



Welcome!

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

Citizens Advisory Committee
Noise Compatibility Program Review Workshop
August 13, 2020



Meeting Agenda

- Welcome and introductions
- Election of CAC Chair and Vice Chair
- Noise Compatibility Program Review
- Next steps
- CAC member discussion



Piedmont Triad Airport Authority

- **Kevin Baker, Executive Director**
 - Part 150 Airport Sponsor
- **Alex Rosser, Deputy Executive Director**
 - Part 150 Program Manager
- **Suzanne Akkoush, Project Manager – Noise Program**
 - Part 150 Project Manager



Part 150 Consultant Team

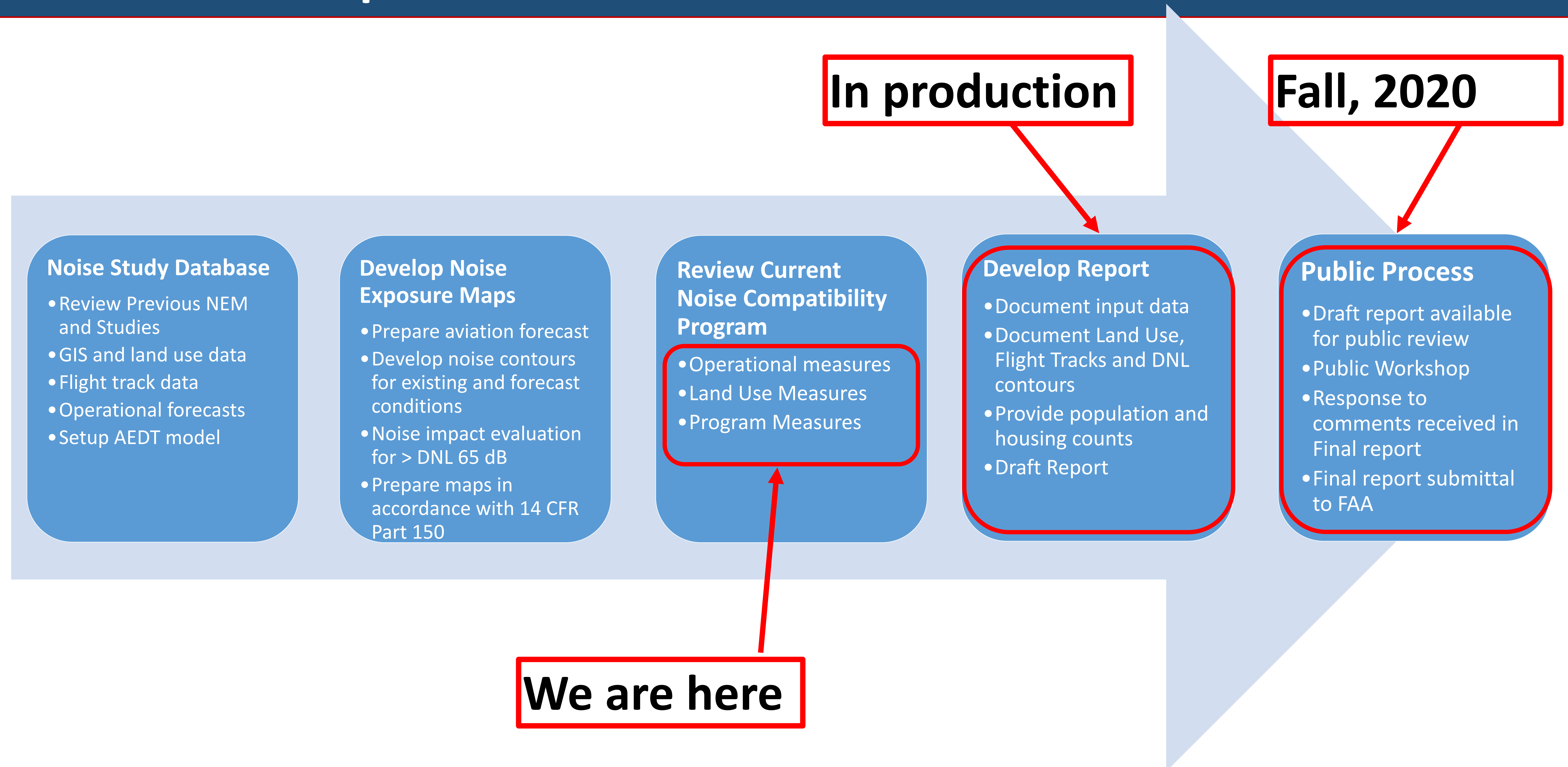
- **Gene Reindel, HMMH Vice President**
 - Part 150 Principal
- **Bob Mentzer, HMMH Principal Consultant**
 - Part 150 Project Manager
- **Ron Miller, Ron Miller & Associates**
 - Part 150 Public Outreach

CAC Members

Name	Jurisdiction	Name	Jurisdiction
Janet Mazzurco, Co-Chair	Greensboro	Ed Levick	High Point
Stan Tennant	Greensboro	Thad Juszczak	High Point
Scott McInnis	Greensboro	Keith Brown	High Point
Steve Johnson	Greensboro	Erin Randall	High Point
Alyson Best	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



Part 150 Update Status



Part 150 Update Public Process

- Three TAC/CAC meetings have been held up to this point
 - First held in June 2019
 - Second held in October 2019
 - Third held virtually in May 2020
- First Public Workshop was June 27, 2019
- Second Public Workshop will present Study results in fall 2020
- Presentations for all prior meetings available at <https://ptipart150update.com/public-outreach/>

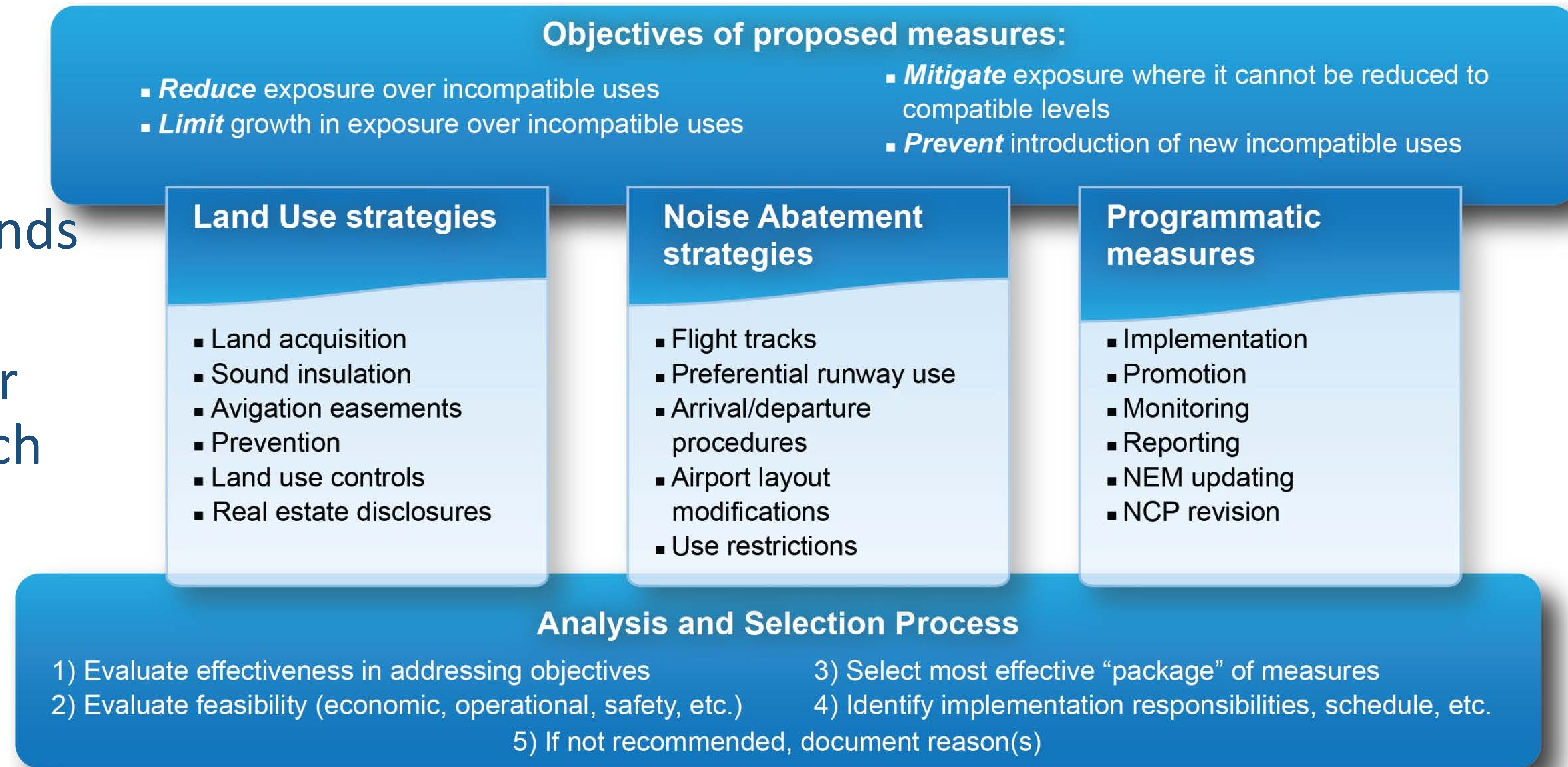


Noise Compatibility Program Overview



Noise Compatibility Program (NCP) overview

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



PTI 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

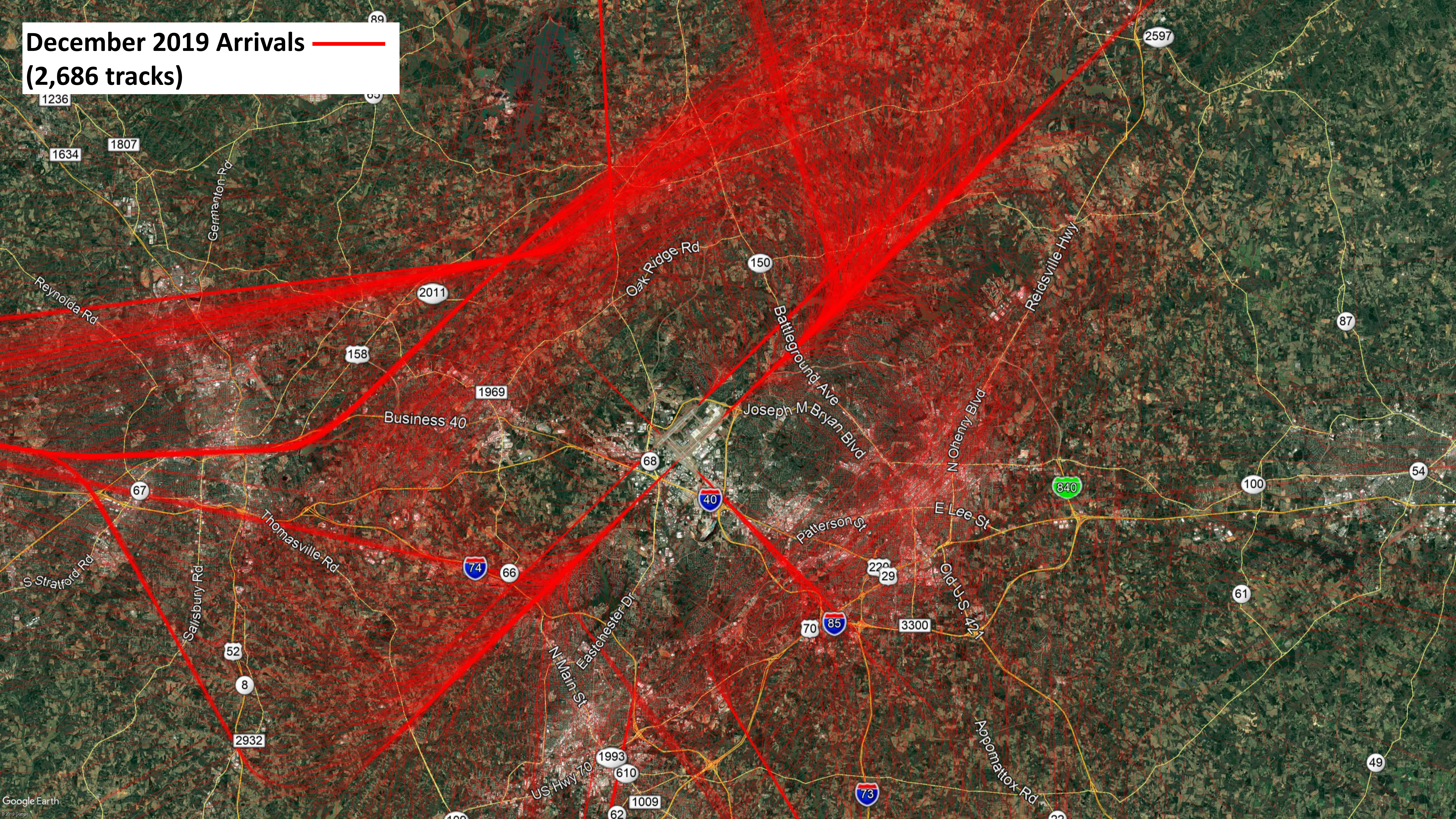
Note: There is no Noise Abatement Measure number 7 since it was included in Noise Abatement Measure number 5 during the course of the original study.

** - Approved for further study.*

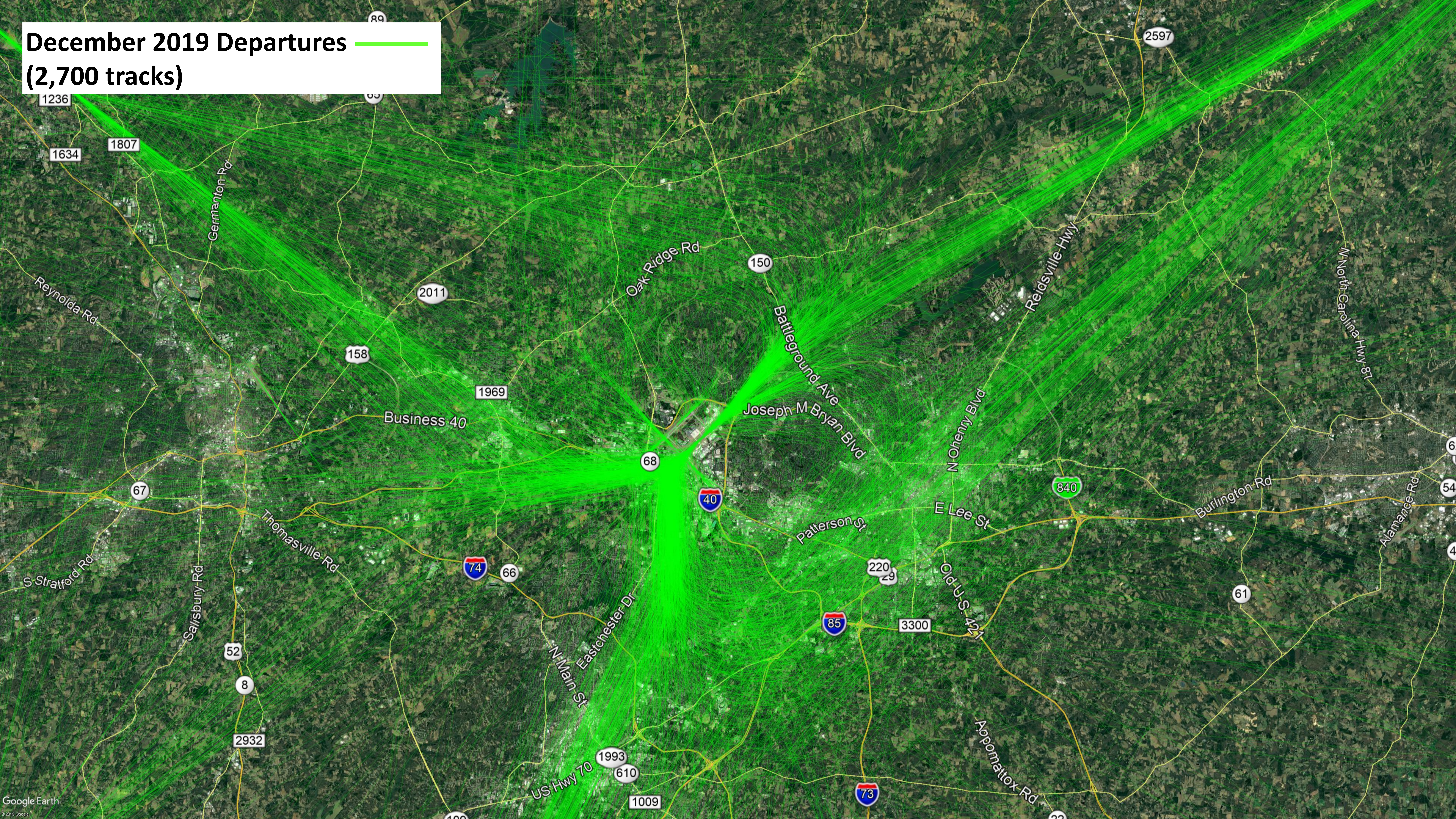
*** - Approved as voluntary measures subject to traffic, weather, and airspace safety and efficiency.*



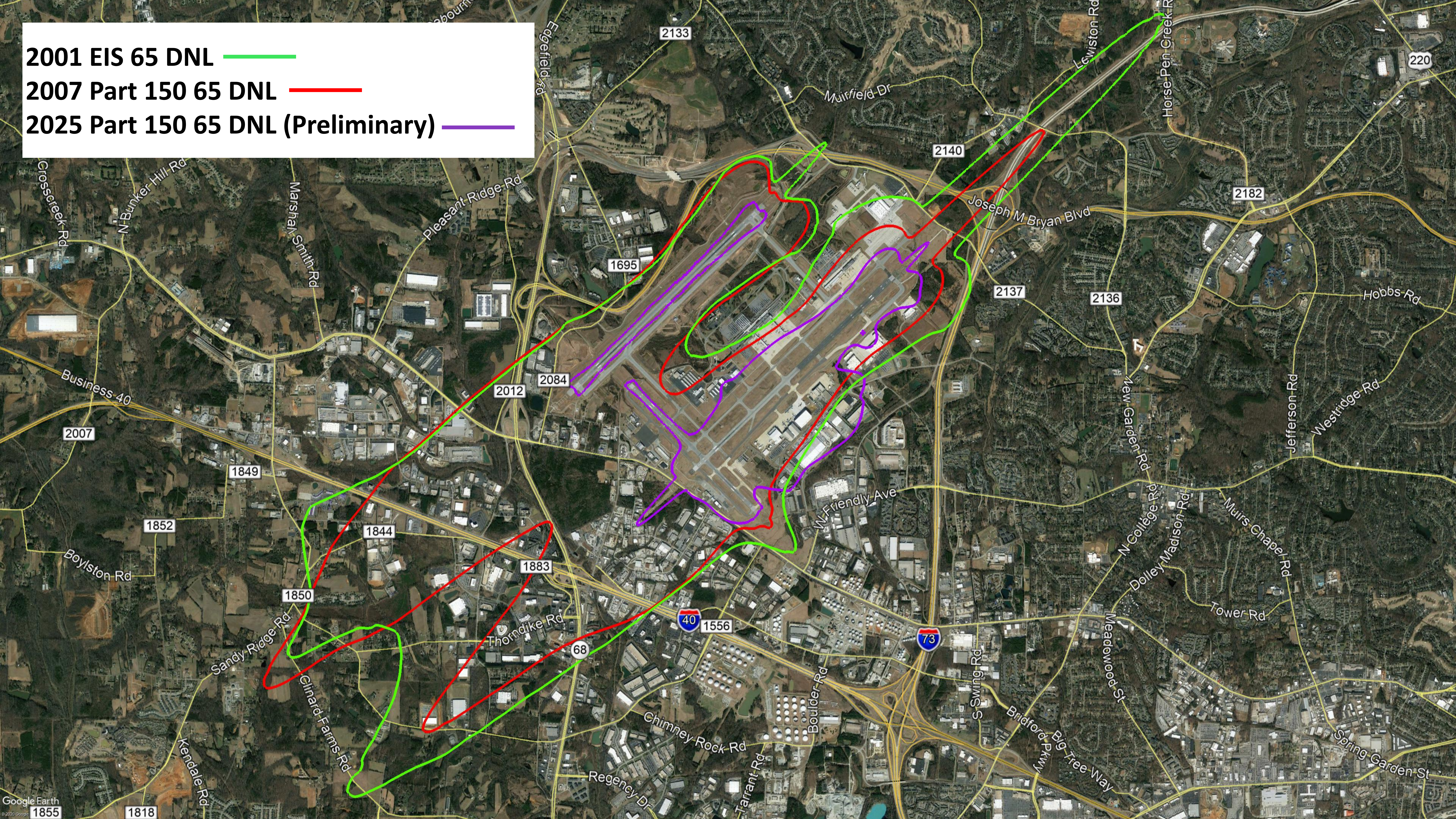
December 2019 Arrivals
(2,686 tracks)



December 2019 Departures
(2,700 tracks)



2001 EIS 65 DNL —
2007 Part 150 65 DNL —
2025 Part 150 65 DNL (Preliminary) —



Preliminary Noise Model Results – Land Use

- Preliminary 65 DNL contours have no non-compatible land uses
- No DNL justification for additional NCP measures

Noise Level, 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

Existing Noise Compatibility Program Review

Noise Abatement (NA) Measures – 12 FAA-approved measures



NA-1: Evaluate Noise Barriers

*“Under this measure, the Piedmont Triad Airport Authority (PTAA) would adopt a policy to **evaluate potential benefits of noise barriers** to control off-airport noise levels from future airport facilities. The policy would commit the PTAA to work with tenants to have the tenant install noise barriers if the PTAA considers the use of a barrier appropriate.”*

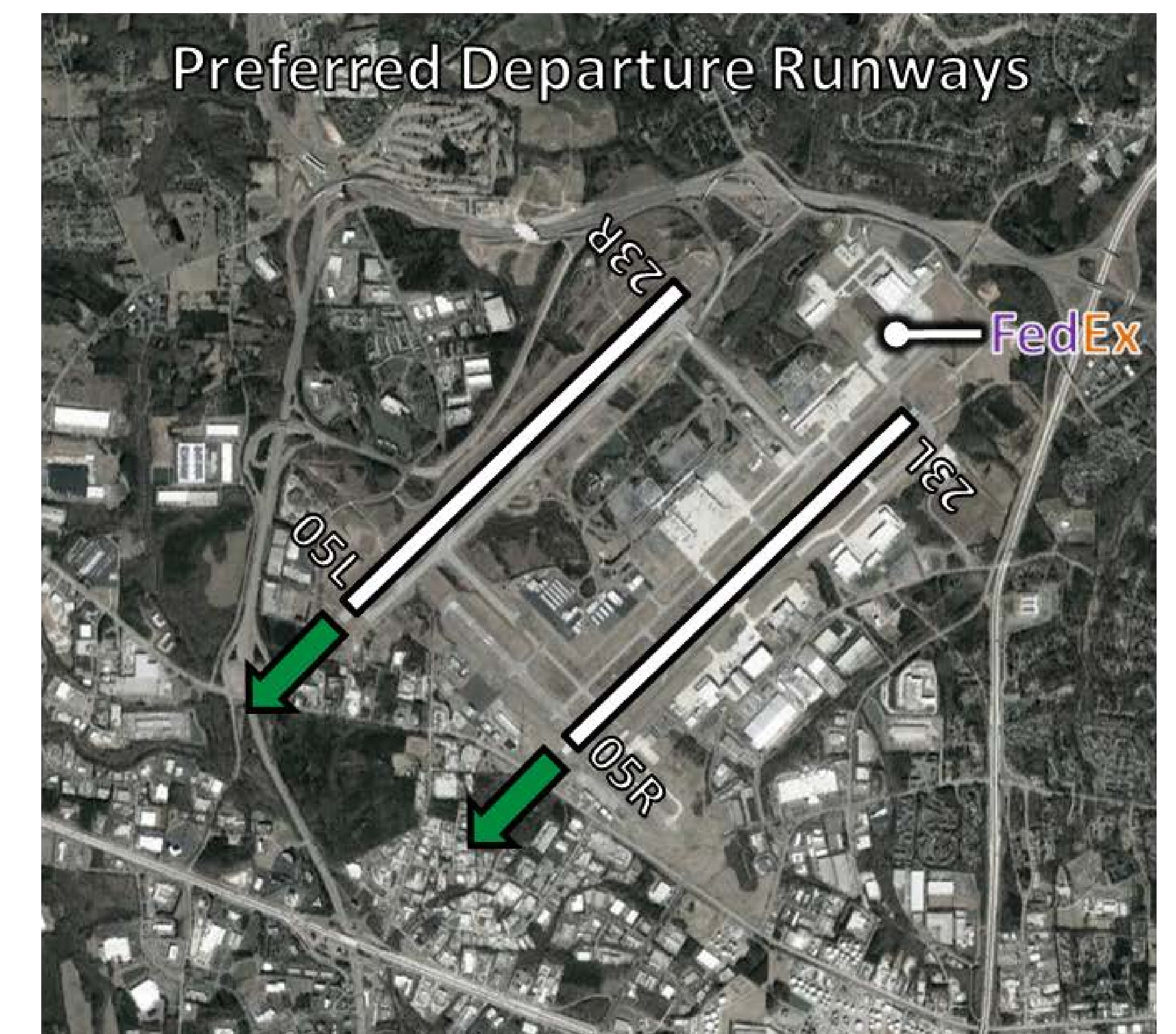
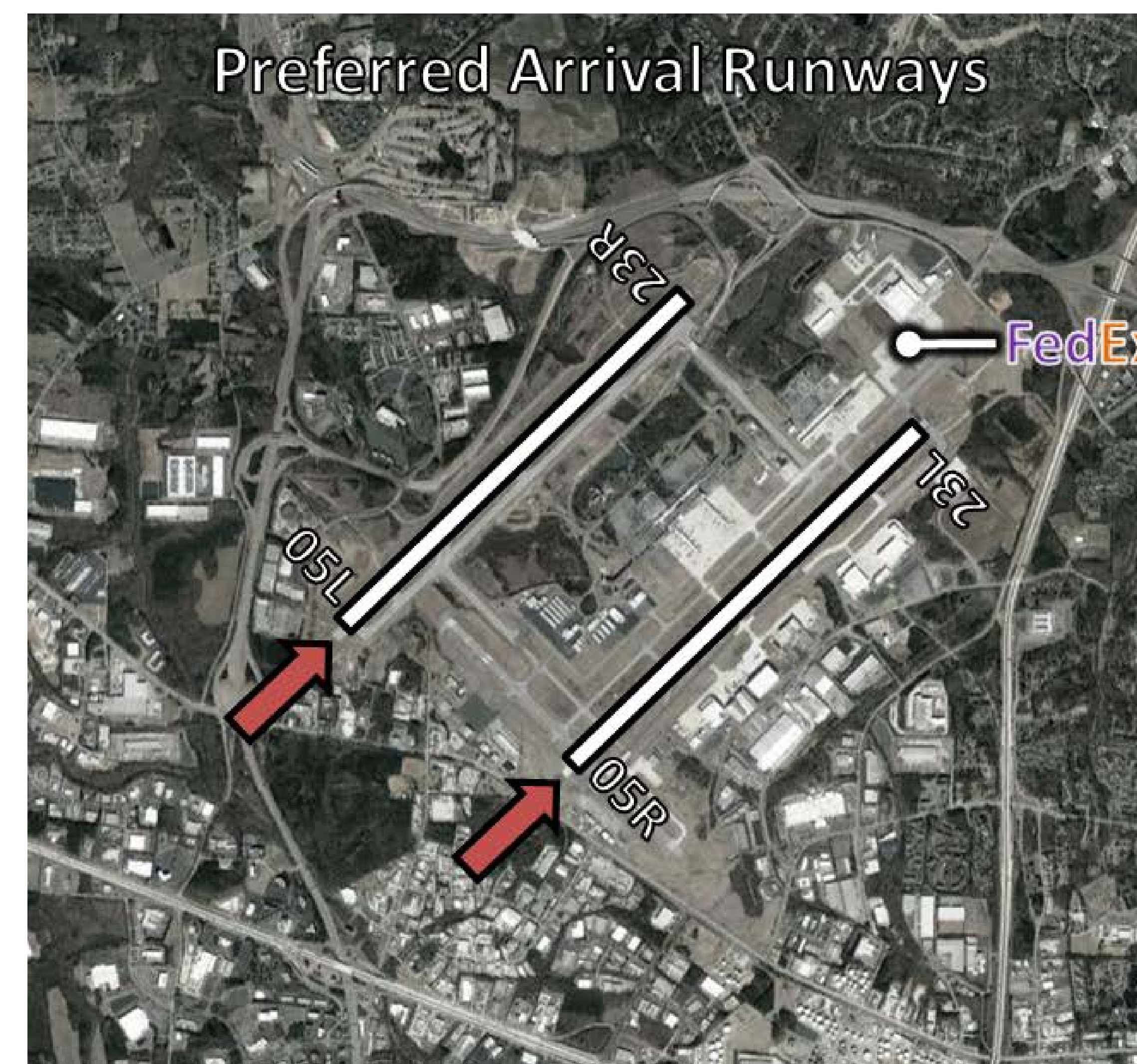
- **Implementation status:** not implemented; engine run-up policy prohibits engine run-ups between 11pm and 5am
- **Compliance:** not applicable



NA-2: Preferred Night Runway Use

*“When new runway 5L/23R is available for use 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. To the extent feasible, equal numbers of aircraft shall use the left and right runways for arrivals. Runway use assignments for departures shall be as established by Proposed Measure NA-3.”*

- **Implementation status:** implemented head-to-head operations; current hub activity levels do not require simultaneous use of the parallel runways, so equal runway use for arrivals not implemented
- **Compliance:** 75% hub arrivals and 92% hub departures comply



NA-2: Preferred Night Runway Use

- Current hub arrival operations generally occur between 11:00 pm and 1:00 am and hub departure operations between 3:00 am and 4:30 am.
- Only FedEx flights occurring on hub nights within an hour or two of these time windows were counted as “Sort” operations.

Runway	Number of Departures	Departure Percentage	Number of Arrivals	Arrival Percentage
5L or 5R	38	8%	353	75%
23L or 23R	463	92%	114	24%
14 or 32	0	0%	2	0%
Total	501	100%	469	100%

Source: GSO NOMS December 15, 2018 – March 31, 2019

NA-3: Night Runway Use Assignments

“When new runway 5L/23R is available for use during the nighttime hub operations, designate the following pattern of runway use...”

- **Note:** the measure included six parts to differentiate runway use between retrofitted Stage 3 aircraft and the rest of the fleet. Retrofitted Stage 3 commercial aircraft no longer operate in the U.S.
- **Implementation status:**
 - Parts 1, 3 and 6 apply to retrofitted Stage 3 aircraft – not applicable
 - Parts 2 and 4 apply to simultaneous use of the parallel runways – not applicable
 - Part 5 applies to aircraft departing Runway 23R – addressed with NA-5
- **Compliance:** not applicable

NA-4: Night Southbound Departure Corridor from Runway 23L

*“Promptly after FAA approval of this measure, establish a new nighttime departure procedure for aircraft departing runway 23L for southern destinations so that the **initial flightpath is in a southerly direction, east of and parallel to NC Highway 68**. Departing aircraft shall initiate the left departure turn onto this flight path as soon as practicable. Aircraft may make a transition to another heading after reaching 4,000 feet MSL.”*

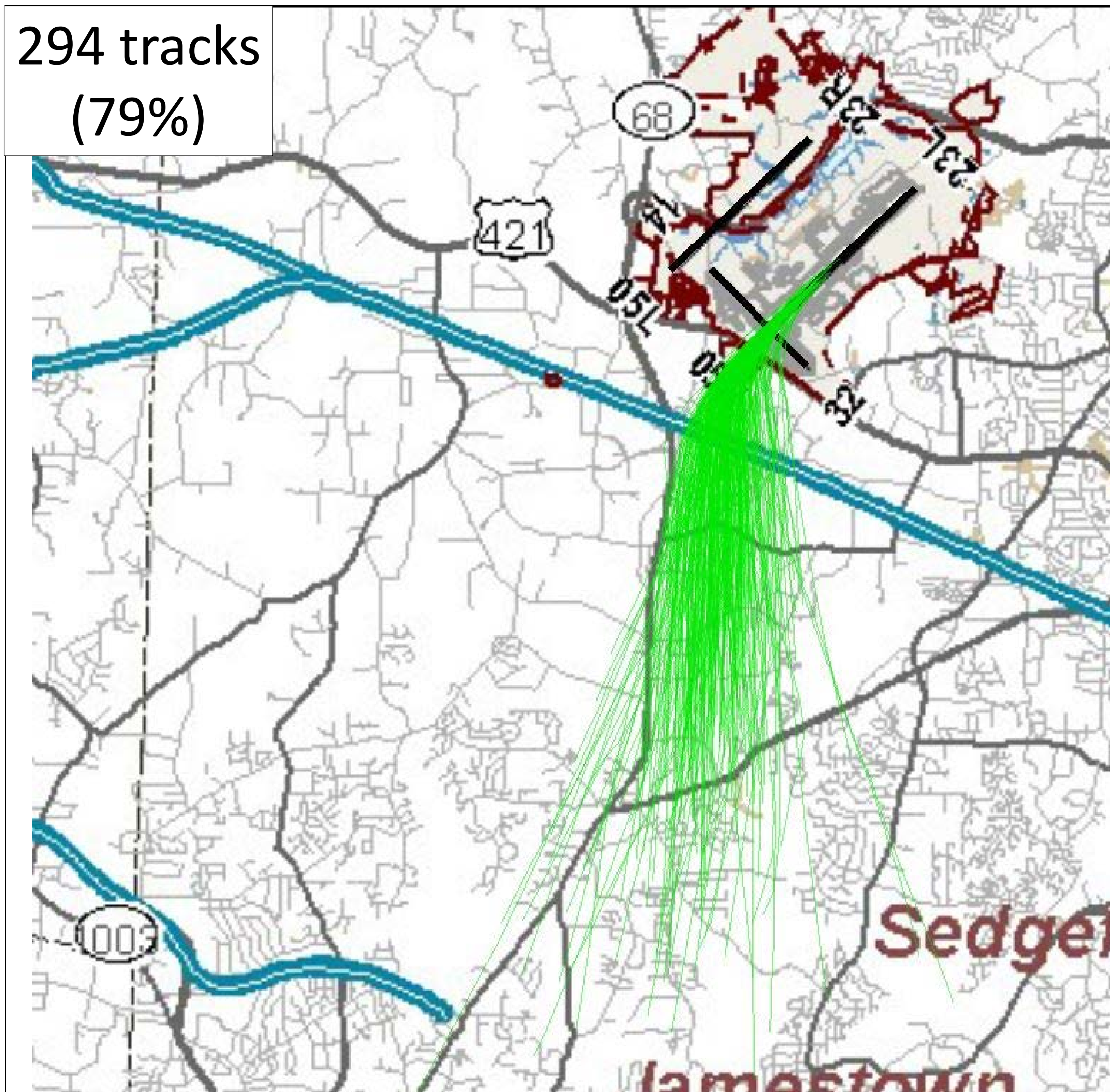
- **Implementation status:** implemented
- **Compliance:** 79% of all Runway 23L nighttime southbound departures turn left to be east of and parallel to NC Highway 68; 93% of these reach 4,000 feet MSL before transitioning to another heading



NA-4: Night Southbound Departure Corridor from Runway 23L

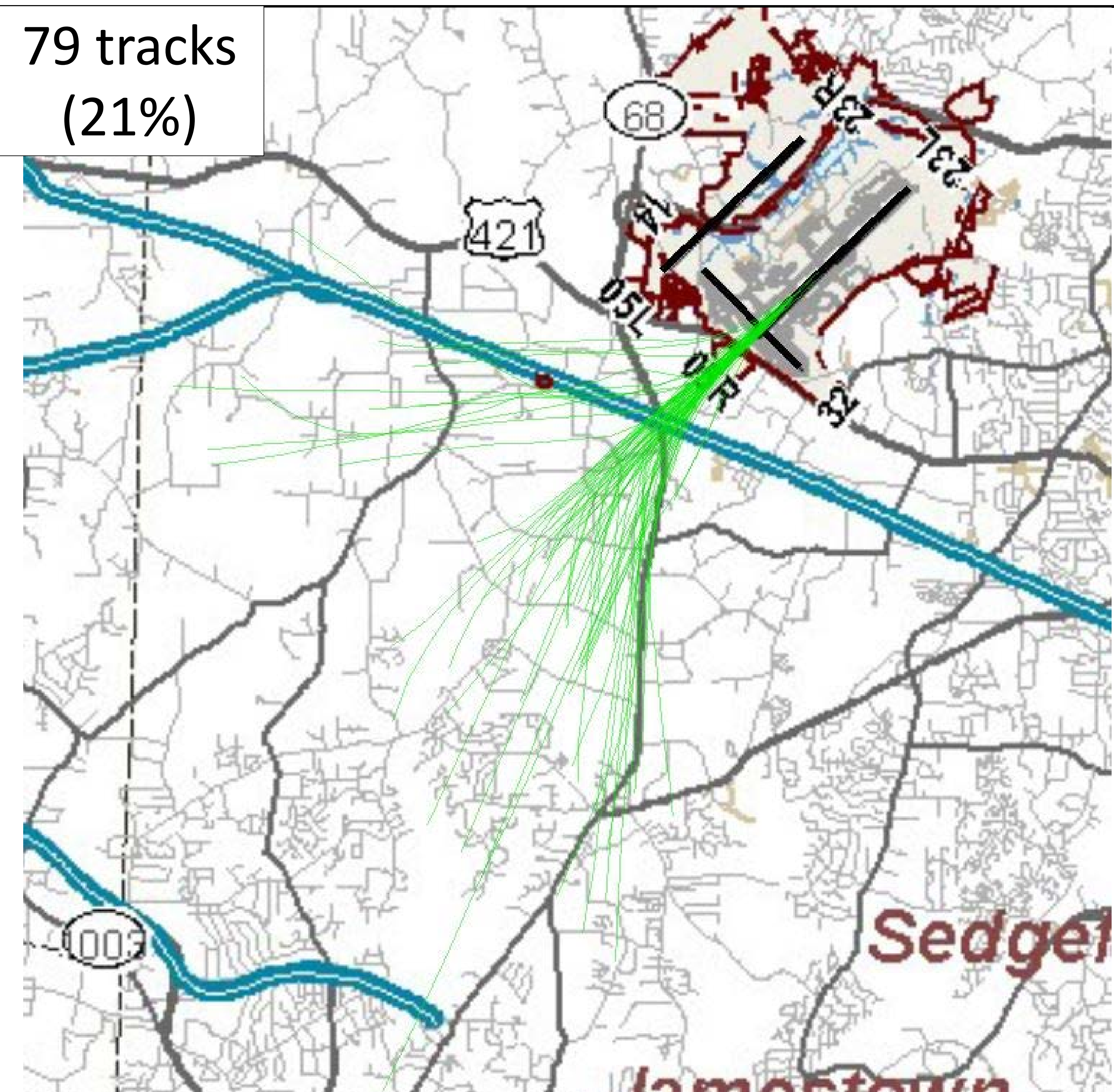
Compliant Flight Tracks

294 tracks
(79%)



Non-compliant Flight Tracks

79 tracks
(21%)



Source: GSO NOMS December 15, 2018 – March 31, 2019

NA-3 Part 5 and NA-5: Night Departure Procedures from Runway 23R

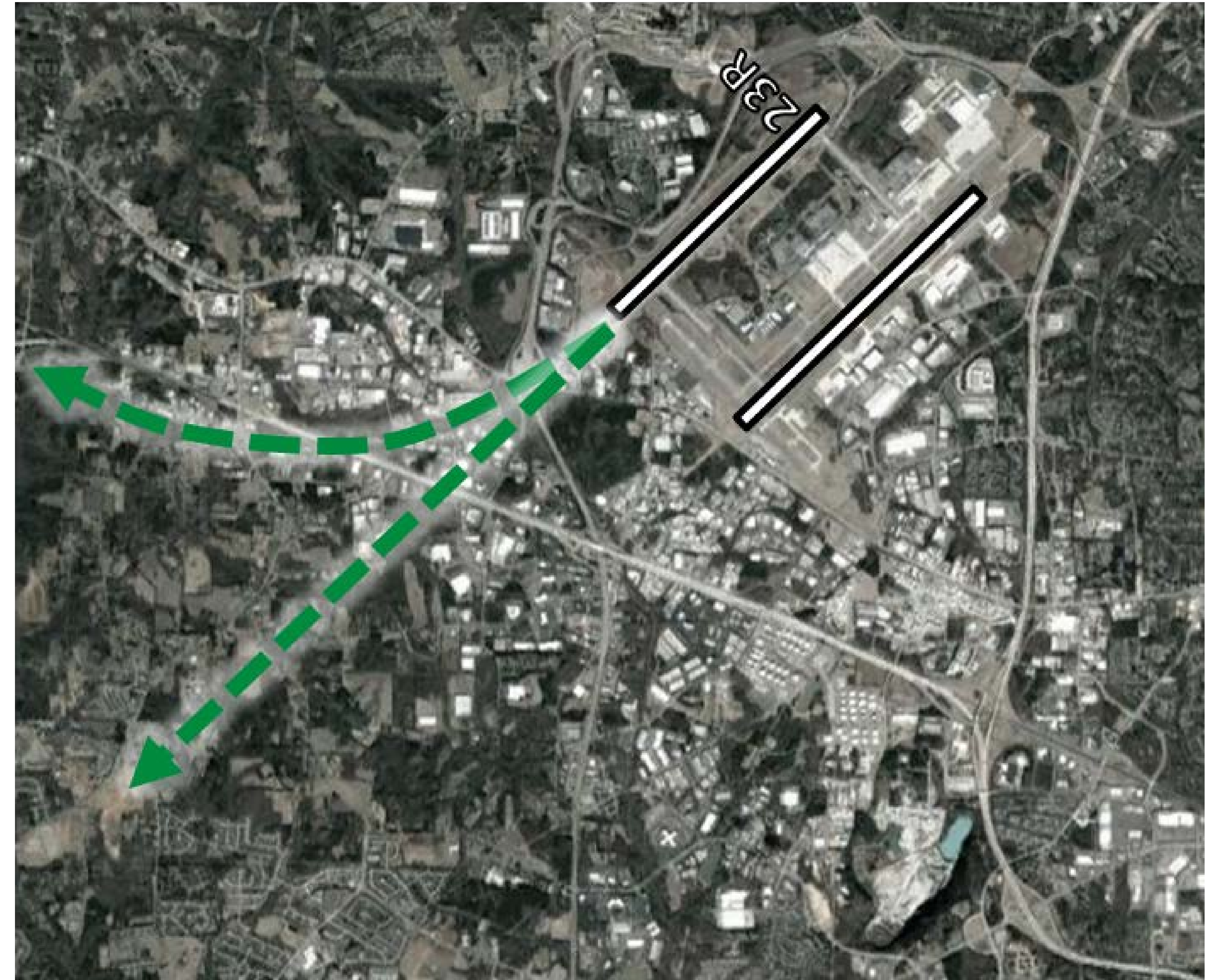
NA-5:

“Aircraft departing runway 23R at night and turning right shall initiate the right departure turn as soon as practicable.”

NA-3, Part 5:

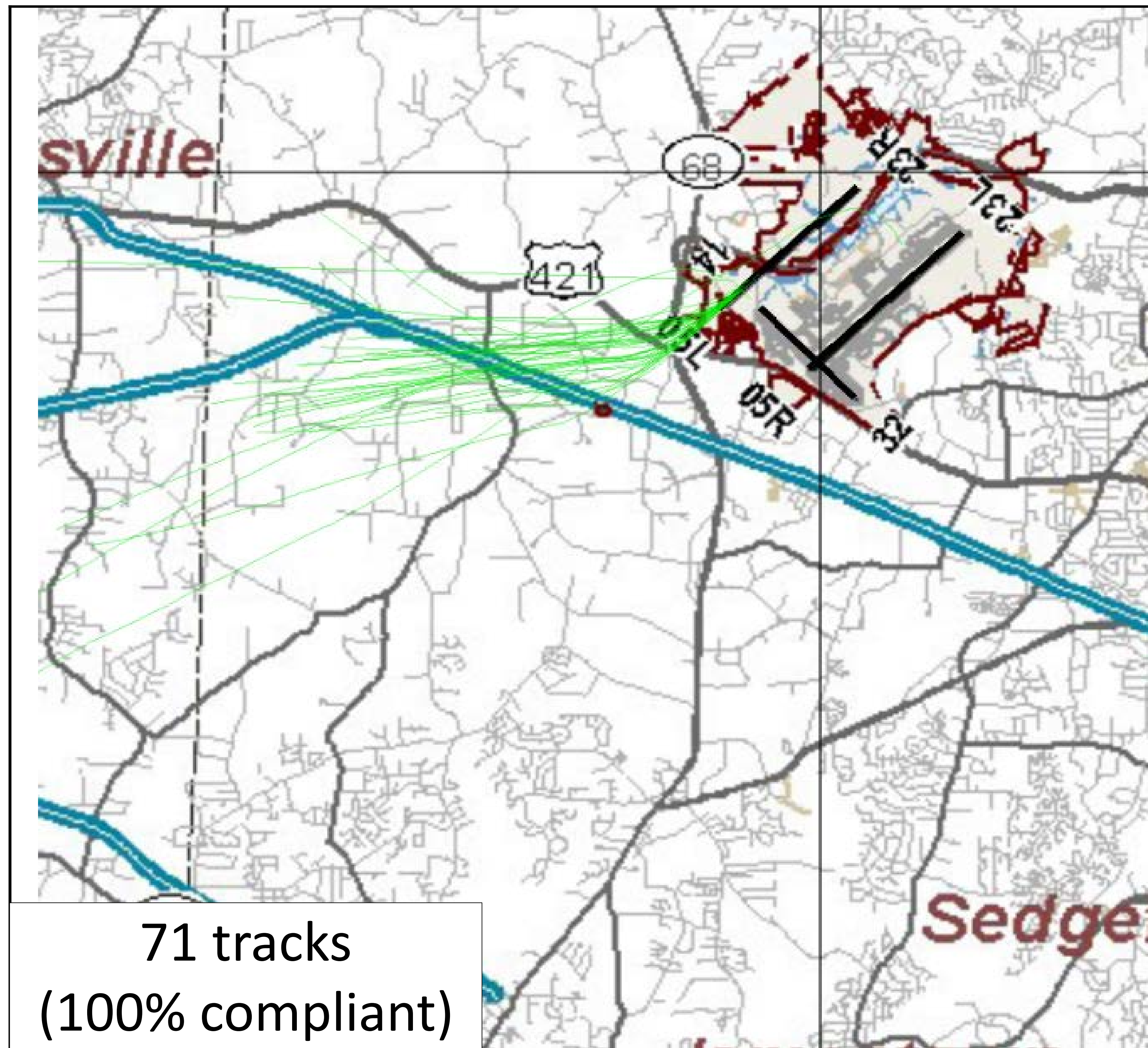
“Aircraft departing on runway 23R and needing to make a transition to a more southerly heading should delay the transition until they have reached an altitude of 4,000 MSL”

- **Implementation status:** implemented (NA-5); not implemented (NA-3, Part 5)
- **Compliance:** 100% (NA-5); 0% (NA-3, Part 5)

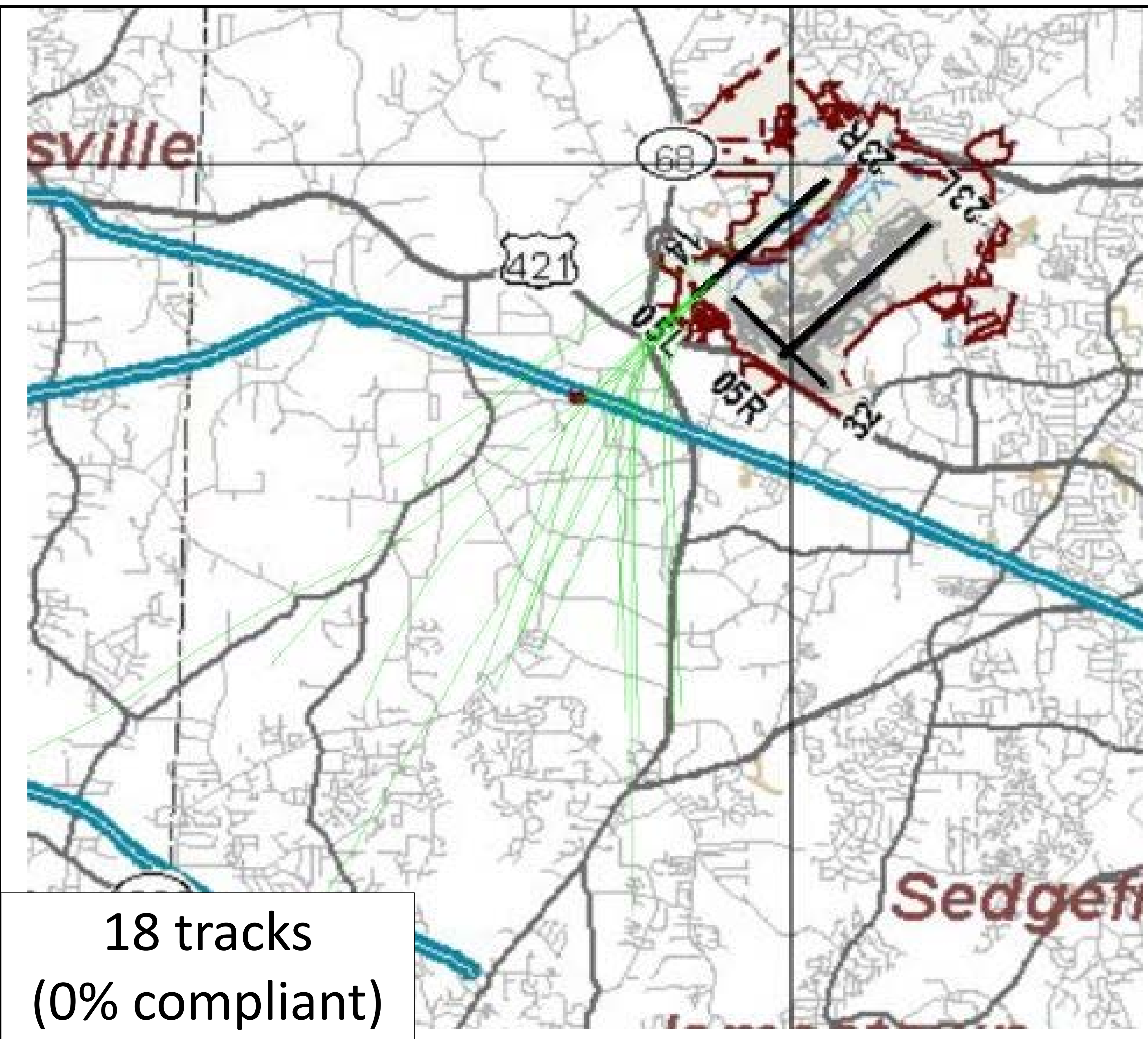


NA-3 Part 5 and NA-5: Night Departure Procedures from Runway 23R

NA-5 Flight Tracks



NA-3 Part 5 Flight Tracks

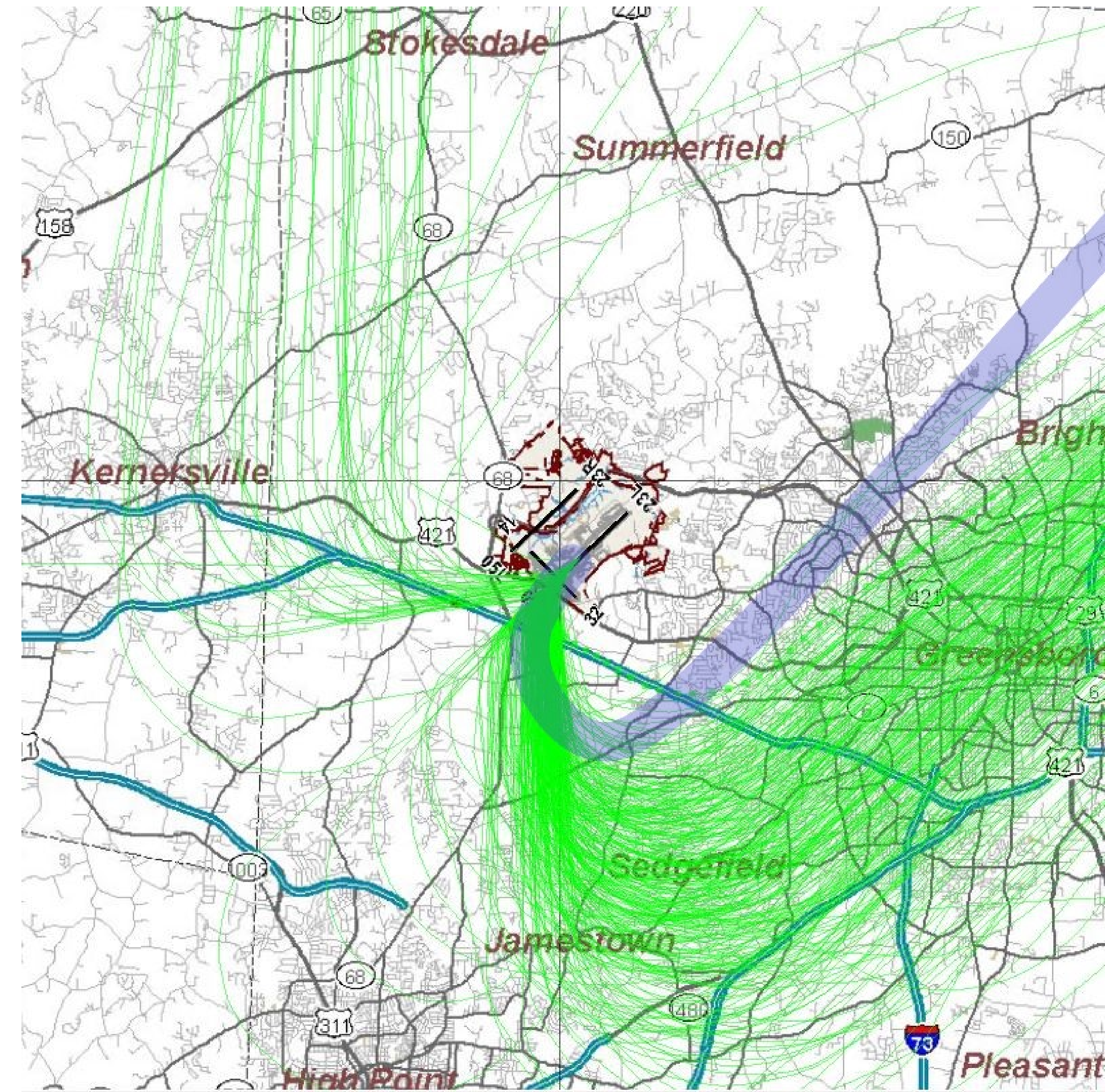


Source: GSO NOMS December 15, 2018 – March 31, 2019

NA-6: Night Departure Procedures from Runway 23L

“Promptly after FAA approval of this measure, establish a new nighttime departure procedure for aircraft departing from runway 23L to northern destinations to initiate a left departure turn to a northeasterly heading as soon as practicable.”

- **Implementation status:** not implemented
- **Compliance:** not applicable
- Of the operations that turned left the majority appear to follow the initial flight path parallel to and east of NC Highway 68, as prescribed in NA-4, as opposed to executing an immediate turn to a northeasterly heading.

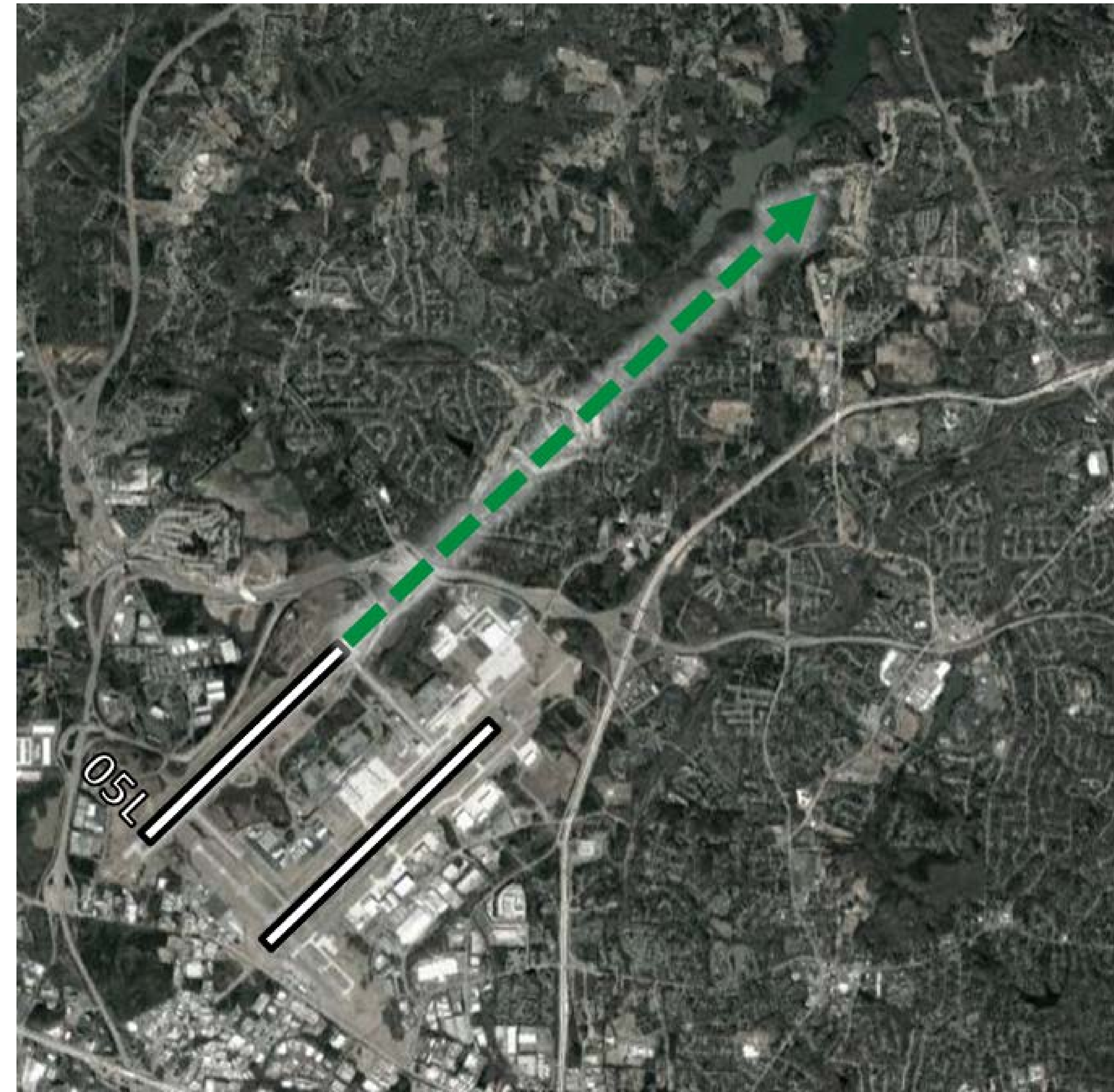


Source: GSO NOMS December 15, 2018 – March 31, 2019

NA-8: Departures from Runway 5L

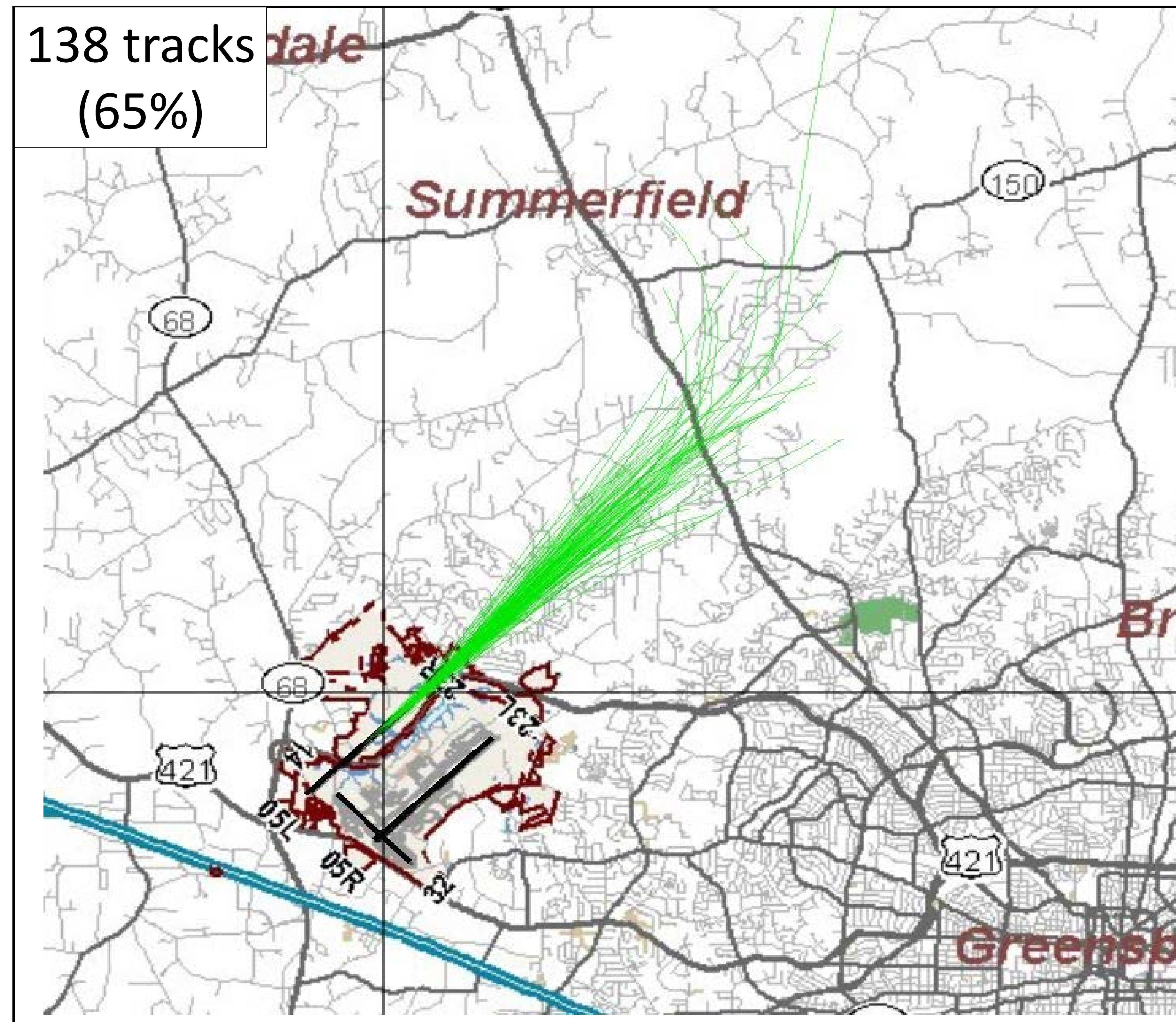
*“When runway 5L/23R is available for use, establish a procedure to **delay initial turns from runway heading** by aircraft departing on runway 5L until such aircraft reach an altitude of 4,000 feet MSL.”*

- **Implementation status:** partially implemented
- **Compliance:** 65% of jets currently delay initial turn until reaching 4,000 feet MSL

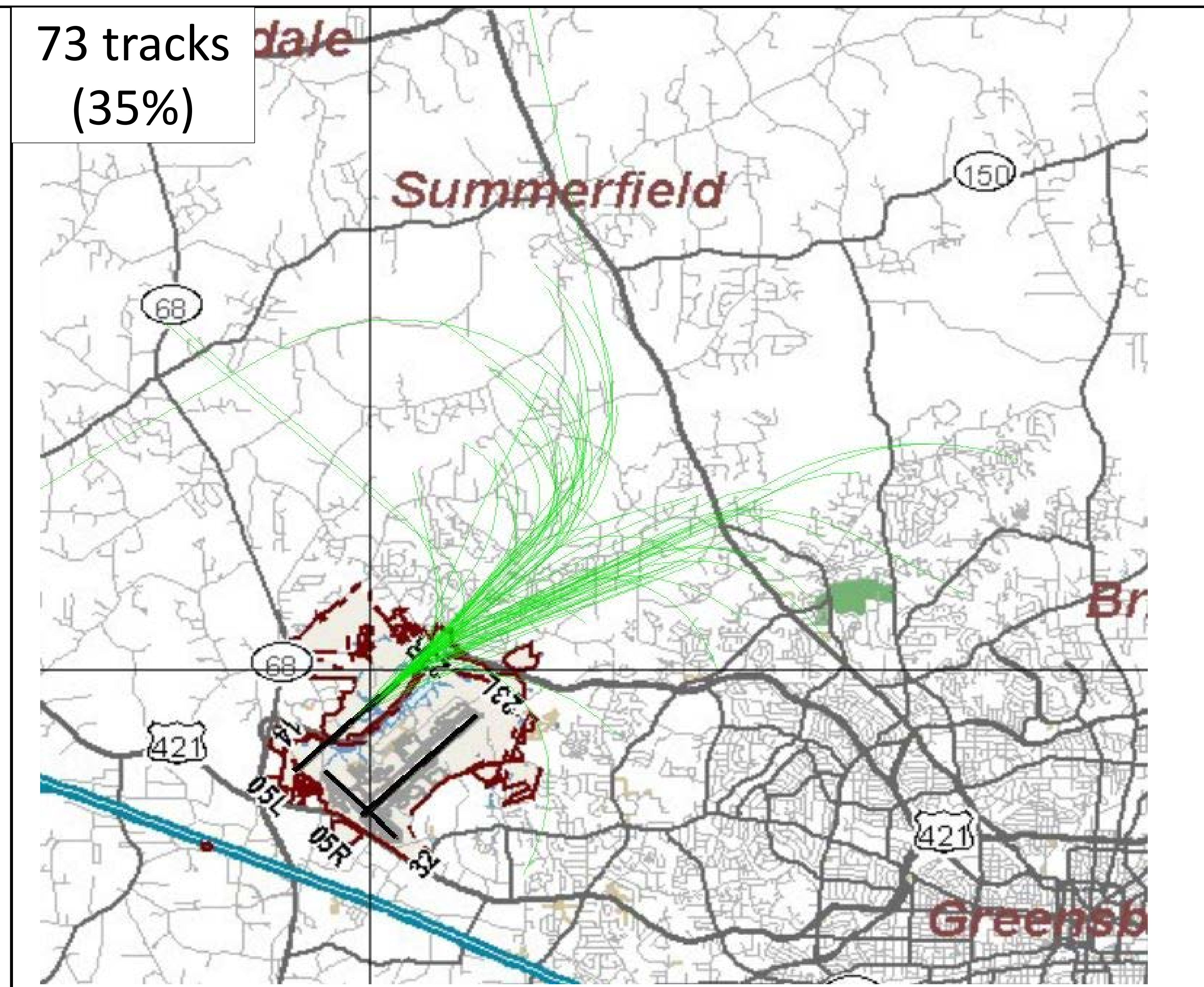


NA-8: Departures from Runway 5L

Compliant Flight Tracks



Non-compliant Flight Tracks



Source: Runway 5L jet departures from GSO NOMS December 15, 2018 – March 31, 2019

NA-9: Departures from Runway 5R

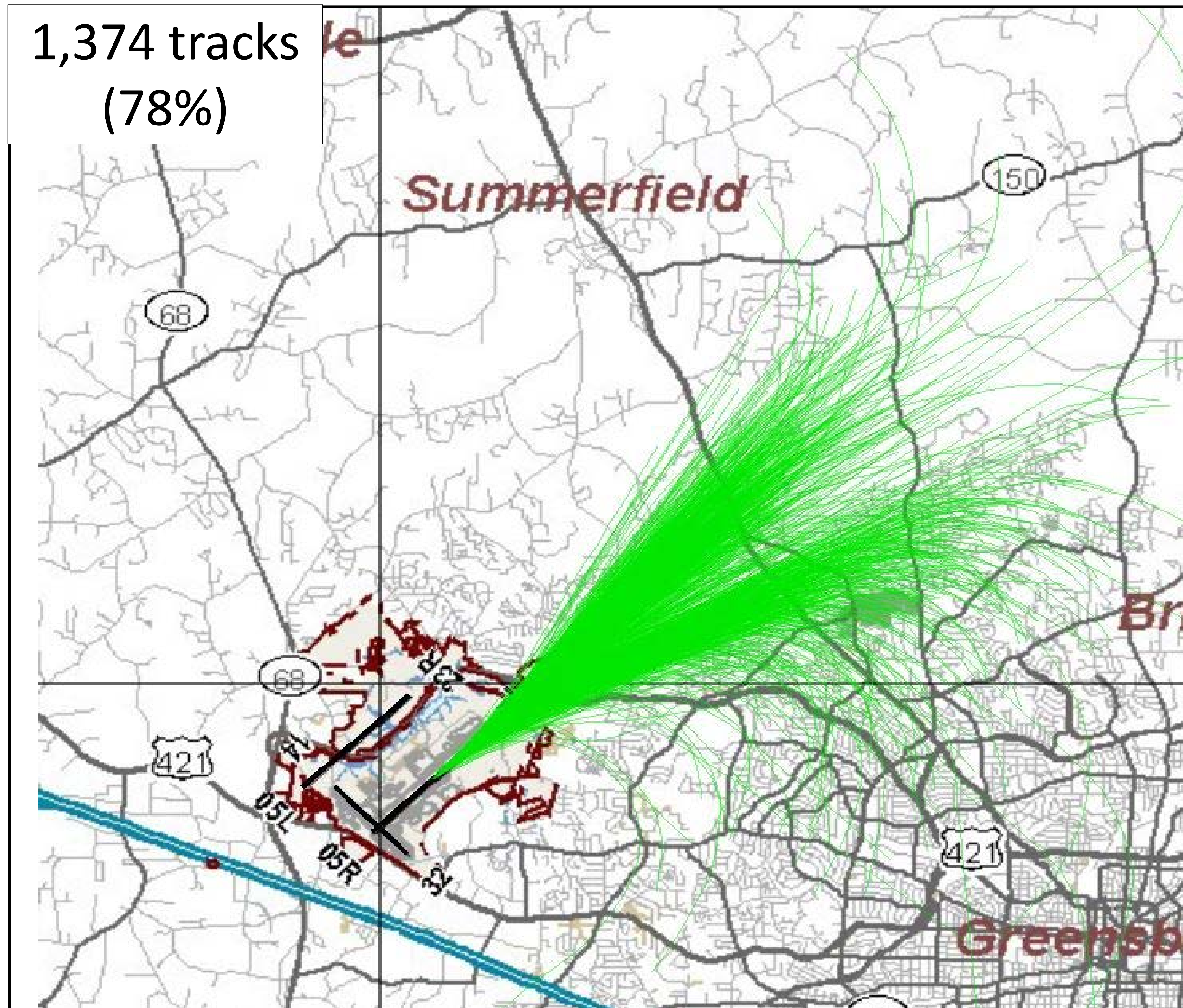
*“Revise the existing procedure to **delay initial left turns from runway heading** by aircraft using runway 5R until such aircraft reach an altitude of 4,000 MSL.”*

- **Implementation status:** partially implemented
- **Compliance:** 78% of jets currently delay initial turn until reaching 4,000 feet MSL

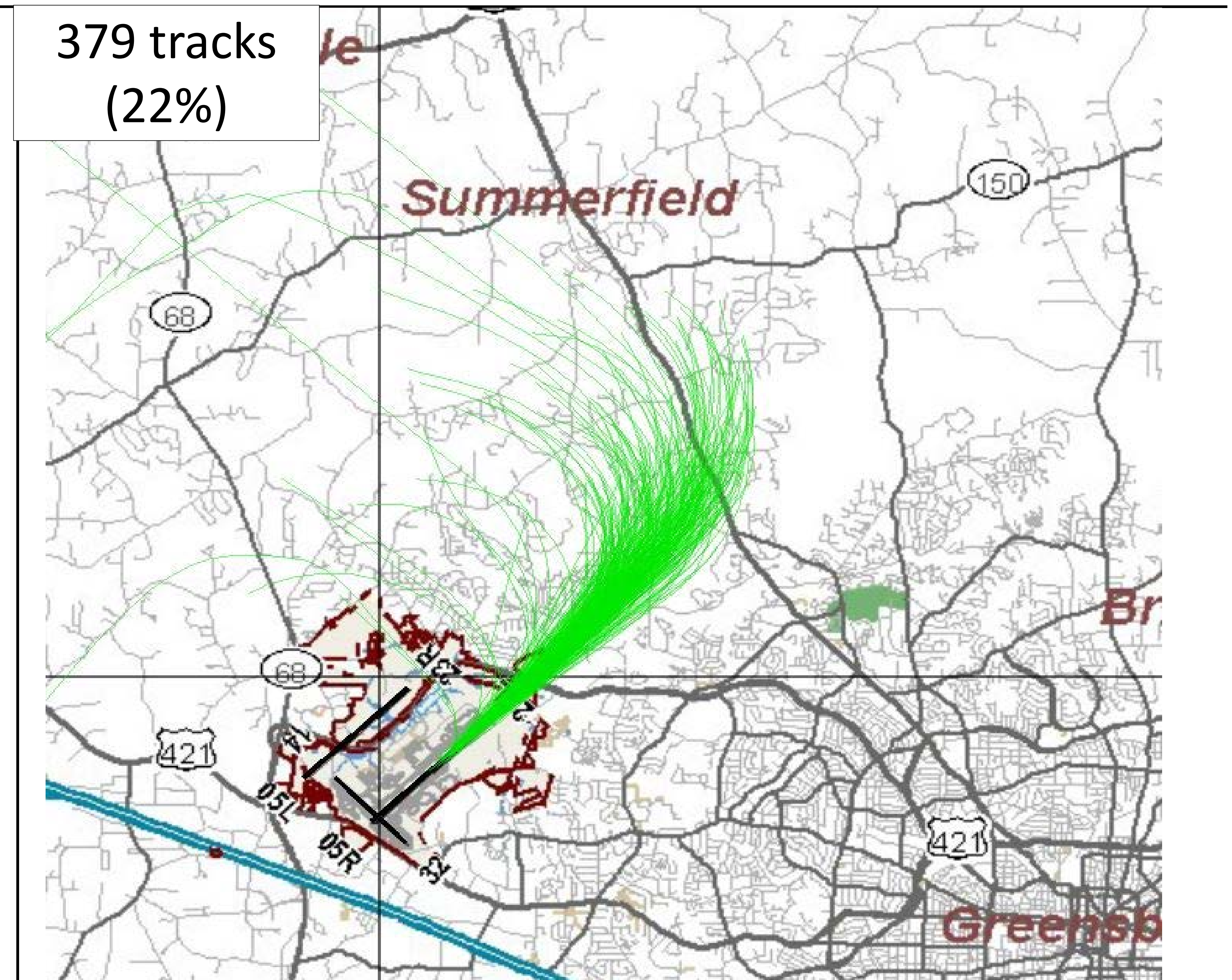


NA-9: Departures from Runway 5R

Compliant Flight Tracks



Non-compliant Flight Tracks



Source: Runway 5R jet departures from GSO NOMS December 15, 2018 – March 31, 2019

NA-10: Restrictions on Use of Auxiliary Power Units

“Under this measure, the Piedmont Triad Airport Authority (PTAA) will adopt a policy for future airport facilities, and for new tenants after FAA approval of this measure, that would require that auxiliary power units, either on-board units or ground units, except for units in use for engine starts, not produce night-time noise levels in off-airport residential neighborhoods that exceed the ambient noise level at those locations.”

- **Implementation status:** partially implemented – formal policy not adopted
- **Compliance:** 16 of 20 jet bridges will have ground power units (GPU) by the end of 2020, allowing aircraft to shut down their APUs at the gate

Ground Power Unit (GPU) at Gate 43

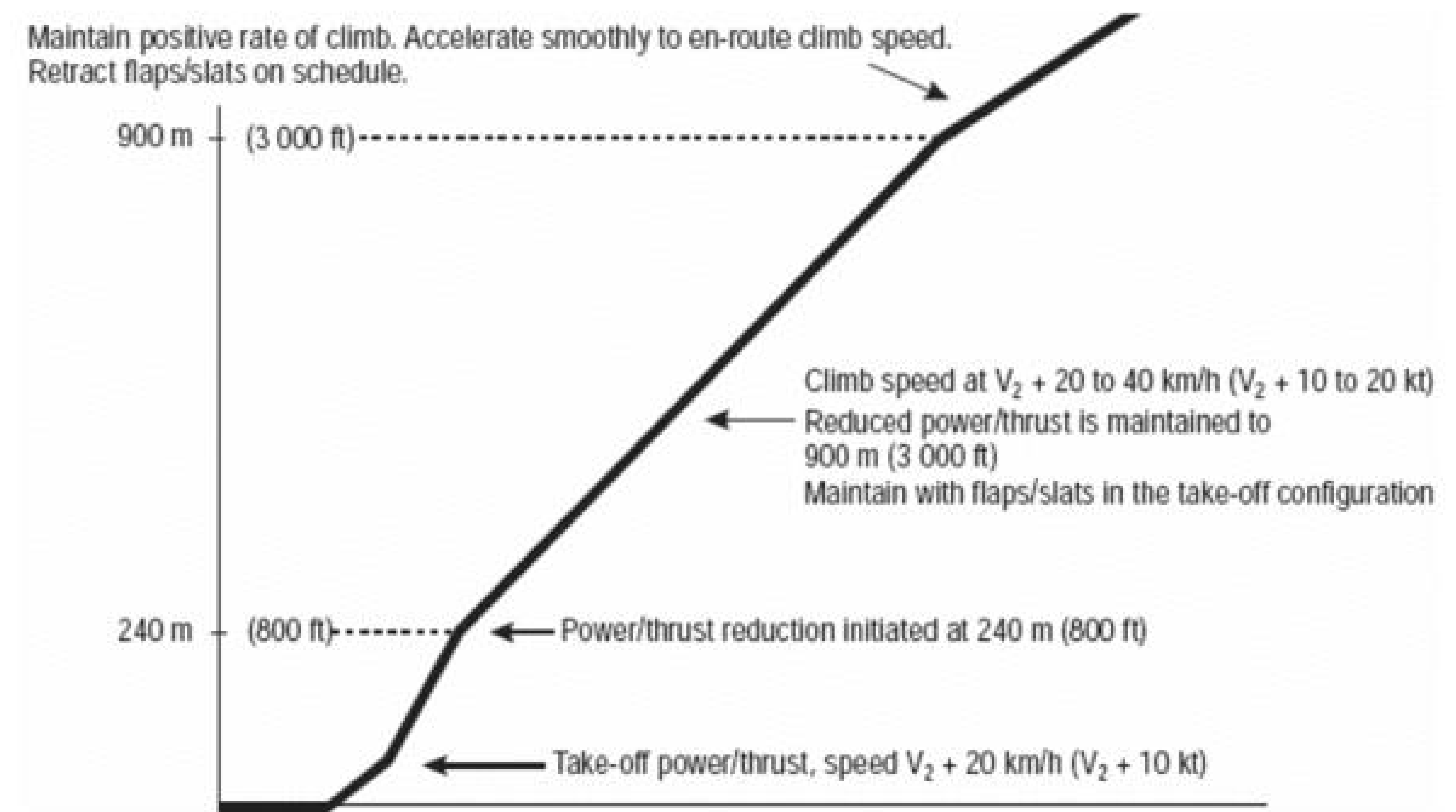


NA-11: Noise Abatement Departure Profiles

“Under this measure, the Piedmont Triad Airport Authority (PTAA) designates the Close-in Noise Abatement Departure Profile (NADP) for jet departures on runways 5L and 5R beginning with the opening for use of new runway 5L/23R.”

- **Implementation status:** not implemented; likely not as effective with the newer generation aircraft
- **Compliance:** not applicable

Noise Abatement Departure Profile (NADP-1)



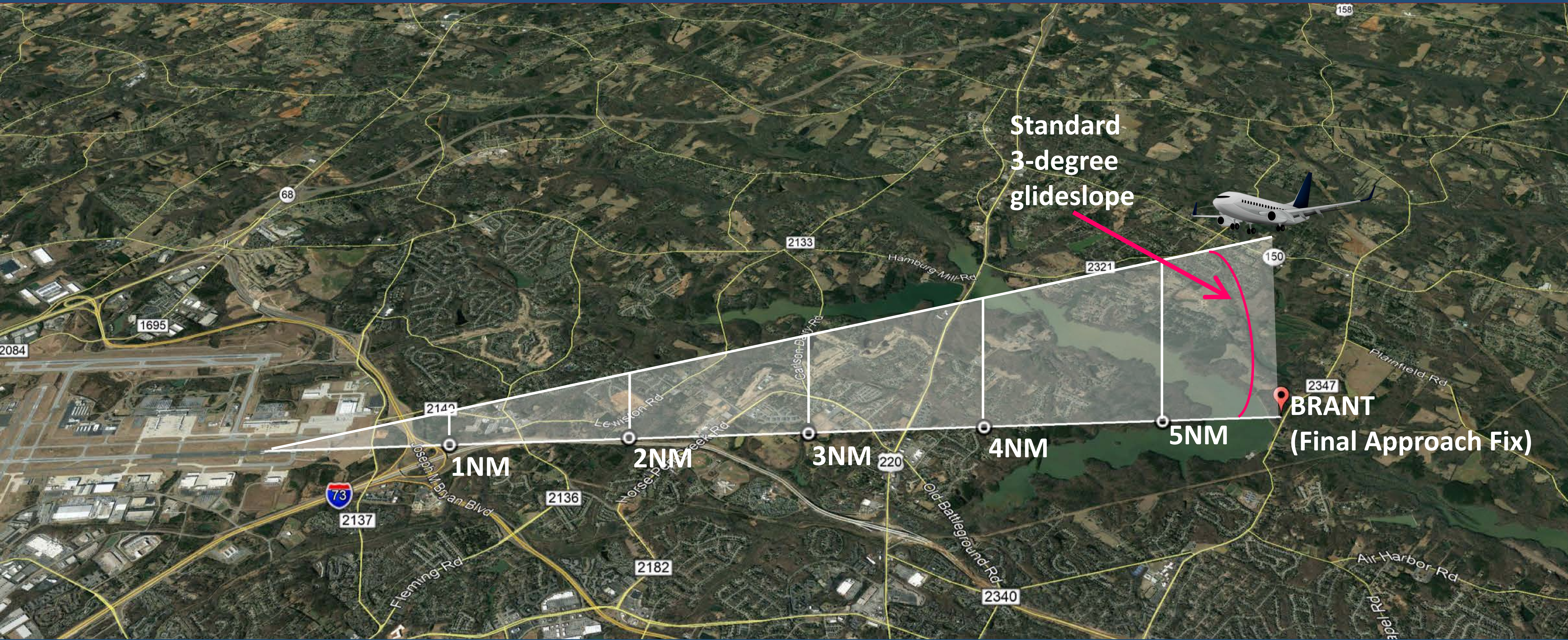
NA-12: Noise Abatement Approach Procedure

*“Under this measure, the PTAA requests that FAA Air Traffic Control Tower personnel direct all jet aircraft arriving at the airport, whether on an IFR or a visual approach, to **intercept the final approach at least 5.5 nautical miles** from the intended landing runway and to stay at or above the glideslope throughout the remainder of their approach. The PTAA requests that FAA Air Traffic Control Tower personnel direct all jet aircraft arriving at the airport and on the final approach within 12.5 nautical miles from the intended landing runway, whether on an IFR or a visual approach, to **stay at or above the glideslope** throughout the remainder of their approach.”*

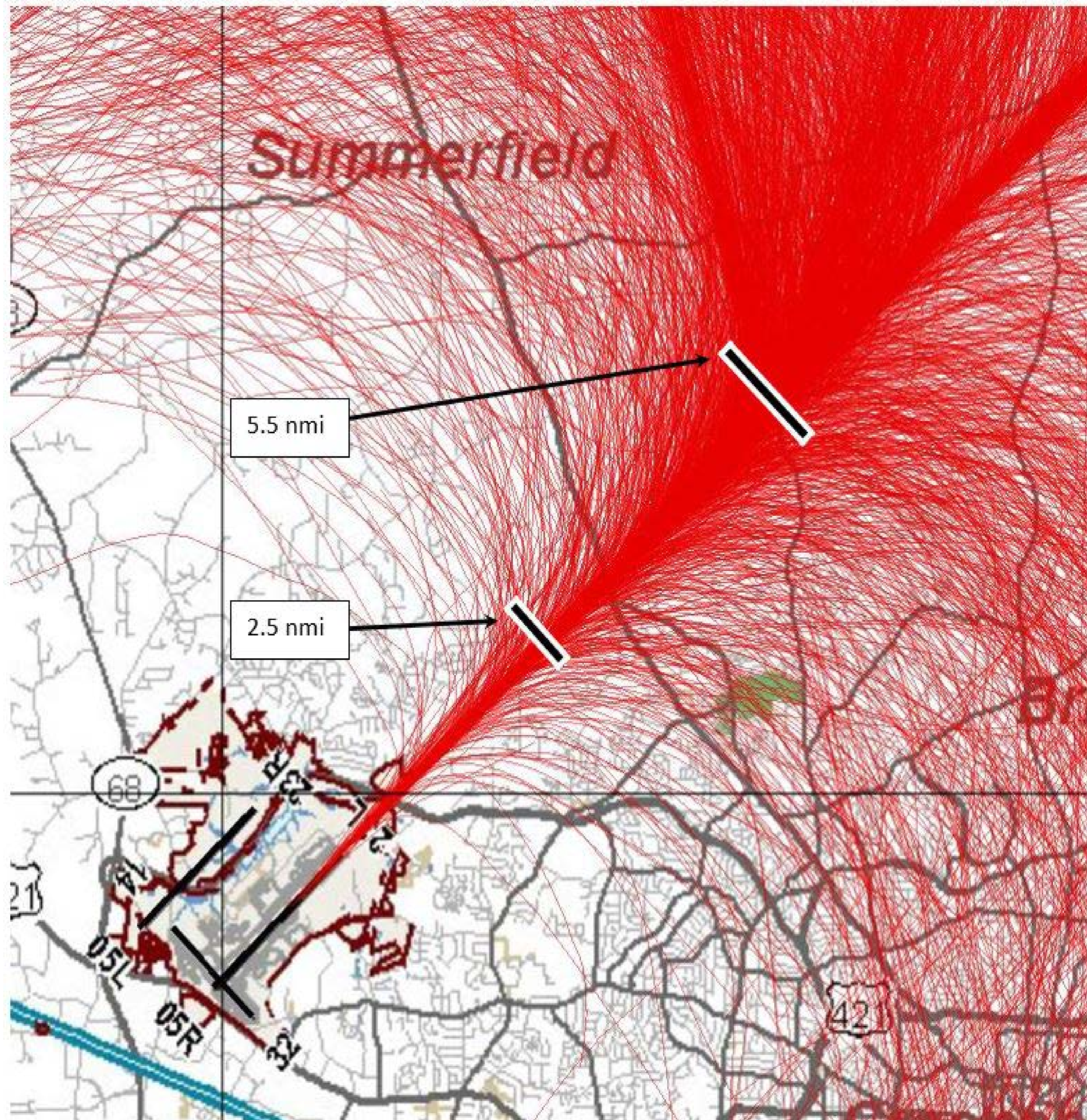
- **Implementation status:** partially implemented
- **Compliance:** 82% intercept final approach at or beyond 5.5 nautical miles; 80% at or above glideslope at 5.5NM; 6% above at 12NM



Example Final Approach Profile: Runway 23L

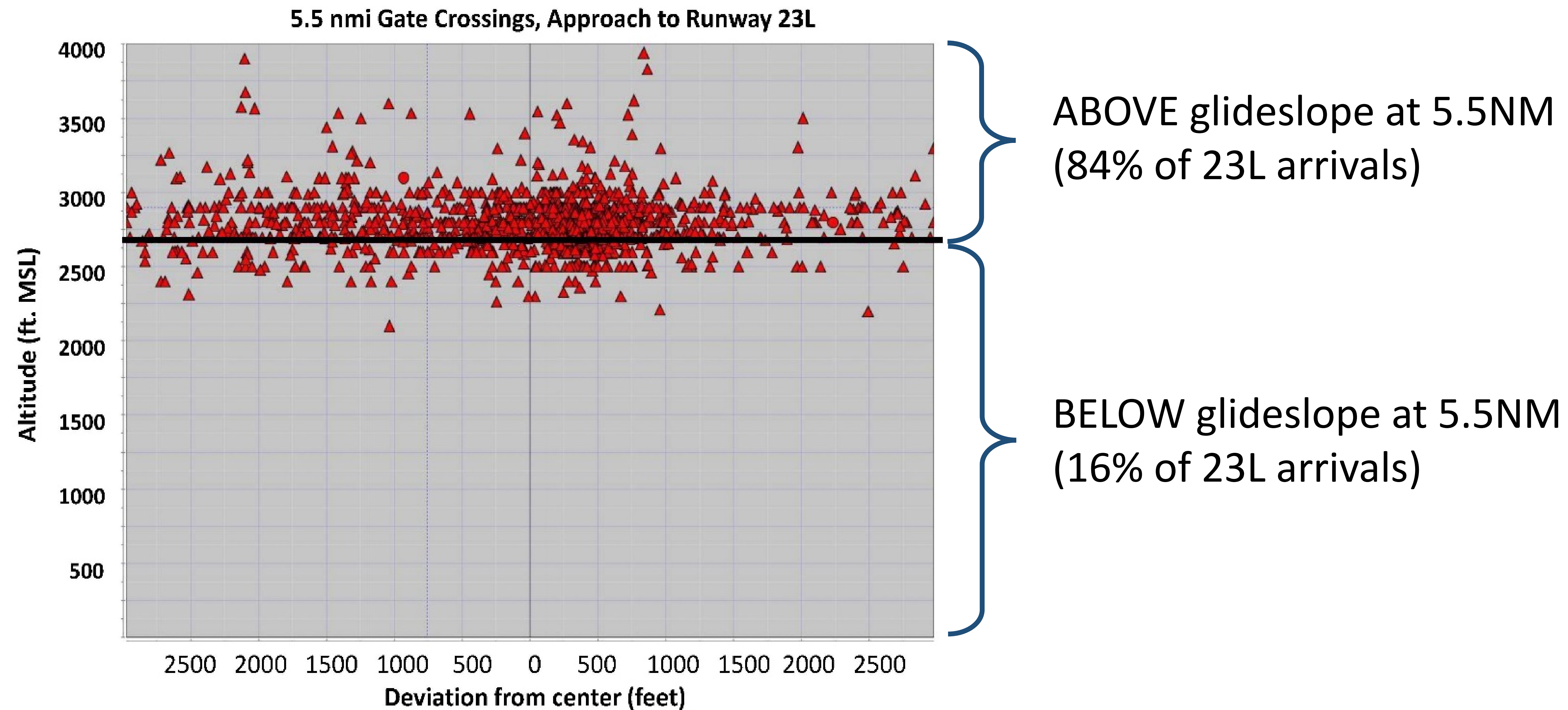


NA-12: Noise Abatement Approach Procedure



Source: GSO NOMS December 15, 2018 – March 31, 2019

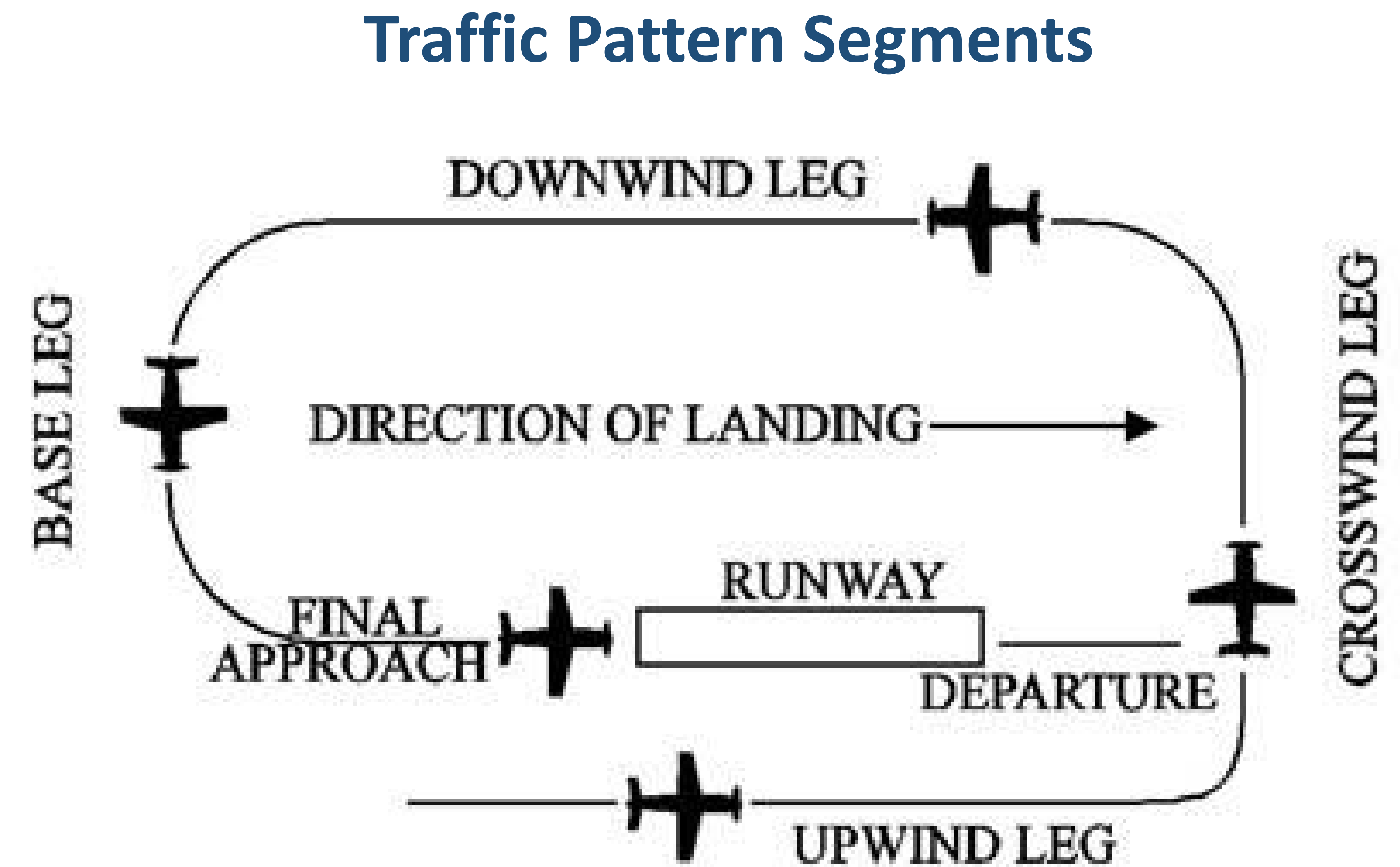
Example analysis of Runway 23L approaches



NA-13: Altitude for Downwind Legs

“Under this measure, the PTAA requests that FAA Air Traffic Control Tower personnel direct IFR aircraft on the downwind leg for arrival on runways 5L, 5R, 23L or 23R to remain at or above 4,000’ MSL until crossing the extended centerline of runway 14/32 at the airport. When implementing this measure and there are simultaneous approaches to runways 5L and 5R, the PTAA requests that FAA Air Traffic Control Tower personnel direct IFR aircraft on the downwind leg for runway 5R to remain at or above 5,000’ MSL and aircraft on the downwind leg for runway 5L to remain at or above 4,000’ MSL.”

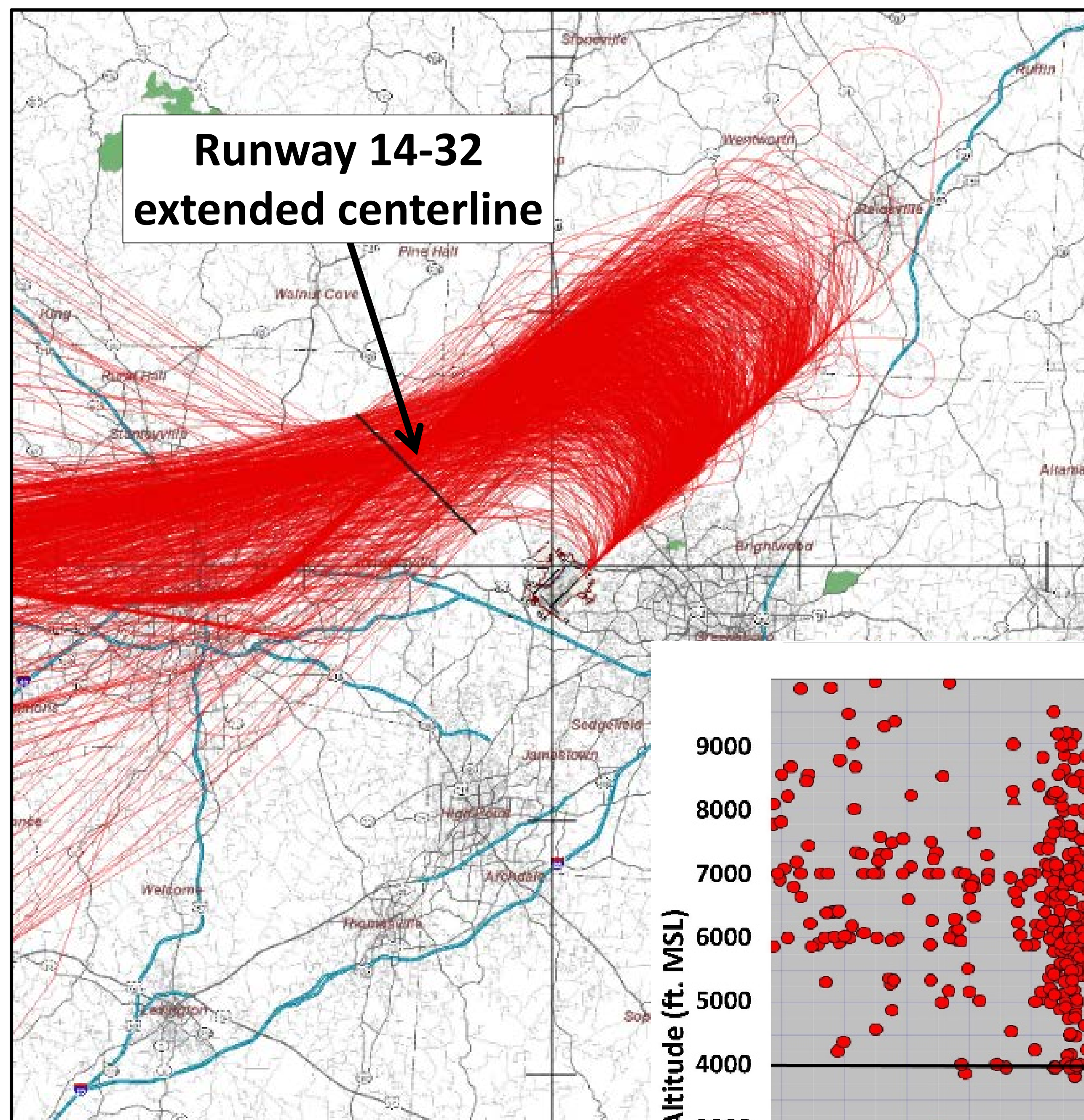
- **Implementation status:** implemented
- **Compliance:** 94% Runway 5L; ≥90% Runway 5R; ≥89% Runway 23L; and ≥85% Runway 23R



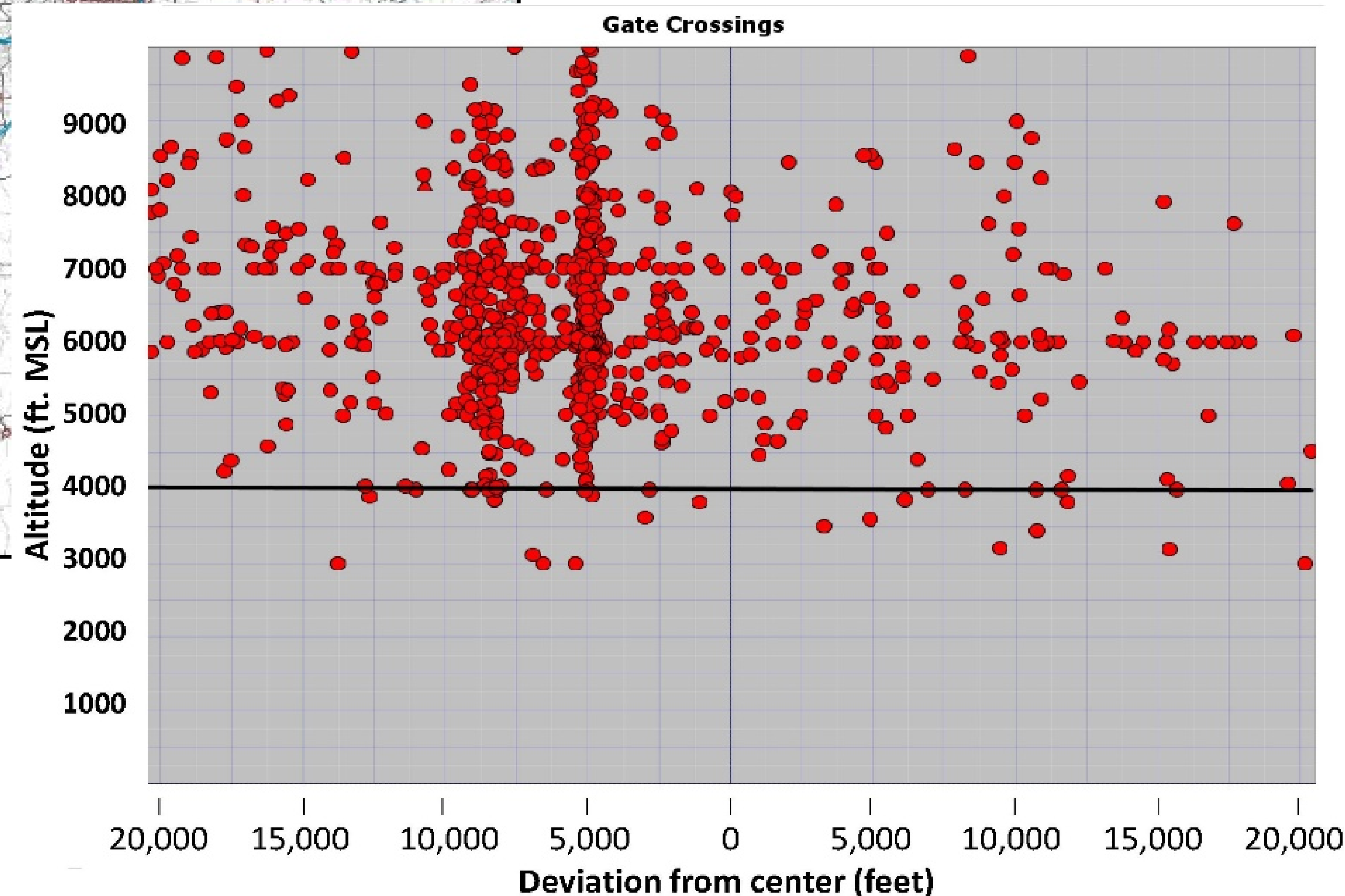
Source: https://www.faa.gov/air_traffic/publications/atpubs/aim_html/chap4_section_3.html

NA-13: Altitude for Downwind Legs

Runway 23L Arrivals: West Downwind

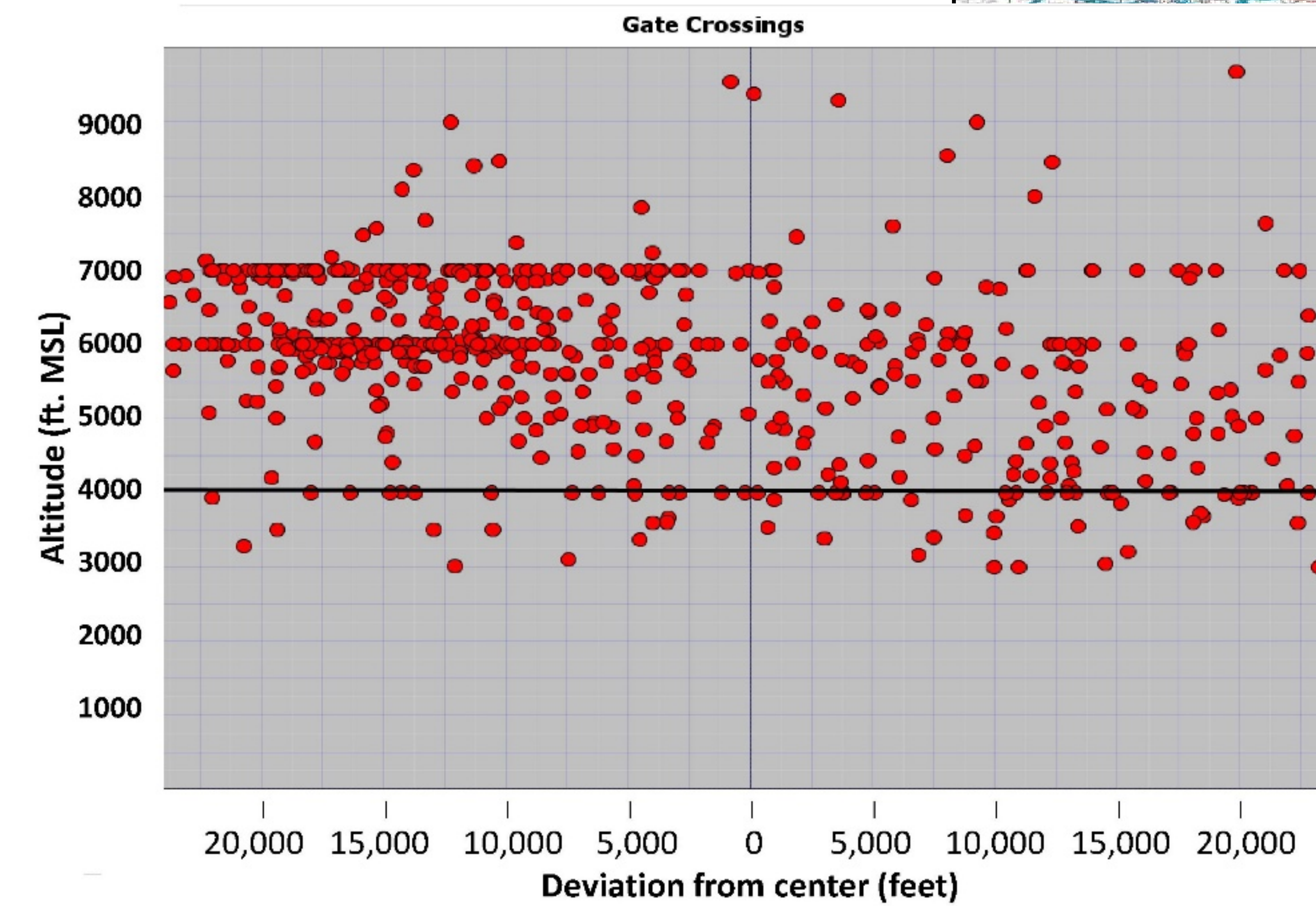
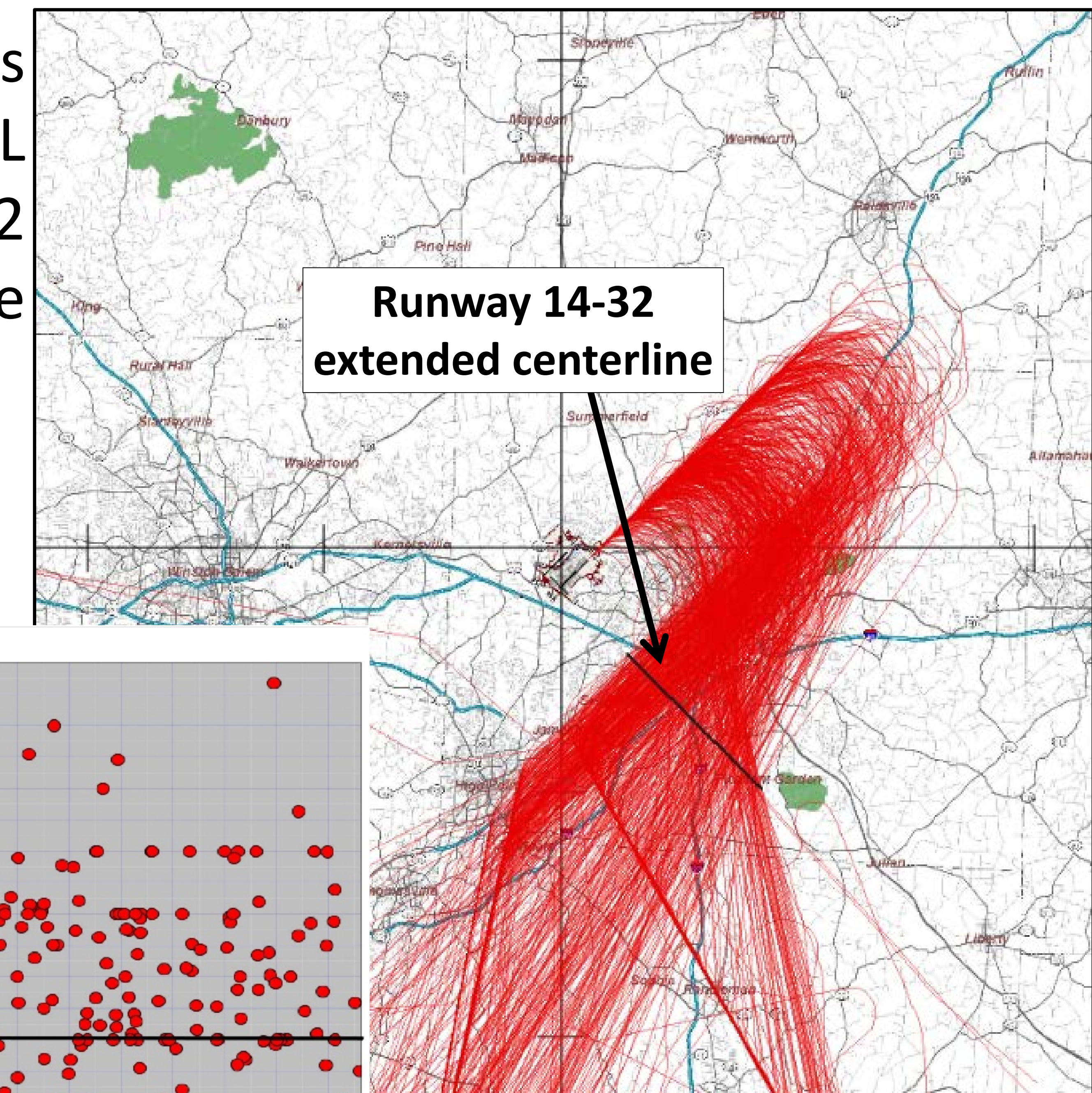


1,045 of 1,076 arrival tracks (97%) above 4,000 ft MSL crossing Runway 14-32 extended centerline



Runway 23L Arrivals: East Downwind

536 of 603 arrival tracks (89%) above 4,000 ft MSL crossing Runway 14-32 extended centerline



Source: GSO NOMS December 15, 2018 – March 31, 2019

Existing Noise Compatibility Program Review

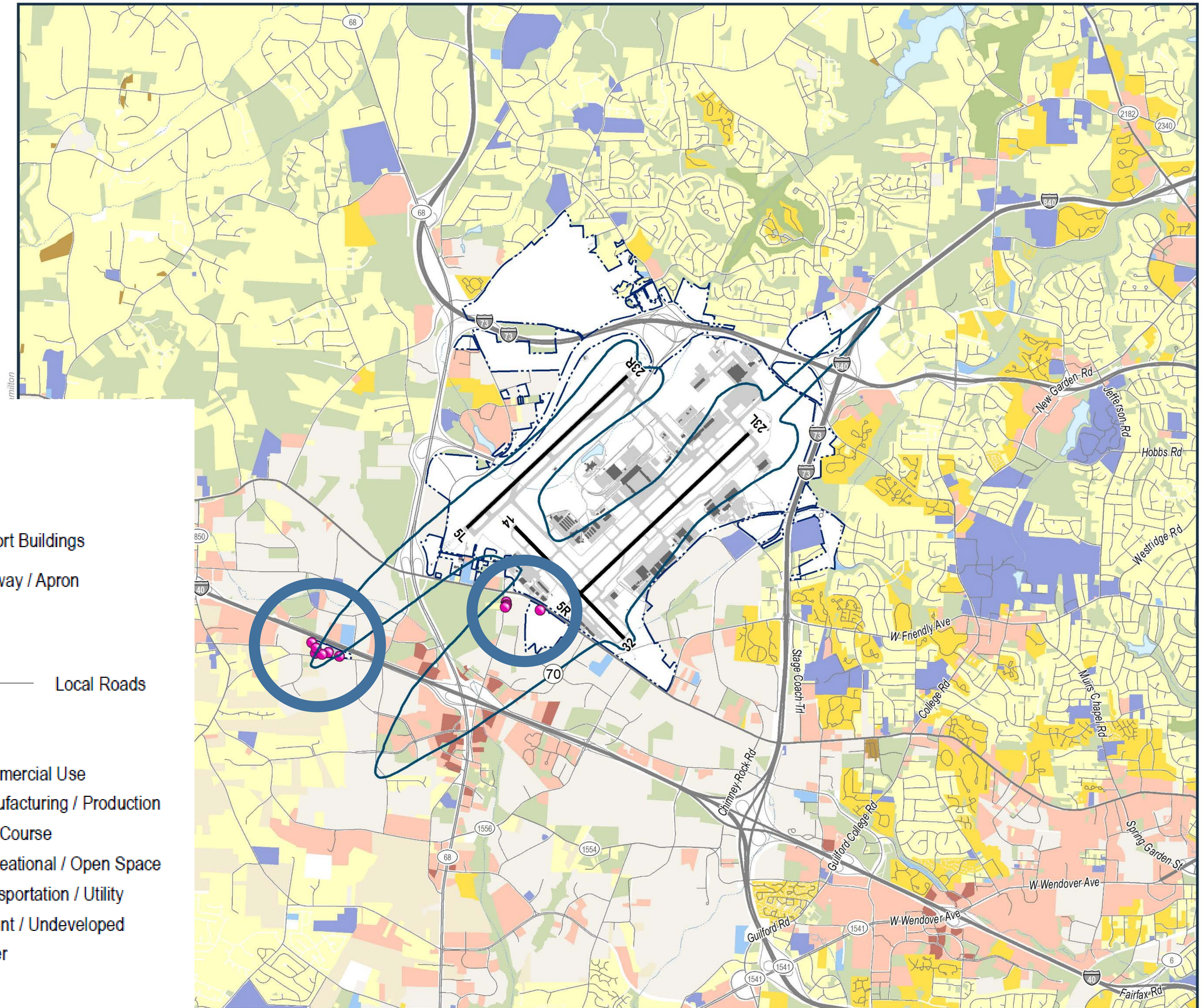
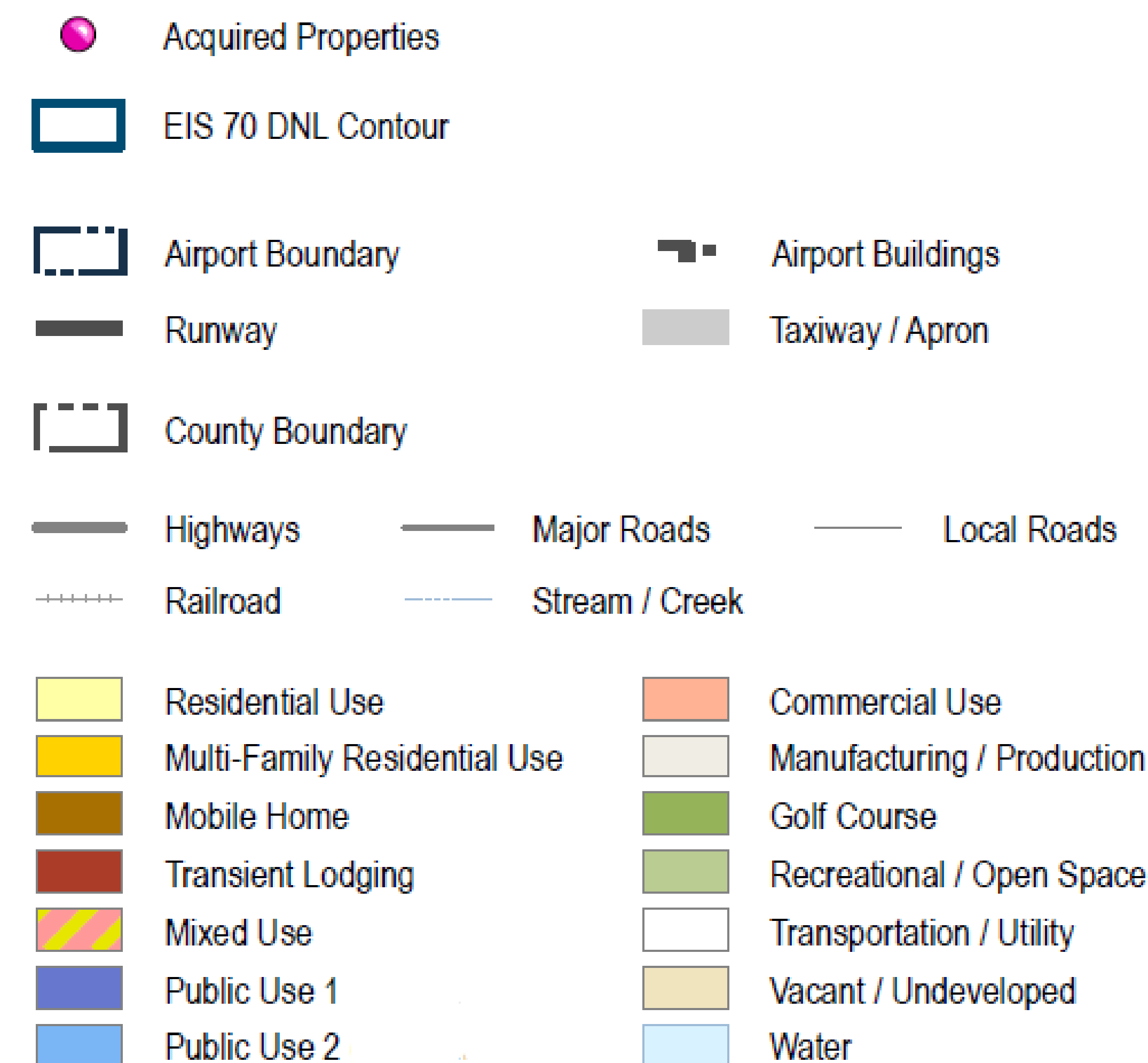
Land Use (LU) Measures – 5 FAA-approved measures



LU-1: Acquire Noise-Sensitive Properties Where DNL Exceeds 70 dB

“The PTAA will offer to acquire properties with houses or other noise-sensitive land uses where DNL with the 2014 NCP exceeds 70 dB.”

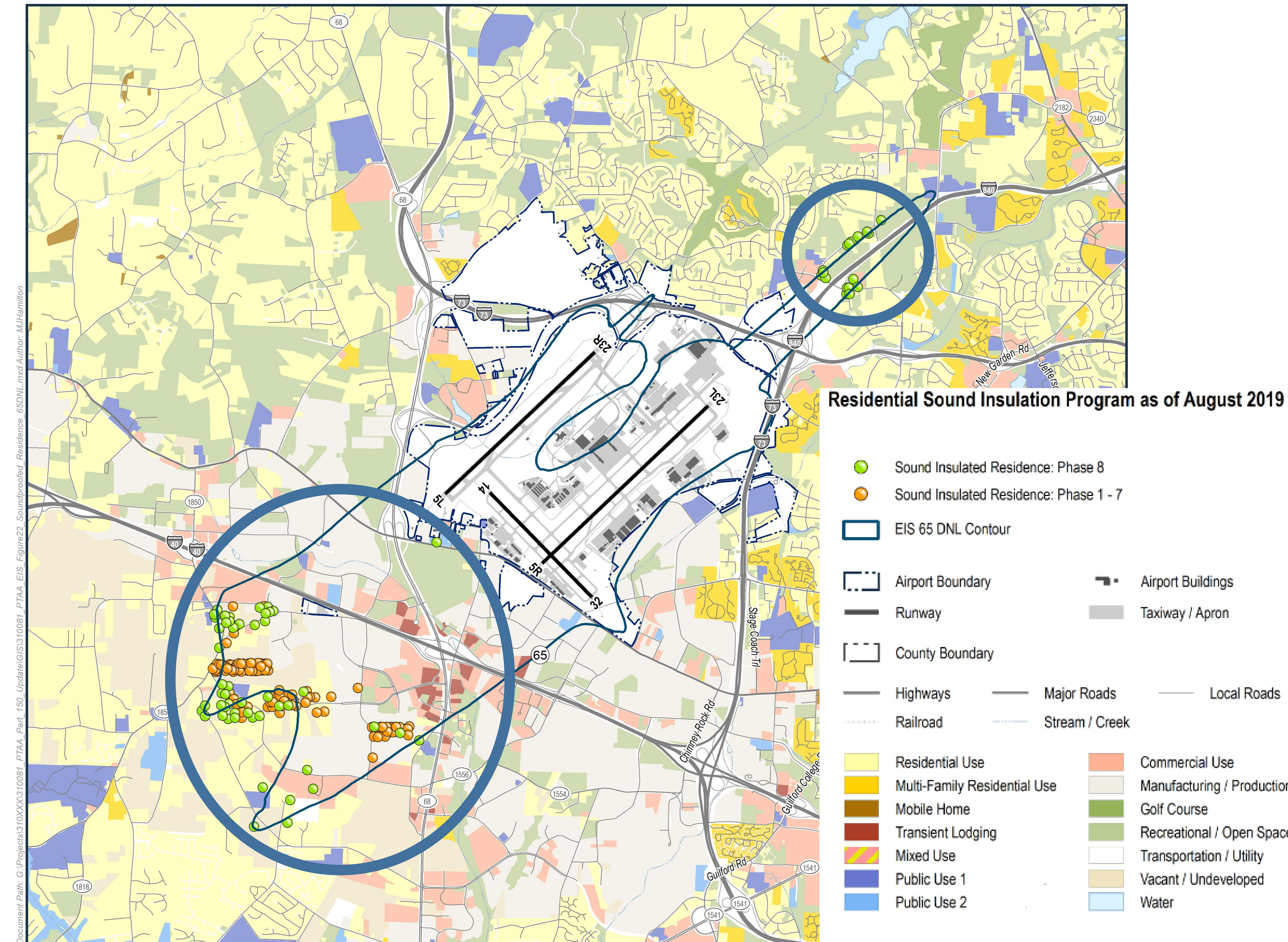
- **Implementation status:** fully implemented and complete



LU-2: Sound Insulation of Noise-Sensitive Structures where DNL Exceeds 65 dB

“The PTAA will offer to sound insulate eligible residences and other noise-sensitive structures intended for public use or assembly where DNL with the 2014 NCP exceeds 65 dB. The PTAA will require property owners participating in the program grant an avigation easement to the PTAA upon completion of the treatment.”

- **Implementation status:** fully implemented and nearly complete



Land Use Measures LU-3 through LU-5

- **LU-3: Optional Acquisition of Avigation Easements for Noise-Sensitive Structures where DNL Exceeds 65 dB**
 - Implementation status: not implemented
- **LU-4: Other Assistance for Owners of Residential Property where DNL Exceeds 65 dB**
 - Implementation status: not implemented
- **LU-5: *Pursue Compatible Use Zoning where DNL Exceeds 65 dB***
 - Implementation status: implemented by the cities of High Point and Greensboro and Guilford County

Existing Noise Compatibility Program Review

Program Management (PM) Measures – 3 FAA-approved measures



PM-1: Establish a Noise Monitoring Function at PTIA

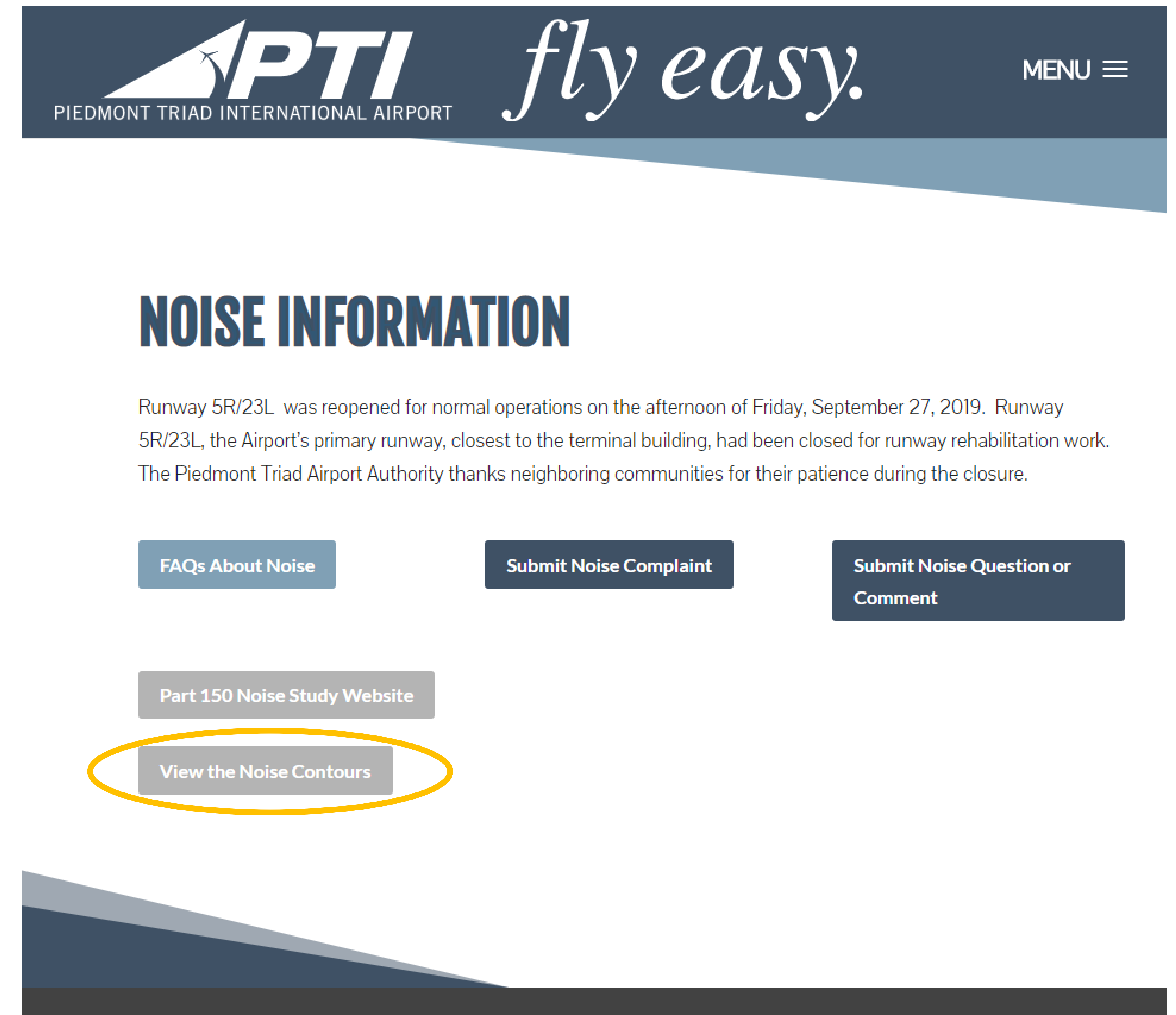
“The PTAA will establish a noise monitoring function within the PTAA with responsibilities that include: to monitor aircraft noise; to provide a point of contact within the PTAA for issues related to aircraft noise; to serve as a liaison with the community for such issues; and to keep air carriers and the public informed about compliance with measures in the NCP.”

- **Implementation status:** implemented; Suzanne Akkoush currently fills this role

PM-2: Publish DNL Contours for DNL 60 and Above

“When the PTAA publishes aircraft noise contours, it will publish contours at 5-dB intervals for values of DNL of 60 dB and above. The most recent contours will be published on the PTAA web site. The contours will be updated as required by FAR Part 150.”

- **Implementation status:** implemented



Source: <https://flyfrompti.com/noise-information/>

PM-3: Install and Operate an Aircraft Noise and Operations Monitoring System

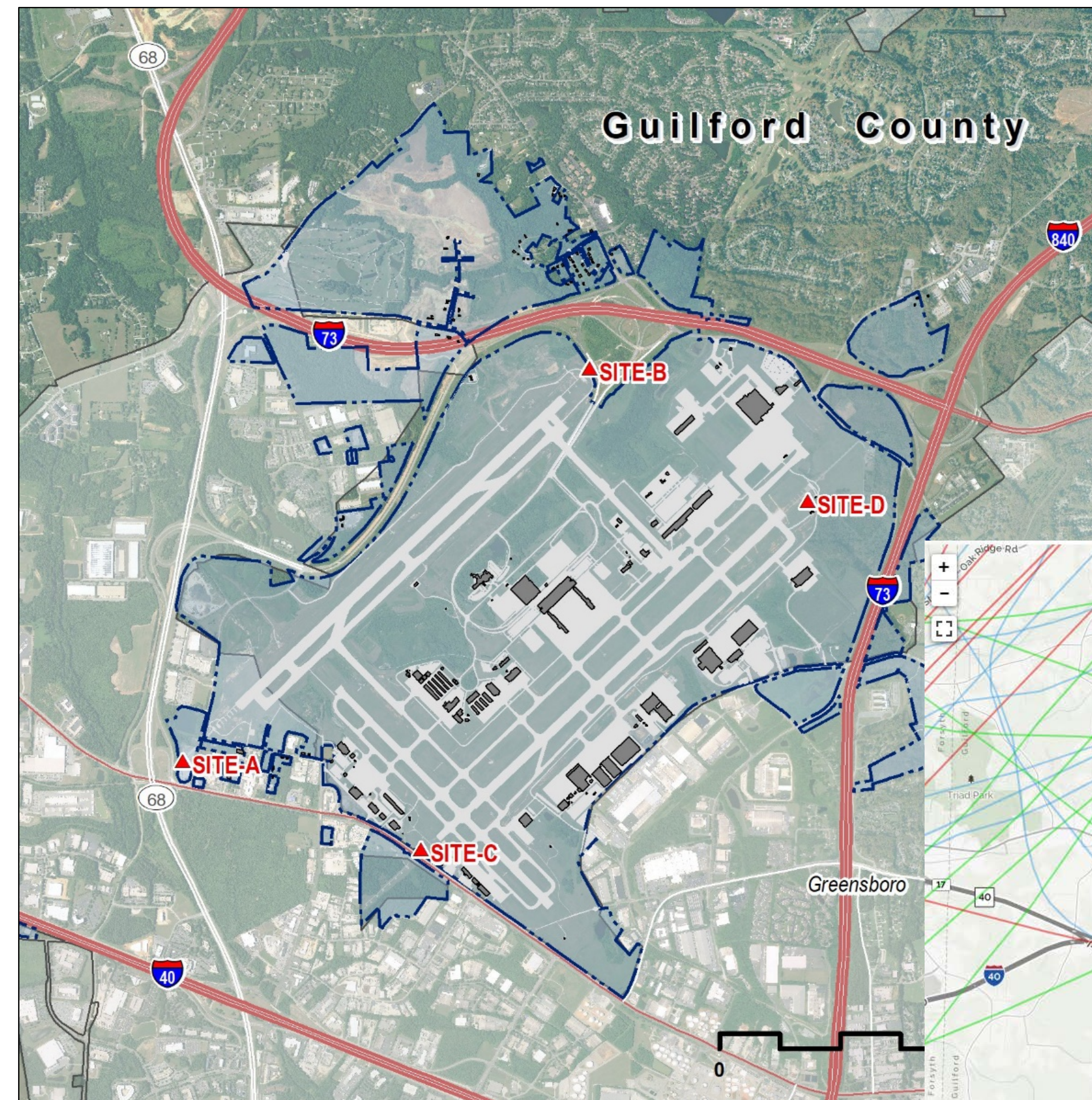
“The PTAA will install and operate an aircraft noise and operations monitoring system to monitor aircraft noise and aircraft operations in the vicinity of the airport. The system will reflect state-of-the-art technology. It is expected that the system will have six or more permanent monitoring microphones and one or two portable monitoring microphones. To the extent feasible, the permanent microphones will be at locations used during the Part 150 study. Summaries of the monitoring results will be reported regularly on the PTAA web site.”

- **Implementation status:** implemented; see next slide

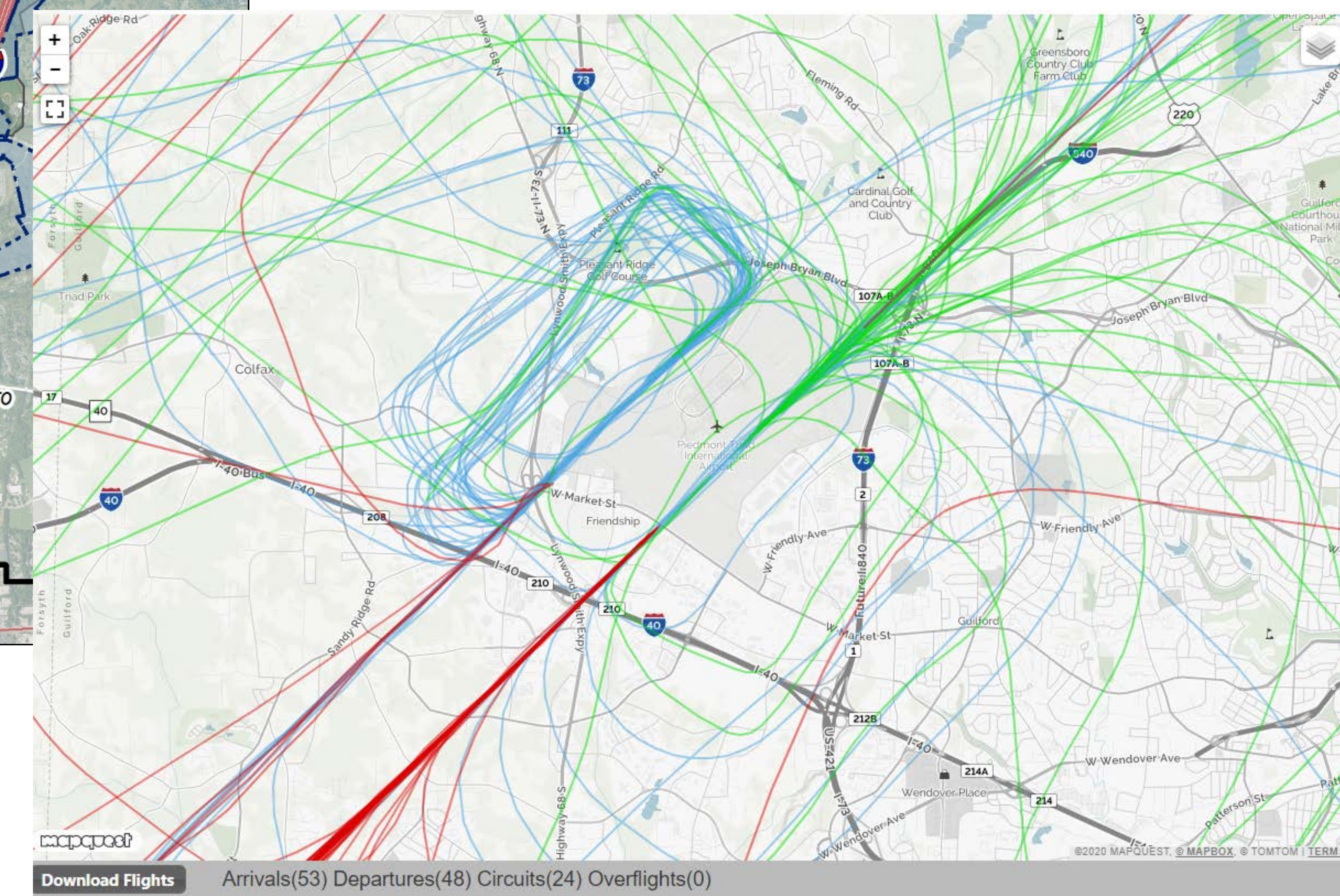
PM-3: Install and Operate an Aircraft Noise and Operations Monitoring System

- Four permanent noise monitors
- Three portable noise monitors available for temporary monitoring in other locations
- Accesses radar flight track data and ability to correlate radar data with measured noise events

Permanent Monitor Locations



Radar Flight Track Software



Next Steps



Next Steps

- Determine whether to amend the NCP
 - If amending NCP, then prepare and document the proposed amendments
Note: PTAA is not updating the NCP, but may amend the NCP with this project
- Preparation of draft Part 150 Update documentation
- Schedule final TAC/CAC meetings, Public Comment period and Public Workshop to present the draft document

Schedule of CAC Meetings & Public Workshops

Meeting	Date	Topic
CAC Meeting #1	June 27, 2019	Introduction to the Part 150 process
Public Information Workshop #1	June 27, 2019	Introduction to the Part 150 study
CAC Meeting #2	October 2, 2019	Noise modeling inputs
CAC Meeting #3	May 20, 2020	Noise modeling and noise measurement results
<i>NCP Review Meeting</i>	<i>August 13, 2020 (today)</i>	<i>Review of NCP measures</i>
CAC Meeting #4	Fall 2020	Presentation of the Part 150 Report
Public Information Workshop #2	Fall 2020	Presentation of the study results





CAC Member Discussion



Adjournment

- Next CAC meeting **fall 2020** (exact date and time to be determined)
- Project contacts and websites
 - Suzanne Akkoush, Project Manager – Part 150 Study
 - Address emails to Part150@gsoair.org
 - Part 150 Website (PTIPart150Update.com) provides most relevant information
 - Will be updated regularly for public outreach purposes
 - TAC will receive direct notices
 - PTAA noise information website provides broader information
 - <https://flyfrompti.com/noise-information/>

Thanks for participating and attending!

