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Naples Airport – June 23rd 2020

Part 150 Study Technical Advisory Committee Meeting #2

ESA

Pledge Of Allegiance

Presentation Materials Overview

- Summary of TAC #1
- Overview of Open Houses and Comment Themes
- Naples Airport Noise History
- Airspace Operational Overview
- Noise Modeling, Operational Analysis, and Land Use Compatibility
- Alternative Community Outreach Strategies in the COVID-19 Environment

Summary of TAC #1

Summary of TAC #1

- Technical Advisory Committee (TAC)
  - Purpose and Objectives of the TAC
  - Role of the TAC Meeting Facilitator
  - TAC Charter and Participation Agreement
  - Florida's Sunshine Law
- Airport Overview
- Part 150 Study Overview
- Introduction to Aircraft Noise, Modeling, and Compatibility
- Project Schedule

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Summary of TAC #1 - Part 150 Study Overview

Federally Regulated Process

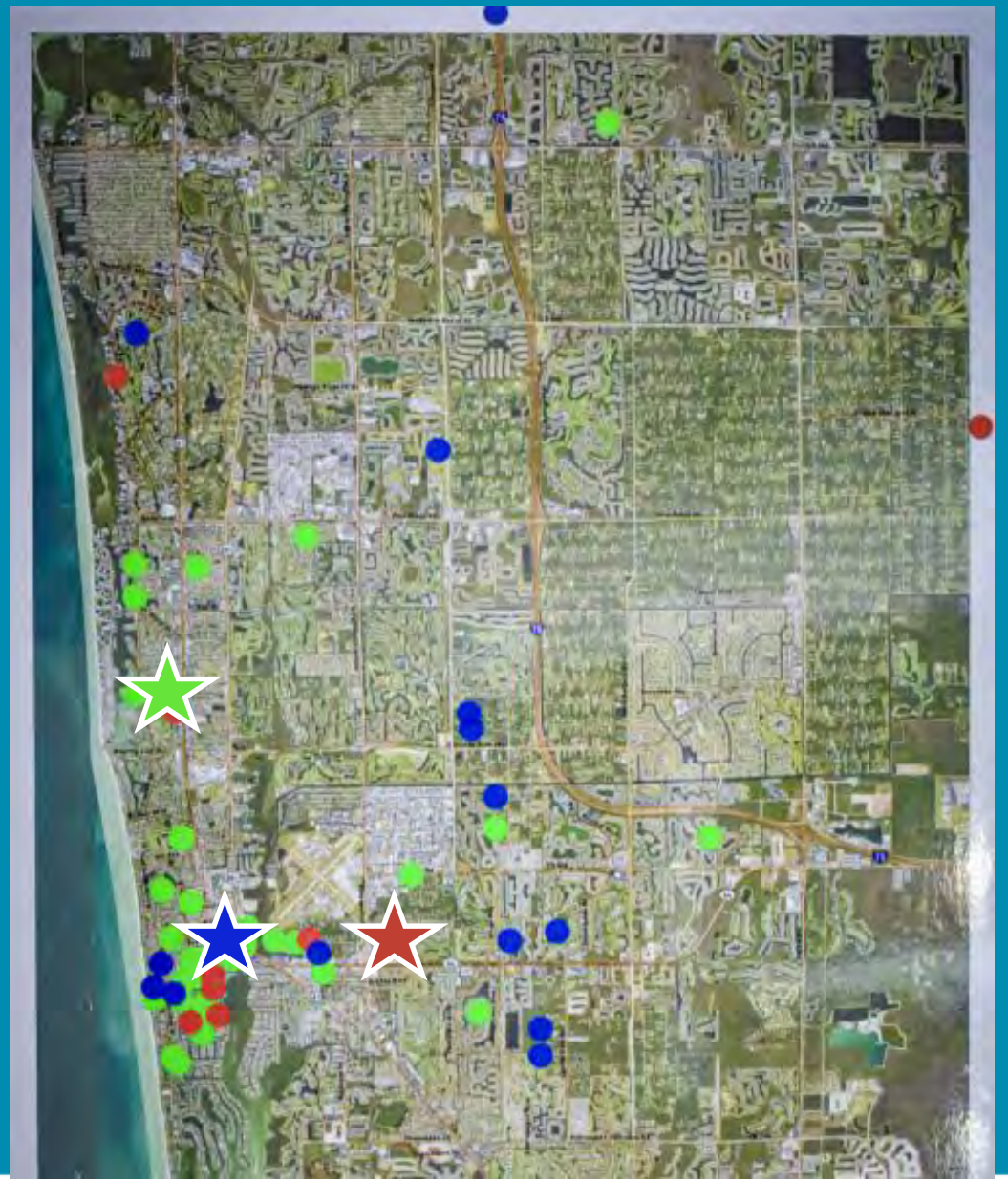
- Determine existing and future noise conditions in the vicinity of an airport
- Identify incompatible uses
- Identify measures to improve compatibility
  - Evaluate the feasibility of possible flight procedure/land use changes
  - Submit locally-endorsed recommendations to the FAA regarding noise reduction measures
  - Approved measures may be eligible for Federal grant funding
- Educate communities on the Federal process and what can and cannot be done to address aircraft noise concerns

Overview of Open Houses and Comments Received

Open House Attendance

- NAA held three Open Houses in February to answer questions on the Part 150 Study and gather feedback from the Naples community on any airport noise-related concerns.

February 11, 2020 5-7 pm	February 12, 2020 9:30-11:30 am	February 12, 2020 6-8 pm
Baker Park Sugden-Gomez Center	Moorings Presbyterian Church	Lorenzo Walker Technical College
26 Attendees	11 Attendees	16 Attendees



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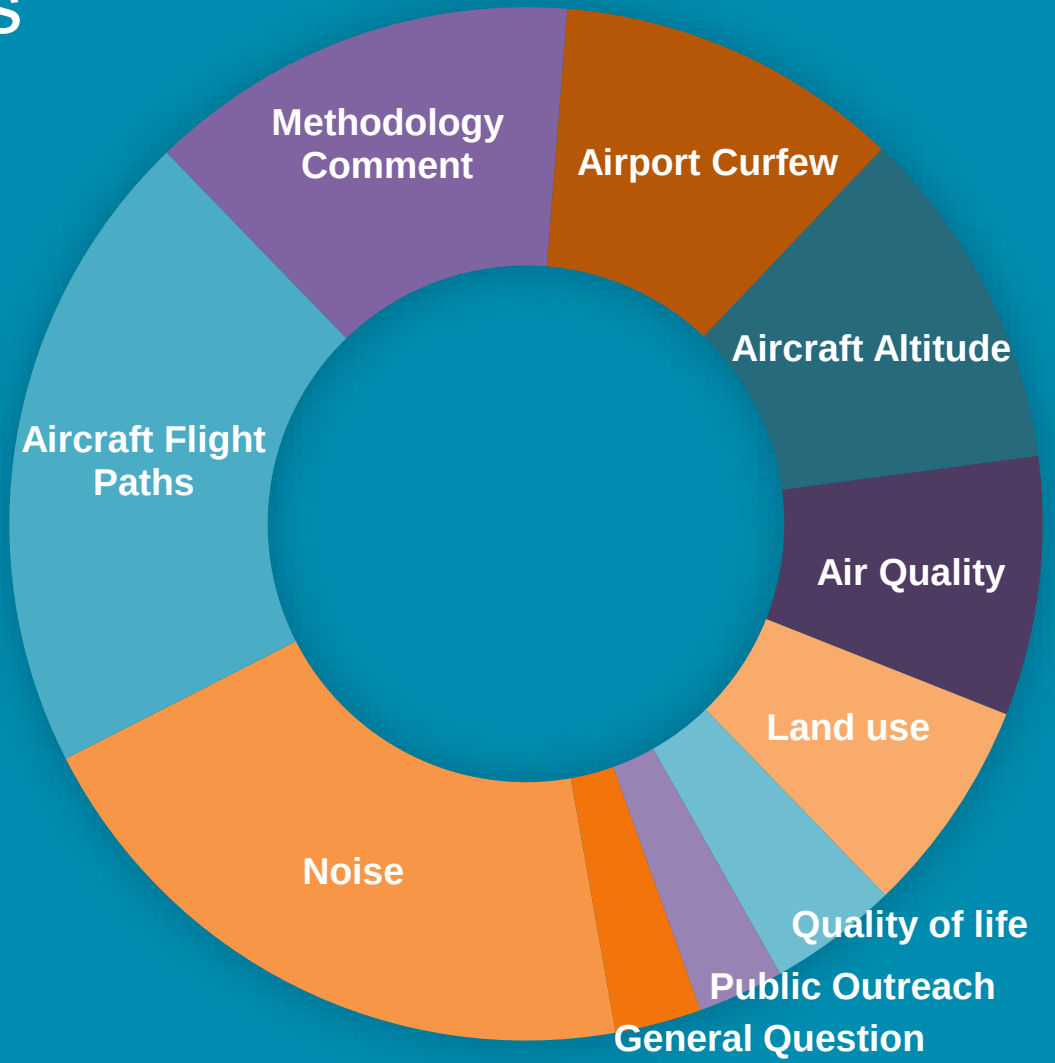
Overview of Open House Comments

- Attendees were encouraged to provide feedback and leave comments on noise-related issues.
- The Open Houses resulted in comments from attendees that showed ten overarching themes:

1. Methodology Comment
2. Quality of Life
3. Public Outreach
4. Noise
5. Land Use
6. Airport Curfew
7. Aircraft Flight Paths
8. Aircraft Altitude
9. Air Quality
10. General Question



NOTE: ***Results only include comments received during comment period (i.e., before February 21, 2020).***

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Top Five Open House Comment Themes

Noise

"Very loud engines noise."
"Flights are becoming more frequent."

80% of noise-related comments were concerns over engine noise and flight frequency.

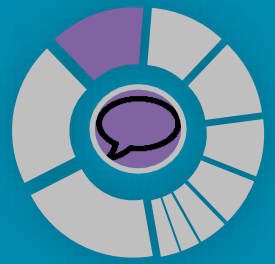
Aircraft Flight Paths

"Approach runway [5] over river and not Old Naples."
"Can take-offs be dispersed more evenly to reduce noise impacts?"

Half of commenters had concerns over flight path changes, utilization of runways, and wished to have flights routed down the river/bay.

Methodology Comment

"Understanding of noise impact study is that it does not reflect peak season because it averages across the year."



Respondents had a range of questions about the modeling methodology used in the Part 150 Study.

Airport Curfew

"Mandatory operation period of 7am to 10pm."
"Mandatory flight curfew with a monitoring body and fines."
"Make the curfew mandatory."

Airport curfew comments indicated concerns over aircraft flying at nighttime hours and waking up residents.

Aircraft Altitude

"Aircraft are flying very low."
"There seems to be high variability in the altitude of planes during take-off and landing."

Altitude comments indicated concerns over aircraft flying too low or not high enough to avoid noise impacts.

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Other Open House Comments

Air Quality

"Fumes from planes can be smelled."
"There is also soot from the aircraft exhaust that has been noticed."

Land Use

"Relocate the airport to a more rural area because it could increase revenue and generate jobs."
"Perhaps moving airport to location that is out of town?"

Quality of Life

"Noise level affects the ability to enjoy the outdoors and impacts quality of life."

Public Outreach

"Suggest additional outreach because some people affected by noise may not be aware of the workshops."

Aircraft Flight Paths

"There was a change for flight paths to make right turns only from 23—why was this change made?"

Methodology Comment

"Flights crossing Old Naples are consistently crossing at a lower than necessary altitude which causes noise impacts—will the Part 150 Study document actual historical flight path altitudes?"

Methodology Comment

"Noise impacts are not directly over 5th Avenue in Old Naples—they are spread throughout the sector—Will the study look at the actual flight paths and the actual impacted populations vs. the model's predictions?"

Naples Airport Noise History

History of Noise at Naples Airport

- Goal 2 in the NAA strategic plan is balancing quality of life with the needs of the aviation community.
- The NAA has over 30 years of experience addressing noise impacts in the Naples community.
- The NAA has spent more than $8 million of its own funds on noise issues since 2000, not including the ongoing Part 150 Noise Study (est. cost $1.4 million)
- Naples Airport is the only airport in the country with an approved Part 161 study that includes a 24-hour ban of Stage 2 jet aircraft.

"Be an engaged, responsive partner in service to the community."

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Naples Noise Compatibility Committee (NCC)

- Established by the NAA in 1997
- Charged with studying airport noise compatibility methods and recommending programs to the NAA in efforts to address complaints
- 9 total members
  - 1 member each representing 4 quadrants around airport (4 total)
  - 1 at large member located in City of Naples
  - 1 at large member located in Collier County
  - 1 member who is an active pilot
  - 1 member nominated by Naples City Council
  - 1 member nominated by Collier County Board of County Commissioners

December 12, 2019
Joint NAA Board and NCC Workshop

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Major Noise Milestones at Naples Airport

1978

- First documented publication of noise abatement procedures.

1987

- NAA completes its first formal noise study.

1997

- NAA submits Part 150 NEM and NCP updates to FAA.

1998

- NAA submits second Part 150 NEM and NCP update.
- NAA proposes 24-hour ban on Stage 1 jet aircraft.

2000

- NAA submits third NEM update to FAA.
- NAA Submits Part 161 Study to FAA.

2010

- NAA completes fourth NEM update.

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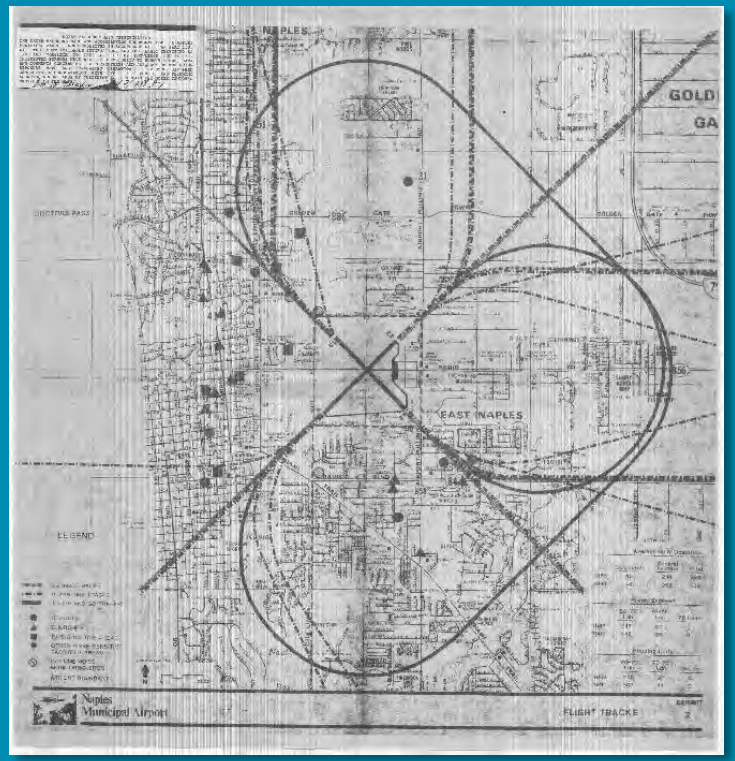
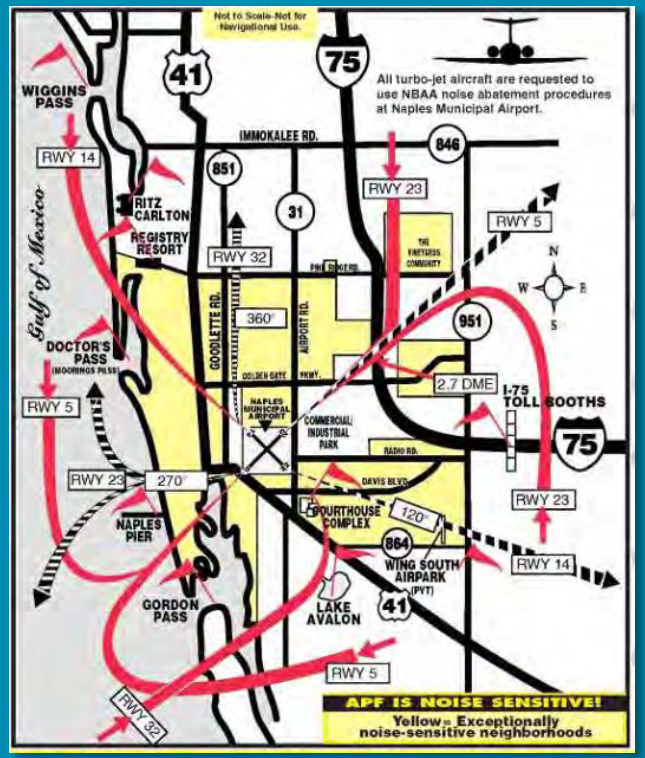
History of Recommended Flight Tracks at Naples Airport

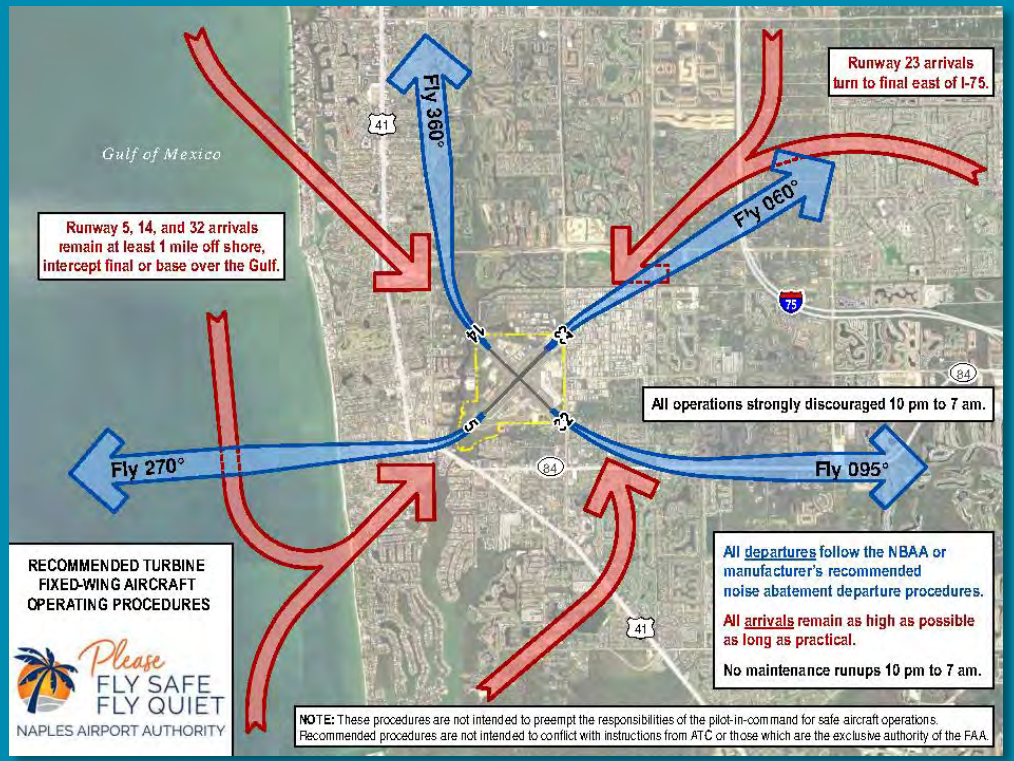
1987



2006



Current



Flight tracks have remained relatively consistent for the past 30+ years.

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Summary of Noise History at Naples Airport

- The NAA has an industry leading history addressing aircraft noise impacts
- Only US airport to achieve a 24-hour ban on Stage 1 and 2 jet aircraft operations
- High compliance with the Quiet Hours (voluntary nighttime curfew) at 98%+ compliance
- The NAA is committed to the continued evaluation and refinement of its noise-related efforts, but is preempted and limited by federal law
- NAA initiated a Part 150 noise study in 2020 to (1) better understand current and future anticipated noise impacts; (2) develop strategies to improve noise compatibility and (3) endeavor to mitigate aircraft noise impacts on the surrounding community

For more information on the History of Noise at Naples Airport, please visit the Noise Program Milestones webpage: https://flynaples.com/noise-program-milestones/

Airspace Operational Overview

Role of Naples ATCT and RSW TRACON

Naples Air Traffic Control Tower (ATCT)

- Naples ATCT directs aircraft ground movements, takeoffs and landings to ensure safe operations primarily within a 7-mile radius of APF.
- After takeoff, the Naples ATCT hands off control to RSW TRACON.
- Naples ATCT and RSW TRACON coordinate approach and departure procedures outlined in a Letter of Agreement.

RSW Terminal Radar Approach Control (TRACON)

- RSW TRACON oversees aircraft arriving and departing aircraft to/from several airports in SWFL along established corridors in its airspace.
- Once an aircraft is approximately 7-miles from APF and below 2,500', TRACON hands off the aircraft to the Naples ATCT.
- TRACON coordinates with airports to establish arrival and departure procedures and handles certain aircraft when Naples ATCT is closed (10 pm – 6 am).

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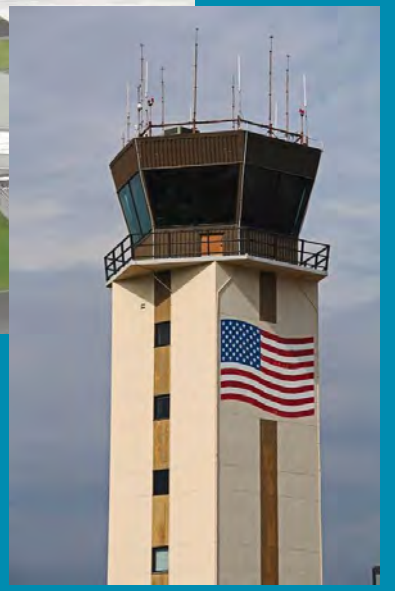
Coordination between Naples ATCT, RSW ATCT, and TRACON

- Naples ATCT works closely with RSW TRACON/ATCT to establish and implement procedures for aircraft arrivals and departures through a Letter of Agreement (LOA).

- The current LOA between Naples ATCT and RSW ATCT is dated November 14, 2017 and outlines the following:
  - Procedures for instrument flight rules (IFR), visual flight rules (VFR), and special VFR (SVFR) aircraft at Naples Airport
  - Standard departure headings are identified for each runway end for both jet and propeller aircraft
  - All departures are assigned a 2,000' departure hold, which restricts aircraft climb out until issued new instructions by the RSW ATCT/TRACON. This departure hold has been in place since at least April 1st, 1998

Rendering of future RSW Tower/TRACON facility



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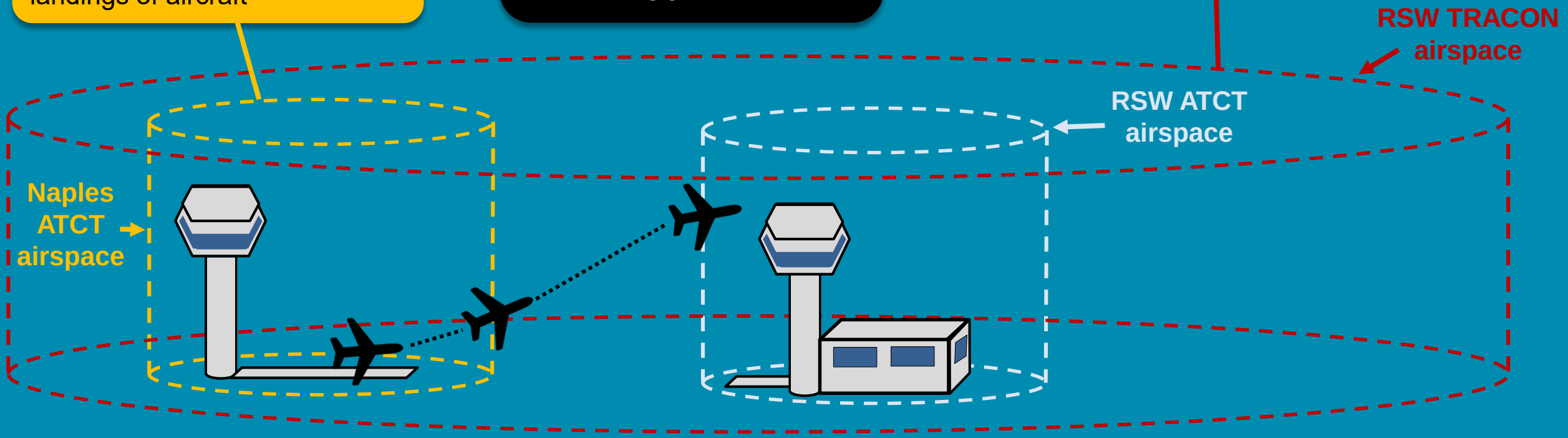
Overview

Naples ATCT directs the safe ground movement, takeoff and landings of aircraft

Naples ATCT issues a takeoff clearance, including heading and altitude, then hands the aircraft off to RSW TRACON

RSW TRACON guides departing aircraft along established ascent corridors in TRACON's regional airspace until the aircraft is handed off again to the enroute airspace



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***NOTE**: The above graphic is intended to provide a simplified depiction of the relationship between Naples Tower and RSW Tower/TRACON—it is not for detailed interpretation.*

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Noise Modeling, Operational Analysis, and Land Use Compatibility

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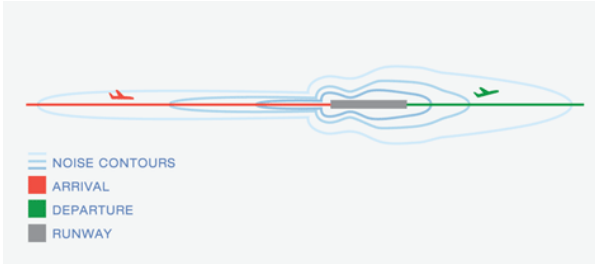
Noise Modeling

Aircraft noise modeling allows:

- Calculation of noise exposure at any point
- Depicting annual average day aircraft noise exposure
- Predicting future aircraft noise exposure
- Assessing changes in noise impacts resulting from runway configuration changes or new runways
- Assessing changes in fleet mix and/or number of operations
- Evaluating operational procedures

Noise Contours of Aircraft Operations



Land Use Map

NEM

NOTE: ***The above pictures are not a result of this Part 150 Study.***

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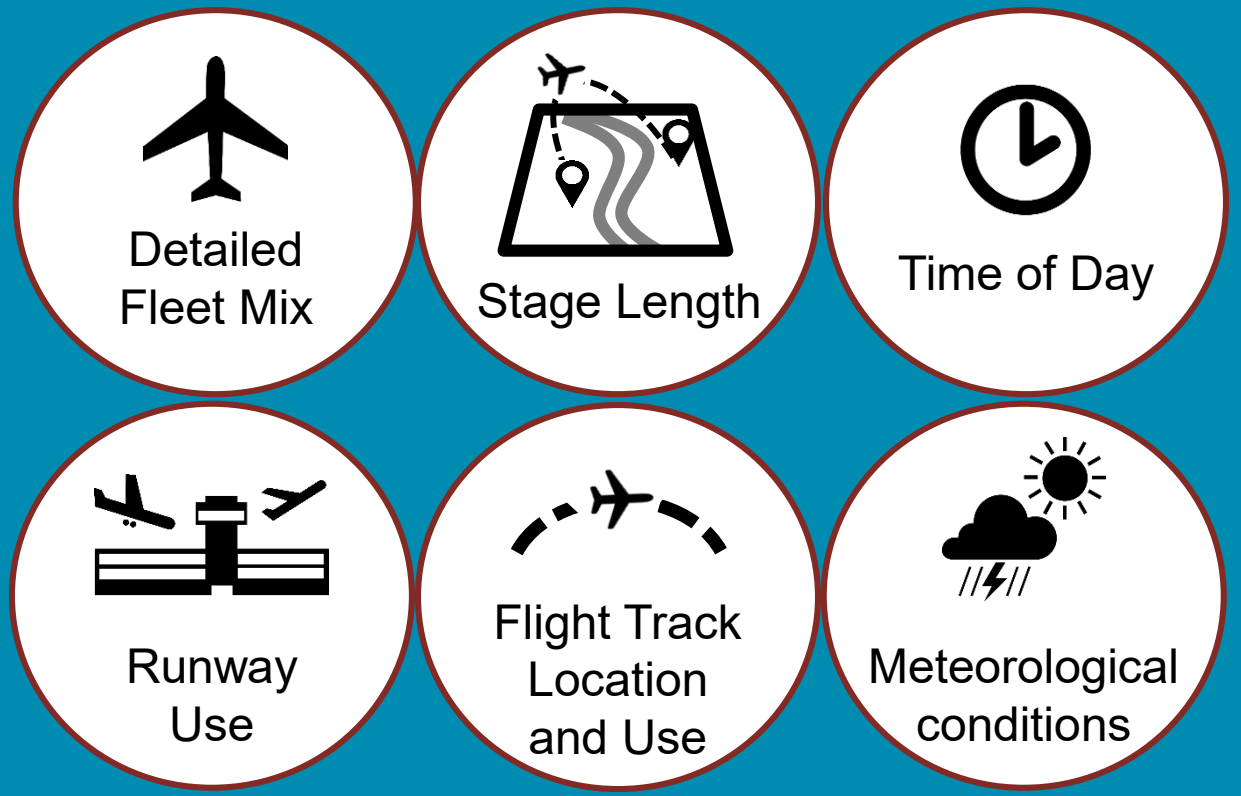
Noise Modeling Inputs

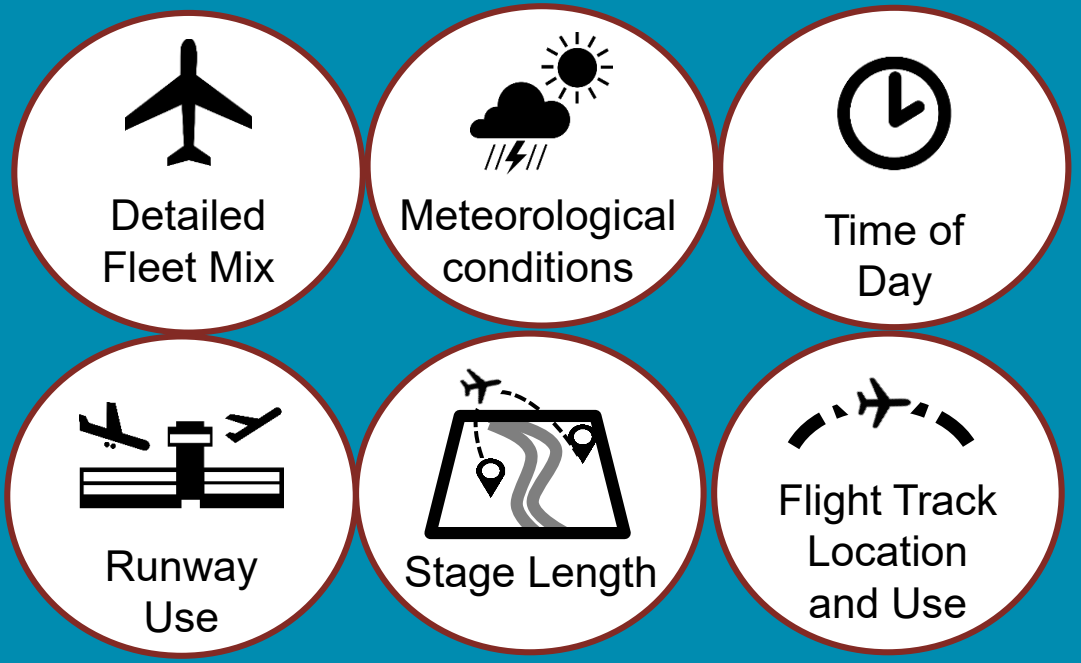
Aircraft Operational Data Inputs

- The amount of noise exposure is determined by:
  - Detailed fleet mix
  - Stage length
  - Time of day (nighttime penalty; 1 nighttime operation = 10 daytime operations)
- The noise exposure distribution is determined by:
  - Runway configuration and use
  - Flight track locations and use
- Other Factors
  - Meteorological Conditions



Noise Modeling with AEDT

Modeling Inputs



Modeling Program

Aviation Environmental Design Tool (AEDT) Version 3c

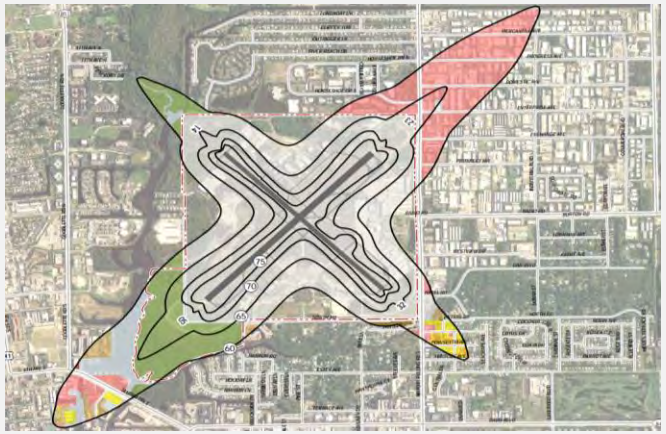
Noise modeling inputs are used in AEDT in order to generate noise contours which show areas of equal noise exposure around an airport and are overlaid on a land use map to identify noncompatible land uses.

Noise Modeling vs. Noise Measurement

Noise Measurement

- Noise can be measured with monitoring equipment placed within areas where aircraft fly.
- Noise measurements represent a glimpse in time at a specific location.
- Provides real-time data.

Noise Modeling



- Computer programs calculate aircraft noise based on performance data and user inputs.
- Provides a glimpse into the past, presents, and future conditions under different scenarios.
- Noise can be calculated over specific areas or large geographic areas.

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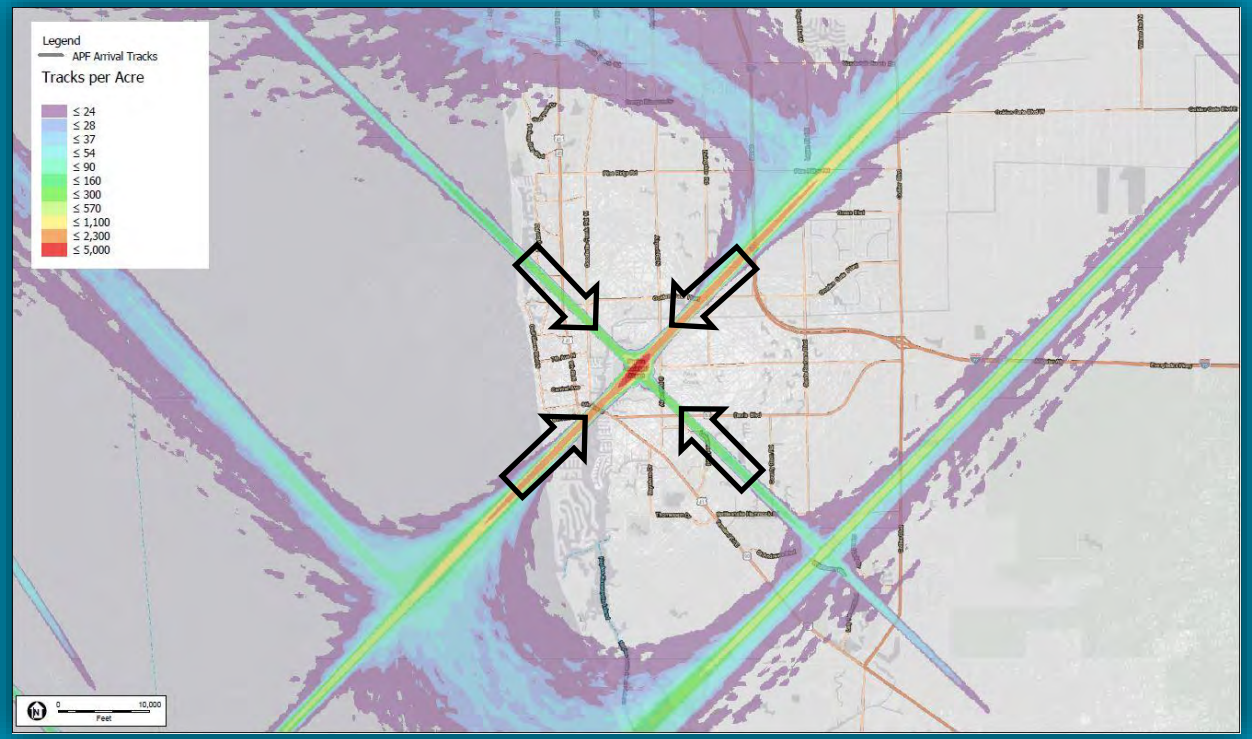
Data Collection Process and Status Updates

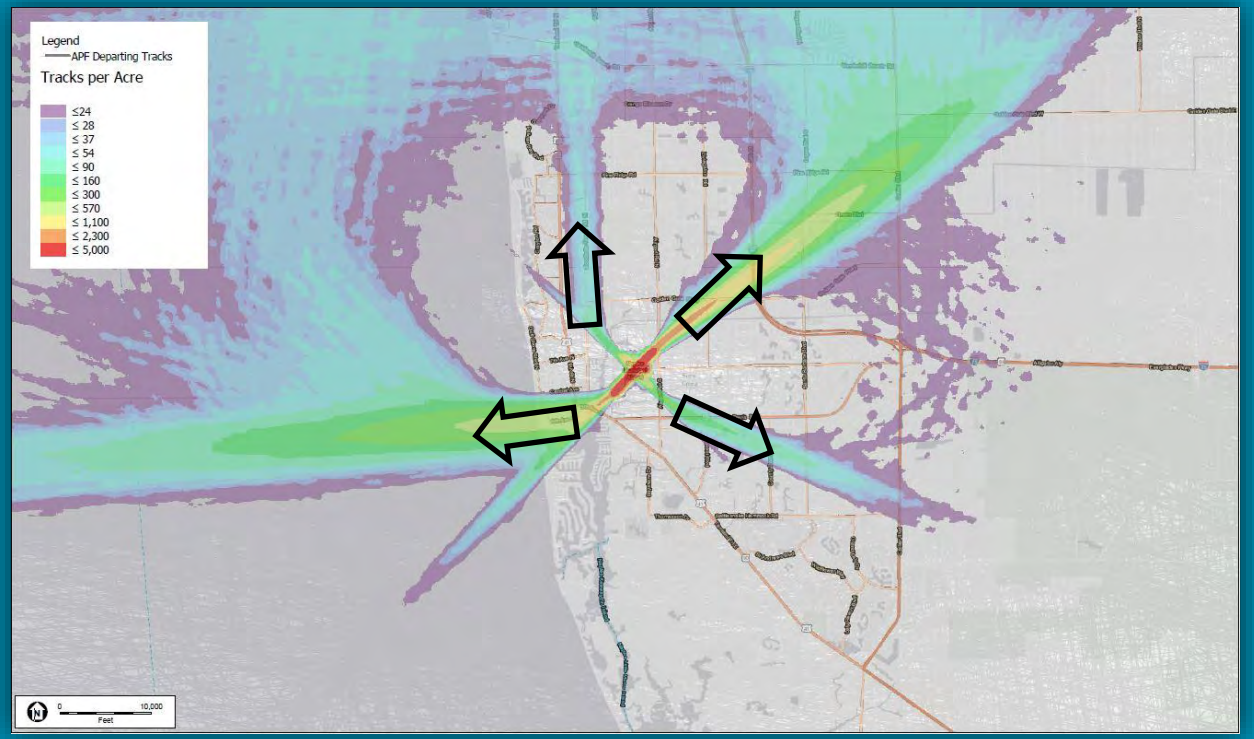
Steps Complete

Naples Airport Aircraft Density

Jet Arrivals All Runways



Jet Departures All Runways



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NOTE: ***Figures represent aircraft density in Calendar Year (CY) 2019.***

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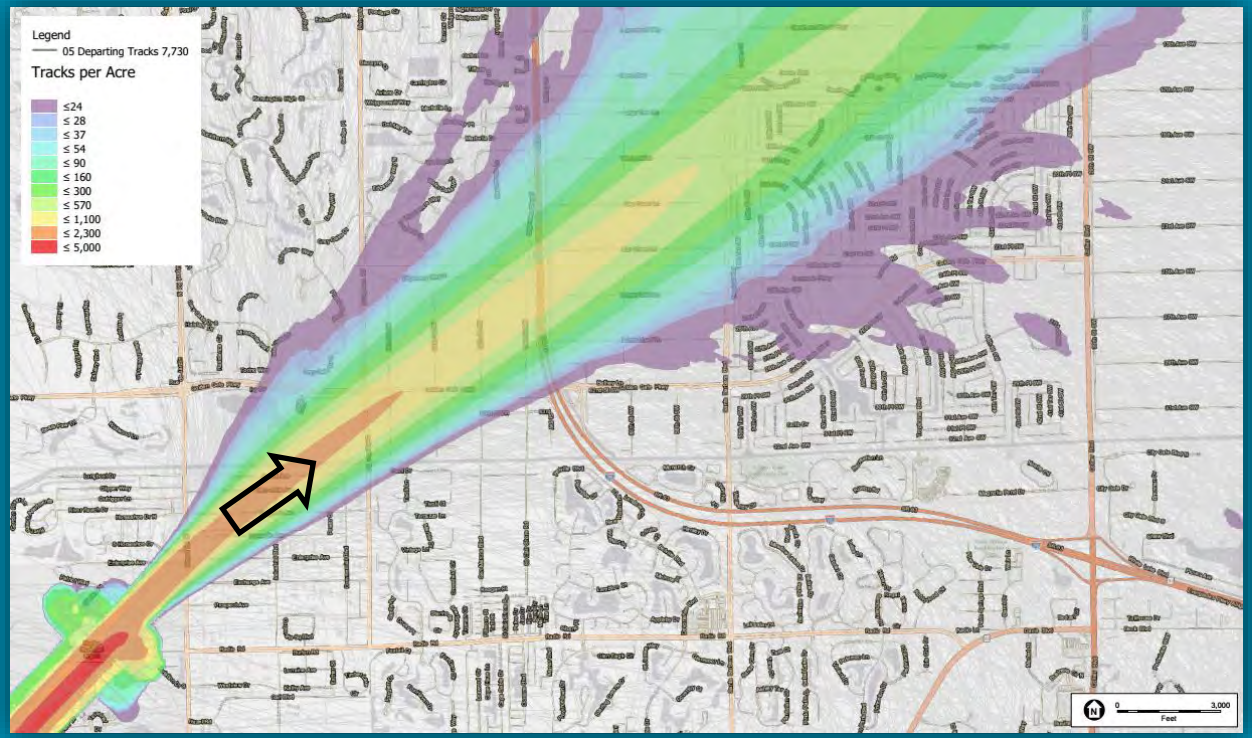
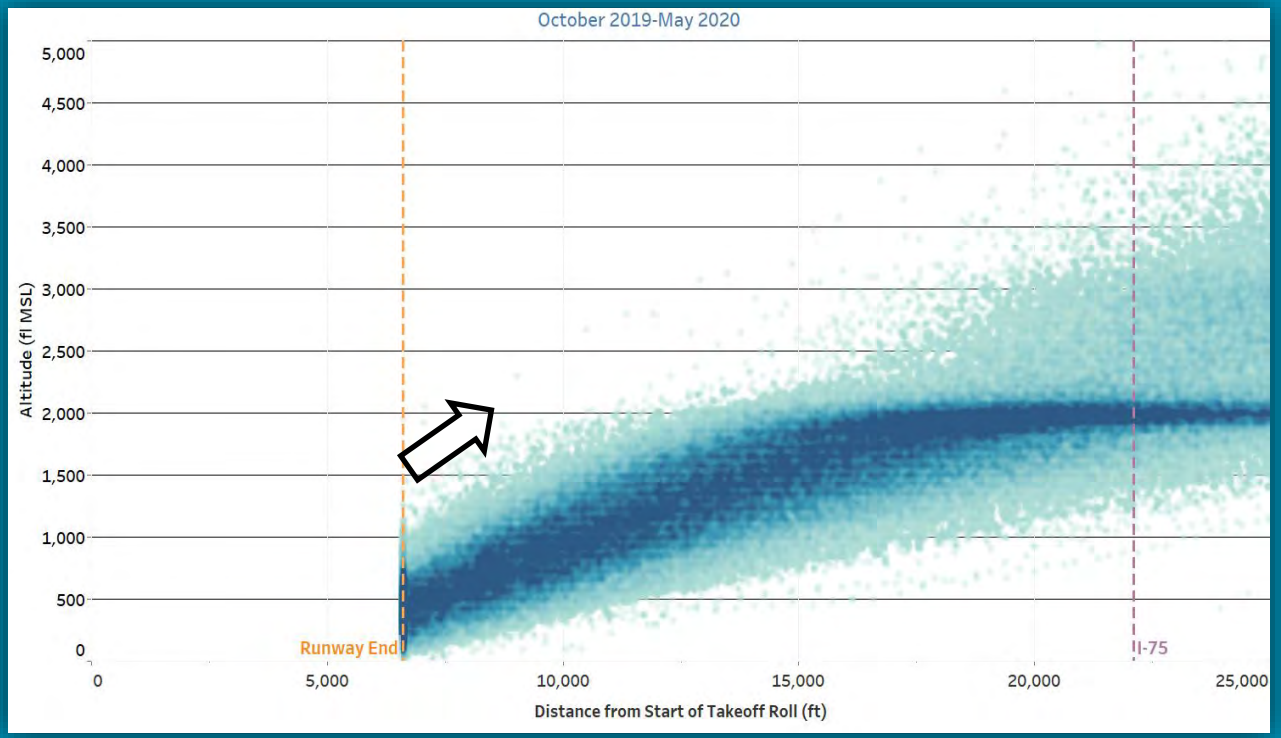
Naples Airport Aircraft Activity - Runway 05 Jet Departures

Aircraft Density



Aircraft Altitude



NOTE: ***Aircraft density is represented in CY 2019. Aircraft altitude is represented from October 2019 to May 2020.***

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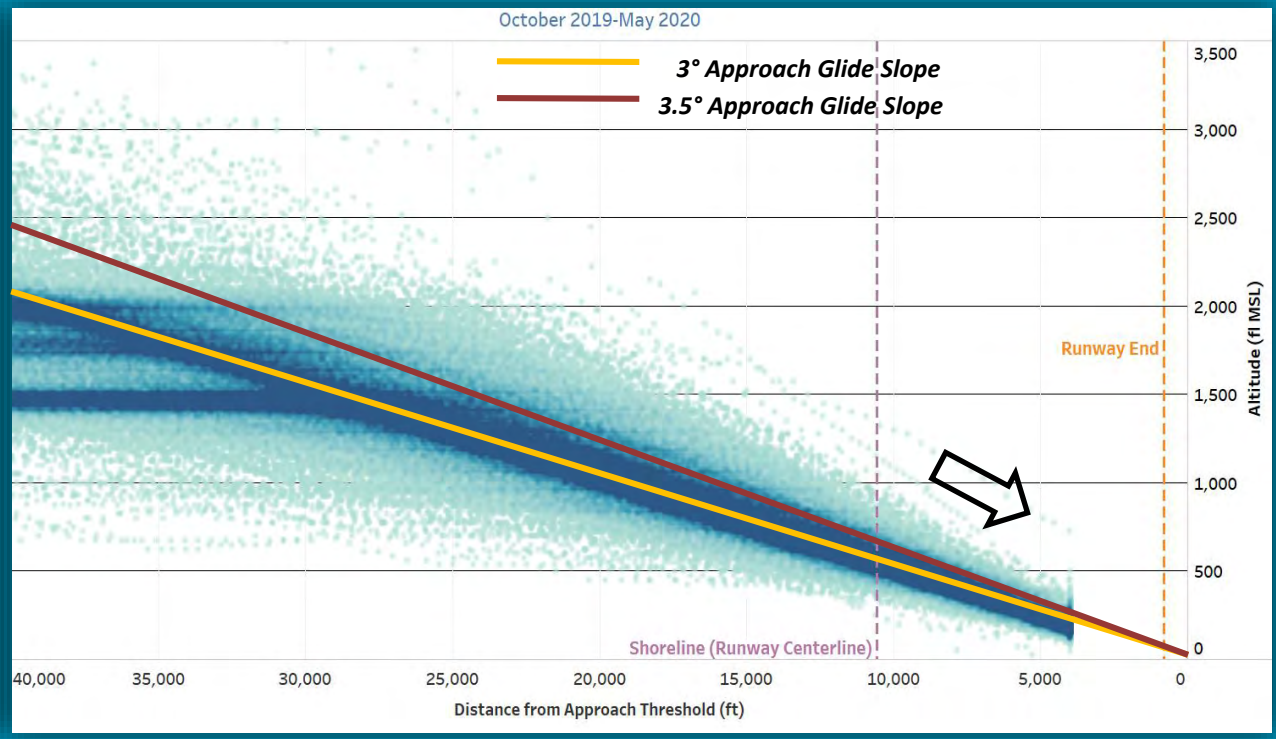
Naples Airport Aircraft Activity - Runway 05 Jet Arrivals

Aircraft Density

Aircraft Altitude



NOTE: ***Aircraft density is represented in CY 2019. Aircraft altitude is represented from October 2019 to May 2020.***

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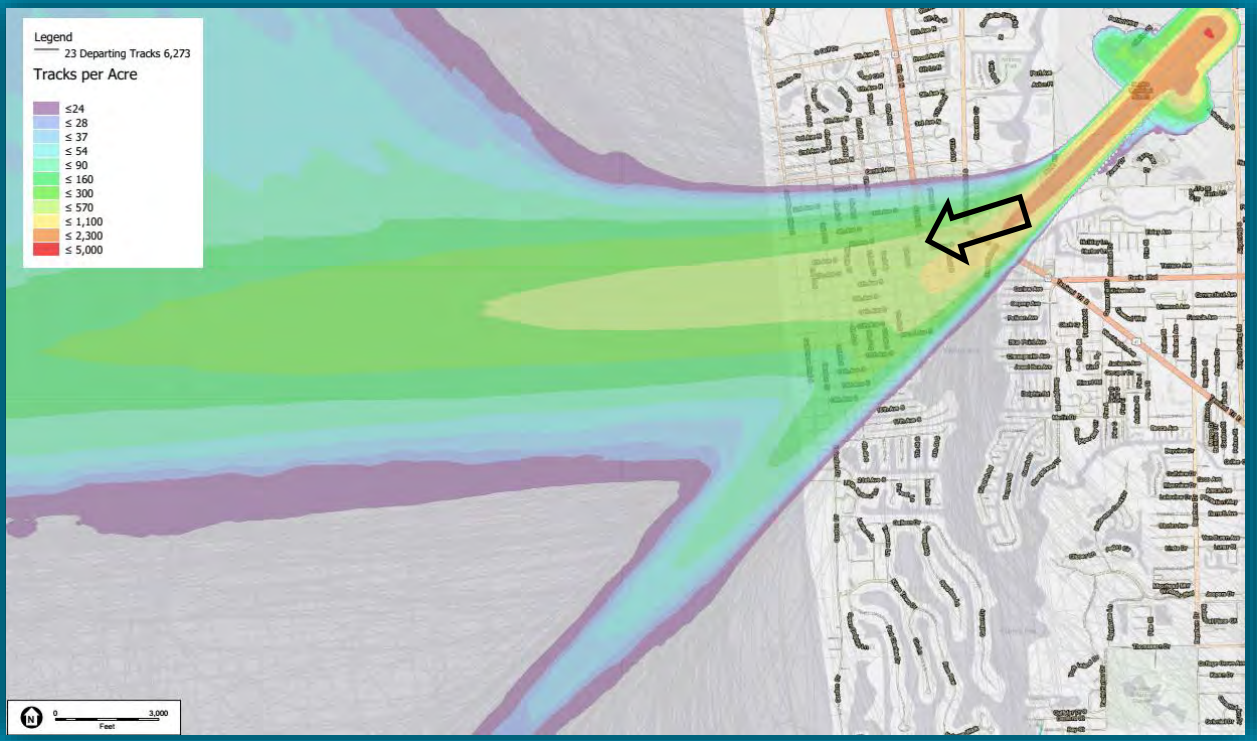
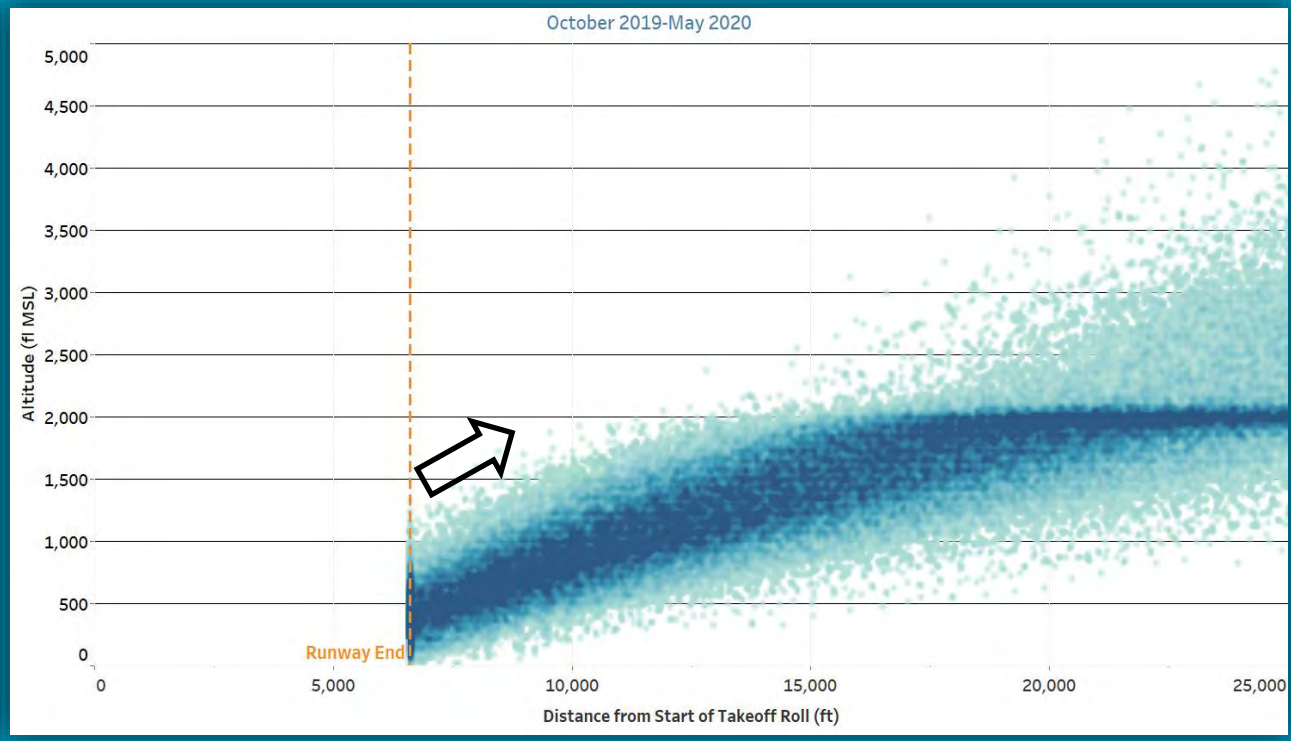
Naples Airport Aircraft Activity - Runway 23 Jet Departures

Aircraft Density



Aircraft Altitude



NOTE: ***Aircraft density is represented in CY 2019. Aircraft altitude is represented from October 2019 to May 2020.***

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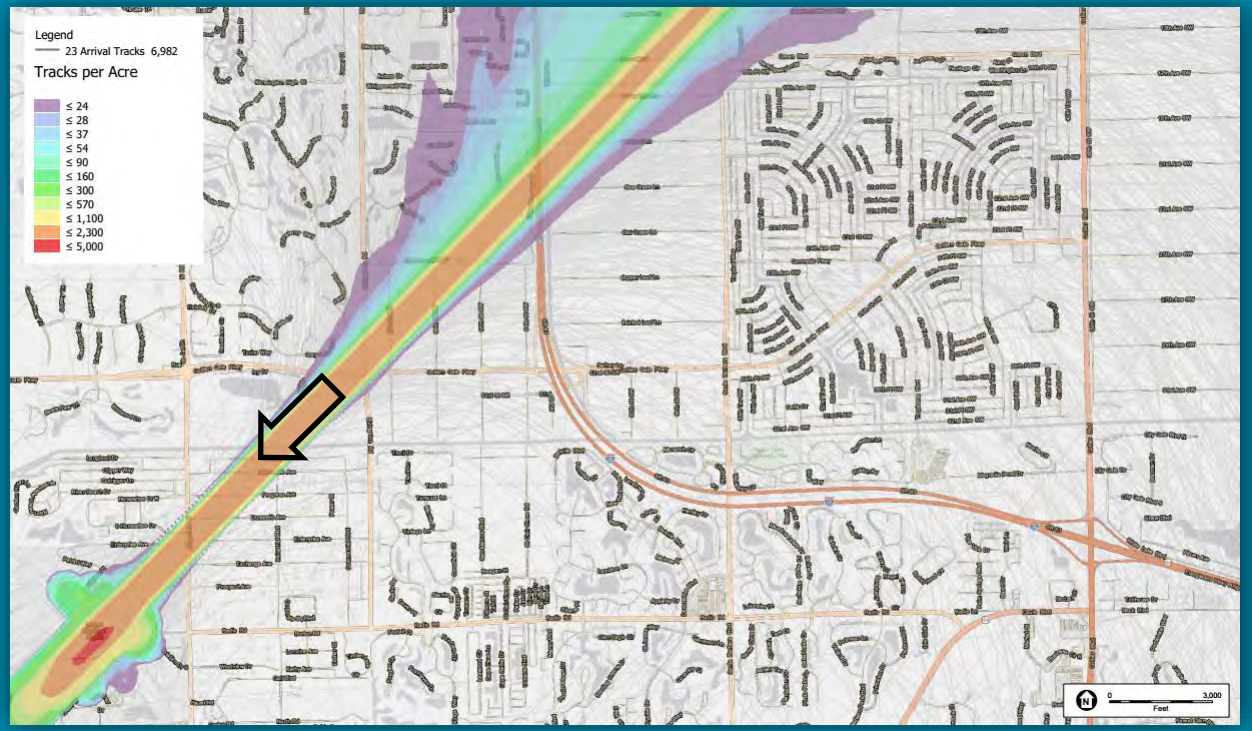
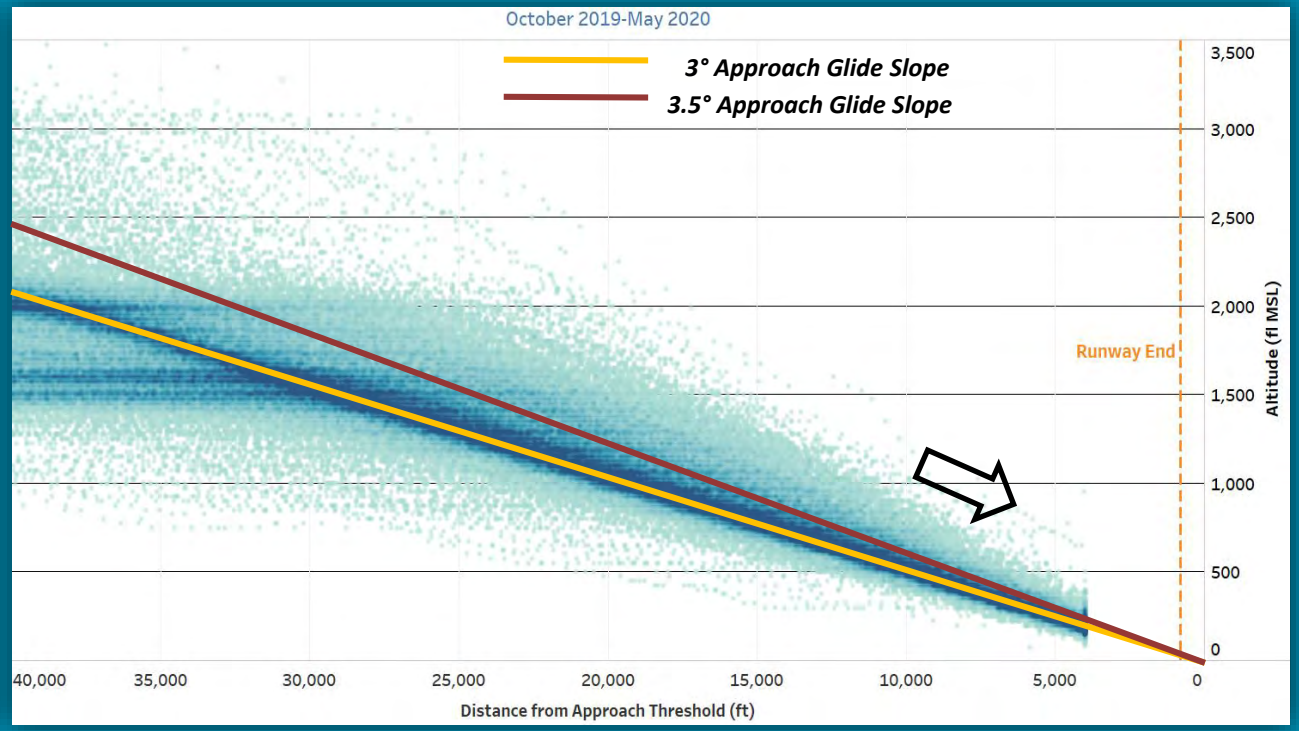
Naples Airport Aircraft Activity - Runway 23 Jet Arrivals

Aircraft Density



Aircraft Altitude



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NOTE: ***Aircraft density is represented in CY 2019. Aircraft altitude is represented from October 2019 to May 2020.***

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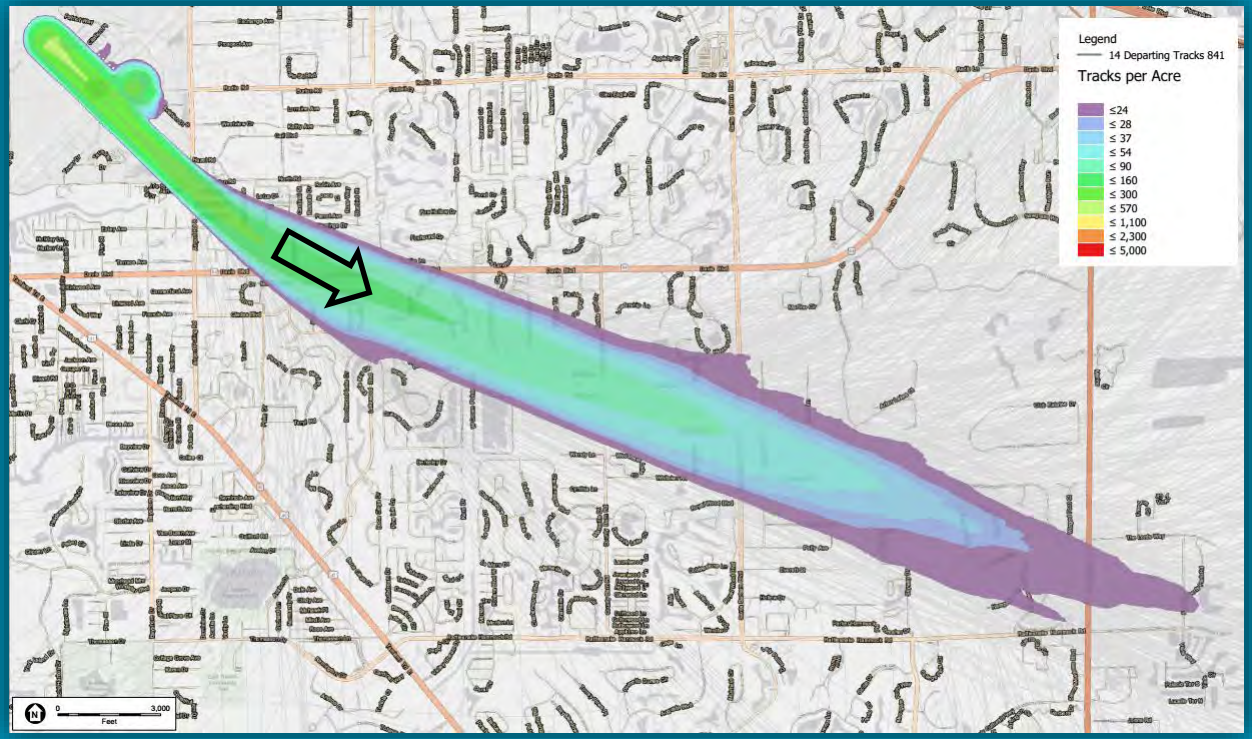
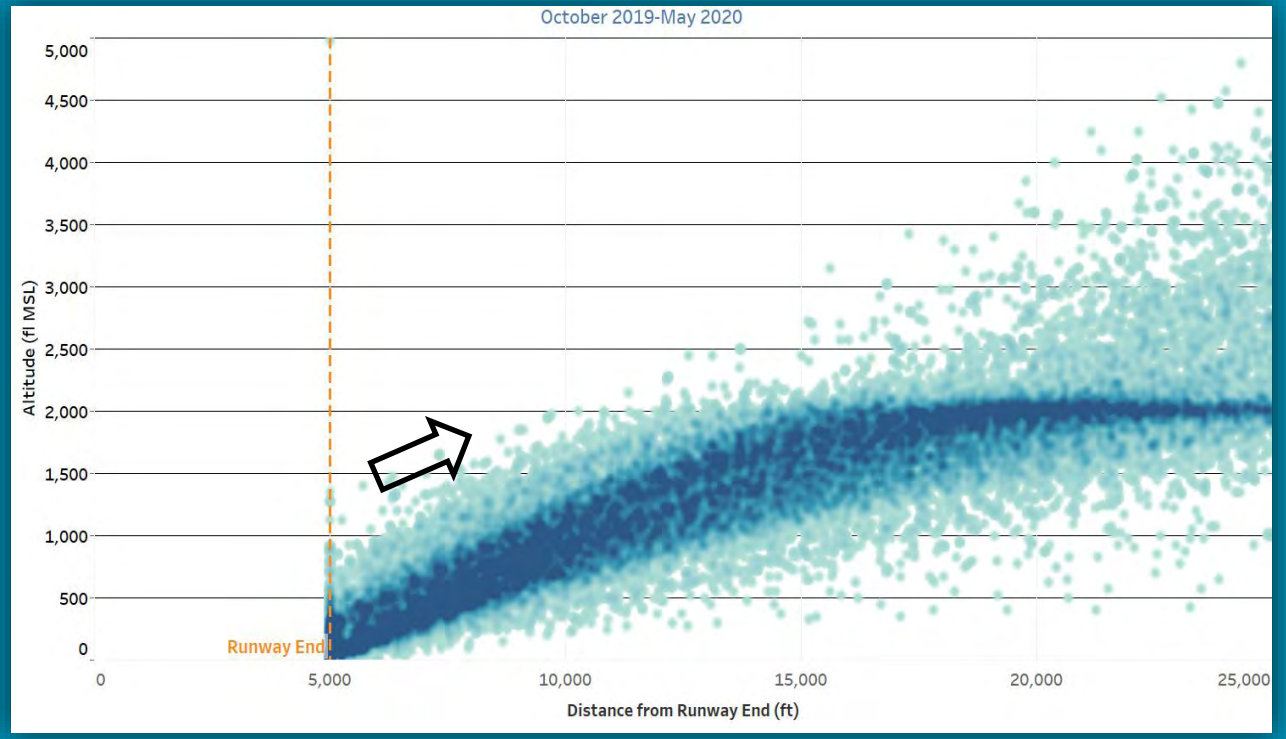
Naples Airport Aircraft Activity - Runway 14 Jet Departures

Aircraft Density



Aircraft Altitude



NOTE: ***Aircraft density is represented in CY 2019. Aircraft altitude is represented from October 2019 to May 2020.***

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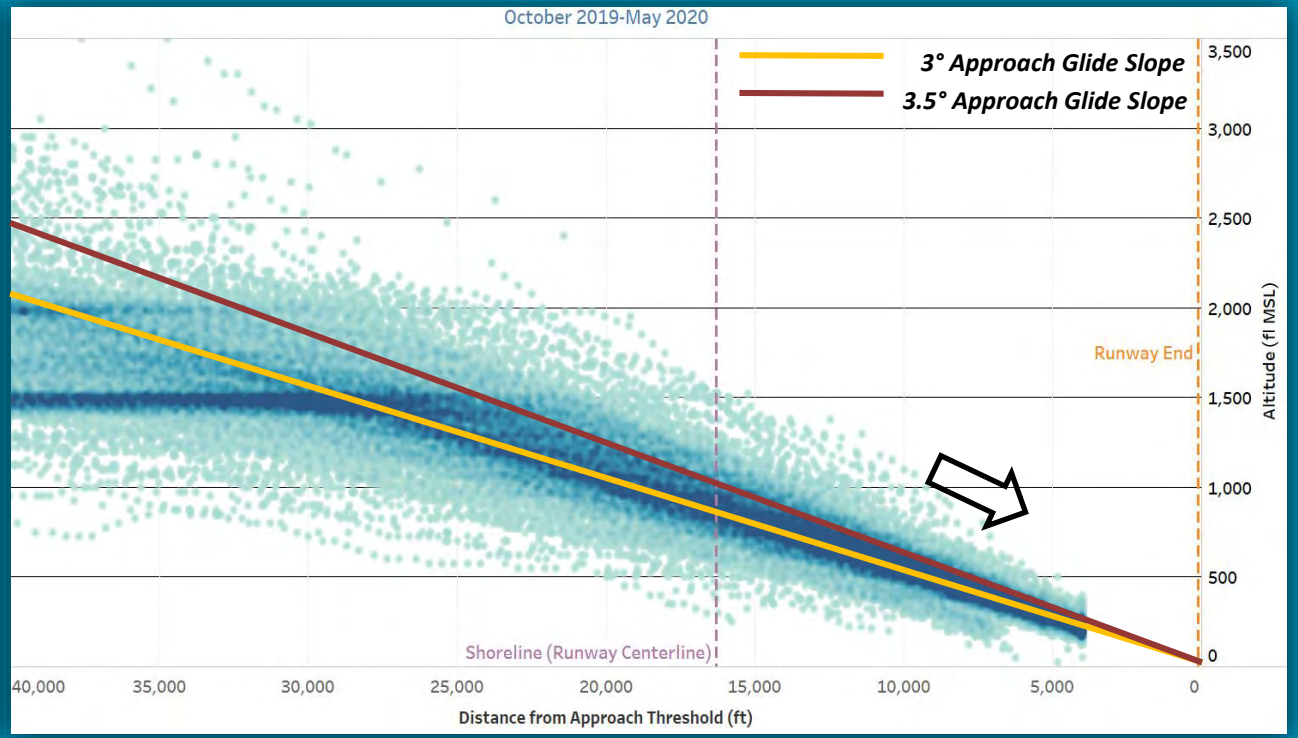
Naples Airport Aircraft Activity - Runway 14 Jet Arrivals

Aircraft Density

Aircraft Altitude



NOTE: ***Aircraft density is represented in CY 2019. Aircraft altitude is represented from October 2019 to May 2020.***

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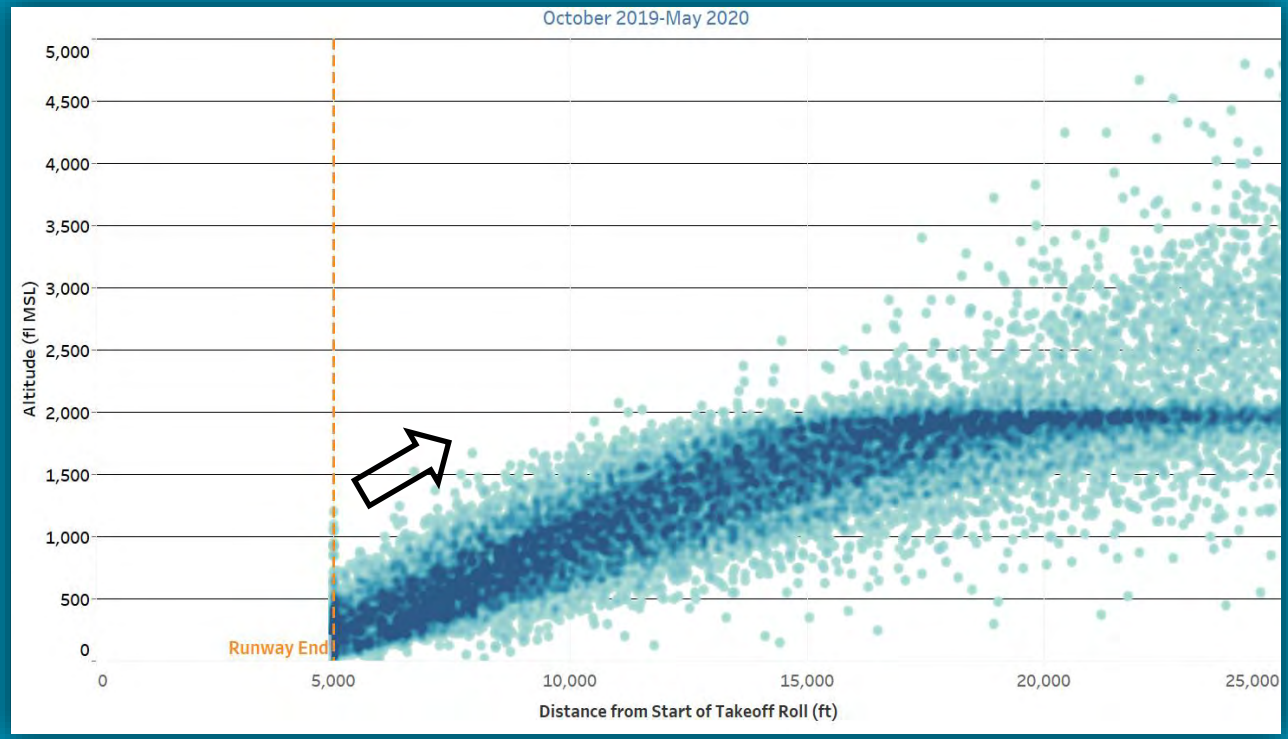
Naples Airport Aircraft Activity - Runway 32 Jet Departures

Aircraft Density

Aircraft Altitude



NOTE: ***Aircraft density is represented in CY 2019. Aircraft altitude is represented from October 2019 to May 2020.***

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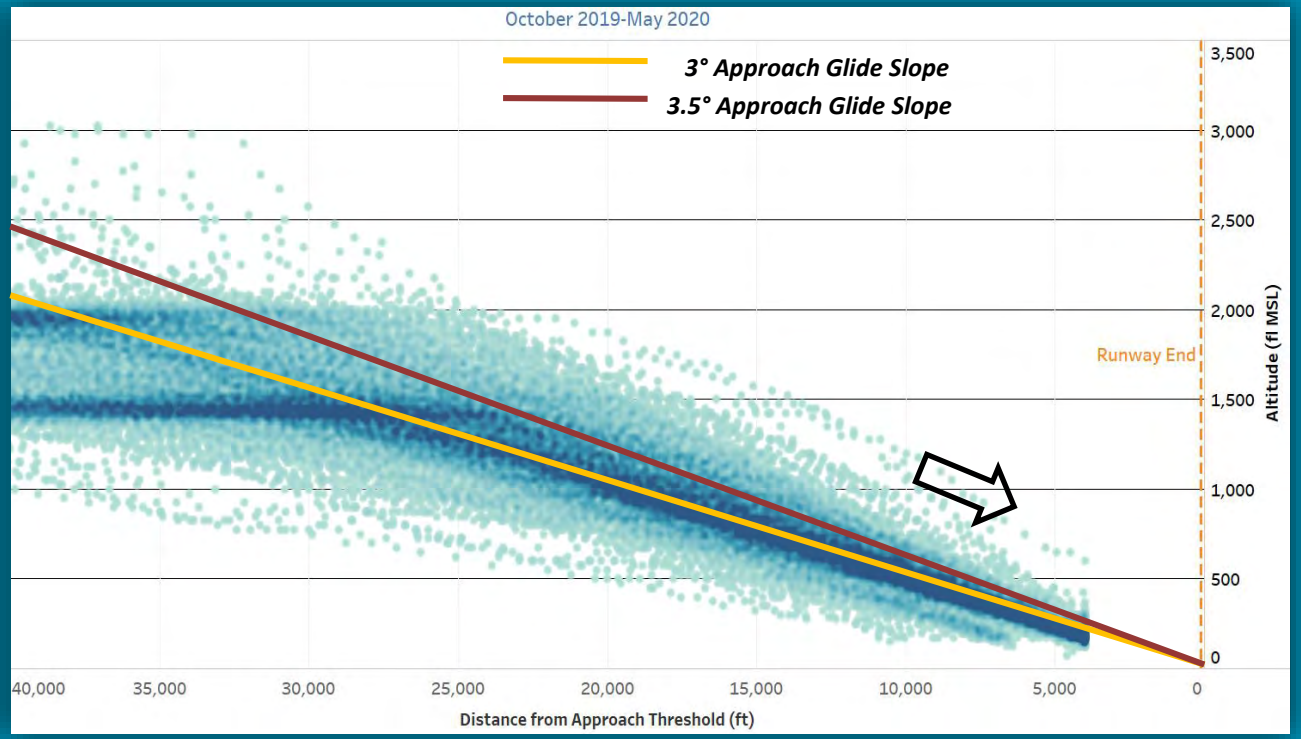
Naples Airport Aircraft Activity - Runway 32 Jet Arrivals

Aircraft Density

Aircraft Altitude



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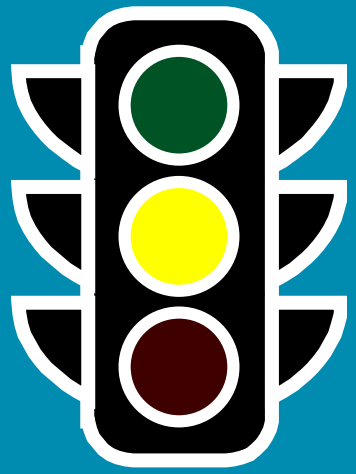

Steps In-Progress

Naples Airport Aircraft Analysis – Preliminary Runway Utilization

- Runway use is a major factor in the how noise is distributed throughout the community
- Runway 05-23 is the primary runway for aircraft operations at Naples Airport.
- Aircraft takeoff and land into the wind due to aircraft performance characteristics
- Jet aircraft generally require longer runway that piston powered aircraft

Arrival/ Departure	Runway				Total
	05	23	14	32	
Raw Data[1]					
Arrivals	44%	43%	7%	6%	100%
Departures	50%	36%	8%	6%	100%
Touch-and-Go (T&G)	48%	34%	10%	8%	100%
Vector Data[2]					
Arrivals	45%	38%	10%	7%	100%
Departures	49%	33%	10%	7%	99%

TO BE UPDATED

SOURCE:
1. Raw data was obtained from HMMH for CY 2019.
2. Vector data was obtained from October 2019 through May 2020. Percentages do not total to 100% due to unknown runway assignments.

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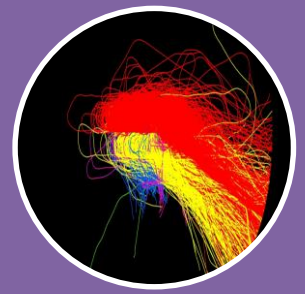
Flight Track Analysis

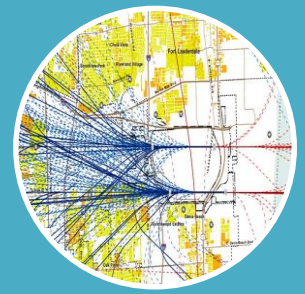
ESA is currently developing the ‘backbone’ AEDT flight tracks

Review Flight Track Radar Data.

Separate data by arrival/departure and runway end.



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



Review the corridors and backbone flight tracks and developed up to 8 sub-tracks for each backbone flight track.

Utilize radar data to assign dispersion for sub-tracks.

Utilize radar data to assign flight track utilization by aircraft category (GA jet, turboprop, and piston/prop, and helicopters).

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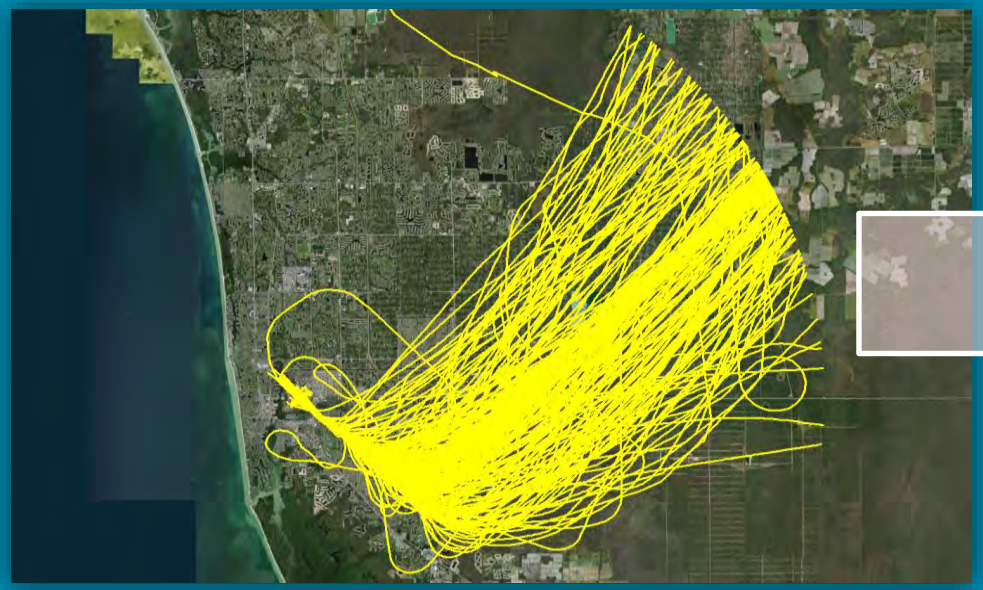
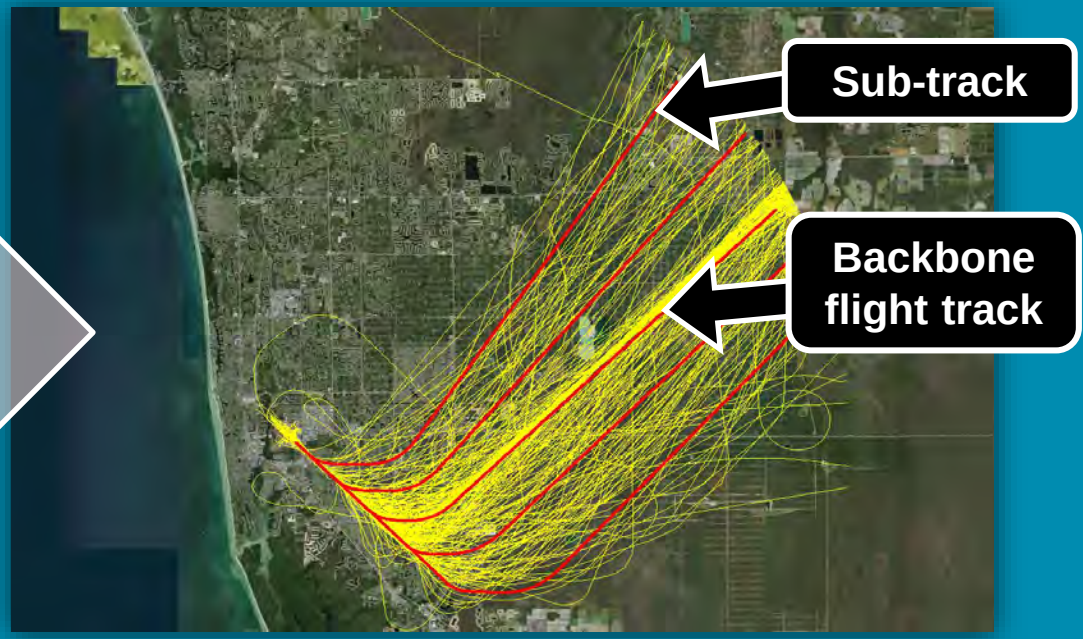
Flight Track Analysis

Primary arrival and departure flight tracks for each runway end are being categorized to identify flight corridors to each runway end.

The flight corridors will form a “backbone” flight track that will be combined with sub-tracks flanking each “backbone” to depict the dispersion of arrivals and departures to APF.





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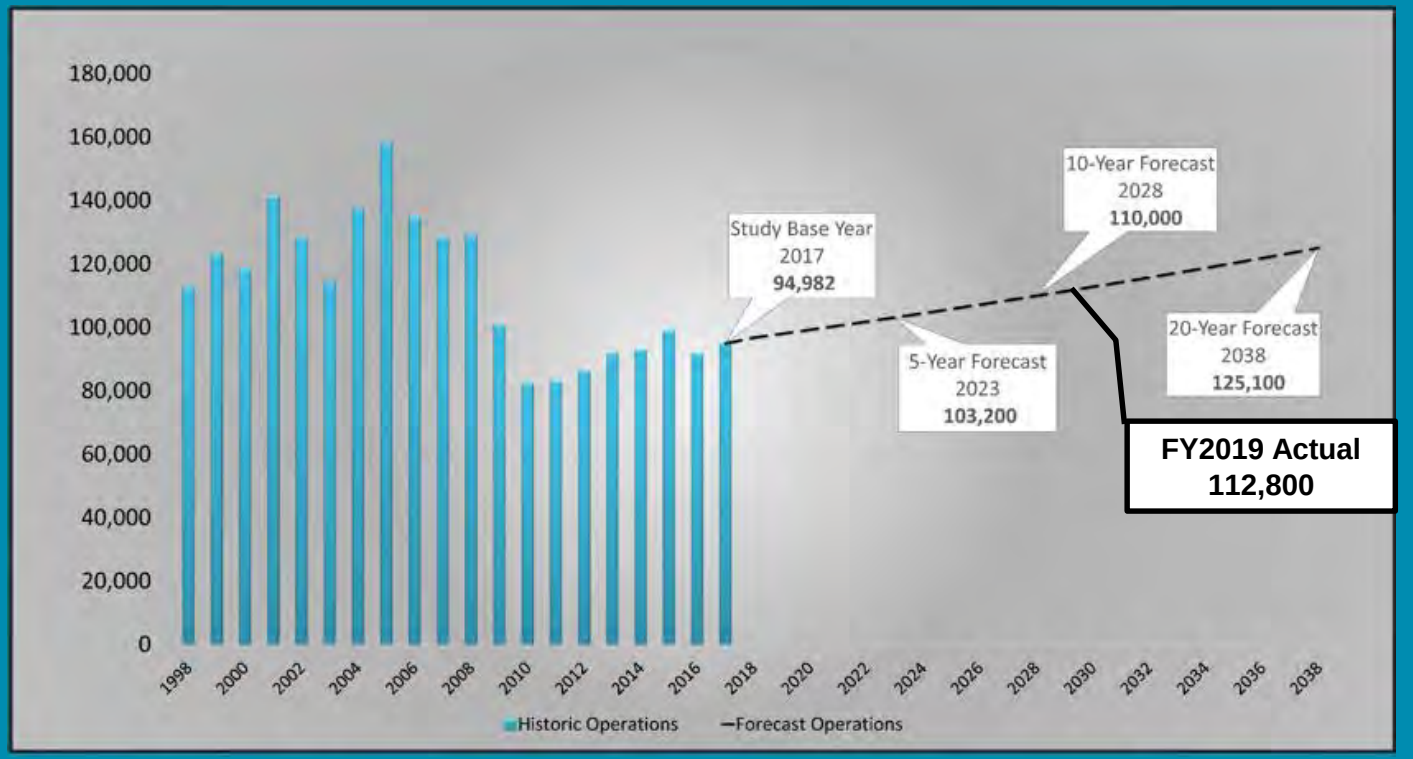
Immediate Next Steps

Naples Airport Forecast

- Naples Airport has seen and increase in number of turboprop and jet aircraft (i.e., business/corporate aviation).
- Increase in operations is also supported by the surrounding area growth and continued airport improvements.
- In the near to mid-term, certain segments of General Aviation may be less likely to be impacted by the COVID19 pandemic than commercial aviation.



SOURCE: Naples Airport Master Plan, 2020. FAA OPSNET database and ESA analysis, 2018.

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Naples Airport Operational Information

- High seasonal variations in noise exposure are due to increased aircraft travel in the winter and early spring (e.g., February through March).
- Peak months represent 11.3% of the annual operations.
- In recent years, itinerant activity has been in the 80 to 82% range, while local operations are below 20%.

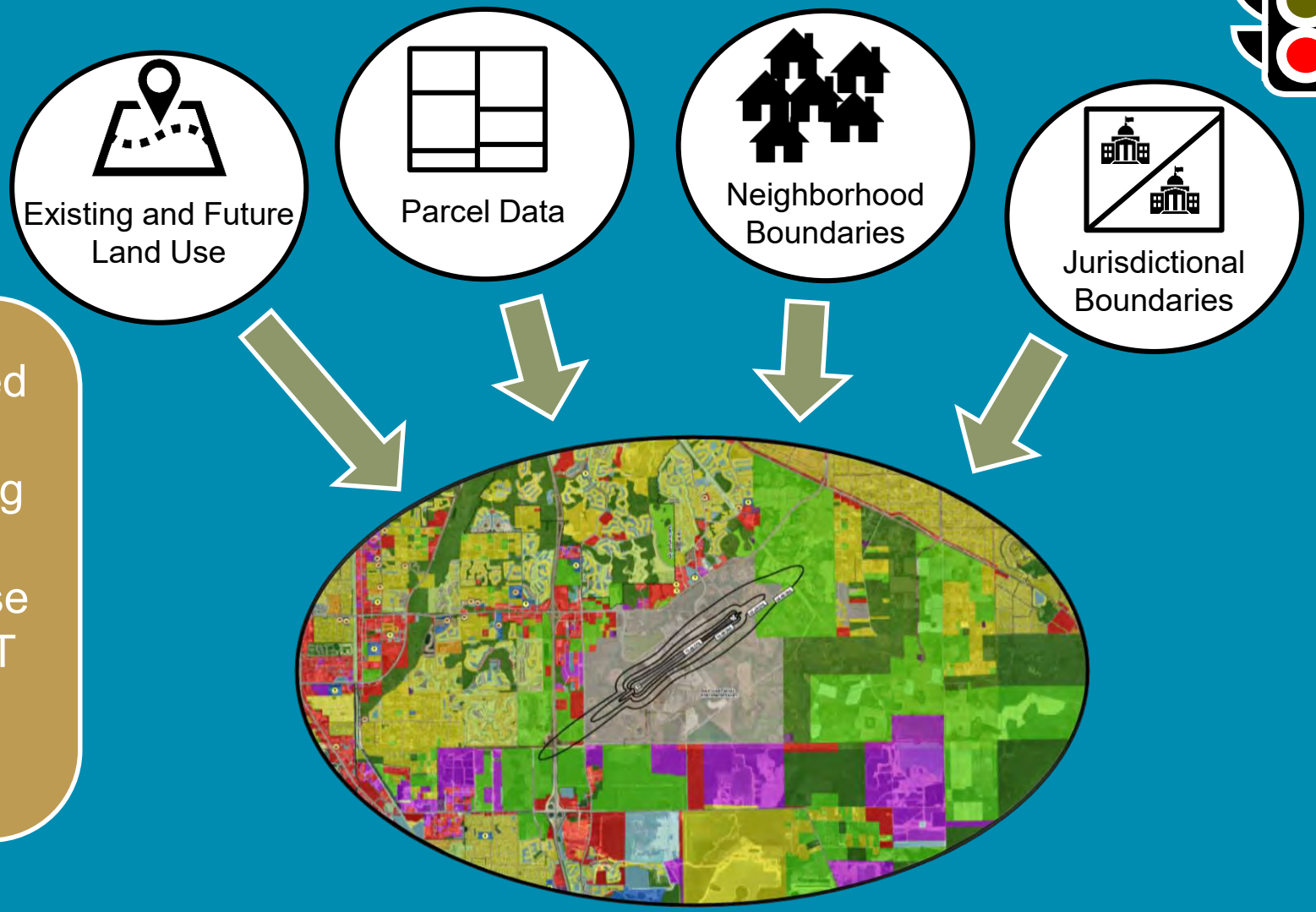
	Base Year	Forecast		
	2017	2023	2028	2038
Based Aircraft				
Single-Engine	230	257	277	323
Multi-Engine (piston & turboprop)	69	76	84	94
Jet	67	83	94	120
Rotorcraft	14	20	27	34
Total	380	436	482	571
Categories of Operations				
Local Operations	18,708	19,600	19,800	21,300
Itinerant Operations	76,274	83,600	90,200	103,800
Total	94,982	103,200	110,000	125,100
Instrument Operations	41,595	48,500	52,800	62,600
Operational Fleet Mix				
Single-Engine	52,810	54,700	55,600	59,400
Multi-Engine (piston & turboprop)	13,677	14,400	14,900	15,700
Jet	26,690	32,000	36,300	44,400
Rotorcraft	1,805	2,100	3,200	5,600
Peaks in Total Aircraft Operations				
Peak Month	9,490	11,660	12,430	14,140
Average Day of Peak Month	321	380	400	460
Peak Hour of Average Day	48	56	60	68

TO BE UPDATED

SOURCE: Naples Airport Master Plan, 2020. FAA's National Based Aircraft Inventory Program, FAA OPSNET database, and ESA analyses, 2018.

Land Use Compatibility

Land use data is being collected to generate a map of existing and future land use surrounding Naples Airport. The land use data will be combined with noise contours generated from AEDT to identify compatible and noncompatible land uses.



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Example Land Use Data Sources

City of Naples
- City Corporate Boundary
- Historic Districts
- Local Historic Landmarks
- Park Boundaries
- Streets

Collier County
- Libraries
- Schools
- Existing and Future Land Use
- Parcel Data

National Park Service
- Historic Resources

Florida Historical Commission
- State Historic Landmarks

U.S. Geologic Survey
- Water Bodies

Land Use Compatibility

The FAA considers DNL 65 dB as the noise exposure level above which is considered noncompatible for noise sensitive land uses; however, the City of Naples and Collier County has adopted DNL 60 dB as the threshold of significance.

A detailed analysis of noise exposure allows for airport sponsors to identify noncompatible land uses and evaluate measures to reduce noise impacts.

Noise Sensitive Land Use Types

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Alternative Community Outreach Strategies in the COVID-19 Environment

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Originally Planned Community Outreach

COVID-19 has forced ESA and NAA to re-think how we engage the Naples community.

	Small Community Meetings	Community Retail Style Outreach
DESCRIPTION	Small community meetings with groups of ~10 people.	Retail style community events (farmers market, festival, etc.) where individuals could stop and ask questions.
PURPOSE	To conduct targeted community outreach in a small, personal setting with interested parties and receive feedback.	To increase awareness, gain feedback, and help inform the broader Naples community that they could be affected by project recommendations.
DURATION	Coordination meetings would be no more than 2 hours in length.	Events would consist of an 8 hour day when including setup, staffing and breakdown.

Alternative Strategies for Performing Community Outreach

ESA is interested in the TAC's suggestions on how to perform public outreach in the current environment, while being able to acknowledge guidelines issued by the Centers for Disease Control (CDC).

Stay at least 6 feet a part from other people.

Wash your hands often with soap for at least 20 seconds.

Wear facemasks in public spaces.

Following CDC guidelines for disinfecting frequently touched surfaces.

Stay home when you are sick.

Do not touch eyes nose and mouth and cover mouth when coughing.

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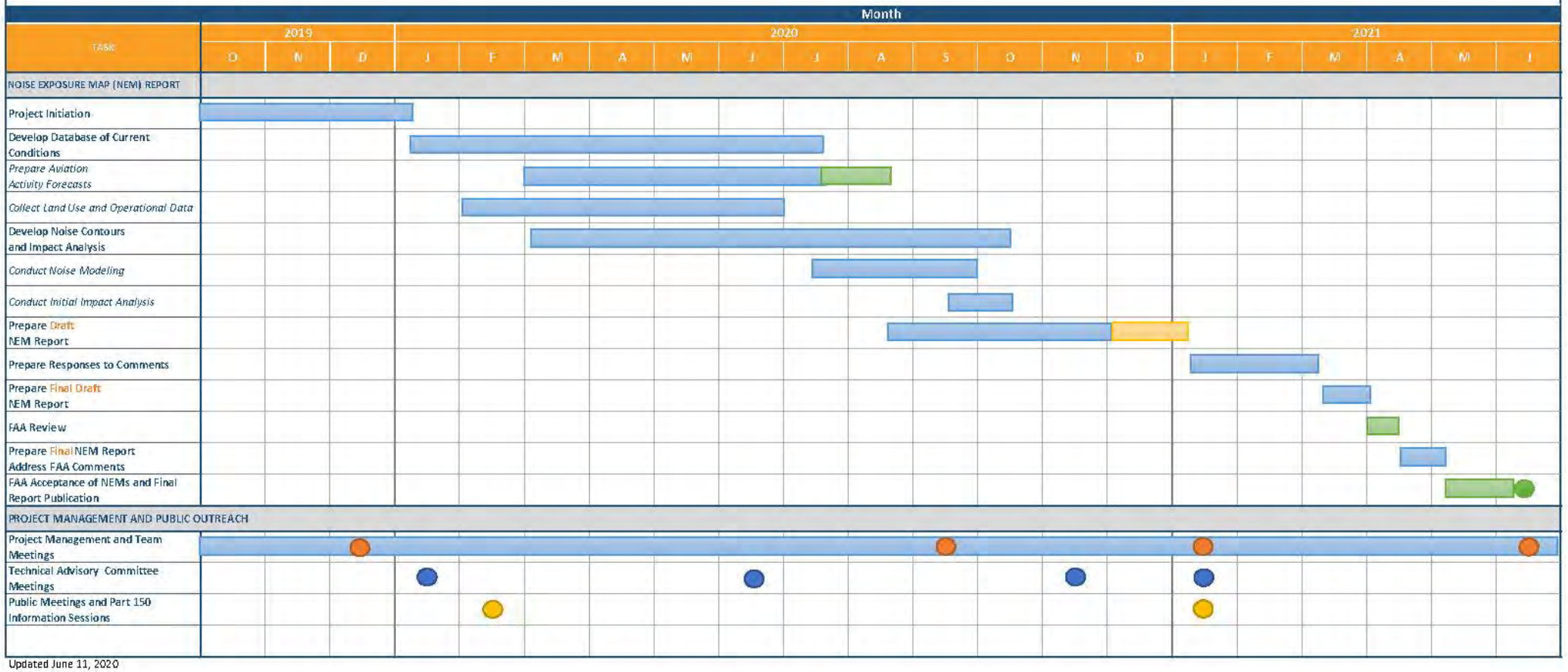
DRAFT Project Schedule Summary - Noise Exposure Map Report
14 CFR Part 150 Study for Naples Airport



Updated June 11, 2020

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Future Meetings

Technical Advisory Committee

- TAC Meeting #3 — **November 5, 2020**
- TAC Meeting #4 (Tentative) — **January 2021**

- Reminder notices will be sent out in advance of each meeting

All TAC Materials will be posted on the Project Website following the meeting at: https://flynaples.com/noisestudy/

Questions