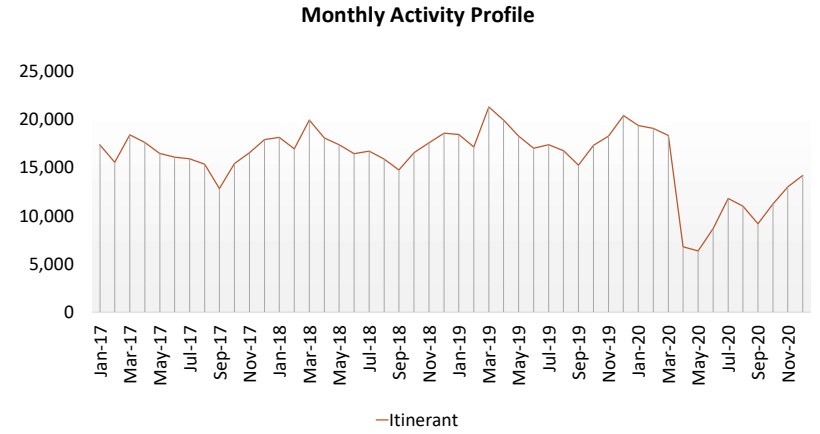
TPA Overview

Key Considerations for this NEM Update

- Aircraft technology has improved and aircraft are quieter; however, noise concerns continue
- Existing NEMs are nearly 20 years old
- Increased nighttime cargo operations since the 2000 Part 150 Study; likely to decrease once Amazon moves its cargo operations from TPA to Lakeland Linder in 2021
- Aircraft upgauging (utilizing larger aircraft) has offset the increase in passenger activity, but larger aircraft are perceived as flying lower, which raises community concerns
- Community concerns related to air emissions, soot, oily substances, fuel, safety, and health impacts are often contributing factors to concerns about noise, but are outside of the Part 150 Study process



1987
HCAA completed first formal noise study

2000
HCAA completed an updated Part 150 Study with revised NEMs and NCP

2020
HCAA initiated the NEM Update

14 CFR Part 150 Overview

The Part 150 process is an airport sponsor's official mechanism to understand and improve land use compatibility

Regulatory Framework

- Federal law sets aircraft noise standards, operating rules, the compatibility planning process, and limits an airport's ability to restrict aircraft operations
- State law sets forth zoning compatibility planning guidelines
- Local noise ordinances set noise standards, but aircraft are exempt

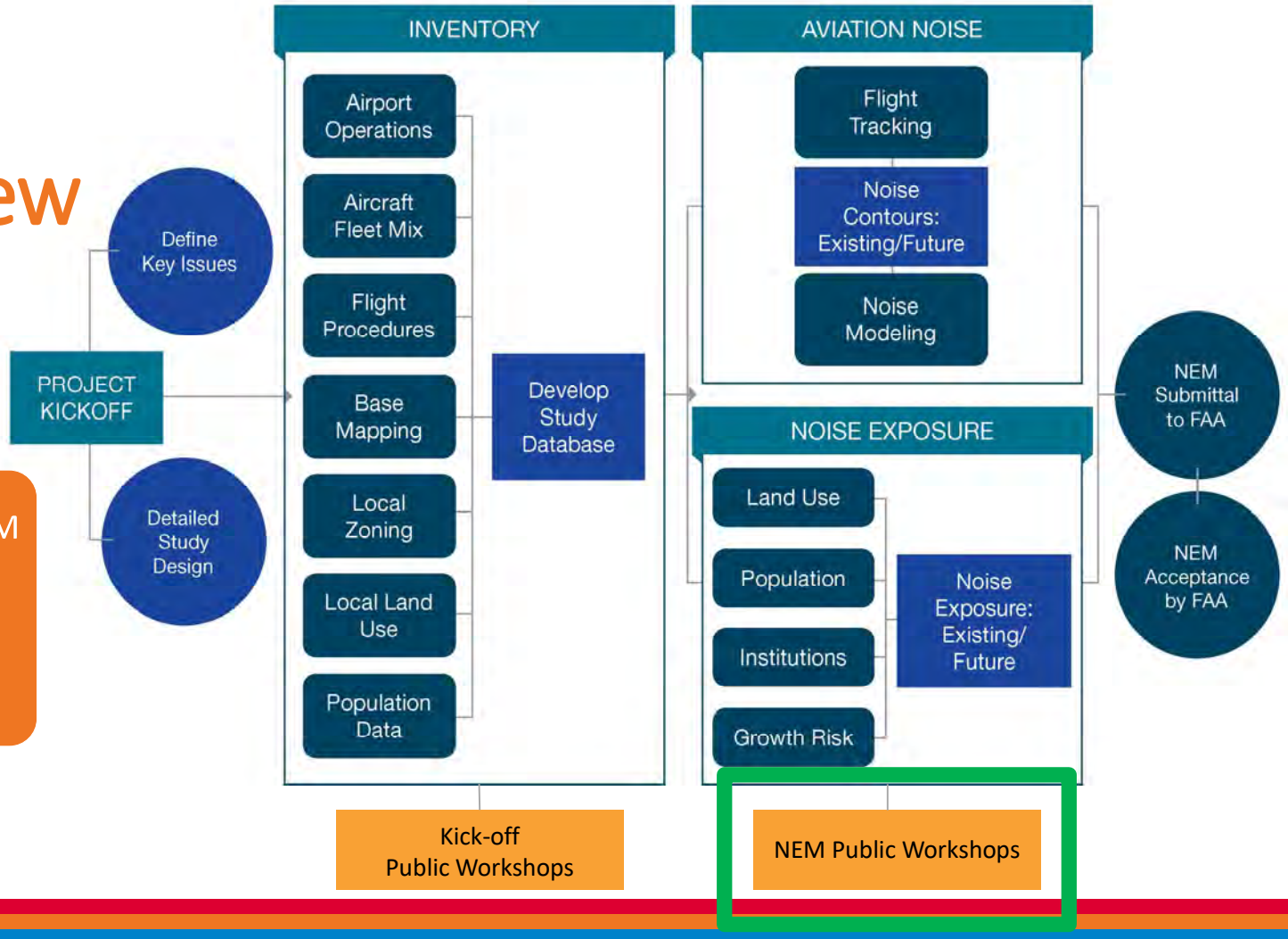
This Part 150 Study involves updating TPA's existing Noise Exposure Maps

Who Can Regulate Airport Noise?

- Federal Aviation Administration
  - Controls aircraft while in flight
  - Controls noise at its source (i.e., aircraft engines)
  - Certifies aircraft and pilots
- Airport Proprietors/Hillsborough County Airport Authority (HCAA)
  - Very limited authority to adopt local restrictions
  - Responsible for airport infrastructure
- Local Governments and States
  - Promote compatible land use through zoning
  - Require real estate disclosures
  - Mandate sound-insulating building materials

14 CFR Part 150 Overview

We are currently in the "NEM Public Workshop" Phase to solicit input and comment from the public on the Draft NEMs.

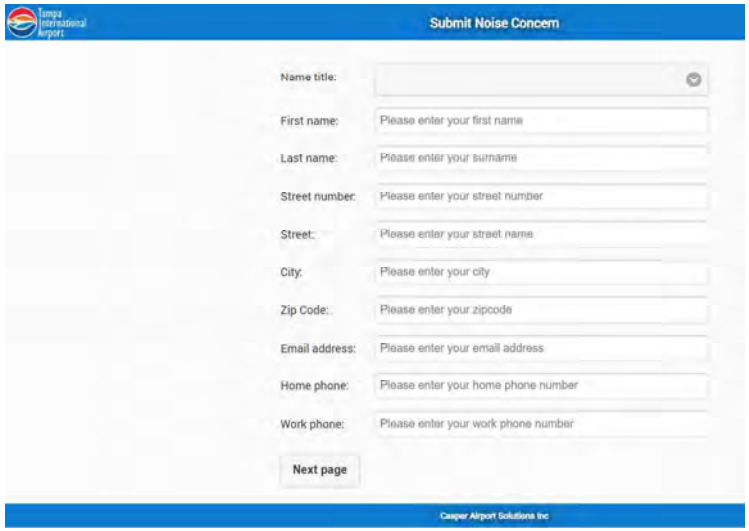


Existing Noise Program

Example Voluntary Noise Abatement Program Measures

- Preferential runway use to reduce noise from jet aircraft
- Specific departure headings for jet aircraft to reduce noise
- Staffing of an airport noise office with monthly Community Noise Monitoring Report
- Bi-monthly Community Noise Forum meetings and regular meetings with homeowner's associations, airlines, fixed based operators (FBOs), and private jet operators
- Airport noise monitoring system, flight tracking website, and an online noise complaint portal
- Sound insulation of homes within the DNL 65 contour (Mariners Estate subdivision)
- Handouts for FBOs and pilots about the Voluntary Noise Abatement Program

HCAA has a comprehensive and proactive noise management program with very high compliance

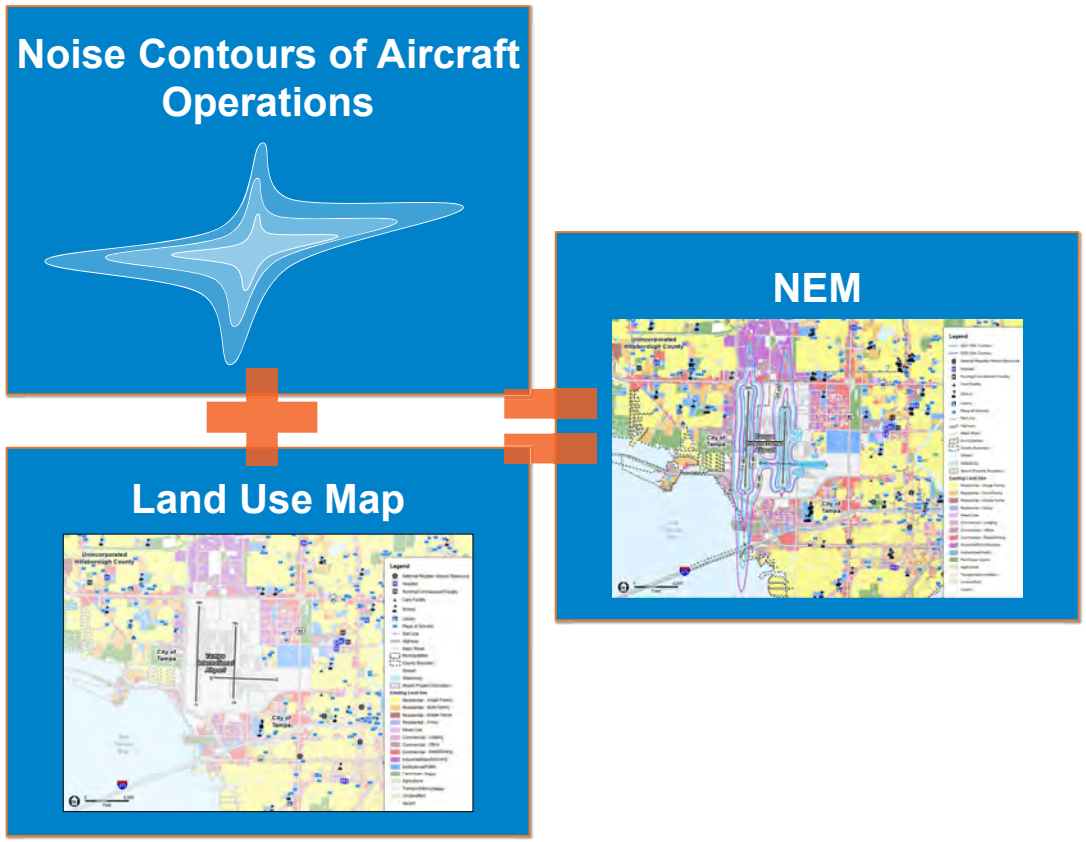


Aircraft Noise Modeling

Allows us to:

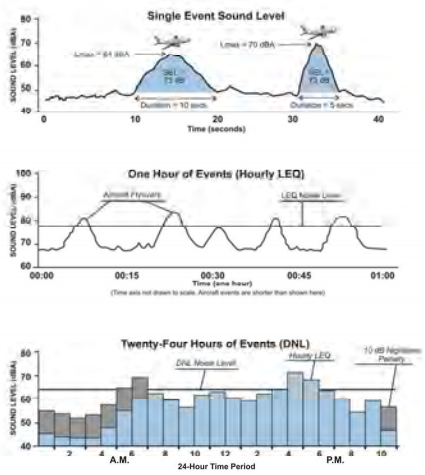
- Calculate and depict annual average day aircraft noise exposure
- Predict future aircraft noise exposure
- Assess changes in noise impacts resulting from runway configuration changes
- Assess changes in fleet mix and/or number of operations
- Evaluate operational procedures

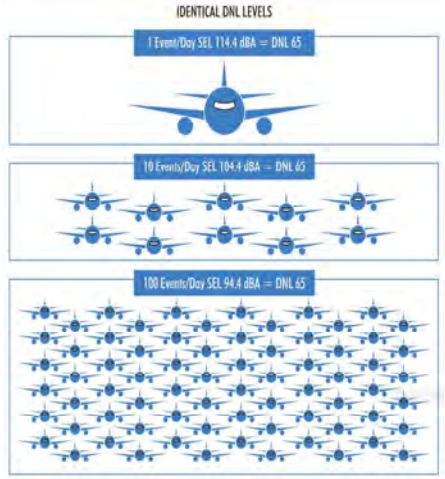
Noise modeling is performed to generate noise contours and are overlaid on a land use map to identify noncompatible land uses.



Day-Night Average Sound Level (DNL)

- 24-hour time weighted energy average noise level based on A-weighted decibels (dBA)
- Noise occurring between 10:00 p.m. to 6:59 a.m. is adjusted by 10 dB to account for the higher sensitivity to noise during nighttime hours
- Average Annual Day aircraft noise exposure is calculated over a broad area and then depicted using contour lines of equal noise levels
- FAA requires the use of DNL for all airport noise assessments and environmental studies conducted nationally





Land Use Compatibility

Table 1 in Appendix A of 14 CFR Part 150 provides regulatory guidelines for noise and land use compatibility

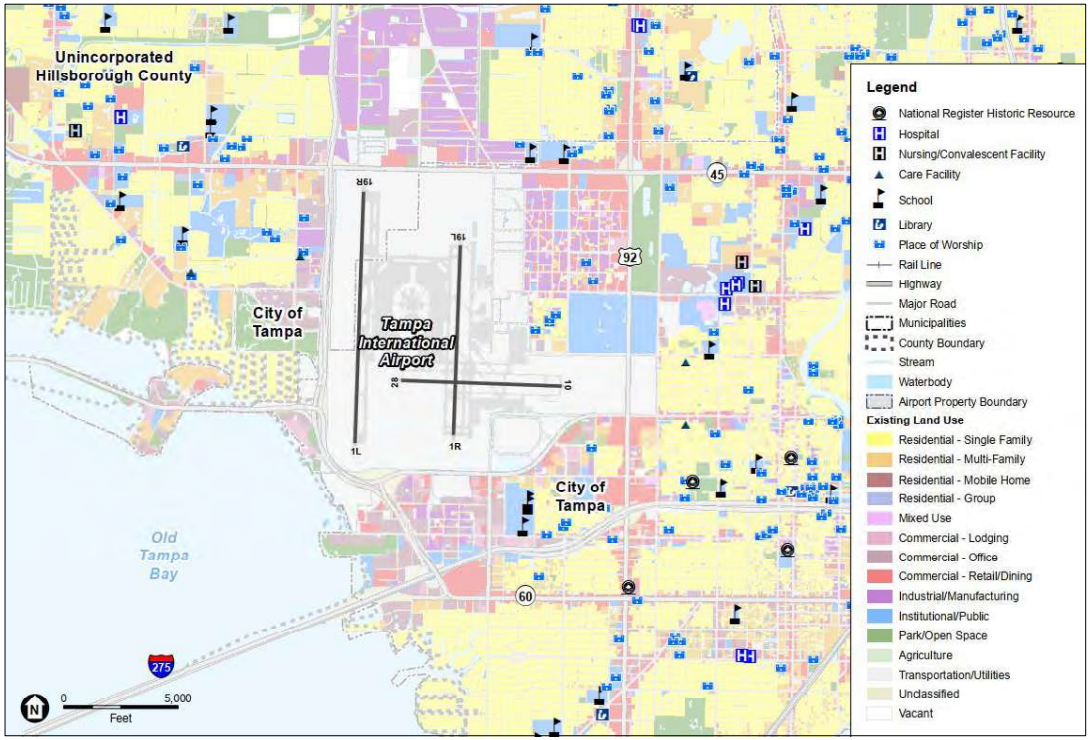
Deems levels below DNL 65 to be compatible with all land uses

Allows for the adoption of appropriate local land use standards for land use compatibility planning purposes

Noise Sensitive Uses

- Residential
- Places of worship
- Schools, colleges and universities
- Libraries
- Hospitals and healthcare facilities
- Daycare facilities
- Historic properties

The 14 CFR Part 150 process is HCAA's mechanism to improve the compatibility between the Airport and surrounding communities



TPA Operational Activity

- Study Team used the FAA's 2020 Terminal Area Forecast (TAF) released in May 2021 which considers the impacts of COVID-19
- Data from 2020 was used to determine the types of aircraft (fleet mix) in operation at TPA
- Factors affecting fleet mix include:
  - Industry-wide up-gauging
  - The number of new technology narrowbody aircraft (e.g., Airbus neo and Boeing MAX)
  - Aircraft retirements and total fleet size driven by COVID-19 related reductions
  - Replacement of Boeing 757 and 767

Aircraft Category	Operations	
	2021	2026
Widebody	5,629	8,669
Narrowbody	118,229	183,218
Regional Jet	8,084	8,393
Business Jet	20,279	25,255
Turboprop	10,316	13,980
Piston	3,989	4,968
Helicopter	1,353	1,685
Total	**167,878**	**246,167**

NOTE: An Aircraft operation is equivalent to one arrival/landing or one departure/takeoff.
SOURCE: Environmental Science Associates and Ricondo & Associates, 2021. Casper data for calendar year 2020. Forecast data provided by FAA 2020 Terminal Area Forecast, May 2021.

Runway Use

Arrivals

Arrivals (Time of Day)	Runway End					
	1L	19R	1R	19L	10	28
2021						
Daytime	41.3%	16.9%	10.6%	28.3%	0.2%	2.8%
Nighttime	52.6%	18.7%	5.3%	20.9%	0.6%	1.9%
2026						
Daytime	42.2%	20.6%	9.5%	25.1%	0.1%	2.4%
Nighttime	53.8%	20.1%	4.4%	18.8%	1.4%	1.5%

NOTE: Runway use is for all jet, turboprop, and propeller aircraft; does not include helicopter operations. Values may not add to 100 percent due to rounding.
SOURCE: Environmental Science Associates, 2021. Casper data for calendar year 2019.

Departures

Departures (Time of Day)	Runway End					
	1L	19R	1R	19L	10	28
2021						
Daytime	18.6%	33.1%	33.6%	12.1%	1.1%	1.5%
Nighttime	22.1%	33.1%	31.0%	7.7%	3.7%	2.3%
2026						
Daytime	21.7%	34.9%	30.4%	10.8%	1.0%	1.3%
Nighttime	23.1%	33.9%	32.3%	6.2%	2.8%	1.6%

NOTE: Runway use is for all jet, turboprop, and propeller aircraft; does not include helicopter operations. Values may not add to 100 percent due to rounding.
SOURCE: Environmental Science Associates, 2021. Casper data for calendar year 2019.

Stage Length Analysis

Stage length is the distance an airplane flies directly from one airport to another.

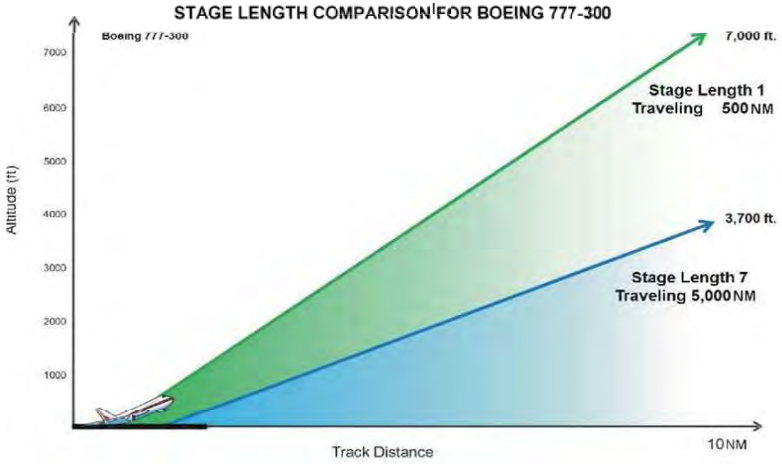


Figure is for illustrative purposes only and is not representative of all aircraft in operation at TPA.

Study Year	Stage Length Category						
	1	2	3	4	5	6	7
2021	34.8%	39.8%	18.0%	6.1%	1.1%	0.1%	0.1%
2026	33.0%	41.4%	16.6%	8.0%	0.9%	0.001%	0.1%

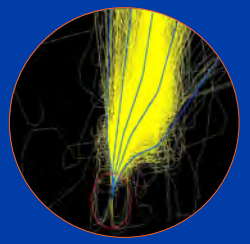
NOTE: Values may not add to 100 percent due to rounding. No aircraft exceeded a departure stage length of 7.

SOURCE: Environmental Science Associates and Ricondo & Associates, 2021. Casper data for calendar year 2020.

Flight Track Analysis

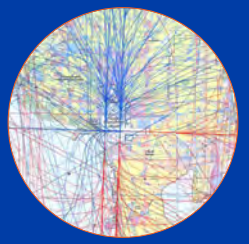
Review Flight Track Radar Data

Separate data by arrival/departure and runway end



Analyze primary corridors and separate data by these corridors to develop “backbone” AEDT flight tracks

Review the corridors and backbone flight tracks and develop sub-tracks for each backbone flight track

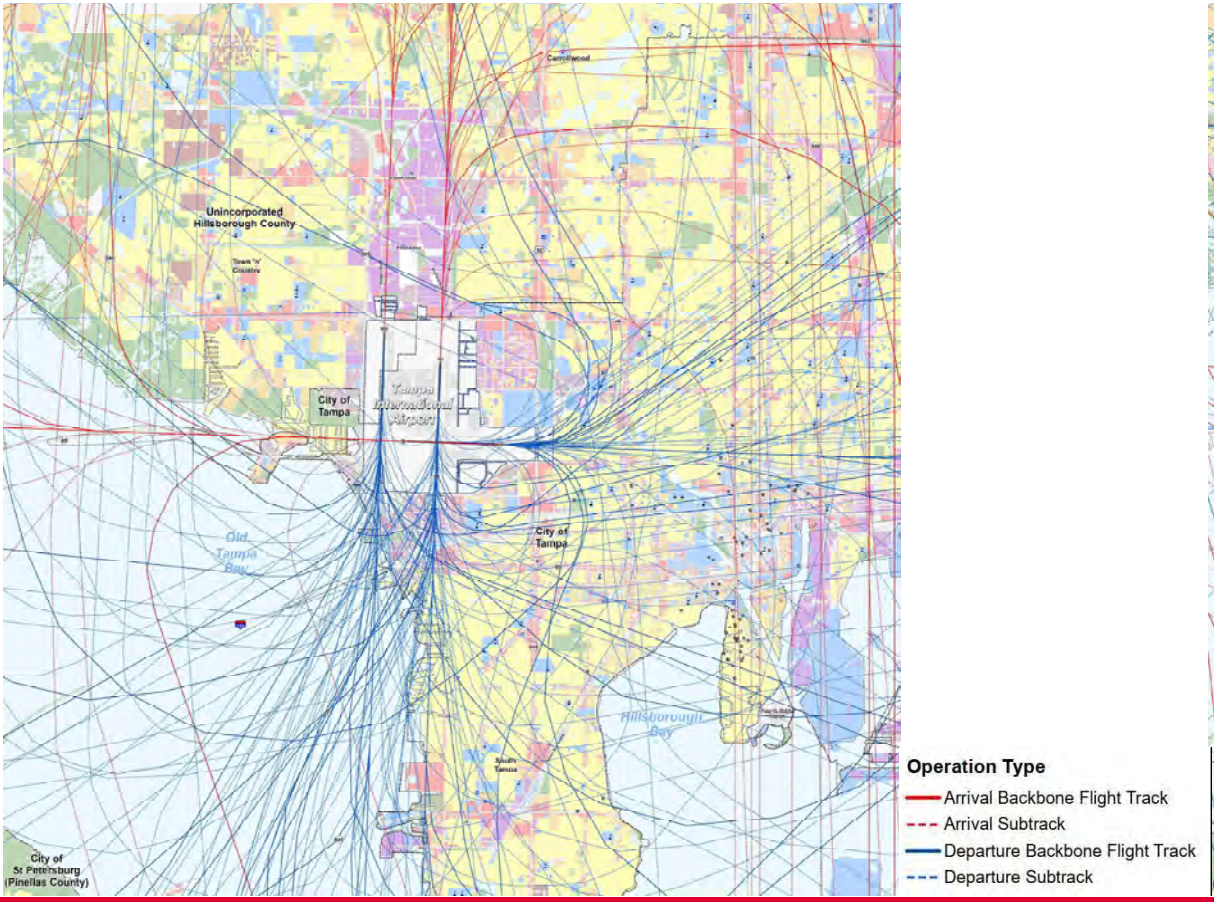


Utilize radar data to assign flight track utilization by aircraft category

Tampa International Airport

ESA

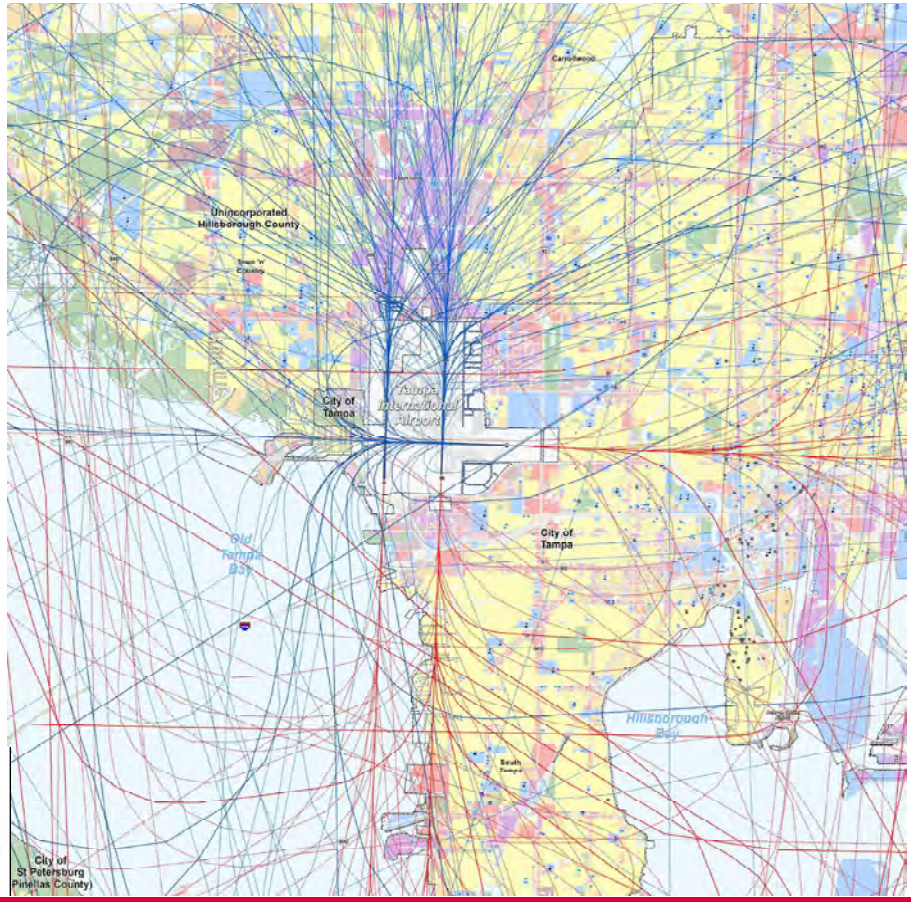
Flight Tracks – South Flow



Operation Type

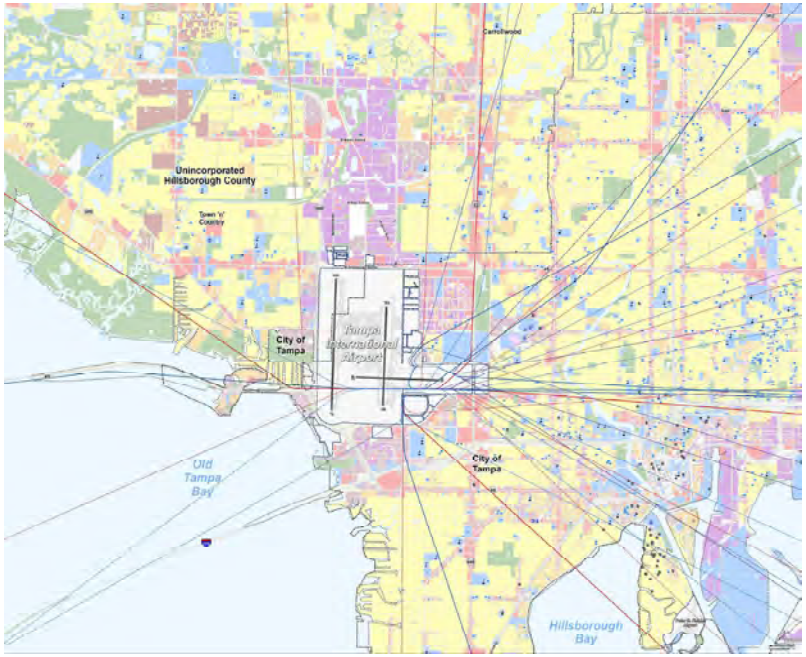
- Arrival Backbone Flight Track
- Arrival Subtrack
- Departure Backbone Flight Track
- Departure Subtrack

Flight Tracks – North Flow



Helicopter Flight Tracks

- Flight corridors utilized by helicopters to and from each runway end and helicopter operating areas were reviewed and a series of centerlines of the flight corridors (backbone tracks) were for modeling in AEDT
- Similar to fixed-wing aircraft, the 2026 flight tracks are expected to remain the same as the 2021 flight tracks
- A total of 1,353 and 1,685 helicopter operations were included for the 2021 Existing Conditions and the 2026 Future Conditions, respectively
- Two areas used by helicopters were identified on the eastern/southeastern portions of the airfield
  - Primarily used to support general aviation operations and local law enforcement



Helicopter Use	Time of Day	
	Day	Night
General Aviation	81%	19%
Law Enforcement	50%	50%

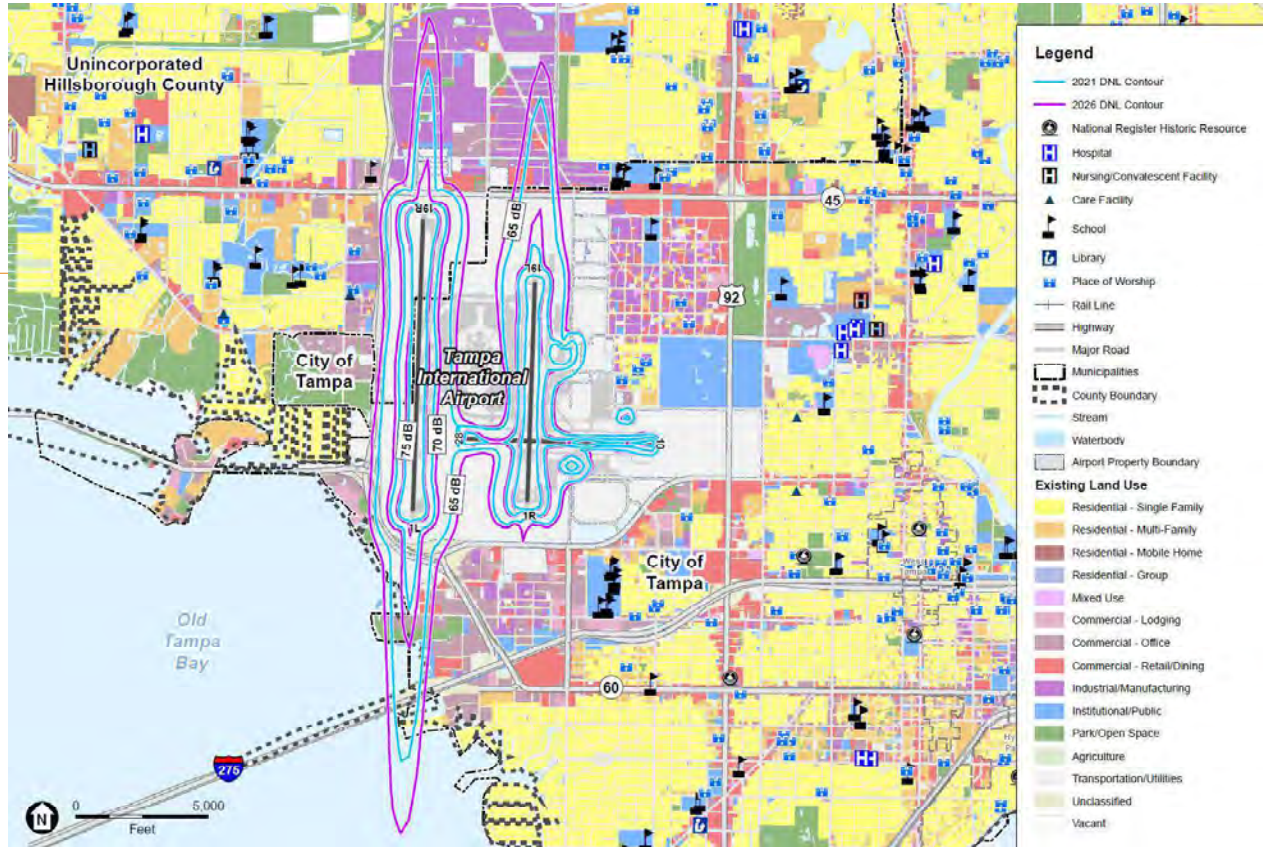
SOURCE: Environmental Science Associates, 2021. Casper data for calendar year 2019.

2021 and 2026 Draft NEMs

Noise sensitive sites exposed to DNL 65 and higher:

2021: 14 housing units

2026: 22 housing units



Properties within 2021 and 2026 DNL Contour

Draft 2021 DNL 65 Contour

All 14 housing units within the Draft 2021 DNL 65 contour have received sound insulation.

Draft 2026 DNL 65 Contour

21 out of 22 housing units within the Draft 2026 DNL 65 contour have received sound insulation.

Anticipated Schedule and How to Provide Official Public Comments

Please send comments using one of the methods identified below

E-mail

airportmeeting@qcausa.com

Web

www.tampaairport.com/part-150-study

Regular Mail

ESA
c/o TPA Part 150 Study
5404 Cypress Center Drive, Suite 125
Tampa, FL 33609

Anticipated schedule after completion of the public workshops is below

Fall 2021 – Receive and respond to public comments

December 2021 – Submit Final NEM Update Report to FAA

Spring 2022 – Acceptance of 2021 and 2026 NEMs

Visit www.tampaairport.com/part-150-study for more information on the Draft NEM Update Report