



14 CFR PART 150 STUDY

Draft Noise Exposure Map Update Report



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September 2021

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CHAPTER 1

Introduction

1.1 Introduction

The Hillsborough County Aviation Authority (HCAA) has undertaken a Title 14 Code of Federal Regulations (CFR) Part 150 (14 CFR Part 150), *Airport Noise Compatibility Planning*, (Part 150 Study), Noise Exposure Map (NEM) Update. This NEM Update will evaluate the compatibility of Tampa International Airport (TPA or the Airport) with the surrounding communities in consideration of the current operational environment. The last set of NEMs produced for the Airport through the 14 CFR Part 150 process were completed in calendar year 2000. Preparing a NEM Update is a voluntary action on the part of the HCAA.¹ However, once a Part 150 Study is undertaken, an airport sponsor is obligated to prepare an update whenever there is a significant change to the noise environment. The primary objective of this Study is to prepare an updated NEM that identifies TPA's existing and future noise conditions around the Airport in addition to the existing and future land uses that are and are not compatible with aircraft noise based on guidelines in 14 CFR Part 150, Appendix A, Table 1.²

1.2 Need for the Preparation of a New Part 150 Study

Since the 2000 Part 150 Study, a number of changes have taken place that can affect the size and shape of aircraft generated noise contours at TPA. 14 CFR Part 36 certified Stage II aircraft less than 75,000 pounds (primarily business jets) have since been phased out in the US, commercial airlines have continued to upgrade aircraft fleets to newer and quieter aircraft, and the Federal Aviation Administration's (FAA) Integrated Noise Model (INM) used to generate the 2000 Part 150 Study NEMs has been replaced with the FAA's Aviation Environmental Design Tool (AEDT). Since 2000, the Airport has also experienced an increase in aircraft operation levels and changes in the aircraft fleet mix.³ Because of these factors, HCAA's existing Day-Night Average Sound Level (DNL) 65 contour may have experienced greater than a 1.5 dB change over noncompatible land uses.

This current study is needed to update the NEMs developed as part of the 2000 Part 150 Study. Updating these noise contours will provide current and more relevant noise exposure information which will, in turn, allow the HCAA and local jurisdictions to effectively develop mitigation and abatement strategies, land use planning initiatives, and goals.

¹ The regulations contained in 14 CFR Part 150 are voluntary and airport operators are not required to participate. However, accepted NEMs and an approved Noise Compatibility Program (NCP) are necessary for federal financial participation in 14 CFR Part 150-related noise abatement measures at an airport and/or adjacent off-airport areas.

² A glossary of terminology related to this Study, and an acronyms list, can be found in Appendix A.

³ The Part 150 Study was initiated prior to the current pandemic in December 2019.

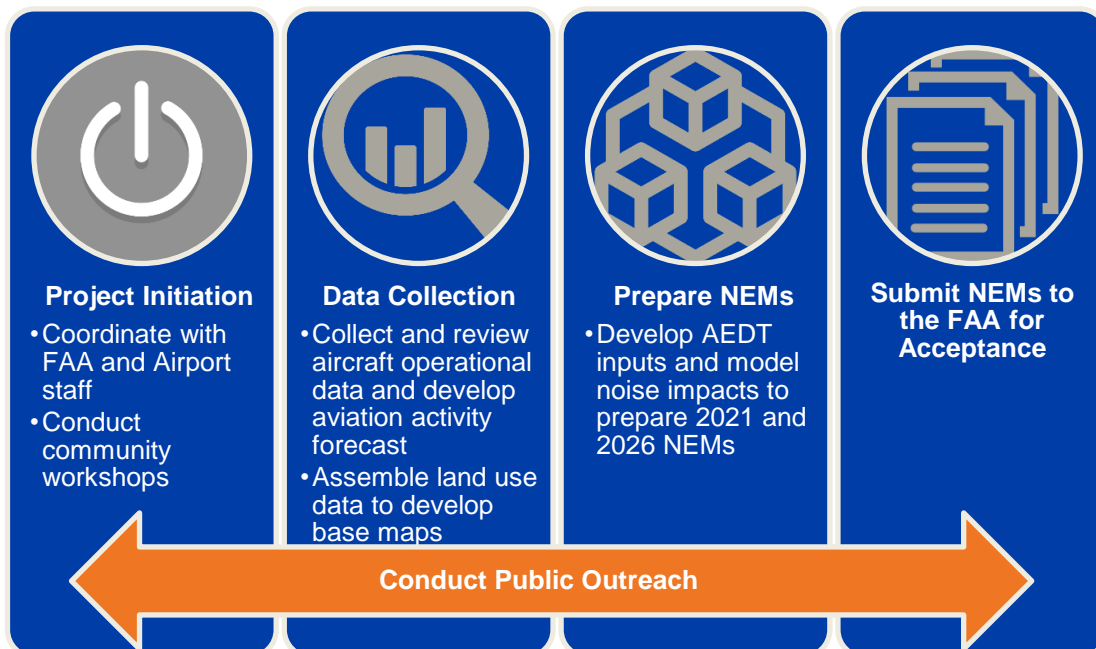
1.3 14 CFR Part 150 Study Process

In late 2019, HCAA initiated the TPA NEM Update. From the onset, key issues were identified through input from the HCAA and TPA stakeholders including interested members of the public. Input was received at meetings with Airport staff and during a series of public workshops and community meetings.

Initial efforts on the Study included an inventory of calendar year 2019 operational activity. This involved collecting data related to the number of aircraft operating at the Airport on an annual basis, the fleet mix (types of aircraft), the time of day in which the aircraft operate (Day: 7:00 A.M. to 9:59 P.M. or Night: 10:00 P.M. to 6:59 A.M.) and existing aircraft operational procedures (i.e., runway use, flight tracks, departure and arrival corridors). In addition to operational data, land use data was collected and reviewed. This data included zoning regulations, existing land use maps, and future land use plans.

After completing the inventory process, a noise prediction model called the AEDT Version 3d was used to produce noise contours (i.e., areas of equal noise exposure around the Airport). The FAA requires that these noise contours be prepared for the year of submittal to the FAA (in this case, 2021) and a projected condition for a future year that must be at least five years from the date of submittal of the document (in this case, 2026). The NEM Process is shown in **Figure 1-1**.

Figure 1-1
NEM Update Process



1.4 Preparation of Noise Exposure Maps

NEMs graphically depict aircraft noise exposure levels on and in the vicinity of an airport by presenting lines of equal aircraft noise in DNL values. Aircraft noise DNL values represent the sound produced by a 24-hour period of aircraft activity. For 14 CFR Part 150 studies, this 24-hour period of aircraft activity is based on average aircraft activity over a 12-month period and the sound energy is represented as A-weighted decibels (dBA).⁴ NEMs provide local communities an opportunity to see aircraft noise exposure levels in order to make better informed decisions regarding proposed noise sensitive development in the vicinity of an airport.

1.4.1 NEM Study Years

The official NEMs include two maps. The first NEM depicts existing noise exposure levels and the land uses in the vicinity of an airport. The second NEM depicts noise exposure levels anticipated five years in the future. As referenced previously, the study years for this NEM update are 2021 and 2026.

1.4.2 COVID-19 Impacts

Since late 2019, the coronavirus disease 2019 (COVID-19) has spread across the globe resulting in a worldwide pandemic. Many countries totally or partially closed their borders in addition to implementing strict guidelines for residents in attempt to slow the spread of the virus. The strict travel restrictions and guidelines for passengers, combined with concerns over spreading and contracting the virus, led to a sharp decrease in passenger traffic at airports globally. In 2020, the Airports Council International (ACI) recorded a decrease of approximately 64% in passenger traffic volumes at the world's busiest airports.⁵ In the US, passenger traffic decreased by approximately 62% in 2020 when compared to 2019 levels.⁶ As a result of the dramatic reduction in passenger traffic resulting from the COVID-19 crisis, HCAA decided to defer or cancel approximately \$900 million in projects over the next four to five years, including construction of Airside D (i.e., Phase 3 of the TPA Master Plan Update). The new plan calls for revisiting TPA's passenger forecast in 2021 as well updating the Master Plan in 2022 to account for the change in passenger travel and capital planning at TPA.⁷

The TPA Existing Conditions (2021) NEM was developed using the FAA's 2020 Terminal Area Forecast (TAF) released in May 2021 (see **Appendix B**). The FAA's TAF takes into consideration the impacts of COVID-19 on air travel and the anticipated level of aviation activity in the future.

⁴ When assessing the effect of sound on humans, sound is measured using an electronic filter that de-emphasizes frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear's decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting, and A-weighted sound levels are expressed in units of A-weighted decibels (dBA).

⁵ *ACI World data reveals COVID-19's impact on world's busiest airports.* Airports Council International. April 22, 2021.

⁶ *TranStats.* U.S. Department of Transportation, Bureau of Transportation Statistics. https://www.transtats.bts.gov/Data_Elements.aspx?Data=1. Accessed: June 7, 2021.

⁷ *Construction of new Airside D delayed due to COVID-19.* Tampa International Airport. <https://news.tampaairport.com/construction-of-new-airside-d-delayed-due-to-covid-19/>. Accessed July 6, 2020.

This Study also uses actual calendar year 2019 day/night utilization, runway usage, and flight tracks from HCAA’s Casper aircraft operation monitoring system data.⁸ By using actual calendar year 2019 data, HCAA is better able to capture aircraft activity during normal operating conditions, rather than the reduced levels experienced during the current pandemic. The future NEM was developed using projected levels of aircraft activity and operational conditions at TPA in 2026. In accordance with 14 CFR Part 150, the Future Conditions NEM represents conditions five years after the NEM year of submittal to the FAA. The NEMs provide the noise exposure baseline against which the effectiveness of noise abatement measures can be evaluated.

1.4.3 Technical Approach to Preparing Noise Exposure Maps

Subsequent chapters of this report describe in detail the information, methods, and tools used to develop the NEMs and estimate existing and future aircraft noise impacts in the vicinity of TPA. A brief overview of the technical approach is provided below.

1.4.3.1 Data Collection and Verification

A wide range of data and information related to the operation of the Airport was collected to provide a complete understanding of aircraft noise at TPA and its effects on local communities including:

Aircraft Activity

The Study Team collected information related to all the types of aircraft that operate at the Airport, the number of annual operations generated by these aircraft, the times of day that these aircraft operate, and the flight paths and flight profiles used by these aircraft for departures and arrivals. The FAA’s 2020 TAF, which was released in May 2021 and accounts for pandemic-induced impacts to operations, was used to support the TPA Part 150 Study by providing the number of annual aircraft operations modeled for the 2021 and 2026 NEMs.

Approach and Departure Procedures

The Study Team reviewed the airspace structure in the area and air traffic control procedures used to direct flights by the FAA in and out of TPA. There are some north flow departure procedures from St. Pete–Clearwater International Airport (PIE) which overfly TPA; however, these flights do not conflict with TPA’s procedures or modeling for this NEM Update. The flights from PIE are not reflected in the noise modeling because of they are too infrequent and at a high enough altitude to not influence noise exposure in the vicinity of TPA. Similar to PIE, flights from MacDill Air Force Base, Peter O. Knight Airport, and Tampa Executive Airport do not conflict with TPA’s procedures and are not reflected in the modeling for this NEM Update.

Land Use

The Study Team collected existing land use information for the study area established for the TPA Part 150 Study and developed base maps. The Study Team also identified proposed land use changes that are anticipated to occur over the next five-year period.

⁸ An aircraft operation is defined as one arrival flight or one departure flight.

1.4.3.2 Aircraft Noise Modeling

Using the FAA's AEDT, noise exposure contours were developed for the year 2021 (Existing Conditions NEM) and the year 2026 (Future Conditions NEM). This process involved compiling information and generating detailed input data for AEDT that represent aircraft activity and operating conditions at TPA. For example, Airport-specific data was gathered and analyzed for the purposes of this Part 150 Study and includes runway usage, flight track information, aircraft operation levels distributed by time of day, aircraft fleet mix, and local meteorological data (see Chapter 4 for additional information).

1.4.3.3 Preparation of NEMs

Using Geographic Information System (GIS) software, the 2021 and 2026 NEMs were developed in accordance with the criteria and guidelines found in 14 CFR Part 150.

1.4.3.4 Aircraft Noise Impact Analysis

Using GIS software, the type and amount (acreage) of incompatible land uses were identified for the 2021 and 2026 NEMs. The analysis also determined the number of people, households, and noise-sensitive sites that are incompatible with aircraft noise exposure levels they receive.

1.4.3.5 South-Central Florida Metroplex

During the course of this Study, the FAA separately completed the environmental review process and began implementing the South-Central Florida Metroplex project (Metroplex) in Spring 2021 and additional procedures will be implemented in late Summer 2021. Metroplex is an FAA-led program, completely separate from this Study, with the specific goals of improving the safety and efficiency of air traffic routes in the South-Central Florida region. Metroplex includes route and airspace procedure modifications located primarily above 10,000 feet. The HCAA reviewed the proposed conceptual changes associated with Metroplex and concluded that because Metroplex included procedure modifications primarily above 10,000 feet, it was not necessary to include these changes in the modeling methodology for this NEM Update.

1.5 Consultation and Public Involvement

14 CFR Part 150 Sections 150.21(b) and A150.105(a) (Appendix A to Part 150) require that the NEMs and documentation submitted “...*be developed and prepared...in consultation with states, public agencies and planning agencies whose area, or any portion of whose area, of jurisdiction is within the DNL 65 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.*”

The consultation and public involvement process for the TPA NEM Update included the following elements to provide adequate opportunities for stakeholder engagement and participation during the development of the NEMs:

- The FAA and the general public were involved in the development of the NEMs for TPA.
- Coordination meetings with key local agencies as directed by HCAA, which may include local land use planning departments such as the City of Tampa, Hillsborough County, and/or Hillsborough Metropolitan Planning Organization.
- Kickoff public workshops held at different locations throughout the Airport community to provide the public and elected official with an opportunity for information sharing and to provide input during the TPA NEM Update.
- Presentations at Community Noise Forum meetings to provide a status update for the TPA NEM Update.
- Public Workshops to provide the community with an opportunity to review the NEMs and provide comments on the draft NEM Report.
- For stakeholders, agencies, and the general public, a Study website⁹ was developed to provide study information including updates on the project progress and schedule, Study documents and meeting materials, and additional information.

Additional information related to public outreach activities is included in **Chapter 6**.

1.6 NEM Report Organization

This report provides the NEMs for TPA and the technical documentation required by 14 CFR Part 150. This report is organized as follows:

Chapter 1 Introduction

Chapter 2 Tampa International Airport Overview

This chapter provides background information regarding the Airport and the history of noise abatement at TPA.

Chapter 3 Land Use

This chapter describes the land use study area and methods for collecting data, existing and future land uses in the study area, and noise sensitive sites.

Chapter 4 NEM Development

This chapter describes the development of the noise exposure maps, the noise model, and noise modeling inputs.

Chapter 5 2021 and 2026 Noise Exposure

This chapter presents the 2021 and 2026 Noise Exposure Maps and information on land use compatibility and aircraft noise-related impacts.

Chapter 6 Consultation and Public Involvement

This chapter documents stakeholder and public outreach engagement efforts undertaken during the Part 150 Study process of the TPA NEM Update.

⁹ <https://www.tampaairport.com/part-150-study>

Technical information, documentation, and maps are contained in the appendices to this report. The appendices are organized as follows:

- Appendix A Glossary and Acronyms
- Appendix B Aircraft Activity Forecast
- Appendix C Airspace and Procedures
- Appendix D Aircraft Noise
- Appendix E Land Use
- Appendix F Radar Flight Tracks
- Appendix G Consultation and Correspondence
- Appendix H Public Outreach
- Appendix I Public Comments and Responses
- Appendix J Official Noise Exposure Maps

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CHAPTER 2

Tampa International Airport Overview

2.1 Airport Location and Setting

The Airport is located on 3,300 acres of land within the City of Tampa and unincorporated Hillsborough County approximately six miles west of downtown Tampa, FL. TPA’s location provides convenient access to I-275 and to Florida’s beaches on the West Coast. The location of TPA is depicted on **Figure 2-1**. The Airport and the surrounding vicinity is depicted on **Figure 2-2**.

2.1.1 Airport History

The City of Tampa first leased land for an airport during 1920s. In 1928, Drew Field airport was established as a 160-acre general aviation facility. In 1940, the City of Tampa leased Drew Field airport to the US Army Air Force, which expanded and operated the facility during World War II.

In 1945, the facility was conveyed back to the City of Tampa at which time the HCAA was established by the Florida Legislature. During the mid-1940s, the Airport had three runways, a large apron, and a perimeter taxiway system. By 1952, the Airport supported international flights and Drew Field was renamed to Tampa International Airport. In 1959, TPA supported a total of 11 airlines that provided service across the US. Due to the increase in air travel, HCAA began planning for a new replacement terminal in the 1960s to accommodate more passengers. By 1971, the \$85-million “New Terminal Complex” was complete and ready for airline service. It included Airsides B, C, D, and E which were separate buildings from the Main Terminal and connected by an Automated People Mover (APM). This represented an innovative design concept in the aviation world during this time period.¹

Since the completion of the New Terminal Complex, the Airport has been expanded and renovated to accommodate more aircraft, airlines, and passengers. Airsides F and A were added to the Terminal Complex while Airsides B and D were closed. By the end of 2005, the remaining four airside complexes consisted of A, C, E, and F. In 2012, HCAA completed a Master Plan Update, which allows for the Airport to accommodate up to 34 million passengers each year. The Master Plan Update is divided into three distinct phases to improve airport facilities in the future.² Phase 1 of the plan was complete in 2018. In 2019, HCAA broke ground on Phase 2, which includes curbside expansion and a 35-acre commercial development around the Rental Car Center. Phase 3 will include airside improvements to increase the number of gates capable of handling international and domestic travel.

¹ *Celebrating 50 Years*. Tampa International Airport. <https://www.tampaairport.com/50>. Accessed: May 19, 2021

² *2012 Master Plan Update – Volume 1*. Tampa International Airport, April 4, 2013.

2.2 Airport Overview

2.2.1 Aviation Role

In 2019, TPA was the fourth busiest commercial service airport in the state of Florida, based on passenger traffic. TPA provides scheduled domestic and international service for both passengers and air cargo and also supports a wide range of general aviation activities.

The FAA’s National Plan of Integrated Airport Systems (NPIAS) identifies TPA as a Large Hub Primary Commercial Service Airport.³ Large hubs are those airports that each account for at least 1% of total U.S. passenger enplanements.

2.2.2 Airport Facilities Overview

This section provides an overview of TPA’s facilities, airspace, and approach and departure procedures. The configuration of the major airfield and landside facilities at TPA is described in the following sections and shown on **Figure 2-3**.

2.2.2.1 Passenger Terminal Facilities

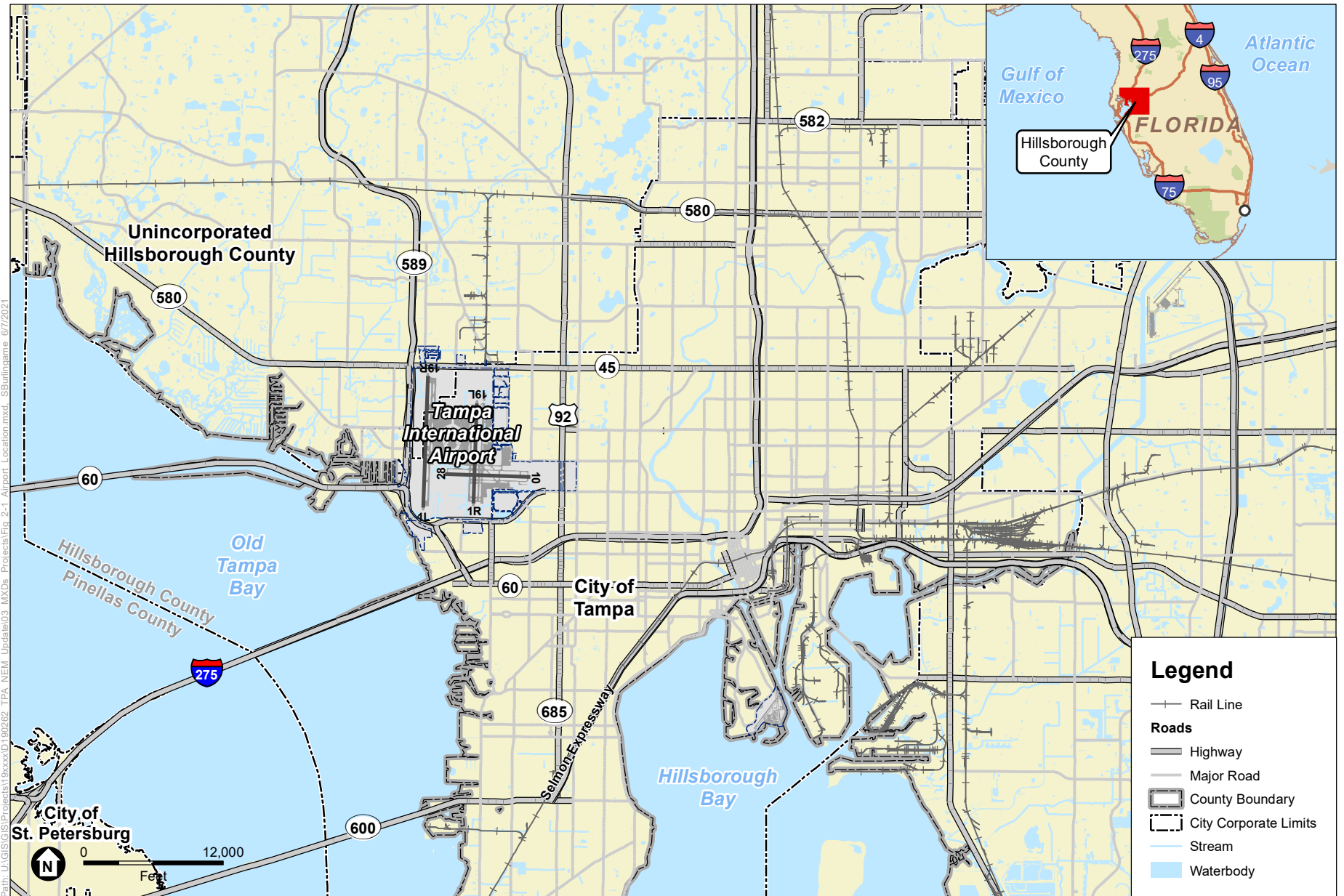
The Airport consists of one central Main Terminal surrounded by four terminal area airside complexes where passengers board and deplane from parked aircraft. The four airside complexes house 59 gates, which are distributed as follows:

- Airside A — 16 gates
- Airside C — 16 gates
- Airside E — 13 gates
- Airside F — 14 gates

The central Main Terminal is located on the landside and is surrounded by four airside complexes that stand as independent, separate structures joined by an APM. Airside F accommodates arriving international passengers and therefore includes Customs and Border Protection (CBP) services. HCAA has future plans for the construction of an additional Airside D to accommodate 16 new gates to service both domestic and international flights as detailed in the *2012 Airport Master Plan Update – 2016 Addendum – Volume 1*.⁴

³ *Report to Congress – National Plan of Integrated Airport Systems (NPIAS) 2019 - 2023*. Federal Aviation Administration, September 26, 2018.

⁴ *2012 Airport Master Plan Update – 2016 Addendum – Volume 1*. Hillsborough County Airport Authority, September, 2017.

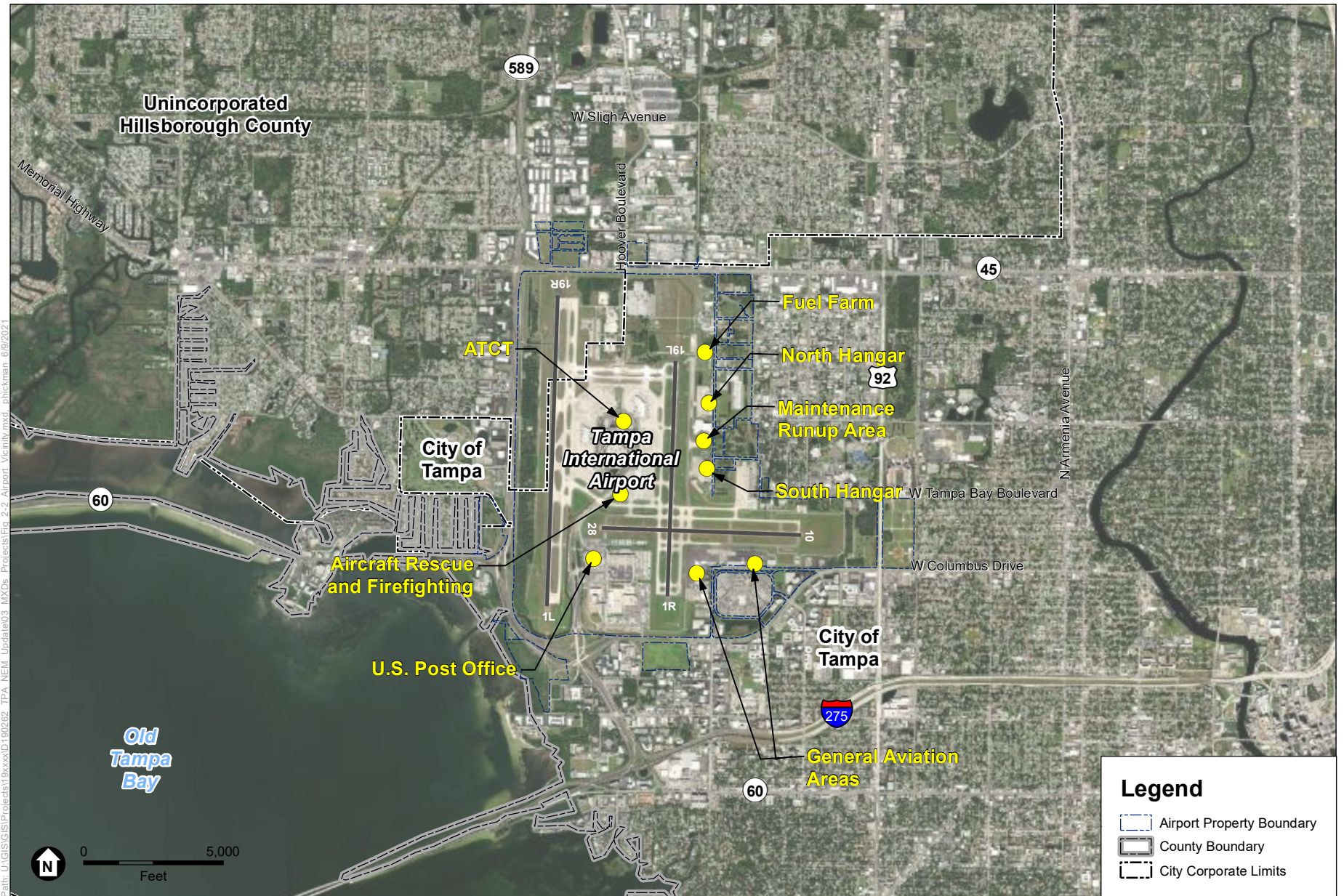


SOURCE: City of Tampa, July 2020; County of Hillsborough, July 2020; County of Pinellas, July 2020; Hillsborough MPO, July 2020; Pinellas County Assessor, July 2020.

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Figure 2-1
 Airport Location
 Tampa International Airport

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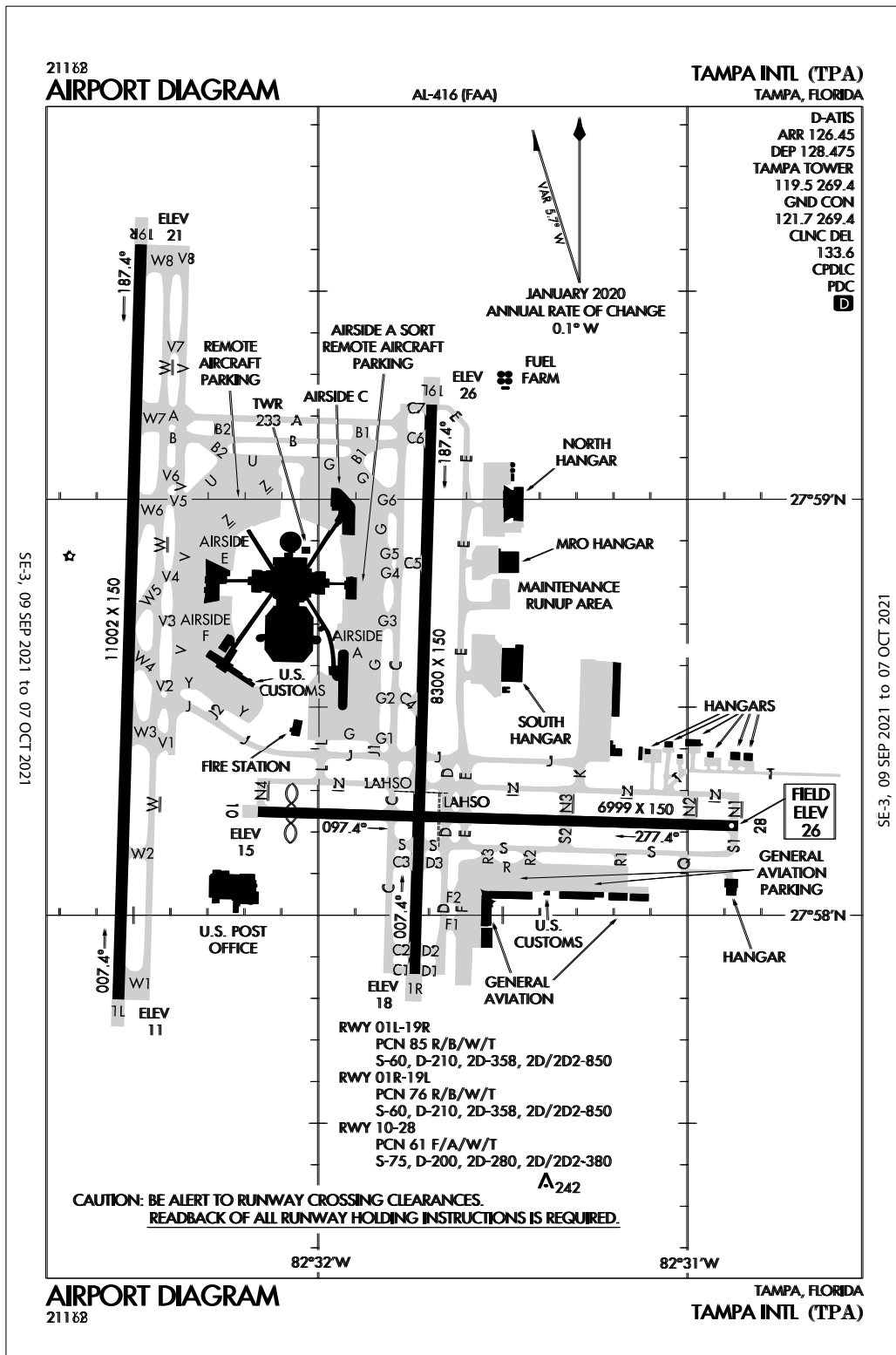


SOURCE: City of Tampa, July 2020; County of Hillsborough, July 2020; County of Pinellas, July 2020; Hillsborough MPO, July 2020; Pinellas County Assessor, July 2020.

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Figure 2-2
 Airport Vicinity
 Tampa International Airport

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SOURCE: Federal Aviation Administration, 2021; ESA, 2021.

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Figure 2-3
FAA Airport Diagram
Tampa International Airport



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2.2.2.2 Runways

The TPA airfield consists of three runways: two parallel north-south runways (Runway 1L/19R and 1R/19L) and one east-west crosswind runway (Runway 10/28). Runway 1L/19R is 11,002 feet long, 150 feet wide, and located west of the Main Terminal. This runway is constructed of concrete and is grooved. Runway 1L/19R does not have a displaced threshold. The takeoff distance available (TODA) for both runway ends is 11,002 feet. The landing distance available (LDA) for Runway ends 1L and 19R is 10,800 and 11,002 feet, respectively.

Runway 1R/19L is 8,300 feet long, 150 feet wide, and east of the Main Terminal. This runway is constructed of asphalt or bituminous concrete and is grooved. Runway 1R/19L has no displaced thresholds, leaving the entire 8,300 feet available for both takeoff and landing on both runway ends.

Runway 10/28 is 6,999-feet long and 150-feet wide. This runway is constructed of asphalt or bituminous concrete and is grooved. Runway end 10 has a displaced threshold of 498 feet reducing the LDA of Runway 10/28 to 6,501 feet at both runway ends. Categorized information regarding runway characteristics is shown in **Table 2-1**.

2.2.2.3 Taxiways

As shown on **Figure 2-3**, a series of taxiways provide a network of connections and access points between the TPA's three runways and the aviation facilities located adjacent to the airfield. The aviation facilities at TPA include the terminal area airside complexes; remain overnight (RON) parking areas; Maintenance, Repair and Overhaul (MRO) facilities; air cargo facilities; Fixed Base Operators (FBOs); and individual corporate, business, and government tenants.

Major taxiways that serve Runway 1R/19L consist of two full length parallel taxiways and a partial parallel taxiway. Runway 10/28 is presently served by a single full length parallel taxiway that extends the entire length of the runway along the north side and a second partial parallel taxiway that extends to the eastern end of Runway 10/28. Runway 1L/19R is served by one full length parallel taxiway with affiliated connectors and a second partial length parallel taxiway. To facilitate movements between the two parallel runways (1R/19L and 1L/19R), the Airport has two existing taxiways and one taxilane that aids aircraft movements from the eastern runway to the western runway.

2.2.2.4 Airport Traffic Control Tower

The Airport is serviced by an FAA-staffed airport traffic control tower (ATCT) located on the north end of the Main Terminal and between the two parallel north-south runways. The ATCT operates 24 hours a day, 365 days a year. Radar approach and departure control is operated by the Terminal Radar Approach Control (TRACON) facility that is co-located with the TPA ATCT.

**TABLE 2-1
TPA RUNWAY CHARACTERISTICS**

Runway Characteristics	Runway 1L/19R		Runway 1R/19L		Runway 10/28	
	1L	19R	1R	19L	10	28
Runway Length (Feet)	11,002		8,300		6,999	
Runway Width (Feet)	150		150		150	
Displaced Arrival Threshold (Feet)	0	0	0	0	498	0
Runway Landing Distance Available (Feet)	10,800	11,002	8,300	8,300	6,501	6,501
Runway Takeoff Distance Available (Feet)	11,002	11,002	8,300	8,300	6,999	6,999
Approach Surface Slope	50:1	50:1	50:1	50:1	34:1	50:1
Runway End Elevation (Feet above MSL)	10.7	21	17.7	26	14.5	26.4
Runway Markings	Precision	Precision	Precision	Precision	Non-precision	Non-precision
Runway Lighting	HIRL, 4-Light PAPI	HIRL, 4-Light PAPI	HIRL, 4-Light PAPI	HIRL, 4-Light PAPI	HIRL, 4-Light PAPI	HIRL, 4-Light PAPI
Part 77 Runway Category and Navigational Aids	ILS/DME	ILS/DME	LOC/DME	ILS	N/A	N/A
Runway Approach Lighting	ALSF2	MALSR	N/A	ALSF2	N/A	N/A

NOTES:

MSL = Mean Sea Level
 HIRL = High Intensity Runway Lighting
 DME = Distance Measuring Equipment
 PAPI = Precision Approach Path Indicator
 MALSR = Medium Intensity Approach Light System with Runway Alignment Indicator Lights
 ILS = Instrument Landing System
 LOC = Localizer
 ALSF2 = Approach Lighting System with Sequenced Flashing Lights

SOURCES: FAA Airport Master Record, Form 5010, 2021.

2.2.2.5 General Aviation Facilities

General Aviation (GA) refers to all types of aviation that are not considered military, cargo, scheduled commercial passenger air service, and non-scheduled air transportation for hire. GA activity at TPA is comprised of business, or corporate, activity as well as personal, private activity.

There are two FBOs currently providing service to GA operators at TPA, Sheltair and Signature Flight Support. These FBOs provide aircraft ground handling, aircraft fueling, pilot’s lounges, passenger lounges, rental cars, and crew/service centers. Both facilities are located east of Runway end 1R and south of Runway 10/28.

2.2.2.6 Air Cargo Facilities

TPA serves as an air cargo center for both domestic and international traffic. The primary cargo operators at TPA include FedEx, United Parcel Service (UPS), and a number of passenger airlines. Freight and air mail is processed at two primary cargo facilities: Belly Haul Air Cargo Building and FedEx Cargo Building. Airline belly cargo is handled through the multi-tenant Belly Haul Air Cargo Building located east of Runway 1R/19L on Air Cargo Road. The FedEx Cargo Facility is located south of West Ohio Avenue and east of Runway 1R/19L. Amazon Prime also conducts cargo operations at TPA. Cargo facilities are shown on **Figure 2-3**.

2.2.2.7 Aircraft Maintenance

There are three full-service MRO hangars located at TPA. The North Hangar is situated east of the Runway end 19L on the east side of the airfield. The United Airlines MRO hangar is located just south of the North Hangar, directly north of the ground run-up enclosure (GRE). The South Hangar is located south of the GRE, off of Runway 1R/19L. The North and South Hangar MRO facilities are operated by Airborne Maintenance & Engineering Services (Airborne). Airborne is an MRO service provider for wide and narrow body aircraft and regional jets. At the two facilities at TPA, Airborne primarily provides aircraft interior servicing and heavy airframe repair (excluding composite materials). Services do not include heavy engine maintenance activities.

The HCAA has a GRE located on the east side of Runway 1R/19L. The GRE was built in 2003 as a recommendation from the most recently completed Part 150 Study at TPA (2000). The GRE is a combined acoustic and jet blast protection structure that allows aircraft engine testing for post-maintenance activities for airlines. Additional information on the Airport's GRE is provided in **Chapter 4**.

2.2.2.8 Other Aviation-Related Facilities

In addition to the passenger terminals, cargo facilities, and general aviation facilities, a number of aviation-related support facilities are located on Airport property. These facilities include:

- Aircraft Rescue and Fire Fighting (ARFF)
- Fuel Farm
- Airport Surveillance Radar
- Ground Support Equipment Storage and Maintenance
- Airport Maintenance
- Airport Security and Police
- Compressed Natural Gas Fuel Facility
- Customs and Border Patrol Facilities
- US Post Office

2.2.3 Future/Planned Airport Facilities

As previously noted, HCAA has implemented projects recommended in the 2013 Master Plan Update. The final plan allows the Airport to accommodate up to 34 million passengers each year, and is divided into three distinct phases: decongestion, enabling, and expansion. It allows a “build as demand dictates” approach to growth, with phases based on passenger volume. The first phase was complete in 2018 and resulted in the new Rental Car Center (RCC), new people-mover (SkyConnect), and a Main Terminal expansion. Phase two broke ground in 2019 and includes expanding the curbsides, constructing a new Central Utility Plant, adding a new east-west cross over taxiway and bridge, widening the road system, and constructing a new office building. Despite the impacts of COVID-19 on the aviation industry, these projects continued to move forward. Once phase three is initiated, it will result in a new, 16-gate Airside satellite capable of serving both international and domestic flights. No runway improvements that would affect either runway length or airfield use are planned through 2026.

2.2.4 Airspace Classification

FAA controlled airspace is referred to as Class A, B, C, D, or E and uncontrolled airspace as Class G. Generally speaking, Class A airspace begins at 18,000 feet above mean sea level, continues upward, and is used to manage en route aircraft traffic. The Airport is located in a Class B airspace, which surrounds the nation’s busiest airports. Class C airspace surrounds airports with high traffic levels, but not as high as Class B airports. Class D airspace surrounds those airports with an ATCT but whose traffic levels are less than the threshold for Class C airspace. Class E airspace is any other controlled airspace where pilots are in radio contact with some portion of the FAA air traffic control network. This network consists of air route traffic control centers, terminal approach control facilities, ATCTs, and flight service stations. Additional information about airspace classifications can be found in **Appendix C** of this report.

2.3 Navigational Aids

Navigational aids (NAVAIDS), airport lighting, and airport markings help users of TPA to safely navigate around the Airport and through local airspace. The NAVAIDS available to pilots using TPA are summarized in **Table 2-2**.

2.4 Instrument Approach Procedures and Charted Visual Flight Procedures

Instrument approach procedures (IAPs) are flight procedures developed and published by the FAA that pilots use to navigate their aircraft to the runway. The most currently published IAPs for TPA are listed in **Table 2-3**.

**TABLE 2-2
TPA NAVIGATIONAL AIDS**

Navigational Aids	Description
Instrument Landing Systems (ILS)	<p>An ILS is a type of precision ground-based electronic landing navigation aid that has been in use in the U.S. for more than 50 years. An ILS guides pilots to runways during periods of limited visibility or inclement weather. An ILS has several components, including:</p> <ul style="list-style-type: none"> • Localizer antenna (LOC) that provides lateral course guidance to the runway • Glide slope antenna (GS) that provides vertical course guidance • Marker beacons along the extended runway centerline • Approach lighting system <p>Non-precision LOC instrument approach procedures are often available when a GS is not installed or for approaches from the opposite end of the runway ("back-course" approach).</p>
Area Navigation (RNAV)	<p>RNAV is a method of Instrument Flight Rules (IFR) navigation that permits aircraft operation on any desired flight path using the combination of both GPS and ground-based navigational aids. RNAV routes and terminal procedures, including departure procedures and standard terminal arrivals, are designed with RNAV systems in mind to save time and fuel, reduce aircraft dependence on air traffic control (ATC) vectoring, and provide for more efficient use of the airspace.</p>
Global Positioning System (GPS)	<p>The GPS, operated by the Department of Defense, uses a network of satellites that create reference points to enable aircraft equipped with GPS receivers to determine their latitude, longitude, and altitude. GPS systems can be used during all phases of flight.</p>
Required Navigation Performance (RNP)	<p>RNP is similar to Area Navigation (RNAV); but, RNP requires on-board navigation performance monitoring and alerting capability to ensure that the aircraft stays within a specific containment area.</p>

SOURCE: FAA, 2020. Adapted by Environmental Science Associates, 2021.

**TABLE 2-3
TPA INSTRUMENT APPROACH PROCEDURES**

Runway 1L/19R		Runway 1R/19L		Runway 10/28	
1L	19R	1R	19L	10	28
ILS OR LOC ILS (SA CAT I) ILS (CAT II - III) RNAV (GPS)	ILS OR LOC RNAV (GPS)	LOC RNAV (GPS)	ILS OR LOC ILS (SA CAT I) ILS (CAT II) RNAV (RNP) ^Y RNAV (GPS) ^Z	RNAV (GPS)	RNAV (GPS)

SOURCE: FAA Instrument Flight Procedures Information Gateway, 2020.

When two or more straight-in approaches with the same type of guidance exist for a runway, a letter suffix is added to the title of the approach so that it can be more easily identified. These approach charts start with the letter Z and continue in reverse alphabetical order.

2.5 Standard Terminal Arrivals and Departure Procedures

The airspace surrounding TPA is structured so that arriving aircraft can be safely and efficiently transitioned from the en route environment to the approach control environment and eventually to the airfield. Likewise, the airspace is structured so that departing aircraft can transition from the airfield to the terminal environment and ultimately to the en route environment. Standard Terminal

Arrival Routes (STARs) and Departure Procedures (DPs) simplify and expedite Instrument Flight Rules (IFR) arrival and departure procedures in airspace. As discussed previously, aircraft flying in and out of TPA follow these routes, depending on the operational flow of the Airport.

2.5.1 Standard Terminal Arrival Routes

There are eight STARs to route aircraft into TPA. There are currently five RNAV (GPS) arrival procedures and three conventional arrival procedures, as shown in **Table 2-4**. **Appendix C** includes a copy of the charts and descriptions of the STARs.⁵

TABLE 2-4 TPA STANDARD TERMINAL ARRIVAL ROUTES		
Procedure Name	Procedure Type	Arrival Direction
BRDGE EIGHT	Conventional	Southeast
DADES SEVEN	RNAV	North/Northeast
DARBS THREE	Conventional	Northwest
DEAKK FIVE	RNAV	South/Southeast
FOOXX FIVE	RNAV	North/Northwest
LZARD SIX	Conventional	Northeast
MAATY ONE	RNAV	North/Northwest
RAYZZ ONE	RNAV	West

NOTE: RNAV = Area Navigation

SOURCE: FAA Instrument Flight Procedures Information Gateway, 2021.

2.5.2 Departure Procedures

Aircraft departing TPA are often assigned a specific DP. A DP is a published procedure that provides a standard route from the runway to the appropriate en route airspace structure. In some cases, a DP may have an associated en route transition, which is a published procedure segment that connects the end of the DP to one of several en route structures. DPs are designed to separate departing aircraft from arriving aircraft, provide for efficient interception of an outbound course, simplify the issuance of departure clearances, and reduce radio communication.

DPs at TPA include a mix of RNAV and conventional procedures. **Table 2-5** summarizes the DPs for TPA. **Appendix C** includes these charts and descriptions of each procedure listed in the charts.

⁵ FAA’s *Instrument Procedures Handbook* (FAA-H-8083-16A) notes that STARs based on conventional NAVAIDs essentially have the same procedure design and obstacle clearance criteria as that for en route procedures. STAR procedures typically include standardized descent gradients and allow for deceleration segments. RNAV STARs serve the same purpose as conventional STARs, but are only used by aircraft equipped with Flight Management System or GPS. An RNAV STAR typically includes flyby (or flyover) waypoints. These waypoints may be assigned crossing altitudes and speeds to optimize the descent and deceleration profiles.

**TABLE 2-5
TPA DEPARTURE PROCEDURES**

Procedure Name	Procedure Type
BAYPO NINE	RNAV
CROWD EIGHT	RNAV
ENDED NINE	RNAV
GANDY EIGHT	RNAV
LGTNG THREE	Conventional
SYKES EIGHT	RNAV
TAMPA SEVEN	Conventional
NOTE: RNAV = Area Navigation	
SOURCE: FAA Instrument Flight Procedures Information Gateway, 2021.	

2.6 Economic Impact

TPA is a gateway to Florida's West Coast for business and leisure travelers from all over the U.S. and internationally. It is a significant driver of the regional economy that provides direct and indirect employment and an equally significant multiplier effect to the regional economy.

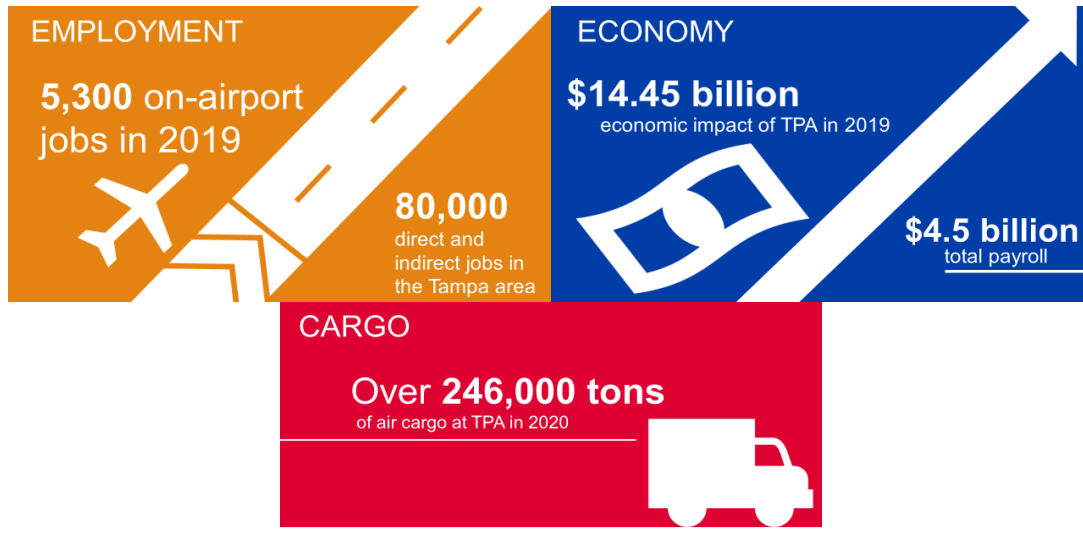
2.6.1 Regional Economic Impact

Airports within the state of Florida play an important role in the state economy by supporting business travel, leisure travel, and cargo shipments to businesses within the state. In 2020, the HCAA recorded over 246,000 tons of air cargo representing an approximate 12.5% increase from 2019 levels.⁶ The Florida Department of Transportation's (FDOT) Florida Statewide Economic Impact Study (March 2019) summarizes the direct contribution and regional benefit generated by airports in Florida. The report notes that TPA supports 5,300 on-airport jobs and 80,000 direct and indirect jobs in the surrounding area. Furthermore, the Airport is estimated to have a \$14.45 billion impact on the regional economy.⁷

⁶ *Tampa International Airport Annual Report*. Hillsborough County Aviation Authority, <https://www.tampaairport.com/facts-statistics-financials>. Accessed May 19, 2021.

⁷ *Florida Statewide Economic Impact Study, March 2019*, Florida Department of Transportation, <https://www.fdot.gov/aviation/economicimpact.shtm>. Accessed June 25, 2020.

**FIGURE 2-4
TPA ECONOMIC IMPACT**



Source: FDOT (Employment and Economy), 2019 and HCAA (Cargo), 2020.

2.7 Noise Abatement and Community Outreach Programs

Historically, HCAA has been active in addressing aircraft noise concerns, with numerous noise abatement measures to improve compatibility and community relations.

2.7.1 Sound Insulation Program

As recommended in TPA’s 2000 Part 150 Study, HCAA implemented a sound insulation program to reduce interior noise levels for residences within the DNL 65 and higher contour areas. The program included acoustical treatments designed to reduce aircraft noise experienced inside of residential homes. As a result, residences located within the DNL 65 contour, which were located in the Mariner Estate subdivision located approximately 1.5 miles south of Runway 1L, were included in an acoustical treatment program.

2.7.2 Real-time Flight Tracking System

The Airport’s real-time flight tracker system is hosted by Casper. The Casper Flight Tracking system consists of a virtual radar system that displays real-time information on aircraft flight activity at TPA. Its web-based application makes it easily accessible on PC, laptop, and tablet to allow for the Tampa and neighboring communities to view a variety of real-time flight information. For example, Casper’s web-based system allows for users to determine an aircraft’s point of closest approach (PCA) relative to specific street address. This allows for users to identify the height of an aircraft relative to a specific location. Additionally, the Casper system allows for the community to review specific aircraft flight tracks from the date selected from the user, which is helpful for understanding nighttime aircraft activity at TPA.

2.7.3 Community Outreach

HCAA is an active member of the surrounding community and implements numerous outreach efforts within the area. To provide a platform for sharing noise-related information with interested parties, the HCAA established the Community Noise Forum (CNF, previously named the Community Noise Consortium) and a public webpage for noise-related information. The CNF meetings are hosted by the HCAA Noise Office on a bi-monthly basis and the public is encouraged to attend. Current members of the CNF consist of people from all areas surrounding the Airport that are interested in noise. All presentations and information reviewed at the bi-monthly meetings are provided on HCAA’s webpage, including monthly Noise Monitoring Office Reports, Community Noise Monitoring Reports, and daily runway use deviation information.⁸ These reports provide an overview of the monthly recorded total operations (by aircraft type and direction), total noise complaints, and upcoming community outreach activities.

HCAA also regularly participates in a number of community outreach programs to increase awareness within areas surrounding the Airport. For example, the HCAA coordinates regular meetings with homeowner’s associations, airlines, FBOs, and private jet operators to increase awareness and create dialog around noise issues at TPA. This outreach includes performing Noise Abatement 101 educational presentations and providing handouts about the Voluntary Noise Abatement Program to interested stakeholders. The HCAA also meets regularly with other airport noise offices to discuss best practices in the area.

2.7.4 Aircraft Noise Complaints / Comments

As part of its noise program, the HCAA collects aircraft noise complaint information using the Casper Flight Tracking System and an online webpage where a noise complaint can be filed. Each noise complaint received is compiled in a database, verified for accuracy, analyzed, and included in monthly Noise Monitoring Office Reports for informational purposes. **Table 2-6** provides the number of annual noise complaints submitted for 2016 through July 2021.

TABLE 2-6 TPA AIRCRAFT NOISE COMPLAINTS (JANUARY 2016 TO JULY 2021)	
Year	Number of Noise Complaints
2016	1,352
2017	2,144
2018	1,757
2019	3,795
2020	2,833
2021 (through July)	4,206

SOURCE: Community Noise Forum and Noise Monitoring Office Reports, Tampa International Airport. Accessed September 23, 2021.

⁸ Community Noise Forum and Noise Monitoring Office Reports, Tampa International Airport. <https://www.tampaairport.com/community-noise-forum-and-noise-monitoring-office-reports>. Accessed July 28, 2020.

2.7.5 Noise Abatement Measures

The Airport's existing noise abatement strategies include preferential runway use, on-line reporting mechanisms, and noise office systems. The goal of the preferential runway use program is to maximize flights over water to the greatest extent possible. For example, Runway 19R is the preferred runway for commercial jet departures to the south and Runway 1L is the preferred runway for jet arrivals from the north, maximizing flights over water. North flow departures are also assigned headings to 3,000 feet before turning on course. Online reporting mechanisms and noise office systems include the monthly Noise Monitoring Office Reports and Airport real-time flight tracker system hosted by Casper, discussed in Sections 2.2.3 and 2.2.7, respectively. Below is a representative list of some of the key measures the HCAA has implemented as part of its noise management program.

- Ground run-up enclosure.
- Staffing an airport noise office.
- Bi-monthly CNF meetings, including a "Noise Abatement 101" educational presentation.
- Regular meetings with homeowner's associations, airlines, FBOs, and private jet operators to advance awareness and noise-related initiatives.
- Meetings with other airport noise offices on best management practices.
- Sound insulation of homes within the DNL 65 contour (Mariners Estate subdivision).
- Handouts for FBOs and pilots about the Voluntary Noise Abatement Program.
- Publicly released monthly Noise Monitoring Office Report and monthly Community Noise Monitoring Report which provide information on the monthly recorded total operations (by aircraft type and direction), total noise complaints, and upcoming community outreach activities at TPA.
- Review and categorization of every deviation from the preferential runway use program.
- Daily reporting of program (runway use) deviation information on TPA's website.
- Airport noise monitoring system and flight tracking website.
- Online noise complaint portal.
- Website updates containing scheduled runway closure information.
- Noise advisory related notifications, which are included in various Aeronautical Publications (e.g., FAA Form 5010-1, FAA Chart Supplement, and FDOT's annual airport directory).

CHAPTER 3

Land Use

3.1 Introduction

Title 14 CFR Part 150 requires the review of land uses located in the airport environs to understand the relationship between those land uses and the noise exposure associated with arriving and departing flights at an airport. This includes delineation of land uses within the DNL 65 and higher contours on the NEMs and identification of noise sensitive uses that may be incompatible with that level of noise exposure. Identification of a noise sensitive use within the DNL 65 contour does not necessarily mean that the use is either considered incompatible or that it is eligible for mitigation. Rather, identification merely indicates that the use is generally considered incompatible, and requires further investigation. Factors that influence compatibility and/or eligibility may include but not be limited to previous sound reduction treatments, current interior noise levels, structure condition, ambient and self-generated noise levels, whether a given use is considered temporary or permanent, and the timeframe within which a given structure was constructed.¹

3.2 Land Use Data Collection

Various types of land use information were collected to provide the basis for the evaluation of land use compatibility and noise exposure in this study.

3.2.1 Land Use Data Collection Area

The TPA NEM Update required the development of a database of existing land uses located in the airport environs affected by noise and flight activity. This process defined a broad data collection area that conforms to 14 CFR Part 150 criteria. The Land Use Data Collection Area for this study considered a number of factors, including:

- The most recent set of noise contours for TPA² to ensure that the 2021 Existing Conditions and 2026 Future Conditions DNL 65 contours developed for the Part 150 Study would be encompassed.
- Land use within a radial distance of 30,000 feet from each runway end at TPA for capture of flight tracks per 14 CFR Part 150 requirements.
- Flight track data associated with arrivals and departure operations at TPA in 2019.

¹ On March 27, 1998, FAA issued a policy on 14 CFR Part 150 airport noise compatibility programs that limits approval of remedial mitigation measures, e.g., soundproofing, property acquisitions, and relocation, etc., to land uses that were in place as of October 1, 1998 unless an airport can demonstrate that DNL contours were not published prior to that date. New non-compatible uses resulting from airport expansion may be eligible for consideration.

² 2000/2001 Tampa International Airport FAR Part 150 Update, Hillsborough County Aviation Authority, 2000.

3.2.2 Study Area

A Study Area was identified for more detailed collection and review of land use data and information. The TPA NEM Update Study Area included areas with the potential to be located within or in proximity to TPA's 2021 Existing and/or 2026 Future DNL 65 and higher contours.

3.2.3 Local Agency and Government Coordination

Publicly-available information from the following jurisdictions and agencies was collected and reviewed to document existing land uses:

- City of Tampa
- Hillsborough County
- Hillsborough County Property Appraiser
- Hillsborough County Metropolitan Planning Organization (MPO)
- Pinellas County
- Pinellas County Assessor

Geospatial data relevant to current land use and other existing conditions was downloaded from the geographic information systems sites associated with each jurisdiction. Parcel databases of property records including land use information were obtained from the Hillsborough County Property Appraiser and the Pinellas County Property Appraiser. Existing land use documentation was primarily based on the parcel-level property use information and was supplemented with additional current land use data provided by the Hillsborough County MPO. Data from the City of Tampa, Hillsborough County, and Pinellas County was used to confirm the presence of hospitals, libraries, parks, schools, and other noise sensitive sites.

3.3 Land Use Compatibility

3.3.1 Aircraft Noise and Land Use Compatibility

Guidelines regarding the compatibility of land uses within various DNL contour intervals are specified in *Appendix A of 14 CFR Part 150*. These guidelines are consistent with land use guidelines developed by other federal agencies, such as the U.S. Environmental Protection Agency and the U.S. Department of Housing and Urban Development. The noise metric used for land use compatibility is the DNL, which represents average noise levels over a 24-hour period. DNL values are expressed in A-weighted decibels (dBA), which is a sound pressure level metric that emphasizes sound at the frequency range where the human ear is most sensitive. In the calculation of DNL, sound events occurring during the nighttime (10:00 P.M. to 6:59 A.M.) are increased by a 10 decibel-weighting to represent the increased sensitivity of people to noise that occurs at night. DNL values represent the cumulative effects of all aircraft operations occurring during an average 24-hour period referred to as an “annual average day,” which is derived from aircraft operations data for an entire calendar year. Further details on aircraft noise are presented in **Appendix D** of this report.

The FAA has determined that the major land uses listed in 14 CFR Part 150, Appendix A, Table 1 (presented here as **Table 3-1**) are normally compatible with aircraft noise below the DNL 65 contour. Therefore, when evaluating land use compatibility, attention is focused on uses within the DNL 65 contour.

As shown in Table 3-1, noise sensitive land uses such as single and multi-family residential, mobile home parks, transient lodging (e.g., hotels), daycares, public and private schools, and outdoor music venues are considered incompatible with noise levels of DNL 65 or higher. Other noise sensitive land uses such as hospitals, nursing homes, churches, auditoriums, and concert halls are considered compatible with noise levels of DNL 65 to 75, provided that appropriate noise attenuation is designed into the building's structure. Commercial, manufacturing, and recreational land (parks, amusement parks, zoos, etc.) are generally less sensitive to noise and are considered compatible with noise levels up to DNL 70 without noise attenuation and up to DNL 80 with appropriate levels of noise attenuation. For this TPA NEM Update, the identification of compatible and incompatible land uses within the DNL 65 and higher contours was documented using the guidance provided in Table 3-1 to the extent that it was readily applied to the area land use categories.

3.3.2 Local Ambient Noise Environment

One important consideration in evaluating land use compatibility relative to aircraft noise is the overall noise environment in proximity to the Airport. 14 CFR Part 150, Appendix A, Section 101 indicates that “if the self-generated noise from a given use and/or the ambient noise from other non-aircraft and non-airport uses is equal to or greater than the noise from aircraft and airport sources,” the land use is considered compatible.

Ambient (background) noise levels generally increase as intensity of development increases; ranging from a quiet rural setting to suburban to urban to a dense urban environment, which typically has the loudest ambient noise levels. Tampa and surrounding cities include land that can be classified as suburban and urban and with the exception of major highway corridors, the local ambient noise environment is generally less than the noise from aircraft and airport sources. Further away from the city, rural areas such as Lutz have a lower ambient noise level.

**TABLE 3-1
14 CFR PART 150 LAND USE COMPATIBILITY GUIDELINES
IN AIRCRAFT NOISE EXPOSURE AREAS**

Land Use	Yearly Day-Night Noise Level (DNL) in decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential						
Residential, Other than mobile homes and transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient Lodgings	Y	N(1)	N(1)	N(1)	N	N
Public Use						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums and concert halls	Y	25	30	N	N	N
Government services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
Commercial Use						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail - building materials, hardware and farm equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade – general	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
Manufacturing & Production						
Manufacturing, general	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation	Y	Y	25	30	N	N

**TABLE 3-1
14 CFR PART 150 LAND USE COMPATIBILITY GUIDELINES
IN AIRCRAFT NOISE EXPOSURE AREAS**

Land Use	Yearly Day-Night Noise Level (DNL) in decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
<i>Numbers in parenthesis refer to notes.</i>						
* The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, State or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.						
Key to Table						
SLUCM	Standard Land Use Coding Manual					
Y(Yes)	Land use and related structures compatible without restrictions.					
N(No)	Land use and related structures are not compatible and should be prohibited.					
NLR	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.					
25, 30 or 35	Land Use and related structures generally compatible; measures to achieve NLR of 25, 30 or 35 dB must be incorporated into design and construction of structure.					
NOTES:						
(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 dB to 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.						
(2) Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where normal noise level is low.						
(3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where normal noise level is low.						
(4) Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where normal noise level is low.						
(5) Land use compatible provided that special sound reinforcement systems are installed.						
(6) Residential buildings require an NLR of 25 dB.						
(7) Residential buildings require an NLR of 30 dB.						
(8) Residential buildings not permitted.						
SOURCE: Title 14 Code of Federal Regulations Part 150, Appendix A, Table 1, <i>Airport Noise Compatibility Planning</i> .						

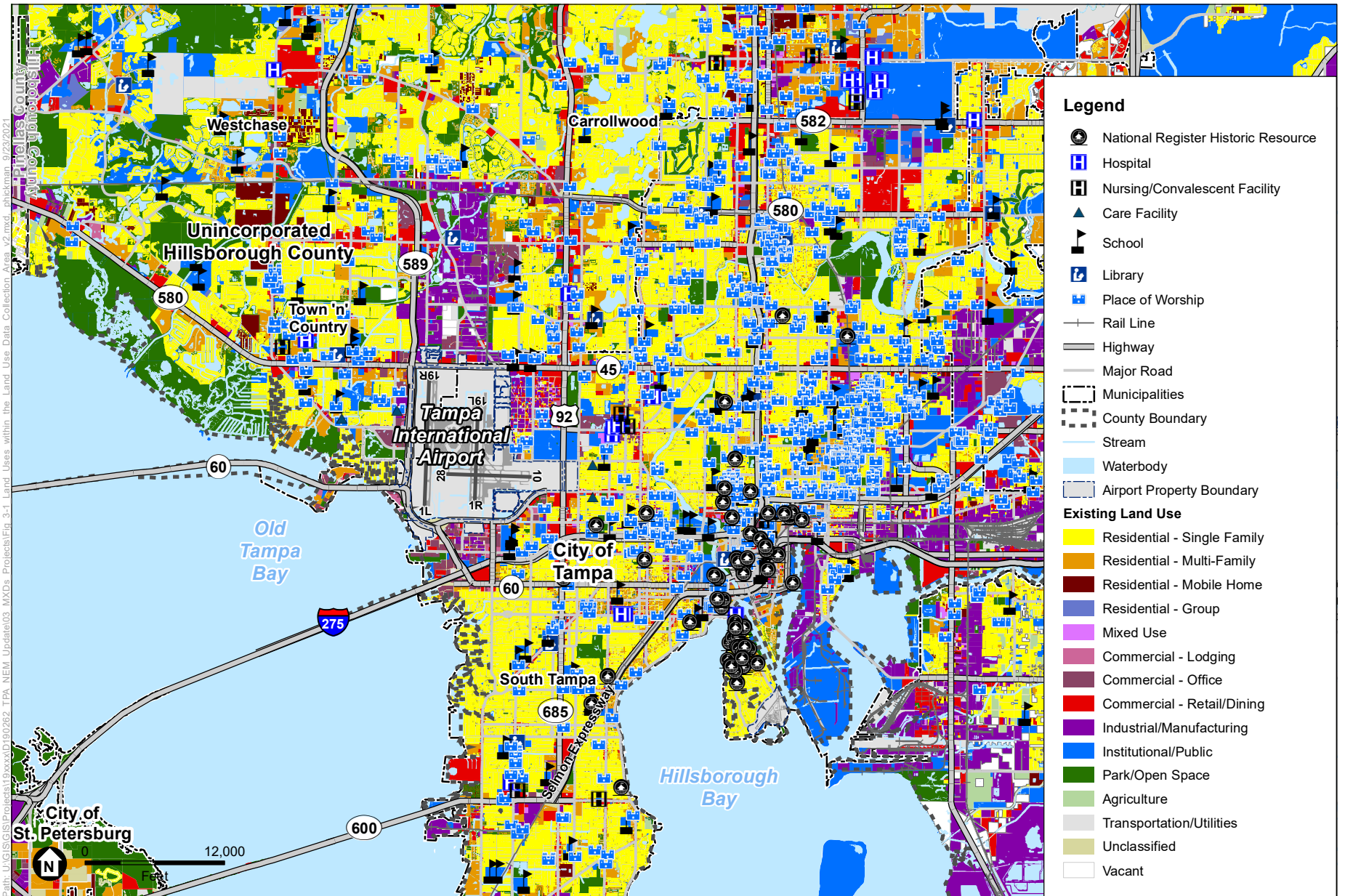
3.3.3 Land Uses Within the Study Area

Land in the Study Area is developed and highly urbanized. The predominant land use immediately surrounding the boundary of TPA consists primarily of commercial development, industrial and manufacturing land uses, and institutional facilities. Residential areas are scattered at locations immediately surrounding the Airport boundary, but are more prevalent further from the Airport boundary. Residential areas immediately surrounding the Airport can be found in the northeast and southeast and west. The Mariner Estate subdivision is located south of Runway end 1L; homes in this subdivision were included in a sound insulation program (see Section 2.7.1 for additional information). Commercial development, and industrial and manufacturing land uses are prevalent south of Runway end 1R, east and north of Runway end 19L, and north and west of Runway end 19R. Commercial development is also found along major road corridors. Land uses in the Study Area are summarized in **Table 3-2** and depicted on **Figure 3-1**. As discussed in Section 3.2.3, data used to identify land uses in the Study Area were collected from a number of sources including various government entities: County of Hillsborough, City of Tampa, County of Pinellas, Hillsborough County Property Appraiser, Hillsborough MPO, Pinellas County Assessor and various readily available on-line data and mapping sources. More information on land uses is provided in **Appendix E**.

**TABLE 3-2
CONSOLIDATED LAND USE CATEGORIES WITHIN THE STUDY AREA**

Consolidated Land Use Categories	Typical Uses	Compatibility with the DNL 65 Contour
Residential - Single Family	Single family homes	Generally considered incompatible
Residential - Multi-Family	Apartment buildings, duplexes, condominiums, public housing complexes, and assisted living facilities	Generally considered incompatible
Residential - Mobile Home	Transportable prefabricated structures used for residential living	Generally considered incompatible
Residential - Group	Group homes, dormitories, and barracks	Generally considered incompatible
Mixed Use	Mixed residential and nonresidential uses occupying the same site	Residential portions are generally considered incompatible
Commercial - Lodging	Hotels, motels, extended stay facilities	Generally considered incompatible
Commercial - Office	Business, professional, and healthcare services	Generally considered compatible
Commercial - Retail/Dining	Retail, including shopping malls, shopping centers, stores, shops, entertainment, restaurants, bars, galleries, and service establishments	Generally considered compatible
Industrial/Manufacturing	Bulk fuel storage, heavy manufacturing and assembly plants, light manufacturing and processing facilities, warehouse and storage, junkyards, sand and gravel pits	Generally considered compatible
Institutional/Public	Schools and universities, libraries, museums, cultural facilities, places of worship, government buildings, auditoriums, hospitals and hospice facilities, nursing homes, police and fire protection, post offices, correctional institutions	Generally considered compatible with the exception of specific noise sensitive uses (schools, hospitals, places of worship, nursing homes)
Park/Open Space	Parks, recreation areas (parks, amusement parks, zoos, etc.), playgrounds, athletic fields, conservation land, preserves, and public land.	Generally considered compatible with the exception of outdoor music venues
Agriculture	Farms, greenhouses, and aquaculture	Generally considered compatible with the exception of farms with on-site residences
Transportation/Utilities	parking facilities; power generation, and substations	Generally considered compatible
Vacant	No present use	Potentially incompatible if it were to be developed with an incompatible use
Unclassified	No land use identified by Hillsborough County, typically highway and road right-of-way	Potentially incompatible if developed with an incompatible use

SOURCE: Environmental Science Associates, 2021.



SOURCE: City of Tampa, July 2020; County of Hillsborough, July 2020; County of Pinellas, July 2020; Hillsborough County Property Appraiser, July 2020; Hillsborough MPO, July 2020; Pinellas County Assessor, July 2020.

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Figure 3-1
Land Uses within the Land Use Data Collection Area
Tampa International Airport

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3.3.4 Noise Sensitive Sites

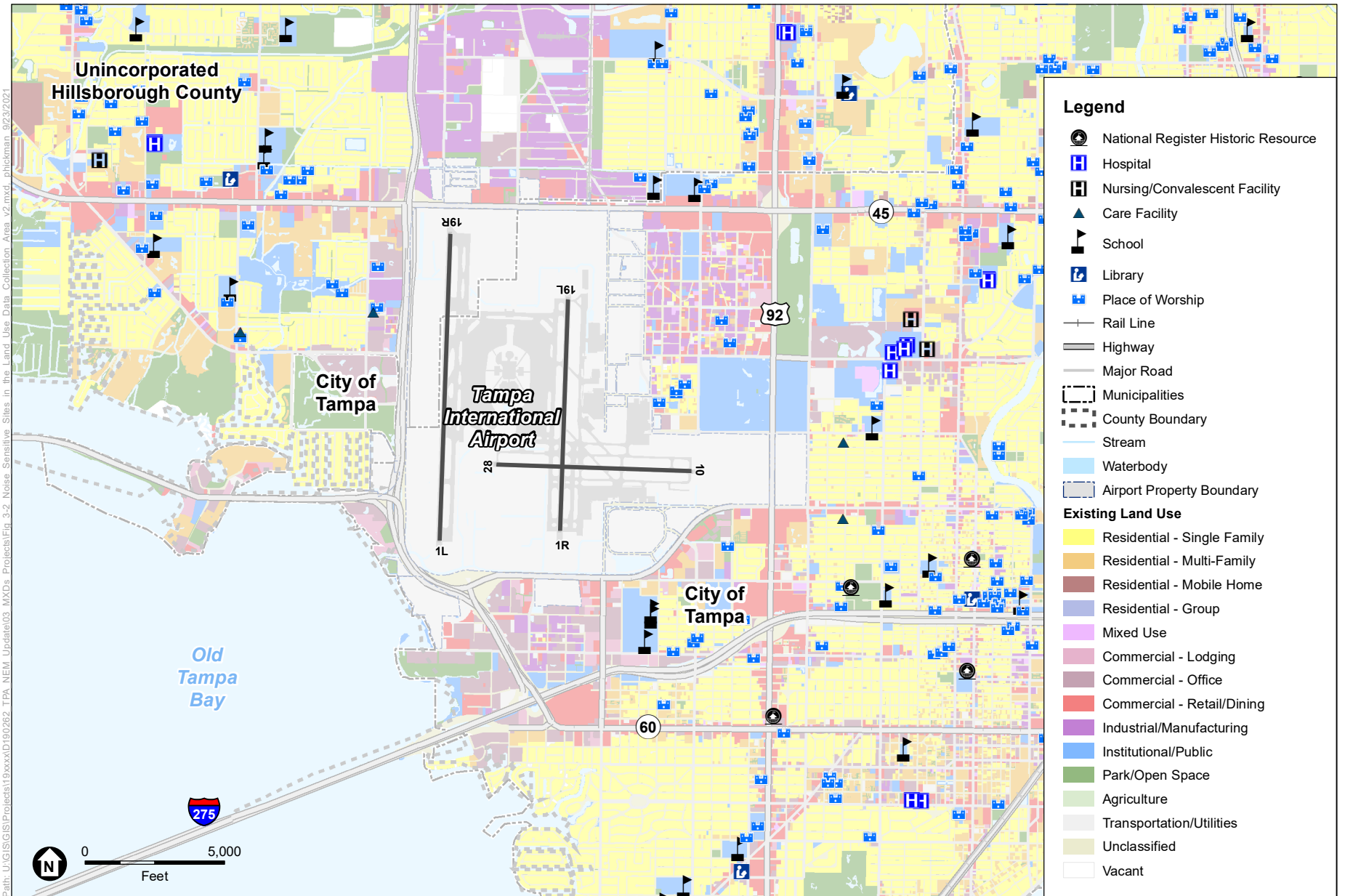
In addition to identifying and mapping land uses, 14 CFR Part 150 also requires the identification of noise sensitive public buildings and properties eligible for inclusion in the National Register of Historic Places. The TPA NEM Update identified the following noise sensitive uses within the Land Use Data Collection Area:

- Places of worship
- Schools
- Libraries
- Hospitals
- Nursing homes
- Care facilities (child and adult day cares)
- Historic properties and sites

The County of Hillsborough, City of Tampa, Hillsborough County Property Appraiser, Hillsborough MPO, Pinellas County Assessor and various readily available on-line data and mapping sources were used to identify noise-sensitive sites. Information sources for the identification of historic resources included the National Register of Historic Places and the Florida State Register of Historic Places.

The locations of noise sensitive uses in the Land Use Data Collection Area are depicted in **Figure 3-2**. As indicated previously, inclusion of these properties within the DNL 65 contour does not necessarily mean that a use is either considered incompatible or that it is eligible for mitigation. Inclusion merely indicates that the use is generally considered incompatible and requires further investigation during the NCP phase of a Part 150 Study.

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SOURCE: City of Tampa, July 2020; County of Hillsborough, July 2020; Hillsborough County Property Appraiser, July 2020; Hillsborough MPO, July 2020; Pinellas County Assessor, July 2020.

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Figure 3-2
Noise Sensitive Sites in the Land Use Data Collection Area
Tampa International Airport

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CHAPTER 4

NEM Development

4.1 Introduction

This chapter summarizes the methods and data used to conduct the aircraft noise analysis and produce the noise exposure contours that are depicted on the NEMs. This chapter will provide information on the noise model used to calculate noise exposure, the noise metric used in this study, and information used as inputs into the noise model.

4.2 FAA Noise Model and Metrics

4.2.1 Aviation Environmental Design Tool

The FAA’s AEDT is the required model to calculate noise exposure for 14 CFR Part 150 studies as of May 29, 2015. AEDT 3d was released on March 29, 2021 and is the latest FAA-approved noise model used for the TPA NEM Update. This model was used to calculate noise exposure for the 2021 Existing Conditions and 2026 Future Conditions.

AEDT uses airport-specific information (e.g., runway data); flight track information; aircraft operation levels distributed by time of day, aircraft fleet mix, and aircraft profiles to develop noise exposure contours. During an annual average 24-hour period, referred to as “annual average day” (AAD), AEDT accounts for each aircraft flight along flight tracks departing from, or arriving to, an airport. The flight tracks are coupled with information in the model’s database relating to noise levels at varying distances and flight performance data for each type of aircraft. In general, the model computes and sums noise levels at grid locations at ground level around the Airport. The cumulative values of noise exposure at each grid location are used to develop contours of equal noise exposure. AEDT can also compute noise levels at user-defined points.

4.2.2 Day Night Average Sound Level

Day Night Average Sound Level expressed in dBA¹ accounts for the noise levels of all individual aircraft events, the number of times those events occur, and the period of day/night in which they occur. The calculation of DNL logarithmically averages aircraft sound levels at grid locations over a 24-hour period, with a 10-decibel adjustment added to those noise events occurring between 10:00 P.M. and 7:00 A.M. Due to the increased sensitivity to noise during normal sleeping hours and because ambient (without aircraft) sound levels during nighttime are typically lower than during

¹ When assessing the effect of sound on humans, sound is measured using an electronic filter that de-emphasizes frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ear’s decreased sensitivity to extremely low and extremely high frequencies. This method of frequency weighting is referred to as A-weighting, and A-weighted sound levels are expressed in units of A-weighted decibels (dBA).

daytime hours, the 10-decibel adjustment, or “weighting,” represents the added intrusiveness of sounds occurring during nighttime hours.

The DNL metric is the noise descriptor required by the FAA for aircraft noise exposure analyses under NEPA, FAA Order 1050.1F, and land use compatibility planning under 14 CFR Part 150.² A more detailed discussion of the AEDT and noise metrics is provided in **Appendix D**.

4.3 Data for Developing Noise Exposure Map

The following sections summarize the information used to develop the noise exposure maps.

4.3.1 Forecasted Annual Aircraft Operations

In accordance with 14 CFR Part 150, the TPA NEMs were prepared for two scenarios: 2021 Existing Conditions and 2026 Future Conditions. To obtain aircraft activity levels for the development of the NEMs, an appropriate forecast needed to be identified. Due to the impacts of COVID-19 on commercial aviation, the Study Team used the FAA’s 2020 Terminal Area Forecast (2020 TAF), which was released in May 2021 and considered the recent events. The 2020 TAF is included in **Appendix B**.

According to the 2020 TAF, aircraft operations at TPA are projected to reach 167,878 in 2021. By the end of 2026, the 2020 TAF projects approximately 246,167 aircraft operations to occur at TPA. The 2021 and 2026 operational levels included in the 2020 TAF are used for the 2021 Existing Conditions and 2026 Future Conditions NEM in this NEM Update (see **Appendix B**).

4.3.2 Aircraft Fleet Mix

The HCAA’s Casper data was used to determine the types of aircraft (fleet mix) in operation at TPA during calendar year 2020. This information was then reviewed along with the latest publicly available airline fleet plans, including aircraft orders and known aircraft retirements, to determine the aircraft types expected to operate at TPA in 2021 and 2026. The Study Team reviewed the data and updated the aircraft future fleet mix for 2026 based on recent industry trends. The resulting fleet mix developed was used to identify the corresponding aircraft and engine combinations within AEDT. Specific factors affecting fleet mix that were considered include:

- Industry-wide up-gauging and the increasing average size of aircraft;
- The number of new technology narrowbody aircraft (e.g., Airbus neo and Boeing MAX) in airline fleets;
- Aircraft retirements and total fleet size driven by COVID-19 related reductions; and
- Replacement of Boeing 757 and 767 aircraft that operate on domestic routes.

Table 4-1 identifies the number of operations by aircraft category for 2021 and 2026. Details pertaining to AEDT aircraft operations are included in **Appendix B-2**.

² U.S. Department of Transportation. Federal Aviation Administration. Order 1050.1F, *Environmental Impacts: Policies and Procedures*. July 16, 2015.

**TABLE 4-1
ANNUAL AIRCRAFT OPERATIONS BY AIRCRAFT CATEGORY**

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. Includes military operations.

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.

4.3.3 Aircraft Operations by Time of Day

As discussed previously, aircraft operations modeled in AEDT are assigned as occurring during daytime or nighttime. **Table 4-2** summarizes time of day splits in which aircraft arrivals and departures are expected to occur in 2021 and 2026 (by percent of total operations). The HCAA's Casper data served as the primary source for the operational splits and time of day information since it captures actual arrival and departure times, versus scheduled times. A detailed breakout of operation times of day, by aircraft type, is provided in **Appendix B-2**.

**TABLE 4-2
ANNUAL AIRCRAFT OPERATIONS (ALL AIRCRAFT) BY TIME OF DAY**

Study Year	Arrivals		Departures	
	Day	Night	Day	Night
2021	86.4%	13.6%	92.4%	7.6%
2026	85.7%	14.3%	91.4%	8.6%

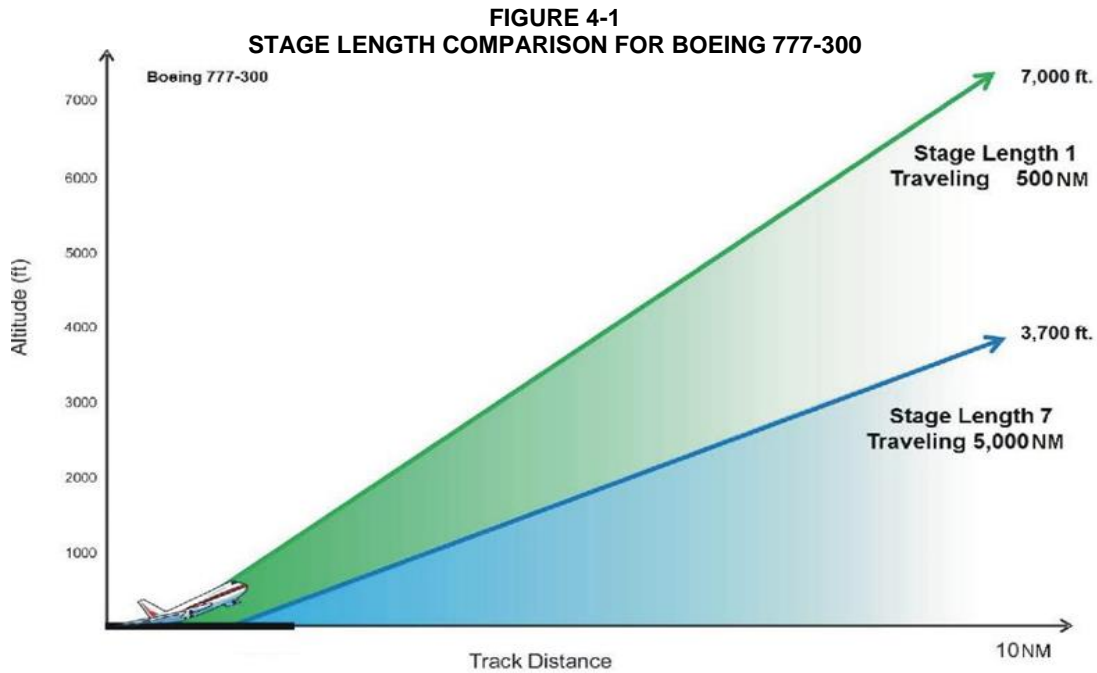
SOURCE: Environmental Science Associates and Ricondo & Associates, 2021. Casper data for calendar year 2020.

4.3.4 Departure Stage Length

Noise exposure from aircraft departures varies depending on takeoff weight. For example, a fully loaded aircraft departing on a long-haul flight typically weighs more on departure than the same fully loaded aircraft departing on a short-haul flight, due to the weight of the additional fuel needed to travel a longer distance (see **Figure 4-1**). A heavier aircraft typically requires higher power (thrust settings) to reach its takeoff speed and uses more runway length. Heavier aircraft also climb at a slower rate than lighter aircraft. Therefore, more land area can be exposed to higher levels of aircraft noise by departures of heavier aircraft. To account for this variance in aircraft weight, AEDT contains up to nine departure climb profiles (corresponding to different departure weights), depending on the type of aircraft. These profiles represent aircraft origin-to-destination trip lengths

from 500 nautical miles to over 6,500 nautical miles. The trip distances for each stage length are shown in **Table 4-3**.

Calendar year 2020 Casper data were analyzed to determine existing departure stage lengths at TPA by aircraft type and assist with projecting stage lengths in 2021 and 2026. **Table 4-4** summarizes the projected departure stage lengths for all aircraft at TPA in 2021 and 2026, respectively. A breakout of stage length by aircraft type is provided in **Appendix B-2**.



Stage Length Category	Departure Route/ Trip Length (nautical Miles)
1	0 - 500
2	501 - 1,000
3	1,001 - 1,500
4	1,501 - 2,500
5	2,501 - 3,500
6	3,501 - 4,500
7	4,501 - 5,500

NOTE: No aircraft at TPA exceeded a departure stage length of 7.

SOURCE: Federal Aviation Administration Aviation Environmental Design Tool Version 3d User Manual, March, 2021.

**TABLE 4-4
DEPARTURE STAGE LENGTH (ALL AIRCRAFT)**

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.

4.4 Meteorological Conditions

AEDT accounts for the influences of meteorological conditions on aircraft performance and atmospheric sound absorption, using temperature and relative humidity to calculate atmospheric absorption coefficients, which in turn are used to adjust standard aircraft performance noise-power-distance curve levels. The AEDT default meteorological data for TPA was used for both the 2021 and 2026 NEMs. This included 10-year averages recorded at the station are 74.43 degrees Fahrenheit, 70.11 percent relative humidity, and sea level pressure of 1017.75 millibars. The AEDT default meteorological data for TPA also included a default headwind of 5.85 knots; AEDT does not have average wind direction for airports and AEDT models wind as a pure headwind, regardless of the direction of travel. Meteorological data in the AEDT model is based on the last ten years (2011-2020) of data from the National Oceanic and Atmospheric Administration (NOAA).

4.5 Airport Operational Information

4.5.1 Runway Use

Runway use refers to the frequency with which aircraft utilize each runway end for departures and arrivals. The more often a runway is used, the more noise is generated in areas located off each end of the runway. Runway utilization data were derived from Casper data for calendar year 2019, to better capture how aircraft operate during normal operations, rather than reduced levels experienced during the current pandemic. As indicated in FAA's 2020 TAF, aircraft activity levels at TPA are expected to return to normal post-pandemic. **Tables 4-5 and 4-6** provide a summary of arrival and departure runway utilization for all aircraft, except helicopters. In 2021, Runway 1L/19R is the primary runway used for daytime and nighttime arrivals, accounting for over 58 percent of arrival activity. In contrast, approximately 65 percent of daytime and nighttime departures at TPA occur off of Runways 19R and 1R. As activity increases at the airport through 2026, it is expected that runway use will not change substantially. A detailed breakout of arrival and departure runway utilization by aircraft category is provided in **Appendix B-2**.

**TABLE 4-5
ARRIVAL RUNWAY USE**

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

**TABLE 4-6
DEPARTURE RUNWAY USE**

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

4.5.2 Flight Tracks and Utilization

Flight tracks refer to the route an aircraft follows when arriving to or departing from a runway. To identify flight tracks that represent annual average day conditions at TPA, aircraft arrival and departure data from Casper were reviewed for calendar year 2019, to better capture how aircraft operate during normal operations, rather than reduced levels experienced during the current pandemic. It is expected that the impacts from the pandemic will subside over the short-term and that aircraft activity levels at TPA will return to normal within the Study Period. The 2019 data provided information on the paths, time of day, and departure stage lengths.

Flight corridors utilized by arriving and departing aircraft to and from each runway end were reviewed and a series of centerlines of the flight corridors (backbone tracks) were established. These tracks were dispersed within AEDT to generate sub-tracks in order to distribute the aircraft within each of the primary flight corridors. The AEDT flight tracks are depicted on **Figures 4-2 through 4-7**. Flight tracks are shaded based on utilization above or below 10 percent utilization, to show that some flight tracks are not frequently utilized. Additional graphics that provide a more detailed depiction of TPA’s arrival and departure flight tracks are provided in **Appendix F**. The

flight tracks and their respective utilization rates are forecast to remain constant for the 2021 and 2026 study years. Flight track utilization, by time of day, is provided in **Appendix B-2**.

4.6 Helicopter Operational Information

4.6.1 Helicopter Use

Based on the review of 2019 Casper data at TPA, a total of two areas used by helicopters were identified for this NEM Update. These areas, on the eastern/southeastern portions of the airfield are primarily used to support general aviation operations and local law enforcement. Modeled helicopter locations are included in **Appendix F**. A total of 1,353 and 1,685 helicopter operations were included for the 2021 Existing Conditions and the 2026 Future Conditions, respectively, based on the Casper data for 2019. **Table 4-7** provides a summary of arrival and departure helicopter utilization at TPA in 2021 and 2026. A detailed breakout of helicopter utilization is provided in **Appendix B-2**.

TABLE 4-7 HELICOPTER ARRIVAL AND DEPARTURE USE – 2021 AND 2026		
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.

4.6.2 Helicopter Flight Tracks and Utilization

Flight tracks refer to the route a helicopter follows when arriving to or departing from the Airport. To identify flight tracks that represent annual average day conditions at TPA, helicopter operation data from the HCAA’s Casper system were reviewed for the calendar year 2019. The 2019 data provided helicopter types, flight paths, time of day, and type of operations.

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 established. These tracks were dispersed within the AEDT to generate sub-tracks in order to distribute the aircraft within each of the primary flight corridors. The AEDT departure and arrival flight tracks for helicopters are depicted on **Figure 4-8**. Flight track utilization, by time of day, is provided in **Appendix B-2**.

4.7 Engine Run-ups

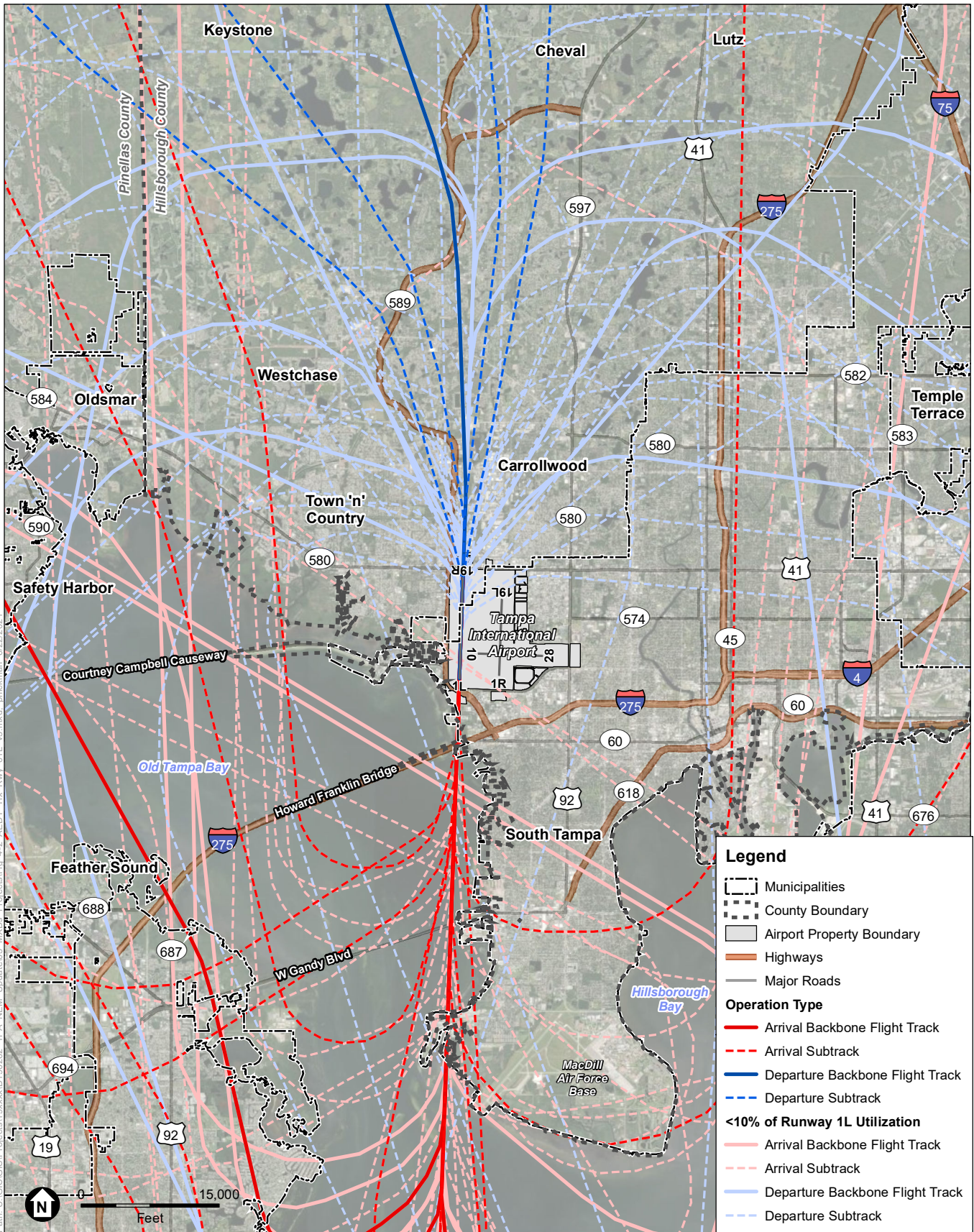
Engine run-ups are conducted after certain types of maintenance performed on an aircraft. For this procedure, the aircraft are taxied to the designated run-up locations on the airfield and engines are run-up at various power settings. The Airport has a GRE located east of Runway 1R/19L, south of the United Airlines facility. It is enclosed on three sides by physical barriers that serve to reduce engine noise to the north, west, and east. The open side of the GRE faces to the south and aircraft test their engines with their noses oriented towards the opening. The GRE at TPA can accommodate large commercial aircraft such as a Boeing 767.

Engine run-up activities that occurred in 2019 were reviewed. The log included the date, time, duration, and aircraft type. A total of 475 ground run-up activities were logged, which equates to approximately 1.3 run-up operations per day, occurring both during the day and night. It should be noted that the logged time represents the time an aircraft was in GRE. Therefore, the durations do not represent the actual run-up duration. For those reasons, following assumptions were made based on reviewing the 2000 TPA Part 150 Update Study and discussions with HCAA staff about run-up operations:

- Duration of run-ups were assumed to be 25 percent of logged duration with the conditions of the minimum duration of 5 minutes and the maximum duration of 30 minutes.
- All of logged run-up activities would conduct full power run-up for 2 minutes with all engines.
- Other than 2 minutes of full power run-ups, aircraft would conduct idle run-up for the rest of durations.

The details of modeled engine run-ups are included in **Appendix B**.

For the 2026 Future Conditions, the number of engine run-up activities are anticipated to remain the same as the 2021 Existing Conditions.



SOURCE: Esri; AEDT 3d; Hillsborough County, July 2020; FGDL, 2019; ESA, 2021.

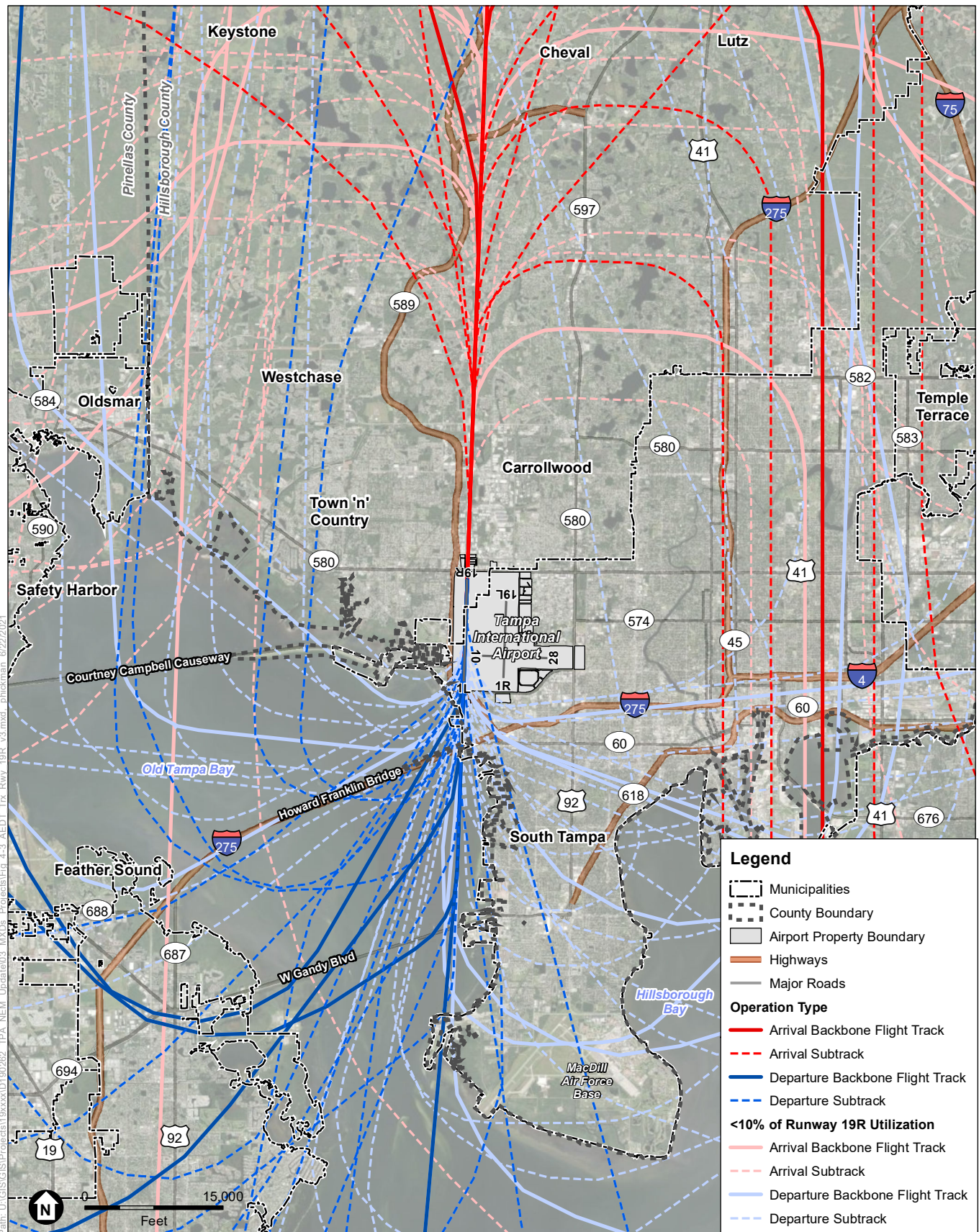
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NOTE: Does not include helicopter flight tracks.



Figure 4-2
AEDT Flight Tracks – Runway 1L
Tampa International Airport

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SOURCE: Esri; AEDT 3d; Hillsborough County, July 2020; FGDL, 2019; ESA, 2021.

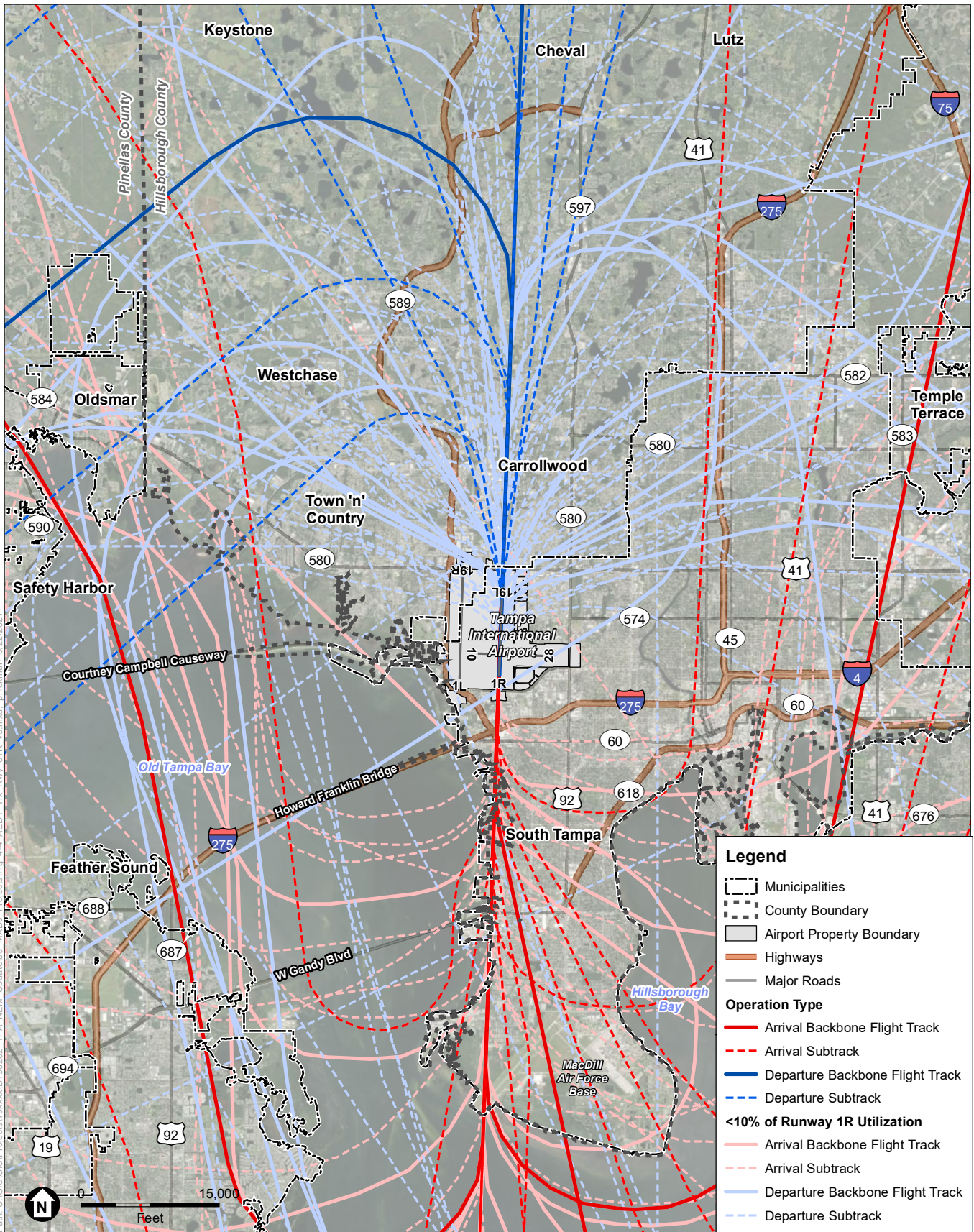
NOTE: Does not include helicopter flight tracks.

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Figure 4-3
AEDT Flight Tracks - Runway 19R
Tampa International Airport



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SOURCE: Esri; AEDT 3d; Hillsborough County, July 2020; FGDL, 2019; ESA, 2021.

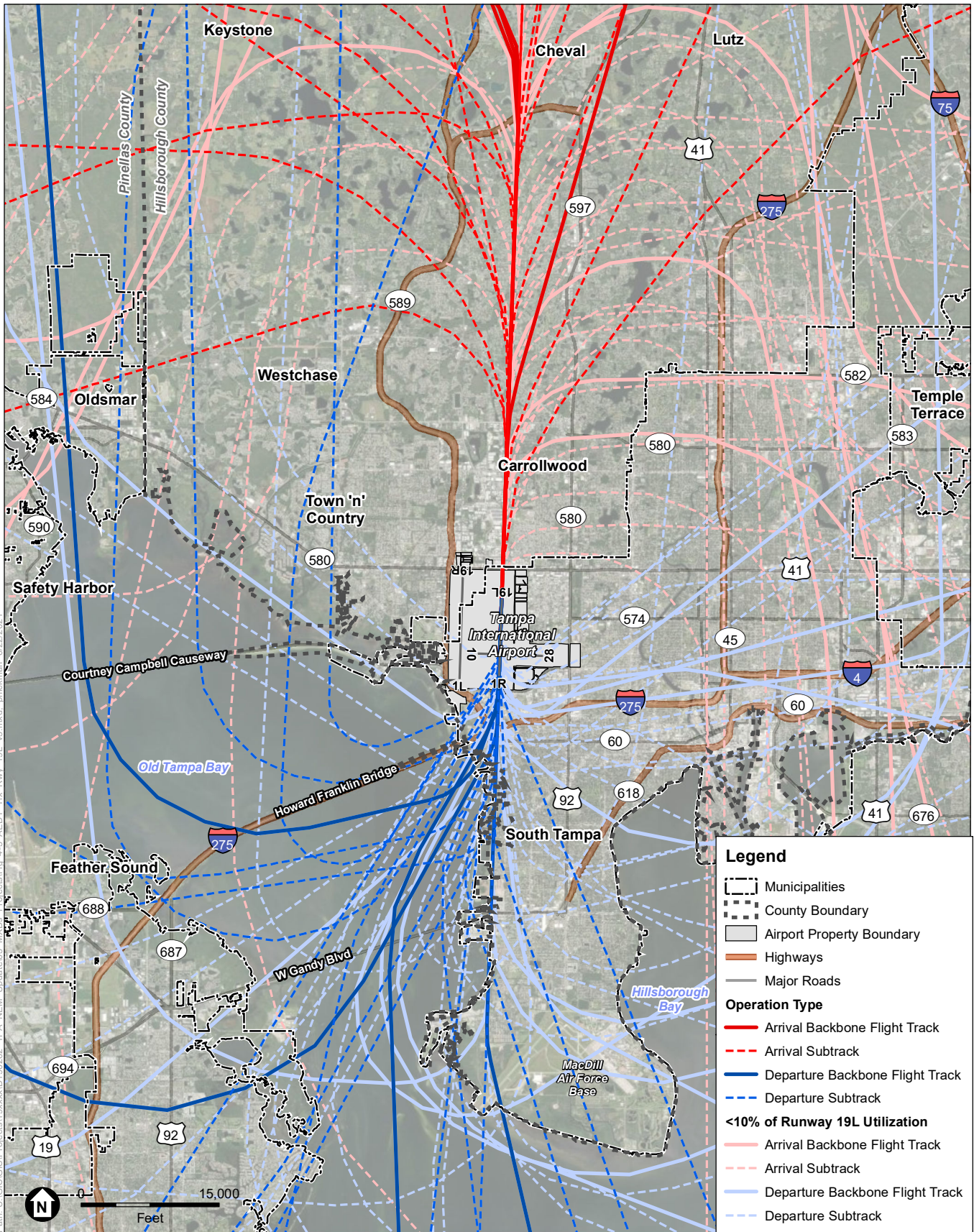
NOTE: Does not include helicopter flight tracks.

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Figure 4-4
AEDT Flight Tracks - Runway 1R
Tampa International Airport



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SOURCE: Esri; AEDT 3d; Hillsborough County, July 2020; FGDL, 2019; ESA, 2021.

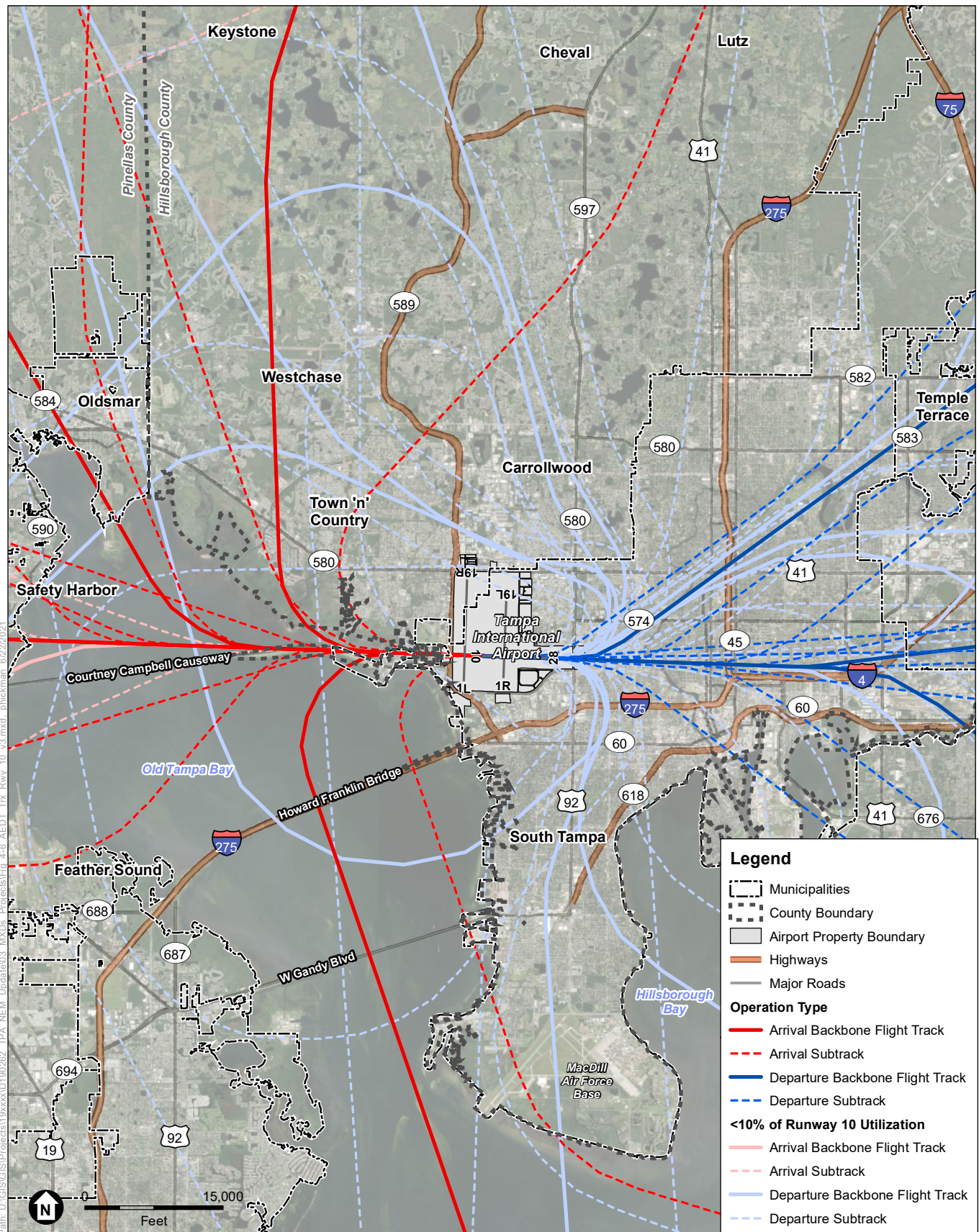
NOTE: Does not include helicopter flight tracks.

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Figure 4-5
AEDT Flight Tracks - Runway 19L
Tampa International Airport



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SOURCE: Esri; AEDT 3d; Hillsborough County, July 2020; FGDL, 2019; ESA, 2021.

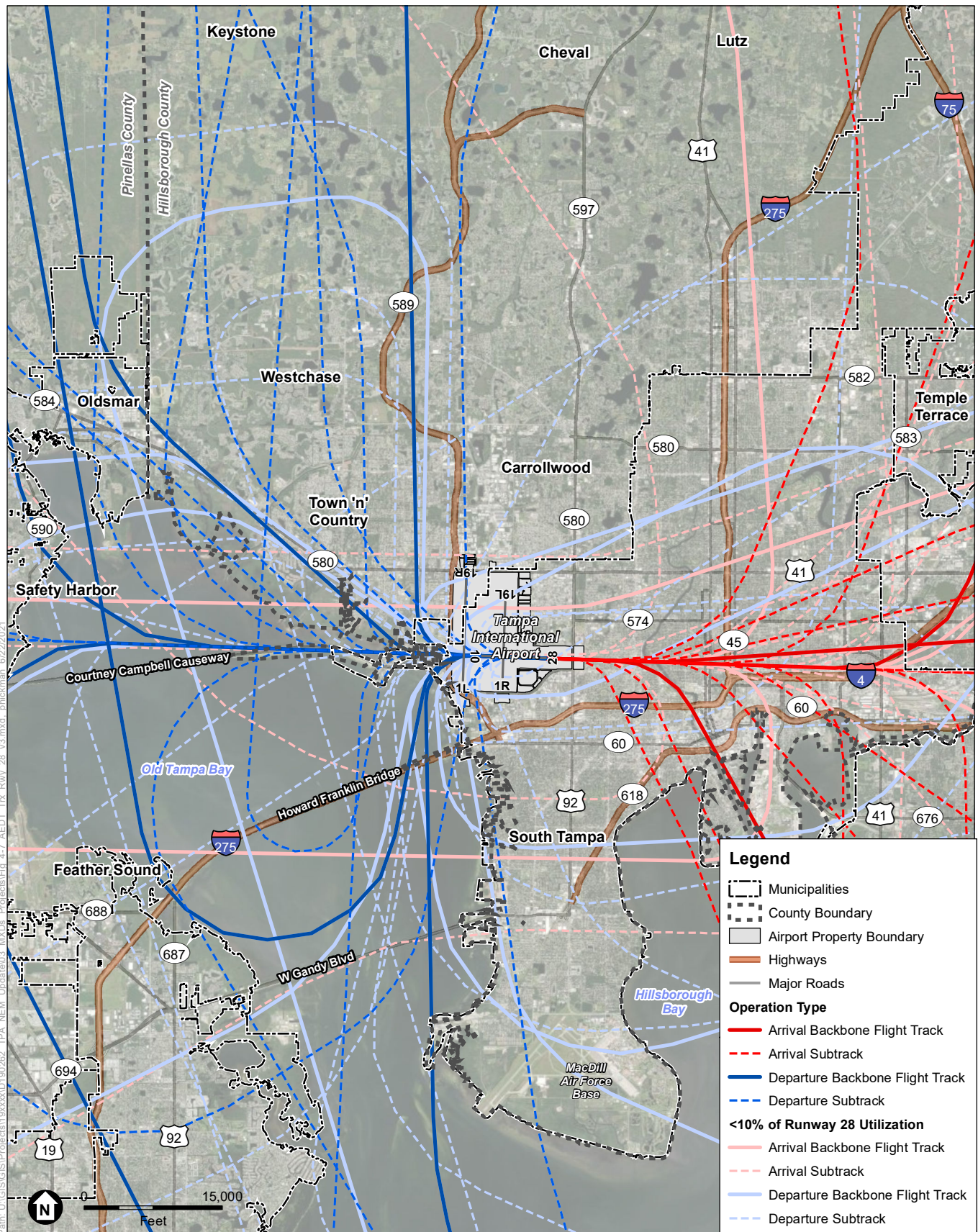
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NOTE: Does not include helicopter flight tracks.



Figure 4-6
AEDT Flight Tracks - Runway 10
Tampa International Airport

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SOURCE: Esri; AEDT 3d; Hillsborough County, July 2020; FGDL, 2019; ESA, 2021.

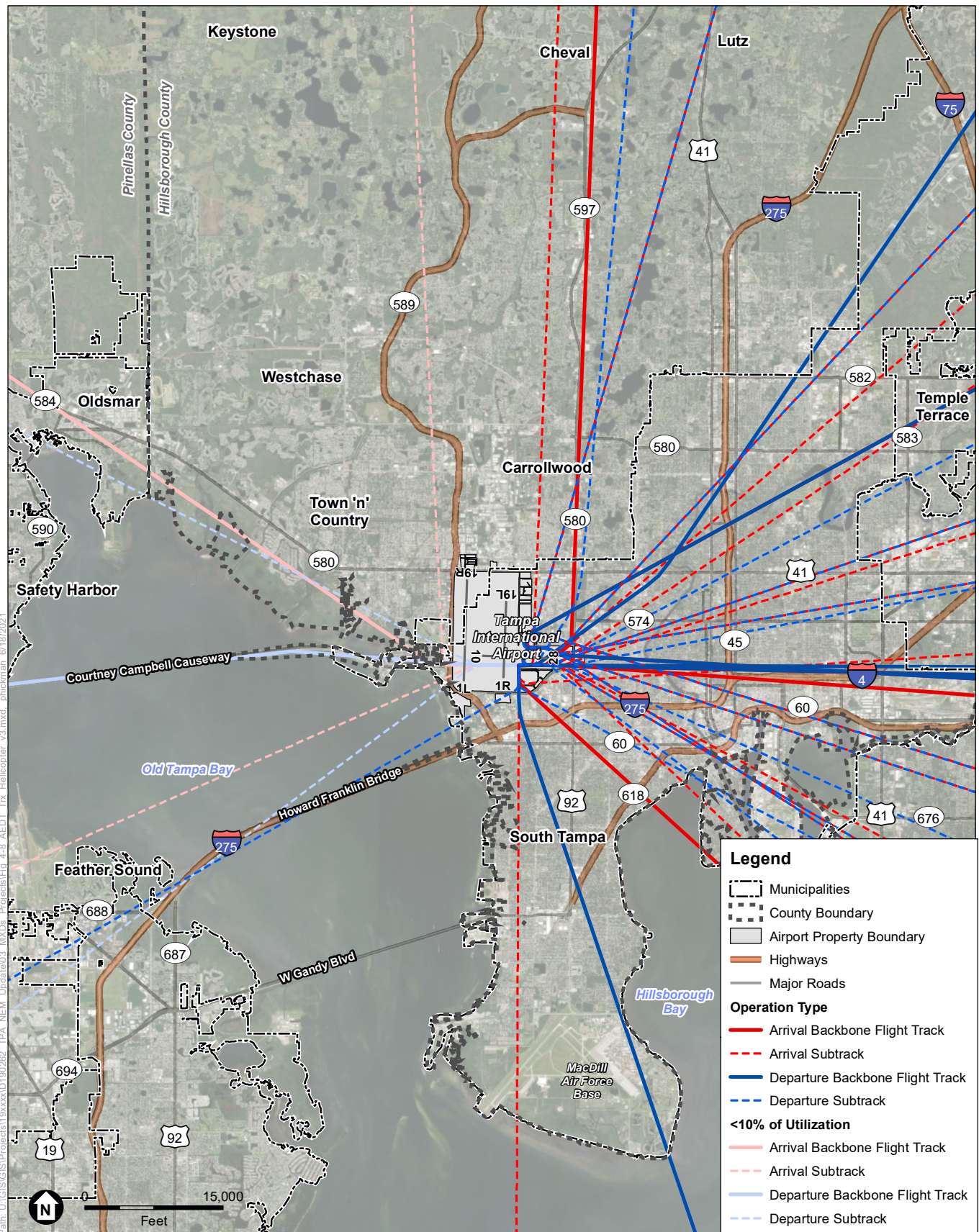
NOTE: Does not include helicopter flight tracks.

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Figure 4-7
AEDT Flight Tracks - Runway 28
Tampa International Airport



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SOURCE: Esri; AEDT 3d; Hillsborough County, July 2020; FGDL, 2019; ESA, 2021.

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Figure 4-8
AEDT Helicopter Flight Tracks
Tampa International Airport



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CHAPTER 5

2021 and 2026 Noise Exposure

5.1 Introduction

This chapter presents the 2021 Existing Conditions and 2026 Future Conditions DNL contours for TPA. As discussed in **Chapter 4**, the contours show how noise from aircraft operations is distributed over the surrounding area. This chapter identifies land use compatibility using Federal guidelines, identifies noise sensitive locations, and quantifies the types of land uses and population within the DNL 65 and higher contours.

14 CFR Part 150 requires that the aircraft noise exposure for the year of submittal (in this case 2021) and for a future year (2026) be developed. The DNL 65, 70, and 75 contours are the only contours required by the FAA for the agency's acceptance of the NEMs. Specific elements that are required to be included on the existing and future NEMs and required supplemental graphics are identified in 14 CFR Part 150. These include depictions of noise sensitive sites within the DNL 65 contour. The 2021 Existing Conditions and 2026 Future Conditions NEMs are included in **Appendix J** of this report.

5.2 2021 Noise Exposure

Figure 5-1 depicts the 2021 Existing Conditions DNL contours superimposed on an existing land use map. In accordance with 14 CFR Part 150, the DNL 65, 70, and 75 contours are shown. The contours accurately represent noise based on Airport and operational data described in **Section 4.3**. The figure also depicts community and geographic reference points, such as TPA's boundary and runways, political boundaries, area roads and highways, and waterbodies. This figure assists in understanding the geographic relationship of TPA's DNL contours to the surrounding community.

The 2021 Existing Conditions DNL contours intersect off-Airport properties north and south of the Airport adhering to the extended runway centerlines. The contours along the Runway 1L/19R centerline extend north past Johns Road in an unincorporated area of Hillsborough County and south into Old Tampa Bay past Mariner Street in the City of Tampa. The contours along the Runway 1R/19L centerline extend north to West Knox Street and do not extend beyond Airport property on the south. DNL contours along Runway 10/28 do not extend beyond Airport property.

5.2.1 Land Use Compatibility within 2021 Existing Conditions DNL Contours

The total area encompassed by the 2021 Existing Conditions DNL 65 and greater contours is approximately 1,861 acres, 304 acres of which are located off-Airport. Land uses located within the 2021 Existing Conditions DNL 65 and higher contours were identified by overlaying the contours on parcel-level land use data provided by the Hillsborough County Property Appraiser.

Using GIS software, the types and amount of land uses were calculated. The total acres for each land use category within the DNL 65 and higher contours are shown in **Table 5-1**. Lands that are not included in the parcel dataset such as transportation corridor right-of-way areas were counted as Unclassified land area. Hillsborough County and the City of Tampa are the public agencies with zoning and planning authority for land within the 2021 Existing Conditions DNL 65 contour.

The Land Use Compatibility Guidelines discussed in **Section 3.3** show that noise-sensitive land uses such as residential, mobile home parks, transient lodging (e.g., hotels and motels), schools, and outdoor music venues are not compatible with noise levels of DNL 65 or higher. Other noise-sensitive land uses such as hospitals, nursing homes, churches, auditoriums, and concert halls are generally compatible with noise levels between DNL 65 and 75 when measures that achieve an outdoor-to-indoor Noise Level Reduction (NLR) of 25 to 30 dB are incorporated into the structures.¹ Commercial, manufacturing, and recreational land (parks, amusement parks, zoos, etc.) are generally less sensitive to noise and considered compatible with noise levels up to DNL 70 (parks are compatible up to DNL 75). Commercial and manufacturing properties are compatible with noise levels up to DNL 80 with NLR of 25 to 30 dB.

As shown in **Table 5-1**, the 2021 Existing Conditions DNL 65 and higher contours contain approximately 58 acres of Industrial/Manufacturing, 41 acres of Park/Open Space, 21 acres of Commercial – Retail/Dining, and 13 acres of Commercial – Office land uses. Other land uses include approximately three acres of Institutional/Public, seven acres of Transportation/Utilities, three acres of Residential – Single Family land uses and a half acre of Vacant land.

5.2.2 Population within 2021 Existing Conditions DNL Contours

Table 5-2 presents the estimated number of households, population, and the noise sensitive sites exposed to DNL 65 and higher in 2021. Based on property records from the Hillsborough County Property Appraiser, 14 housing units are exposed to aircraft noise of DNL 65 and higher in 2021.

The population exposed to aircraft noise of DNL 65 and higher was determined by multiplying the average number of persons per household in each individual census tract, as provided by the U.S. Census Bureau,² within the DNL 65 and higher contours by the number of households intersected by the DNL contours within the associated census tracts. The individual household populations were then summed to quantify the total number of persons within the DNL 65 and higher contours. The total population exposed to aircraft noise of DNL 65 and higher was estimated to be 36 persons.

Of the 14 housing units exposed to aircraft noise of DNL 65 and higher in 2021, all 14 have participated in TPA's Voluntary Noise Abatement Program by receiving soundproofing and are considered compatible land uses for the purposes of this NEM Update. As shown in **Figure 5-2**, these homes are located along Mariner Street approximately one and a half miles from the approach end of Runway 1L.

¹ Normal residential construction can be expected to provide an outdoor to indoor NLR of 20 dB.

² U.S. Census Bureau, <https://data.census.gov/cedsci/table?q=United%20States&t=Housing%3APopulations%20and%20People&g=1400000US12057005900,12057011605&y=2010&d=DEC%20Summary%20File%201&tid=DECENNIALSF12010.P17&hidePreview=true> (accessed June 4, 2021).

**TABLE 5-1
LAND USES EXPOSED TO DNL 65 AND HIGHER – 2021 EXISTING CONDITIONS**

Land Use Category ¹	Land Uses exposed to DNL 65 and Higher (acres) ²				Housing Units ³	Population ³
	DNL 65-70	DNL 70-75	DNL 75+	Total		
Residential - Single Family	3.3	0.0	0.0	3.3	14	36
Residential - Multi-Family	0.0	0.0	0.0	0.0	0	0
Residential - Mobile Home	0.0	0.0	0.0	0.0	0	0
Residential - Group	0.0	0.0	0.0	0.0	0	0
Mixed Use	0.0	0.0	0.0	0.0	0	0
Commercial - Lodging	0.0	0.0	0.0	0.0	0	0
Commercial - Office	13.4	0.0	0.0	13.4	0	0
Commercial - Retail/Dining	20.6	0.0	0.0	20.6	0	0
Industrial/Manufacturing	58.4	0.0	0.0	58.4	0	0
Institutional/Public	3.1	0.0	0.0	3.1	0	0
Park/Open Space	40.7	0.0	0.0	40.7	0	0
Agriculture	0.0	0.0	0.0	0.0	0	0
Transportation/Utilities	6.9	0.0	0.0	6.9	0	0
Unclassified	86.9	6.8	0.1	93.8	0	0
Vacant	0.5	0.0	0.0	0.5	0	0
Water	62.8	0.0	0.0	62.8	0	0
Total	296.7	6.8	0.1	303.6	14	36

NOTE: Acreages listed are indicative of off-Airport land area. All housing units have received sound insulation and are considered compatible land uses. Population counts may not total due to rounding

SOURCES:

¹ Land Use Categories derived from Hillsborough County Property Appraiser records.

² Noise contours from Environmental Science Associates.

³ Housing units and population estimates derived from Hillsborough County Property Appraiser records and U.S Census Bureau 2010 Decennial Census Summary File 1 Survey Data.

**TABLE 5-2
NOISE SENSITIVE SITES EXPOSED TO DNL 65 AND HIGHER – 2021 EXISTING CONDITIONS**

Noise Level ¹	Total Area (Acres)	Housing Units ²	Population ²	Religious	Schools	Hospitals	Historic Resources	Day Cares	Group Care	Libraries	Nursing Homes
DNL 65-70	296.7	14	36	0	0	0	0	0	0	0	0
DNL 70-75	6.8	0	0	0	0	0	0	0	0	0	0
DNL 75+	0.1	0	0	0	0	0	0	0	0	0	0
Total	303.6	14	36	0	0	0	0	0	0	0	0

SOURCES:

¹ Noise contours from Environmental Science Associates.

² Housing units and population estimates derived from Hillsborough County Property Appraiser records and U.S Census Bureau 2010 Decennial Census Summary File 1 Survey Data.

³ Noise sensitive site data from County of Hillsborough and U.S. National Park Service.

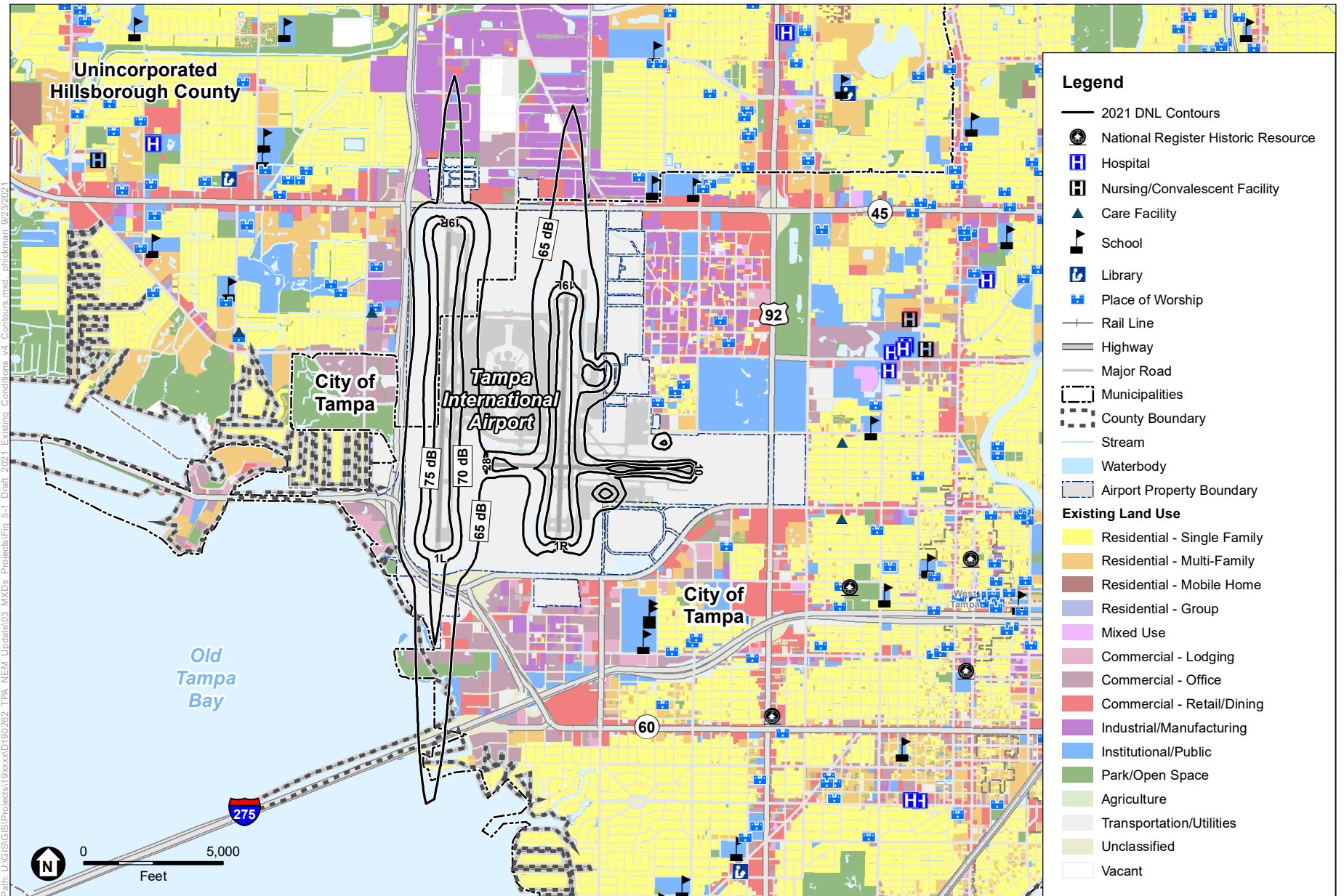
5.3 2026 Noise Exposure

The 2026 Future Conditions DNL contours are depicted on **Figure 5-3**. Similar to **Figure 5-1**, the 2026 DNL contours are superimposed over a future land use map. In accordance with 14 CFR Part 150, the 2026 DNL contours reflect the anticipated noise conditions based on Airport and operational data that are representative of calendar year 2026, as described in **Section 4.3**. The 2026 Future Conditions DNL contours retain the same general form as the 2021 Existing Conditions DNL contours with slightly expanded area. The DNL 65 and higher contours extend north along the Runway 1L/19R centerline beyond West Sligh Avenue, and north along the Runway 1R/19L centerline to West Knollwood Street. The contours extend off-Airport to the south along the Runway 1L/19R centerline approximately two and one-quarter miles from the runway end into Old Tampa Bay.

5.3.1 Land Use Compatibility within 2026 Future Conditions DNL Contours

The total area encompassed by the 2026 Future Conditions DNL 65 and higher noise contours is approximately 2,413 acres, 612 acres of which are located off-Airport. The type and amount of land uses within the DNL 65 and higher contours are provided in **Table 5-3**. As presented in the table, the 2026 Future Conditions DNL 65 and higher contours contain approximately five acres of Residential - Single Family land use. **Figure 5-4** depicts the 22 residential parcels within the DNL 65 contour; 21 of the parcels are located along Mariner Street and those homes have received sound insulation and are considered compatible. The other parcel is Mixed Use and located north of W. Sligh Avenue. The residential component of the parcel is not considered compatible within the DNL 65 contour.

Aside from the residential land uses, there are approximately 134 acres of Industrial/Manufacturing, 53 acres of Park/Open Space, 38 acres of Commercial – Retail/Dining, 22 acres of Commercial – Office, 18 acres of Transportation Utilities, eight acres of Institutional/Public, and one acre of Commercial – Lodging, of which no guest rooms or other noncompatible structures are located inside the DNL 65 contour.

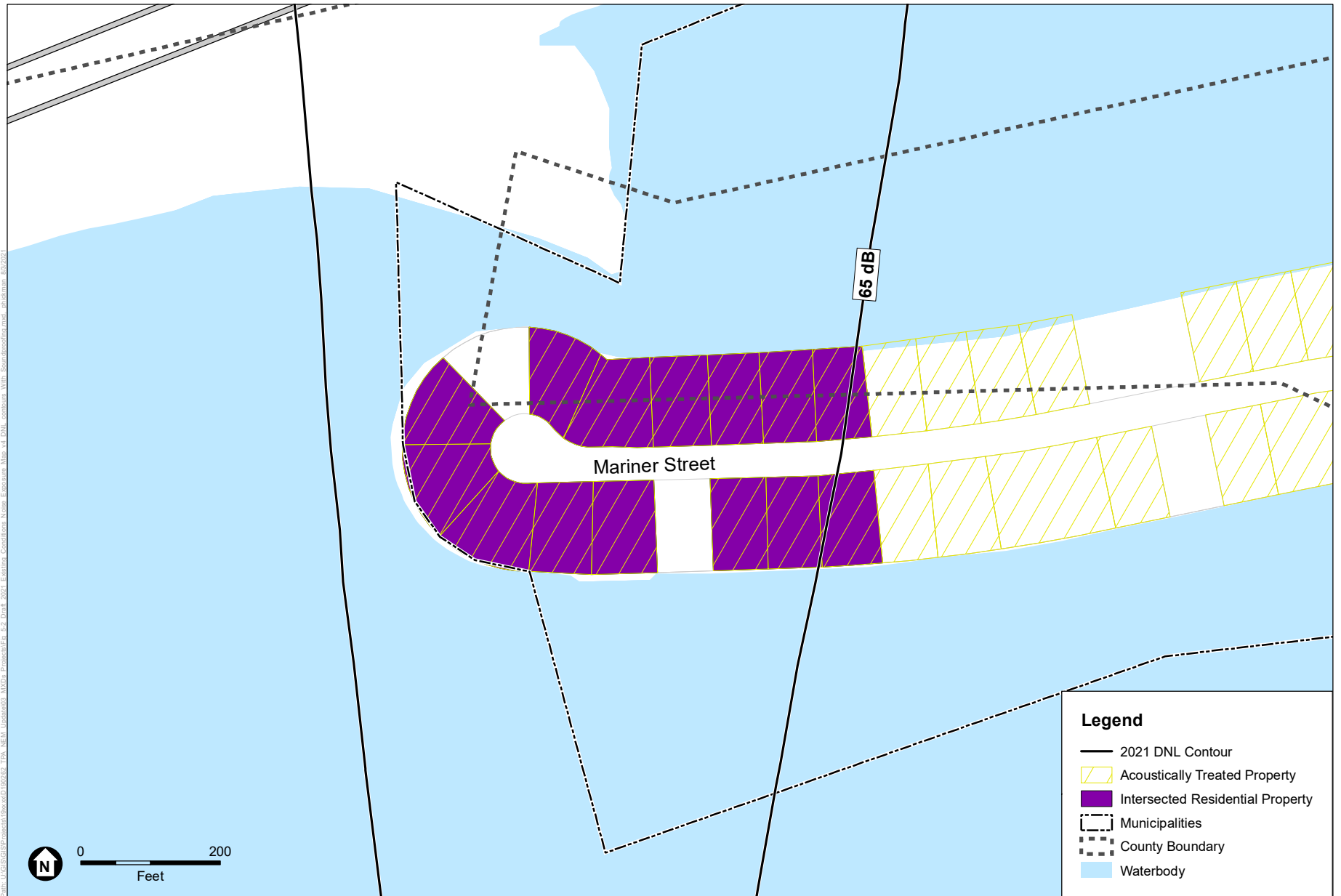


SOURCE: AEDT, 3d, 2021; City of Tampa, July 2020; County of Hillsborough, July 2020; County of Pinellas, July 2020; Hillsborough County Property Appraiser, July 2020; Hillsborough MPO, July 2020.

Tampa International Airport Draft Noise Exposure Map Update Report

Figure 5-1
Draft 2021 Existing Conditions Noise Exposure Map
Tampa International Airport

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SOURCE: AEDT, 3d, 2021; City of Tampa, July 2020; County of Hillsborough, July 2020; Hillsborough County Property Appraiser, July 2020; Hillsborough MPO, July 2020; Hillsborough County Aviation Authority, 2021.

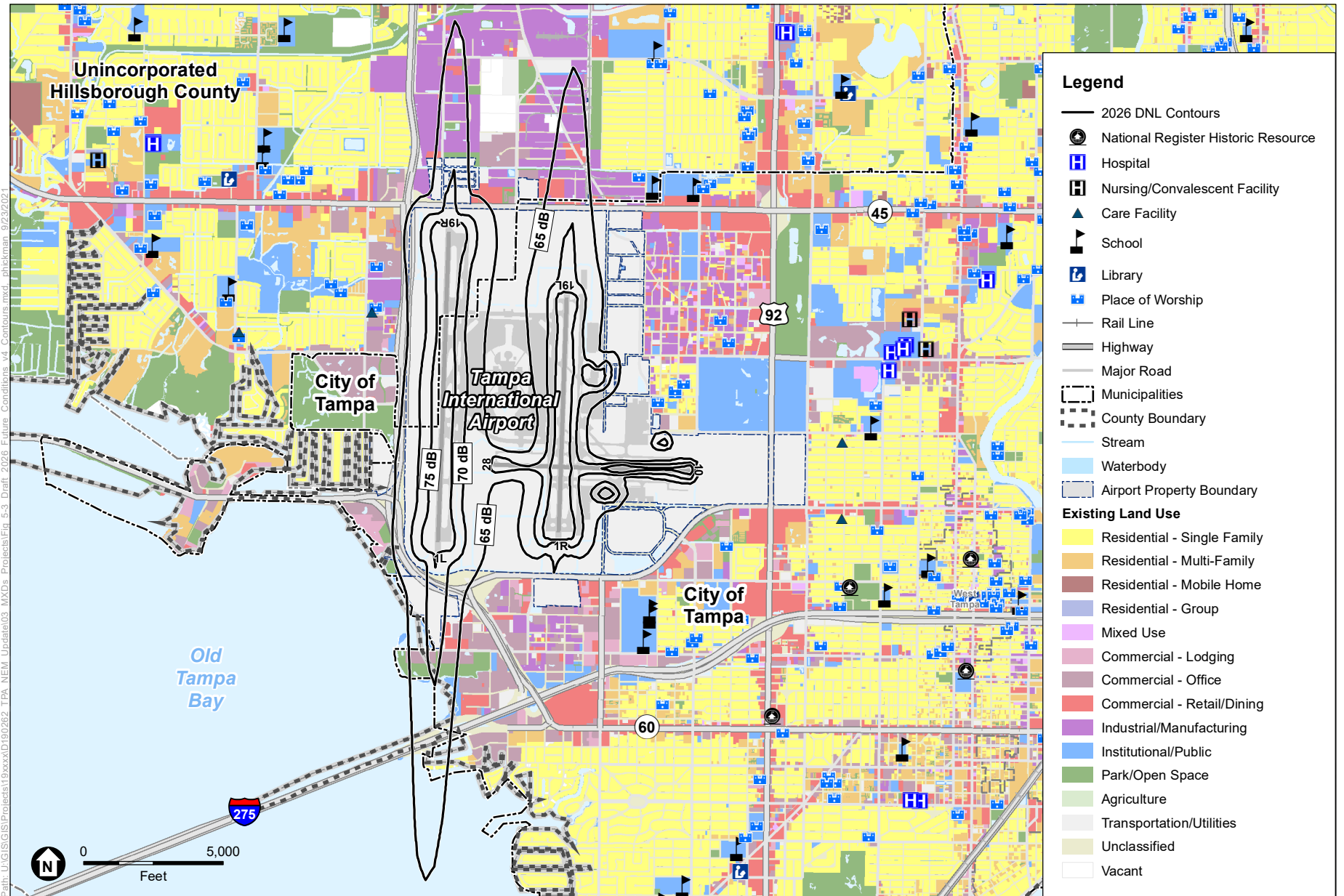
Tampa International Airport Draft Noise Exposure Map Update Report

- Legend**
- 2021 DNL Contour
 - ▨ Acoustically Treated Property
 - ▨ Intersected Residential Property
 - - - Municipalities
 - ⋯ County Boundary
 - Waterbody

Figure 5-2

Draft 2021 Existing Conditions Noise Exposure Map With Soundproofing Tampa International Airport

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SOURCE: AEDT, 3d, 2021; City of Tampa, July 2020; County of Hillsborough, July 2020; County of Pinellas, July 2020; Hillsborough County Property Appraiser, July 2020; Hillsborough MPO, July 2020.

Tampa International Airport Draft Noise Exposure Map Update Report

Figure 5-3
Draft 2026 Future Conditions Noise Exposure Map
Tampa International Airport

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**TABLE 5-3
LAND USES EXPOSED TO DNL 65 AND HIGHER – 2026 FUTURE CONDITIONS**

Land Use Category ¹	Land Uses exposed to DNL 65 and Higher (acres) ²				Housing Units ³	Population ³
	DNL 65-70	DNL 70-75	DNL 75+	Total		
Residential - Single Family	4.9	0.0	0.0	4.9	21	54
Residential - Multi-Family	0.0	0.0	0.0	0.0	0	0
Residential - Mobile Home	0.0	0.0	0.0	0.0	0	0
Residential - Group	0.0	0.0	0.0	0.0	0	0
Mixed Use	0.3	0.0	0.0	0.3	1	3
Commercial - Lodging	0.9	0.0	0.0	0.9	0	0
Commercial - Office	17.7	4.2	0.0	21.9	0	0
Commercial - Retail/Dining	37.3	0.5	0.0	37.8	0	0
Industrial/Manufacturing	133.8	0.0	0.0	133.8	0	0
Institutional/Public	8.1	0.0	0.0	8.1	0	0
Park/Open Space	48.8	4.0	0.0	52.7	0	0
Agriculture	0.0	0.0	0.0	0.0	0	0
Transportation/Utilities	16.3	2.0	0.0	18.2	0	0
Unclassified	160.6	12.2	0.1	173.0	0	0
Vacant	4.5	0.0	0.0	4.5	0	0
Water	152.3	3.9	0.0	156.2	0	0
Total	585.4	26.8	0.1	612.3	22	57

NOTE: Acreages listed are indicative of off-Airport land area. 21 of the 22 housing units have received sound insulation and those are considered compatible land uses. Numbers may not total due to rounding

SOURCES:

¹ Land Use Categories derived from Hillsborough County Property Appraiser records.

² Noise contours from Environmental Science Associates.

³ Housing units and population estimates derived from Hillsborough County Property Appraiser records and U.S Census Bureau 2010 Decennial Census Summary File 1 Survey Data.

5.3.2 Population within 2026 Future Conditions DNL Contours

Table 5-4 presents the estimated number of households, population and the noise sensitive sites exposed to DNL 65 and higher in 2026. Based on property records from the Hillsborough County Property Appraiser, 22 housing units are exposed to aircraft noise of DNL 65 and higher in 2021. Based on demographic data by census tract, the total population exposed to aircraft noise of DNL 65 and higher was estimated to be 57 persons. When compared to 2021, this represents an increase of eight dwelling units and an estimated population increase of 21 individuals.

**TABLE 5-4
NOISE SENSITIVE SITES EXPOSED TO DNL 65 AND HIGHER – 2026 FUTURE CONDITIONS**

Noise Level ¹	Total Area (Acres)	Housing Units ²	Population ²	Religious	Schools	Hospitals	Historic Resources	Day Cares	Group Care	Libraries	Nursing Homes
DNL 65-70	585.4	22	57	0	0	0	0	0	0	0	0
DNL 70-75	26.8	0	0	0	0	0	0	0	0	0	0
DNL 75+	0.1	0	0	0	0	0	0	0	0	0	0
Total	612.3	22	57	0	0	0	0	0	0	0	0

SOURCES:¹ Noise contours from Environmental Science Associates.² Housing units and population estimates derived from Hillsborough County Property Appraiser records and U.S Census Bureau 2010 Decennial Census Summary File 1 Survey Data.³ Noise sensitive site data from County of Hillsborough and U.S. National Park Service.

Of the 22 housing units exposed to aircraft noise of DNL 65 and higher in 2026, 21 were acoustically treated through TPA's NCP. The remaining unit (**Table 5-5**) is part of a mixed use property intermingled amongst commercial and industrial land uses in an area north of West Sligh Avenue.

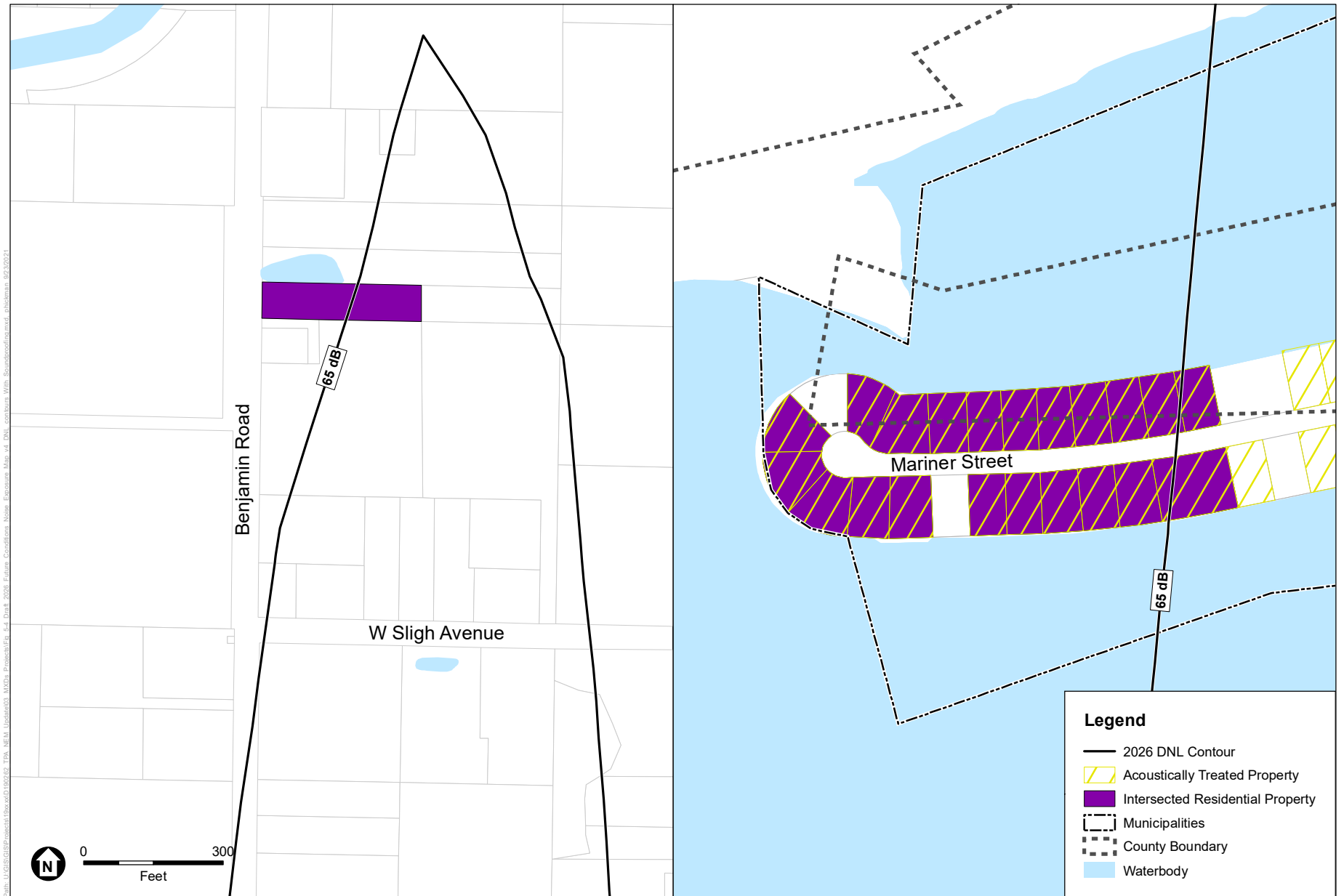
**TABLE 5-5
HOUSING UNITS AND POPULATION WITHOUT SOUNDPROOFING – 2026 FUTURE CONDITIONS**

Noise Level ²	Housing Units ³	Population ³
DNL 65-70	1	3
DNL 70-75	0	0
DNL 75+	0	0
Total	1	3

SOURCES:¹ TPA soundproofing data from Hillsborough County Aviation Authority.² Noise contours from Environmental Science Associates.³ Housing units and population estimates derived from Hillsborough County Property Appraiser records and U.S Census Bureau 2010 Decennial Census Summary File 1 Survey Data.

5.4 Noise Sensitive Sites

Aside from the housing units referenced above, no other noise sensitive sites are located within the DNL contours under the 2021 Existing Conditions or 2026 Future Conditions.



SOURCE: AEDT, 3d, 2021; City of Tampa, July 2020; County of Hillsborough, July 2020; Hillsborough County Property Appraiser, July 2020; Hillsborough MPO, July 2020; Hillsborough County Aviation Authority, 2021.

Tampa International Airport Draft Noise Exposure Map Update Report

Figure 5-4

Draft 2026 Future Conditions Noise Exposure Map With Soundproofing
Tampa International Airport

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5.5 Comparison of 2021 and 2026 NEMs

A comparison of the 2021 Existing Conditions to the 2026 Future Conditions DNL contours shows that the off-Airport land encompassed by the DNL 65 and higher contours in 2026 would be approximately 309 acres greater than the off-Airport land encompassed by the 2021 DNL contours (see **Table 5-6**). The contours maintain the same general shape from the existing to future condition. The 2026 Future Conditions DNL contours extend farther along the extended runway centerlines to the north and south. The contours do not extend off of Airport property along the Runway 10/28 centerline under either the existing or future condition.

The largest increases in exposure to DNL 65 and higher noise occurs over water (93 acres) and unclassified right-of-way space (79 acres). Industrial/Manufacturing exposure increases by 75 acres, reflecting the northward expansion of the future conditions contours into the industrial area north of the Airport. Commercial – Retail/Dining also increase in exposure (17 acres), as these land uses are intermingled in the same industrial area north of the Airport. Residential – Single Family, Mixed Use, Commercial – Office, Institutional/Public, Park/Open Space, and Transportation/Utilities land uses experience incremental increases in noise exposure. Approximately four acres of vacant property and one acre of Commercial – Lodging would be newly exposed to DNL 65 and higher noise in the 2026 Future Conditions.

Table 5-7 presents a summary of the increase in noise sensitive sites exposed to DNL 65 or higher noise from the 2021 Existing Conditions to the 2026 Future Conditions. There is no increase in exposure to other (non-residential) noise sensitive sites from 2021 to 2026.

An overlay of the 2021 Existing Conditions and 2026 Future Conditions DNL contours is depicted on **Figure 5-5**.

**TABLE 5-6
CHANGE IN LAND USE EXPOSURE – 2021 TO 2026**

Land Use Category ¹	Net Change in Acreage by Land Use (acres) ²			
	DNL 65-70	DNL 70-75	DNL 75+	Total
Residential - Single Family	1.6	0.0	0.0	1.6
Residential - Multi-Family	0.0	0.0	0.0	0.0
Residential - Mobile Home	0.0	0.0	0.0	0.0
Residential - Group	0.0	0.0	0.0	0.0
Mixed Use	0.3	0.0	0.0	0.3
Commercial - Lodging	0.9	0.0	0.0	0.9
Commercial - Office	4.3	4.2	0.0	8.4
Commercial - Retail/Dining	16.7	0.5	0.0	17.2
Industrial/Manufacturing	75.4	0.0	0.0	75.4
Institutional/Public	5.0	0.0	0.0	5.0
Park/Open Space	8.1	4.0	0.0	12.0
Agriculture	0.0	0.0	0.0	0.0
Transportation/Utilities	9.3	2.0	0.0	11.3
Unclassified	73.7	5.4	0.0	79.2
Vacant	4.0	0.0	0.0	4.0
Water	89.4	3.9	0.0	93.4
Total Change	288.7	19.9	0.0	308.6

NOTE: Acreages listed are indicative of off-Airport land area.

SOURCES:

¹ Land Use Categories derived from Hillsborough County Property Appraiser records.

² Noise contours from Environmental Science Associates.

³ Housing units and population estimates derived from Hillsborough County Property Appraiser records and U.S Census Bureau 2010 Decennial Census Summary File 1 Survey Data.

**TABLE 5-7
CHANGE IN NOISE SENSITIVE SITES EXPOSED – 2021 TO 2026**

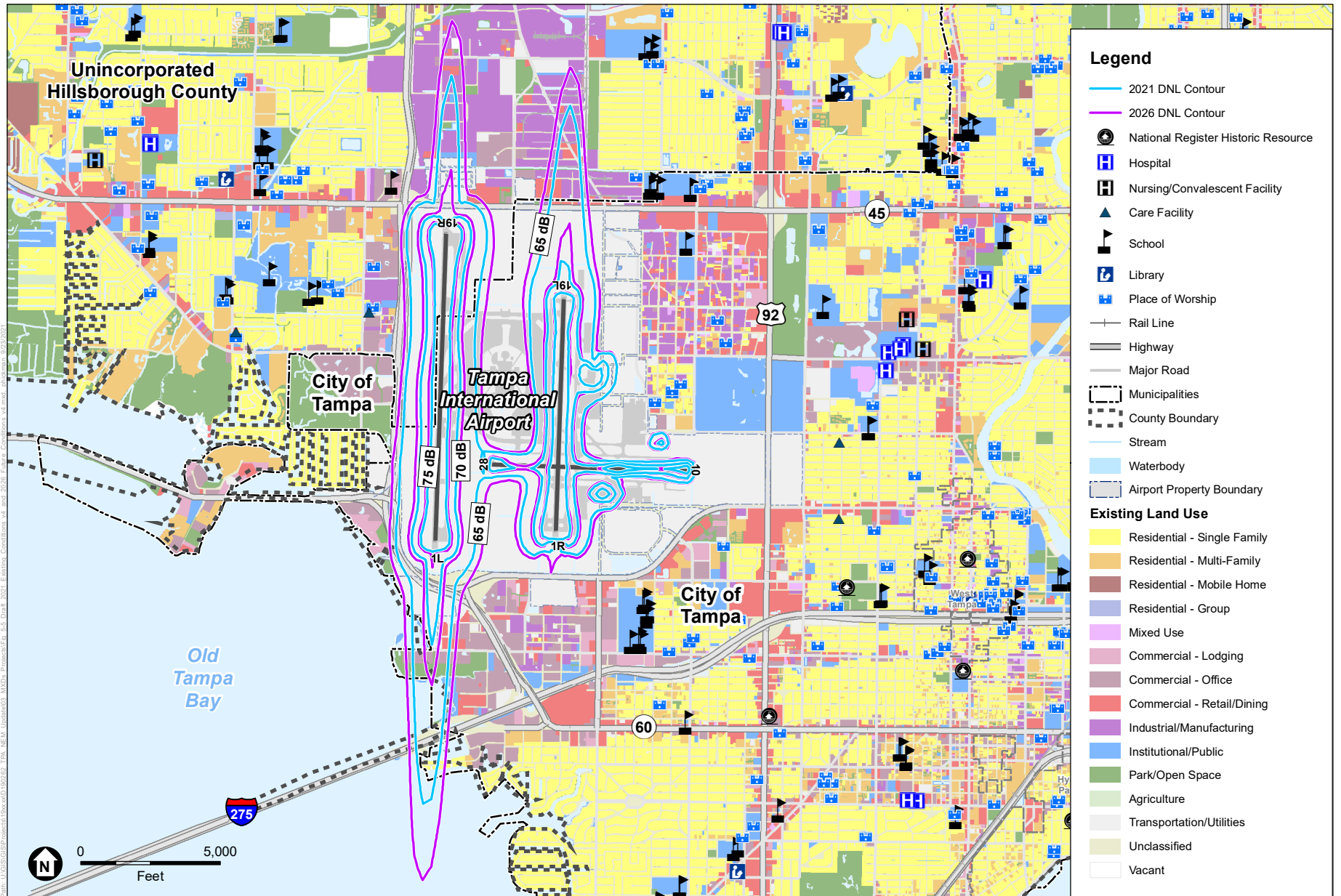
Noise Level ¹	Total Area (Acres)	Housing Units ²	Population ²	Religious	Schools	Hospitals	Historic Resources	Day Cares	Group Care	Libraries	Nursing Homes
DNL 65-70	288.7	8	21	0	0	0	0	0	0	0	0
DNL 70-75	19.9	0	0	0	0	0	0	0	0	0	0
DNL 75+	0.0	0	0	0	0	0	0	0	0	0	0
Total	308.6	8	21	0	0	0	0	0	0	0	0

SOURCES:

¹ Noise contours from Environmental Science Associates.

² Housing units and population estimates derived from Hillsborough County Property Appraiser records and U.S Census Bureau 2010 Decennial Census Summary File 1 Survey Data.

³ Noise sensitive site data from County of Hillsborough and U.S. National Park Service.



SOURCE: AEDT, 3d, 2021; City of Tampa, July 2020; County of Hillsborough, July 2020; County of Pinellas, July 2020; Hillsborough County Property Appraiser, July 2020; Hillsborough MPO, July 2020; Pinellas County Assessor, July 2020.

Tampa International Airport Draft Noise Exposure Map Update Report

Figure 5-5

Draft 2021 Existing Conditions and 2026 Future Conditions Noise Exposure Map
Tampa International Airport

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CHAPTER 6

Consultation and Public Involvement

6.1 Introduction

Title 14 CFR Part 150 §150.21(b) and §150.105(a) require that NEMs and documentation submitted be developed and prepared

“in consultation with states, public agencies and planning agencies whose area, or any portion of whose area, of jurisdiction is within the DNL 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.”

Consultation required by 14 CFR Part 150 includes the following entities:

- Aviation users (e.g., airlines, fixed base operators, based aircraft operators);
- Jurisdictional authorities with land located within the DNL 65 or greater contours (Hillsborough County is the sole land use agency for land located within the DNL 65 and higher contours); and
- Interested parties (i.e., the public).

HCAA implemented a proactive agency consultation and public involvement program that exceeded the requirements of 14 CFR Part 150 and provided opportunities for meaningful public engagement and participation in development of the NEMs. Agency consultation and public involvement efforts undertaken for this TPA NEM Update are discussed in this chapter.

6.2 Public Workshops, Draft TPA NEM Report, and Public Comments

Over the course of the TPA NEM Update, HCAA accepted comments from the public and held several Public Workshops. Due to the number of communities involved and anticipated public attendance, a series of workshops were conducted to provide opportunities to attend on a variety of dates at multiple locations. The first round of Public Workshops was held at the beginning of the TPA NEM Update process (October 2020), and additional Public Workshops will be held October 2021, after the release of the Draft NEM Update Report. Details of the Public Workshops, release of the Draft NEM Update Report, and public comments are provided in this section.

6.2.1 Study Kick-off Public Workshops

The first round of Public Workshops for the TPA NEM Update was initially scheduled for the week of March 9, 2020. However, the workshops were postponed due to the COVID-19 pandemic and

were rescheduled and held throughout the week of October 5, 2020. **Table 6-1** below lists the location and time of each workshop.

TABLE 6-1 STUDY KICK-OFF PUBLIC WORKSHOPS FOR TPA NEM UPDATE		
Date	Location	Time
Monday, October 5, 2020	Virtual	10:00 A.M. - 12:00 P.M.
Tuesday, October 6, 2020	Virtual	5:30 P.M. - 7:30 P.M.
Thursday, October 8, 2020 (By Appointment Only)	Aviation Authority Boardroom at Tampa International Airport	9:00 A.M. - 7:00 P.M.
SOURCE: Environmental Science Associates, 2020.		

In attendance were a number of members of the general public (see sign-in sheets included in **Appendix H**). The information presented provided an overview of the Study process, the need for the Study, how to provide comments and stay involved, and other relevant information related to the Study. Workshop materials included a presentation. Copies of the public workshop notice, sign-in sheets, and presentation materials are provided in **Appendix H**. Comments received following these workshops are included in **Appendix I**.

6.2.2 Draft NEM Update Report and Second Public Workshop

A Notice of the Public Workshops was published in the Tampa Bay Times on September 12, 2021 and La Gaceta on September 17, 2021. A Notice of Availability of the Draft TPA NEM Update Report and a second Notice of the Public Workshops was published in the Tampa Bay Times on September 26, 2021 and in La Gaceta on October 1, 2021. The Notices were also placed on the Study website the same day at: www.tampaairport.com/part-150-study.

The Draft TPA NEM Update Report is available electronically (in PDF format) for download on the Study website at: www.tampaairport.com/part-150-study. A hardcopy, CD-ROM, or flash drive of the Draft NEM Update Report will be provided for those who specifically indicate that they do not have a computer or access to the internet by e-mailing airportmeeting@qcausa.com or calling 727-277-4965.

6.3 Other Public Outreach and Meetings

Additional elements of the public outreach program implemented by HCAA are summarized below.

6.3.1 Community Noise Forum

The CNF (previously the Community Noise Consortium) was formed to assist in disseminating noise-related information to the Tampa community. The TPA Noise Office holds regular CNF meetings on a bi-monthly basis where the public is encouraged to join. Current members of the CNF consist of people from all areas surrounding the Airport that are interested in noise. All

presentations and information reviewed at the bi-monthly meetings are provided on HCAA's webpage (www.tampaairport.com/community-noise-forum-and-noise-monitoring-office-reports), including monthly Noise Monitoring Office Reports, Community Noise Monitoring Reports, and daily runway use deviation information. Due to the COVID-19 pandemic, HCAA was unable to hold regular meetings with the CNF to provide attendees with information related to the TPA NEM Update. HCAA is using the CNF as a platform to provide the public with an ongoing opportunity to receive updates during the TPA NEM Update process. Community Noise Forum meeting materials related to the TPA NEM Update will be provided in **Appendix G**.

6.3.2 Study-Specific Meetings

Additional meetings to discuss the TPA NEM Update will be held with local, regional, and federal agencies and government officials. Coordination meetings will be held with the following entities:

- Meetings with Land Use Agencies (Fall 2021)
 - City of Tampa, Hillsborough County, and/or Hillsborough Metropolitan Planning Organization

Meeting presentations will be included in **Appendix G**.

6.3.3 Elected Officials

Elected officials were engaged through the NEM development process and received notification regarding the Public Workshops and Draft NEM Update Report availability. The elected official contact list will be included in **Appendix G**.

6.3.4 TPA 14 CFR Part 150 Information Website

A website¹ was developed and published for the TPA NEM Update. The website made Study-related information and documents available to stakeholders, agencies, and the general public. Information and documents available on the website included:

- Study and Airport information;
- Upcoming project meetings;
- Study documents, including public workshop materials, Draft NEM Update Report, NEMs, and Study newsletters;
- Relevant links;
- Frequently Asked Questions; and
- HCAA contact information.

¹ <https://www.tampaairport.com/part-150-study>

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