJ3, 525B	105	9	11	125	116	2	7	125
	GA	Miscellaneous	C25C	Cessna CitationJet CJ4, 525C	99	7	-	105	91	5	9	105
	GA	Miscellaneous	C425	Cessna 425 (Corsair/Conquest)	31	-	2	33	31	2	-	33
	GA	Miscellaneous	C525	Cessna CitationJet CJ1, 525	206	4	9	219	217	3	-	219
	GA	Miscellaneous	C550	Cessna Citation 550 Citation II	109	20	7	136	114	11	11	136

Table A-1: Base Year Fleet Mix

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival				Departure			
					Day	Evening	Night	Total	Day	Evening	Night	Total
	GA	Miscellaneous	C560	Cessna 560 Citation V, Ultra & Ultra Encore	96	11	-	107	97	3	8	107
	GA	Miscellaneous	C56X	Cessna 560XL Citation Excel	191	50	20	261	232	16	13	261
	GA	Miscellaneous	C680	Cessna 680 Citation Sovereign	53	2	-	55	55	-	-	55
	GA	Miscellaneous	C68A	Cessna Citation Latitude	4	-	-	4	4	-	-	4
	GA	Miscellaneous	C750	Cessna 750 series/Citation X	134	61	7	202	185	10	7	202
	GA	Miscellaneous	CL30	Bombardier Challenger 300	202	11	42	254	194	5	56	254
	GA	Miscellaneous	CL35	Bombardier Challenger 350	22	-	-	22	22	-	-	22
	GA	Miscellaneous	CL60	Canadair Bombardier CL600/610 Challenger Twin Jet	224	26	29	278	237	19	23	278
	GA	Miscellaneous	CRJ2	Bombardier CRJ 200 Regional Jet	33	15	-	48	26	16	6	48
	GA	Miscellaneous	CRJ7	Bombardier CRJ 700 Regional Jet	59	-	-	59	59	-	-	59
	GA	Miscellaneous	DA40	Diamond DA40 SEPF	15	18	9	42	18	13	10	42
	GA	Miscellaneous	E145	Embraer ERJ-145	37	-	-	37	37	-	-	37
	GA	Miscellaneous	E170	Embraer ERJ-170	-	2	-	2	-	2	-	2
	GA	Miscellaneous	E190	Embraer ERJ-190-100 /-200	39	7	-	46	36	7	2	46
	GA	Miscellaneous	E50P	Embraer EMB500 Phenom 100	39	2	2	44	37	7	-	44
	GA	Miscellaneous	E550	Embraer EMB550 Phenom 300	44	4	-	48	39	9	-	48
	GA	Miscellaneous	E55P	Embraer EMB550 Phenom 300	43	11	2	57	50	4	2	57
	GA	Miscellaneous	E75L	Embraer ERJ-175	24	11	-	35	35	-	-	35
	GA	Miscellaneous	EC35	Eurocopter EC-135 COM & MIL	4	-	7	11	4	2	4	11

Table A-1: Base Year Fleet Mix

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival				Departure			
					Day	Evening	Night	Total	Day	Evening	Night	Total
	GA	Miscellaneous	F2TH	Dassault Falcon 2000	105	9	2	116	106	10	-	116
	GA	Miscellaneous	F900	Dassault Falcon 900	158	24	7	189	176	8	5	189
	GA	Miscellaneous	FA20	Dassault Falcon 20 Mystere 20 /200	72	-	-	72	72	-	-	72
	GA	Miscellaneous	FA50	Dassault Falcon 50	224	15	11	250	219	18	13	250
	GA	Miscellaneous	G280	Gulfstream G280	31	4	-	35	35	-	-	35
	GA	Miscellaneous	GALX	IAI 1126 Astra Galaxy/Gulfstream 200	18	-	-	18	18	-	-	18
	GA	Miscellaneous	GL5T	Bombardier Global 5000 BD-700	9	4	-	13	10	3	-	13
	GA	Miscellaneous	GLEX	Bombardier BD-700 Global Express	15	-	2	18	18	-	-	18
	GA	Miscellaneous	GLF4	Gulfstream IV	73	15	15	103	77	10	15	103
	GA	Miscellaneous	GLF5	Gulfstream V	63	13	11	88	62	11	15	88
	GA	Miscellaneous	H25B	Hawker 800/800 XP/850 XP Twin Turbojet	112	15	4	132	117	10	5	132
	GA	Miscellaneous	H500	MD Helicopters MD 500	4	4	-	9	9	-	-	9
	GA	Miscellaneous	HELO	Unknown Helicopter	59	9	20	88	57	9	22	88
	GA	Miscellaneous	LJ35	Learjet 35 Twin Jet	21	2	6	29	16	4	8	29
	GA	Miscellaneous	LJ45	Learjet 45 Twin Jet	68	7	-	75	64	11	-	75
	GA	Miscellaneous	LJ60	Learjet 60 Twin Jet	94	4	4	103	92	2	9	103
	GA	Miscellaneous	M20P	Mooney Mark 20 Series	44	2	-	46	40	6	-	46
	GA	Miscellaneous	P28A	Piper PA-28-140/150/160/180 Cherokee	78	35	19	132	77	27	27	132
	GA	Miscellaneous	P46T	Piper PA-46-500TP Malibu Meridian	37	-	-	37	35	2	-	37
	GA	Miscellaneous	PA24	Piper PA-24 Comanche	55	4	-	59	57	2	-	59
	GA	Miscellaneous	PA28	Piper PA-28-151 Cherokee Warrior	15	13	15	44	15	15	15	44

Table A-1: Base Year Fleet Mix

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival				Departure			
					Day	Evening	Night	Total	Day	Evening	Night	Total
	GA	Miscellaneous	PA44	Piper PA-44 Seminole	4	22	9	35	-	27	8	35
	GA	Miscellaneous	PC12	Pilatus PC-12	118	7	2	127	113	7	7	127
	GA	Miscellaneous	PRM1	Raytheon 390 Premier	184	61	11	257	221	14	21	257
	GA	Miscellaneous	R22	Robinson R22B w/Lycoming 0320	35	13	18	66	26	22	18	66
	GA	Miscellaneous	R44	Robinson R44 Clipper/Raven Helicopter	9	-	-	9	7	2	-	9
	GA	Miscellaneous	S76	Sikorsky S-76	2	-	-	2	2	-	-	2
	GA	Miscellaneous	SR20	Cirrus SR20	26	2	-	29	23	5	-	29
	GA	Miscellaneous	SR22	Cirrus SR22	118	4	2	125	121	4	-	125
General Aviation Total					5,414	974	479	6,868	5,509	750	609	6,868
Military	Military	Miscellaneous	AC95	Gulfstream Jetprop Commander 1000	36	-	-	36	36	-	-	36
	Military	Miscellaneous	B350	Beech Super King Air 350	3	-	-	3	3	-	-	3
	Military	Miscellaneous	B703	Boeing 707	7	-	-	7	7	-	-	7
	Military	Miscellaneous	B722	Boeing 727-200	32	-	-	32	32	-	-	32
	Military	Miscellaneous	B763	Boeing 767-300	1	-	-	1	1	-	-	1
	Military	Miscellaneous	C130	Lockheed C-130 Hercules	1	-	-	1	1	-	-	1
	Military	Miscellaneous	C17	Boeing Globemaster 3	1	-	-	1	1	-	-	1
	Military	Miscellaneous	C172	Cessna Skyhawk 172/Cutlass	3	-	-	3	3	-	-	3
	Military	Miscellaneous	C206	Cessna 206 Stationair	1	-	-	1	1	-	-	1
	Military	Miscellaneous	C30J	C-130J Hercules	1	-	-	1	1	-	-	1
	Military	Miscellaneous	DC10	Boeing (Douglas) DC 10-10/30	4	-	-	4	4	-	-	4
	Military	Miscellaneous	EC45	Eurocopter EC-145	3	-	-	3	3	-	-	3
	Military	Miscellaneous	EXP	Meyers MAC-145	1	-	-	1	1	-	-	1
	Military	Miscellaneous	F18S	F18 Hornet	1	-	-	1	1	-	-	1

Table A-1: Base Year Fleet Mix

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival				Departure			
					Day	Evening	Night	Total	Day	Evening	Night	Total
	Military	Miscellaneous	F22	Boeing Raptor F22	3	-	-	3	3	-	-	3
	Military	Miscellaneous	F4	McDonnell Douglas F-4 Phantom II	1	-	-	1	1	-	-	1
	Military	Miscellaneous	GA8	Gippsland GA-8 Airvan	1	-	-	1	1	-	-	1
	Military	Miscellaneous	GLF3	Gulfstream III/G300	7	-	-	7	7	-	-	7
	Military	Miscellaneous	GLF4	Gulfstream IV/G400	1	-	-	1	1	-	-	1
	Military	Miscellaneous	GLF5	Gulfstream V/G500	7	-	-	7	7	-	-	7
	Military	Miscellaneous	H25B	BAe HS 125/700/800 Hawker	1	-	-	1	1	-	-	1
	Military	Miscellaneous	H60	Sikorsky SH-60 Seahawk	15	-	-	15	15	-	-	15
	Military	Miscellaneous	K35R	Boeing KC-135 Stratotanker	1	-	-	1	1	-	-	1
	Military	Miscellaneous	LJ35	Bombardier Learjet 35/36	2	-	-	2	2	-	-	2
	Military	Miscellaneous	LJ60	Bombardier Learjet 60	1	-	-	1	1	-	-	1
	Military	Miscellaneous	MD11	Boeing (Douglas) MD 11	1	-	-	1	1	-	-	1
	Military	Miscellaneous	P28A	Piper Cherokee	4	-	-	4	4	-	-	4
	Military	Miscellaneous	P3	Lockheed P-3C Orion	1	-	-	1	1	-	-	1
	Military	Miscellaneous	PA32	Piper Cherokee Six	1	-	-	1	1	-	-	1
	Military	Miscellaneous	SW4	Swearingen Merlin 4/4A Metro2	2	-	-	2	2	-	-	2
	Military	Miscellaneous	T38	Northrop T-38 Talon	3	-	-	3	3	-	-	3
	Military	Miscellaneous	TEX2	Raytheon Texan 2	1	-	-	1	1	-	-	1
	Military	Miscellaneous	UH1	Bell UH-1 Iroquois	1	-	-	1	1	-	-	1
Military Total					154	-	-	154	154	-	-	154
Grand Total					31,870	10,227	10,916	53,013	30,204	6,674	16,135	53,013

Source: ANOMS Radar Data, FAA Draft 2020 TAF, FAA FTMSC Data, and HNTB Analysis, 2022.

Appendix B

Future Scenario (2023/2024/2025) Fleet Mixes

Table B-1: Future Scenario (2023/2024/2025) Fleet Mixes

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival			Departure		
					2023	2024	2025	2023	2024	2025
Passenger Carrier	AAL	American Airlines	A21N	Airbus A321NEO Series	95	99	103	95	99	103
	AAL	American Airlines	A319	Airbus A319 series	543	563	585	543	563	585
	AAL	American Airlines	A320	Airbus A320 series	283	294	305	283	294	305
	AAL	American Airlines	A321	Airbus A321 series	139	144	149	139	144	149
	AAL	American Airlines	B38M	Boeing 737 MAX 8	1,863	1,932	2,009	1,863	1,932	2,009
	AAL	American Airlines	B738	Boeing 737-800	621	644	669	621	644	669
	AAL Total				3,543	3,675	3,820	3,543	3,675	3,820
	ASA	Alaska Airlines	A21N	Airbus A321NEO Series	539	559	581	539	559	581
	ASA	Alaska Airlines	B39M	Boeing 737 MAX 9	186	193	201	186	193	201
	ASA	Alaska Airlines	B737	Boeing 737-700	6	6	6	6	6	6
	ASA	Alaska Airlines	B738	Boeing 737-800	97	101	105	97	101	105
	ASA	Alaska Airlines	B739	Boeing 737-900	179	186	193	179	186	193
	ASA Total				1,008	1,045	1,086	1,008	1,045	1,086
	ASH	Mesa Airlines/American Eagle	CRJ9	Bombardier CRJ 900 Regional Jet	637	660	686	637	660	686
	ASH	Mesa Airlines/United Express	E75L	Embraer ERJ-175	172	178	185	172	178	185
	ASH Total				808	838	871	808	838	871
	AVA	Avianca	A319	Airbus A319 series	156	156	156	156	156	156
	AVA Total				156	156	156	156	156	156
	CAL	China Airlines	A359	Airbus A350-900	166	172	179	166	172	179
	CAL	China Airlines	B77W	Boeing 777-300ER	172	179	186	172	179	186
	CAL Total				338	351	365	338	351	365
	DAL	Delta Air Lines	A21N	Airbus A321NEO Series	98	102	106	98	102	106
	DAL	Delta Air Lines	A220	Airbus A220	37	38	40	37	38	40
	DAL	Delta Air Lines	A339	Airbus A330-900	9	10	10	9	10	10
	DAL	Delta Air Lines	B738	Boeing 737-800	515	534	555	515	534	555
	DAL	Delta Air Lines	B739	Boeing 737-900	165	171	178	165	171	178

Table B-1: Future Scenario (2023/2024/2025) Fleet Mixes

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival			Departure		
					2023	2024	2025	2023	2024	2025
	DAL	Delta Air Lines	B752	Boeing 757-200	7	7	7	7	7	7
	DAL Total				831	862	896	831	862	896
	FFT	Frontier Airlines	A20N	Airbus A320NEO Series	474	492	511	474	492	511
	FFT	Frontier Airlines	A21N	Airbus A321NEO Series	318	330	343	318	330	343
	FFT	Frontier Airlines	A320	Airbus A320 series	78	80	84	78	80	84
	FFT Total				869	902	937	869	902	937
	HAL	Hawaiian Airlines	A21N	Airbus A321NEO Series	289	289	289	289	289	289
	HAL Total				289	289	289	289	289	289
	JBU	JetBlue Airways	A21N	Airbus A321NEO Series	60	62	64	60	62	64
	JBU	JetBlue Airways	A320	Airbus A320 series	318	330	343	318	330	343
	JBU	JetBlue Airways	A321	Airbus A321 series	42	44	46	42	44	46
	JBU Total				420	435	452	420	435	452
	QXE	Horizon Air	E75L	Embraer ERJ-175	281	292	303	281	292	303
	QXE Total				281	292	303	281	292	303
	SKW	SkyWest Airlines	CRJ2	Bombardier CRJ 200 Regional Jet	742	770	800	742	770	800
	SKW	SkyWest Airlines	CRJ7	Bombardier CRJ 700 Regional Jet	210	217	226	210	217	226
	SKW	SkyWest Airlines	CRJ9	Bombardier CRJ 900 Regional Jet	292	302	314	292	302	314
	SKW	SkyWest Airlines	E75L	Embraer ERJ-175	589	611	635	589	611	635
	SKW Total				1,832	1,900	1,976	1,832	1,900	1,976
	SWA	Southwest Airlines	B38M	Boeing 737 MAX 8	1,912	1,983	2,061	1,912	1,983	2,061
	SWA	Southwest Airlines	B737	Boeing 737-700	8,898	9,230	9,594	8,898	9,230	9,594
	SWA	Southwest Airlines	B738	Boeing 737-800	1,741	1,806	1,877	1,741	1,806	1,877
	SWA Total				12,551	13,019	13,533	12,551	13,019	13,533
	UAL	United Airlines	A319	Airbus A319 series	82	85	89	82	85	89
	UAL	United Airlines	A320	Airbus A320 series	329	341	355	329	341	355
	UAL	United Airlines	B39M	Boeing 737 MAX 9	122	126	131	122	126	131

Table B-1: Future Scenario (2023/2024/2025) Fleet Mixes

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival			Departure		
					2023	2024	2025	2023	2024	2025
	UAL	United Airlines	B738	Boeing 737-800	175	181	188	175	181	188
	UAL	United Airlines	B739	Boeing 737-900	325	337	351	325	337	351
	UAL	United Airlines	B752	Boeing 757-200	1	1	1	1	1	1
	UAL Total				1,034	1,072	1,115	1,034	1,072	1,115
	VOI	Volaris	A20N	Airbus A320NEO Series	184	191	199	184	191	199
	VOI	Volaris	A320	Airbus A320 series	164	170	176	164	170	176
	VOI Total				348	361	375	348	361	375
	AHA	Aha!	E145	Embraer ERJ-145	317	317	317	317	317	317
	AHA Total				317	317	317	317	317	317
	TBA	Nores Atlantic Airways	B787	Boeing 787 Series	112	112	112	112	112	112
	TBA Total				112	112	112	112	112	112
Passenger Carrier Total					24,738	25,627	26,605	24,738	25,627	26,605
All Cargo Carrier	AAH	Aloha Air Cargo	B733	Boeing 737-300	133	138	143	133	138	143
	AAH Total				133	138	143	133	138	143
	ABX	ABX Air	B762	Boeing 767-200	1,062	1,102	1,145	1,062	1,102	1,145
	ABX	ABX Air	B763	Boeing 767-300	10	11	11	10	11	11
	ABX Total				1,073	1,113	1,157	1,073	1,113	1,157
	AIP	Alpine Air Express	B190	Beechcraft 1900D	225	234	243	225	234	243
	AIP Total				225	234	243	225	234	243
	AJT	Amerijet International	B763	Boeing 767-300	54	56	58	54	56	58
	AJT Total				54	56	58	54	56	58
	AMF	Ameriflight	BE99	Beechcraft Airliner Model 99	1,018	1,056	1,097	1,018	1,056	1,097
	AMF	Ameriflight	E120	Embraer EMB-120 Brasilia	247	256	266	247	256	266
	AMF	Ameriflight	PA31	Piper PA-31 Navajo	259	268	279	259	268	279
	AMF	Ameriflight	SW4	SA227 Metroliner	76	79	82	76	79	82
	AMF Total				1,599	1,659	1,724	1,599	1,659	1,724

Table B-1: Future Scenario (2023/2024/2025) Fleet Mixes

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival			Departure		
					2023	2024	2025	2023	2024	2025
	ATN	Air Transport International	B762	Boeing 767-200	70	72	75	70	72	75
	ATN	Air Transport International	B763	Boeing 767-300	1,102	1,143	1,188	1,102	1,143	1,188
	ATN Total				1,171	1,215	1,263	1,171	1,215	1,263
	CFS	Empire Airlines	AT43	Avions de Transport Régional ATR-43	265	275	286	265	275	286
	CFS Total				265	275	286	265	275	286
	CKS	Kalitta Air	B742	Boeing 747-200	7	8	8	7	8	8
	CKS	Kalitta Air	B744	Boeing 747-400	38	40	41	38	40	41
	CKS Total				46	47	49	46	47	49
	FDX	FedEx	A306	Airbus A300-600/622R	186	193	201	186	193	201
	FDX	FedEx	A30B	Airbus A300B4-600 Series	4	4	4	4	4	4
	FDX	FedEx	B752	Boeing 757-200	397	411	428	397	411	428
	FDX	FedEx	B763	Boeing 767-300	1,405	1,458	1,515	1,405	1,458	1,515
	FDX	FedEx	B77L	Boeing 777F	402	417	433	402	417	433
	FDX	FedEx	MD11	McDonnell Douglas MD-11 (Mixed)	499	518	538	499	518	538
	FDX Total				2,893	3,001	3,120	2,893	3,001	3,120
	GTI	Atlas Air	B744	Boeing 747-400	33	34	36	33	34	36
	GTI	Atlas Air	B763	Boeing 767-300	1,242	1,288	1,339	1,242	1,288	1,339
	GTI Total				1,275	1,323	1,375	1,275	1,323	1,375
	PCM	West Air	C208	Cessna 208 Caravan I	2,444	2,535	2,635	2,444	2,535	2,635
	PCM Total				2,444	2,535	2,635	2,444	2,535	2,635
	SCX	Sun Country Airlines	B737	Boeing 737-700	1	1	1	1	1	1
	SCX	Sun Country Airlines	B738	Boeing 737-800	415	431	448	415	431	448
	SCX Total				416	432	449	416	432	449
	SOO	Southern Air	B738	Boeing 737-800	86	89	93	86	89	93
	SOO Total				86	89	93	86	89	93
	SWQ	IAero Airways	B733	Boeing 737-300	32	33	35	32	33	35

Table B-1: Future Scenario (2023/2024/2025) Fleet Mixes

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival			Departure		
					2023	2024	2025	2023	2024	2025
	SWQ	IAero Airways	B734	Boeing 737-400	1	1	1	1	1	1
	SWQ	IAero Airways	B738	Boeing 737-800	1	1	1	1	1	1
	SWQ Total				34	36	37	34	36	37
	UPS	UPS	A306	Airbus A300-600/622R	2,525	2,619	2,722	2,525	2,619	2,722
	UPS	UPS	B744	Boeing 747-400	266	276	287	266	276	287
	UPS	UPS	B748	Boeing 747-800	405	420	437	405	420	437
	UPS	UPS	B752	Boeing 757-200	1,614	1,674	1,740	1,614	1,674	1,740
	UPS	UPS	B763	Boeing 767-300	3,502	3,632	3,776	3,502	3,632	3,776
	UPS	UPS	MD11	McDonnell Douglas MD-11 (Mixed)	1,108	1,149	1,195	1,108	1,149	1,195
	UPS Total				9,419	9,770	10,156	9,419	9,770	10,156
	WGN	Western Global Airlines	B744	Boeing 747-400	8	9	9	8	9	9
	WGN	Western Global Airlines	MD11	McDonnell Douglas MD-11 (Mixed)	98	101	105	98	101	105
	WGN Total				106	110	114	106	110	114
All Cargo Carrier Total					21,240	22,031	22,902	21,240	22,031	22,902
Air Taxi	Air Taxi	Miscellaneous	A306	Airbus A300-600/622R	6	6	6	6	6	6
	Air Taxi	Miscellaneous	A319	Airbus A319 series	13	14	14	13	14	14
	Air Taxi	Miscellaneous	A320	Airbus A320 series	21	22	23	21	22	23
	Air Taxi	Miscellaneous	A321	Airbus A321 series	1	1	1	1	1	1
	Air Taxi	Miscellaneous	B38M	Boeing 737 MAX 8	3	3	3	3	3	3
	Air Taxi	Miscellaneous	B722	Boeing 727-200	8	9	9	8	9	9
	Air Taxi	Miscellaneous	B733	Boeing 737-300	6	6	6	6	6	6
	Air Taxi	Miscellaneous	B734	Boeing 737-400	14	15	15	14	15	15
	Air Taxi	Miscellaneous	B737	Boeing 737-700	57	59	61	57	59	61
	Air Taxi	Miscellaneous	B738	Boeing 737-800	42	44	45	42	44	45
	Air Taxi	Miscellaneous	B739	Boeing 737-900	7	7	7	7	7	7
	Air Taxi	Miscellaneous	B744	Boeing 747-400	14	15	15	14	15	15

Table B-1: Future Scenario (2023/2024/2025) Fleet Mixes

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival			Departure		
					2023	2024	2025	2023	2024	2025
	Air Taxi	Miscellaneous	B748	Boeing 747-800	1	1	1	1	1	1
	Air Taxi	Miscellaneous	B752	Boeing 757-200	51	53	55	51	53	55
	Air Taxi	Miscellaneous	B762	Boeing 767-200	14	15	15	14	15	15
	Air Taxi	Miscellaneous	B763	Boeing 767-300	39	41	42	39	41	42
	Air Taxi	Miscellaneous	B77L	Boeing 777-200LR	1	1	1	1	1	1
	Air Taxi	Miscellaneous	BE40	Beechcraft Beechjet 400	4	4	4	4	4	4
	Air Taxi	Miscellaneous	C56X	Cessna 560XL Citation Excel	21	21	22	21	21	22
	Air Taxi	Miscellaneous	C680	Cessna 680 Citation Sovereign	14	14	15	14	14	15
	Air Taxi	Miscellaneous	C68A	Cessna Citation Latitude	15	15	16	15	15	16
	Air Taxi	Miscellaneous	C750	Cessna 750 series/Citation X	10	10	11	10	10	11
	Air Taxi	Miscellaneous	CL30	Bombardier Challenger 300	40	41	43	40	41	43
	Air Taxi	Miscellaneous	CL35	Bombardier Challenger 350	15	16	17	15	16	17
	Air Taxi	Miscellaneous	CL60	Canadair Bombardier CL600/610 Challenger Twin Jet	2	2	2	2	2	2
	Air Taxi	Miscellaneous	CRJ9	Bombardier CRJ 900 Regional Jet	12	13	13	12	13	13
	Air Taxi	Miscellaneous	E550	Embraer EMB550 Phenom 300	2	2	2	2	2	2
	Air Taxi	Miscellaneous	E55P	Embraer EMB550 Phenom 300	25	25	26	25	25	26
	Air Taxi	Miscellaneous	F2TH	Dassault Falcon 2000	1	1	1	1	1	1
	Air Taxi	Miscellaneous	GALX	IAI 1126 Astra Galaxy/Gulfstream 200	4	4	4	4	4	4
	Air Taxi	Miscellaneous	GL5T	Bombardier Global 5000 BD-700	11	11	12	11	11	12
	Air Taxi	Miscellaneous	GLEX	Bombardier BD-700 Global Express	8	9	9	8	9	9
	Air Taxi	Miscellaneous	GLF4	Gulfstream IV	9	10	10	9	10	10
	Air Taxi	Miscellaneous	MD11	McDonnell Douglas MD-11 (Mixed)	15	16	16	15	16	16
Air Taxi Total					506	524	545	506	524	545
General Aviation	GA	Miscellaneous	A109	Agusta / AgustaWestland A-109	11	11	11	11	11	11
	GA	Miscellaneous	A169	AgustaWestland AW169	4	4	4	4	4	4
	GA	Miscellaneous	AS50	Eurocopter AS-350	148	148	149	148	148	149

Table B-1: Future Scenario (2023/2024/2025) Fleet Mixes

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival			Departure		
					2023	2024	2025	2023	2024	2025
	GA	Miscellaneous	B350	Beechcraft Super King Air 350/300B	202	203	204	202	203	204
	GA	Miscellaneous	B407	Bell Helicopter 407	56	56	56	56	56	56
	GA	Miscellaneous	B412	Bell Helicopter 412 Sentinel	2	2	2	2	2	2
	GA	Miscellaneous	B505	Bell 505 Jet Ranger X	11	11	11	11	11	11
	GA	Miscellaneous	BE20	Beechcraft Model 200 (Super) King Air 200	122	123	123	122	123	123
	GA	Miscellaneous	BE30	Beechcraft Super King Air 300	35	35	35	35	35	35
	GA	Miscellaneous	BE35	Beechcraft Model 35 Bonanza	30	30	30	30	30	30
	GA	Miscellaneous	BE40	Beechcraft Beechjet 400	38	38	38	38	38	38
	GA	Miscellaneous	BE99	Beechcraft Airliner Model 99	6	6	6	6	6	6
	GA	Miscellaneous	BE9L	Beechcraft Model 90 King Air	83	83	83	83	83	83
	GA	Miscellaneous	C150	Cessna 150 Single Engine SEPF	33	33	33	33	33	33
	GA	Miscellaneous	C152	Cessna 152 Single Engine SEPF	89	89	89	89	89	89
	GA	Miscellaneous	C172	Cessna 172 Single Engine SEPF	1,076	1,080	1,084	1,076	1,080	1,084
	GA	Miscellaneous	C180	Cessna 180 Skywagon	110	110	111	110	110	111
	GA	Miscellaneous	C182	Cessna 182 Skylane	116	116	117	116	116	117
	GA	Miscellaneous	C206	Cessna 206 Stationair	207	208	209	207	208	209
	GA	Miscellaneous	C208	Cessna 208 Caravan I	73	73	73	73	73	73
	GA	Miscellaneous	C210	Cessna 210 Centurion	135	135	136	135	135	136
	GA	Miscellaneous	C25A	Cessna CitationJet CJ2, 525A	35	35	35	35	35	35
	GA	Miscellaneous	C25B	Cessna CitationJet CJ3, 525B	212	213	214	212	213	214
	GA	Miscellaneous	C25C	Cessna CitationJet CJ4, 525C	200	201	202	200	201	202
	GA	Miscellaneous	C425	Cessna 425 (Corsair/Conquest)	38	38	38	38	38	38
	GA	Miscellaneous	C525	Cessna CitationJet CJ1, 525	300	301	303	300	301	303
	GA	Miscellaneous	C550	Cessna Citation 550 Citation II	161	162	162	161	162	162
	GA	Miscellaneous	C560	Cessna 560 Citation V, Ultra & Ultra Encore	127	128	128	127	128	128

Table B-1: Future Scenario (2023/2024/2025) Fleet Mixes

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival			Departure		
					2023	2024	2025	2023	2024	2025
	GA	Miscellaneous	C56X	Cessna 560XL Citation Excel	395	397	398	395	397	398
	GA	Miscellaneous	C680	Cessna 680 Citation Sovereign	93	93	94	93	93	94
	GA	Miscellaneous	C68A	Cessna Citation Latitude	10	10	11	10	10	11
	GA	Miscellaneous	C750	Cessna 750 series/Citation X	292	293	294	292	293	294
	GA	Miscellaneous	CL30	Bombardier Challenger 300	432	433	435	432	433	435
	GA	Miscellaneous	CL35	Bombardier Challenger 350	52	52	53	52	52	53
	GA	Miscellaneous	CL60	Canadair Bombardier CL600/610 Challenger Twin Jet	271	272	273	271	272	273
	GA	Miscellaneous	CRJ2	Bombardier CRJ 200 Regional Jet	38	38	38	38	38	38
	GA	Miscellaneous	CRJ7	Bombardier CRJ 700 Regional Jet	70	70	70	70	70	70
	GA	Miscellaneous	DA40	Diamond DA40 SEPF	60	60	60	60	60	60
	GA	Miscellaneous	E145	Embraer ERJ-145	59	59	59	59	59	59
	GA	Miscellaneous	E170	Embraer ERJ-170	3	3	3	3	3	3
	GA	Miscellaneous	E190	Embraer ERJ-190-100 /-200	81	81	82	81	81	82
	GA	Miscellaneous	E50P	Embraer EMB500 Phenom 100	45	45	45	45	45	45
	GA	Miscellaneous	E550	Embraer EMB550 Phenom 300	60	60	61	60	60	61
	GA	Miscellaneous	E55P	Embraer EMB550 Phenom 300	105	105	105	105	105	105
	GA	Miscellaneous	E75L	Embraer ERJ-175	60	60	60	60	60	60
	GA	Miscellaneous	EC35	Eurocopter EC-135 COM & MIL	17	17	17	17	17	17
	GA	Miscellaneous	F2TH	Dassault Falcon 2000	160	161	161	160	161	161
	GA	Miscellaneous	F900	Dassault Falcon 900	210	211	212	210	211	212
	GA	Miscellaneous	FA20	Dassault Falcon 20 Mystere 20 /200	85	86	86	85	86	86
	GA	Miscellaneous	FA50	Dassault Falcon 50	269	270	271	269	270	271
	GA	Miscellaneous	G280	Gulfstream G280	74	74	74	74	74	74
	GA	Miscellaneous	GALX	IAI 1126 Astra Galaxy/Gulfstream 200	16	16	16	16	16	16
	GA	Miscellaneous	GL5T	Bombardier Global 5000 BD-700	22	22	22	22	22	22
	GA	Miscellaneous	GLEX	Bombardier BD-700 Global Express	26	26	27	26	26	27

Table B-1: Future Scenario (2023/2024/2025) Fleet Mixes

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival			Departure		
					2023	2024	2025	2023	2024	2025
	GA	Miscellaneous	GLF4	Gulfstream IV	122	122	122	122	122	122
	GA	Miscellaneous	GLF5	Gulfstream V	149	149	150	149	149	150
	GA	Miscellaneous	H25B	Hawker 800/800 XP/850 XP Twin Turbojet	129	130	130	129	130	130
	GA	Miscellaneous	H500	MD Helicopters MD 500	9	9	9	9	9	9
	GA	Miscellaneous	HELO	Unknown Helicopter	126	127	127	126	127	127
	GA	Miscellaneous	LJ35	Learjet 35 Twin Jet	31	31	31	31	31	31
	GA	Miscellaneous	LJ45	Learjet 45 Twin Jet	113	113	114	113	113	114
	GA	Miscellaneous	LJ60	Learjet 60 Twin Jet	83	83	83	83	83	83
	GA	Miscellaneous	M20P	Mooney Mark 20 Series	44	45	45	44	45	45
	GA	Miscellaneous	P28A	Piper PA-28-140/150/160/180 Cherokee	112	112	112	112	112	112
	GA	Miscellaneous	P46T	Piper PA-46-500TP Malibu Meridian	64	65	65	64	65	65
	GA	Miscellaneous	PA24	Piper PA-24 Comanche	54	54	54	54	54	54
	GA	Miscellaneous	PA28	Piper PA-28-151 Cherokee Warrior	41	41	41	41	41	41
	GA	Miscellaneous	PA44	Piper PA-44 Seminole	40	40	40	40	40	40
	GA	Miscellaneous	PC12	Pilatus PC-12	190	191	192	190	191	192
	GA	Miscellaneous	PRM1	Raytheon 390 Premier	262	263	264	262	263	264
	GA	Miscellaneous	R22	Robinson R22B w/Lycoming 0320	67	67	67	67	67	67
	GA	Miscellaneous	R44	Robinson R44 Clipper/Raven Helicopter	13	13	13	13	13	13
	GA	Miscellaneous	S76	Sikorsky S-76	2	2	2	2	2	2
	GA	Miscellaneous	SR20	Cirrus SR20	40	40	41	40	40	41
	GA	Miscellaneous	SR22	Cirrus SR22	183	184	185	183	184	185
GA Total					8,541	8,570	8,600	8,541	8,570	8,600
Military	MIL	Miscellaneous	AC95	Gulfstream Jetprop Commander 1000	37	37	37	37	37	37
	MIL	Miscellaneous	B350	Beech Super King Air 350	4	4	4	4	4	4

Table B-1: Future Scenario (2023/2024/2025) Fleet Mixes

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival			Departure		
					2023	2024	2025	2023	2024	2025
	MIL	Miscellaneous	B703	Boeing 707	7	7	7	7	7	7
	MIL	Miscellaneous	B722	Boeing 727-200	34	34	34	34	34	34
	MIL	Miscellaneous	B763	Boeing 767-300	1	1	1	1	1	1
	MIL	Miscellaneous	C130	Lockheed C-130 Hercules	1	1	1	1	1	1
	MIL	Miscellaneous	C17	Boeing Globemaster 3	1	1	1	1	1	1
	MIL	Miscellaneous	C172	Cessna Skyhawk 172/Cutlass	4	4	4	4	4	4
	MIL	Miscellaneous	C206	Cessna 206 Stationair	1	1	1	1	1	1
	MIL	Miscellaneous	C30J	C-130J Hercules	1	1	1	1	1	1
	MIL	Miscellaneous	DC10	Boeing (Douglas) DC 10-10/30	5	5	5	5	5	5
	MIL	Miscellaneous	EC45	Eurocopter EC-145	4	4	4	4	4	4
	MIL	Miscellaneous	EXP	Meyers MAC-145	1	1	1	1	1	1
	MIL	Miscellaneous	F18S	F18 Hornet	1	1	1	1	1	1
	MIL	Miscellaneous	F22	Boeing Raptor F22	4	4	4	4	4	4
	MIL	Miscellaneous	F4	McDonnell Douglas F-4 Phantom II	1	1	1	1	1	1
	MIL	Miscellaneous	GA8	Gippsland GA-8 Airvan	1	1	1	1	1	1
	MIL	Miscellaneous	GLF3	Gulfstream III/G300	7	7	7	7	7	7
	MIL	Miscellaneous	GLF4	Gulfstream IV/G400	1	1	1	1	1	1
	MIL	Miscellaneous	GLF5	Gulfstream V/G500	7	7	7	7	7	7
	MIL	Miscellaneous	H25B	BAe HS 125/700/800 Hawker	1	1	1	1	1	1
	MIL	Miscellaneous	H60	Sikorsky SH-60 Seahawk	15	15	15	15	15	15
	MIL	Miscellaneous	K35R	Boeing KC-135 Stratotanker	1	1	1	1	1	1
	MIL	Miscellaneous	LJ35	Bombardier Learjet 35/36	2	2	2	2	2	2
	MIL	Miscellaneous	LJ60	Bombardier Learjet 60	1	1	1	1	1	1
	MIL	Miscellaneous	MD11	Boeing (Douglas) MD 11	1	1	1	1	1	1
	MIL	Miscellaneous	P28A	Piper Cherokee	5	5	5	5	5	5
	MIL	Miscellaneous	P3	Lockheed P-3C Orion	1	1	1	1	1	1

Table B-1: Future Scenario (2023/2024/2025) Fleet Mixes

Operation Type	Airline ID	Airline Description	Aircraft ID	Aircraft Description	Arrival			Departure		
					2023	2024	2025	2023	2024	2025
	MIL	Miscellaneous	PA32	Piper Cherokee Six	1	1	1	1	1	1
	MIL	Miscellaneous	SW4	Swearingen Merlin 4/4A Metro2	2	2	2	2	2	2
	MIL	Miscellaneous	T38	Northrop T-38 Talon	4	4	4	4	4	4
	MIL	Miscellaneous	TEX2	Raytheon Texan 2	1	1	1	1	1	1
	MIL	Miscellaneous	UH1	Bell UH-1 Iroquois	1	1	1	1	1	1
Military Total					161	161	161	161	161	161
Grand Total					55,184	56,913	58,812	55,184	56,913	58,812

Source: ANOMS Radar Data, FAA Draft 2020 TAF, FAA TFMSC, FAA OPSNET, and HNTB Analysis, 2022.

Attachment 2
Flight Track Development

Table B-1 Track Use Percentage

Category	Aircraft Type	Operation Type	Runway	Track	Percent
Passenger	Jet	Arrival	8L	A08LPJE1	29.6%
				A08LPJN1	11.6%
				A08LPJN2	1.0%
				A08LPJN3	2.0%
				A08LPJN4	5.5%
				A08LPJN6	6.5%
				A08LPJN7	24.1%
				A08LPJN8	17.6%
				A08LPJS1	2.0%
			8R	A08RPJE1	31.9%
				A08RPJE3	19.4%
				A08RPJN1	5.6%
				A08RPJN2	12.5%
				A08RPJN3	25.0%
				A08RPJN4	5.6%
			26L	A26LPJE2	1.5%
				A26LPJE3	34.1%
				A26LPJN1	1.8%
				A26LPJN2	1.5%
				A26LPJN3	3.7%
				A26LPJN4	18.1%
				A26LPJN5	0.7%
				A26LPJN6	1.2%
				A26LPJN7	5.7%
				A26LPJN8	18.8%
				A26LPJS1	0.8%
				A26LPJS2	2.2%
				A26LPJS3	2.2%
				A26LPJS4	1.2%
				A26LPJW2	2.2%
				A26LPJW3	4.5%
			26R	A26PJE4	0.9%
				A26RPJE1	0.2%
				A26RPJE2	0.2%
				A26RPJE3	2.8%
				A26RPJE4	0.2%
				A26RPJE5	0.2%

Table B-1 Track Use Percentage

Category	Aircraft Type	Operation Type	Runway	Track	Percent
				A26RPJE6	1.6%
				A26RPJE7	2.1%
				A26RPJE8	12.7%
				A26RPJE9	1.1%
				A26RPJN1	2.1%
				A26RPJN2	2.8%
				A26RPJN3	0.4%
				A26RPJN4	2.0%
				A26RPJN5	0.2%
				A26RPJN8	0.5%
				A26RPJN9	0.2%
				A26RPJS1	34.1%
				A26RPJW1	1.3%
				A26RPJW2	26.0%
				A26RPJW3	8.5%
		Departure	8L	D08LPJN1	0.5%
				D08LPJN2	3.0%
				D08LPJN3	5.9%
				D08LPJN4	8.2%
				D08LPJS1	3.5%
				D08LPJS2	3.7%
				D08LPJS3	35.1%
				D08LPJW1	17.3%
				D08LPJW2	19.0%
				D08LPJW4	3.7%
			8R	D08RPJE1	37.0%
				D08RPJN1	5.5%
				D08RPJN2	11.0%
				D08RPJW1	20.5%
				D08RPJW2	26.0%
			26L	D26LPJE1	42.1%
				D26LPJE2	2.3%
				D26LPJN1	4.1%
				D26LPJN2	6.4%
				D26LPJN4	2.3%
				D26LPJS2	3.4%
				D26LPJW1	16.5%
				D26LPJW2	22.9%
			26R	D26RPJE1	0.4%

Table B-1 Track Use Percentage

Category	Aircraft Type	Operation Type	Runway	Track	Percent
				D26RPJE2	0.5%
				D26RPJE3	0.6%
				D26RPJE4	15.1%
				D26RPJE5	16.9%
				D26RPJN1	1.1%
				D26RPJN2	3.4%
				D26RPJN3	4.5%
				D26RPJN4	7.4%
				D26RPJN5	0.9%
				D26RPJS2	1.5%
				D26RPJW1	25.5%
				D26RPJW2	20.6%
				D26RPJW3	1.6%
				D26RPJW4	0.0%
Cargo	Jet	Arrival	8L	A08CJN1	33.0%
				A08LCJE1	25.2%
				A08LCJN2	13.0%
				A08LCJN3	16.5%
				A08LCJN4	5.2%
				A08LCJS1	7.0%
			8R	A08RCJE1	25.0%
				A08RCJN2	7.4%
				A08RCJN3	9.3%
				A08RCJN4	13.0%
				A08RCJN5	4.6%
				A08RCJN7	5.6%
				A08RCJS1	3.7%
				A08RCJN1	31.5%
			26L	A26LCJE1	31.8%
				A26LCJE2	0.4%
				A26LCJE3	0.7%
				A26LCJE4	0.9%
				A26LCJE5	5.4%
				A26LCJN1	0.2%
				A26LCJN2	0.1%
				A26LCJN3	15.3%
				A26LCJN4	1.0%
				A26LCJN5	14.4%
				A26LCJN6	0.2%

Table B-1 Track Use Percentage

Category	Aircraft Type	Operation Type	Runway	Track	Percent
				A26LCJN7	17.4%
				A26LCJN8	1.9%
				A26LCJN9	3.0%
				A26LCJS1	1.2%
				A26LCJS2	2.9%
				A26LCJS3	1.3%
				A26LCJW1	0.7%
				A26LCJW3	1.3%
			26R	A26RCJE1	19.4%
				A26RCJN1	14.7%
				A26RCJN2	1.0%
				A26RCJN3	3.7%
				A26RCJN4	9.0%
				A26RCJN6	2.4%
				A26RCJN7	13.9%
				A26RCJS1	6.3%
				A26RCJS3	0.4%
				A26RCJW1	17.3%
				A26RCJW2	6.5%
				A26RCJW3	2.4%
				A26RCJW4	1.2%
				A26RCJW5	1.6%
		Departure	8L	D08LCJE1	17.3%
				D08LCJN1	5.1%
				D08LCJN2	3.1%
				D08LCJN3	14.3%
				D08LCJN4	4.1%
				D08LCJS1	35.7%
				D08LCJS2	17.3%
				D08LCJW1	3.1%
			8R	D08RCJE1	2.2%
				D08RCJE2	37.0%
				D08RCJE3	6.6%
				D08RCJE5	3.4%
				D08RCJN1	2.9%
				D08RCJN2	3.4%
				D08RCJN3	5.6%
				D08RCJN4	2.5%
				D08RCJN5	2.2%

Table B-1 Track Use Percentage

Category	Aircraft Type	Operation Type	Runway	Track	Percent
				D08RCJS1	2.9%
				D08RCJS2	2.7%
				D08RCJW1	4.7%
				D08RCJW2	16.9%
				D08RCJW3	6.9%
			26L	D26LCJE1	6.6%
				D26LCJE2	47.9%
				D26LCJE3	1.4%
				D26LCJE4	1.2%
				D26LCJN1	3.3%
				D26LCJN2	0.7%
				D26LCJN3	3.4%
				D26LCJN4	3.2%
				D26LCJN5	2.2%
				D26LCJN6	1.6%
				D26LCJS1	0.7%
				D26LCJS2	2.1%
				D26LCJS3	2.1%
				D26LCJS4	1.1%
				D26LCJW1	5.5%
				D26LCJW2	3.6%
				D26LCJW3	10.5%
				D26LCJW4	3.1%
			26R	D26RCJE1	10.1%
				D26RCJE2	46.5%
				D26RCJE3	8.8%
				D26RCJN1	10.5%
				D26RCJN2	1.7%
				D26RCJN3	10.3%
				D26RCJN4	7.1%
				D26RCJW1	2.7%
				D26RCJW2	2.3%
	Propeller	Arrival	8L	A08LCPN1	23.1%
				A08LCPW1	76.9%
			8R	A08RCJS1	9.8%
				A08RCPN1	14.6%
				A08RCPS2	9.8%
				A08RCPW1	2.4%
				A08RCPW2	14.6%

Table B-1 Track Use Percentage

Category	Aircraft Type	Operation Type	Runway	Track	Percent
				A08RCPW3	17.1%
				A08RCPW4	24.4%
				A08RCPW5	7.3%
			26L	A26LCPE3	3.9%
				A26LCPE4	3.1%
				A26LCPN1	5.5%
				A26LCPN2	3.9%
				A26LCPN3	1.9%
				A26LCPN4	1.2%
				A26LCPN5	3.4%
				A26LCPN6	3.3%
				A26LCPN7	1.2%
				A26LCPS1	5.3%
				A26LCPS2	4.6%
				A26LCPS3	2.9%
				A26LCPS4	0.3%
				A26LCPW1	0.5%
				A26LCPW2	10.3%
				A26LCPW3	14.4%
				A26LCPW4	16.6%
				A26LCPW5	1.0%
				A26LCPW7	15.1%
				A26RCPN7	0.7%
				A26RCPW2	0.7%
			26R	A26RCPE1	5.6%
				A26RCPN1	7.4%
				A26RCPN2	7.4%
				A26RCPN3	3.7%
				A26RCPN4	9.3%
				A26RCPN5	6.5%
				A26RCPN6	3.7%
				A26RCPN7	1.9%
				A26RCPN8	3.7%
				A26RCPS1	5.6%
				A26RCPS2	5.6%
				A26RCPW1	5.6%
				A26RCPW2	7.4%
				A26RCPW3	14.8%
				A26RCPW4	12.0%

Table B-1 Track Use Percentage

Category	Aircraft Type	Operation Type	Runway	Track	Percent
		Departure	8L	D08LCPN1	12.5%
				D08LCPW1	37.5%
				D08LCPW2	50.0%
			8R	D08RCPN1	11.1%
				D08RCPS1	5.6%
				D08RCPS2	13.0%
				D08RCPW1	18.5%
				D08RCPW2	22.2%
				D08RCPW3	11.1%
				D08RCPW4	14.8%
				D08RCPW5	3.7%
			26L	D26LCPE2	0.8%
				D26LCPE4	2.2%
				D26LCPN1	4.9%
				D26LCPN2	9.1%
				D26LCPN3	5.9%
				D26LCPN4	5.1%
				D26LCPN5	2.6%
				D26LCPN6	3.4%
				D26LCPN7	3.9%
				D26LCPS1	8.1%
				D26LCPS2	3.9%
				D26LCPS4	7.3%
				D26LCPW1	0.2%
				D26LCPW2	19.5%
				D26LCPW3	10.8%
				D26LCPW4	6.5%
				D26LCPW5	5.7%
			26R	D26RCPE1	4.6%
				D26RCPN1	5.2%
				D26RCPN2	9.2%
				D26RCPN3	9.2%
				D26RCPN4	12.1%
				D26RCPN5	5.7%
				D26RCPN6	4.6%
				D26RCPN7	6.9%
				D26RCPS1	4.6%
				D26RCPS2	4.6%
				D26RCPW1	17.2%

Table B-1 Track Use Percentage

Category	Aircraft Type	Operation Type	Runway	Track	Percent
				D26RCPW2	1.1%
				D26RCPW3	14.9%
Air Taxi	Jet	Arrival	8L	A08LPJE1	29.6%
				A08LPJN1	11.6%
				A08LPJN2	1.0%
				A08LPJN3	2.0%
				A08LPJN4	5.5%
				A08LPJN6	6.5%
				A08LPJN7	24.1%
				A08LPJN8	17.6%
				A08LPJS1	2.0%
			8R	A08RPJE1	31.9%
				A08RPJE3	19.4%
				A08RPJN1	5.6%
				A08RPJN2	12.5%
				A08RPJN3	25.0%
				A08RPJN4	5.6%
			26L	A26LPJE2	1.5%
				A26LPJE3	34.1%
				A26LPJN1	1.8%
				A26LPJN2	1.5%
				A26LPJN3	3.7%
				A26LPJN4	18.1%
				A26LPJN5	0.7%
				A26LPJN6	1.2%
				A26LPJN7	5.7%
				A26LPJN8	18.8%
				A26LPJS1	0.8%
				A26LPJS2	2.2%
				A26LPJS3	2.2%
				A26LPJS4	1.2%
				A26LPJW2	2.2%
				A26LPJW3	4.5%
			26R	A26PJE4	0.9%
				A26RPJE1	0.2%
				A26RPJE2	0.2%
				A26RPJE3	2.8%
				A26RPJE4	0.2%
				A26RPJE5	0.2%

Table B-1 Track Use Percentage

Category	Aircraft Type	Operation Type	Runway	Track	Percent
				A26RPJE6	1.6%
				A26RPJE7	2.1%
				A26RPJE8	12.7%
				A26RPJE9	1.1%
				A26RPJN1	2.1%
				A26RPJN2	2.8%
				A26RPJN3	0.4%
				A26RPJN4	2.0%
				A26RPJN5	0.2%
				A26RPJN8	0.5%
				A26RPJN9	0.2%
				A26RPJS1	34.1%
				A26RPJW1	1.3%
				A26RPJW2	26.0%
				A26RPJW3	8.5%
		Departure	8L	D08LPJN1	0.5%
				D08LPJN2	3.0%
				D08LPJN3	5.9%
				D08LPJN4	8.2%
				D08LPJS1	3.5%
				D08LPJS2	3.7%
				D08LPJS3	35.1%
				D08LPJW1	17.3%
				D08LPJW2	19.0%
				D08LPJW4	3.7%
			8R	D08RPJE1	37.0%
				D08RPJN1	5.5%
				D08RPJN2	11.0%
				D08RPJW1	20.5%
				D08RPJW2	26.0%
			26L	D26LPJE1	42.1%
				D26LPJE2	2.3%
				D26LPJN1	4.1%
				D26LPJN2	6.4%
				D26LPJN4	2.3%
				D26LPJS2	3.4%
				D26LPJW1	16.5%
				D26LPJW2	22.9%
			26R	D26RPJE1	0.4%

Table B-1 Track Use Percentage

Category	Aircraft Type	Operation Type	Runway	Track	Percent
				D26RPJE2	0.5%
				D26RPJE3	0.6%
				D26RPJE4	15.1%
				D26RPJE5	16.9%
				D26RPJN1	1.1%
				D26RPJN2	3.4%
				D26RPJN3	4.5%
				D26RPJN4	7.4%
				D26RPJN5	0.9%
				D26RPJS2	1.5%
				D26RPJW1	25.5%
				D26RPJW2	20.6%
				D26RPJW3	1.6%
				D26RPJW4	0.0%
General Aviation	Jet	Arrival	8L	A08LGJW1	100.0%
			8R	A08RGJE2	42.9%
				A08RGJE3	28.6%
				A08RGJN1	28.6%
			26L	A26LGJE1	27.8%
				A26LGJE2	0.9%
				A26LGJN1	14.8%
				A26LGJN2	7.6%
				A26LGJN3	0.9%
				A26LGJS1	9.0%
				A26LGJS2	6.3%
				A26LGJW1	4.0%
				A26LGJW2	7.6%
				A26LGJW3	21.1%
			26R	A26RGJE1	30.0%
				A26RGJN1	26.0%
				A26RGJN2	18.0%
				A26RGJS1	16.0%
				A26RGJW3	10.0%
		Departure	8L	D08LGJ1	100.0%
			8R	D08RGJE1	38.5%
				D08RGJN1	61.5%
			26L	D26LGJN1	6.5%
				D26LGJN2	5.4%
				D26LGJN3	2.2%

Table B-1 Track Use Percentage

Category	Aircraft Type	Operation Type	Runway	Track	Percent
				D26LGJN4	3.8%
				D26LGJS1	9.7%
				D26LGJS2	4.3%
				D26LGJS3	27.4%
				D26LGJS4	9.7%
				D26LGJW1	11.3%
				D26LGJW2	19.9%
			26R	D26RGJE1	33.3%
				D26RGJE3	1.7%
				D26RGJN1	11.7%
				D26RGJN2	11.7%
				D26RGJW1	15.0%
				D26RGJW3	26.7%
	Propeller	Arrival	8L	A08LGPW1	100.0%
			8R	A08RGPN5	100.0%
			26L	A26LGPE2	8.2%
				A26LGPE3	26.2%
				A26LGPE4	18.0%
				A26LGPS2	13.1%
				A26LGPW1	27.9%
				A26LGPW2	4.9%
				A26RGPE1	1.6%
			26R	A26RGPE1	5.1%
				A26RGPE2	53.8%
				A26RGPN1	7.7%
				A26RGPS1	10.3%
				A26RGPW1	12.8%
				A26RGPW2	10.3%
		Departure	8L	D08LGP1	100.0%
			8R	D08RGPS1	100.0%
			26L	D26LGPE1	9.8%
				D26LGPN1	9.8%
				D26LGPN2	9.8%
				D26LGPS1	29.3%
				D26LGPS2	7.6%
				D26LGPW1	8.7%
				D26LGPW2	2.2%
				D26LGPW4	5.4%
				D26LGPW5	12.0%

Table B-1 Track Use Percentage

Category	Aircraft Type	Operation Type	Runway	Track	Percent
				D26LGPW6	5.4%
			26R	D26RGPE2	44.1%
				D26RGPN1	8.8%
				D26RGPN2	11.8%
				D26RGPW1	29.4%
				D26RGPW2	5.9%
	Helicopter	Arrival	H01	AHELOE1	12.5%
				AHELOE2	12.5%
				AHELOS1	12.5%
				AHELOS2	12.5%
				AHELOW1	12.5%
				AHELOW2	12.5%
				AHELOW3	12.5%
				AHELOW4	12.5%
		Departure	H01	DHELON1	14.3%
				DHELON2	14.3%
				DHELOS1	14.3%
				DHELOS2	14.3%
				DHELOW1	14.3%
				DHELOW2	14.3%
				DHELOW3	14.3%
Military	Jet	Arrival	8L	A08LGJW1	100.0%
			8R	A08RGJE2	42.9%
				A08RGJE3	28.6%
				A08RGJN1	28.6%
			26L	A26LGJE1	27.8%
				A26LGJE2	0.9%
				A26LGJN1	14.8%
				A26LGJN2	7.6%
				A26LGJN3	0.9%
				A26LGJS1	9.0%
				A26LGJS2	6.3%
				A26LGJW1	4.0%
				A26LGJW2	7.6%
				A26LGJW3	21.1%
			26R	A26RGJE1	30.0%
				A26RGJN1	26.0%

Table B-1 Track Use Percentage

Category	Aircraft Type	Operation Type	Runway	Track	Percent
				A26RGJN2	18.0%
				A26RGJS1	16.0%
				A26RGJW3	10.0%
		Departure	8L	D08LGJ1	100.0%
			8R	D08RGJE1	38.5%
				D08RGJN1	61.5%
			26L	D26LGJN1	6.5%
				D26LGJN2	5.4%
				D26LGJN3	2.2%
				D26LGJN4	3.8%
				D26LGJS1	9.7%
				D26LGJS2	4.3%
				D26LGJS3	27.4%
				D26LGJS4	9.7%
				D26LGJW1	11.3%
				D26LGJW2	19.9%
			26R	D26RGJE1	33.3%
				D26RGJE3	1.7%
				D26RGJN1	11.7%
				D26RGJN2	11.7%
				D26RGJW1	15.0%
				D26RGJW3	26.7%
	Propeller	Arrival	8L	A08LGPW1	100.0%
			8R	A08RGPN5	100.0%
			26L	A26LGPE2	8.2%
				A26LGPE3	26.2%
				A26LGPE4	18.0%
				A26LGPS2	13.1%
				A26LGPW1	27.9%
				A26LGPW2	4.9%
				A26RGPE1	1.6%
			26R	A26RGPE1	5.1%
				A26RGPE2	53.8%
				A26RGPN1	7.7%
				A26RGPS1	10.3%

Table B-1 Track Use Percentage

Category	Aircraft Type	Operation Type	Runway	Track	Percent
				A26RGPW1	12.8%
				A26RGPW2	10.3%
		Departure	8L	D08LGP1	100.0%
			8R	D08RGPS1	100.0%
			26L	D26LGPE1	9.8%
				D26LGPN1	9.8%
				D26LGPN2	9.8%
				D26LGPS1	29.3%
				D26LGPS2	7.6%
				D26LGPW1	8.7%
				D26LGPW2	2.2%
				D26LGPW4	5.4%
				D26LGPW5	12.0%
				D26LGPW6	5.4%
			26R	D26RGPE2	44.1%
				D26RGPN1	8.8%
				D26RGPN2	11.8%
				D26RGPW1	29.4%
				D26RGPW2	5.9%
	Helicopter	Arrival	H01	AHELOE1	12.5%
				AHELOE2	12.5%
				AHELOS1	12.5%
				AHELOS2	12.5%
				AHELOW1	12.5%
				AHELOW2	12.5%
				AHELOW3	12.5%
				AHELOW4	12.5%
		Departure	H01	DHELON1	14.3%
				DHELON2	14.3%
				DHELOS1	14.3%
				DHELOS2	14.3%
				DHELOW1	14.3%
				DHELOW2	14.3%
				DHELOW3	14.3%

Source: 2019 and 2020 radar data and HNTB analysis, 2022.