



Noise Abatement 101

December 2, 2019

Objectives

- Provide context and a better understanding for how and why flights operate at Tampa International Airport.
- Provide an overview of laws, regulations and other factors that limit airports in implementing restrictions, curfews or fines.
- Review the steps the Hillsborough County Aviation Authority takes on a daily basis to engage and educate stakeholders in an effort to maintain the highest level of compliance possible to the Airport's Voluntary Noise Abatement Program.

U.S. Aviation – Brief Overview

- 532 airports in the nation certified for commercial air service.
- 5,000 aircraft in the air at any given moment.
- Over 600 million passengers fly every year in the U.S.
- 50% increase in U.S. air traffic is projected by 2025.
- Aviation accounts for 11.5 million jobs:
 - Accounting for \$396 billion in annual wages
 - Contributes \$1.3 trillion to the U.S. Economy
 - Accounts for approximately 5.6% of U.S. GDP



Source: FAA Next-Gen 101 Video

Tampa International Airport – Highlights

- Tampa International Airport is one of 29 large hub airports in the nation.
- 22,285,829 passengers served (12 months ending October 2019).
- 214,814 operations (12 months ending October 2019).
- Generates approximately \$14.5 billion in economic activity each year.
- TPA Air Service:
 - 18 Airlines
 - 3 Air Cargo Operators
 - 2 Fixed Based Operators (serving General Aviation)
- Supports over 81,000 jobs in the community.





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TPA's Voluntary Noise Abatement Program

Tampa International Airport

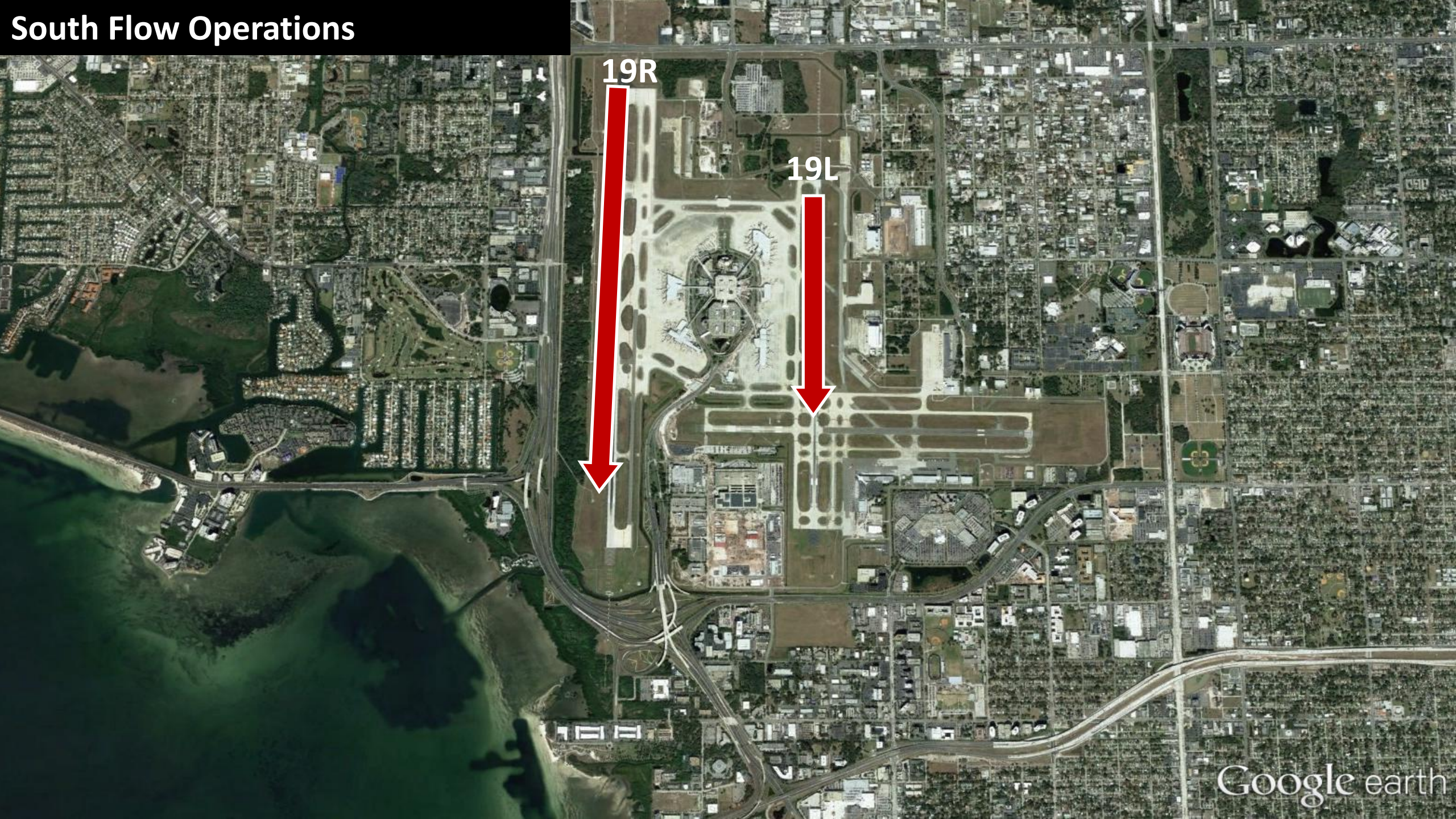


- Part 150 Noise Studies:
 - First completed in 1987.
 - Second completed in 2000.
 - The Airport is in the process of updating the Noise Exposure Map for Tampa International Airport. Public meetings are expected in 2020.
- Pilot compliance with the program is key to the success of the program.
 - Commercial pilots have complied with the Airport's Voluntary Noise Abatement Program over **99%** of the time.
 - The Authority continues to educate corporate jet pilots on the Airport's Noise Program to gain further compliance.
 - On a combined basis, year-to-date corporate and commercial jet pilot compliance is 99%.
 - This is a Voluntary Noise Abatement Program and ultimately, it is up to the pilot and the FAA on how flights are flown over the community.

TPA Part 150 Recommendation Highlights

- Preferential Runway Use:
 - Goal is to maximize flights over water to the greatest extent possible.
 - South Flow: Runway 19R is the preferred runway for commercial jet departures, maximizing flights over water.
 - North Flow: Runway 1L is the preferred runway for jet arrivals, maximizing flights over water.
 - There is no stated preference to runway arrivals for south flow arrivals or north flow departures.
- North flow departures are to fly assigned headings to 3,000 ft. before turning on course.
- Full Part 150 study is available online.

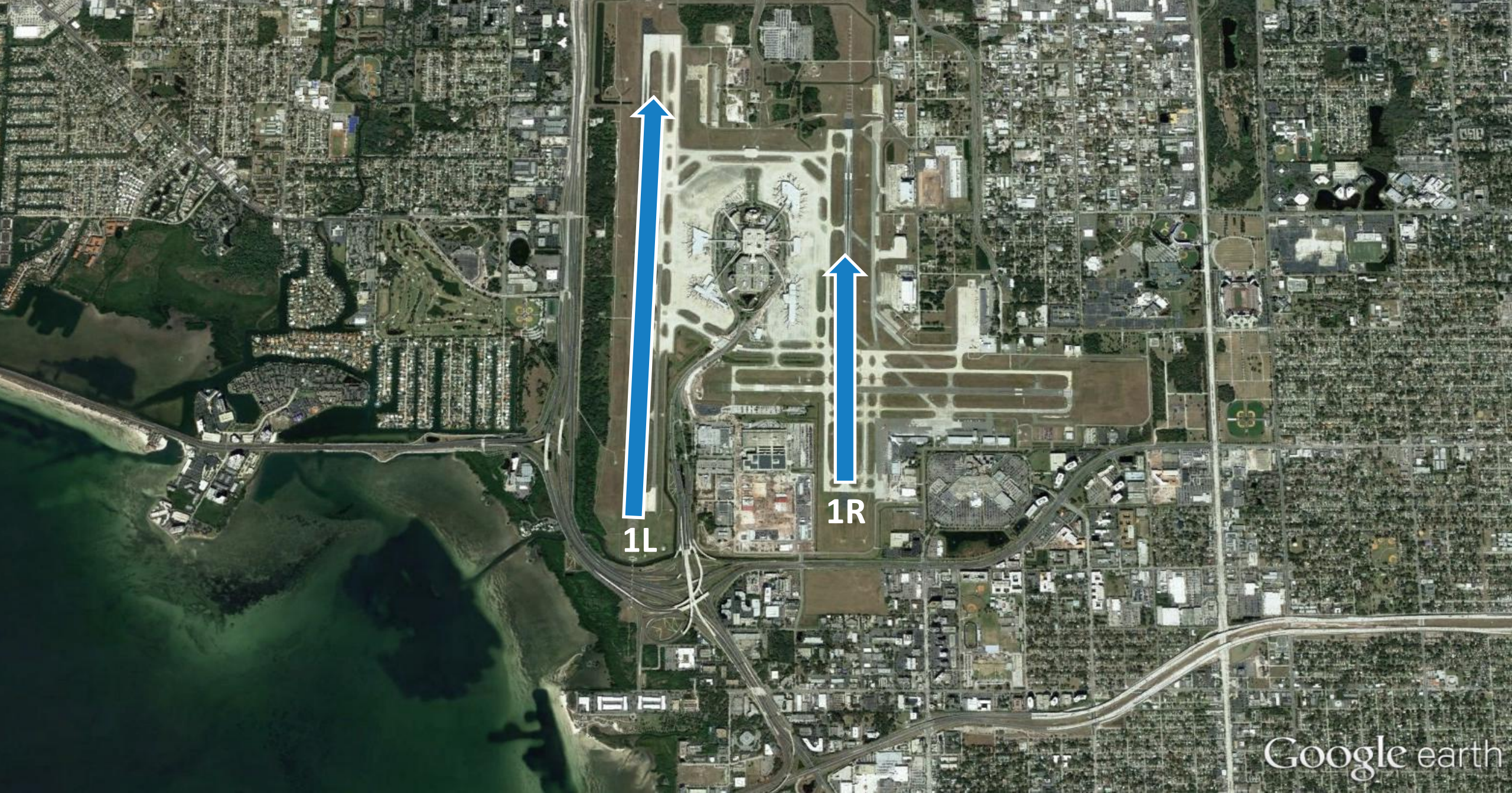
South Flow Operations



19R

19L

North Flow Operations

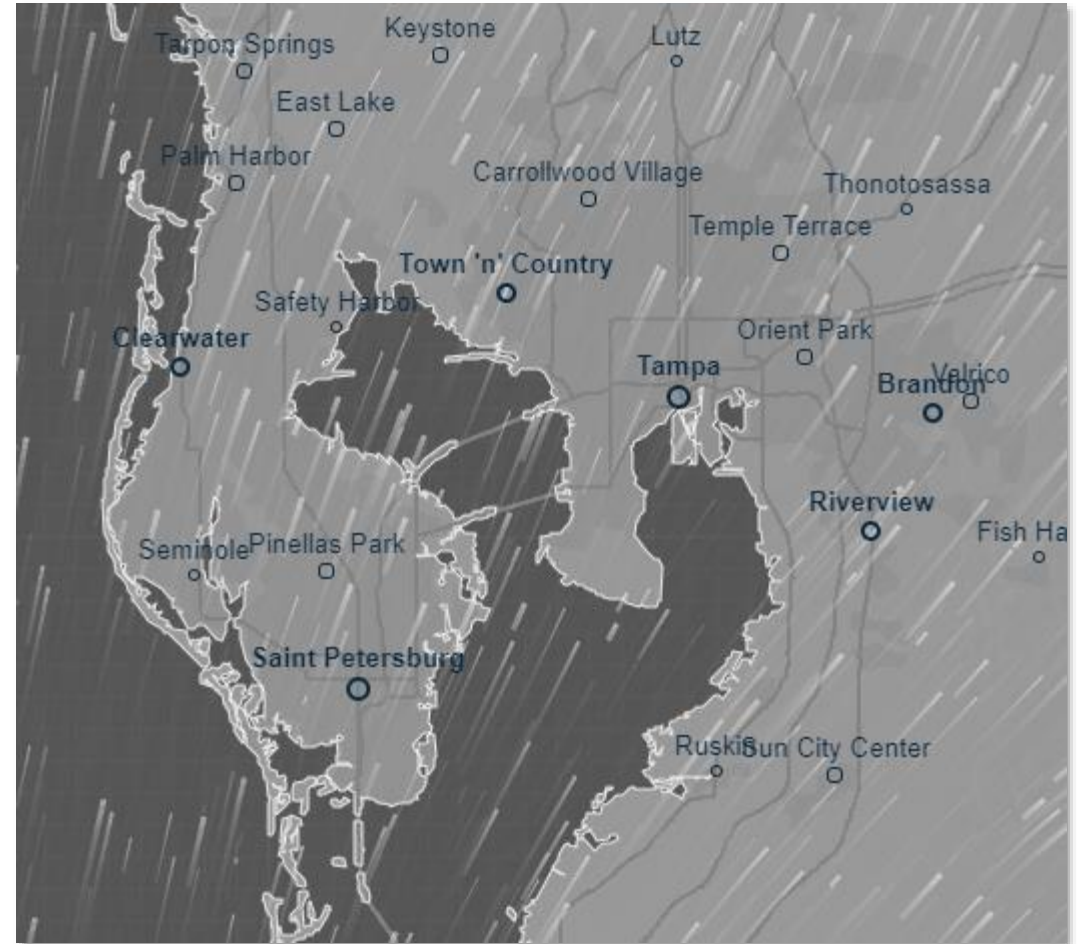


1L

1R

Recent Arrival/Departure Flow

- August 62.4% South Flow
- September 76% North Flow
- October 57% North Flow
- November 79% North Flow



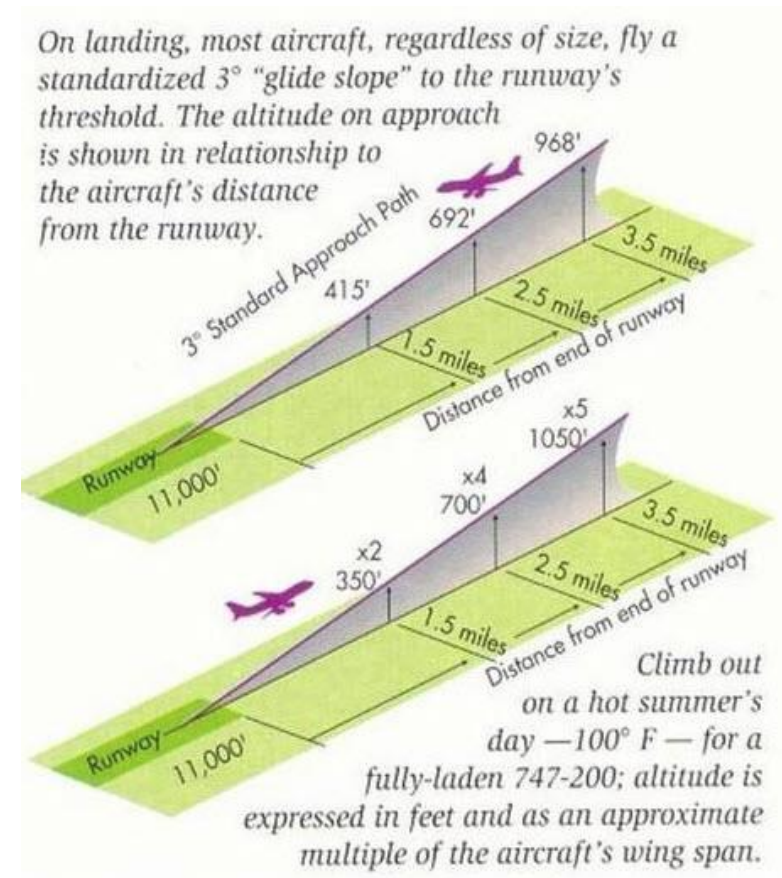


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A Stabilized Approach and Why It Matters

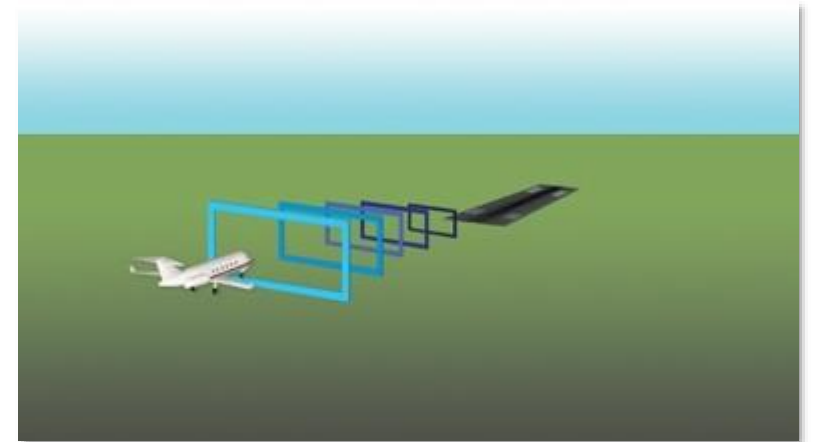
What is a Stabilized Approach?

- A pilot will establish and maintain a constant angle glidepath towards a predetermined point on the landing runway.
- An optimum glidepath follows the 3:1 principle.
 - The last 500 feet to 1000 feet are critical



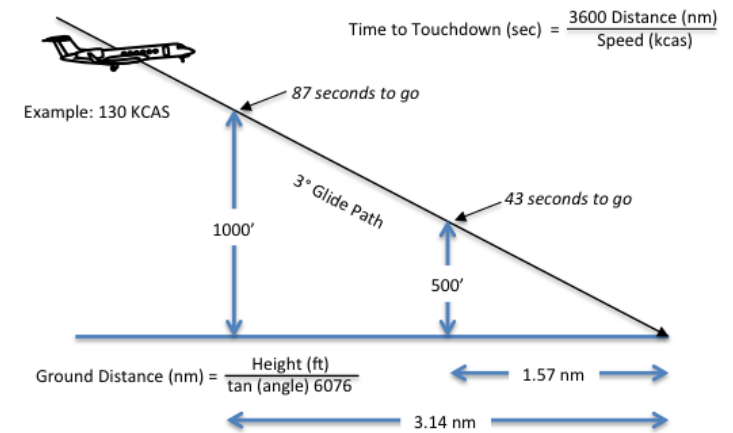
Stabilized Approach (cont'd)

- Stabilized for safety
 - Maintains alignment with the Runway
 - Prevents landing too fast
 - Prevents landing too high
- These situations can result in loss of control of the aircraft and runway surface departure.

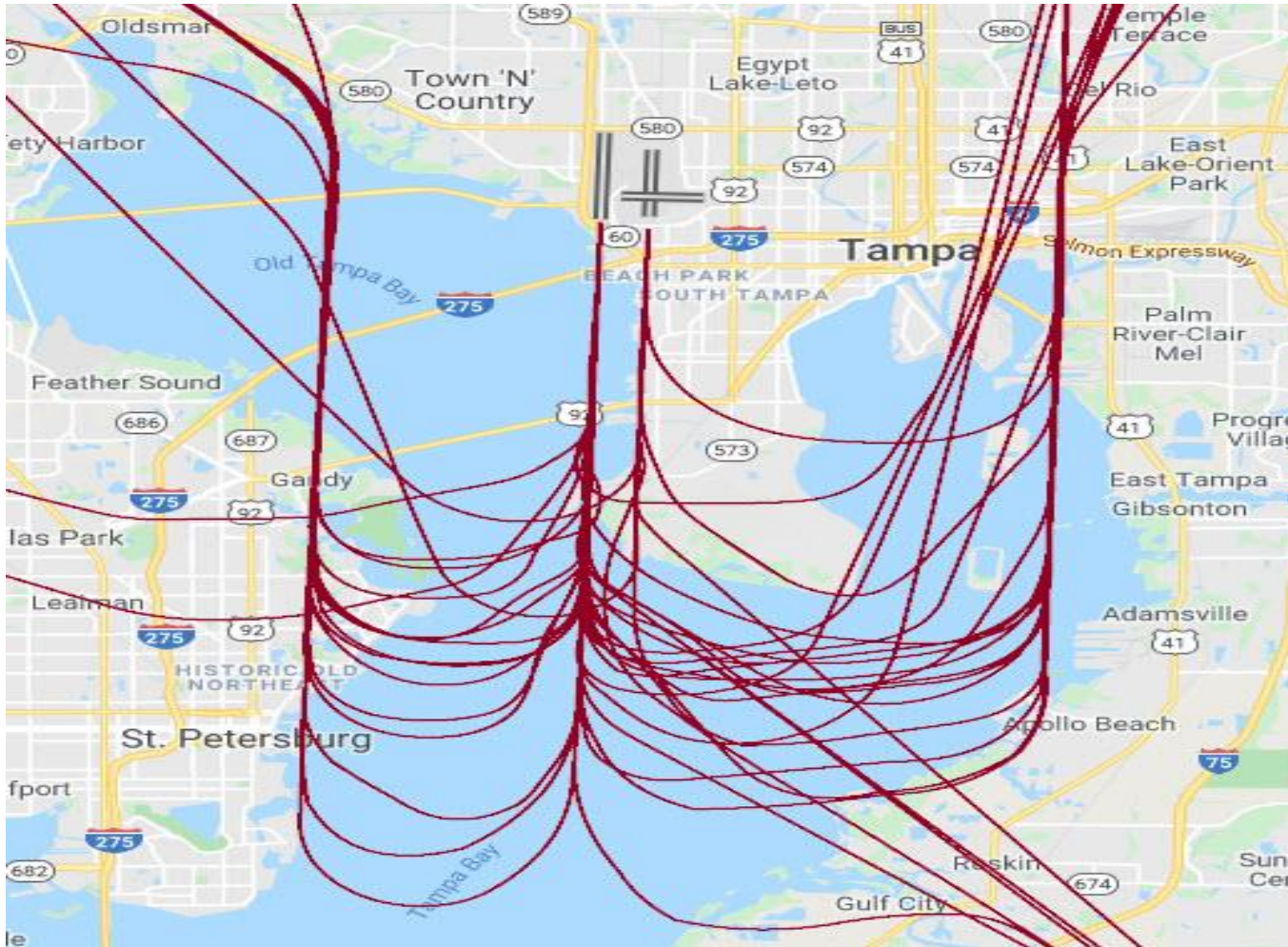


Stabilized Approaches and TPA

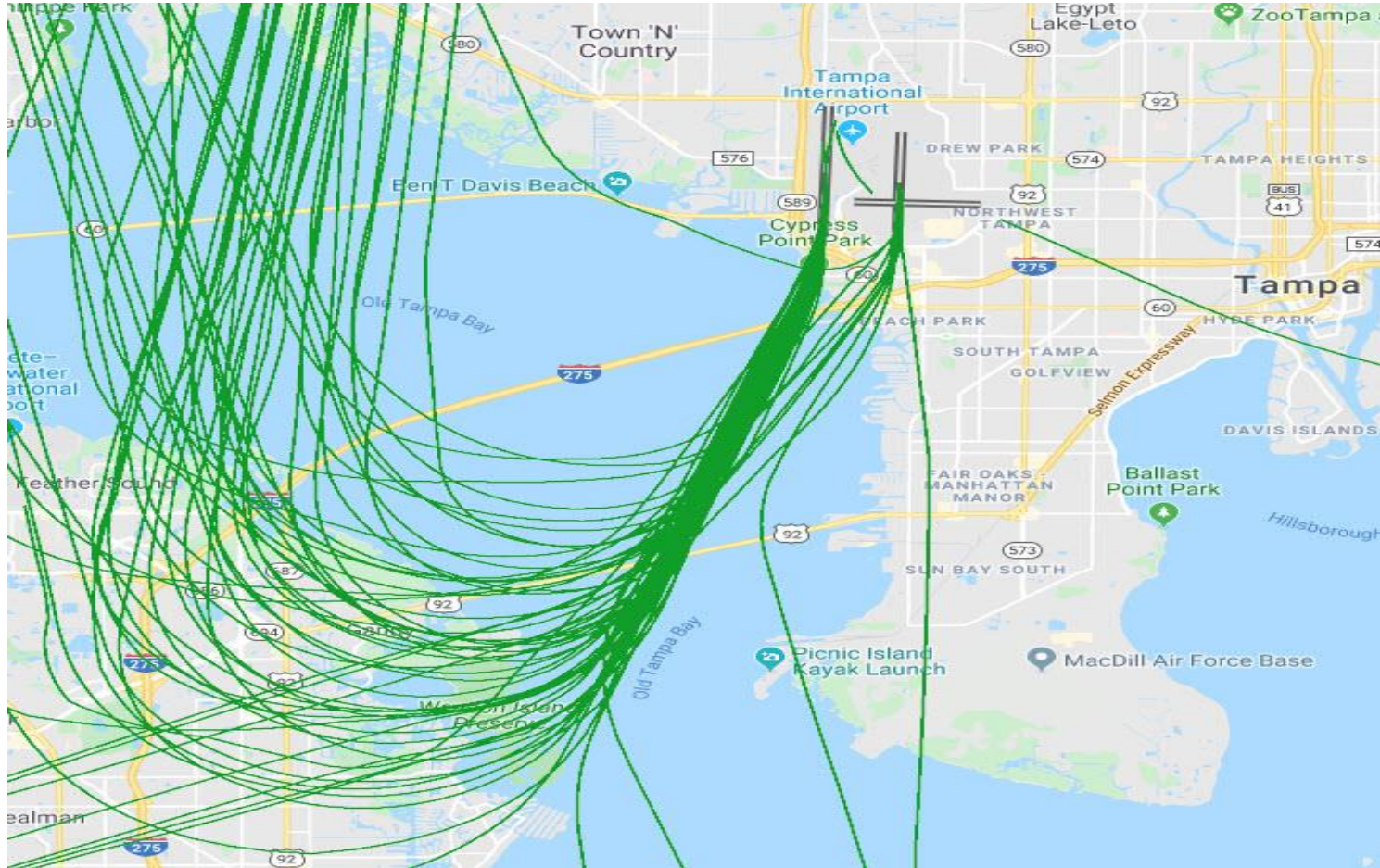
- Typically stabilized approaches begin south of MacDill which is approx. 9 miles from TPA.
 - At MacDill aircraft are 2,600 feet and less than 3 minutes from touchdown.
 - At the Gandy Bridge aircraft are 1,500 feet and less than 90 seconds from touchdown.
 - At the Howard Franklin Bridge aircraft are at 500 feet and 30 seconds from touchdown.



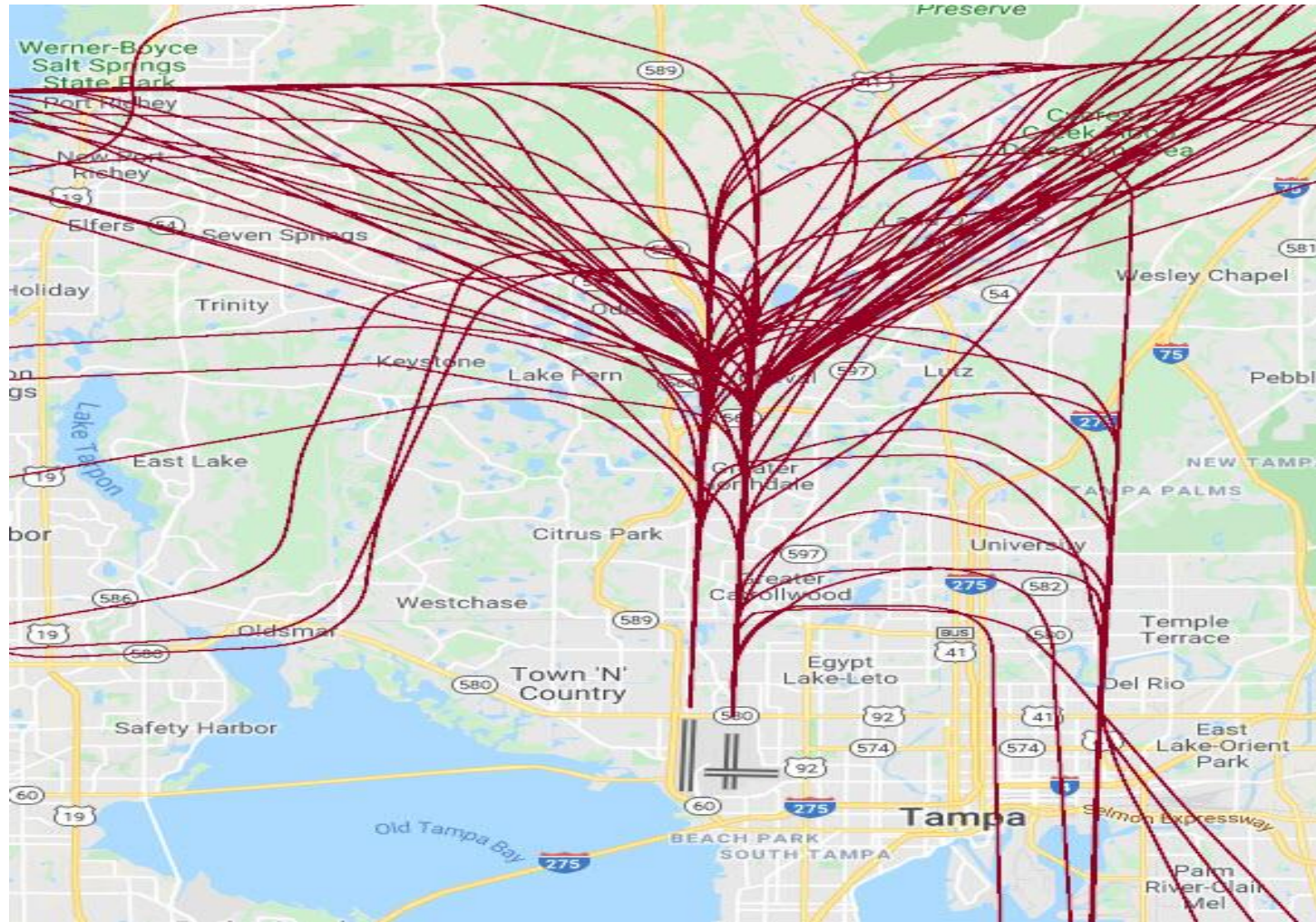
TPA Arrivals North Flow



TPA South Flow Departures



TPA South Flow Arrivals



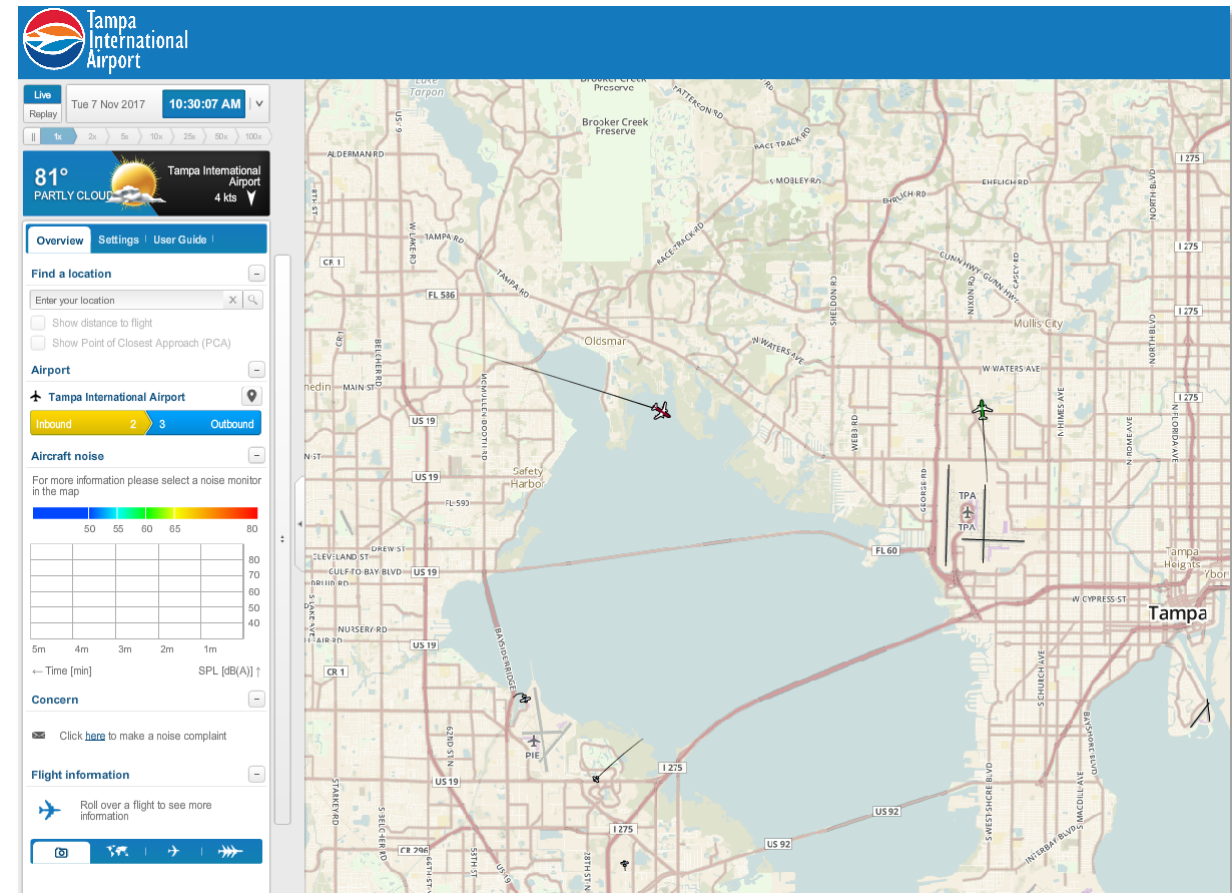


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Noise Monitoring Office Systems

Noise Monitoring Office Systems

- The Noise Monitoring Office uses advanced flight monitoring and tracking tools provided by Casper Airport Solutions.
- The Casper System was brought online effective October 1, 2017 and replaced a system used by the Airport for many years, provided by the Harris Corporation.
- The tools available to our community may be accessed by visiting www.TampaAirport.com/noise-abatement



Daily Deviations

- The Airport began posting daily deviation information on the Airport's website.
 - All commercial jet departures on Runway 19L and stated deviation cause.
 - All jet arrivals to Runway 1R and stated deviation cause.
 - All jet departures on Runway 28 and stated deviation cause.
 - All jet arrivals to Runway 10 and stated deviation cause.
- TPA is the only airport in the nation to proactively post such information on daily basis.

Daily Deviations (cont'd)

Deviation Categories:

-Pilot Request: Refers to instances where pilots request to deviate from the Airport's Voluntary Noise Abatement Program.

-FAA Assigned: Refers to instances where air traffic controllers (FAA), in the interest of safety, make decisions to assign runways for aircraft in the air and on the ground, which may differ from the Airport's Voluntary Noise Abatement Program due to operational requirements.

- Runway Unavailable: Refers to instances where the Airport's noise program is affected by scheduled or unscheduled closures and/or impacts rendering the noise program inapplicable for arriving and/or departing aircraft.

December 9, 2018

[Runway 1R Jet Arrivals - December 9, 2018.pdf](#)

[Runway 28 Jet Departures - December 9, 2018.pdf](#)



callsign	ac_type	registrati	dep_af	des_af	dep_time	des_time	dep_rwy	des_rwy	jet_type	deviation_cause
EJA111	GL5T	N111QS	KIAD	KTPA	12/9/2018 11:37		01R		CORPORATE	FAA ASSIGNED
N550DX	GLF5	N550DX	KSGJ	KTPA	12/9/2018 17:47		01R		CORPORATE	FAA ASSIGNED
N26HH	C550	N26HH	MYNN	KTPA	12/9/2018 18:21		01R		CORPORATE	FAA ASSIGNED



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Laws and Regulations on Aircraft Noise

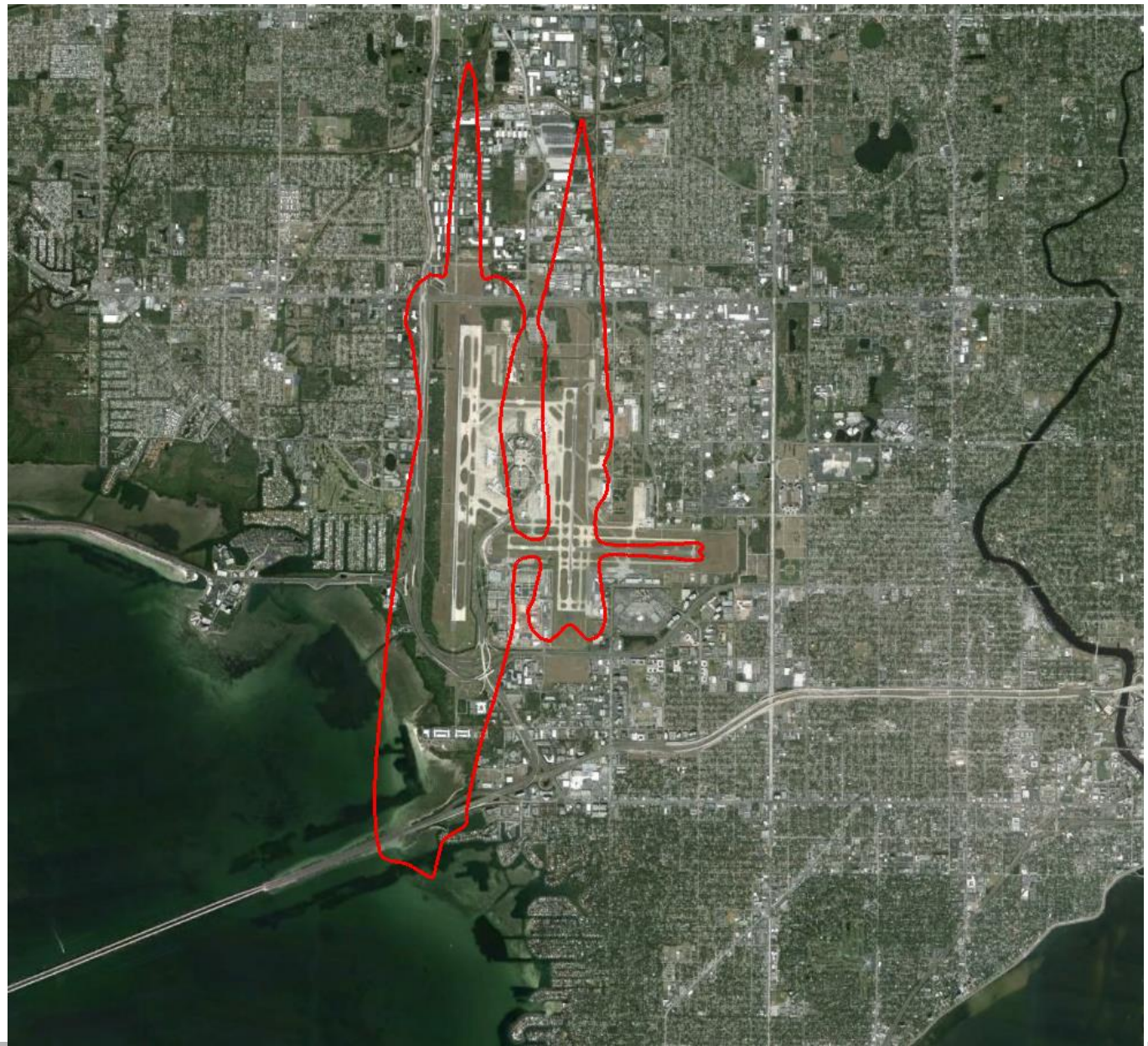
Aviation Safety and Noise Act (ASNA)

- This legislation was passed in 1979.
- 14 C.F.R (Code of Federal Regulation) Part 150 resulted from this legislation.
 - A Part 150 study is optional for airports (not mandatory).
- Created federal framework for FAA review of noise compatibility:
 - Day-Night Level (DNL) noise metric.
 - Established 65 DNL compatibility threshold.
- A Part 150 study establishes a plan that:
 - Is a vehicle for funding.
 - Provides means of supporting noise control measures, but tied to FAA's DNL 65 threshold.
 - Provides recommendations on noise abatement procedures.

Retrieved from presentation by John E. Putnam, Kaplan, Kirsch, and Rockwell.

Tampa International Airport – 65 DNL Noise Contour (Part 150 Study)

Represents Projected 2005 Noise Exposure Map From Part 150 Study.



Airport Noise and Capacity Act (ANCA)

- This legislation was passed in 1990.
- Phased out noisiest large aircraft.
- Restricts an airports ability to adopt access restrictions.
- For restrictions on Stage 3 aircraft, airport must complete study *and* secure FAA approval.



History of Airport Noise Restrictions

- Since 1990, *many* airports have tried to adopt new use restrictions. ***Only two have been successful; both restrictions were Stage 2 aircraft that have since been prohibited by Congress from operating nationwide:***
 - *Naples Municipal Airport (APF)*
 - *Van Nuys Airport (VNY)*
- Part 161 requires six conditions be met:
 - Reasonable, non-arbitrary and non-discriminatory.
 - **No undue burden on interstate or foreign commerce.**
 - **This condition necessitates benefits of a proposed restriction outweigh potential cost. Because no residents south of Runway 1R live within the 65 DNL, the benefit would be considered \$0, meaning that benefits would not outweigh the cost. On this one condition alone, the Airport would be unable to meet the required conditions of a Part 161 study.**
 - Maintain safe and efficient use of navigable airspace.
 - Does not conflict with existing federal statute or regulation.
 - Adequate opportunity for public comment.
 - No undue burden on national aviation system.



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Overview of Deviation Causes

Deviation Categories – Pilot Request

- Pilot Request:
 - 14 C.F.R. (Code of Federal Regulation) 91.3 states:
 - “The pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft.
 - A pilot in command of their aircraft may request an alternative runway from what is assigned, which may deviate from the Airport’s Voluntary Noise Abatement program. If the requested runway is available, Air Traffic Control cannot prohibit an aircraft from landing on that runway.
 - The Noise Office contacts air carriers in writing when a pilot request deviation occurs, **whether a complaint is received or not.**
 - Through continued airline partnership, commercial pilot request deviations have totaled less than 1% of the total operations at TPA.

Deviation Categories – FAA Assigned

- FAA Assigned (Air Traffic Control):
 - Air traffic control is responsible for the safe movement of aircraft in the air and on the ground.
 - Air Traffic Control has full authority over ensuring safety throughout the National Airspace System and may assign an aircraft instructions that deviate from recommendations in the Airport's Noise Abatement Program.

Deviation Categories – Aircraft Emergencies

- Aircraft Emergencies:
 - Any aircraft experiencing a reported mechanical issue or a medical emergency will take priority. The pilot and Air Traffic Control will determine the most suitable runway for the arrival. Noise abatement procedures are not a consideration when managing an emergency.
 - Emergency arrivals may, depending on the circumstances, require a closure of the runway used for arrival. During such closure(s), arriving and departing aircraft may use the Airport's noise sensitive runway until the noise preferred runway is reopened.

Deviation Categories – Runway Closures

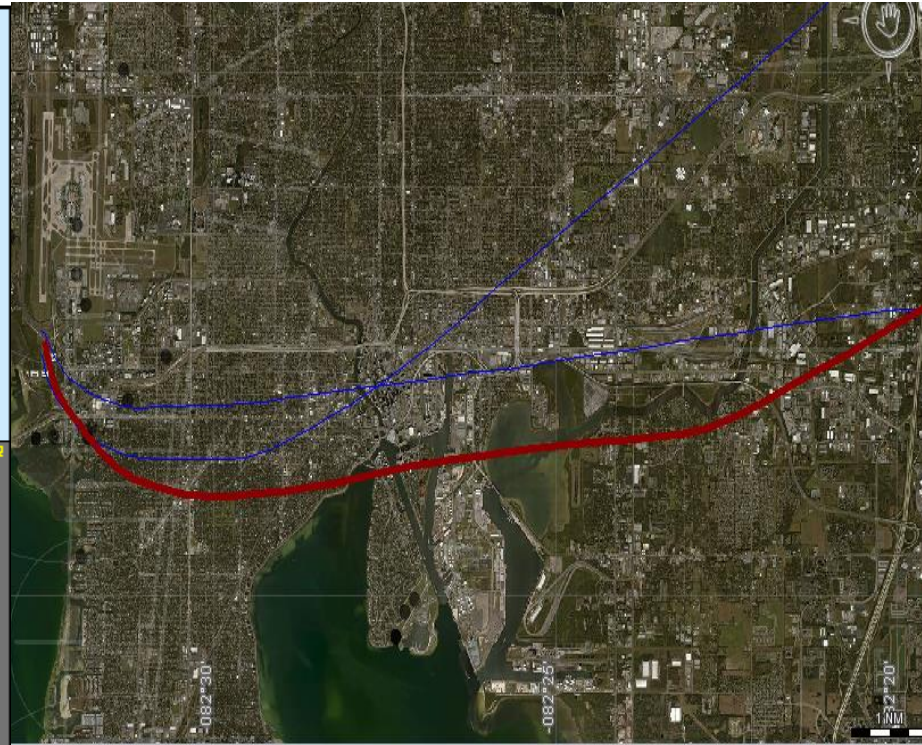
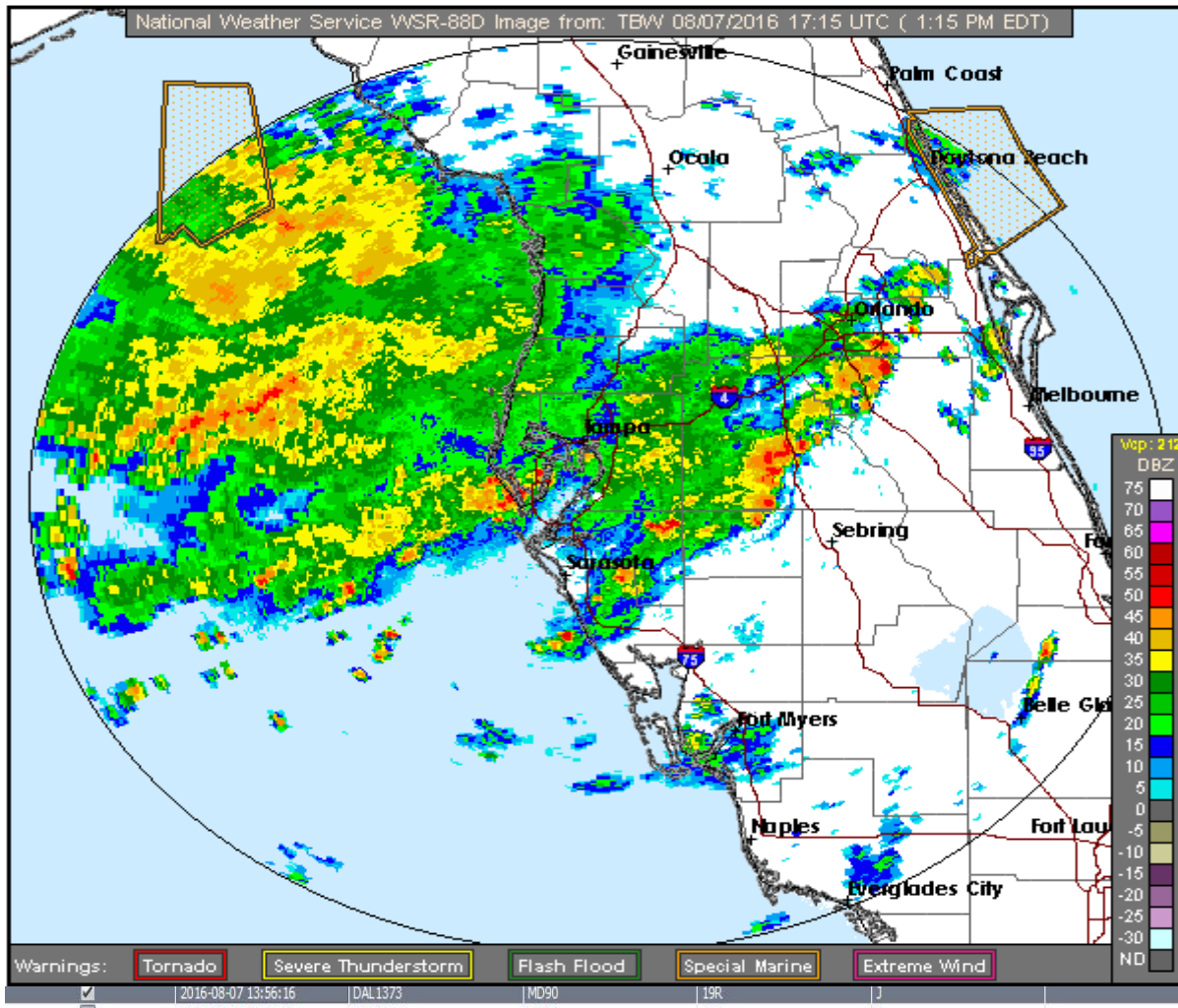
- Scheduled Runway Closures:
 - Are communicated in advance to those on the Airport’s CNC email distribution list.
 - Each of the Airport’s runways are closed at least once a month for scheduled monthly maintenance.
 - West runway generally the first Wednesday of each month.
 - East Runway generally the third Wednesday of each month.
 - Additional maintenance requirements throughout any given month may require additional closures. The maximum amount of work is coordinated to take place during each closure.
- Unscheduled Runway Closures:
 - Aircraft emergencies.
 - Wildlife strike reports.
 - FOD (foreign object debris).
 - Other safety matters that must be addressed immediately.

Deviation Categories – Weather

- Weather:
 - Wind direction dictates whether aircraft arrive and depart to the south (south flow) or arrive and depart to the north (north flow).
 - Air Traffic Control continuously monitors weather conditions and assigns instructions to crews based on numerous factors - all to ensure safety.



Deviation Categories – Weather (cont'd)



Origin Airport	Destination Airport	Operation Type	Associated With Complaint	Associated Noise Events
2260 TPA	BWI	D	False	1
7776 TPA	DFW	D	False	1
7043 TPA	ATL	D	False	0

Deviation Categories – Weather (cont'd)

- Runway 1L and Runway 1R:
 - Distance between the two runways is less than 1 mile.
 - Advanced technology used by Air Traffic Control monitors for strong winds, including wind shear.
 - Wind shear alerts may be received for the approach to one runway but not the other.
 - As a result, aircraft will be vectored to the safest runway during inclement weather events.

Exempt Aircraft

- The following aircraft do not fall within the guidelines of the Airport's Voluntary Noise Abatement program:
 - Military.
 - Law Enforcement.
 - Medivac.



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FAQ

Can Tampa International Airport Force Planes to Stop Using The Noise Sensitive/East Runway?

The Airport Noise and Capacity Act of 1990 **prohibits** the Airport from implementing any restriction on runway use ***without completing a Part 161 application and receiving FAA approval of the application and the restriction.***

One of six conditions set forth in Part 161 necessitates benefits of a proposed restriction outweigh potential cost. Because no residents south of Runway 1R live within the 65 DNL, the benefit would be considered \$0, meaning that benefits would not outweigh the cost. On this one condition alone, the Airport would be unable to meet the required conditions of a Part 161 study.

Can Tampa International Airport Implement a Curfew?

The Airport Noise and Capacity Act of 1990 **prohibits** the Airport from implementing a curfew ***without completing a Part 161 application and receiving FAA approval of the application and the restriction.***

One of six conditions set forth in Part 161 necessitates benefits of a proposed restriction outweigh potential cost. Because no residents south of Runway 1R live within the 65 DNL, the benefit would be considered \$0, meaning that benefits would not outweigh the cost. On this one condition alone, the Airport would be unable to meet the required conditions of a Part 161 study.

Do Residents of Hillsborough County Pay Ad Valorem Property Taxes That Support The Airport?

No.

Although empowered to levy ad valorem property taxes, the Authority has not collected any tax funds since 1973.

The Authority is a self-supporting organization and generates revenue from airport users. Capital projects are funded through generated revenue, grants, facility charges, various forms of financing and bonds.

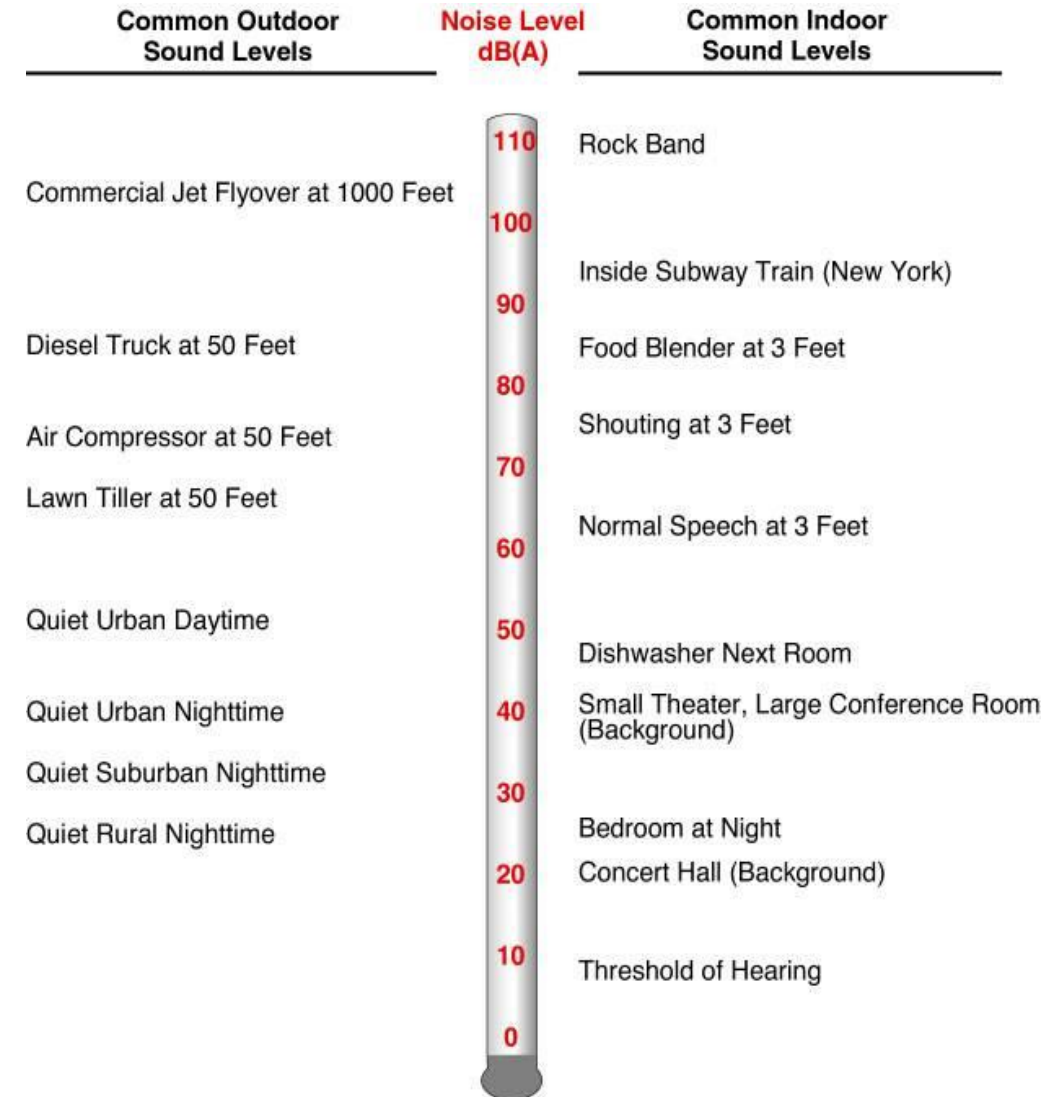
What is the Difference Between *a Noise Level of 65 dB During an Aircraft Flyover* and 65 DNL?

We use so-called “single event” noise metrics to measure individual events; those metrics only take into account the noise associated with that specific event.

DNL is a measure of cumulative noise exposure over a 24-hour period (or any number of 24-hour periods; e.g., a week, month, quarter, or year). To account for human sensitivity to noise between the hours of 10 p.m. and 7 a.m., noise events occurring during these hours receive a “penalty” when the DNL is calculated. Each nighttime event is measured as if ten daytime events occurred.

What is the Difference Between 65 dB and 65 DNL? (cont'd)

- Human auditory system not equally sensitive to all frequencies.
- To be a useful environmental analysis tool, we need a way to measure sound the same way the ear 'hears' it.
- The A-weighted level achieves this goal
Consistent with EPA's recommendation, the A-weighted level is used by federal, state, and local agencies for environmental noise analyses.



Retrieved from presentation by HMMH – Basic Aircraft Noise Terminology.



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Conclusion



Noise Abatement 101

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