



# Welcome!

## Noise Compatibility Study (Part 150) Update Piedmont Triad International Airport

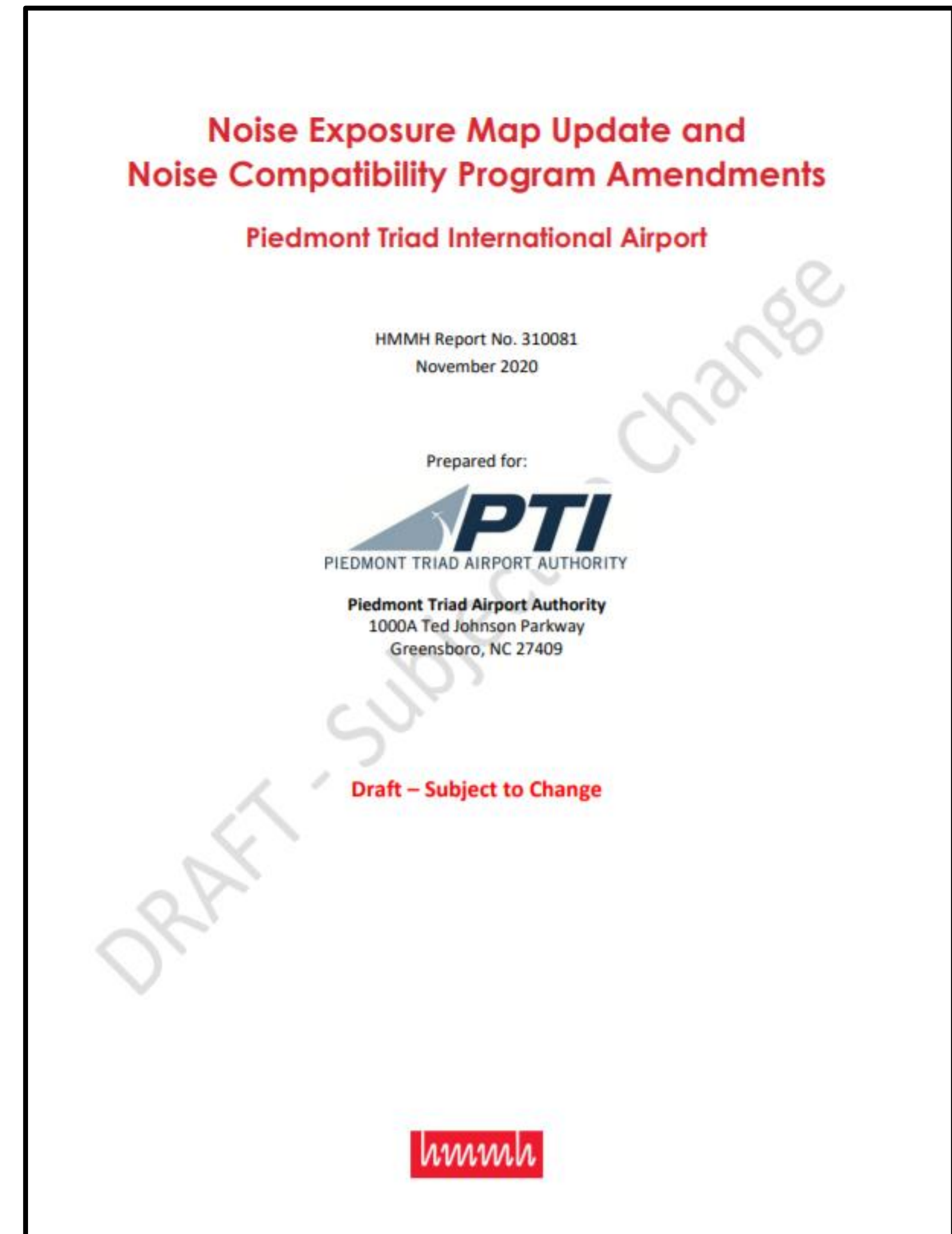
Public Workshop #2  
December 8, 2020





# Public Review of the PTI Part 150 Update

- Draft Report is available for public review
  - Project website ([ptipart150update.com/documents](https://ptipart150update.com/documents))
  - Airport Authority offices
- Comments will be accepted through 5pm Dec.17
  - Email to: [part150@gsoair.org](mailto:part150@gsoair.org)
  - Mail to: PTAA, 1000A Ted Johnson Parkway, Greensboro, NC 27409
  - Oral comments at public hearing (if registered)
- All comments (written and oral) will be included in the Final document and submitted to FAA



# Tonight's Schedule

| Time          | Agenda                          |
|---------------|---------------------------------|
| 6:00 – 6:15pm | Welcome and Introductions       |
| 6:15 – 6:45pm | Presentation on Part 150 Update |
| 6:45 – 7:30pm | Q&A with Study Team             |
| 7:30 – 8:30pm | Public Hearing                  |





# Part 150 Team

## **Piedmont Triad Airport Authority:**

- Kevin Baker, Executive Director
- Alex Rosser, Chief Operating Officer
- Suzanne Akkoush, Project Manager – Noise Program

## **Consultant Team:**

- Gene Reindel, Principal Lead (HMMH)
- Bob Mentzer, Project Manager (HMMH)
- Ron Miller, Public Outreach Liaison (Ron Miller & Associates)
- Paul Puckli, CHA Consulting, Inc. (CHA) – aviation forecast





# Technical Advisory Committee

| Name                               | Affiliation              | Name             | Affiliation                      | Name            | Affiliation        |
|------------------------------------|--------------------------|------------------|----------------------------------|-----------------|--------------------|
| Lisa Cooke                         | FAA, Memphis ADO         | Jim Messura      | FedEx                            | Steve Galanti   | Greensboro         |
| Jennifer Adams /<br>Felicia Reeves | FAA, Southern Region     | David Daubenmire | UPS                              | Lee Burnette    | High Point         |
| Charlie Dale                       | FAA, ATCT/TRACON - FAA   | Brian Hofheins   | HAECO Americas                   | Matthew Johnson | Jamestown          |
| Ryan Hampton                       | FAA, ATCT/TRACON - NATCA | Israel Stolze    | Cessna/Textron                   | Rochelle Joseph | Kernersville       |
| John Parker                        | FAA, FSDO                | Nathan Wilsford  | GTCC                             | Chris York      | Summerfield        |
| Kelly Scudder                      | American Airlines        | Bernie Dalere    | US Customs and Border Protection | Sean Taylor     | Oak Ridge          |
| Bryan Street                       | Delta Airlines           | Jason Dean       | Honda Aircraft Company           | Ted Kaplan      | Forsyth County     |
| Erica Simmons                      | Spirit Airlines          | Rachel Wall      | Samaritan's Purse                | Joe Saldarini   | CAC Representative |
| Donald Brookshire                  | Signature Flight Support | Kaye Graybeal    | Guilford County                  | Janet Mazzurco  | CAC Representative |
| Scott Stuart                       | Koury Aviation           |                  |                                  | Stan Tennant    | CAC Representative |





# Citizens Advisory Committee

| Name                        | Jurisdiction    | Name              | Jurisdiction |
|-----------------------------|-----------------|-------------------|--------------|
| Janet Mazzurco              | Greensboro      | Ed Levick         | High Point   |
| Stan Tennant                | Greensboro      | Thad Juszczak     | High Point   |
| Steve Johnson               | Greensboro      | Keith Brown       | High Point   |
| Alyson Best                 | Greensboro      | Erin Randall      | High Point   |
| Scott McInnis/Joe Saldarini | Greensboro      | Bill Nagy         | High Point   |
| Sebastian King              | Guilford County | Michael Lopez     | Summerfield  |
| Sharon Kasica               | Guilford County | Lawrence Straughn | Jamestown    |
| Toneq McCullough            | Winston-Salem   | George McClellan  | Oak Ridge    |
| Clarence Lambe              | Forsyth County  | Bob Prescott      | Kernersville |





# Presentation Agenda

- Part 150 Update document overview
- Part 150 overview
- Aircraft noise terminology
- PTI Noise Exposure Map (NEM) Update
- PTI Noise Compatibility Program (NCP) Amendments





# Overview of the Draft Report

## Main Body

- Executive Summary
  - Sponsor's Certification (Executed in final submission)
  - FAA Checklist
  - Glossary
- 1. Introduction to Noise Compatibility Planning
- 2. Airport Background
- 3. Land Use
- 4. Existing Noise Compatibility Program
- 5. Noise Measurement Program
- 6. Development of Noise Exposure Contours
- 7. Noise Exposure Maps and Land Use Compatibility
- 8. Noise Compatibility Program Amendments
- 9. Stakeholder Engagement

## Appendices

- A. Fundamentals of Characterizing Sound, Noise Effects and Metrics
- B. FAA Acceptance of Previous NEM and FAA Record of Approval for 2007 NCP
- C. Noise Monitoring Program
- D. Documentation of the Noise Modeling Process
- E. Advisory Committees
- F. Public Outreach
- G. Public Comments  
*(these will be included and addressed in the final submission to FAA)*





# Part 150 Overview

- Federal Aviation Administration (FAA) developed the Part 150 Program in response to the federal Aviation Safety and Noise Abatement Act of 1979 (“ASNA”)
- Codified under Title 14 of the Code of Federal Regulations (CFR) Part 150
  - Formal *citation* is “14 CFR Part 150,” informal is “Part 150”
  - Formal *title* is “Airport Noise Compatibility Planning”
- *Voluntary* FAA-defined process for airport noise studies
  - 250+ airports have participated
- *Why do airports participate?* Primary reasons include:
  - Provides access to FAA funding of some approved measures
  - Well-established, understood, accepted, and comprehensive process



# Part 150 Overview

- Two primary elements
  - Noise Exposure Map (NEM)
  - Noise Compatibility Program (NCP)
  - Detailed FAA guidance at [www.faa.gov/airports/environmental/airport\\_noise/](http://www.faa.gov/airports/environmental/airport_noise/)
- Consultation required with
  - All local, state, and federal entities with control over land use within day night average sound level (DNL) 65+ dB
  - FAA regional officials, regular aeronautical users of the airport
  - All parties interested in reviewing and commenting on the draft reports



*See Chapter 1 of Draft Report for more information*





# Noise Compatibility Roles and Responsibilities

## Defined by “FAA Noise Abatement Policy Statement” (November 1976)

- Federal government - source emissions, air traffic control, funding, and safety oversight
- State and local government - compatible land use planning and control
- Aircraft operators - noise-sensitive schedules, cockpit procedures, and fleet improvements
- Air travelers and shippers - bear the costs
- Current and potential residents – seek to act in an informed manner
- Airport operators - plan and implement noise compatibility measures



# Aircraft Noise Terminology

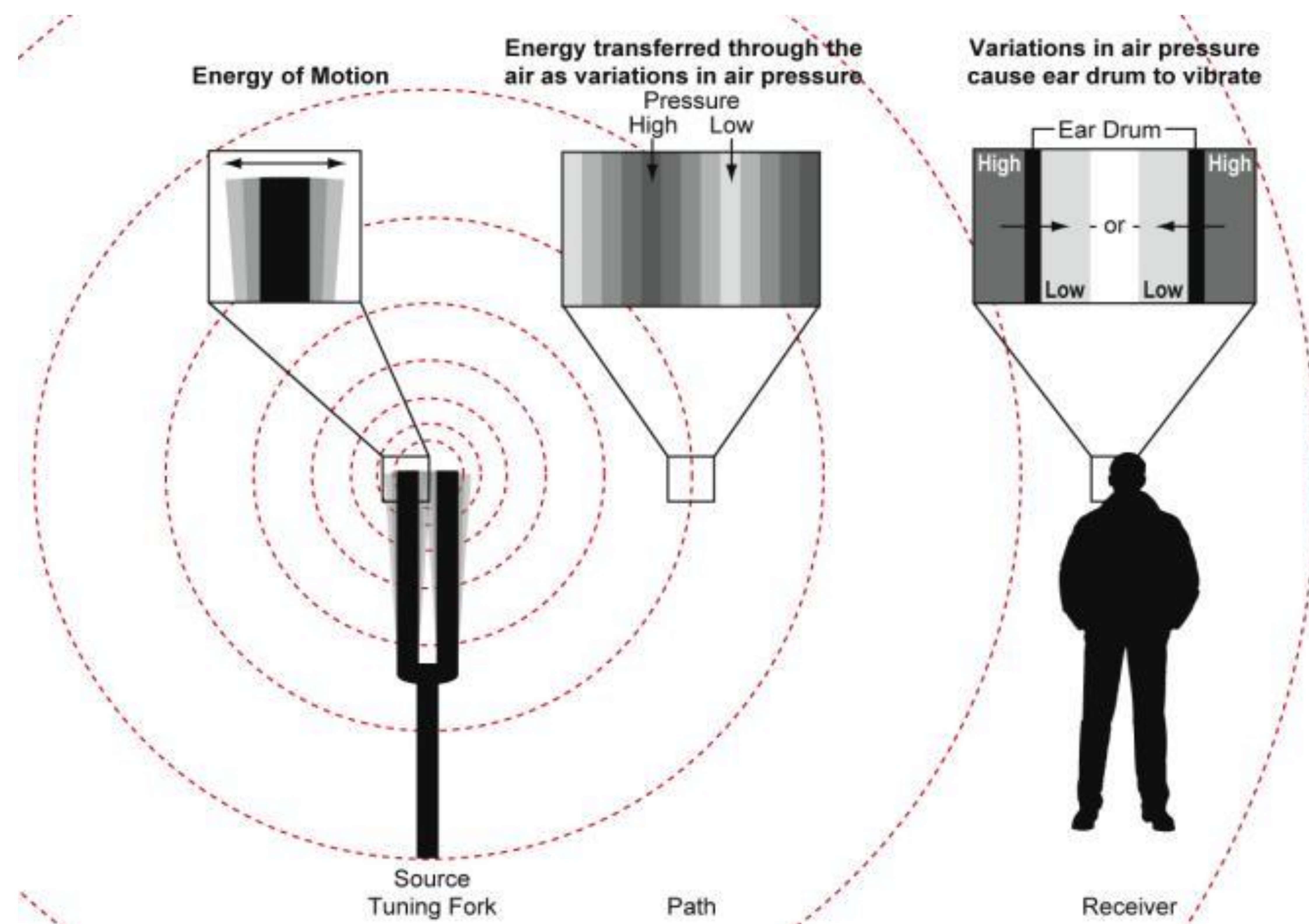
Document Appendix A





# What is “Noise”?

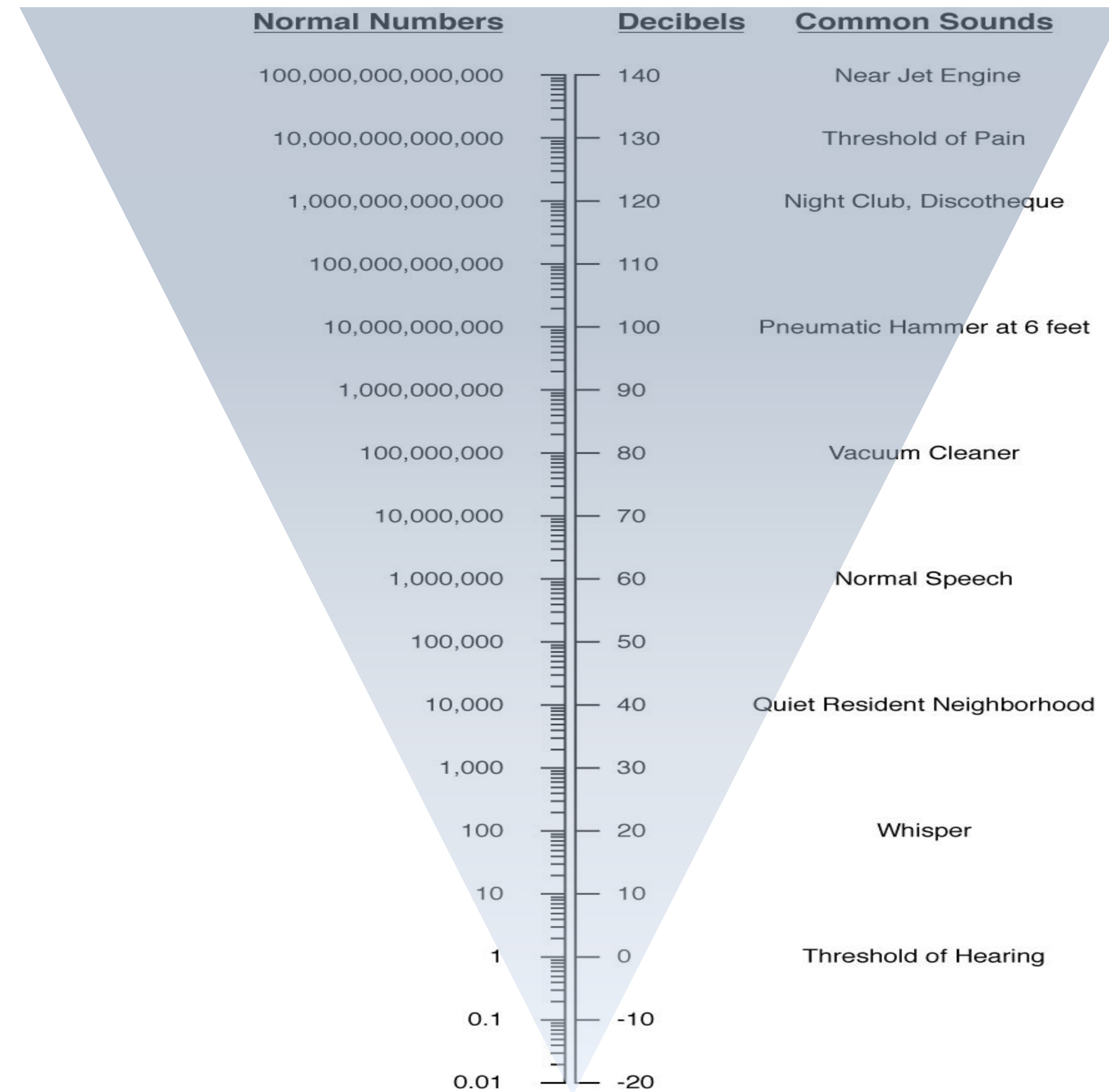
- Sound is pressure variation our ears can detect
  - An objective quantity
- Noise is “unwanted sound”
  - A subjective quantity
- We relate sound and noise by considering effects
  - Annoyance
  - Speech interference
  - Sleep disruption





# The Decibel Scale

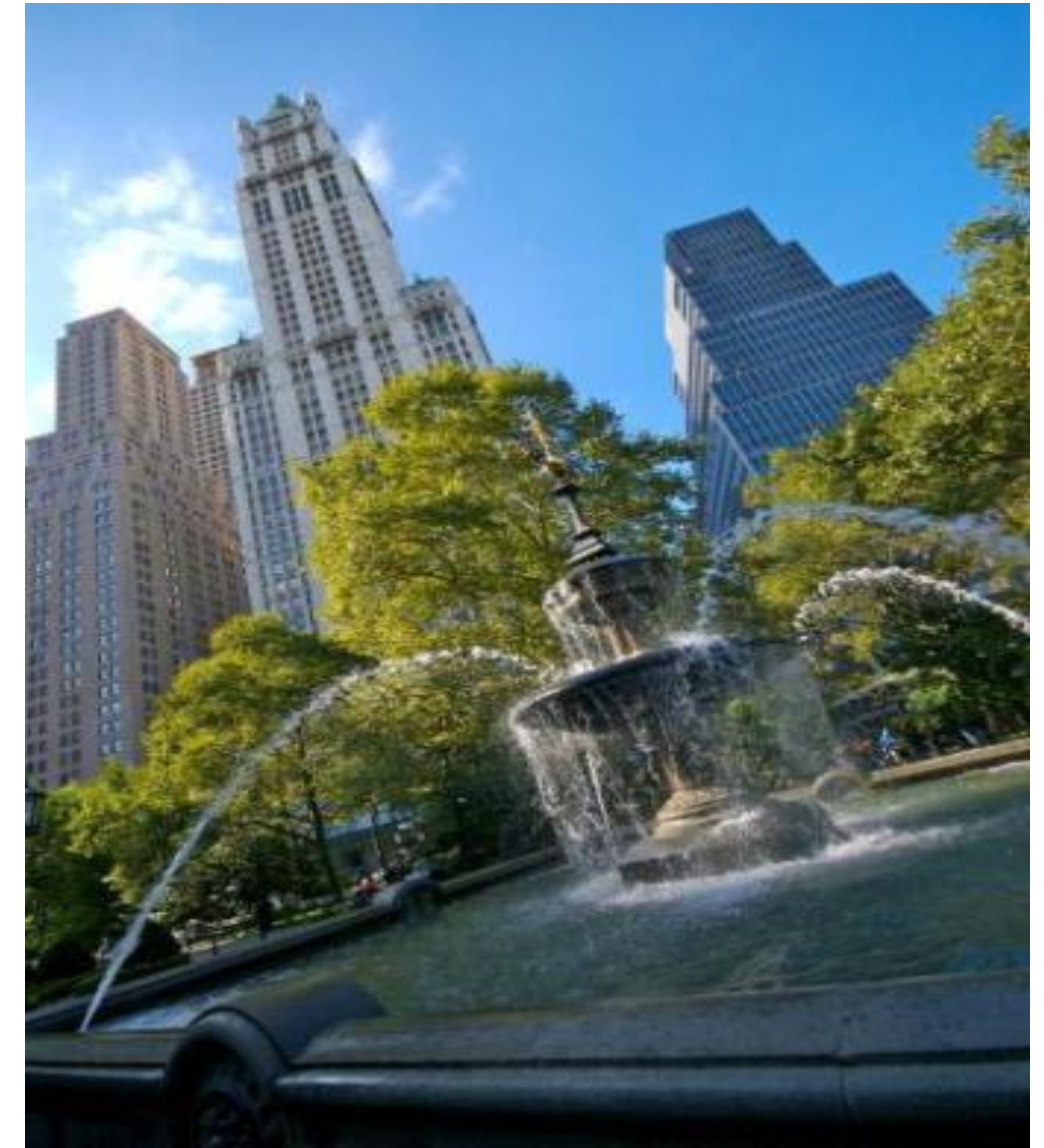
- We use a logarithmic scale – decibels (dB) to express sound levels and noise levels
  - We hear sound pressures over a HUGE sound energy range (from 1 to over a 100 trillion)
  - Decibels compress this range to match the way we interpret sound pressures (from 0 to 140 dB)
  - We “hear” in decibels





# Other factors to consider...

- Sound *quality* matters
  - Sources with the same overall dB level may “sound” different





# Other factors to consider...

- Duration matters
  - Longer durations increase exposure, even for sources with the same dB level





# Other factors to consider...

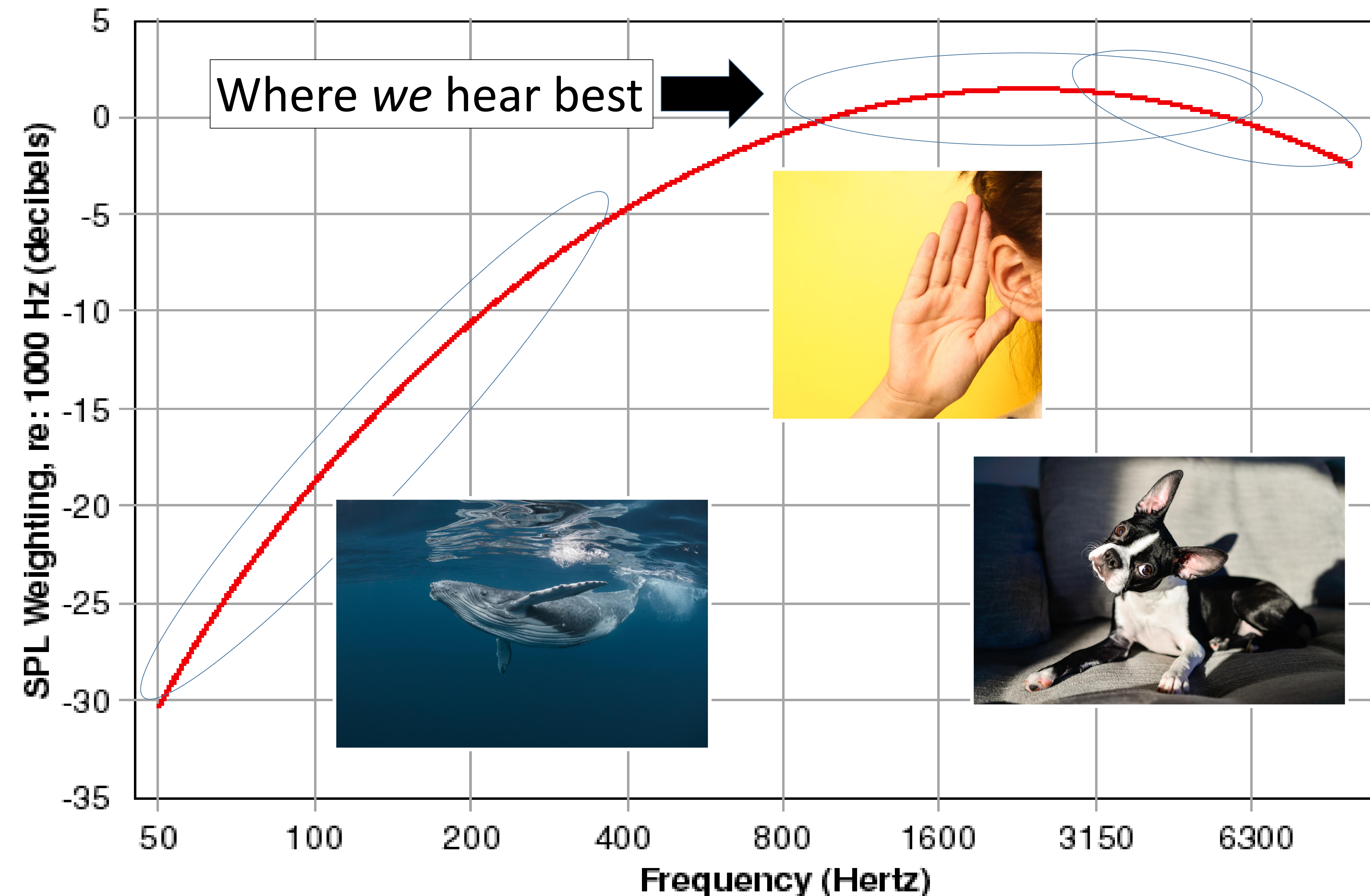
- *Time of day matters*





# FAA requires use of the A-Weighted Sound Level

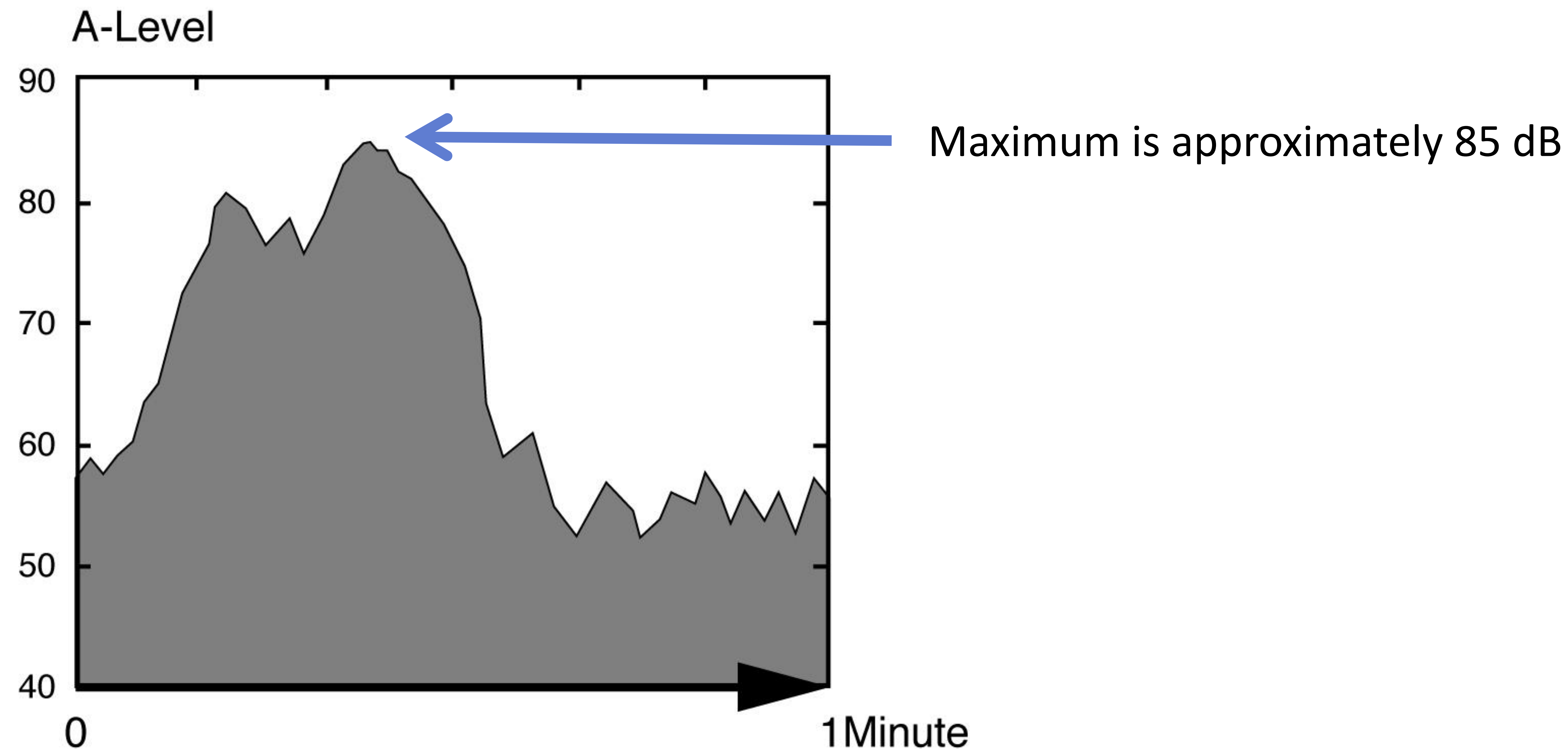
- Our ears are not equally sensitive to all frequencies
- A-weighted decibels reports sound the way we “hear” it
- All sound levels reported in this project are A-weighted unless otherwise specified





# Single Event Noise Metrics: Maximum Sound Level ( $L_{\max}$ )

The simplest way to describe a discrete noise “event” is its maximum sound level ( $L_{\max}$ )

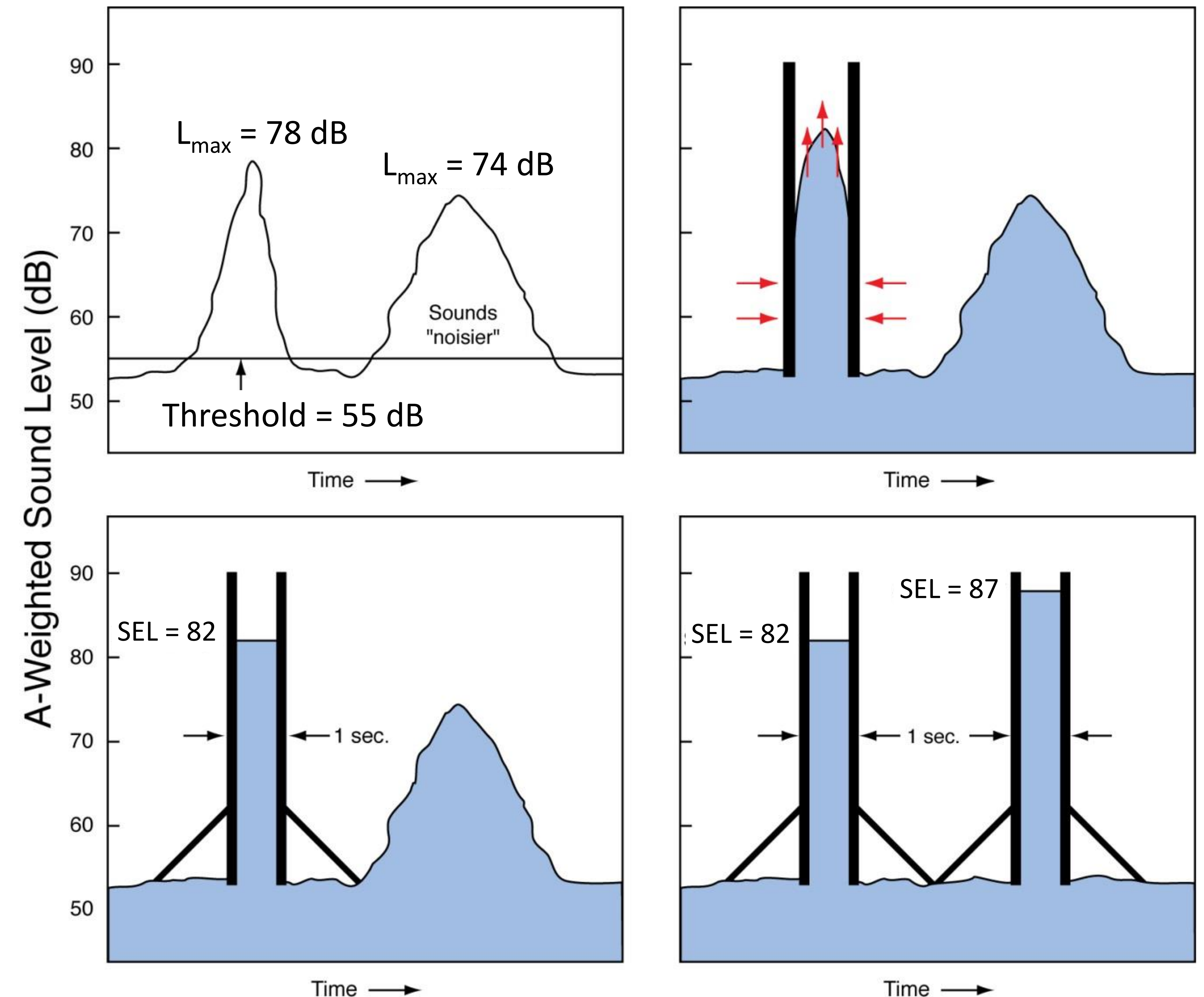




# Single Event Noise Metrics: Sound Exposure Level (SEL)

## Duration matters:

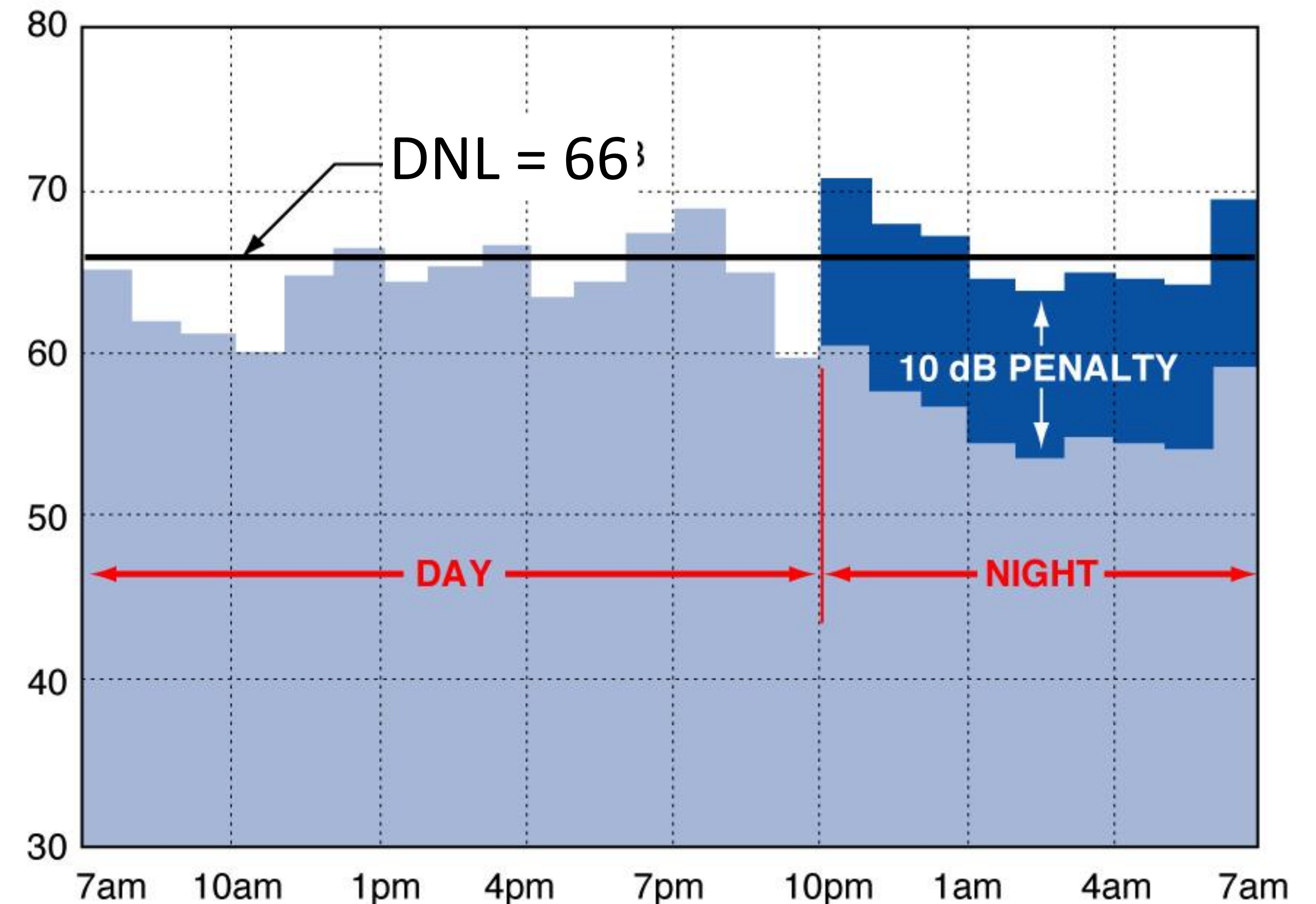
- A longer event may seem “noisier,” even if it has a lower or equal maximum level
- SEL measures the total “noisiness” of an event by taking duration into account





# Cumulative Exposure: Day-Night Average Level (DNL)

- Describes 24-hour exposure
- Noise from 10 pm to 7 am is factored up by 10 dB
  - Equal to counting each night aircraft operation 10 times
- Part 150 requires DNL for land use compatibility assessment
  - Specifically the annual-average DNL from aircraft operations



*See Appendix A of Draft Report for more information*



# PTI 2020 Part 150 Update





# PTI Part 150 Update Status

**We are here**

## Noise Study Database

- Review Previous NEM and Studies
- GIS and land use data
- Flight track data
- Operational forecasts
- Setup AEDT model

## Develop Noise Exposure Maps

- Prepare aviation forecast
- Develop noise contours for existing and forecast conditions
- Noise impact evaluation for > DNL 65 dB
- Prepare maps in accordance with 14 CFR Part 150

## Review Current Noise Compatibility Program

- Operational measures
- Land Use Measures
- Program Measures

## Noise Exposure Map Report

- Document input data
- Document Land Use, Flight Tracks and DNL contours
- Provide population and housing counts
- Draft Report

## Public Process

- Draft report available for public review
- Public Workshop
- Response to comments received in Final report
- Final report submittal to FAA





# Other Ongoing Projects

- Residential Sound Insulation Program (Airport Authority)
- Master Plan Update (Airport Authority)
- Airport Overlay District Changes (City of Greensboro)





# Noise Exposure Map Update 2020

Document Chapters 3, 6 and 7





# Noise Exposure Map Basics

- FAA “accepts” NEM as compliant with Part 150 standards
- NEM must include detailed description of
  - Airport layout, aircraft operations, and other inputs to noise model
  - Aircraft noise exposure in terms of Day-Night Average Sound Level (DNL)
  - Land uses within DNL 65+ decibel (dB) contours
  - Noise / land use compatibility statistics within DNL 65+ dB contours
- NEM must address two calendar years
  - Year of submission
  - Forecast (at least five years from year of submission)
  - FAA reviews forecasts for consistency with Terminal Area Forecast, TAF

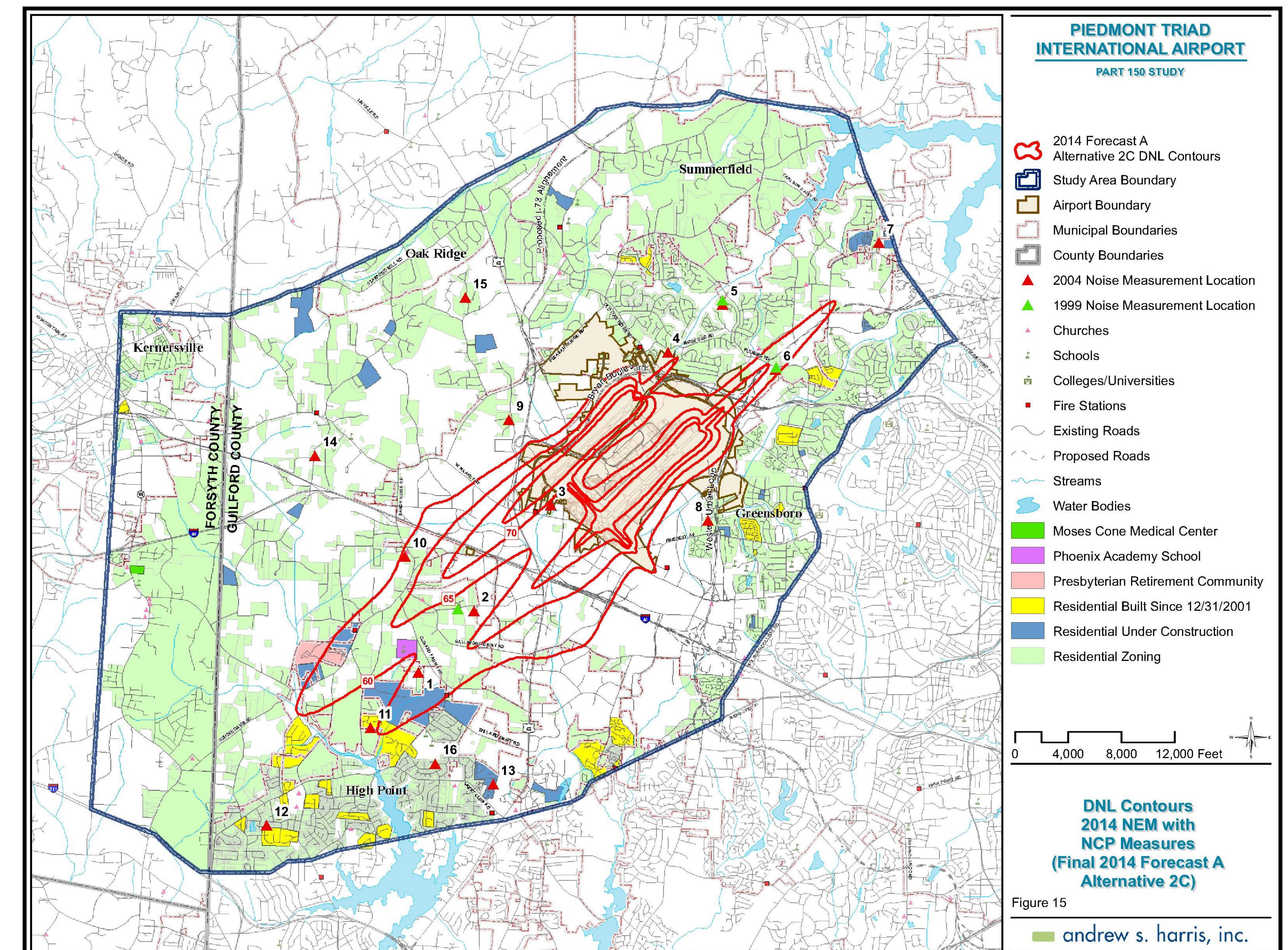




# PTI 2008 Noise Exposure Map

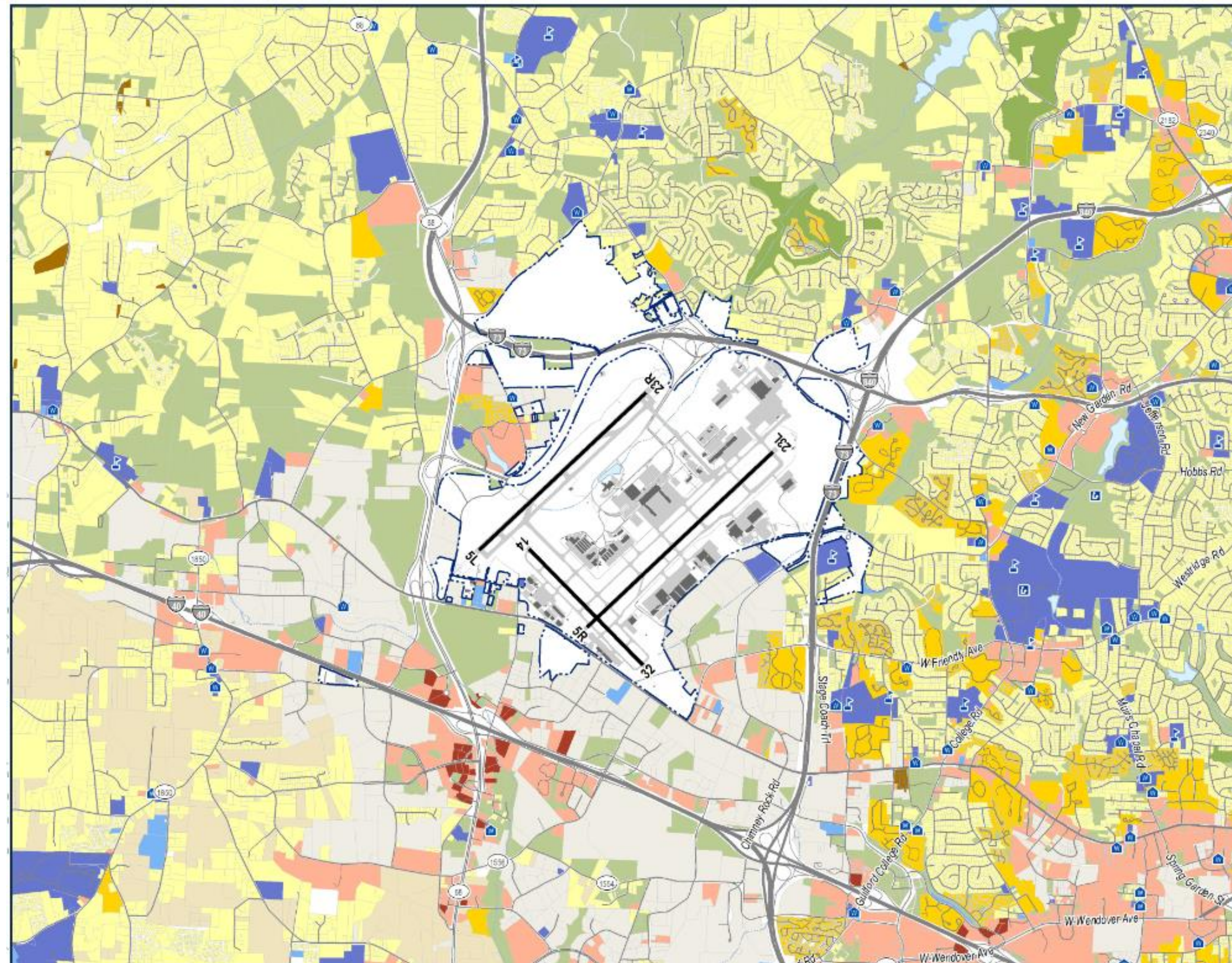
- PTAA completed original Part 150 process in 2008
  - 2006 (Existing Condition) and 2014 (Forecast Condition) NEMs
- Major graphical components include:
  - DNL 65, 70, and 75 dB contours
  - Within 65 dB DNL contour
    - Generalized land use categories
    - Historic properties, schools, places of worship, health care facilities, other “discrete” sensitive uses
    - Jurisdiction(s) responsible for land use controls

*Note: PTAA includes the 60 DNL contours for informational purposes*





# Study Area with Updated Land Use



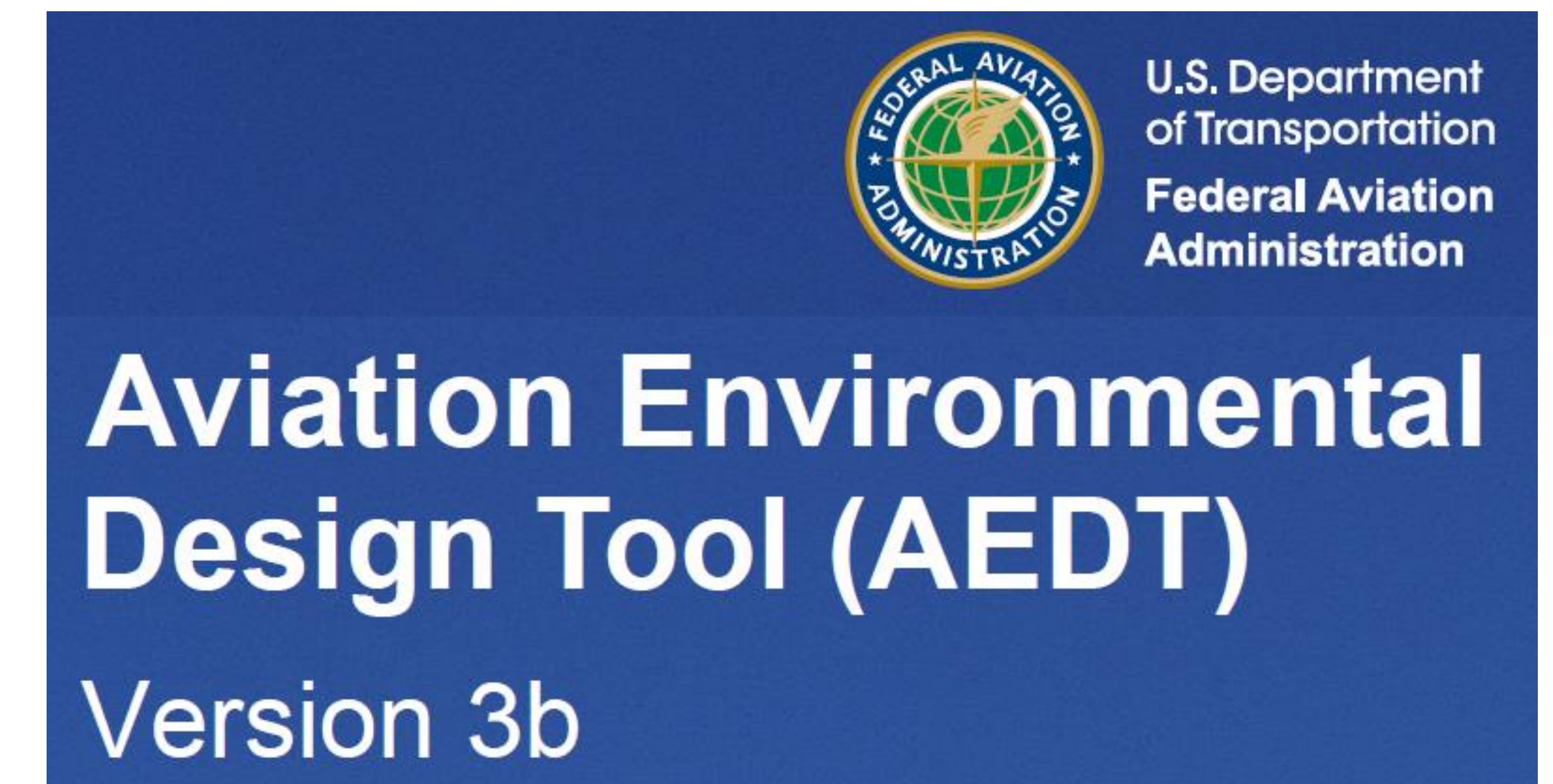
**Map has been updated based on input submitted by: PTAA, City of Greensboro, City of High Point, Guilford County, and windshield surveys conducted by HMMH in November, 2019**

**See Chapter 3 of Draft Report for more information**



# Aircraft Noise Modeling

- We must use FAA-approved model
  - FAA's Aviation Environmental Design Tool (AEDT)
- Required noise modeling inputs
  - Airport layout
  - Annual average meteorological data
  - Terrain
  - Aircraft operations by day/night for 2020 and forecast 2025
  - Runway utilization rates by aircraft categories
  - Flight track geometry and use by aircraft categories



*See Chapter 6 of Draft Report for more information*



# Noise Modeling: Major Data Sources

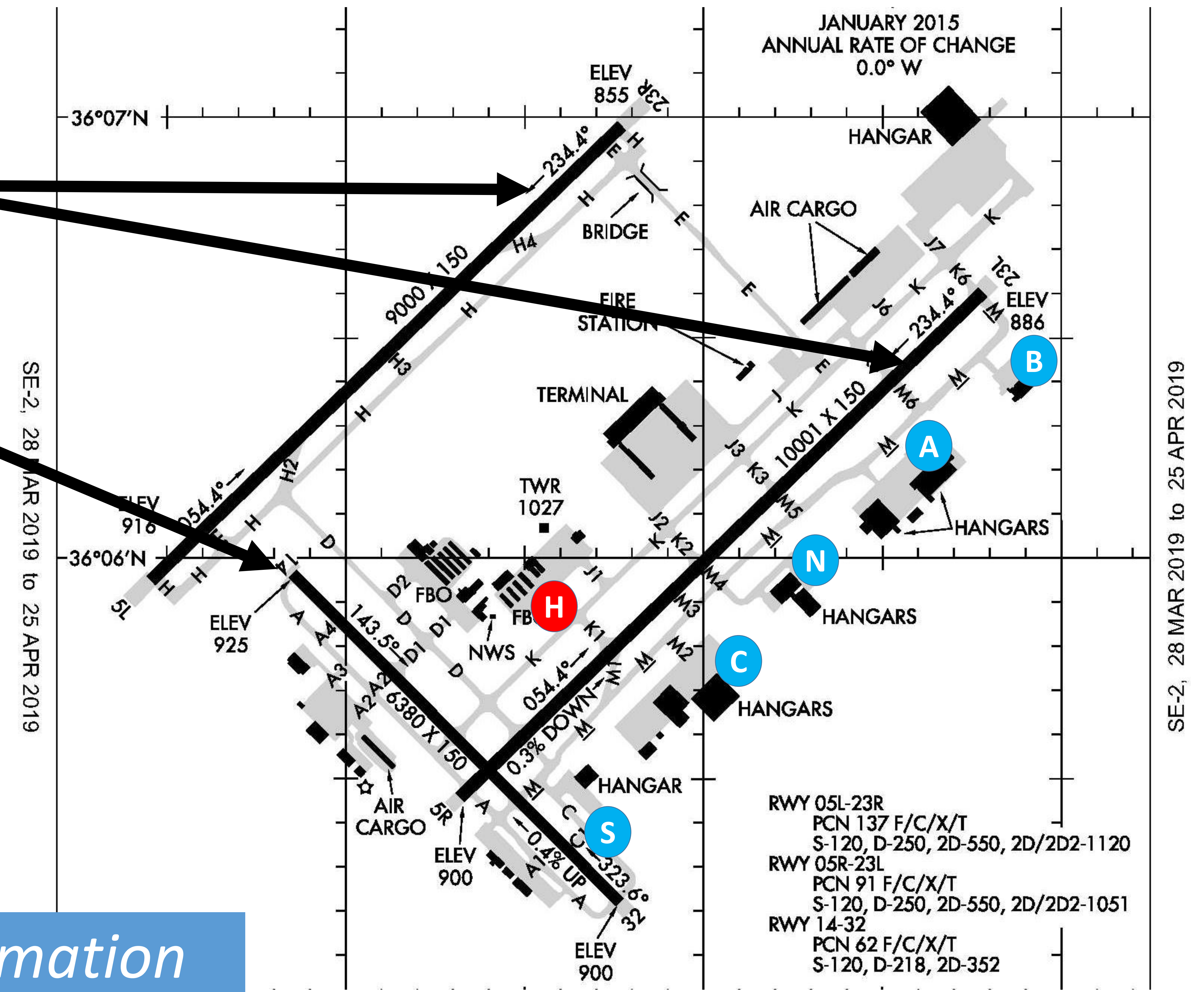
- Predominant source(s) used for each noise model input category:
  - *Airport layout* - FAA airport diagram, GSO Airport Layout Plan (ALP)
  - *Meteorological* - NOAA National Climatic Data Center
  - *Terrain* - U.S. Geological Survey
  - *Baseline operations* – PTAA monitoring system (NOIARS)
  - *Forecast operations* – Discussion with GSO users and the FAA's Terminal Area Forecast (TAF)
  - *Flight tracks, profiles, and runway use* – 2017-2019 data from NOIARS
  - *Land use* – Guilford, Davidson and Forsyth Counties GIS, NC OneMap Geospatial Portal, and ESRI



# Airport Layout

- Three runways
  - Parallel Runways 5L/23R and 5R/23L
  - Crosswind Runway 14/32
- Modeled helipad location H
- Modeled Engine Runup locations
  - DC10s, A300s, 767s C
  - A319s, A320s, A321s, 737s C N
  - small jets and turboprops S
  - Honda jets A B

*See Chapter 6.1 of Draft Report for more information*





# Modeled Aircraft Operations: Annual Forecasts

## FAA-approved PTAA Aviation Forecast

| Year               | Commercial         |          |                |        | General Aviation |       |        | Military  |       |       | Total Operations |
|--------------------|--------------------|----------|----------------|--------|------------------|-------|--------|-----------|-------|-------|------------------|
|                    | Passenger Aircraft | Air Taxi | Cargo Aircraft | Total  | Itinerant        | Local | Total  | Itinerant | Local | Total |                  |
| 2018               | 32,774             | 10,034   | 6,458          | 49,267 | 24,596           | 5,816 | 30,412 | 1,453     | 383   | 1,836 | 81,514           |
| 2020               | 36,359             | 10,053   | 8,204          | 54,616 | 26,964           | 6,656 | 33,620 | 1,453     | 383   | 1,836 | 90,072           |
| 2025               | 37,265             | 10,099   | 10,456         | 57,821 | 27,413           | 6,767 | 34,180 | 1,453     | 383   | 1,836 | 93,836           |
| Average Annual Day | Commercial         |          |                |        | General Aviation |       |        | Military  |       |       | Total Operations |
|                    | Passenger Aircraft | Air Taxi | Cargo Aircraft | Total  | Itinerant        | Local | Total  | Itinerant | Local | Total |                  |
| 2018               | 89.8               | 27.5     | 17.7           | 135.0  | 67.4             | 15.9  | 83.3   | 4.0       | 1.0   | 5.0   | 223.3            |
| 2020               | 99.6               | 27.5     | 22.5           | 149.6  | 73.9             | 18.2  | 92.1   | 4.0       | 1.0   | 5.0   | 246.8            |
| 2025               | 102.1              | 27.7     | 28.6           | 158.4  | 75.1             | 18.5  | 93.6   | 4.0       | 1.0   | 5.0   | 257.1            |

*See [Appendix D.1](#) of Draft Report for more information*

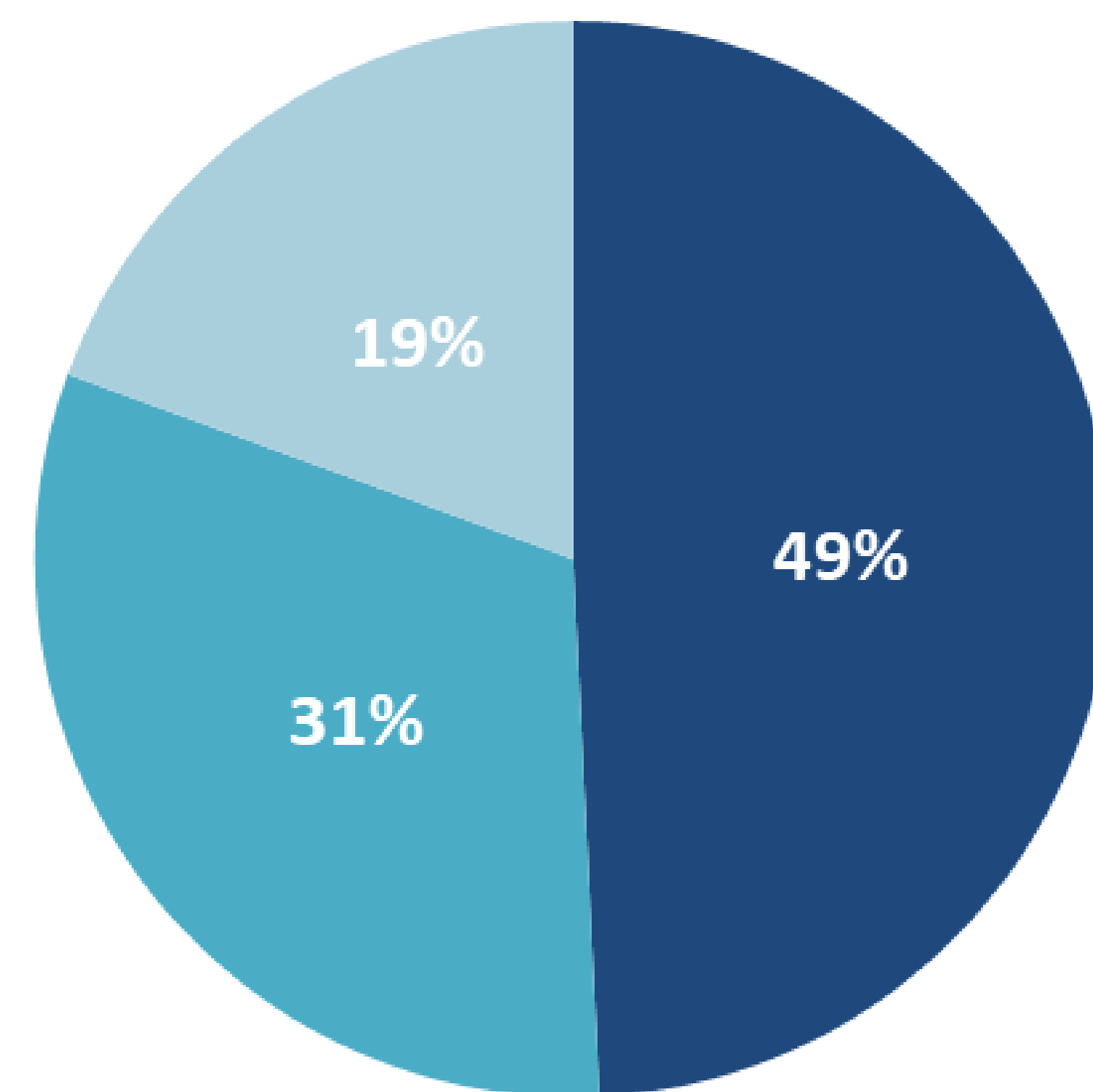




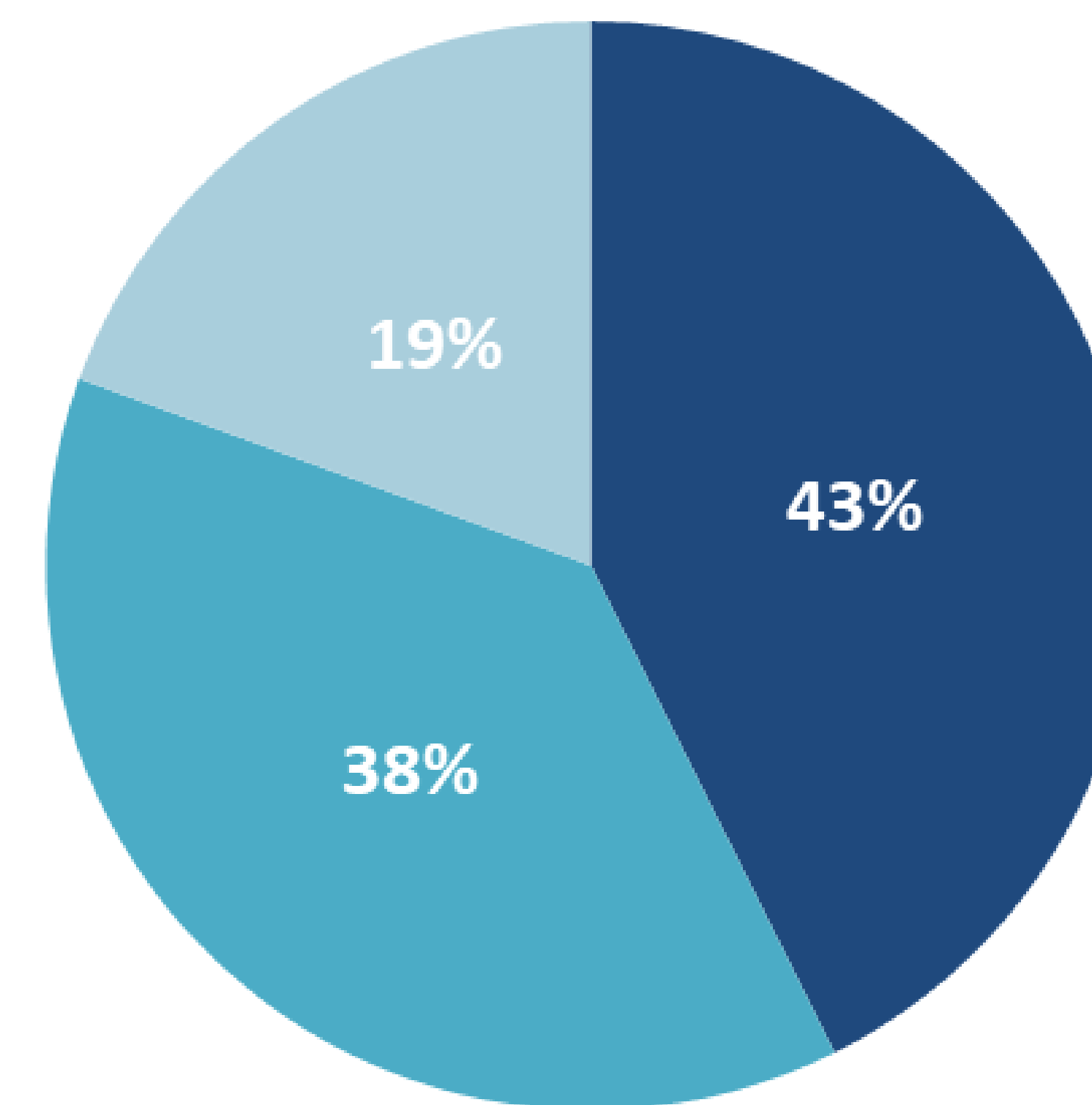
# Modeled Aircraft Operations: Aircraft Types

## Scheduled Passenger Operations

2020

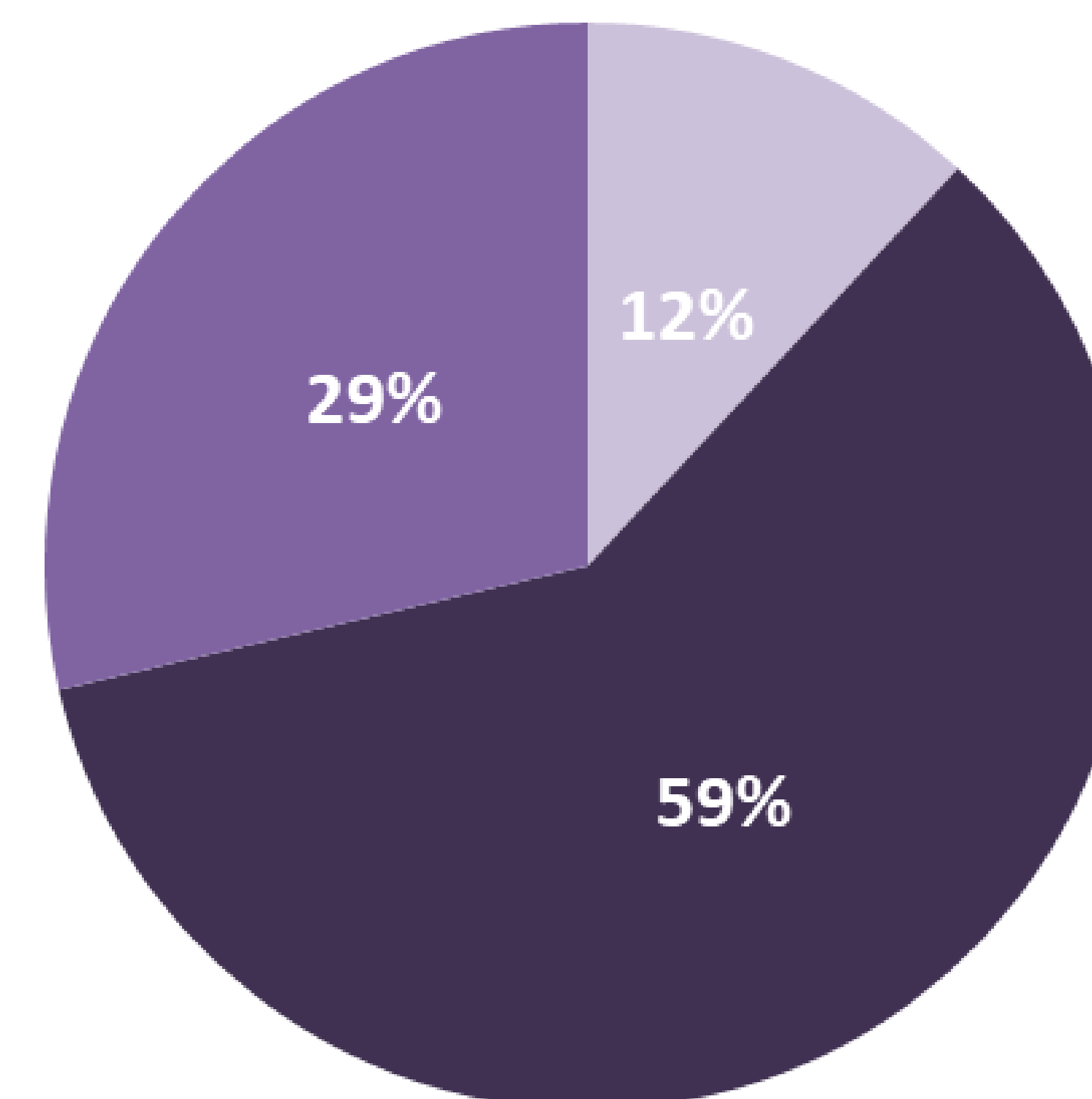
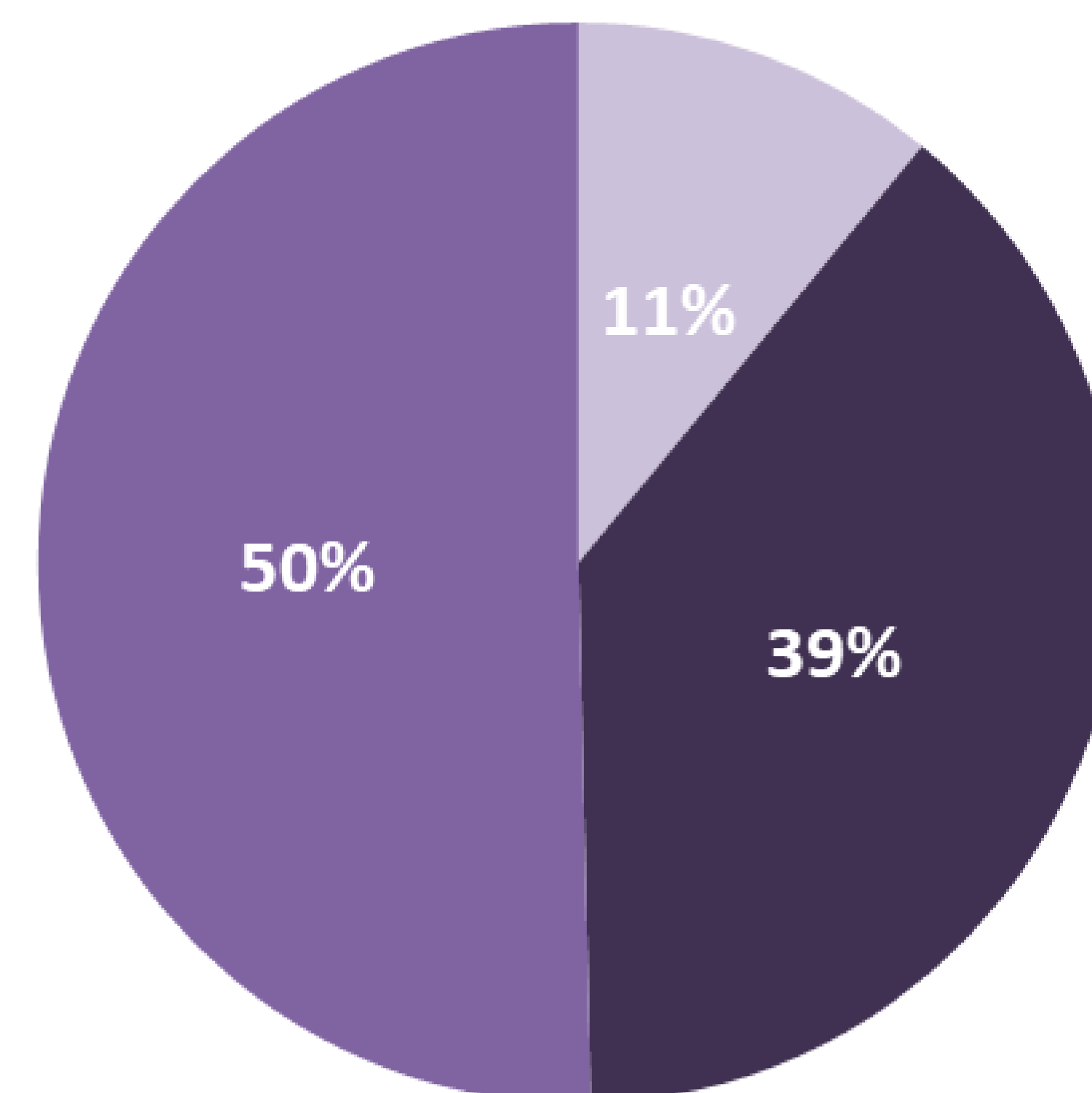


2025



- Small regional jet (<60 seats)
- Large regional jet (>60 seats)
- Narrowbody jet

## Cargo Operations

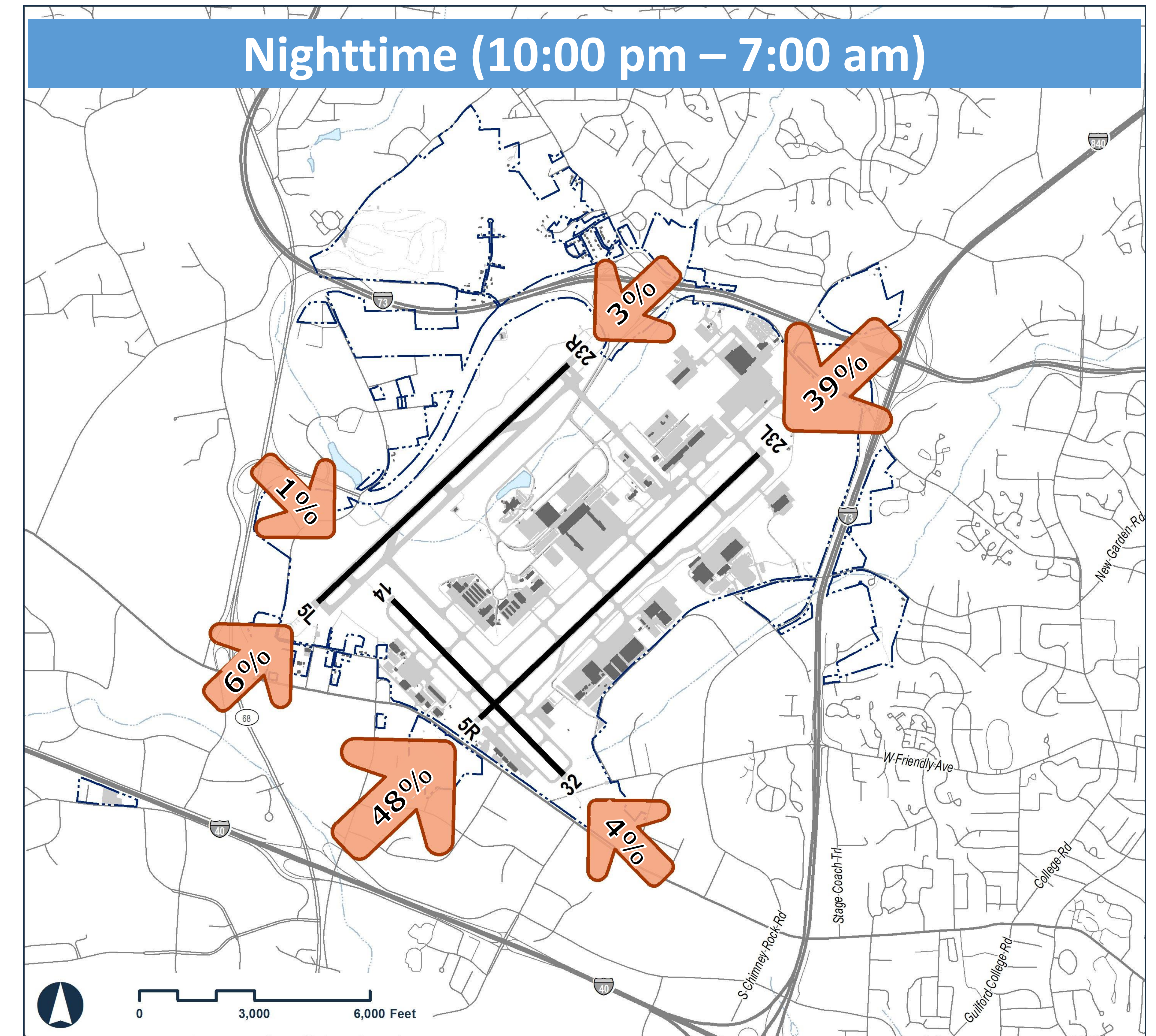
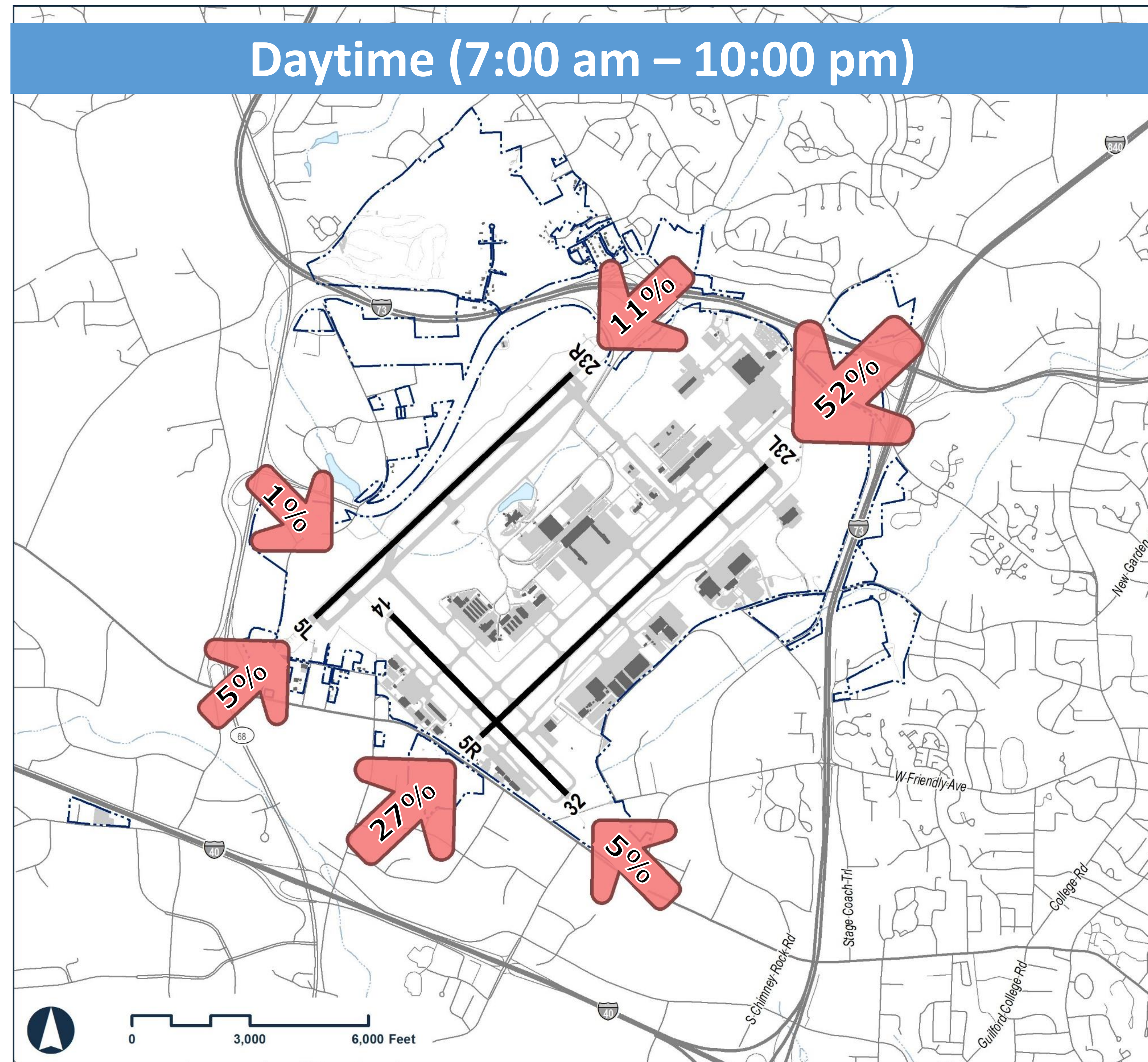


- Turbo prop
- Boeing 757
- Heavy

*See Chapter 6.4  
of Draft Report  
for more details*



# Modeled Runway Use: Arrivals

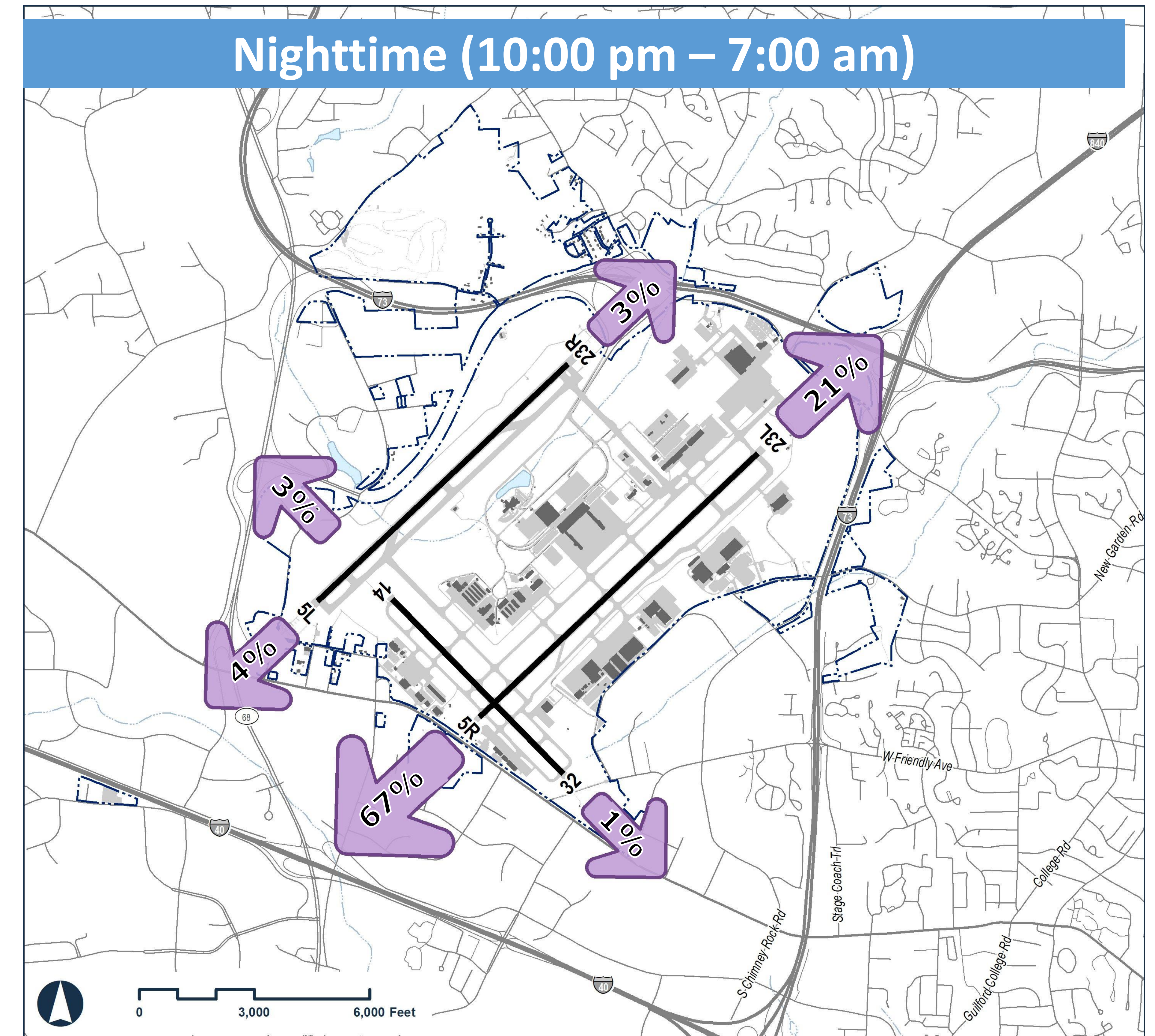
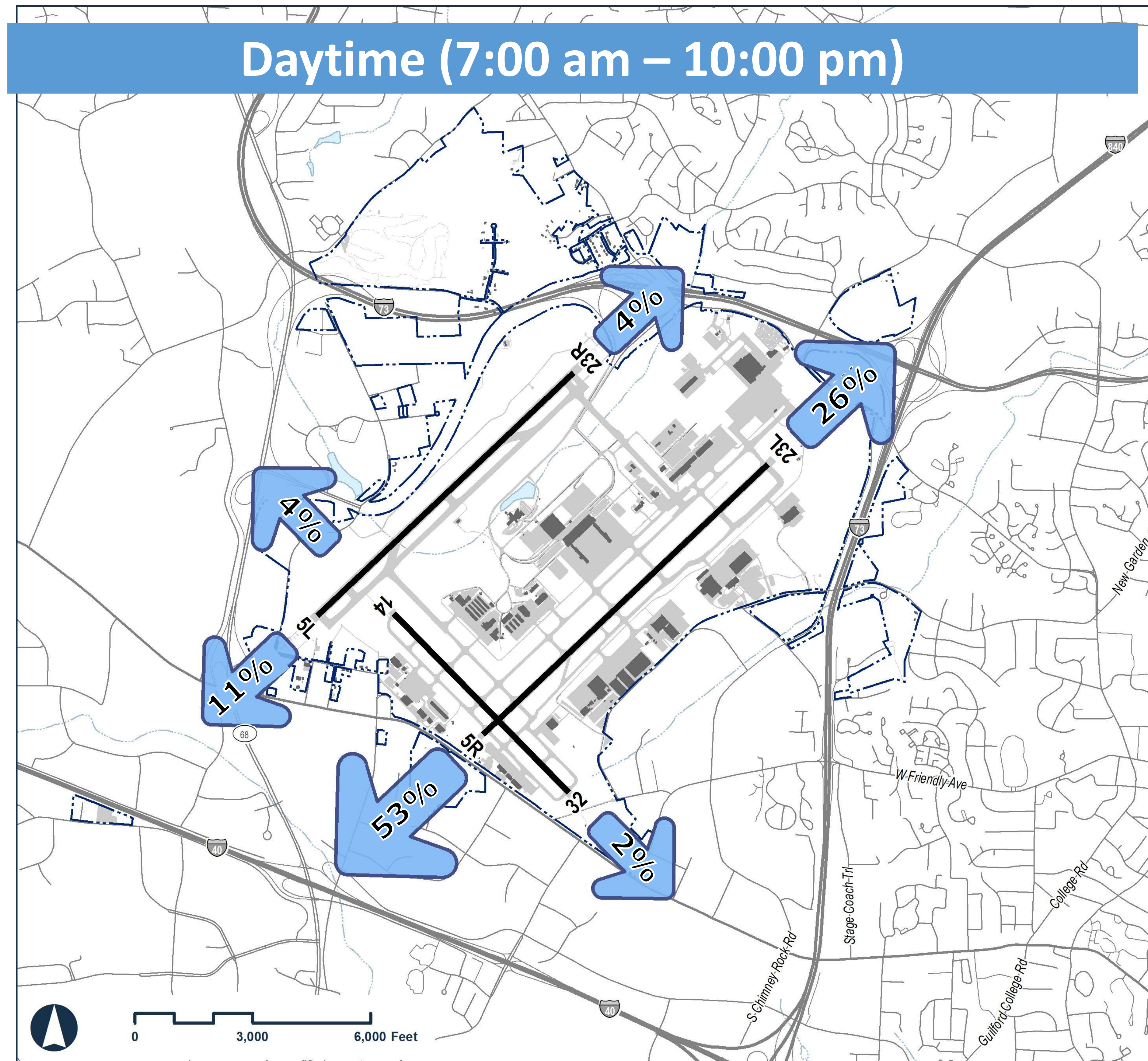


See Chapter 6.2 of Draft Report for more information





# Modeled Runway Use: Departures



See Chapter 6.2 of Draft Report for more information





# Modeled Flight Tracks: Runway 5R

## Jet Arrivals – Runway 5R

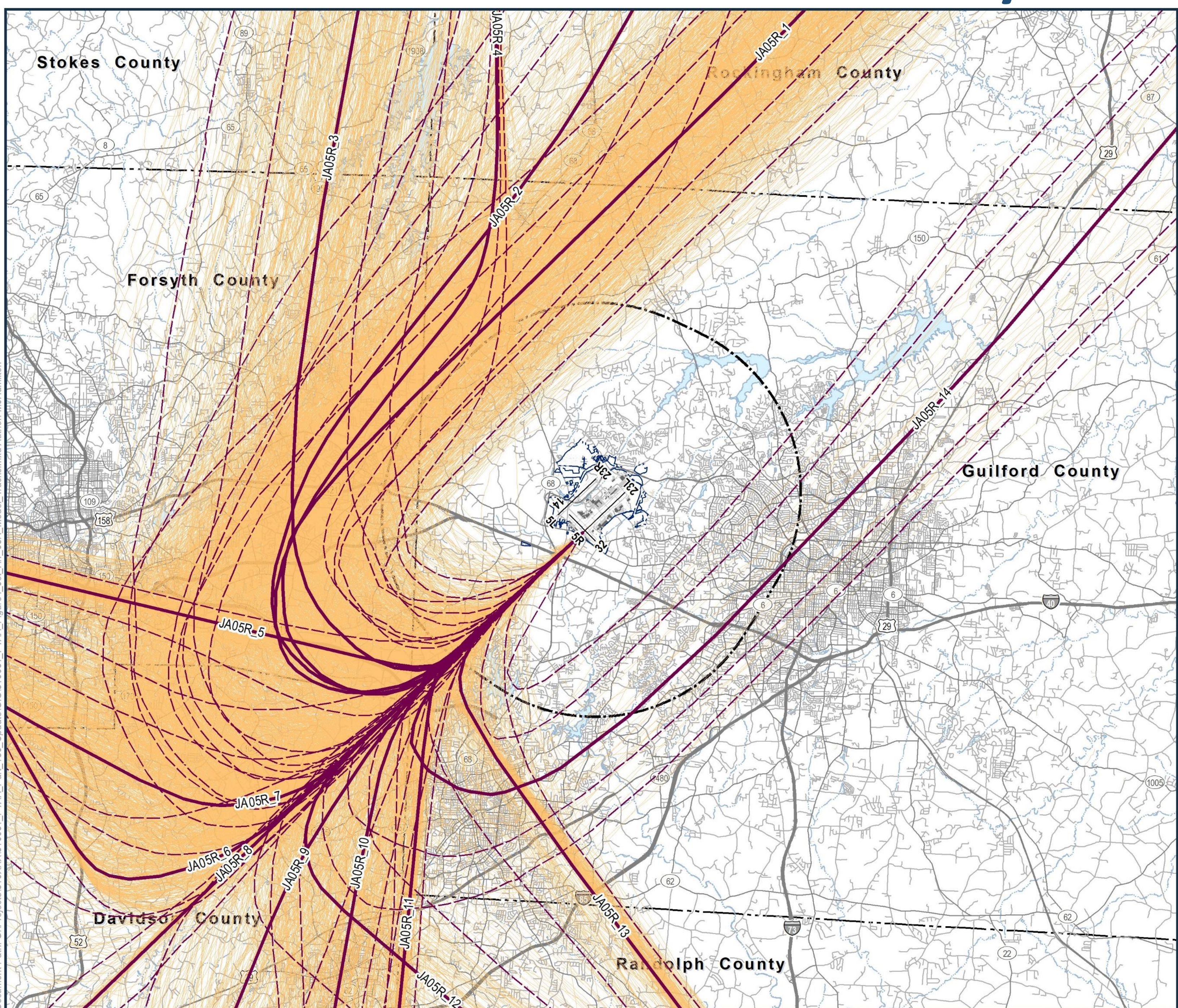
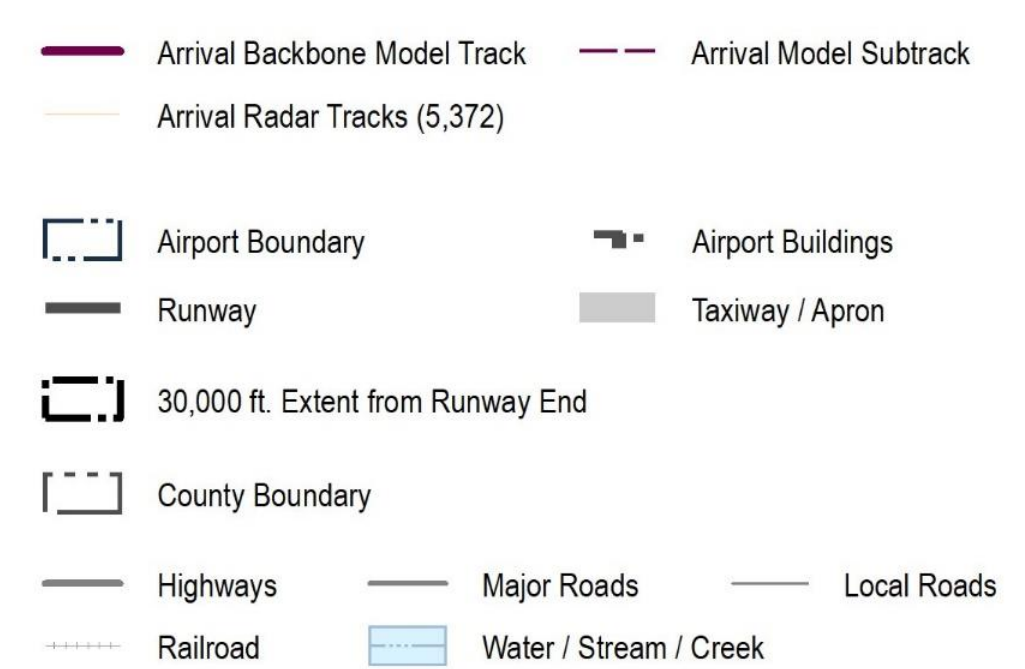


Figure: 4  
Jet Arrivals to Runway 05R



| Track Bundle | # of tracks | Day Usage | Night Usage | FDX Day | FDX Night |
|--------------|-------------|-----------|-------------|---------|-----------|
| JA05R_1      | 5           | 20.9%     | 17.3%       | 1.1%    | 23.8%     |
| JA05R_2      | 5           | 3.4%      | 2.4%        | 0.0%    | 1.9%      |
| JA05R_3      | 5           | 8.3%      | 8.0%        | 0.0%    | 2.4%      |
| JA05R_4      | 5           | 14.7%     | 5.9%        | 0.0%    | 1.5%      |
| JA05R_5      | 3           | 13.9%     | 23.0%       | 37.1%   | 18.4%     |
| JA05R_6      | 3           | 3.7%      | 2.1%        | 3.4%    | 1.5%      |
| JA05R_7      | 5           | 16.0%     | 14.4%       | 56.2%   | 21.4%     |
| JA05R_8      | 3           | 0.4%      | 2.6%        | 0.0%    | 0.5%      |
| JA05R_9      | 3           | 3.6%      | 7.5%        | 0.0%    | 1.0%      |
| JA05R_10     | 5           | 5.3%      | 3.0%        | 0.0%    | 0.5%      |
| JA05R_11     | 3           | 3.7%      | 1.7%        | 0.0%    | 0.0%      |
| JA05R_12     | 3           | 2.6%      | 2.5%        | 1.1%    | 7.8%      |
| JA05R_13     | 3           | 3.1%      | 6.7%        | 1.1%    | 19.4%     |
| JA05R_14     | 5           | 0.2%      | 3.0%        | 0.0%    | 0.0%      |
| Total        | 56          | 100.0%    | 100.0%      | 100.0%  | 100.0%    |

**DRAFT**

Data Sources: Guilford County GIS; Davidson County GIS; Forsyth County GIS; NC OneMap GeoSpatial Portal; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH Inc.



## Jet Departures - Runway 5R

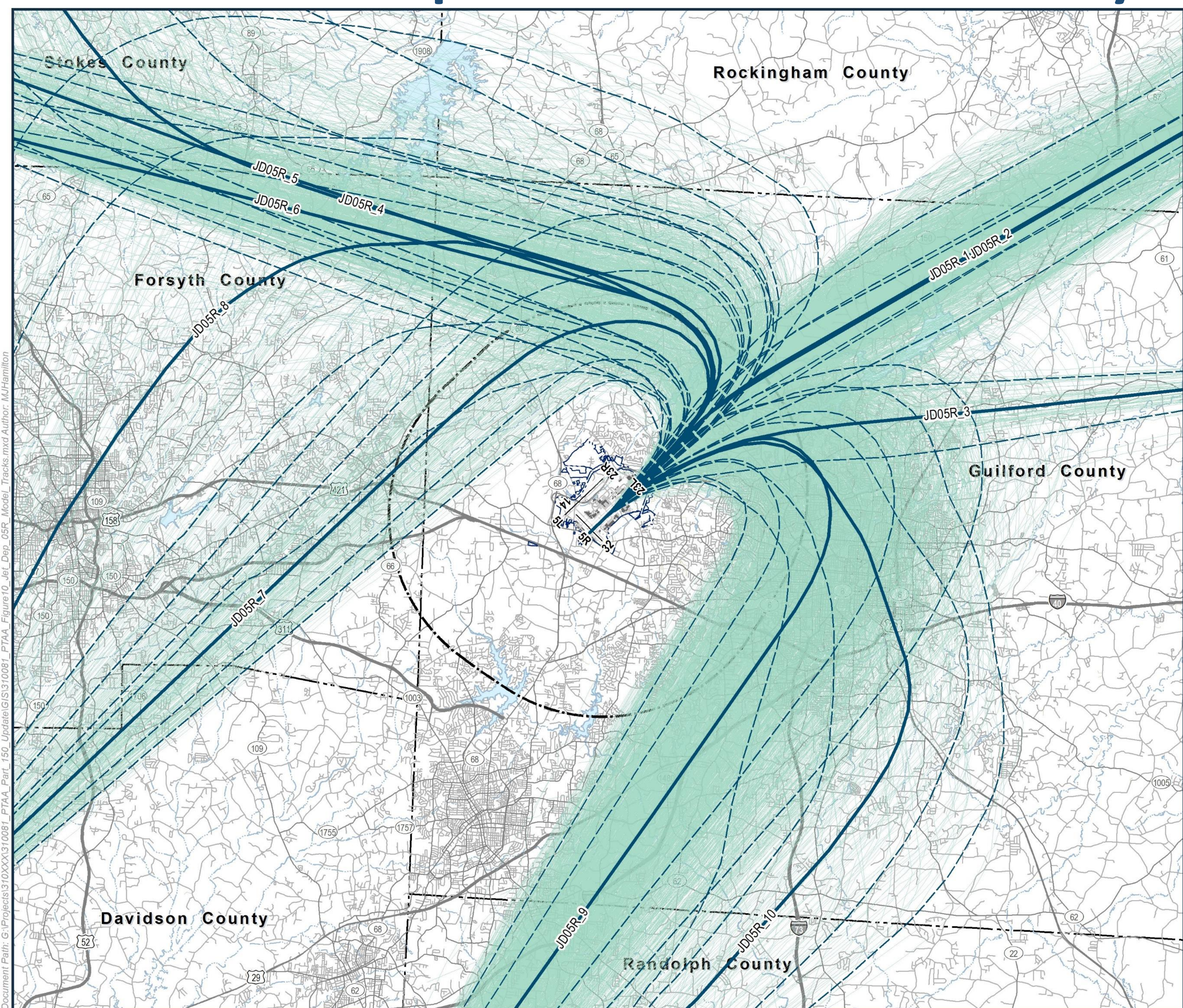
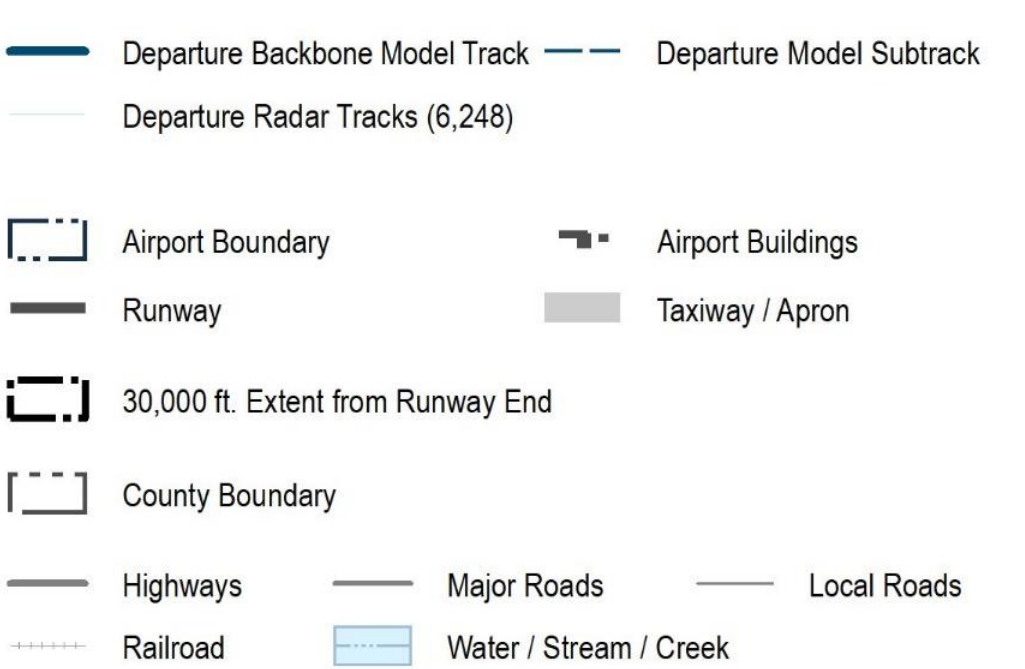


Figure: 10  
Jet Departures from Runway 05R



| Track Bundle | # of tracks | Day Usage | Night Usage | FDX Day | FDX Night |
|--------------|-------------|-----------|-------------|---------|-----------|
| JD05R_1      | 5           | 46.7%     | 51.7%       | 2.6%    | 6.8%      |
| JD05R_2      | 3           | 1.9%      | 0.8%        | 0.0%    | 0.0%      |
| JD05R_3      | 3           | 1.1%      | 0.3%        | 0.0%    | 0.0%      |
| JD05R_4      | 5           | 4.8%      | 4.1%        | 2.6%    | 6.8%      |
| JD05R_5      | 5           | 2.1%      | 1.8%        | 9.0%    | 6.8%      |
| JD05R_6      | 5           | 5.8%      | 6.0%        | 16.7%   | 21.9%     |
| JD05R_7      | 5           | 3.9%      | 5.1%        | 0.0%    | 0.0%      |
| JD05R_8      | 5           | 3.2%      | 4.5%        | 0.0%    | 0.0%      |
| JD05R_9      | 5           | 28.6%     | 25.3%       | 67.9%   | 57.5%     |
| JD05R_10     | 5           | 1.9%      | 0.5%        | 1.3%    | 0.0%      |
| Total        | 46          | 100.0%    | 100.0%      | 100.0%  | 100.0%    |

**DRAFT**

Data Sources: Guilford County GIS; Davidson County GIS; Forsyth County GIS; NC OneMap GeoSpatial Portal; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH Inc.



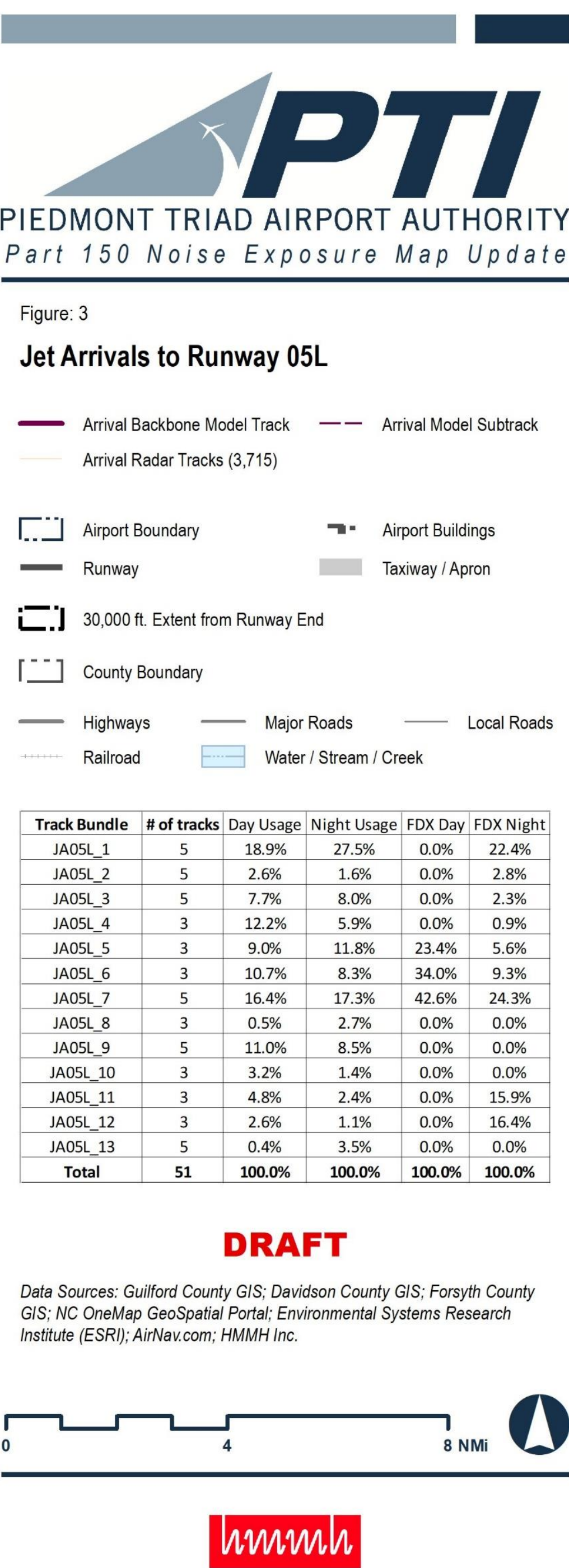
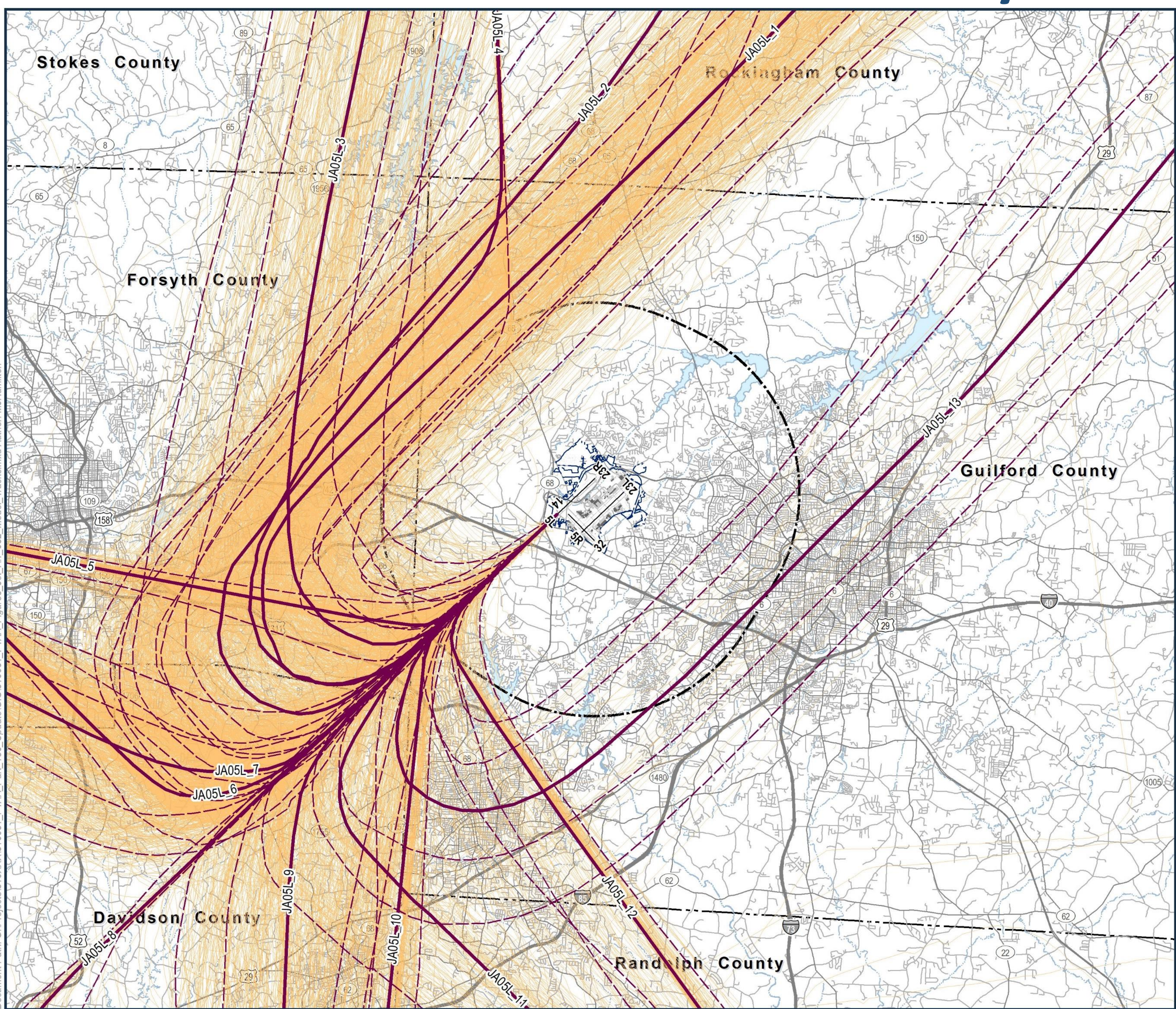
See Appendix D.3 of Draft Report for more information



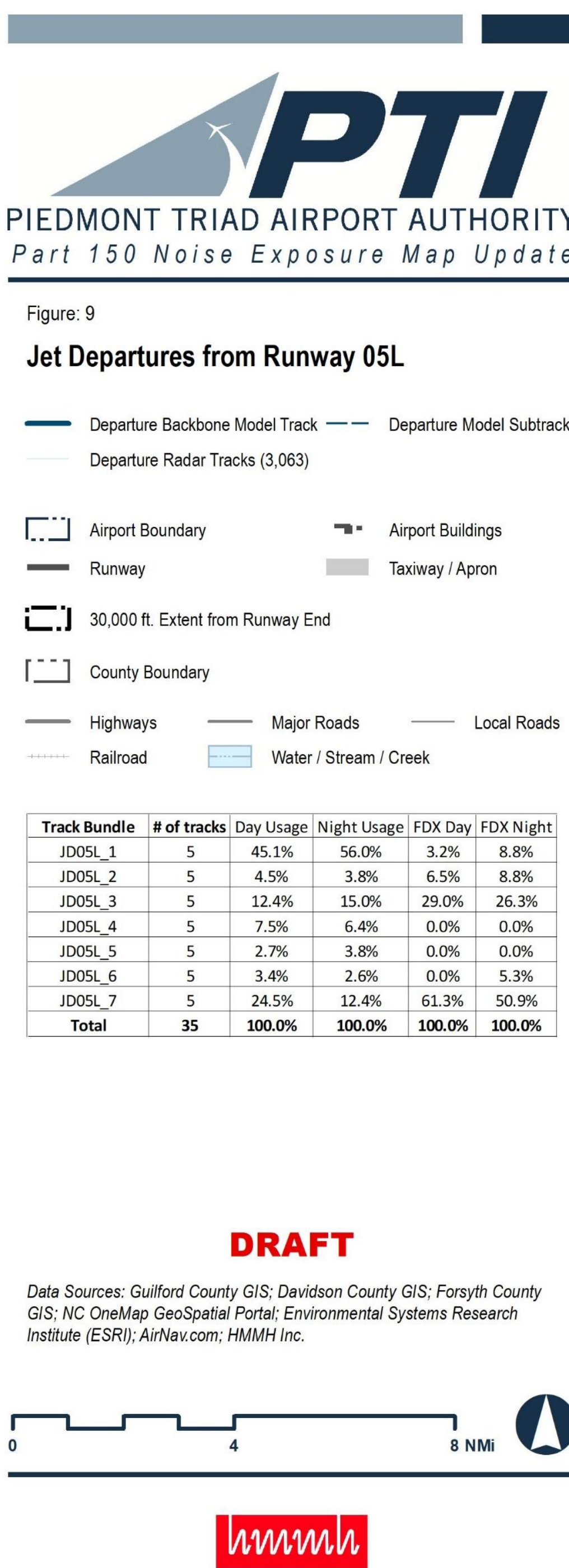
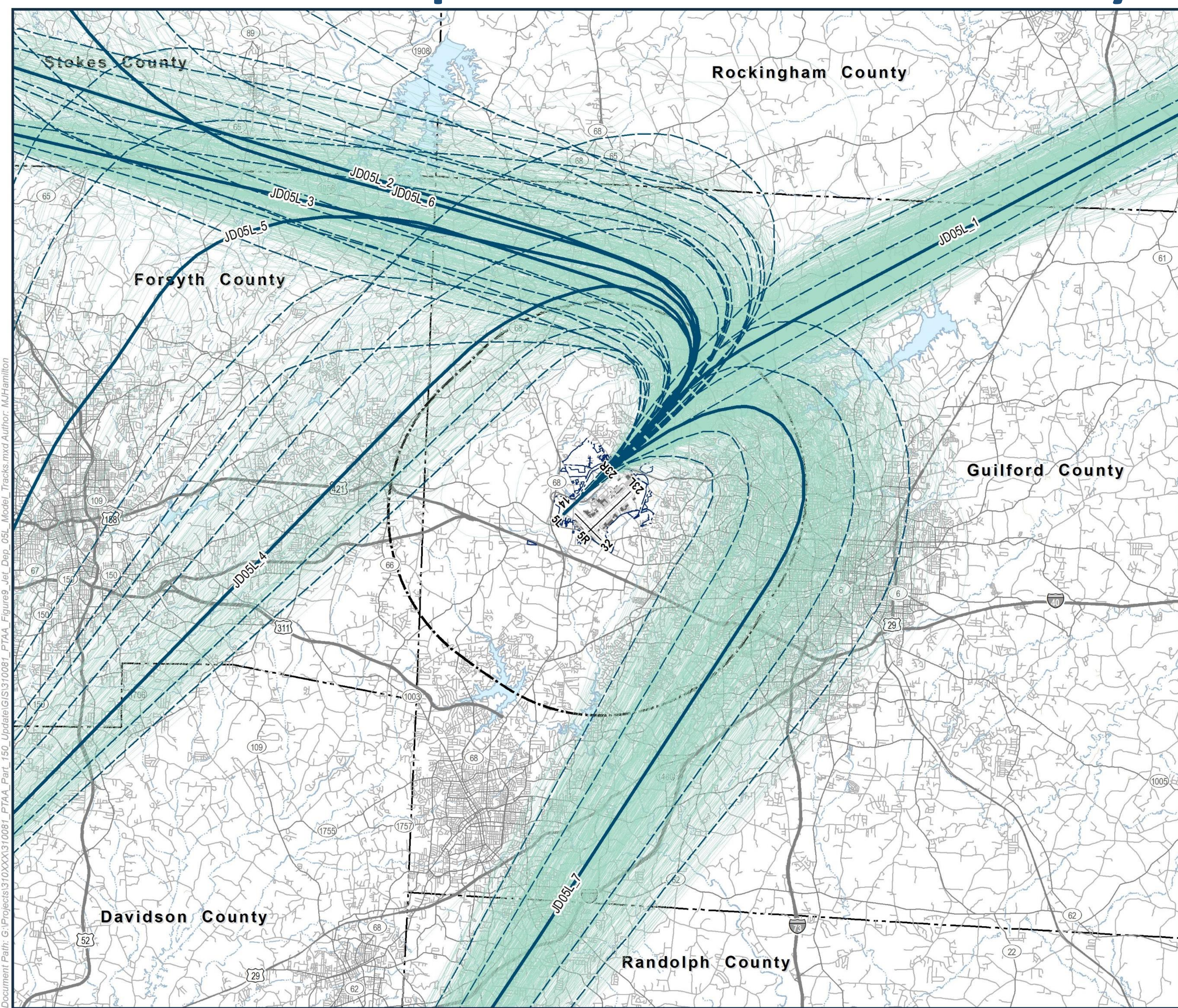


# Modeled Flight Tracks: Runway 5L

## Jet Arrivals – Runway 5L



## Jet Departures - Runway 5L



See Appendix D.3 of Draft Report for more information



# Modeled Flight Tracks: Runway 23R

## Jet Arrivals – Runway 23R

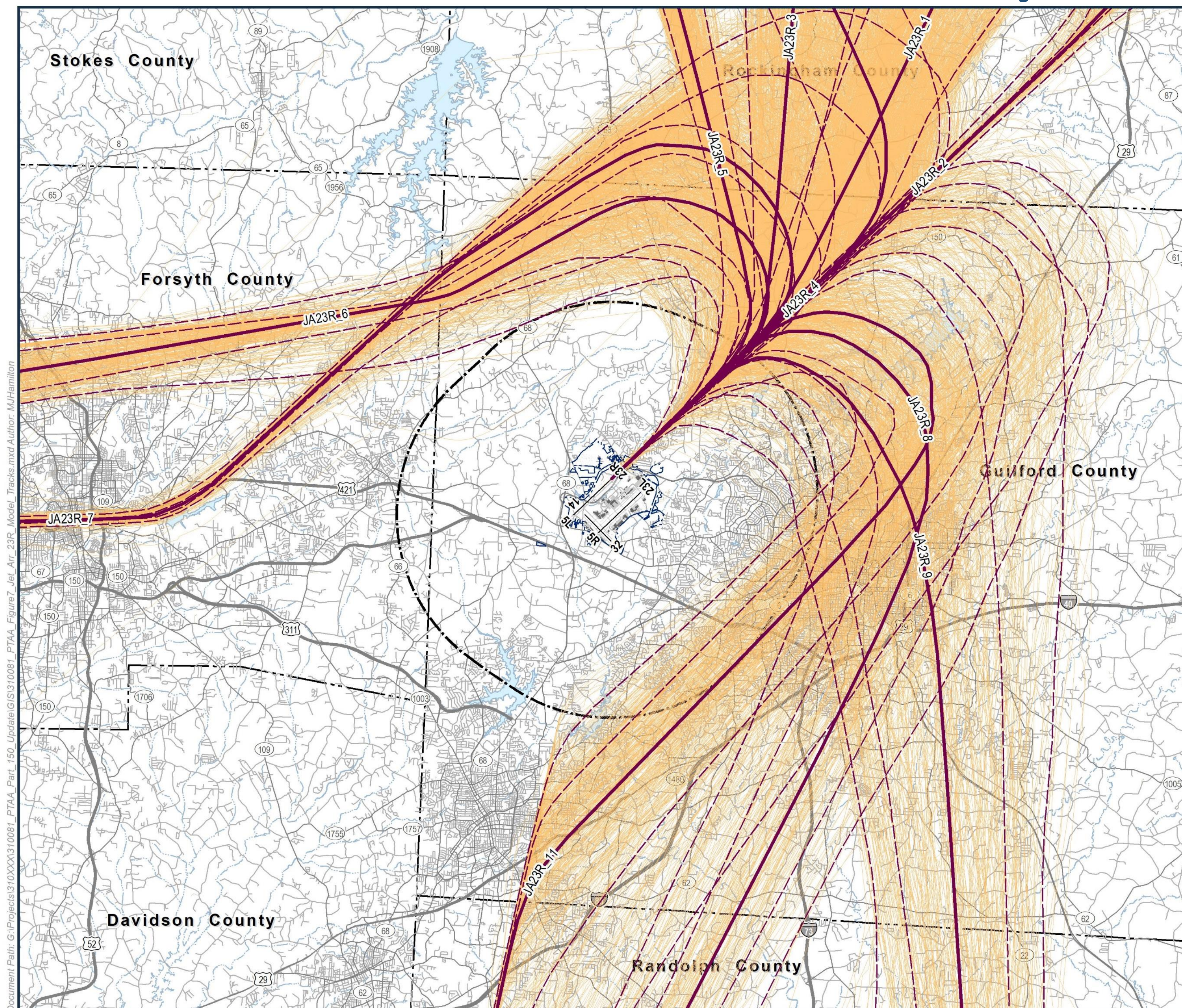
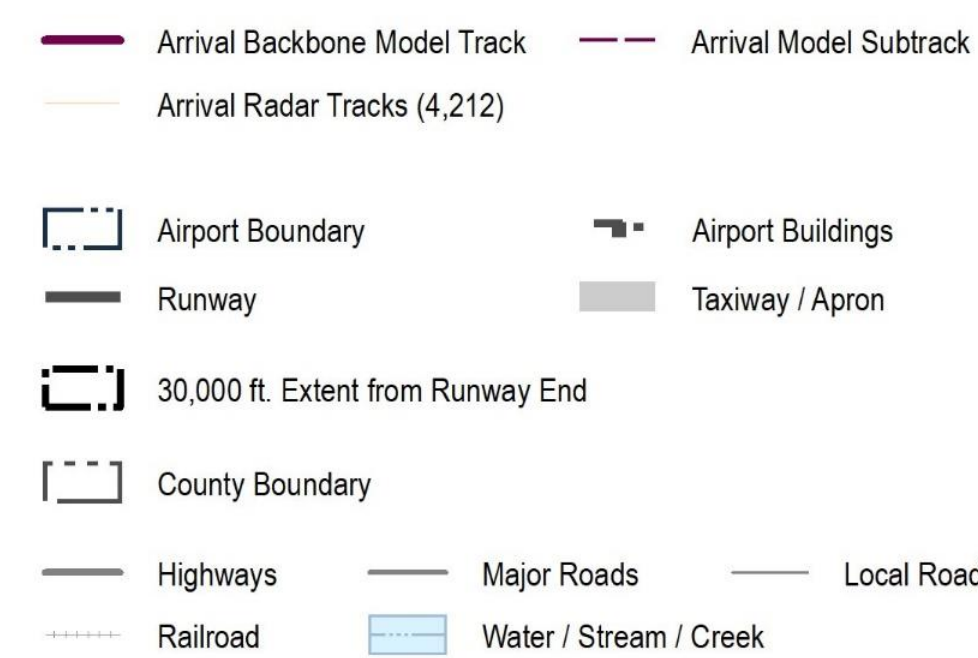


Figure 7

### Jet Arrivals to Runway 23R



| Track Bundle | # of tracks | Day Usage | Night Usage | FDX Day | FDX Night |
|--------------|-------------|-----------|-------------|---------|-----------|
| JA23R_1      | 3           | 19.9%     | 31.8%       | 0.0%    | 5.9%      |
| JA23R_2      | 5           | 4.8%      | 10.9%       | 0.0%    | 8.8%      |
| JA23R_3      | 3           | 6.1%      | 5.1%        | 0.0%    | 1.5%      |
| JA23R_4      | 3           | 5.8%      | 5.5%        | 0.0%    | 1.5%      |
| JA23R_5      | 3           | 9.5%      | 10.5%       | 0.0%    | 0.0%      |
| JA23R_6      | 5           | 6.6%      | 7.0%        | 35.8%   | 8.8%      |
| JA23R_7      | 5           | 23.5%     | 18.3%       | 64.2%   | 54.4%     |
| JA23R_8      | 5           | 3.5%      | 1.7%        | 0.0%    | 0.0%      |
| JA23R_9      | 5           | 6.1%      | 4.6%        | 0.0%    | 19.1%     |
| JA23R_11     | 5           | 14.1%     | 4.6%        | 0.0%    | 0.0%      |
| Total        | 42          | 100.0%    | 100.0%      | 100.0%  | 100.0%    |

**DRAFT**

Data Sources: Guilford County GIS; Davidson County GIS; Forsyth County GIS; NC OneMap GeoSpatial Portal; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH Inc.



## Jet Departures - Runway 23R

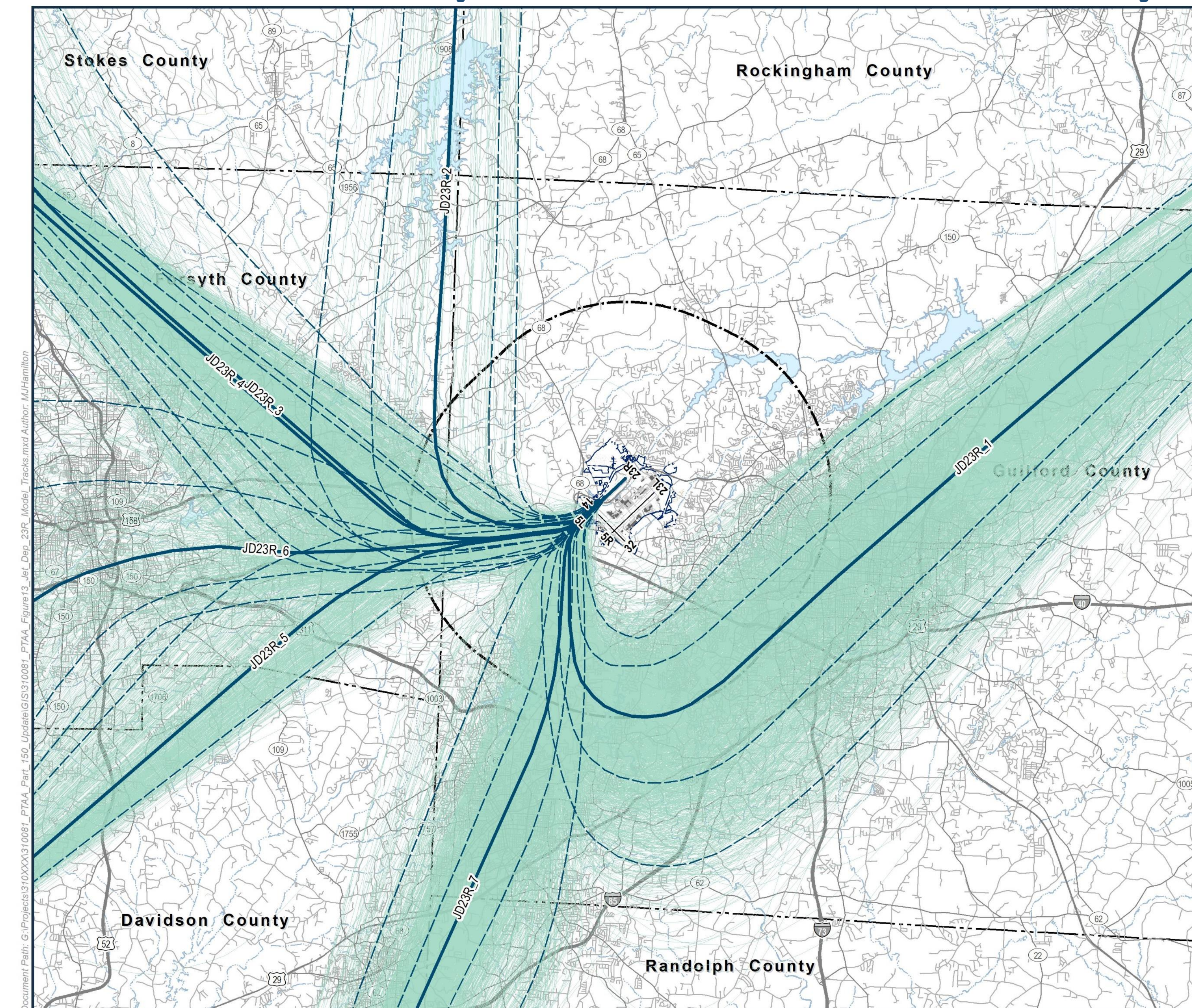
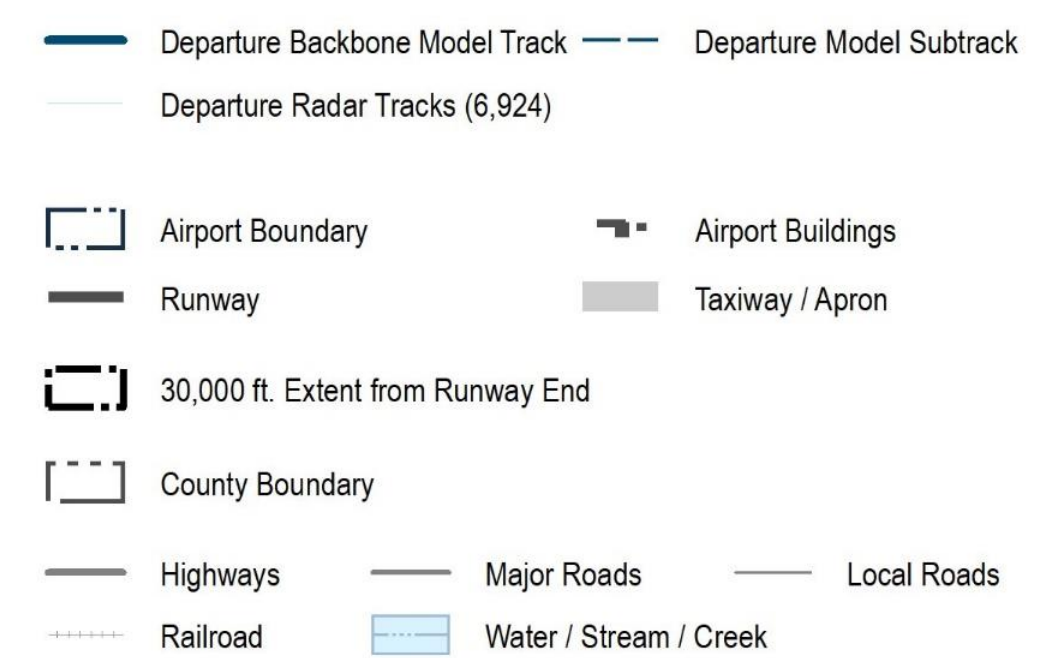


Figure 13

### Jet Departures from Runway 23R



| Track Bundle | # of tracks | Day Usage | Night Usage | FDX Day | FDX Night |
|--------------|-------------|-----------|-------------|---------|-----------|
| JD23R_1      | 5           | 32.5%     | 42.9%       | 0.0%    | 9.8%      |
| JD23R_2      | 5           | 0.3%      | 6.6%        | 0.0%    | 0.3%      |
| JD23R_3      | 5           | 4.0%      | 2.9%        | 1.9%    | 13.2%     |
| JD23R_4      | 5           | 21.1%     | 19.9%       | 39.3%   | 22.7%     |
| JD23R_5      | 3           | 9.8%      | 7.9%        | 0.9%    | 0.0%      |
| JD23R_6      | 5           | 4.3%      | 4.4%        | 0.0%    | 0.0%      |
| JD23R_7      | 5           | 28.0%     | 15.4%       | 57.9%   | 54.0%     |
| Total        | 33          | 100.0%    | 100.0%      | 100.0%  | 100.0%    |

**DRAFT**

Data Sources: Guilford County GIS; Davidson County GIS; Forsyth County GIS; NC OneMap GeoSpatial Portal; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH Inc.



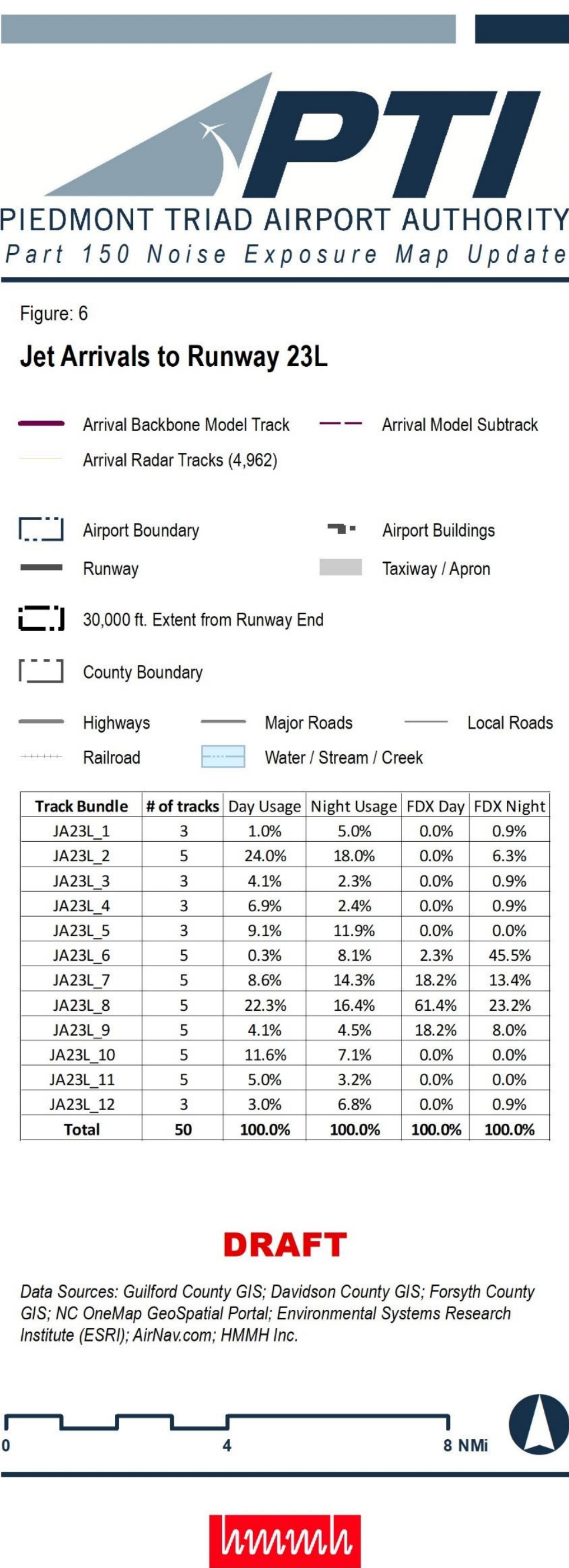
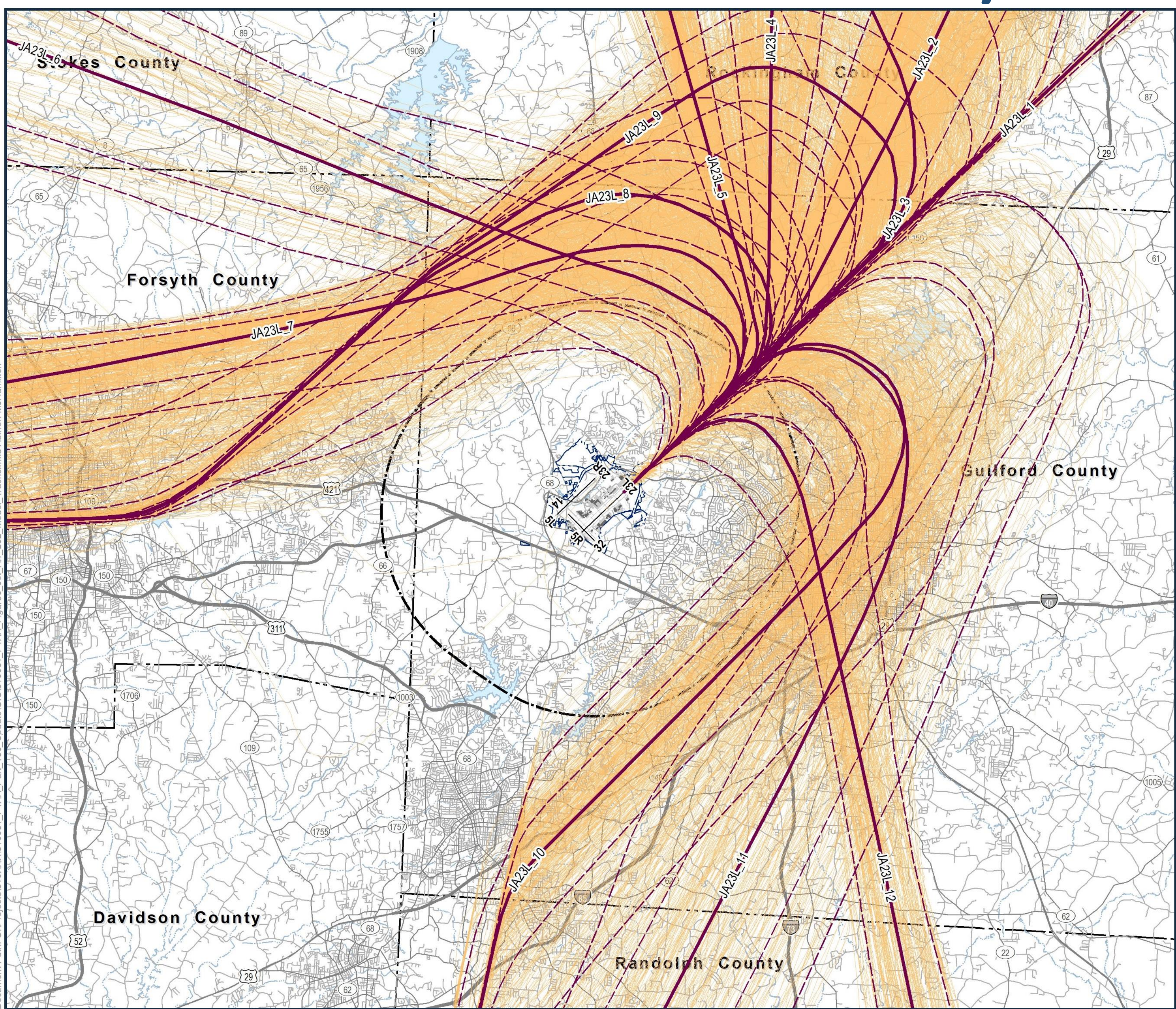
See Appendix D.3 of Draft Report for more information



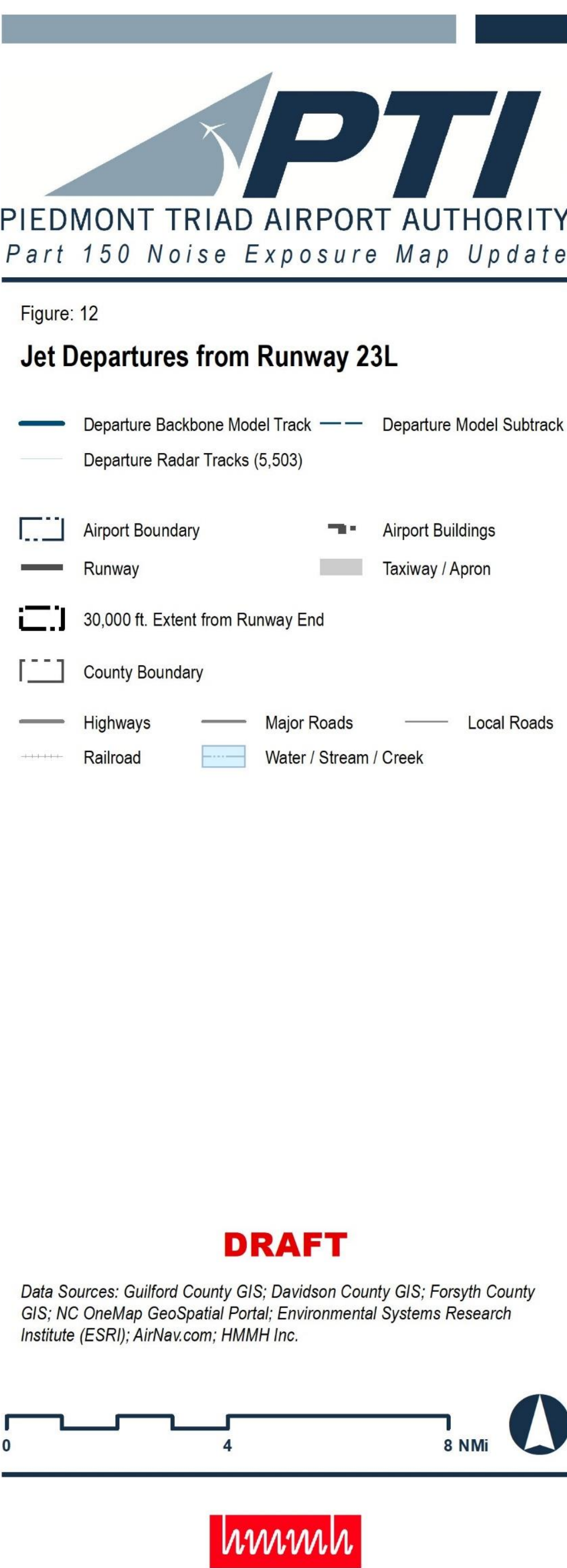
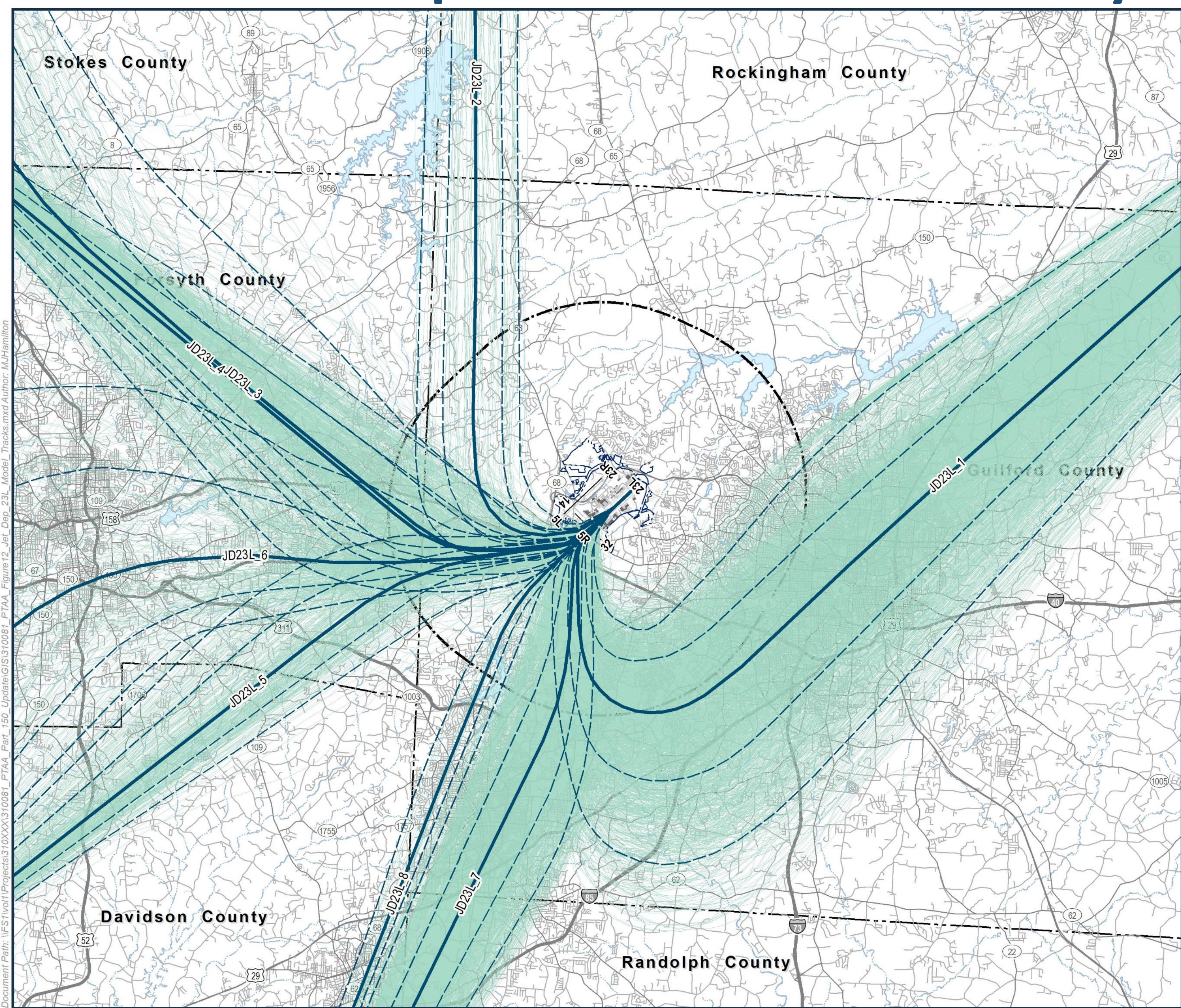


# Modeled Flight Tracks: Runway 23L

## Jet Arrivals - Runway 23L



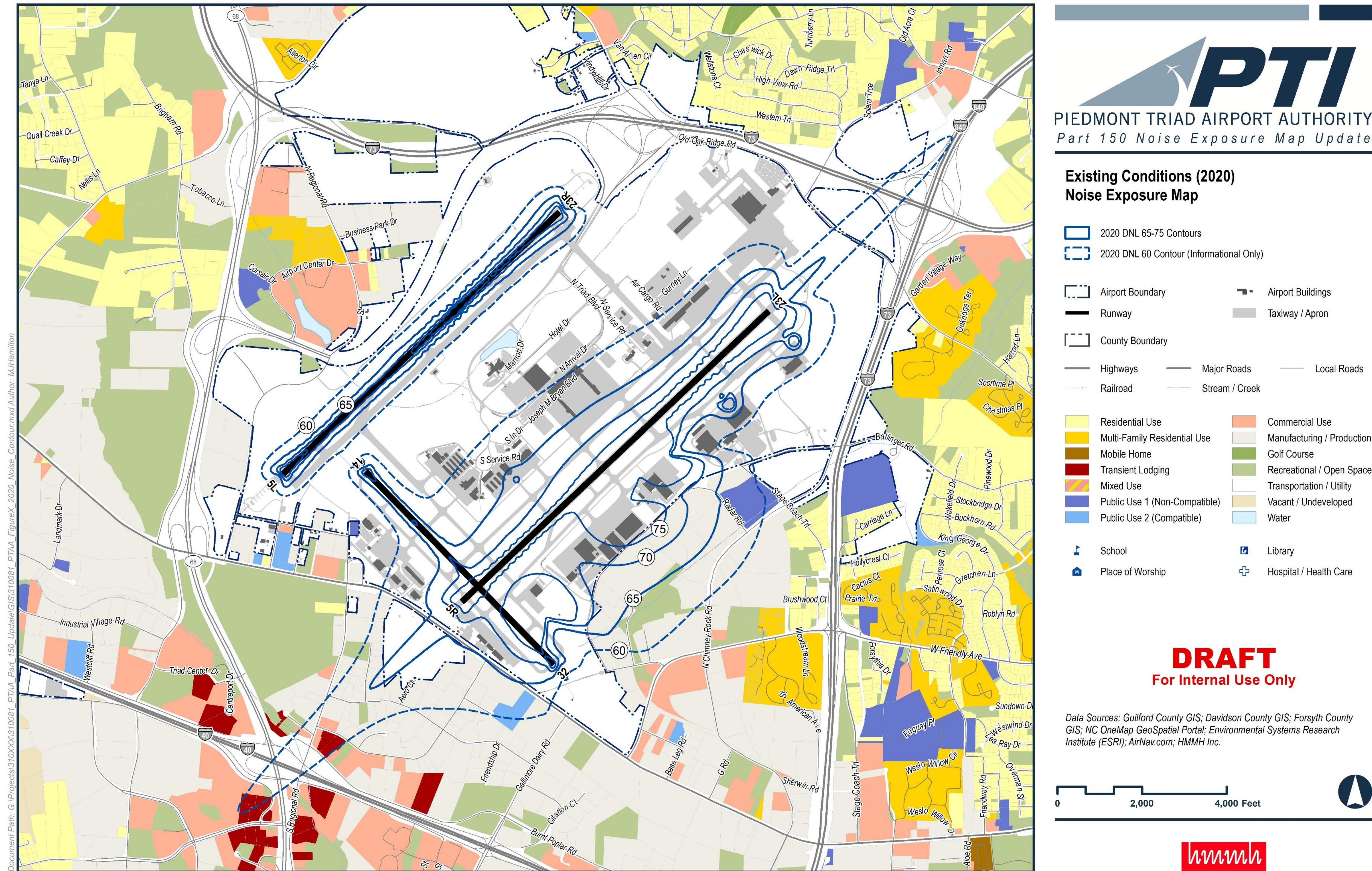
## Jet Departures - Runway 23L



See Appendix D.3 of Draft Report for more information



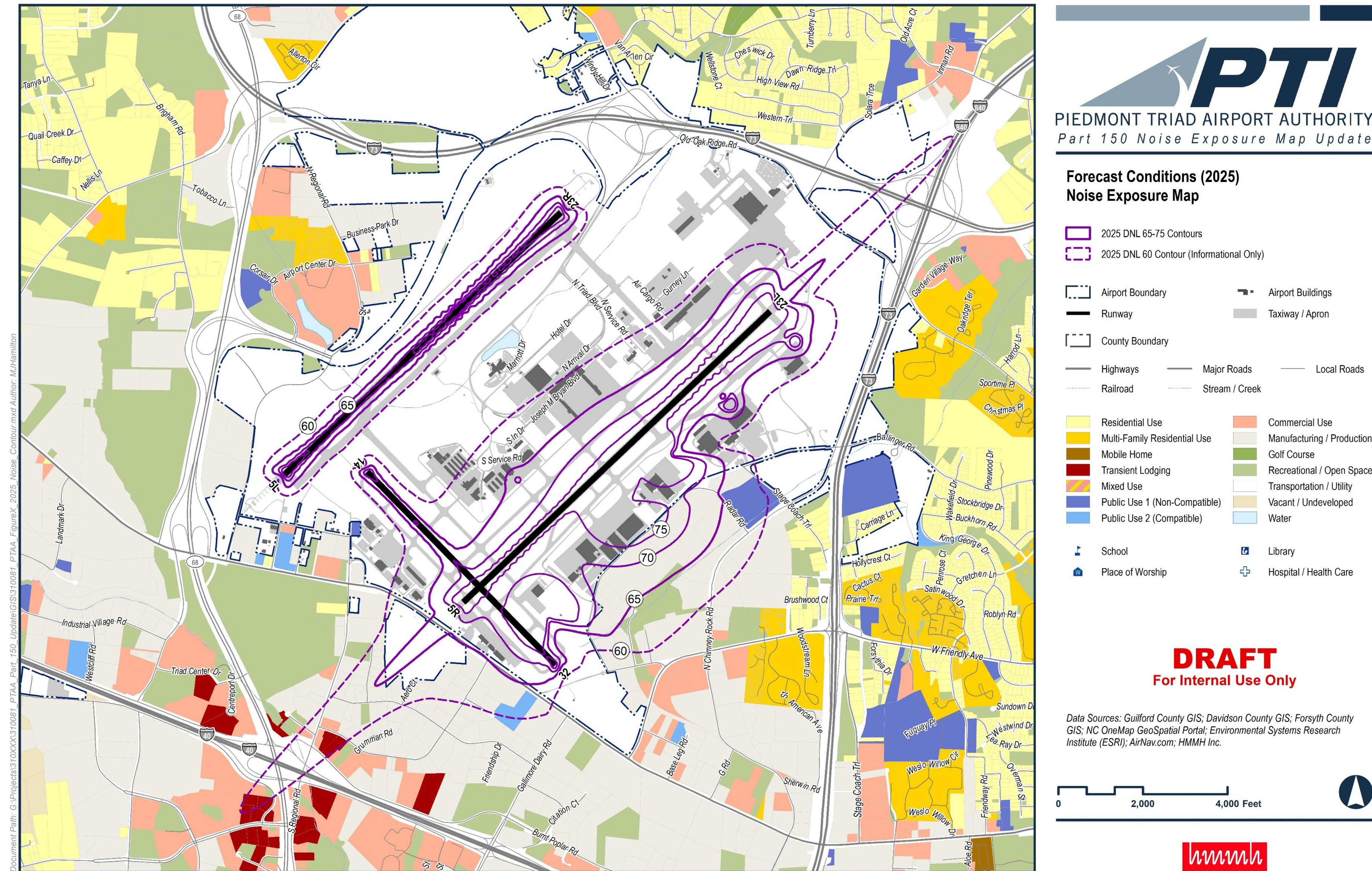
# Noise Exposure Map – 2020



See Chapter 7 of  
Draft Report for  
full size graphics



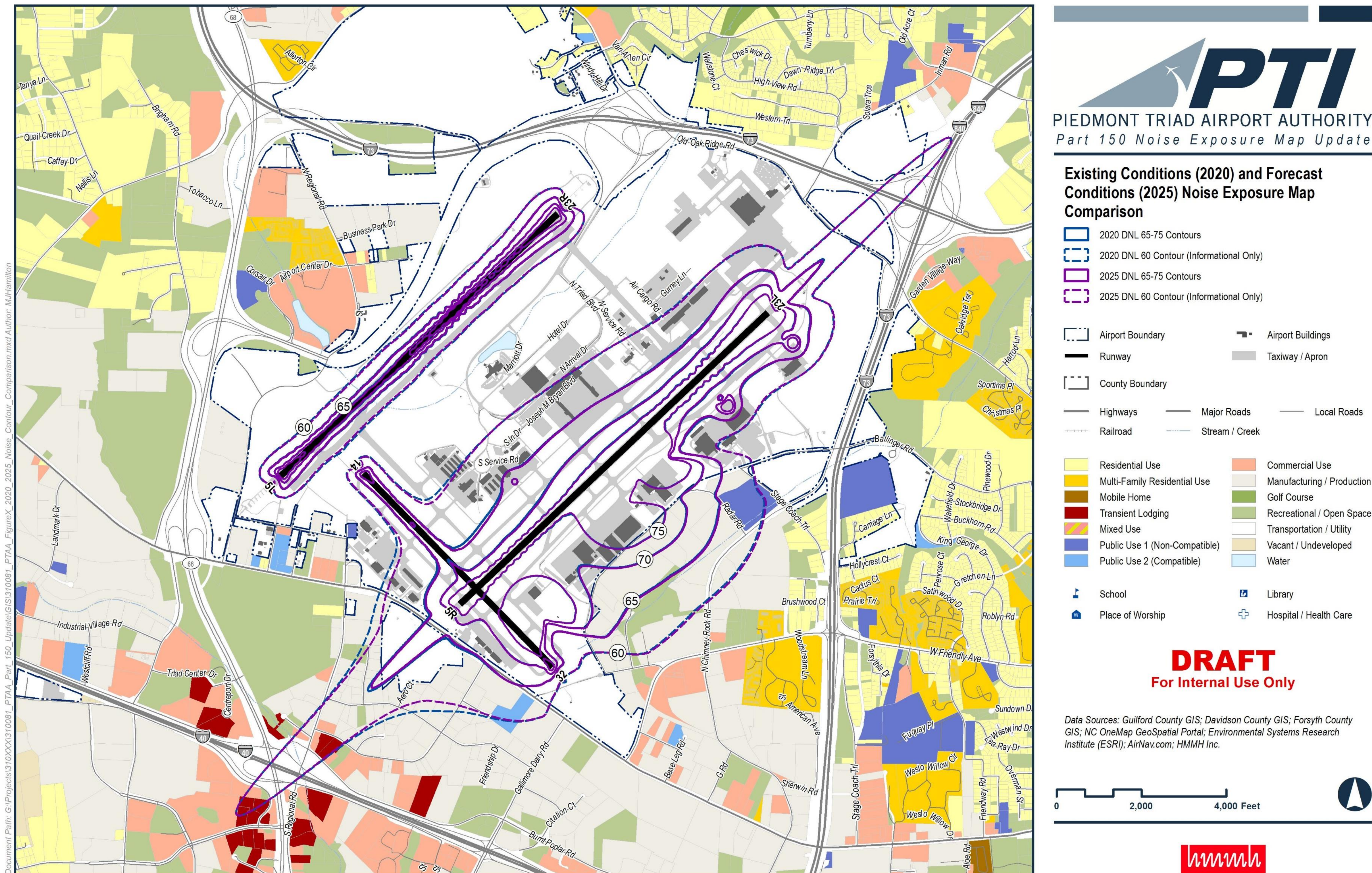
# Noise Exposure Map – 2025



See Chapter 7 of  
Draft Report for  
full size graphics



# Comparison of 2020 & 2025 Noise Exposure Map



See Chapter 7 of  
Draft Report for  
full size graphics



# Noise Compatibility – Residential Land Use

- 65 DNL contours have no non-compatible land uses
- No DNL justification for additional Noise Compatibility Program (NCP) measures

| Noise Level,<br>DNL | Existing Contours - 2020 |                                   | Forecast Contours – 2025 |                                   |
|---------------------|--------------------------|-----------------------------------|--------------------------|-----------------------------------|
|                     | Estimated Population     | Estimated Number of Housing Units | Estimated Population     | Estimated Number of Housing Units |
| 65-70 dB            | 0                        | 0                                 | 0                        | 0                                 |
| 70-75 dB            | 0                        | 0                                 | 0                        | 0                                 |
| 75+ dB              | 0                        | 0                                 | 0                        | 0                                 |
| Total               | 0                        | 0                                 | 0                        | 0                                 |



# Noise Compatibility Program Amendments 2020

Chapters 4 and 8





# Noise Compatibility Program Basics

## Objectives of proposed measures:

- **Reduce** exposure over incompatible uses
- **Limit** growth in exposure over incompatible uses
- **Mitigate** exposure where it cannot be reduced to compatible levels
- **Prevent** introduction of new incompatible uses

### Land Use strategies

- Land acquisition
- Sound insulation
- Avigation easements
- Prevention
- Land use controls
- Real estate disclosures

### Noise Abatement strategies

- Flight tracks
- Preferential runway use
- Arrival/departure procedures
- Airport layout modifications
- Use restrictions

### Programmatic measures

- Implementation
- Promotion
- Monitoring
- Reporting
- NEM updating
- NCP revision

## Analysis and Selection Process

- 1) Evaluate effectiveness in addressing objectives
- 2) Evaluate feasibility (economic, operational, safety, etc.)
- 3) Select most effective “package” of measures
- 4) Identify implementation responsibilities, schedule, etc.
- 5) If not recommended, document reason(s)

- PTAA recommends NCP measures
- FAA approves or disapproves each recommended measure



# Current Noise Compatibility Program (NCP)

The FAA approved, in whole or in part, all 20 PTAA-recommended NCP measures in the previous Part 150 Study

## Noise Abatement Measures

1. Evaluate Noise Barriers \*
2. Preferred Night Runway Use \*\*
3. Night Runway Use Assignments \*\*
4. Night Southbound Departure Corridor from Runway 23L \*\*
5. Night Departure Procedures from Runway 23R \*\*
6. Night Northbound Departure Corridor from Runway 23L \*\*
8. Departures from Runway 05L \*\*
9. Departures from Runway 05R \*\*
10. Restrictions on Use of APUs
11. Noise Abatement Departure Profiles \*\*
12. Noise Abatement Approach Procedure \*\*
13. Altitude for Downwind Legs \*\*

## Land Use Measures

1. Acquire Noise-Sensitive Properties where DNL Exceeds 70 dB
2. Sound Insulation of Noise-Sensitive Structures where DNL Exceeds 65 dB
3. Optional Acquisition of Avigation Easements for Noise-Sensitive Structures where DNL Exceeds 65 dB
4. Other Assistance for Owners of Residential Property where DNL Exceeds 65 dB \*
5. Pursue Compatible Use Zoning where DNL Exceeds 65 dB

## Programmatic Measures

1. Establish a Noise Monitoring Function at PTI
2. Publish DNL Contours at 60 dB and Above
3. Install and Operate an Aircraft Noise and Operations Monitoring System

*Note: There is no Noise Abatement Measure number 7 since it was included in Noise Abatement Measure number 5 during the course of the original study.*

*\* - Approved for further study.*

*\*\* - Approved as voluntary measures subject to traffic, weather, and airspace safety and efficiency.*

*See Chapter 4 of Draft Report for more information*





# Noise Abatement Measure Amendments

| Original Number | Noise Abatement Measure                             | Amended Number | Recommended Amendment   |
|-----------------|---|----------------|---|
| NA-1            | Evaluate Noise Barriers                             | NA-1           | No change   |
| NA-2            | Preferred Night Runway Use                          | NA-2           | <b>Clarify description</b>  |
| NA-3            | Night Runway Use Assignments                        | --             | <b>Eliminate</b>  |
| NA-4            | Night Southbound Departure Corridor from Runway 23L | NA-3           | <b>Include northeast destinations and initiate development of an RNAV procedure</b> |
| NA-5            | Night Departure Procedures from Runway 23R          | NA-4           | <b>Incorporate NA-3, Part 5</b>   |
| NA-6            | Night Northbound Departure Corridor from Runway 23L | --             | <b>Eliminate</b>  |
| NA-7            | Not Applicable                                      | --             | --  |
| NA-8            | Departures from Runway 5L                           | NA-5           | No change   |
| NA-9            | Departures from Runway 5R                           | NA-6           | No change   |
| NA-10           | Restrictions on Use of APUs                         | NA-7           | No change   |
| NA-11           | Noise Abatement Departure Profiles                  | --             | <b>Eliminate</b>  |
| NA-12           | Noise Abatement Approach Procedures                 | NA-8           | No change   |
| NA-13           | Altitude for Downwind Legs                          | NA-9           | No change   |

*See Chapter 8 of Draft Report for more information*



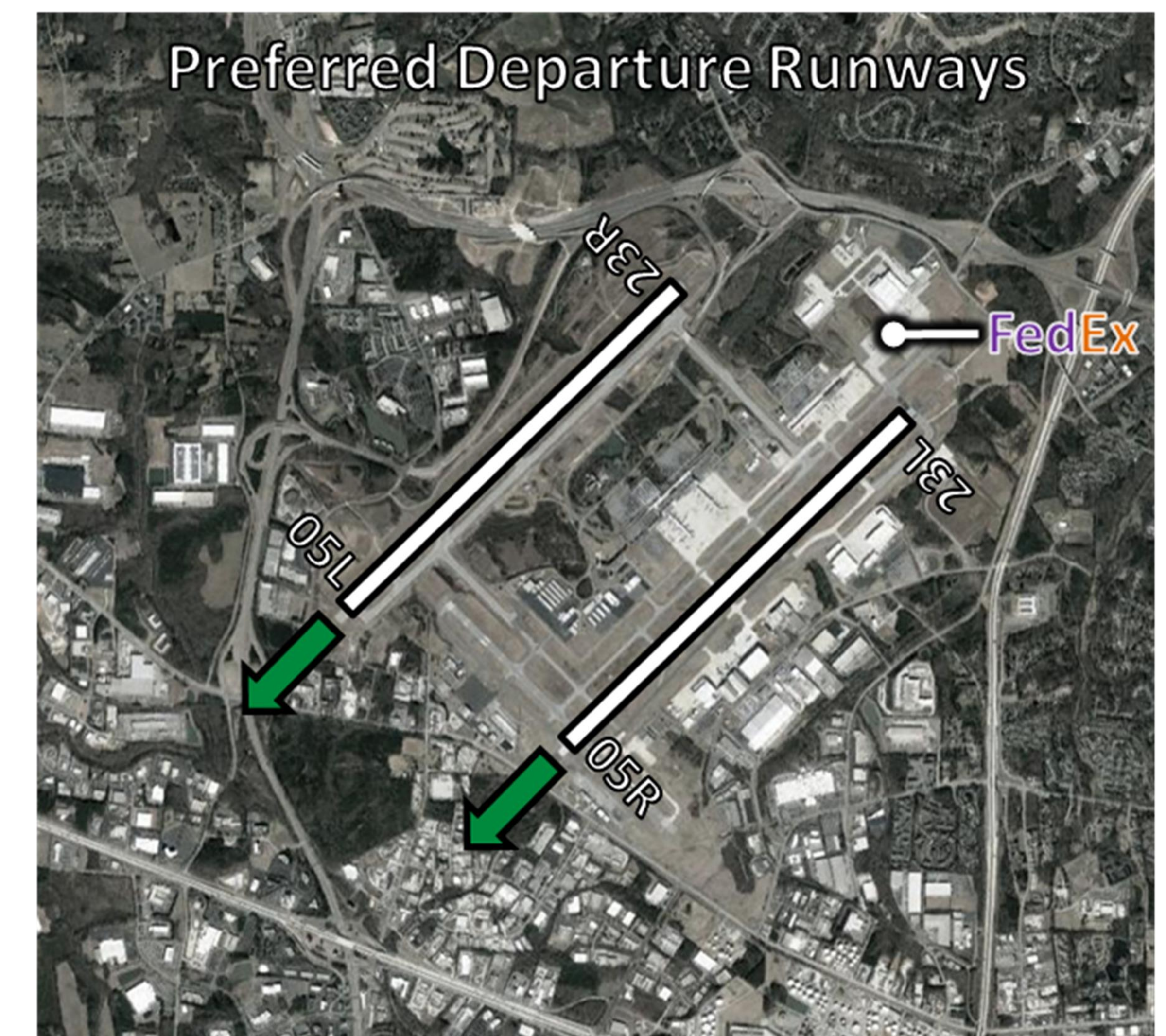
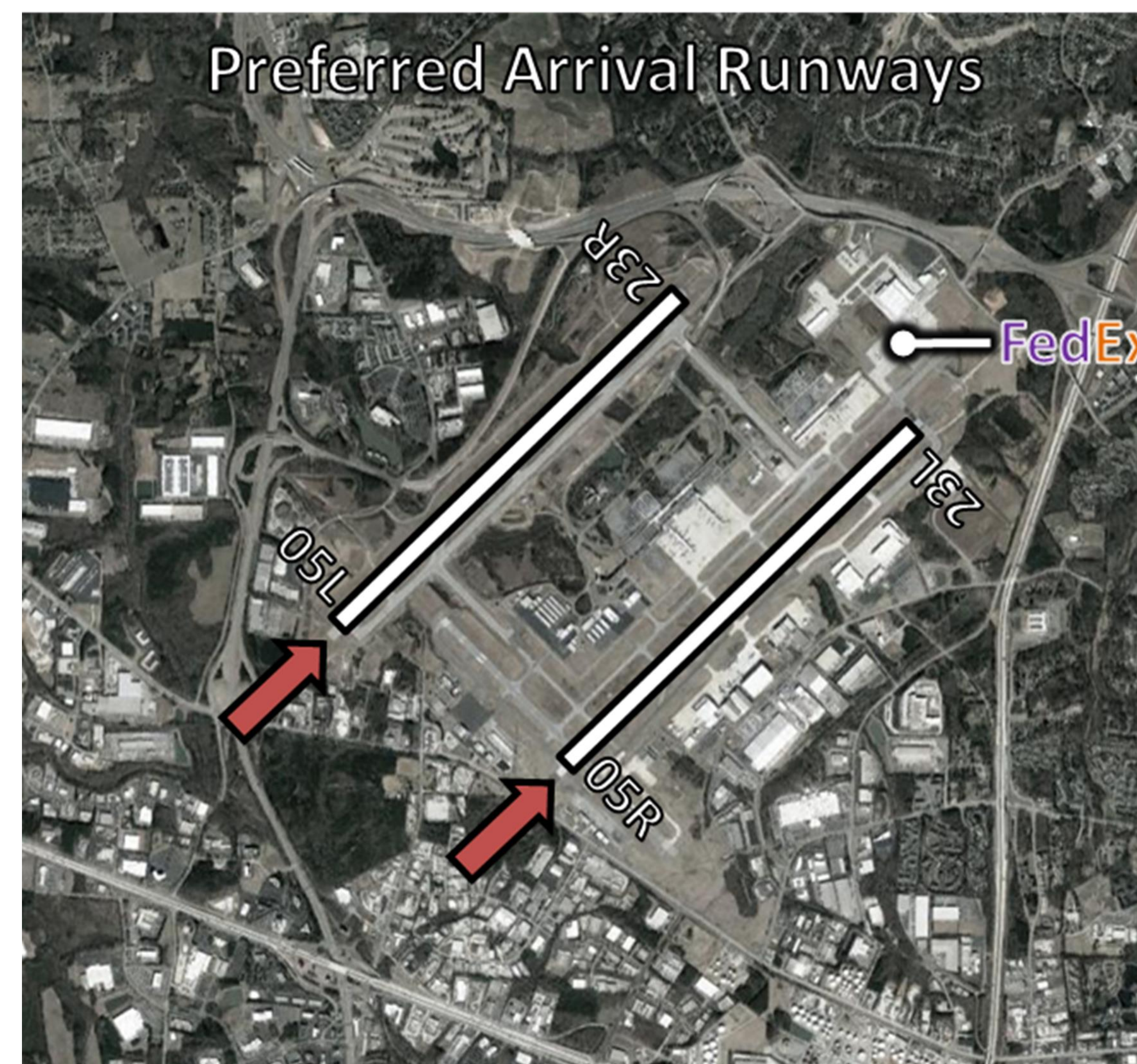


# Preferred Night Runway Use

## Amend measure to clarify the preferred runway use during nighttime FedEx Hub operations

### *Proposed description:*

*“During nighttime hub operations, designate runways 23L and 23R as the preferred departure runways and runways 5L and 5R as the preferred arrival runways. This head-to-head pattern of runway use will be used when permitted by weather and runway conditions.”*





# Night Runway Use Assignments

## Eliminate measure – not implemented

- This PTAA-recommended and FAA-approved measure with six parts was not implemented.
- Parts 1 and 3 were specific to “retrofitted” Stage 3 aircraft. Retrofitted aircraft no longer operate – most of them are retired.
- Parts 2, 4 and 6 were specific to certified Stage 3 aircraft. Runway assignments of these aircraft are currently handled by the Airport Traffic Control Tower with flexibility and efficiency. Equal use of the parallel runways is not required nor preferred.
- Part 5 recommended a procedure for aircraft departing Runway 23R, which has been incorporated into amended noise abatement measure “**Night Departure Procedures from Runway 23R**”.

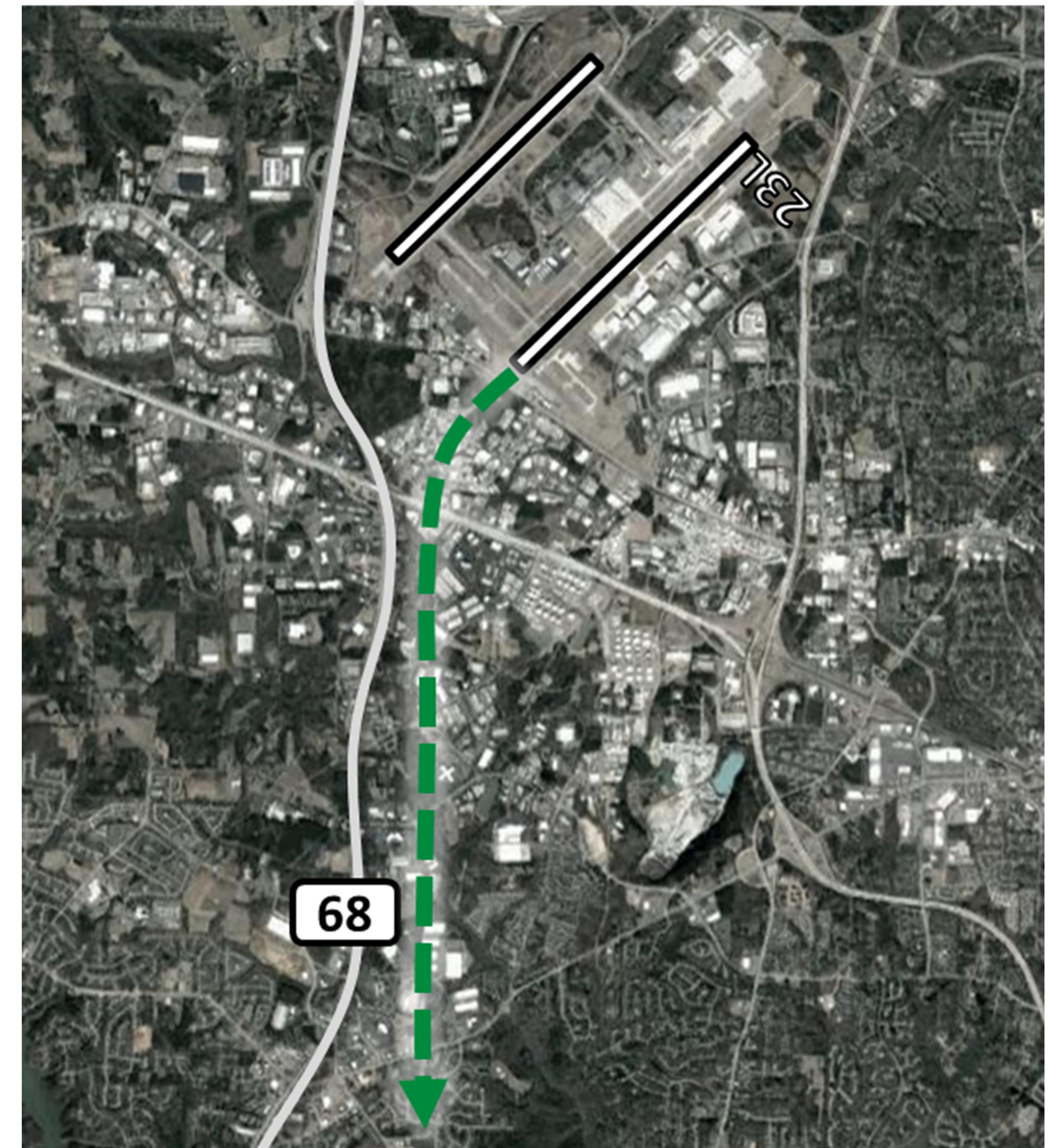


# Night Southbound Departure Corridor from Runway 23L

**Amend measure to include northbound destinations and initiate development of an Area Navigation (RNAV) procedure**

***Proposed description:***

“For jet departures from Runway 23L to south or northeast destinations, develop and implement an RNAV departure procedure that makes an initial left turn and concentrates the flight path over NC Highway 68. Aircraft may make a transition to another heading after reaching 4,000 feet MSL.”



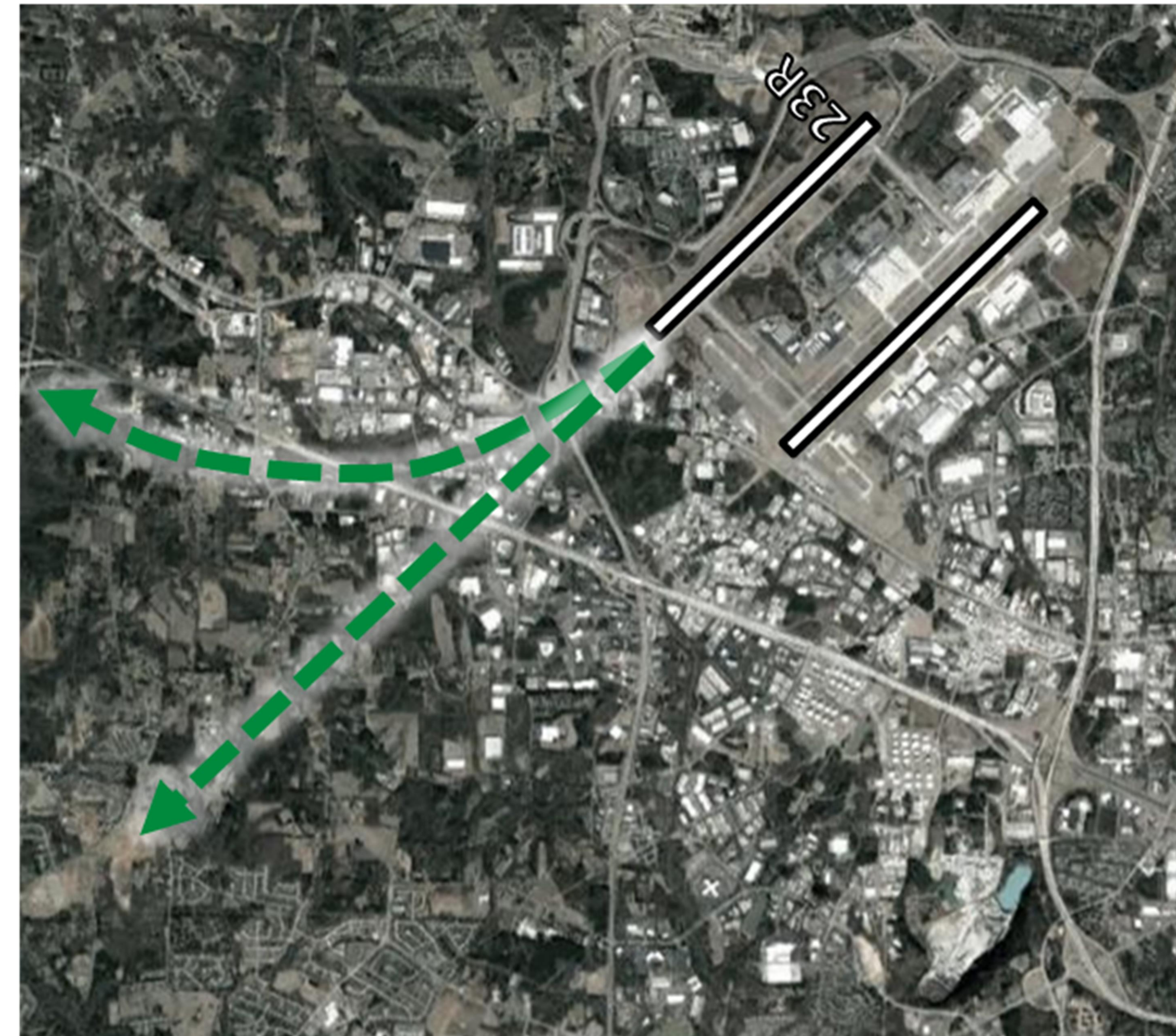


# Night Departure Procedures from Runway 23R

**Amend measure to incorporate the portion of the “Night Runway Use Assignments” related to Runway 23R departures**

***Proposed description:***

“Aircraft departing runway 23R at night and turning right shall initiate the right departure turn as soon as practicable. Aircraft departing on runway 23R and needing to make a transition to a more southerly heading should delay the transition until they have reached an altitude of 4,000 MSL.”

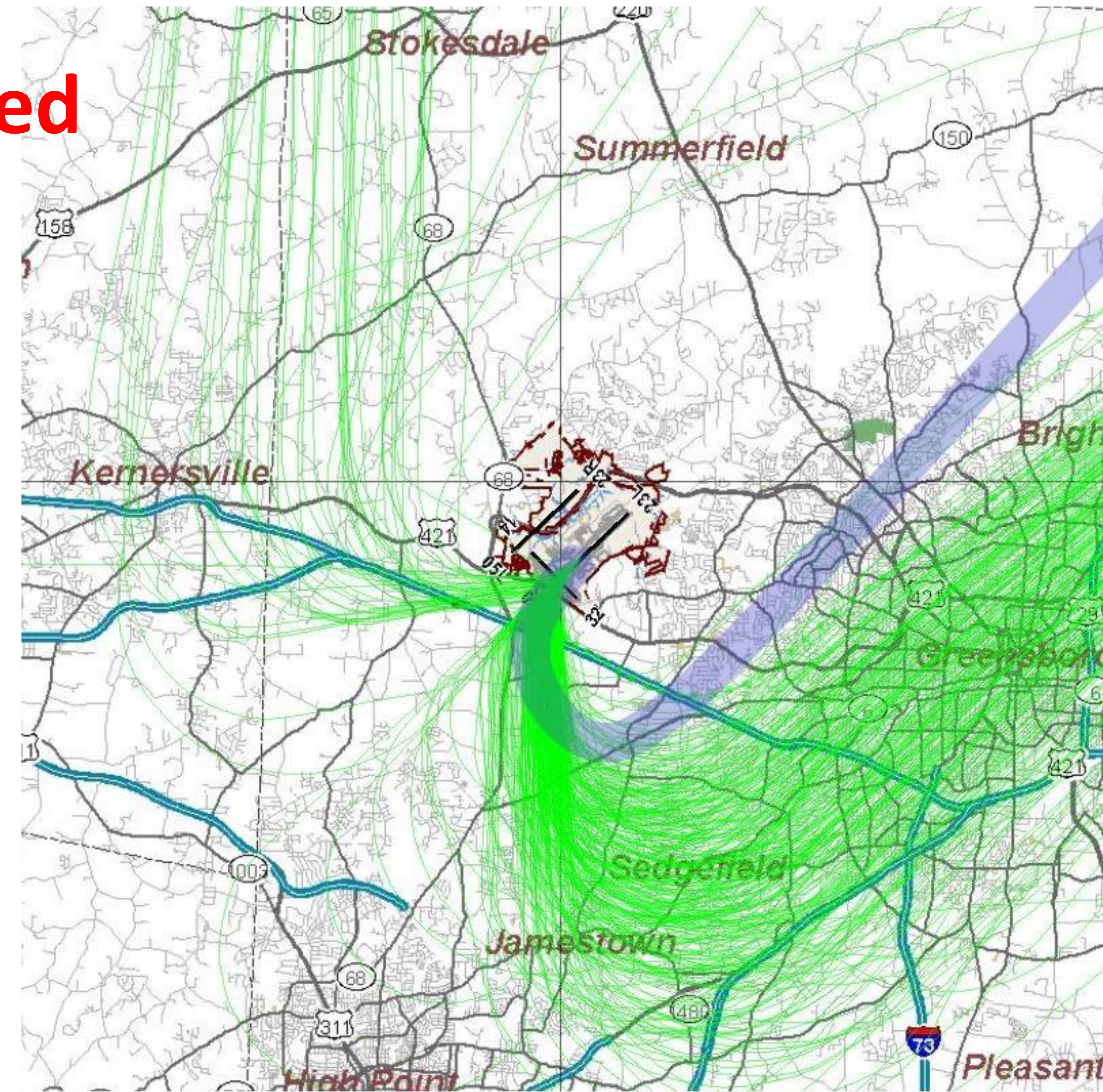




# Night Northbound Departure Corridor from Runway 23L

## Eliminate measure – not implemented

- Northbound aircraft currently follow the Highway 68 departure corridor, which is preferred
- Measure NA-4 amended to address both southbound and northbound departures



2007 NCP  
NA-6  
departure  
path

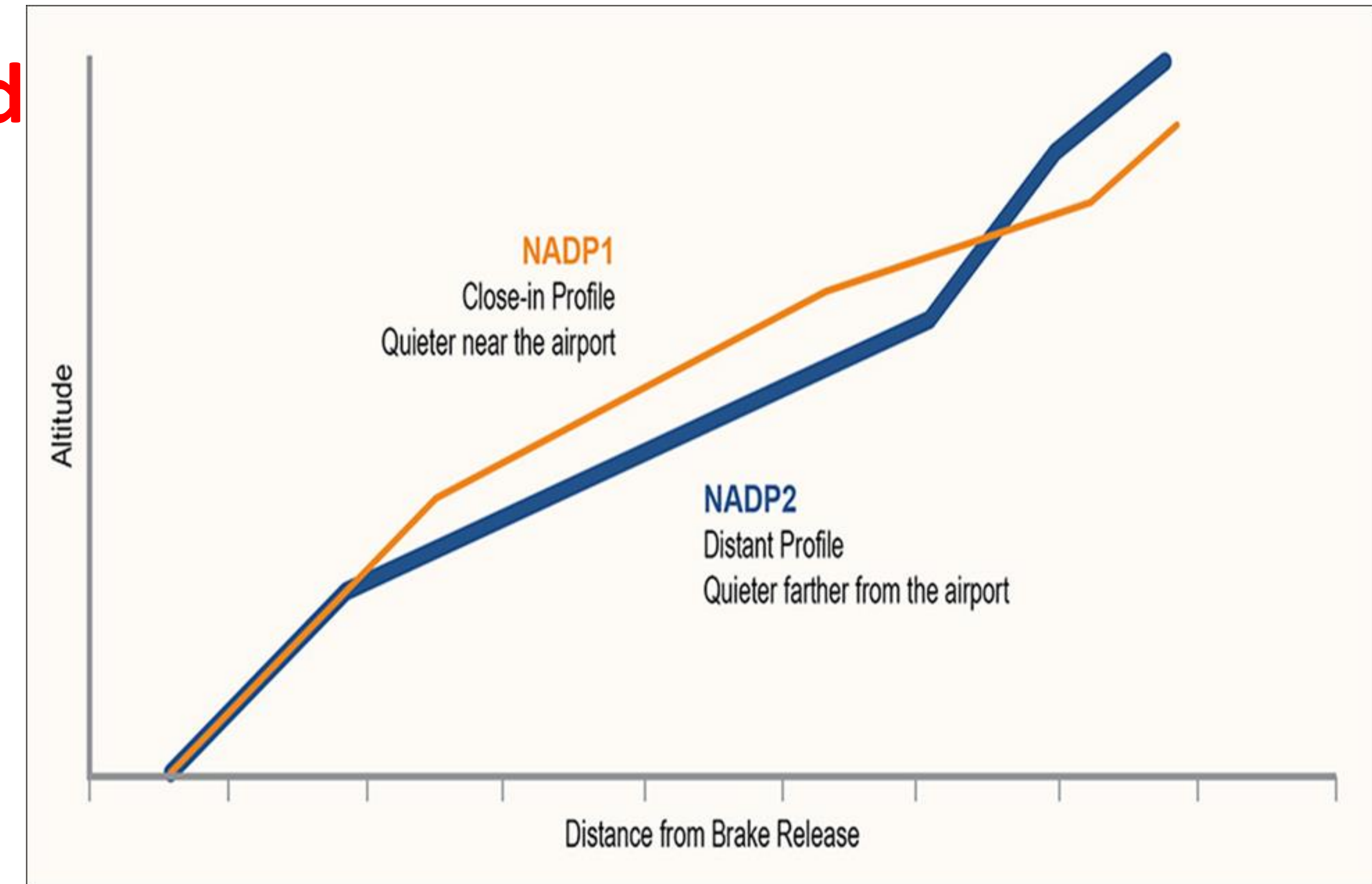
Source: PTAA monitoring system December 15, 2018 – March 31, 2019



# NA-11: Noise Abatement Departure Profiles

## Eliminate measure – not implemented

- Compliance with the “close-in” Noise Abatement Departure Profile (NADP-1) can not be determined
- NADP-1 is likely not as effective with newer generation aircraft
- Aircraft operators prefer NADP-2 as it provides a fuel savings and noise benefit



Source: Civil Air Navigation Services Organization and Airports Council International, “Managing the Impacts of Aviation Noise - A Guide for Airport Operators and Air Navigation Service Providers,” September 2015



# Land Use Measure Amendments

- Eliminate the following four land use measures:
  - LU-1: Acquire noise-sensitive properties where DNL exceeds 70 dB
    - Implemented and complete
  - LU-2: Sound insulation of noise-sensitive structure where DNL exceeds 65 dB
    - Implemented and in last phase of program
  - LU-3: Optional acquisition of aviation easements for noise-sensitive structure where DNL exceeds 65 dB – not implemented
  - LU-4: Other assistance for owners of residential property where DNL exceeds 65 dB – not implemented
- Retain one land use measure as-is:
  - LU-5: Pursue Compatible Use Zoning where DNL Exceeds 65 dB

*See Chapter 8 of Draft Report for more information*





# Part 150 Public Review

- Key Dates
  - December 8, 2020 (today): Public Workshop and Public Hearing
  - December 17, 2020: End of the public review period for the document
  - December 31, 2020: Submit Part 150 Update document to the FAA
- How to comment
  - Email to: [part150@gsoair.org](mailto:part150@gsoair.org)
  - Mail to: PTAA, 1000A Ted Johnson Parkway, Greensboro, NC 27409
  - Oral comments at public hearing (if registered)





# Questions

Related to the 2020 Part 150 Update

*Note: These questions and answers will not be included in the document submitted to the FAA*

