

Updating ATL's Noise Exposure Maps (NEMs)

Thomas E. Nissalke, Ph.D.

December 5, 2024



MAYOR ANDRE DICKENS
CITY OF ATLANTA



JAN LENNON
INTERIM AIRPORT GENERAL
MANAGER

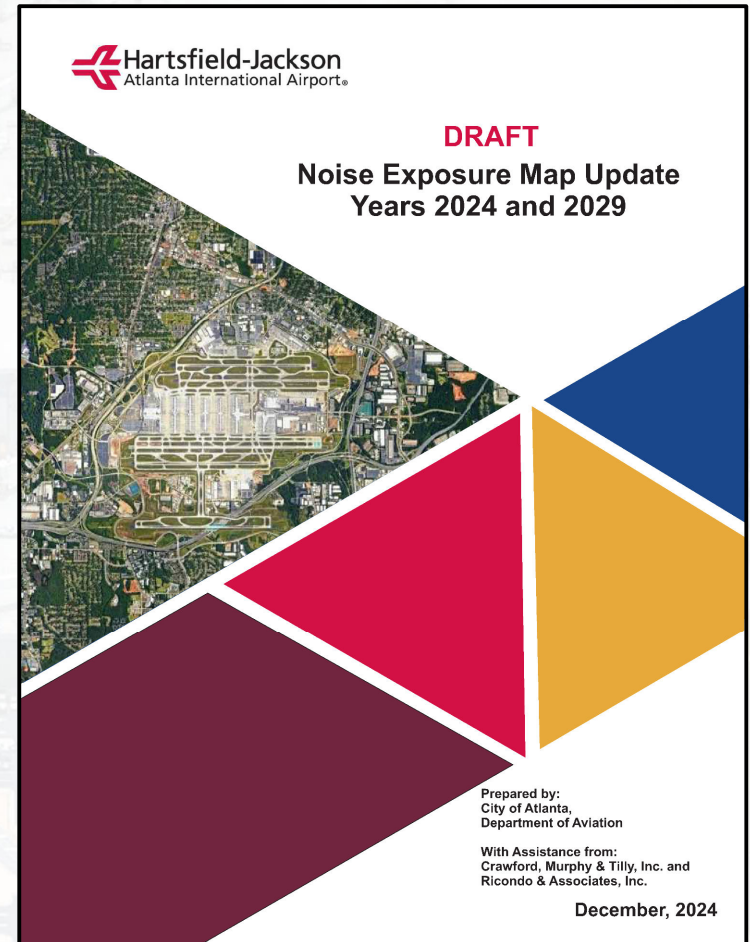
Purpose of Presentation

- **The City of Atlanta owns Hartsfield-Jackson Atlanta International Airport (ATL) and the City's Department of Aviation (DOA) operates the airport.**
- **The DOA implements an aircraft noise mitigation program and uses federal funds to fund the program.**
- **To receive and use federal funds, the DOA must follow a process prescribed in Code of Federal Regulations Title 14, Part 150 that guides an airport sponsor in the preparation of Noise Exposure Maps (NEMs).**
- **The NEMs provide the basis for the geographic boundaries of the noise insulation program.**
- **In accordance with 14 CFR Part 150, the DOA is updating ATL's NEMs to reflect existing, year 2024 operations and forecast year 2029 operations.**
- **Subpart B, Section 150.21(b) of Part 150 requires that the public be afforded the opportunity to review and comment during the development of the NEMs.**
- **Scoping sessions were held earlier this year for which users of the airport, political jurisdictions, regulatory/planning agencies, and the public were invited. Comments received from the sessions were considered in the development of the Draft NEMs being presented tonight.**

CFO

Draft NEM Update Report

- In addition to presenting the Draft NEMs, the DOA is also announcing the availability of the Draft NEM Update Report.
- A notice of the availability of the Draft NEM Update Report was published in the Atlanta Journal-Constitution.
- A digital copy of the NEMs and the Draft NEM Update Report are available for download on the DOA's website for ATL (ATL.com) and at ATL-NEM.com.
- A hardcopy of the NEMs and the Draft NEM Update Report are available for review at the DOA's Technical Support Campus (1255 South Loop Road).



ATL Facts and Figures

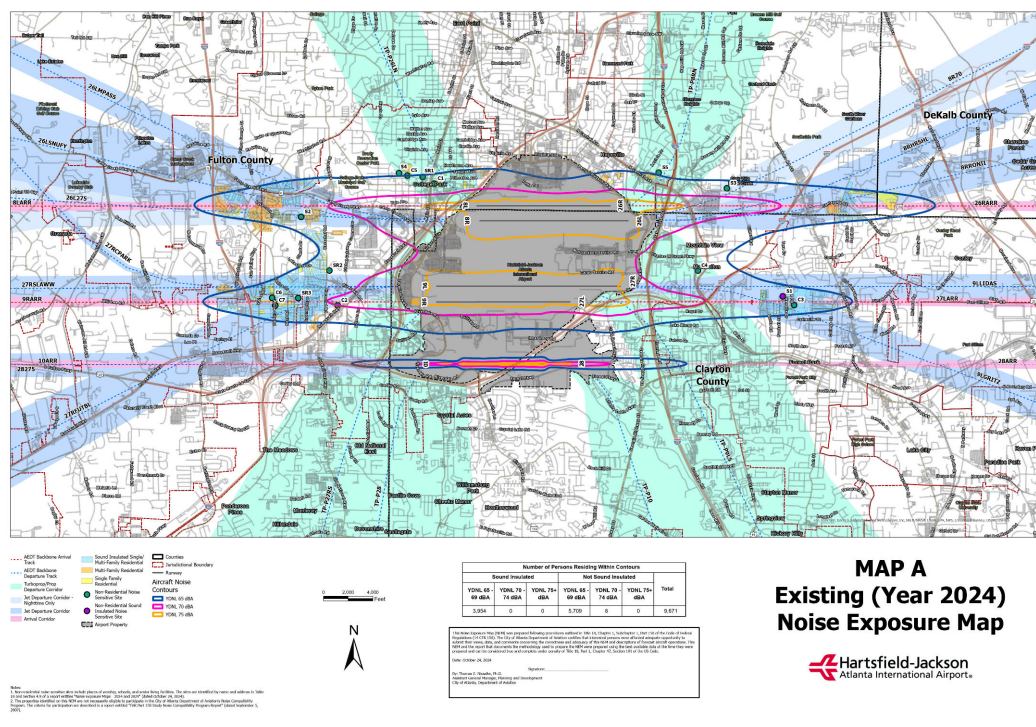
- Since 1998, Hartsfield-Jackson Atlanta International Airport (ATL) has been the busiest airport in the world for 24 out of 25 years.
- ATL has five parallel runways (two primarily used for arrivals, two primarily used for departures, and one used for both arrivals and departures).
- ATL serves more than 150 destinations within the U.S. and more than 70 international destinations in 43 countries.

Year	Annual Number of	
	Passengers	Operations
2019	110,531,300	904,301
2020	42,918,685	548,016
2021	75,704,760	707,661
2022	93,699,630	724,145
2023	104,663,451	775,818



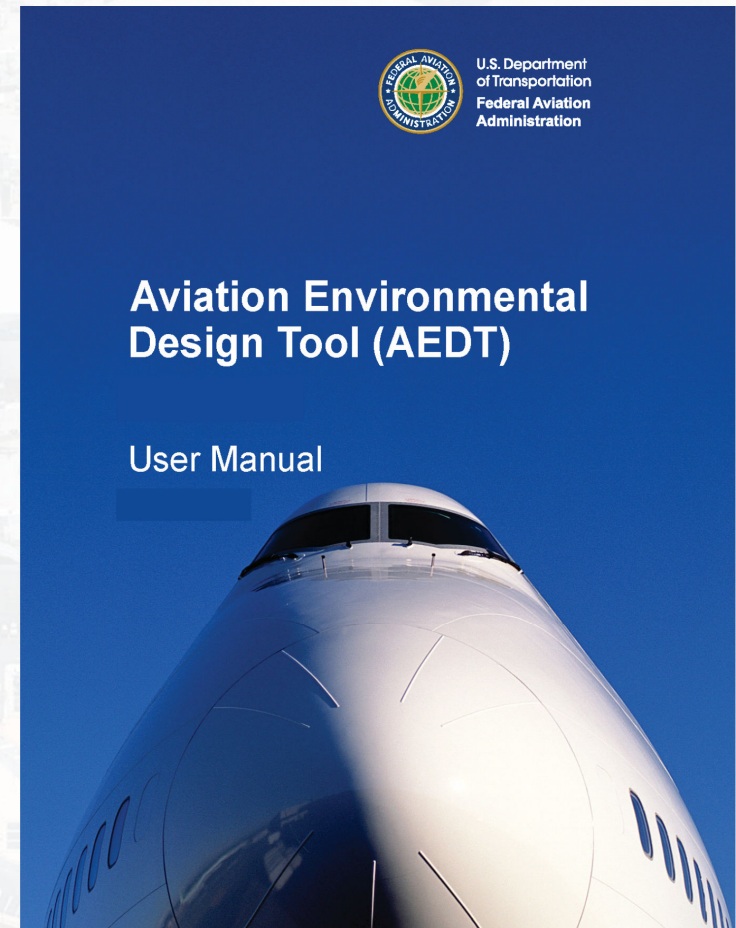
What's an NEM?

- A scaled, geographic depiction of a land use map overlaid with aircraft noise contours of yearly average day-night sound levels (YDNL 65, 70, and 75 decibels).
- NEMs identify land uses within the contours that are noncompatible with the above levels of aircraft noise (e.g., residences, schools).



How are NEMs Developed?

- **NEMs are developed using a computer program—the Aviation Environmental Design Tool (AEDT).**
- **The AEDT was designed by the Federal Aviation Administration to model aviation-related operations to computer noise, emissions, and fuel consumption.**
- **AEDT Version 3f will be used in the preparation of the noise contours that are placed on the land use map.**



Roles/Responsibilities

- **There are multiple entities involved in the process of updating NEMs:**
 - **DOA:**
 - Responsible for preparing NEMs in consultation with those that use ATL, political jurisdictions, and planning agencies with property within ATL's NEMs, and the public. Meetings were held earlier this year with users of the airport and the political jurisdictions/planning agencies with authority over the properties within ATL's NEMs.
 - **Federal Aviation Administration:**
 - Establish regulations that provide a uniform system of evaluating aircraft noise exposure. Regulate the maximum noise level that civilian aircraft can emit through noise certification standards. Review and accept NEMs.
 - **Land Use Planning Officials:**
 - Responsible for considering the effects of aviation activity on local land use.

Review of Draft AEDT Input

- Year 2024 and 2029 aircraft fleet mix data and number of average day operations
- Arrival and departure runway use
- Airfield directional use
- East and west flow flight tracks and corridors
- Arrival and departure profiles
- Time of day airfield use
- ATL average annual temperature
- Airfield elevation



Note: Other than fleet mix and number of aircraft operations, there are no proposed changes from the Draft AEDT input that will be reviewed for the Year 2029.

Aircraft Fleet Data (Average Day) - 2024

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Category		Airframe	Engine	Number of Operations
Air Carrier	Passenger	Airbus A220-300	PW1521G	7
		Airbus A319-100 Series	CFM56-5A5	63
		Airbus A320-200 Series	CFM56-5A3	120
		Airbus A320-NEO	LEAP-1A26/26E1	72
		Airbus A321-200 Series	CFM56-5B3/3	275
		Airbus A321-NEO	PW1133GA-JM	29
		Airbus A330-200 Series	PW4168A	5
		Airbus A330-300 Series	PW4168A	19
		Airbus A330-900N Series (Neo)	TRENT 7000-72	2
		Airbus A350-900 series	TRENT XWB-84	27
		Boeing 717-200 Series	BR700-715C1-30	260
		Boeing 737-700 Series	CFM56-7B24	116
		Boeing 737-8	LEAP-1B27	52
		Boeing 737-800 Series	CFM56-7B26/3	136
		Boeing 737-9	LEAP-1B27	3
		Boeing 737-900 Series	CFM56-7B24E	342
		Boeing 757-200 Series	PW2037	275
		Boeing 757-300 Series	PW2040	16
		Boeing 767-300 Series	PW4060	22
		Boeing 767-400	CF6-80C2B7E	13
	Boeing 777-200 Series	TRENT 892B	4	
	Boeing 777-300ER	GE90-115BL2	2	
	Bombardier CRJ-700	CF34-8C1	43	
	Bombardier CRJ-900	CF34-8C5	167	
	Embraer ERJ170	CF34-8E5A1	4	
	Embraer ERJ175	CF34-8E	5	
	Embraer ERJ175-LR	CF34-8E	8	
	Embraer ERJ190	CF34-10E6	10	
	Cargo	Airbus A300F4-600 Series	PW4158-3	4
		Boeing 747-400 Series Freighter	CF6-80C2B1F	3
Boeing 747-8F		GENX-2B67	5	
Boeing 757-200 Series		PW2037	2	
Boeing 767-300 Series		PW4060	21	
Boeing 777-200-LR		GE90-110B1L	8	
Cessna 208 Caravan		PT6A-114	15	
Air Taxi, General Aviation, Military	Cessna 560 Citation V	JT15D-5, -5A, -5B	5	
	Cessna 680-A Citation Latitude	PW306C	8	
	Embraer ERJ170	CF34-8E5A1	0	
	Embraer Phenom 300 (EMB-505)	PW530	15	
	Raytheon Beech 1900-C	PT6A-65B	17	
Total				2,200

Developed using data from the DOA's Flight Tracking System and Aviation Activity Forecast prepared by Ricondo & Associates.

Aircraft Fleet Data (Average Day) - 2029

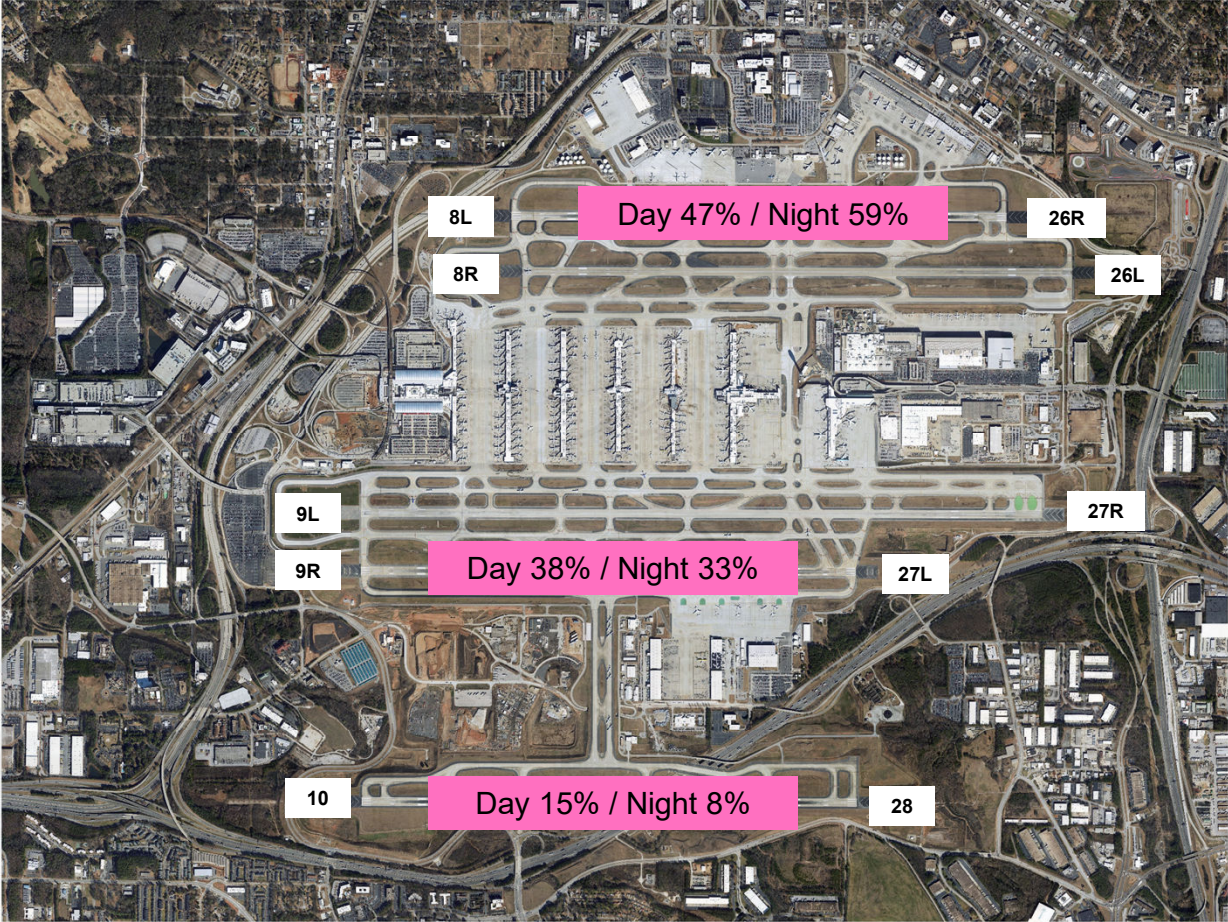
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Category	Airframe	Engine	Number of Operations	
Air Carrier	Passenger	Airbus A220-100	PW1524G	111
		Airbus A220-300	PW1521G	106
		Airbus A319-100 Series	CFM56-5A5	91
		Airbus A320-200 Series	CFM56-5A3	7
		Airbus A320-NEO	LEAP-1A26/26E1	47
		Airbus A321-200 Series	CFM56-5B3/3	383
		Airbus A321-NEO	PW1133GA-JM	231
		Airbus A330-200 Series	PW4168A	12
		Airbus A330-300 Series	PW4168A	10
		Airbus A330-900N Series (Neo)	TRENT 7000-72	7
		Airbus A350-900 series	TRENT XWB-84	40
		Boeing 737-700 Series	CFM56-7B24	118
		Boeing 737-8	LEAP-1B27	55
		Boeing 737-800 Series	CFM56-7B26/3	155
		Boeing 737-9	LEAP-1B27	48
		Boeing 737-900 Series	CFM56-7B24E	403
		Boeing 747-8F	GENX-2B67	2
		Boeing 757-200 Series	PW2037	238
		Boeing 757-300 Series	PW2040	26
		Boeing 767-300 Series	PW4060	8
		Boeing 767-400	CF6-80C2B7E	7
		Boeing 777-200 Series	TRENT 892B	7
		Boeing 777-300 ER	GE90-115BL2	2
		Boeing 787-9 Dreamliner	GENX-1B70	2
		Bombardier CRJ-700	CF34-8C1	34
		Bombardier CRJ-900	CF34-8C5	132
		Embraer ERJ170	CF34-8E5A1	6
		Embraer ERJ175	CF34-8E	15
Cargo	Airbus A300F4-600 Series	PW4158-3	5	
	Boeing 747-400 Series Freighter	CF6-80C2B1F	3	
	Boeing 747-8F	GENX-2B67	5	
	Boeing 757-200 Series	PW2037	3	
	Boeing 767-300 Series	PW4060	23	
	Boeing 777-200-LR	GE90-110B1L	8	
Air Taxi	Cessna 208 Caravan	PT6A-114	12	
	Embraer ERJ170	CF34-8E5A1	11	
	Raytheon Beech 1900-C	PT6A-65B	13	
General Aviation/Military	Cessna 560 Citation V	JT15D-5, -5A, -5B	4	
	Cessna 680-A Citation Latitude	PW306C	6	
	Embraer Phenom 300 (EMB-505)	PW530	12	
Total			2,406	

Developed using data from the DOA's Flight Tracking System and Aviation Activity Forecast prepared by Ricondo & Associates.

Runway Use – Arrivals

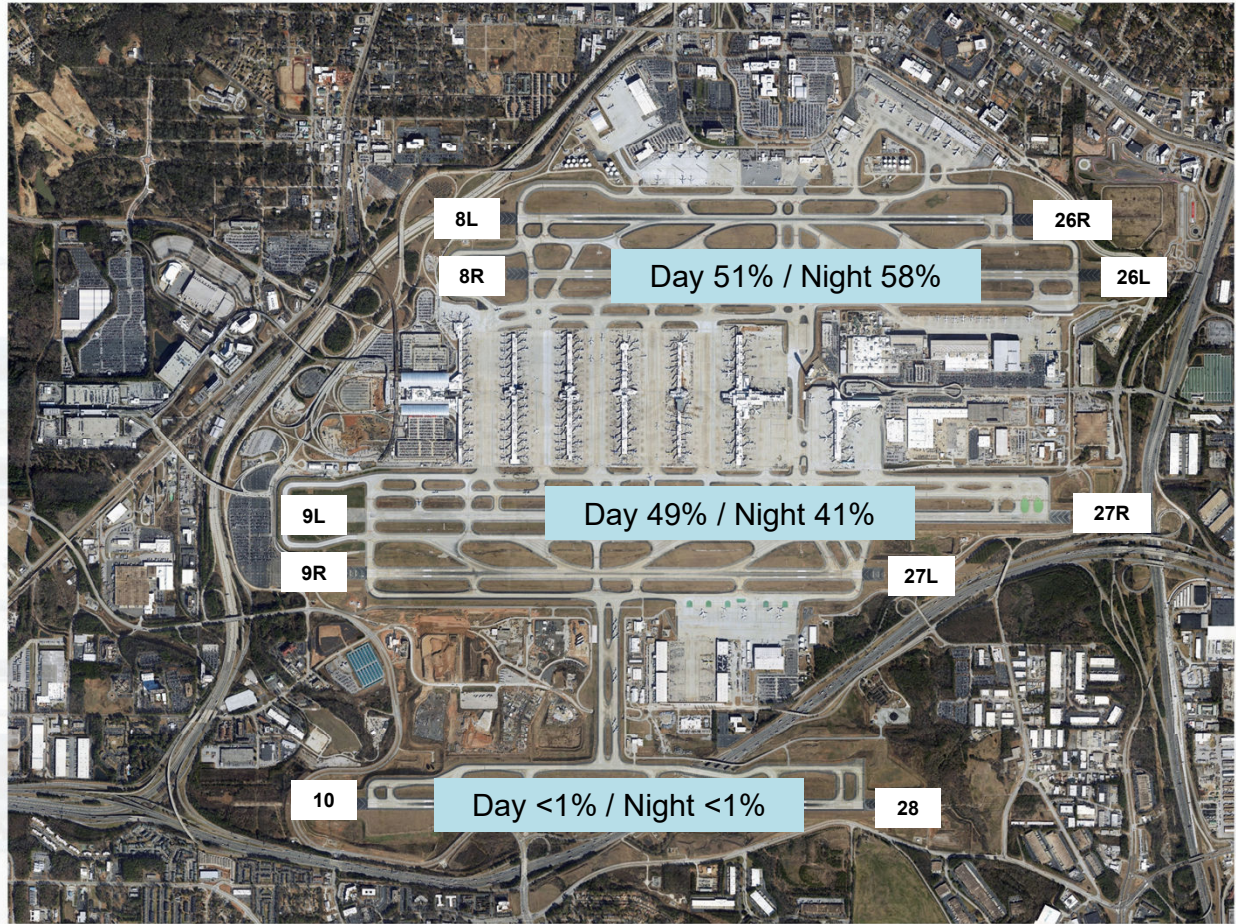
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Developed using data from the DOA's Flight Tracking System and Aviation Activity Forecast prepared by Ricondo & Associates.

Runway Use – Departures

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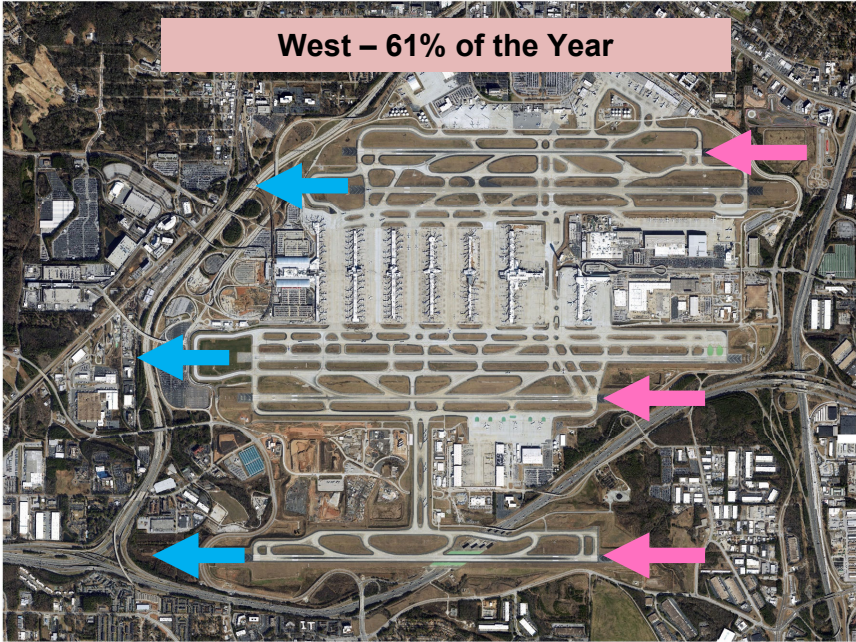
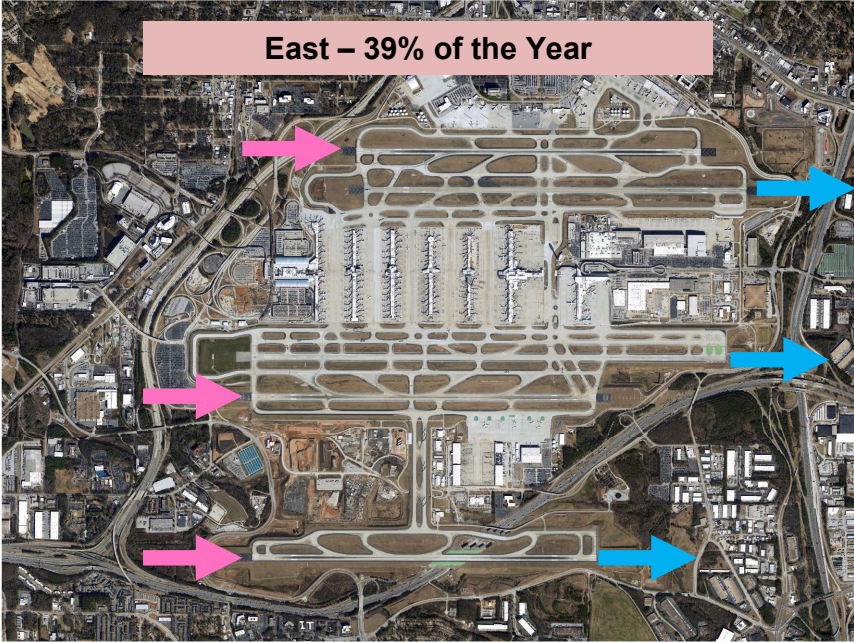


Developed using data from the DOA's Flight Tracking System and Aviation Activity Forecast prepared by Ricondo & Associates.

Airfield Directional Use

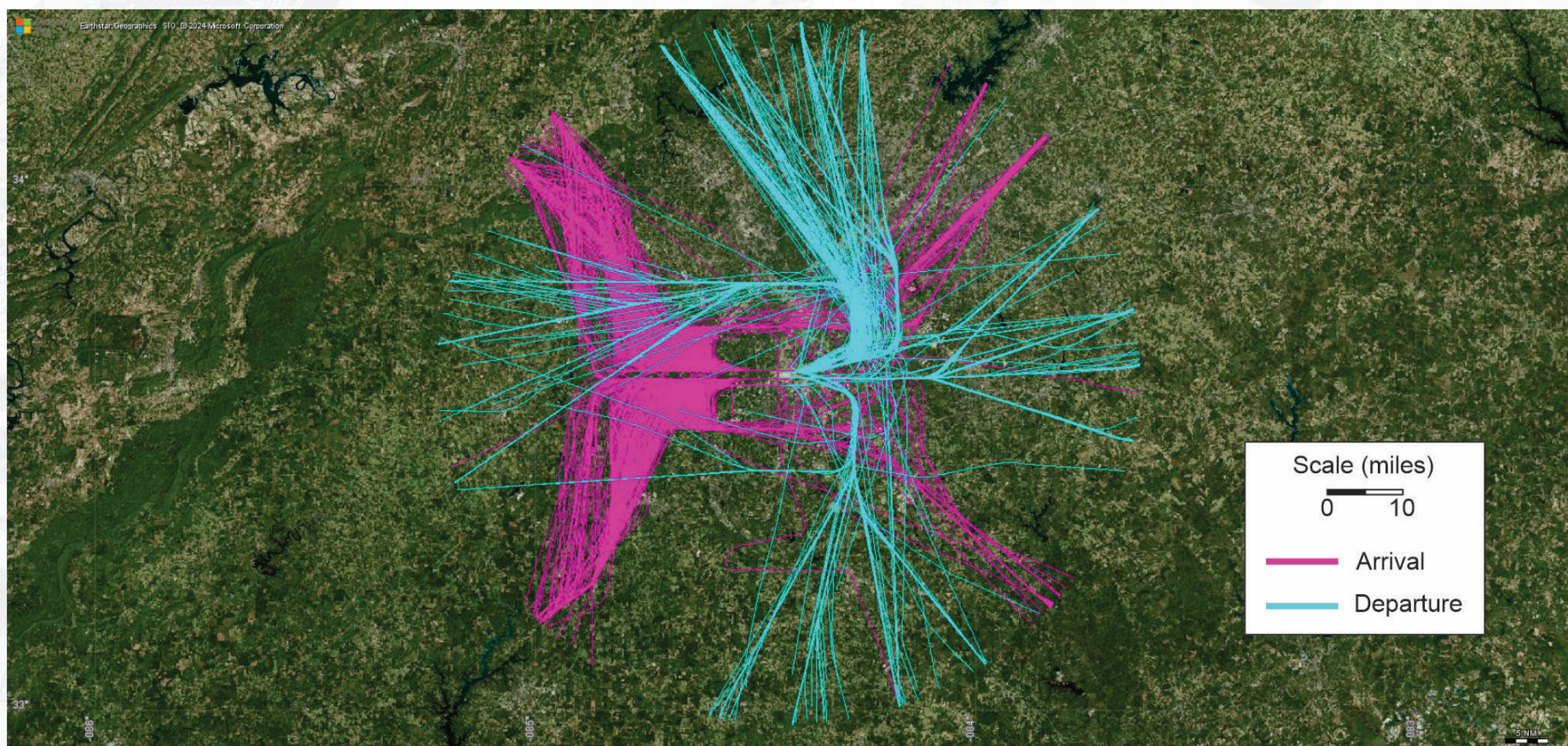
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- ➡ Arrivals
- ➡ Departures



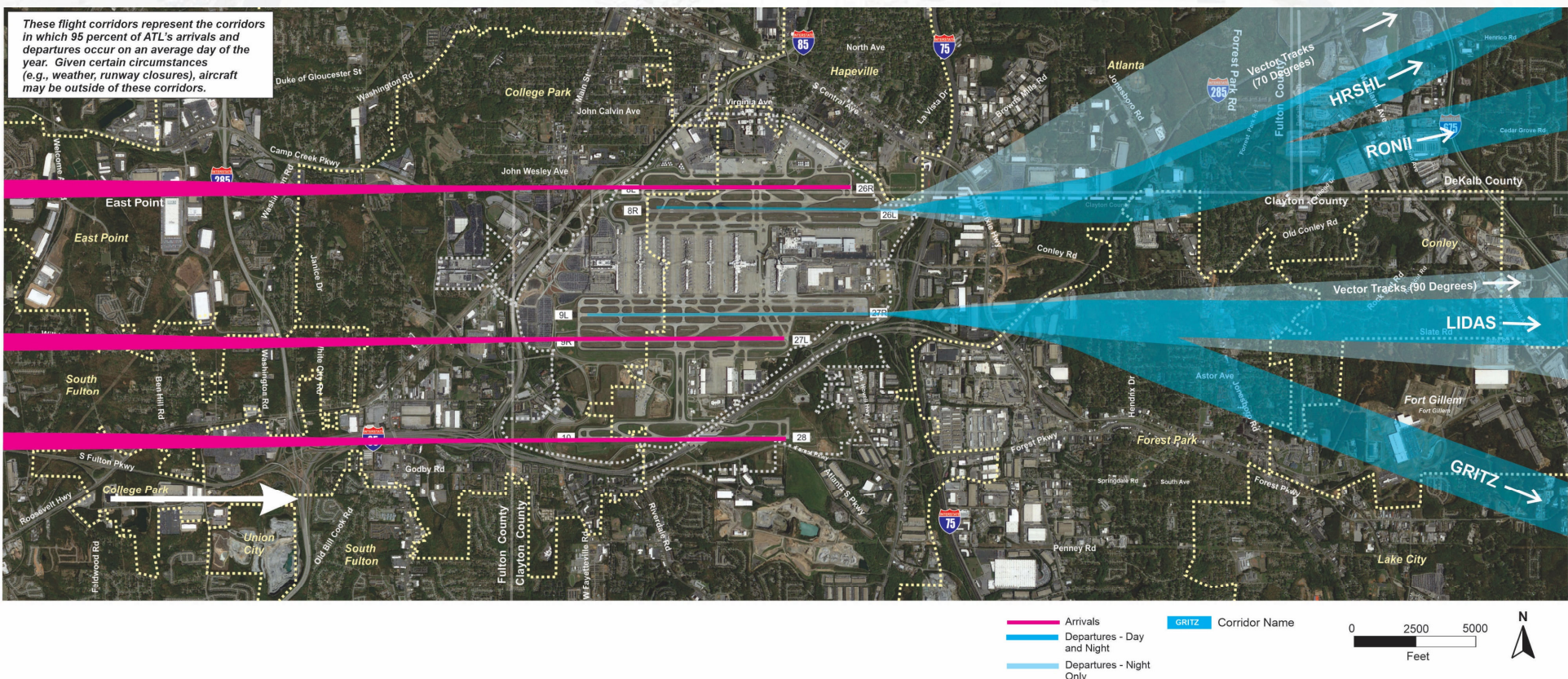
Developed using data from the DOA's Flight Tracking System.

Arrival/Departure Tracks- East Flow



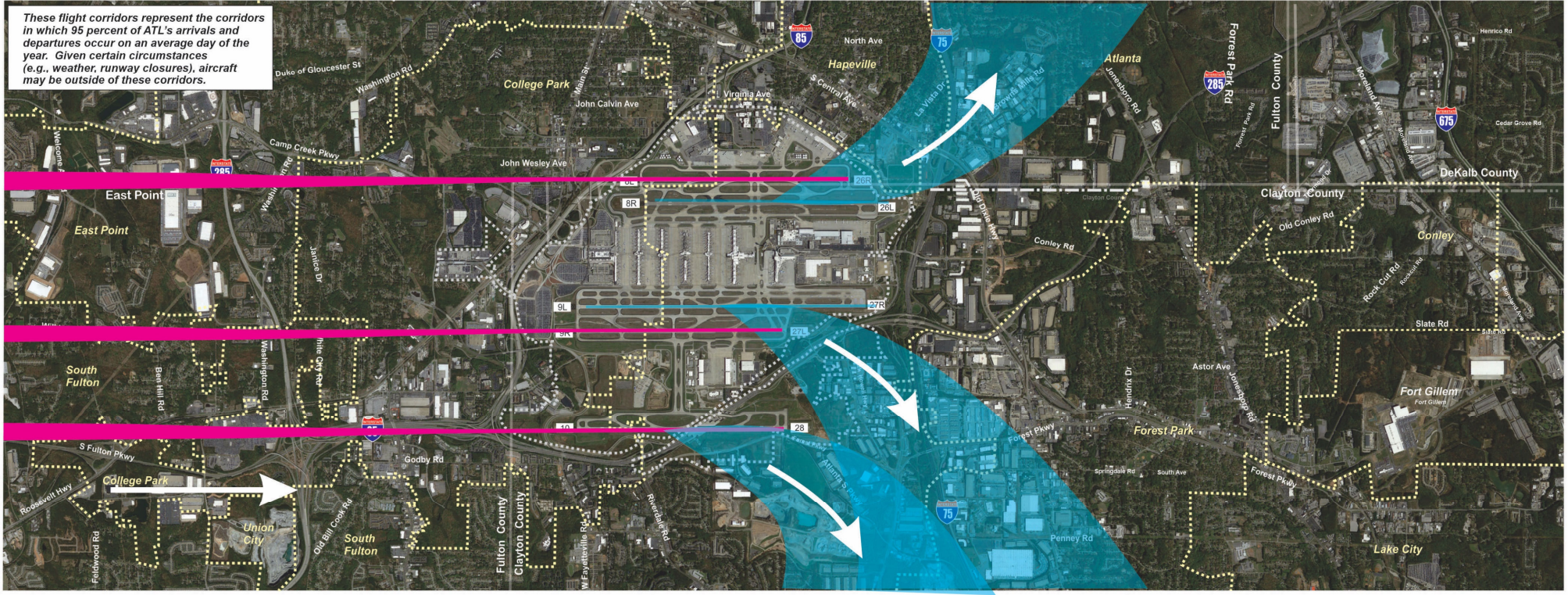
Source: FAA radar data (coverage 45 miles from airport center and up to 20,000 ft in altitude).

Jet Arrival/Departure Corridors – East Flow



Prop/Turboprop Arrival/Departure Corridors – East Flow

These flight corridors represent the corridors in which 95 percent of ATL's arrivals and departures occur on an average day of the year. Given certain circumstances (e.g., weather, runway closures), aircraft may be outside of these corridors.

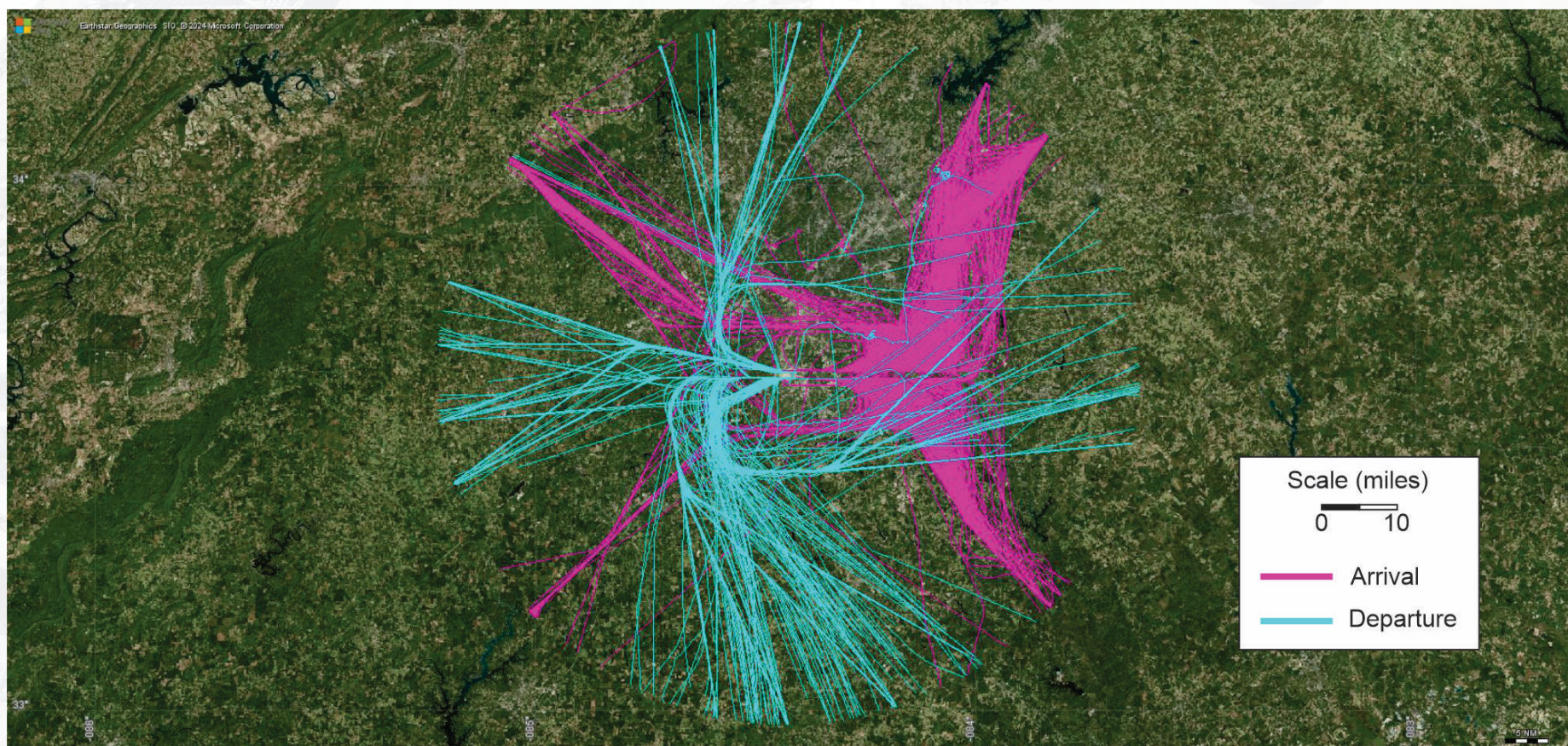


— Arrivals
 Departures - Day and Night

0 2500 5000
 Feet

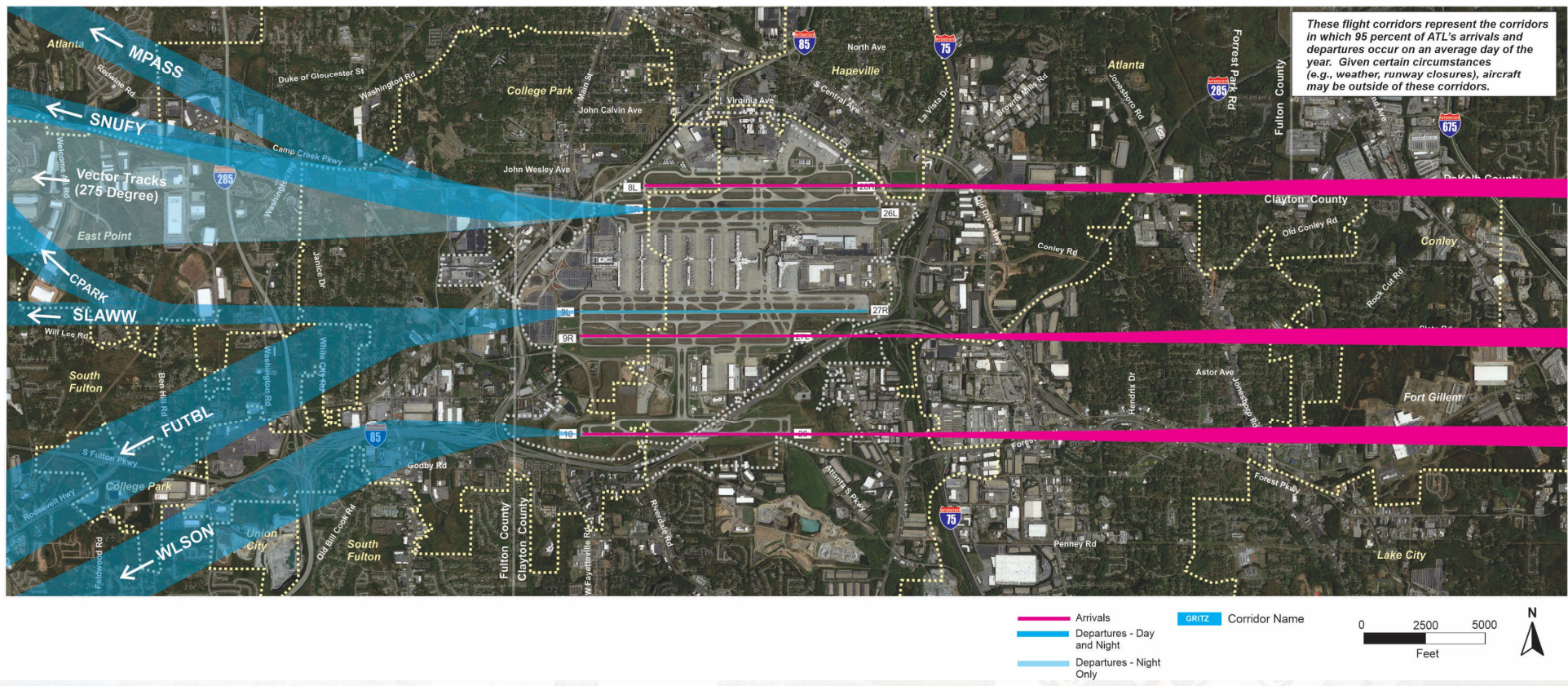
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Arrival/Departure Tracks- West Flow



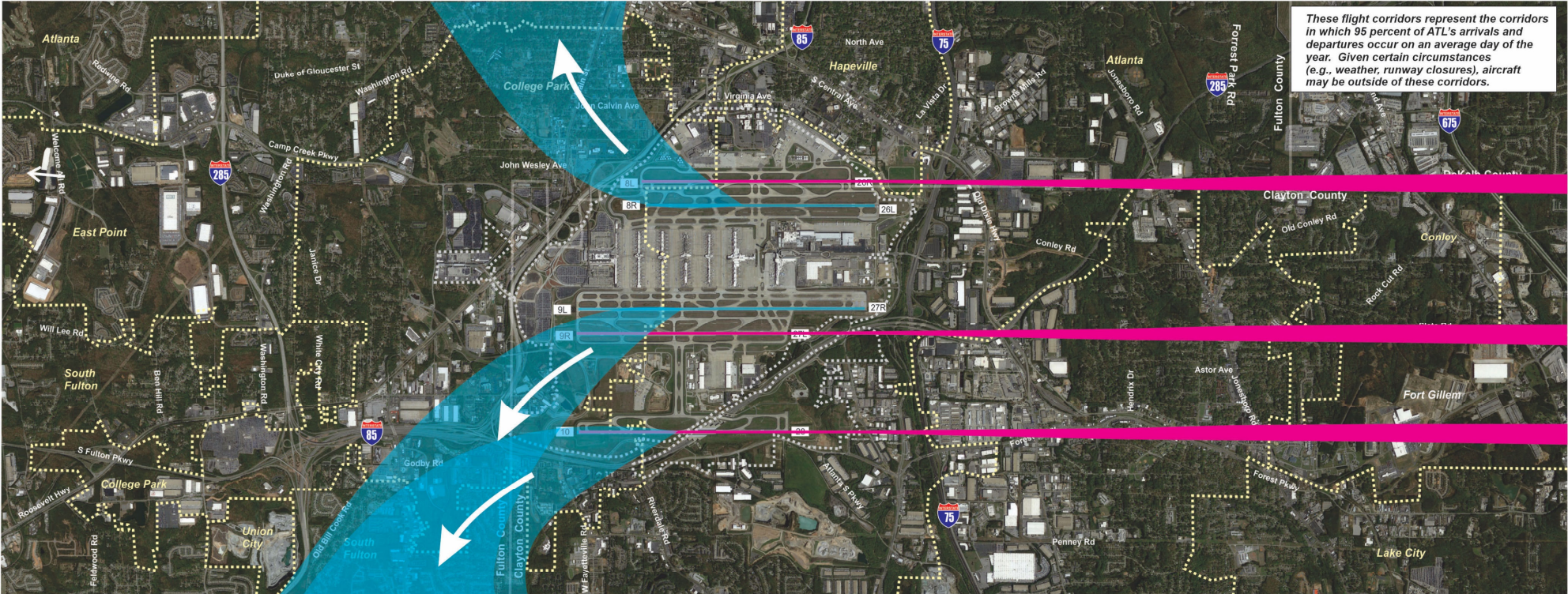
Source: FAA radar data (coverage 45 miles from airport center and up to 20,000 ft in altitude).

Jet Arrival/Departure Corridors – West Flow



These flight corridors represent the corridors in which 95 percent of ATL's arrivals and departures occur on an average day of the year. Given certain circumstances (e.g., weather, runway closures), aircraft may be outside of these corridors.

Prop/Turboprop Arrival/Departure Corridors–West Flow



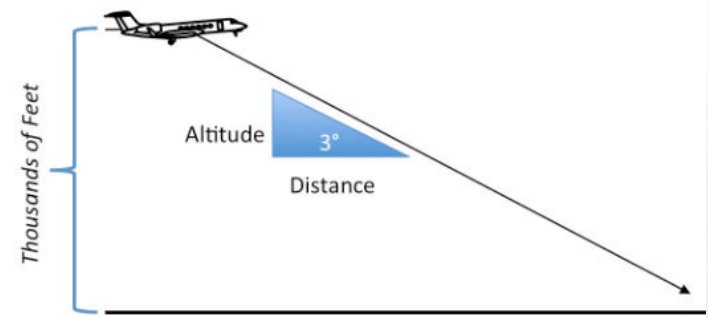
— Arrivals
— Departures - Day and Night

0 2500 5000
Feet

N

Arrival and Departure Profiles

- **Arrivals:** At established distances from ATL's runways, aircraft descend to the end of a runway using a three-degree glideslope.



- **Departures:** The profiles of the aircraft departing ATL are being based on data from the DOA's Flight Tracking System (FTS). The FTS provides destination airports for each departure that are then assigned an aircraft stage (i.e., trip) length for input to AEDT. AEDT uses the trip length to approximate the weight of the aircraft on departure which, in combination with AEDT's meteorological data, determines the aircraft departure profiles.

Operation Time	AC Type	Runway	Origin Airport	Destination Airport
2024-09-08 09:25:02	B739	8R	ATL	CLE
2024-09-08 09:25:49	B739	8R	ATL	SMF
2024-09-08 09:26:54	B739	8R	ATL	CVG
2024-09-08 09:32:49	B739	8R	ATL	SJC
2024-09-08 09:34:54	B739	8R	ATL	DTW
2024-09-08 09:56:45	B739	8R	ATL	GEG
2024-09-08 10:03:54	B739	8R	ATL	MEM

Time of Day

DRAFT

Arrivals/Departures	Percent	
	Daytime (7 AM - 10 PM)	Nighttime (10 PM - 7 AM)
Arrivals	88	12
Departures	86	14

Developed using data from the DOA's Flight Tracking System and Aviation Activity Forecast prepared by Ricondo & Associates.

Meteorological Data

Airport:	20486 - HARTSFIELD - JACKSON ATLANTA INTL
Select year:	2014-2023 average System data (ISD)
Temperature (°F):	63.85
Pressure (millibars):	981.21
Sea level pressure (millibars):	1018.38
Relative humidity (%):	66.36
Dew point (°F):	52.38
Wind speed (knots):	6.99

Source: AEDT

Airfield Location and Elevation

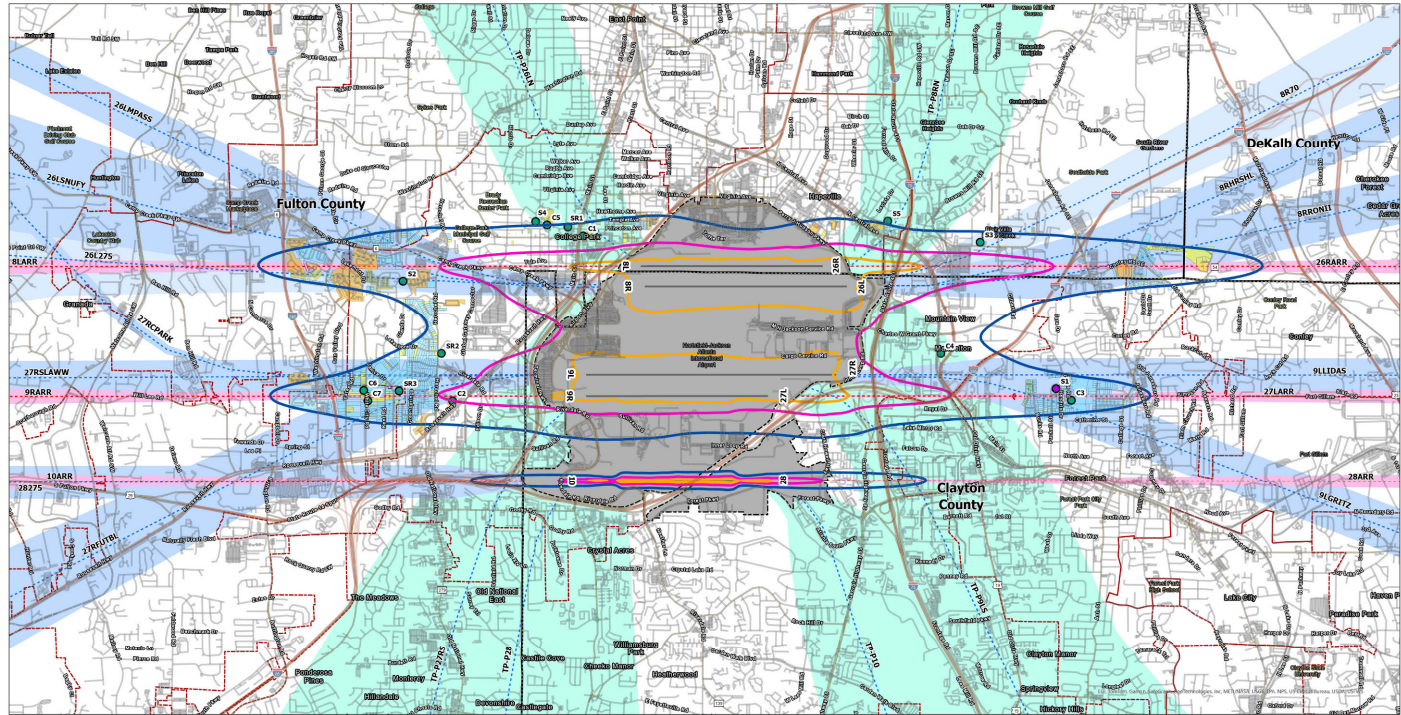
Airport: KATL - HARTSFIELD - JACKSON ATLANTA INTL

^ **Location**

City	ATLANTA
State	GEORGIA
Country	UNITED STATES
Latitude	33.6366996111
Longitude	-84.427864
Elevation MSL (ft)	1027

Source: AEDT

2024 NEM



- AEDT Backbone Arrival
- AEDT Backbone Departure
- Takeoff/Approach
- 3rd Departure Corridor - Nighttime Only
- 3rd Departure Corridor
- Arrival Corridor
- Sound Insulated Single/Family Residential
- Multi-Family Residential
- Single Family Residential
- Non-Residential Noise Sensitive Site
- Non-Residential Sound Insulated Noise Sensitive Site
- Airport Property
- Jurisdictional Boundary
- Survey
- Aircraft Noise Contours**
- YDNL 65 dBA
- YDNL 70 dBA
- YDNL 75 dBA



Number of Persons Residing Within Contours					
Sound Insulated			Not Sound Insulated		
YDNL 65 - 69 dBA	YDNL 70 - 74 dBA	YDNL 75+ dBA	YDNL 65 - 69 dBA	YDNL 70 - 74 dBA	YDNL 75+ dBA
3,504	0	0	5,709	6	9,671

This Noise Exposure Map (NEM) was prepared pursuant to procedures outlined in Title 16, Chapter 3, Subchapter 1, Part 16B of the Code of Federal Regulations (16 CFR 16B). The City of Atlanta Department of Aviation and the Hartsfield-Jackson Atlanta International Airport (HJAA) are pleased to provide this NEM to the public. The NEM and the report that documents the methodology used to prepare the NEM were prepared using the best available data at the time they were prepared and will be updated based on complete noise operations of 18th St, Runway 12, Chapter 10, Section 1010 of the 01 Code.

Date: October 24, 2024

By: Thomas E. Neelley, Ph.D.
 Assistant General Manager, Planning and Development
 City of Atlanta, Department of Aviation

MAP A Existing (Year 2024) Noise Exposure Map



Comparison of 2017 and 2024 NEMs

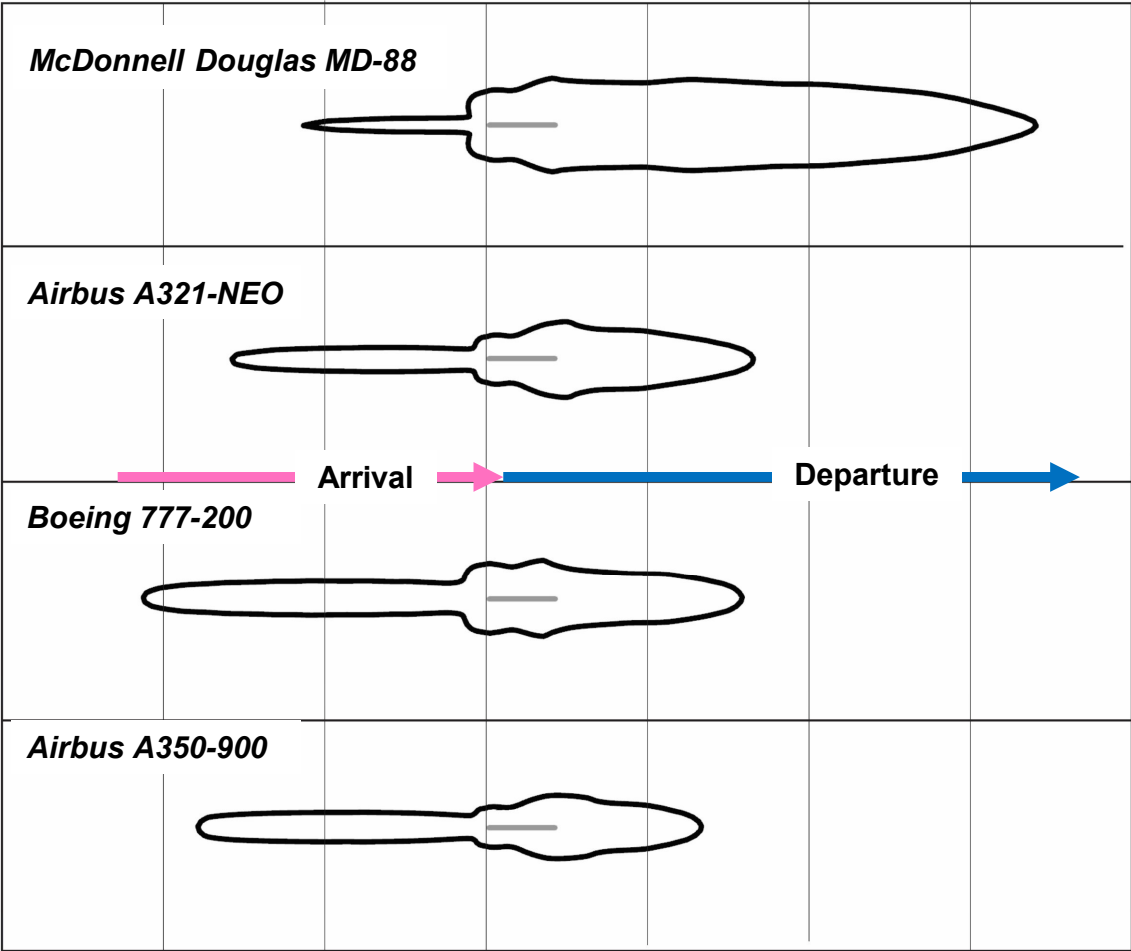
DNL 65 dB in 2017 DNL 65 dB in 2024



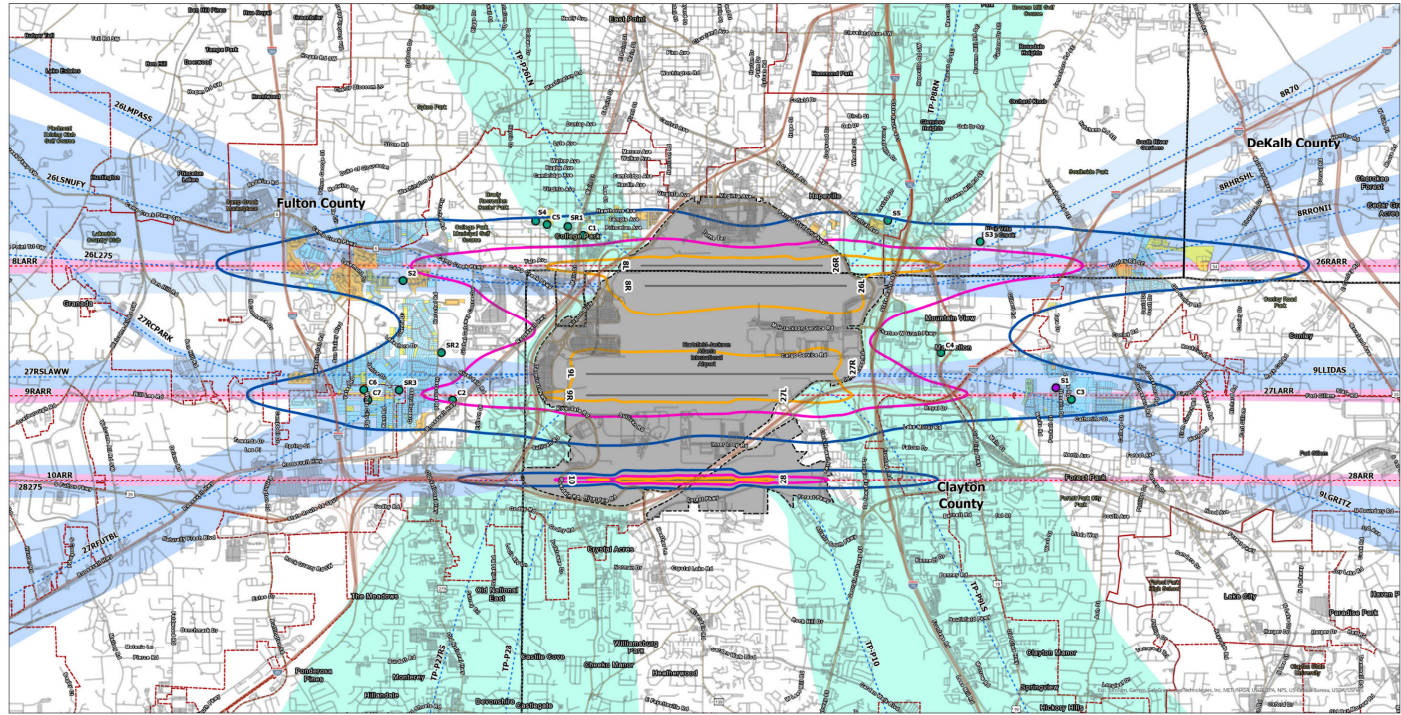
Within YDNL 65+ dBA Contour	2017	2024
Number of residences	8,163	4,649
Population	18,146	9,671
Noise contour area (sq miles)	24	14

Sound Exposure Levels (SELs)

SELs allow comparisons of noise events that occur over different durations by “normalizing” the duration of each event into one second (i.e., a sound level expressed as a steady noise level that has the same amount of energy as the longer duration event).



2029 NEM



- AEDT Backbone Arrival Track
- AEDT Backbone Departure Track
- Taxiway/Prop. Departure Corridor
- 3rd Departure Corridor - Nighttime Only
- 3rd Departure Corridor - Arrival Corridor
- Sound Insulated Single-Family Residential
- Multi-Family Residential
- Single Family Residential
- Non-Residential Noise Sensitive Site
- Non-Residential Sound Sensitive Site
- Airport Property
- Counties
- Jurisdictional Boundary
- Survey
- Aircraft Noise Contours
- YDNL 65 dBA
- YDNL 70 dBA
- YDNL 75 dBA



Number of Persons Residing Within Contours						
Sound Insulated			Not Sound Insulated			Total
YDNL 65-69 dBA	YDNL 70-74 dBA	YDNL 75+ dBA	YDNL 65-69 dBA	YDNL 70-74 dBA	YDNL 75+ dBA	
6,141	12	0	6,602	142	0	12,007

This Noise Exposure Map (NEM) was prepared following procedures outlined in Title 14, Chapter 1, Subchapter 1, Part 176 of the Code of Federal Regulations (14 CFR 176). The City of Atlanta Department of Aviation certifies that interested persons were afforded adequate opportunity to submit their views, comments, and concerns concerning the construction and adoption of the NEM and the operation of Hartsfield-Jackson Atlanta International Airport. The City will accept the comments for consideration and to provide the NEM only if approved along with available data at the time they were prepared and can be considered true and accurate under penalty of Title 16, Part 1, Chapter 45, Section 101 of the US Code.

Date: October 24, 2025

By: Thomas E. Hensley, III, City Manager
 Hartsfield-Jackson Heritage, Planning and Development
 City of Atlanta, Department of Aviation

MAP B Future (Year 2029) Noise Exposure Map



Notes:
 1. Non-residential noise sensitive sites include schools, churches, and other living facilities. The sites are identified by name and address in Table 10 and Section 4.1 of report and the "Noise Exposure Map - 2025 and 2027" dated October 24, 2025.
 2. The properties identified on this NEM are not necessarily eligible to participate in the City of Atlanta Department of Aviation's Noise Compatibility Program. The criteria for participation are described in a report entitled "NEM Part 150 Study Noise Compatibility Program Report" (dated September 15, 2025).

Comparison of 2024 and 2029 NEMs

DNL 65 dB in 2024

DNL 65 dB in 2029



Within YDNL 65+ dBA Contour	2024	2029
Number of residences	4,649	5,789
Population	9,671	12,097
Noise contour area (sq miles)	14	16

Schedule

Today Draft NEMs Presented and Notice of Availability Given for Draft NEM Update Report – Comments Due January 6, 2025

After January 6, 2025 Final Draft NEMs/Report Submitted to Federal Aviation Administration (FAA) for Determination of Compliance with 14 CFR Part 150

JANUARY 2025

SUN	MON	TUE	WED	THU	FRI	SAT
29	30	31	1	2	3	4
5	6 X	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1

Views, Data, Comments

- **Tonight:**
 - **Provide your input to the court reporter**
 - **Submit the comment sheet attached to the handout**
- **After Tonight:**
 - **By Mail-Postmarked by January 6, 2025 to:**

**Tianna Evola
Director of Government Affairs
City of Atlanta/Department of Aviation
P. O. Box 20509
Atlanta, GA 30320**

- **By Email-Received by January 6, 2025 to:**

NEMComments@cmtengr.com

