



April 19, 2024 (finalized September 13, 2024)

**VIA EMAIL**

Mrs. Clara Bennett, Executive Director  
Boca Raton Airport Authority  
903 NW 35<sup>th</sup> Street  
Boca Raton, FL 33431

RE: Boca Raton Airport General Consulting Services  
Task 83 – Noise Exposure Maps Update Scope of Work and Fee Proposal

Dear Mrs. Bennett:

Ricondo & Associates, Inc. (Ricondo) appreciates the opportunity to submit this proposal to prepare an update to the Noise Exposure Maps (NEM's, or NEM Update) for the Boca Raton Airport (BCT) and Boca Raton Airport Authority (BRAA, or the Airport Authority). The NEM Update will be developed in accordance with Title 14, Code of Federal Regulations (CFR) Part 150. A detailed scope of services' proposal for the preparation of the NEM's is attached to this letter.

If you have any questions on this proposal, please contact me at 305-260-2727 (extension 251). Ricondo is ready to proceed with these services, contingent upon your authorization, and appreciates the opportunity to support the Airport Authority with the NEM Update.

Sincerely,

RICONDO & ASSOCIATES, INC.

A handwritten signature in cursive script that reads "Pete Ricondo".

Pete Ricondo, P.E.  
Senior Vice President

ENCLOSURES



Mrs. Clara Bennett  
Boca Raton Airport Authority  
April 19, 2024 (finalized September 13, 2024)  
Page 2

*Pursuant to the Prime Agreement with the Boca Raton Airport Authority, authorizing Ricondo and its sub-consulting team members to serve as the General Engineer of Record and provide professional architecture, engineering, planning, surveying, and other as-needed airport management support services, along with the Airport Authority's approved Resolution 11-30-23 for the Boca Raton Airport's Noise Exposure Map Update and in adherence to the total project cost provided, please execute this letter to represent Airport Management's concurrence with this scope of work and fee proposal and authorizing Ricondo to proceed with the completion of this scope of services.*

  
\_\_\_\_\_  
Signature, Boca Raton Airport Authority

  
\_\_\_\_\_  
Print Name

  
\_\_\_\_\_  
Date

Please return via e-mail (pricondo@ricondo.com) or U.S. mail to the address provided on the footer of page 1.

cc: Scott Kohut – Deputy Director  
Dharma Thapa - Ricondo  
17-04-0988

APRIL 2024

Boca Raton Airport

# **Title 14 CFR Part 150 Noise Exposure Map Update – Scope of Work and Fee Proposal**

Prepared for:

Boca Raton Airport Authority

Prepared by:

**RICONDO**

Ricondo & Associates, Inc. (Ricondo) prepared this document for the stated purposes as expressly set forth herein and for the sole use of Boca Raton Airport Authority (Authority) and its intended recipients. The techniques and methodologies used in preparing this document are consistent with industry practices at the time of preparation and this Document should be read in its entirety for an understanding of the analysis, assumptions, and opinions presented. Ricondo & Associates, Inc. is not registered as a municipal advisor under Section 15B of the Securities Exchange Act of 1934 and does not provide financial advisory services within the meaning of such act.

## TABLE OF CONTENTS

- 1. Introduction ..... 1**
- 2. Scope of Work Tasks ..... 1**
  - 2.1 Project Management and Administration.....1
    - 2.1.1 Monthly Status Reports.....1
    - 2.1.2 Project Review and Coordination Meetings.....2
  - 2.2 Review of Previous Planning, Environmental and Title 14 CFR Part 150 Documentation .....2
  - 2.3 Existing Conditions Noise Exposure Contour .....2
    - 2.3.1 Study Area Determination and Land Use and Zoning Base Maps.....2
    - 2.3.2 Airfield, Aircraft Operations, Flight Track Data and Weather Data Collection .....3
    - 2.3.3 Existing Conditions AEDT Operations Input Analysis.....4
    - 2.3.4 Existing Conditions AEDT Flight Track Input Analysis.....4
    - 2.3.5 Existing Conditions AEDT Flight Profile Input Analysis .....5
    - 2.3.6 Existing Conditions AEDT Noise Contour Calculation .....5
  - 2.4 noise measurements .....6
  - 2.5 Future Conditions Noise Exposure Contour .....6
    - 2.5.1 Forecast Operations.....6
    - 2.5.2 Future Air Traffic Procedure Assessment.....7
    - 2.5.3 Future Conditions AEDT Operations Input Analysis.....7
    - 2.5.4 Future Conditions AEDT Flight Track Input Analysis.....7
    - 2.5.5 Future Conditions AEDT Noise Contour Calculation.....7
  - 2.6 Forecast Operations Effect on Land Use Compatibility .....8
  - 2.7 Baseline Land Use Map Development.....8
    - 2.7.1 Estimated Population and Dwelling Unit DATA.....8
    - 2.7.2 Existing Land Use Data and Plans Inventory .....8
    - 2.7.3 Existing Non-Residential Noise-Sensitive Resources Database.....9
    - 2.7.4 Existing Land Use Map..... 10
  - 2.8 Consultation and Public Comment Process ..... 10
    - 2.8.1 Stakeholder Consultation and Coordination Plan..... 11
    - 2.8.2 Noise Technical Advisory Committee..... 11
    - 2.8.3 Public Review and Comment ..... 13

2.8.4 Website Support ..... 14

2.9 Noise Exposure Map Update Documentation ..... 14

2.9.1 Preliminary Draft Noise Exposure Map Update Report ..... 14

2.9.2 Draft Noise Exposure Map Update Report ..... 15

2.9.3 FAA-Submittal Noise Exposure Map Update Report and Checklist ..... 15

2.9.4 Final NEM Update Report and Maps ..... 15

**3. Fee Proposal ..... 16**

**4. Forecast Attachment ..... 18**

**LIST OF TABLES**

Table 1 Fee Proposal ..... 17

# 1. INTRODUCTION

The Boca Raton Airport Authority (Authority) seeks to update the existing Noise Exposure Map (NEM) that was prepared under Title 14, Code of Federal Regulations (CFR) Part 150 – Airport Noise Compatibility Planning (referred to as “Part 150 NEM Update”) for Boca Raton Airport (Airport) and accepted by the Federal Aviation Administration (FAA) in December 2001. Since the last NEM update accepted by the FAA, the Airport has experienced changes in aircraft fleet mix and traffic levels. The Authority decided to conduct an update to the NEM to support accurate and effective responses to noise concerns from the surrounding community, particularly with the implementation of the South-central Florida Metroplex initiatives by the FAA on August 12, 2021. This NEM update will include updating Airport noise contours, noise exposure maps consistent with 14 CFR Part 150 (Part 150) requirements, and submission to the FAA for review and determination of compliance. The NEM Update would include new existing and five-year (from year when the NEM report is transmitted to FAA for review) forecast NEMs in accordance with CFR Part 150. The following sections describe the scope of work that Ricondo & Associates, Inc. (Ricondo) would follow to complete the Part 150 NEM Update. Section 3 includes a fee estimate to perform the efforts outlined in the tasks.

## 2. SCOPE OF WORK TASKS

The following sections describe the primary tasks necessary to complete the Part 150 NEM Update. The Part 150 NEM Update does not require temporary portable noise measurements, long-range (more than 5 years) forecasts, or an update to the Airport Noise Compatibility Plan (NCP). Therefore, this Scope of Work (SOW) does not include effort related to those tasks.

### 2.1 PROJECT MANAGEMENT AND ADMINISTRATION

The subsections below outline general project management and administrative subtasks. These subtasks include efforts to address the administrative functions for the project such as monthly reporting, schedule development and updates, and budget evaluation. Monthly consultation with the designated Authority project manager and key staff would be consulted to ensure a coordinated, integrated deliverable. For budgetary purposes, Ricondo assumes the total project duration would be twelve (12) months based on the assumption that the NEM report would be submitted to FAA prior to the end of calendar year 2024.

#### 2.1.1 MONTHLY STATUS REPORTS

Ricondo would provide a brief progress report to be issued with the monthly invoices covering coincidental periods of performance. The progress reports would be submitted via email and reference the work plan schedule, indicating:

- Work completed
- Work remaining
- Meetings to schedule
- Other pertinent information for Authority staff consideration

## 2.1.2 PROJECT REVIEW AND COORDINATION MEETINGS

Ricondo would attend scheduled bimonthly review meetings (total of up to six meetings via web conference or telephone) established by the Authority to review work progress and address any potential project risks throughout the duration of this project. Over the course of the project, progress updates and milestones would be discussed with the Authority and key staff via telephone or email.

## 2.2 REVIEW OF PREVIOUS PLANNING, ENVIRONMENTAL AND TITLE 14 CFR PART 150 DOCUMENTATION

This task involves the review of previous planning and environmental documentation, including Part 150 documents and noise files. The documents would be reviewed to gain a historical background on activity conducted at the Airport and plans that may influence noise exposure and would assist in determining the study area. Ricondo would also identify previous NCP measures approved by FAA and their implementation status. The status of previous NCP measures would be considered while developing the updated NEMs. The information would be referenced by modelers to account for existing noise abatement procedures in the model, and by planners to account for mitigated residential properties while assessing incompatible land use. The information will also be entered in the NEM document to reference existing noise abatement and mitigation efforts at the Airport. Prior studies<sup>1</sup>, including documentation and noise study files would be made available to Ricondo by the Authority in electronic format. Printed hard copies of the documents should be available if the electronic format is not available. This task does not include review of existing land use plans for surrounding local jurisdictions (refer to Task 2.7.1).

## 2.3 EXISTING CONDITIONS NOISE EXPOSURE CONTOUR

Efforts conducted in this task would result in the existing conditions noise exposure contour calculated using FAA Aviation Environmental Design Tool (AEDT). The most recent version of AEDT available at the time NTP is received would be used.

### 2.3.1 STUDY AREA DETERMINATION AND LAND USE AND ZONING BASE MAPS

A study area identifies the area where noise exposure will be calculated and where land use and zoning data are needed. Part 150 requires the Day/Night Average Noise Level<sup>2</sup> (DNL) 65 decibel A-weighted<sup>3</sup> (dBA), 70, and 75 with land use indicated on the map. However, the study area would include the expected DNL 60 and higher areas. Ricondo would rely on previous Part 150 studies conducted for the Airport to define the study area and ensure consistency, and would coordinate with the Authority to determine the appropriate compatibility guidelines.

Digital maps would be developed based on readily available and most recent georeferenced data provided by the local jurisdiction(s). The base map would show primary roadways, existing political jurisdictions, land uses, and zoning. Section 2.7.4 explains the land use in detail. Ricondo would utilize a Geographic Information System (GIS)

---

<sup>1</sup> Prior noise studies including, Noise Exposure Maps (NEM) submitted to the FAA in December 2009, in accordance with Section 103(a)(1) of the Aviation Safety and Noise Abatement Act of 1979 (ASNA), was not accepted by the FAA.

<sup>2</sup> Day/Night Noise Level (DNL): describes the average noise exposure during for a 24-hour period. In computing DNL, an extra weighting of 10 decibels (dB) is assigned to any sound levels occurring between the hours of 10:00 p.m. and 6:59 a.m. This penalty is intended to account for the greater annoyance that nighttime noise is presumed to cause for most people.

<sup>3</sup> A-weighted decibels (dBA): the human ear has the ability to handle a large range of sound levels. In order to express levels of sound meaningfully in numbers that are more manageable, a logarithmic scale is used, rather than a linear one. This scale is the decibel scale. An A-weighted decibel is a range that has been adjusted to attempt to take into account the varying sensitivity of the human ear to different frequencies of sound. The main effect of the adjustment is that low and very high frequencies are given less weight than on the standard decibel scale that are detectible by people.

mapping system to generate all base maps.

### 2.3.2 AIRFIELD, AIRCRAFT OPERATIONS, FLIGHT TRACK DATA AND WEATHER DATA COLLECTION

Ricondo would require information related to airfield layout, runway use, arrival, and departure flight patterns to and from the Airport, weather, and current land use and zoning. This SOW assumes the Authority designated staff would coordinate and collect the information listed below. Ricondo would provide a memorandum to the Authority documenting the specific information and formats needed. If expected sources are not available or do not meet quality standards, Ricondo will coordinate with the Authority on alternative approaches and related change scope, level of effort and/or schedule.

- Airfield definition: expected source would be the current FAA-approved Airport Layout Plan (ALP) in AutoCAD or GIS format and ALP Datasheet in Acrobat PDF (PDF) format. Ricondo assumes the approved ALP will include the plans related to airfield changes.
- FAA BCT Airport Traffic Control Tower (ATCT) Standard Operating Procedures
- FAA Terminal Radar Approach Control (TRACON) Standard Operating Procedures
- FAA ATCT and TRACON Letter of Agreement
- Twelve consecutive months of DNL values measured by permanent noise monitors by quarter
- Detailed Airport activity reports
- The GIS land use, geographic data, and noise-sensitive facility data

The information would be used to document existing airfield and Airport facilities and serve as a resource to confirm airfield definitions in AEDT. The Standard Operating Procedure (SOP) and Letter of Agreement (LOA) documentation would aid Ricondo in identifying the appropriate initial departure headings and general traffic flows to/from the Airport. The measurement data cannot be used to calibrate and validate AEDT results but may be used for informational purposes. The GIS land use, geographic data and noise-sensitive facility data will be required to develop the NEM.

Ricondo would acquire sample radar data, a minimum of four weeks covering all seasons, from the Airport's Noise Monitoring and Flight Tracking System (NMFTS) and use the data as a primary source to develop generalized aircraft noise model tracks that represent the primary traffic flows to/from the Airport. Ricondo assumes the radar track data would not require post-processing to address processing errors such as missed runway-to-track assignments, operation mode assignments and missing flight information. Ricondo would collect published flight procedures and assess FAA planned instrument flight procedure amendments for the Airport, if any, listed on FAA's Instrument Flight Procedure Gateway site and associate the procedures to the primary traffic noise model tracks and modify the tracks if necessary. Ricondo would coordinate with the FAA-contracted ATCT and the Airport personnel to verify generalized flight tracks for modeling.

Ricondo would collect historical (at least 10 years) hourly wind, temperature, air pressure, humidity, visibility, cloud ceiling height measured on airfield. Ricondo expects to be able to download airfield weather data from the National Oceanic and Atmospheric Administration (NOAA) website if not available in AEDT.

Ricondo would use the United States Geographic Survey (USGS) terrain data available online. Ricondo would review the data to ensure completeness, and coordinate with designated Authority staff as needed to confirm specific requests.

### 2.3.3 EXISTING CONDITIONS AEDT OPERATIONS INPUT ANALYSIS

Ricondo would develop input data required for modeling noise for the “existing conditions year,” in compliance with Part 150 requirements<sup>4</sup>. This would involve the analysis of based aircraft, radar data, BCT ATCT tower counts, and runway operating configuration data to develop the existing conditions year average annual day operations file. The operations file would include:

- Aircraft type
- Time-of-day (day: 7:00 a.m. to 9:59 p.m.; night: 10:00 p.m. to 6:59 a.m.)
- Operation type (arrival, departures and touch-and-go)
- Runway and primary helicopter takeoff/landing areas (note: no designated helipads at the Airport)
- Departure stage length (based on great circle trip length from the Airport to destination)
- Aircraft maintenance run-up information including location, aircraft type and duration

Ricondo would rely on the 12 consecutive months of flight information data from the NMFTS to develop the average annual day aircraft type activity by runway and time of day. Ricondo would compare FAA ATCT tower counts and normalize average annual day operations to equal BCT ATCT counts. Ricondo would distribute the activity on each runway end according to the 12 consecutive months of NMFTS data.

Summary of the existing year operations, inputs, and assumptions will be coordinated with the FAA’s Orlando Airports District Office (ADO) prior to developing this NEM.

Aircraft types not available in AEDT would be substituted with a like aircraft using FAA-approved substitutions provided in AEDT. If AEDT does not include an FAA-approved substitution, Ricondo would draft a memorandum to FAA ADO representative requesting approval of proposed substitution. Ricondo understands the Orlando ADO would forward the request to FAA Office of Environment and Energy (AEE) for review. If requested, Ricondo would coordinate directly with FAA AEE. Ricondo expects FAA to approve the requested substitution or provide a recommended substitution.

### 2.3.4 EXISTING CONDITIONS AEDT FLIGHT TRACK INPUT ANALYSIS

Ricondo would develop flight track input data required for modeling noise for existing conditions in compliance with Part 150 requirements. This would involve the analysis of the sample set of radar data to develop generalized aircraft flight track location and use. The radar data would be separated first by operation type (i.e., arrival, departure) and then by aircraft category, runway, and directionality. Primary flight corridors would be identified then used to develop bundles of radar tracks based on runway, aircraft category (i.e., jet, prop), and route similarity. Once the radar track bundles are completed, the development of noise modeling input tracks in the AEDT would be conducted.

The generalized flight tracks would represent statistically significant traffic patterns and would extend out to the study area boundary to at least 30,000 feet from the end of each runway. Dispersion along the base flight tracks would be modeled based on generalized sub-tracks following along the primary track (backbone track), and distribution among backbone and sub-tracks would be based on a standard normal bell-curve distribution.

---

<sup>4</sup> “Existing conditions year” represents the year of submission to FAA for compliance review. Data for the year prior to submission may be applicable as long as conditions described in 14 CFR Section 150.21, Noise Exposure Maps and Related Descriptions are met. Typically, data for the most recent full calendar year for which data are available at the time the maps are prepared are used to represent existing conditions with a modification to forecast operation levels representing the year of submission.

Ricondo would select the sample radar data that includes the time period after new Performance Based Navigation (PBN) procedures were implemented as a result of the FAA's South-Central Florida Metroplex Redesign (Metroplex). The focus of this assessment would be to model aircraft noise exposure after the Metroplex procedures are implemented and is not expected to assess changes compared to conditions prior to implementation. This assessment is also limited to developing input required to calculate DNL exposure levels as low as DNL 60 dBA and not expected to be used to assess DNL levels below DNL 60 dBA.

### 2.3.5 EXISTING CONDITIONS AEDT FLIGHT PROFILE INPUT ANALYSIS

AEDT includes standard arrival and departure performance (altitude, speed and thrust) profiles for each aircraft type. Ricondo expects to use standard arrival and departure performance profiles (altitude, speed and thrust) available in AEDT. It is anticipated that no aircraft performance profiles would need to be customized. If customization is required to model level segments based on radar data analysis, Ricondo would coordinate with the Authority to determine potential impact to schedule and cost if customization and FAA-approval is required.

Current noise abatement programs would be reviewed. Noise-sensitive land uses are near BCT and noise abatement measures, including a voluntary curfew effective during the night hours. Other implemented voluntary noise abatement procedures include, but not limited to, specific departure turns off each runway ends, limitations of maintenance runups, and touch-and-go operations. All the implemented noise abatement measures would be considered, where applicable, for generating the aircraft noise contours.

### 2.3.6 EXISTING CONDITIONS AEDT NOISE CONTOUR CALCULATION

Ricondo would use the AEDT to calculate the existing conditions noise exposure contours. Noise modeling output would include noise contour maps depicting DNL 60, 65, 70, and 75 dBA levels. The NEM contours would be displayed over base maps developed in Task 2.7.4. The NEM would include:

- Runway and helicopter parking locations
- Noise exposure contours of DNL 60, 65, 70, and 75 dBA
- Outline of the Airport, along with other jurisdictional boundaries
- Incompatible land uses within the noise exposure contours
- Location of noise-sensitive public buildings (e.g., schools, hospitals, and health care facilities), and properties on or eligible for inclusion in the National Register of Historic Places located within DNL 60 or higher exposure area
- Streets and major geographic features

Ricondo would calculate DNL values for noise-sensitive facilities from the Airport GIS data files developed under Task 7.1. The population factor would be calculated for each DNL interval (60-65, 65-70, 70-75, >75) by averaging the population factors for all census blocks intersecting the DNL contour intervals, either wholly or partially.<sup>5</sup>

---

<sup>5</sup> U.S. Census Blocks are the smallest geographic areas defined by the US Census Bureau (Geography Division) that collects and attributes decennial census data, including population and dwelling units. U.S. Census Blocks are available annually from the US Census Bureau data site, <https://www.census.gov/cgi-bin/geo/shapefiles/index.php>. Using the resulting population factors and readily available GIS parcel data made available by the Authority, Ricondo would estimate population and residential units within each DNL contour interval. Multiplying each dwelling unit represented in the parcel data by its respective DNL contour interval population factor described in previous paragraph, Ricondo would calculate an estimated population and residential unit count within each DNL contour interval to determine the total population impacted.

Ricondo would develop a PowerPoint presentation (PPT) summarizing the input and results for the existing conditions draft NEM. The PPT would include the following information:

- Average annual operations by operation mode and time of day,
- fleet mix by operation mode and time of day,
- runway use by operation mode and time of day,
- aircraft high power maintenance run-ups,
- noise model flight tracks and use by operation type,
- residential population and dwelling units by DNL noise exposure contour, and
- non-residential noise-sensitive facilities by DNL noise exposure contour, and,
- the draft NEM map and maps depicting the noise model flight tracks over the NEM base map.

The PPT is expected to be presented to the advisory committee (discussed in section 2.8, Consultation and Public Comment Process) for the purpose of informing members and seeking feedback. Prior to finalizing the PPT, Ricondo will coordinate with the Airport staff for the review of the draft document (up to two iterations if necessary).

## 2.4 NOISE MEASUREMENTS

The Airport operates a NMFTS comprising of seven permanent community noise monitors and a flight tracker that monitors local radar. Ricondo would obtain the noise level summary data from the noise monitors from the ANOMS system from the Authority staff to include in the document for information purposes only. The measurement data cannot be used to calibrate and validate AEDT results but can be used for informational purposes.

## 2.5 FUTURE CONDITIONS NOISE EXPOSURE CONTOUR

Part 150 requires a future conditions contour representing at least five years from the year the NEM is submitted to FAA for compliance review.<sup>6</sup> The following tasks summarize the planned efforts to develop the future condition.

### 2.5.1 FORECAST OPERATIONS

Ricondo would rely on the latest updated operations forecast provided by the Authority to use for the fifth-year forecast level of operations. Assuming the NEM Report is submitted to FAA in 2024, the fifth-year would be 2029. The annual forecast operations numbers that would be used in the NEM update would have to be approved by the FAA for purposes of conducting the Part 150 NEM update (note: a notice of approval by FAA must specifically indicate the forecast is approved for purposes of conducting a Part 150 NEM update). Ricondo would draft a memorandum addressed to the assigned environmental specialist with the FAA ADO requesting approval to use the current forecast fifth-year operations. If the FAA does not approve the use of the forecast provided by the Authority, Ricondo will coordinate with the Authority regarding development of an updated forecast.

Ricondo would develop a derivative operations schedule equivalent to the average annual day operations for the forecast fifth year from the FAA-approved forecast. The FAA approved the Master Plan Forecast May 2021 will be used for the NEM update and the forecast summary showing the comparison with the most recent 2023 Terminal Area Forecast (TAF) is presented in Attachment A. The operations schedule would include aircraft type, time of day (day or night), operation mode (arrival and departures), and departure stage length. Ricondo would assume the

---

<sup>6</sup> 14 CFR §150.21(a)(1)

distribution of operations for time of day, origin/destination and general aviation fleet mix ratio will remain the same as existing conditions.

Ricondo would develop a PowerPoint presentation (PPT) designed to summarize the forecast assumptions and results for the purpose of presenting to the advisory committee.

### **2.5.2 FUTURE AIR TRAFFIC PROCEDURE ASSESSMENT**

The FAA's Instrument Flight Procedure (IFP) gateway website would be consulted to identify proposed amendments to the existing approach procedures for the Airport. There was only one flight procedure listed for amendment at the time this scope was drafted: the MYZNR Area Navigation (RNAV) Standard Instrument Departure (SID). Ricondo would rely on the Authority for assistance to gather as much information as possible from FAA Air Traffic Organization and Airports to determine what proposed amendments would be made and planned within the planning horizon and gather general definition of the proposed instrument flight procedure changes including. Ricondo would use the information to determine if existing condition noise model tracks should be adjusted for the future condition. If so, Ricondo would manually adjust noise model tracks to reflect anticipated route changes.

### **2.5.3 FUTURE CONDITIONS AEDT OPERATIONS INPUT ANALYSIS**

Ricondo would develop input data required for modeling noise for the future conditions in compliance with Part 150 requirements. The operations input would be based on the derivative forecast operations schedule described in Task 2.5.1. The operations file must include:

- Aircraft type
- Time-of-day (day: 7:00 a.m. to 9:59 p.m.; night: 10:00 p.m. to 6:59 a.m.)
- Operation model (arrival, departure or touch-and-go)
- Runway
- Departure stage length (based on great circle trip length from the Airport to destination)

Runway use and time of day distribution for the forecast condition year are expected to remain the same as the current year.

### **2.5.4 FUTURE CONDITIONS AEDT FLIGHT TRACK INPUT ANALYSIS**

Ricondo would adjust the current year noise model tracks as needed to reflect any changes identified in Task 2.5.2. Note: adjustments would be made to the extent they would potentially influence the area exposed to DNL 60 dBA and higher.

### **2.5.5 FUTURE CONDITIONS AEDT NOISE CONTOUR CALCULATION**

Ricondo would use AEDT to calculate the future conditions noise exposure contours. Noise modeling output would include noise contour maps depicting DNL 60, 65, 70, and 75 dBA levels. The NEM contours would be displayed over base maps developed in Task 2.7.4.

Ricondo would calculate DNL levels for noise-sensitive facilities, and school and housing data points from the Airport land use GIS datasets developed in Task 7.1.

Ricondo would provide the same information and exhibits for the future conditions as for existing conditions, as described in Task 2.3.6 in the PPT for the future contours.

## 2.6 FORECAST OPERATIONS EFFECT ON LAND USE COMPATIBILITY

Ricondo would compare the noise exposure contours between the existing and future conditions to determine the potential effect forecast operations may have on land use compatibility. The information would be used to identify potential reasons for an increase or decrease in land use areas considered to be incompatible. Comparisons of population, incompatible noise-sensitive resources and incompatible land use category area exposed to aircraft noise of DNL 60 dBA and above would be conducted. Ricondo would create draft maps and tables summarizing the comparison results and the potential effects forecast operations can have on land use compatibility.

## 2.7 BASELINE LAND USE MAP DEVELOPMENT

Part 150 requires that an NEM identifies each incompatible land use in each contour area depicted on the map, as of the date of submission. For budgetary purposes, Ricondo expects the land uses within the DNL 60 dBA will not change within the projected 5-year forecast; therefore, there is no task to develop a future land use map. If, after consultation with local planning agencies, the Authority identifies that any land use changes are anticipated over the 5 years, Ricondo would coordinate with Authority staff on additional level of effort necessary to incorporate changes into the land use database.

### 2.7.1 ESTIMATED POPULATION AND DWELLING UNIT DATA

Ricondo would use the U.S. Census Bureau 2020 block data, population, and housing datasets.<sup>7</sup> These datasets would then be used to calculate a population factor for each census block by dividing the population of each census block by the area within that census block. The intent of this task is to collect and build up the datasets that would be used to estimate population and residential units within each DNL contour interval in Tasks 2.3.6, existing conditions and 2.5.5, future conditions for each DNL interval (60-65, 65-70, 70-75, >75). The Authority may have a more detailed residential unit count by parcel. If so, Ricondo may use the GIS database provided by the Authority in lieu of the proposed approach.

### 2.7.2 EXISTING LAND USE DATA AND PLANS INVENTORY

In addition to the airfield and aviation data collected in Task 2.3.2, land use planning and regulatory documents must be secured from the local governments with land use regulatory authority in the Airport environs to ensure compliance with Part 150 requirements. A key part of this effort includes consultation with local land use planning officials to gather information about local development trends and to ensure that all relevant land use planning documents are secured. Ricondo would coordinate with Authority staff to schedule meetings with appropriate local agencies responsible for land use regulations.

---

<sup>7</sup> U.S. Census block data: U.S. Census Bureau, Geography Division: US Census Bureau, 2020, <https://www.census.gov/cgi-bin/geo/shapefiles/index.php>

Ricondo assumes that GIS mapping files would be secured by the Authority and provided to Ricondo.

A list of key information to be secured through this task follows:

- Government agency sponsored GIS parcel and land use databases
- Comprehensive land use, zoning, and other pertinent geographic data (e.g., governmental boundaries; political boundaries in GIS format)
- Noise-sensitive facilities evaluated in previous Part 150 Study in GIS format
- Comprehensive land use plans and zoning ordinances
- Gather information on planned development, zoning changes
- List of resources on the National Register of Historic places within the study area
- Lists of state-designated and locally designated historic resources

The GIS mapping data and supporting documentation would serve as the primary source for the NEM base map. If data are not readily available, Ricondo would coordinate with Authority staff to determine another approach and adjust scope, budget and/or schedule as needed.

It is anticipated that the FAA's land use compatibility guidelines, presented in Table 1 in Appendix A of Part 150, would be the basis for noise impact analyses to be conducted later in the study process. Based on the current land use measures approved by FAA in June 2022, the land use compatibility analysis will include assessing number of residential and public noise-sensitive facilities exposed to DNL 60 or higher levels to assess the effect the updated noise contours will have in implementing Measure #6 associated with acquiring aviation easements. It is not anticipated that additional local compatibility guidelines will be considered. Any additional recommended modifications to FAA guidelines would require FAA official acceptance. Ricondo will coordinate with the Authority on scope, schedule, and budget if a local guideline is preferred but not previously accepted by the FAA in the previous Part 150 update.

### **2.7.3 EXISTING NON-RESIDENTIAL NOISE-SENSITIVE RESOURCES DATABASE**

Based on the data collected in Task 2.7.2, Ricondo would develop a GIS database that includes non-residential noise-sensitive resources. including:

- Schools
- Hospitals
- Health Care facilities
- Places of Worship
- Properties listed on the National Register of Historic Places (<https://www.nps.gov/subjects/nationalregister/index.htm>)

Ricondo would rely primarily on GIS parcel data records to identify resources. If necessary, Ricondo would perform an aerial photograph survey using Google Earth Pro to confirm non-residential noise-sensitive resources. The extent of data collection would be limited to the study area.

## 2.7.4 EXISTING LAND USE MAP

Using the GIS data collected in Task 2.7.2, Ricondo would develop an existing land use map based on generalized land use categories consistent with those listed Table 1 in Appendix A of Part 150 and the previous Part 150 Study conducted in 2001. Ricondo expects to generalize land use based on the following categories<sup>8</sup> and compatibility categories:

- Single-family residential - Residential
- Multi-family residential - Residential
- Institutional, Medical, Education, Religious
- Commercial - Compatible
- Industrial/Manufacturing - Compatible
- Transportation/Utilities - Compatible
- Opens Space/Vacant - Compatible

The land use map would show land use only within the extents of the study area. The land use map would include location points for the incompatible noise-sensitive resources that would serve as the base map for the NEM maps. Ricondo will coordinate with FAA to determine if the changes mentioned in the Land Use Combability Advisory Circular from 2022 needs to be referenced when reporting land use categories<sup>9</sup>.

## 2.8 CONSULTATION AND PUBLIC COMMENT PROCESS

Part 150 requires that each map, and related documentation submitted be developed in

“...consultation with states, and public agencies and planning agencies whose area, or any portion of whose area, of jurisdiction is within the Ldn<sup>10</sup> 65 dB contour depicted on the map, FAA regional officials, and other Federal officials having local responsibility for land uses depicted on the map. This consultation must include regular aeronautical users of the airport. The airport operator shall certify that it has afforded interested persons adequate opportunity to submit their views, data, and comments concerning the correctness and adequacy of the draft noise exposure map and descriptions of forecast aircraft operations.”<sup>11</sup>

The NEMs submitted to FAA must also include documentation describing the consultation and the opportunities provided to the public to review and comment during the development of the map<sup>12</sup> This includes a copy of all written comments received during consultation. Refer to Tasks 2.8.2 and 2.8.3 for a description of Ricondo’s proposed approach to meet this requirement.

<sup>8</sup> FAA is in the process of updating the 14 CFR Part 150 Advisory Circular and issue a draft for public review. The draft AC may include modifications to land use categories to agree with categories identified in AC 150/5190B, *Airport Land Use Compatibility Planning*. For budgetary purposes, Ricondo does not assume it will be finalized during the duration of this project.

<sup>9</sup> AC 150/5190-4B

<sup>10</sup> Formerly referred to as Ldn is the same as Day-Night Average Sound Level (DNL).

<sup>11</sup> 14 C.F.R. §150.21(b)

<sup>12</sup> 14 C.F.R. §150.21(b)

## 2.8.1 STAKEHOLDER CONSULTATION AND COORDINATION PLAN

Ricondo would develop a stakeholder consultation and coordination plan for the Authority staff approval. In keeping with the scale of the Part 150 NEM Update project, Ricondo expects this to be a simple plan. Any noise project, however, is potentially controversial, and Ricondo and the Authority staff must establish clear lines of communication, clear messages to stakeholders and the public, and clear procedures for stakeholder outreach. Ricondo expects the stakeholder consultation and coordination plan to include a few key elements:

- **FAA ADO Coordination:** Procedures for ongoing coordination with the FAA environmental protection specialist (EPS) assigned to the NEM Update. Continuing coordination through the project would help ensure that the NEM update is being prepared in accordance with 14 CFR Part 150 and FAA policies and procedures. The objective is to help expedite the FAA's review of the official NEM submission. As described in earlier tasks, Ricondo expects, at a minimum, coordination with FAA ADO on the proposed scope of work, forecast review and approval and AEDT aircraft substitution approval.
- **FAA Air Traffic Control Coordination:** The local air traffic facility manager is a source of essential information about airport use and operating constraints. The air traffic manager has the background and expertise to offer valuable insights as the analysis develops and interim reports and memoranda are produced. Ricondo intends to assist the Authority staff to consult with the air traffic manager and their staff at least three times during the study: (1) at the beginning during the data collection phase; (2) upon developing a preliminary analysis of noise modeling input data; (3) after producing the noise exposure maps and comparative analyses. This may be conducted via web conference.
- **Local Government Coordination:** Local government has the responsibility for land use regulation and the promotion of economic development. Ricondo would assist Authority staff with local planner and government official interviews, including representatives from the City of Boca Raton and Palm Beach County, during the initial data collection phase. Ricondo also anticipates reporting the results of noise modeling to them as a group. (Refer to Task 2.8.2 related to NTAC efforts)
- **Industry Group:** Representatives of the industry groups from, corporate and general aviation FBO community will be invited to join an advisory committee.
- **Media Relations and Messaging:** Ricondo would confer with Authority staff to determine procedures for communicating with the media. Ricondo anticipates that the Authority staff will reserve this responsibility for itself, but Ricondo must clearly understand the Authority's policies and preferred procedures. Ricondo would be prepared to advise the Authority staff on any messaging needs related to the NEM Update.

## 2.8.2 NOISE TECHNICAL ADVISORY COMMITTEE

Although formation of advisory groups or task forces is common in Part 150 studies, it is not required by the regulations. Airport operators are given the flexibility to determine how to meet the consultation and participation requirements. However, it is highly advisable that the formation of a Noise Technical Advisory Committee (NTAC) coordinate with all the stakeholders during the Part 150 NEM update process and meet Part 150 consultation requirements. The advisory committee would ensure that the project team has access to the information necessary to conduct the study, and to ensure that all interested parties have an opportunity to provide input. A NTAC would comprise Airport staff, representatives of communities within the Airport environs interested in aircraft noise. Also, a NTAC would include FAA representatives; ATCT personnel; state, county, and local government agencies; airport users; and industry groups. All meetings would be open to the public and likely attended by interested citizens, elected officials or their representatives, and local media representatives.

The intent of coordination with NTAC during the process would be to share information on the Part 150 process, describe the NEM contour development methodology, and gather comments from the members on the draft NEM Report. Ricondo believes an effective use of a NTAC requires at least three meetings. Ricondo assumes the Authority would conduct efforts to coordinate with NTAC, and presentation materials would be distributed electronically. Ricondo anticipates efforts for each meeting to include the following:

- Meeting #1: NEM kick off meeting to educate members on process, operations forecast methodology, and noise model methodology.
  - Ricondo would prepare a PPT presentation describing Noise 101, purpose and reason to update Part 150 NEM, Part 150 NEM update process, current year operation levels and traffic patterns, operations forecast methodology, and NEM development methodology. Ricondo assumes presentation materials of no more than 20 slides.
  - Ricondo would provide 2 staff members to attend and present at the meeting.
  - Ricondo would prepare a draft agenda for Authority review.
  - Ricondo would provide sign-in sheets and meeting summary notes.
  - Summarize input provided by NTAC members
- Meeting #2: Meeting to present the data sources and input assumptions for the noise analysis.
  - Ricondo would prepare a PPT presentation focusing on the major model input parameters such as average daily fleet mix, flight tracks depicting annual average traffic patterns and usage representing existing and future year conditions. Ricondo assumes presentation materials of no more than 20 slides.
  - Ricondo would provide 2 staff members to attend and present at the meeting.
  - Ricondo would prepare a draft agenda for Authority review.
  - Ricondo would provide sign-in sheets and meeting minutes.
  - Summarize input provided by NTAC members
- Meeting #3: Meeting to present draft results of the existing and the 5-year NEMs, comparison to current year. Also present the proposed public workshop plan to the committee.
  - Ricondo would prepare PPT presentation depicting existing generalized land use and noise-sensitive facilities, draft current year NEM and summary exposure statistics. Ricondo assumes presentation materials of no more than 10 slides.
  - Ricondo would prepare PPT presentation depicting draft existing and 5-year NEM, comparison between 5-year and current year NEM and summary noise exposure statistics Ricondo assumes presentation materials of no more than 10 slides
  - Ricondo would prepare PPT presentation documenting proposed public workshop plan, announcement, and boards.
  - Ricondo would provide 2 staff members to attend and present at the meeting.
  - Ricondo would prepare a draft agenda for Authority review.

- Ricondo would provide sign-in sheets and meeting minutes.
- Summarize input provided by NTAC members

Ricondo would include the PPT slides and NTAC meeting agendas in the Public Consultation Appendix. Ricondo would also summarize NTAC efforts in the Public Consultation section of the NEM report. Any comments in the form of emails from the NTAC members to the designated point of contact would be included in the Public Comments Appendix.

### 2.8.3 PUBLIC REVIEW AND COMMENT

Ricondo assumes Authority staff would request two public workshops relying on the Board Workshop format. Authority staff will advertise and provide notice of the Board Workshop public meeting, at least two weeks in advance of each workshop, on their website and social media platforms, the City of Boca Raton's and Palm Beach County's respective public notice websites (calendars), and through direct correspondence with local homeowners' associations (HOAs). The Board Workshops will be facilitated by the Authority Chair, key information will be presented to the Board and public attendees by subject matter experts using a PowerPoint presentation, and an opportunity will be given for the public to provide verbal and written comments. The Board Workshops are recorded and made available on the Airport's website, along with the meeting agenda and meeting minutes. For budgeting purposes, it is assumed the Authority will provide meeting minutes as part of the typical Workshop format.

The first public workshop will be conducted after the first NTAC meeting is conducted. Ricondo assumes that the first public workshop will be accomplished through an Authority Board Workshop. The agenda is expected to describe the overall scope, the difference between Part 150 NEM and Noise Compatibility Plans (NCP), an overview of the methodology and an overview of the forecast. Ricondo will provide the following support:

- Prepare presentation materials in PPT format.
- Provide up to two expert staff members to attend and present the PPT materials at the Board Workshop.
- Review written comments and provide a summary of comments by topic.
- Coordinate with the Authority staff on comments to determine the need for adjustments in the NEM development process. (note: Title 14 CFR Part 150 does not require responses to comments in NEM document – only requires submitting all comments received to FAA for their records; if responses to comments are preferred, Ricondo will coordinate with the Authority to determine appropriate scope and fee.)

Ricondo expects the second workshop to be conducted 30 days after the Draft NEM report is completed (note: the 30 days provides public time to review the report prior to the workshop). Ricondo assumes that the second public workshop be accomplished through an Authority Board Workshop and that Authority staff will facilitate public meeting announcements, workshop recording, and the collection of comments from the public. The agenda for this workshop will include an overview of the process and an overview of the input and results Ricondo will provide the following support:

- Prepare presentation materials in PPT format.
- Provide up to two expert staff members to attend and present the PPT materials at the Board Workshop.
- Review written comments and provide a summary of comments by topic.

- Coordinate with the Authority staff on comments to determine the need for adjustments in NEM report (note: Title 14 CFR Part 150 does not require responses to comments in NEM document – only requires submitting all comments received to FAA for their records; if responses to comments are preferred, Ricondo will coordinate with the Authority to determine appropriate scope and fee.)

## 2.8.4 WEBSITE SUPPORT

An effective tool to inform the public on the NEM Update project is through a website. Ricondo expects the Authority's IT or contracted third party who is responsible for the Authority's website to develop the Part 150 NEM webpages based on content provided by Ricondo and will manage the process in updating information as needed. The website would be updated throughout the study. Ricondo anticipates the project website would include a schedule of upcoming activities during the course of the Study. Information posted on the website would include the following:

- Part 150 NEM Update overview,
- frequently asked questions,
- glossary of technical terms commonly used,
- public workshop presentation boards and handouts,
- public workshop notice, and
- the draft of the Part 150 NEM Update for Boca Raton Airport Report.
- Web forms to submit comments for general public

## 2.9 NOISE EXPOSURE MAP UPDATE DOCUMENTATION

Ricondo would prepare documentation of the updated NEMs to comply with the requirements Part 150 and Section 508 accessibility requirements. The following tasks summarize the planned efforts.

### 2.9.1 PRELIMINARY DRAFT NOISE EXPOSURE MAP UPDATE REPORT

Ricondo would prepare a Preliminary Draft NEM Report containing the following information:

- Introduction – summarize historic perspective of previous noise analysis, overview of project location and setting, overview of Part 150 NEM process, purpose of the study, and roles/responsibilities of key stakeholders
- FAA Noise Exposure Map checklist
- Noise and Land Use Compatibility Guidelines – description of compatibility guidelines used to assess incompatible land use
- Existing Noise Compatibility Plan – description of previous FAA-approved NCP measures and implementation status
- Existing and Future Airport Conditions and Environment – summarizes existing and planned airfield, navigational aids, and air traffic procedures; and summarizes existing land use and land use control regulations
- Forecast Operations – summarizes the forecast operations by time of day and fleet mix by operation mode and time of day
- Aircraft Noise Analysis – provides an overview of noise fundamentals, noise analysis methodology, noise descriptors, and the AEDT model

- Existing and Future NEMs – summarizes development of noise contours, forecast operations, compatible land use analysis and comparative analysis
- Public Consultation – describes the public consultation opportunities
- Appendices
  - Glossary of Terms and Acronyms
  - FAA Policies, Guidance and Regulations
  - Aircraft Noise Modeling Methodology, Input and Results
  - Noise Abatement Procedures
  - Public Consultation (e.g., meeting announcements, presentation material, sign-in sheets, and/or meeting minutes) – would be completed after public workshop
  - Public Comments – would be completed after public workshop
  - FAA Correspondence – would include FAA acceptance of forecast and aircraft substitutions

Ricondo would coordinate with the Authority staff to determine the final outline of the report prior to drafting the sections. Ricondo would develop the report using internal quality assurance procedures, which include editor review, Officer-in-Charge review, and format production. The Authority staff would receive a version in Microsoft Word (Word) and PDF format. No hard copies would be produced for the Authority Draft. For budgetary purposes, Ricondo assumes the document and appendices would be no more than 200 pages.

## 2.9.2 DRAFT NOISE EXPOSURE MAP UPDATE REPORT

The Authority staff would provide consolidated comments/changes on the Preliminary Draft NEM Report in Word for content, and in PDF for exhibits. Ricondo would coordinate with Authority staff on proposed responses to comments/changes received, and execute the changes as agreed. A clean version of the draft maps and document will be sent to the FAA for preliminary review, that will resolve the FAA's comments. Ricondo would process the version through quality assurance process and editor review and provide Authority staff a second version. The draft NEM Update report would be prepared in accordance with Section-508 of the Rehabilitation Act of 1973. Two hard copies would be printed for the public workshop and four hard copies to be distributed to four local libraries. (note: Ricondo will coordinate with the Authority to determine if hard copies are required).

## 2.9.3 FAA-SUBMITTAL NOISE EXPOSURE MAP UPDATE REPORT AND CHECKLIST

Ricondo would update the Draft NEM Report after considering input from the Authority and public comments. Ricondo would also coordinate with Authority staff on changes related to comments received. Ricondo would process documents through final formatting and production and would prepare the FAA-required checklists demonstrating that the appropriate procedures have been followed. Ricondo would draft a transmittal letter to FAA for Authority staff to review and assist in transmitting Draft Part 150 NEM Update Report to FAA. Ricondo will provide the FAA an electronic version in PDF format and five hard copies, including the checklists, and bind using a three-ring binder or other appropriate binding and send to designated FAA environmental specialist. Ricondo assumes the document and appendices to be approximately 200 pages.

## 2.9.4 FINAL NEM UPDATE REPORT AND MAPS

Ricondo will update the final NEM Update Report based on the FAA's comments. For budgetary purposes, Ricondo assumes no additional updated technical analysis would be required to address FAA's comments. Ricondo will address

changes and include FAA’s compliance determination letter at the front of the NEM Report. Ricondo would also obtain a copy of FAA’s Federal Register notice of compliance. Ricondo would provide Authority staff with the final report document in PDF and Word and a copy will be provided to the FAA. The final NEM Update report would be prepared in accordance with Section-508 of the Rehabilitation Act of 1973.

### 3. FEE PROPOSAL

**Table 1** provides Ricondo’s fee proposal based on the efforts described in the SOW.

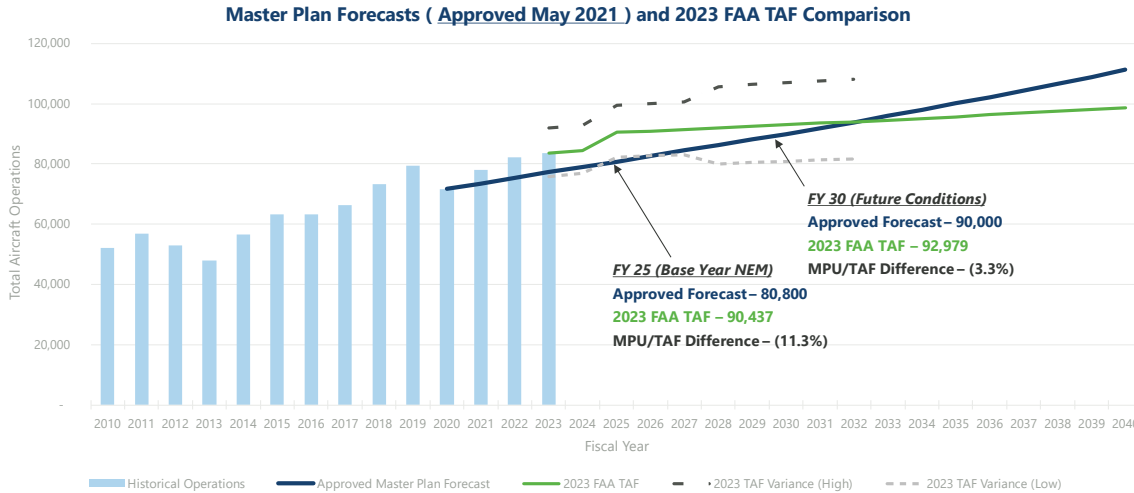
TABLE 1 - FEE PROPOSAL  
NOISE EXPOSURE MAP (NEM) UPDATE

Tasks and Descriptions		Officer	Director	Managing Consultant	Senior Consultant	Consultant	Labor Hours	Direct Labor	Direct Expenses	Total Labor Costs and Direct Expenses
		\$ 335.00	\$ 290.00	\$ 241.00	\$ 199.00	\$ 159.00				
Preliminary Staffing Proposed:		John Williams, Pete Ricondo	Stephen Smith, Dharma Thapa	Kate Dougherty	Thalia Herrera	Jennifer Goldman				
		Hours								
<b>Boca Rotan Airport NEM Update</b>		<b>95</b>	<b>281</b>	<b>399</b>	<b>481</b>	<b>368</b>	<b>1,624</b>	<b>\$ 363,593</b>	<b>\$ 16,114</b>	<b>\$ 379,707</b>
<b>1</b>	<b>Project Management and Administration (12 month duration)</b>	<b>4</b>	<b>16</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>\$ 9,836</b>	<b>\$ -</b>	<b>\$ 9,836</b>
2.1	Scope of Work Coordination with FAA	2	8	8			18	\$ 4,918	\$ -	\$ 4,918
2.2	Monthly Status Reports		4	4			8	\$ 2,124	\$ -	\$ 2,124
2.3	Project Review and Coordination Meetings	2	4	4			10	\$ 2,794	\$ -	\$ 2,794
							0	\$ -	\$ -	\$ -
							0	\$ -	\$ -	\$ -
<b>2</b>	<b>Previous Planning, Environmental and Title 14 CFR Part 150 Documentation Review</b>	<b>1</b>	<b>8</b>	<b>4</b>	<b>4</b>	<b>0</b>	<b>17</b>	<b>\$ 4,415</b>	<b>\$ -</b>	<b>\$ 4,415</b>
<b>3</b>	<b>Existing Conditions Year Noise Exposure Contour</b>	<b>2</b>	<b>34</b>	<b>44</b>	<b>66</b>	<b>126</b>	<b>272</b>	<b>\$ 54,302</b>	<b>\$ -</b>	<b>\$ 54,302</b>
3.1	Study Area Determination		2		2	2	6	\$ 1,296	\$ -	\$ 1,296
3.2	Airfield, Aircraft Operations, Flight Track Data and Weather Data Collection		2	4	8	8	22	\$ 4,408	\$ -	\$ 4,408
3.3	Existing Conditions AEDT Operations Input Analysis		8	16	8	8	40	\$ 9,040	\$ -	\$ 9,040
3.4	Existing Conditions AEDT Flight Track Input Analysis		16	16	24	80	136	\$ 25,992	\$ -	\$ 25,992
3.5	Existing Conditions AEDT Flight Profile Input Analysis		2		8	4	14	\$ 2,808	\$ -	\$ 2,808
3.6	Existing Conditions AEDT Noise Contour Calculation	2	4	8	16	24	54	\$ 10,758	\$ -	\$ 10,758
<b>2.4</b>	<b>Noise Measurement</b>	<b>1</b>	<b>4</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>21</b>	<b>\$ 4,118</b>	<b>\$ -</b>	<b>\$ 4,118</b>
<b>5</b>	<b>Forecast Conditions Year Noise Exposure Contour</b>	<b>6</b>	<b>38</b>	<b>28</b>	<b>40</b>	<b>36</b>	<b>148</b>	<b>\$ 33,462</b>	<b>\$ -</b>	<b>\$ 33,462</b>
5.1	Forecast Operations Development (assumed Authority will provide); Coordinate for FAA approval	2	16	16	8		42	\$ 10,758	\$ -	\$ 10,758
5.2	Future Air Traffic Procedure Assessment	2	2	4	8	8	24	\$ 5,078	\$ -	\$ 5,078
5.3	Forecast Conditions AEDT Operations Input Analysis		4	8	4	4	20	\$ 4,520	\$ -	\$ 4,520
5.4	Forecast Conditions AEDT Flight Track Input Analysis		8		4	8	20	\$ 4,388	\$ -	\$ 4,388
5.5	Forecast Conditions AEDT Noise Contour Calculation	2	8		16	16	42	\$ 8,718	\$ -	\$ 8,718
<b>6</b>	<b>Forecast Operations Effect on Land Use Compatibility</b>	<b>1</b>	<b>2</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>27</b>	<b>\$ 5,707</b>	<b>\$ -</b>	<b>\$ 5,707</b>
<b>7</b>	<b>Baseline Land Use Map Development</b>	<b>2</b>	<b>8</b>	<b>30</b>	<b>48</b>	<b>20</b>	<b>108</b>	<b>\$ 22,952</b>	<b>\$ -</b>	<b>\$ 22,952</b>
7.1	Estimated Population Data			2	16	4	22	\$ 4,302	\$ -	\$ 4,302
7.2	Existing and Future Land Use Data and Plans Inventory		4	16	8	4	32	\$ 7,244	\$ -	\$ 7,244
7.3	Existing and Future Non-Residential Noise-Sensitive Resources Database		2	4	8	8	22	\$ 4,408	\$ -	\$ 4,408
7.4	Existing and Future Land Use Map	2	2	8	16	4	32	\$ 6,998	\$ -	\$ 6,998
<b>8</b>	<b>Consultation and Comment Process</b>	<b>57</b>	<b>118</b>	<b>129</b>	<b>143</b>	<b>82</b>	<b>529</b>	<b>\$ 125,787</b>	<b>\$ 15,339</b>	<b>\$ 141,126</b>
8.1	Stakeholder Outreach and Consultation Plan	2	12	16	16	16	62	\$ 13,734	\$ -	\$ 13,734
8.2	Noise Technical Advisory Committee	38	56	70	74	32	270	\$ 65,654	\$ 10,172	\$ 75,826
8.3	Public Review and Comment	16	42	35	37	22	152	\$ 36,836	\$ 5,168	\$ 42,004
8.4	Website Support	1	8	8	16	12	45	\$ 9,563	\$ -	\$ 9,563
<b>9</b>	<b>Noise Exposure Map Update Documentation (Section 508 Compliant)</b>	<b>22</b>	<b>56</b>	<b>136</b>	<b>164</b>	<b>88</b>	<b>466</b>	<b>\$ 103,014</b>	<b>\$ 775</b>	<b>\$ 103,789</b>
9.1	Preliminary Draft Noise Exposure Map Update Report	8	32	56	80	44	220	\$ 48,372	\$ -	\$ 48,372
9.2	Draft Noise Exposure Map Update Report (includes editor review)	8	8	48	48	32	144	\$ 31,208	\$ -	\$ 31,208
9.3	FAA-Submittal Version Noise Exposure Map Update Report (includes response to comments and edit	4	8	16	24	8	60	\$ 13,564	\$ 775	\$ 14,339
9.4	Final NEM Update Report and Maps	2	8	16	12	4	42	\$ 9,870	\$ -	\$ 9,870
<b>Grand Totals</b>		<b>95</b>	<b>281</b>	<b>399</b>	<b>481</b>	<b>368</b>	<b>1,624</b>	<b>\$ 363,593</b>	<b>\$ 16,114</b>	<b>\$ 379,707</b>

# 4. FORECAST ATTACHMENT

**Attachment A** provides the summary of the FAA approved Master Plan Forecast in May 2021 and comparison with the latest FAA Terminal Area Forecast (TAF). The forecast would be used for the NEM update.

## BCT NEM Update – Aircraft Operations Forecast



**NOTES:**

1. The fiscal year (FY) is October 1 through September 30.
  2. FAA TAF variances (outlined in FAA AC 150/50706B) are +-10% between FY 23 and FY 27 and +15% between FY 28 and FY 31.
- SOURCES: Ricondo & Associates, Inc. November 2020. (Master Plan Forecast); FAA, 2022 Terminal Area Forecast (accessed January 5, 2024).