MARYLAND DEPARTMENT OF TRANSPORTATION

MARYLAND AVIATION ADMINISTRATION

2025 Airport Noise Zone Update

Baltimore/Washington International Thurgood Marshall Airport

BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

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2025 Airport Noise Zone Update

Baltimore/Washington International Thurgood Marshall Airport

July 2026

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Executive Summary

Introduction

Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall) is owned by the State of Maryland and operated by the Maryland Department of Transportation Maryland Aviation Administration (MAA). BWI Marshall is located 9 miles south of downtown Baltimore, Maryland, 32 miles northeast of Washington, DC in Linthicum, Maryland, and within unincorporated Anne Arundel County southeast of MD-295, north of MD-100, and west of Interstate 97. The Airport has three runways: Runway 10/28, Runway 15L/33R and Runway 15R/33L.

Maryland law (the Maryland Environmental Noise Act of 1974) requires the protection of citizens from the impact of transportation-related noise. The Code of Maryland Regulations (COMAR) requires the MAA to control incompatible land development in areas where noise levels are Day-Night Average Sound Level (DNL)[1] 65 dBA or more. Therefore, the MAA is required to develop and certify an Airport Noise Zone (ANZ) that controls incompatible land development around BWI Marshall.

Maryland law also requires the MAA to regularly update the ANZ for BWI Marshall to ensure it remains an accurate representation of noise conditions at the Airport. Updating the ANZ is necessary because factors such as the total number of aircraft, operations, aircraft types, and flight paths may change over time, potentially altering overall noise exposure. Updating the ANZ involves modeling airport noise and developing noise contours for both existing and future conditions at BWI Marshall necessary for land use planning.

The ANZ update also includes a review of the BWI Marshall Noise Abatement Plan (NAP). If incompatible land uses exist within a noise zone, the MAA is required to develop an NAP. The NAP prescribes measures to monitor and reduce or eliminate impacted land use areas to the extent feasible, while maintaining efficient airport operations.

The ANZ update provides the MAA and BWI Marshall stakeholders, including surrounding communities, with improved understanding of current and future noise conditions at the airport. The ANZ provides a means for the MAA to identify, control, and prevent incompatible land development around the airport.

Public Engagement

The ANZ update process includes multiple public consultation efforts to ensure that BWI Marshall stakeholder input is reflected in the resulting ANZ contour and NAP documentation. This public involvement component includes two major initiatives: (1) voluntarily forming and convening a Stakeholder Advisory Committee (SAC) and (2) conducting a public workshop and hearing.

[1] For the purposes of this document, Day-Night Average Sound Level is referred to as DNL. DNL describes 24-hour exposure. Noise from 10:00 p.m. to 7:00 a.m. is considered nighttime and is factored up by 10 dB. This “penalty” is equal to counting each nighttime event 10 times.

The SAC was formed to include representatives of community and industry stakeholder groups with an interest in airport activities to ensure they were kept informed of the 2025 BWI Marshall ANZ update process and methodology. The SAC is composed of stakeholders representing significant interests at BWI Marshall, including representatives from:

- Local government planning staff
- Community organizations
- DC Metroplex BWI Community Roundtable
- Federal Aviation Administration (FAA) Air Traffic Control Tower (ATCT) at BWI Marshall
- BWI Marshall tenants, including aircraft operators and airlines

Members of the SAC were asked to review study inputs, assumptions, analyses, and documentation, and were encouraged to provide input, advice, and guidance related to the ANZ and NAP. SAC members were expected to share pertinent BWI Marshall ANZ update information with the groups or any interested citizens that they represent. The SAC convened three times to discuss major milestones in the ANZ update process. SAC members served in an advisory role to the MAA solely to support the BWI Marshall ANZ update.

As required by Maryland law, a public workshop and hearing regarding the 2025 BWI Marshall ANZ was held on March 19, 2026. The public workshop and hearing allowed all interested people an opportunity to comment on the proposed update to the BWI Marshall ANZ and NAP.

Airport Noise Zone

The ANZ is an area specified by noise contours in terms of DNL and is a composite of three different contours. The ANZ study process considered the existing conditions in 2025 (also referred to as the base year) and two forecast years (2030 and 2035). These forecasts were developed using FAA-accepted forecasting methods and the most current data available at the time.

The 2025 BWI Marshall ANZ document includes the DNL noise contours for the following three conditions:

1. Base year 2025 conditions with the current airfield layout
2. Five-year 2030 forecast conditions with the current airfield layout
3. Ten-year 2035 forecast conditions including the Phase II and Phase III improvements to the airfield as depicted in the BWI Marshall Airport Layout Plan[2]

The ANZ, as shown in Figure ES-1, is a composite of the three contours described above. The 2025 ANZ represents the largest extent of the DNL contours for each of the three study years (2025, 2030, and 2035) and is defined to provide the largest area of the existing or future noise exposure contours. The noise contours are presented in 5-decibel increments for DNL from 65 dB to 75 dB. In conjunction with development of the 2025 ANZ DNL contour, population and households within the ANZ were estimated. The 2025 ANZ 65 dB DNL contour covers 3,802 acres, of which approximately 2,381 acres (63 percent) are

[2] BWI Marshall Airport Planning Documents, *BWI Marshall Airport Future Airport Layout Plan*, Draft, November 2022, https://marylandaviation.com/wp-content/uploads/2024/06/_Final_EA_Appendix_A_Planning_Docs.pdf

located on MAA property and 1,420 acres (37 percent) are located off airport property. Based on the 2020 Census data, this area includes an estimated 1,704 residents living in approximately 636 households.

The 2025 ANZ is smaller than the 2020 ANZ by approximately 31 percent. The 2025 ANZ also contains an approximate 57 percent decrease in estimated population based on the 2020 US Census, and 59 percent decrease in the number of estimated households exposed to noise levels greater than 65 dB DNL relative to the 2020 ANZ.

The decrease in ANZ size is due to several factors, including changes in the aircraft fleet mix and differences in number of operations.

Noise Abatement Plan

The NAP fulfills State requirements under the provisions of Sections 5-805, 5-806, and 5-819 of the Transportation Article, Annotated Code of Maryland.[3] These sections require airport operators to develop an NAP, in conjunction with an ANZ, to reduce or eliminate the impacted land use area. In general, impacted land use areas are residential areas, schools, hospitals, rest homes, homes for the aged, nursing homes, libraries, and churches within the ANZ 65 dB DNL contour.

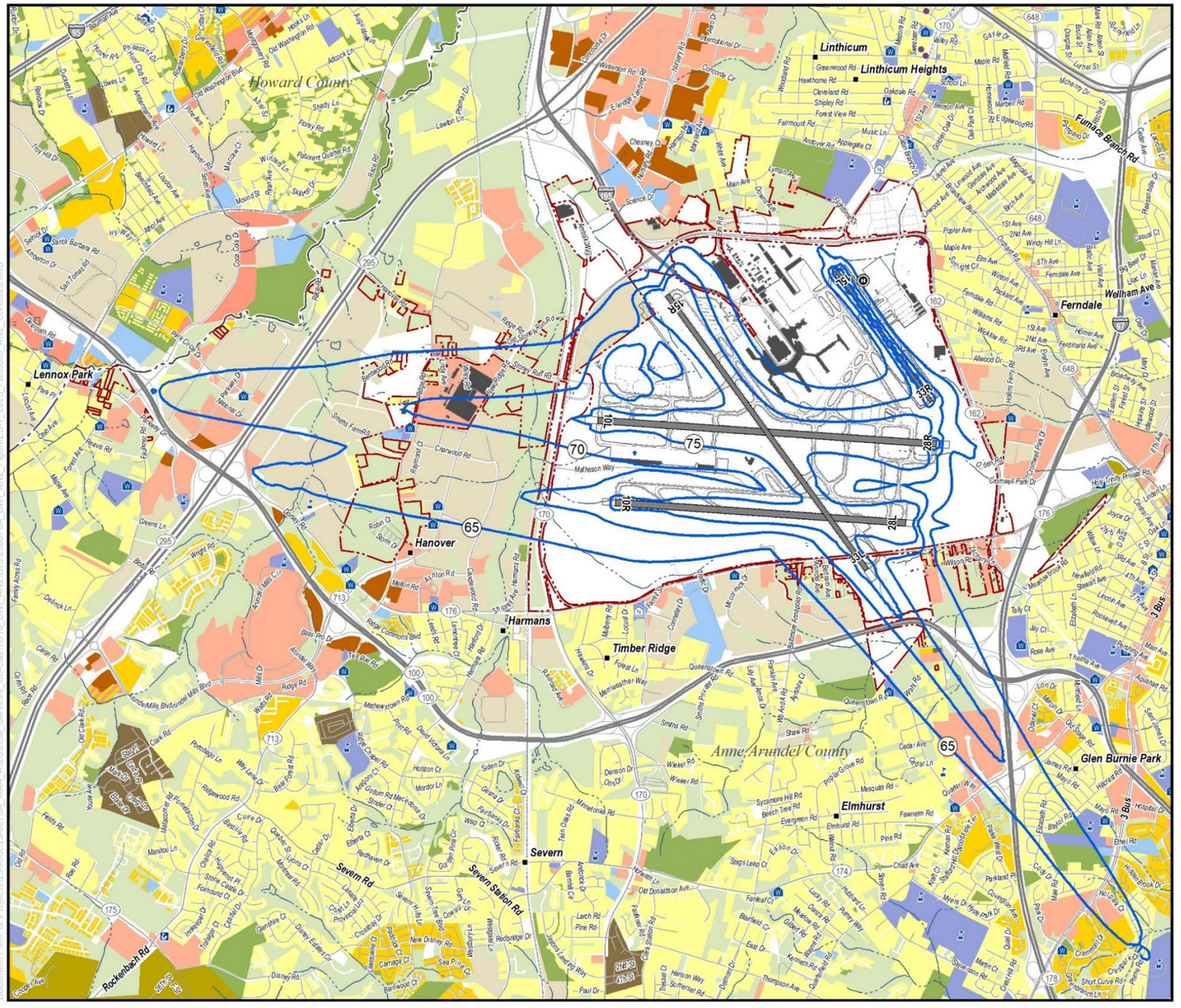
The NAP is designed to minimize the noise of aircraft operations within the constraints of the Federal Air Traffic Control System and ensure aircraft safety. BWI Marshall has an extensive NAP, which the MAA staff have developed over several decades through extensive cooperative efforts with the FAA, aviation stakeholders and the community. The NAP was reviewed with the cooperation of SAC members, the FAA ATCT at BWI Marshall, and industry stakeholders. The goal of the NAP is to minimize noise disturbance to neighboring communities while maintaining safe and efficient airport operations.

The NAP was most recently updated as part of the 2020 ANZ update and was reviewed and updated as part of the 2025 BWI Marshall ANZ update process to accurately reflect current operating conditions at BWI Marshall.

The NAP is comprised of two parts: (1) aircraft operating procedures and (2) the efforts the MAA is taking to mitigate noise in the areas surrounding BWI Marshall. While operational measures receive the most public attention, the program includes compatible land use measures and other measures that focus on program implementation, communication, monitoring, and updating. Notable changes to the NAP identified in this update include removing references to the Interstate Visual procedure, adding references to maintenance run-ups at the midfield cargo facility, and adding a discussion of the MAA's Annual Report.

[3] The BWI Marshall NAP is established pursuant to the Maryland Environmental Noise Act of 1974 (Transportation Article, §§ 5-805, 5-806, and 5-819, Annotated Code of Maryland) and COMAR Section 11.03.02.10. http://mdrules.elaws.us/comar/11.03.02.10.

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BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure ES-1
2025 ANZ Contours

- 2025 ANZ Contours
- MAA Property Boundary
- Runup Locations
- Helicopter Operation Area
- Runway
- Airport Buildings
- Airport Pavement Edge
- Airport Pavement Shoulder
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Residential Use
- Multi-Family Residential Use
- Mobile Home
- Transient Lodging
- Mixed Use
- Public Use (Non-Compatible)
- Public Use (Compatible)
- Water
- Military Use
- Commercial Use
- Manufacturing / Production
- Vacant / Undeveloped
- Recreational / Open Space
- Golf
- Transportation / Utility
- School
- Place of Worship
- Nursing / Assisted Living
- Library
- Hospital / Health Care
- Historic Place (NRHP)

Data Sources: Maryland Aviation Administration; Anne Arundel County Open Data Portal (https://opendata.aacounty.org/); Howard County MD (https://data.howardcountymd.gov/); Baltimore County Government Open Data Portal (https://opendata.baltimorecountymd.gov/); MDDOT (https://data-maryland.opendata.arcgis.com/pages/mdot-data); Environmental Systems Research Institute (ESRI); AirNav.com; HMMH Inc.

0 3,000 6,000 Feet

hmmh

Figure ES-1. 2025 ANZ Contours

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Acronyms

AAD	Average Annual Day
AEDT	Aviation Environmental Design Tool
AGL	Above Ground Level
ALP	Airport Layout Plan
ANOMS	Airport Noise and Operations Monitoring System
ANZ	Airport Noise Zone
APU	Auxiliary Power Unit
ATADS	Air Traffic Activity Data System
ATC	Air Traffic Control
ATCT	Air Traffic Control Tower
AZD	Airport Zoning District
BAZA	Board of Airport Zoning Appeals
BWI	Baltimore/Washington International Thurgood Marshall Airport
CFR	Code of Federal Regulations
COMAR	Code of Maryland Regulations
dB	Decibel
dBA	A-Weighted Decibel
DME	Distance Measuring Equipment
DNL/Ldn	Day-Night Average Sound Level
FAA	Federal Aviation Administration
GIS	Geographic Information System
HMMH	Harris Miller Miller & Hanson Inc.
IFR	Instrument Flight Rules
ILS	Instrument Landing System
Leq	Equivalent A-Weighted Sound Level
Lmax	Maximum A-Weighted Sound Level
MAA	Maryland Department of Transportation Maryland Aviation Administration
MSL	Mean Sea Level
NAD 83	North American Datum 1983
NAP	Noise Abatement Plan
NCP	Noise Compatibility Program
NEM	Noise Exposure Map
nmi	Nautical Miles
NMT	Noise Monitoring Terminal
NRHP	National Register of Historic Places
PBN	Performance Based Navigation
SAC	Stakeholder Advisory Committee
SEL	Sound Exposure Level
TAF	Terminal Area Forecast
TRACON	Terminal Radar Approach Control
USGS	United States Geological Survey
VASI	Visual Approach Slope Indicator

VFR	Visual Flight Rules
VORTAC	VHF Omni-directional Range Tactical Air Navigation

1. Introduction and Background

The Maryland Environmental Noise Act of 1974 requires the protection of citizens from the impact of transportation-related noise. The Maryland Department of Transportation Maryland Aviation Administration (MAA) is required to develop and certify an Airport Noise Zone (ANZ) that controls incompatible land development around BWI Marshall.

Noise modeling analysis conducted for the ANZ study provides the MAA, BWI Marshall stakeholders, and surrounding communities with a better understanding of current and future noise conditions at the airport. The ANZ serves as a tool for the MAA to identify, control, and prevent incompatible land development around the airport. It also guides the Noise Abatement Plan (NAP), which prescribes measures to reduce or eliminate the impacted land use area. The goal of the NAP is to minimize noise disturbance to neighboring communities while maintaining safe and efficient airport operations.

Maryland regulations requiring the development of an ANZ and NAP were established before the creation of a similar federal program for airports nationwide. The voluntary federal program, codified in Title 14 of the Code of Federal Regulations Part 150 (14 CFR Part 150 or Part 150), includes the development and certification of noise exposure maps (NEMs) and a Noise Compatibility Program (NCP). These steps are necessary for airports to qualify for federal funding for noise mitigation programs and to obtain Federal Aviation Administration (FAA) approval for implementing certain noise abatement procedures. The MAA has participated in the Part 150 program for many years. The NCP for BWI Marshall was last comprehensively updated in 2007, and the FAA issued a Record of Approval on February 26, 2008. The Airport's NEMs were subsequently updated and accepted by the FAA in 2016. The NAP includes the MAA's NCP prepared under Part 150. Any future updates to the NCP would also require corresponding updates to the NAP to maintain consistency between state and federal noise management programs.

The State of Maryland uses the Day-Night Average Sound Level, abbreviated DNL,[4,5] as the measure of cumulative noise exposure required to develop an ANZ. The ANZ represents a composite of the 65, 70, and 75 decibel (dB) DNL noise level contours for three study years: the base year, five-year, and ten-year forecast contours. The 2025 ANZ, as presented in this document, represents the largest extent of the DNL contours for all three years included in this study (2025, 2030, and 2035). Forecasts for these years were developed using FAA-accepted forecasting methods and the most current data available at the time.

The resulting ANZ is defined as the composite of the largest area of the existing or future noise exposure contours and is overprinted on county tax maps. Maryland law requires the MAA to regularly update the ANZ for BWI Marshall to ensure it accurately reflects current and forecasted noise conditions at the airport. The BWI Marshall ANZ was last updated in 2020 and certified in 2021.[6] Since that update, several factors that influence the noise environment of the airport have changed, including:

[4] COMAR defines the term "Annual day-night (average) sound level (Ldn)."

[5] For the purposes of this document, Day-Night Average Sound Level is referred to as DNL. DNL describes 24-hour exposure. Noise from 10:00 p.m. to 7:00 a.m. is considered nighttime and is factored up by 10 dB. This "penalty" is equal to counting each nighttime event 10 times.

[6] MAA, *BWI Marshall Airport Noise Zone*, https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/

- Aircraft fleet mix changes, such as the retirement of some older, noisier aircraft and the introduction of newer, quieter aircraft.
- FAA updates to arrival and departure procedures in July and September 2024.
- Changes in the number of forecast aircraft operations.

The ANZ represents composite noise contours at specified levels of exposure, which are intended to control incompatible land development around BWI Marshall in areas where levels of cumulative aircraft noise exposure equal or exceed the limits established by Maryland regulations.[7] Restrictions on allowable land use and development within the ANZ are based on established limits for cumulative noise exposure.

Any entity desiring to construct or modify a structure or to establish land use within the ANZ must first apply for and obtain an airport zoning permit from the MAA. Local government approval of development activities within the ANZ is prohibited before an airport zoning permit or variance is obtained. According to State law, the MAA must deny a permit if the proposed land use is incompatible with the established cumulative noise exposure limits or if the proposed land use development is found to be incompatible with the ANZ.

If an airport zoning permit is denied, an applicant may petition the Board of Airport Zoning Appeals (BAZA) for a variance from the regulations. The Board will consider any facts and circumstances relevant to the request for a variance, including testimony or evidence regarding possible impacts of granting or denying the variance on the surrounding community. In granting a variance to the regulations, the Board will require, at a minimum, 1) compliance with all applicable minimum standards of noise attenuation adopted by the MAA and 2) an avigation easement over the property. BAZA may also issue conditions such as the addition of sound insulation components to buildings within the certified ANZ. Since the certification of the previous ANZ in April 2021, the BAZA has granted variances for five applications, including two single-family homes and three public schools.

Additions and modifications to existing residential structures are exempt from the noise zoning permit process if the modification does not increase the number of dwelling units. Permit applications can be obtained from the MAA, the Anne Arundel County Office of Inspections and Permits, or the Howard County Office of License and Permits.

BWI Marshall also has an Airport Zoning District (AZD) defined by a four-mile radius around the airport reference point. To obtain county permits for projects within the AZD, an applicant must obtain an approved airport zoning permit from the MAA. Airport zoning permit applications are reviewed for ANZ land use compatibility, airport and airspace compatibility, and stormwater management and landscaping compatibility.

The 2025 BWI Marshall ANZ update began in January 2025. The MAA retained Harris Miller Miller & Hanson Inc. (HMMH) to support the Office of Environmental Compliance and Sustainability in preparing the 2025 BWI Marshall ANZ document. In coordination and collaboration with the MAA, HMMH designed and conducted the public participation program, developed the DNL contours, compiled the composite ANZ contour, conducted a land-use inventory, reviewed and updated the NAP, and prepared ANZ documentation.

[7] COMAR, 11.03.03.03, *Limits for Cumulative Noise Exposure*, http://mdrules.elaws.us/comar/11.03.03.03

Section 2 of this report describes the methodology used in modeling the noise contours. Section 3 describes the inputs to the noise model in detail for the base year and forecast years. Section 4 presents DNL contours for the base and forecast years, the composite 2025 BWI Marshall ANZ contour, and the land use inventory. Section 5 contains measured versus modeled annual noise data, and Section 6 presents the updated NAP. Section 7 discusses the public consultation process undertaken for the study.

The appendices of this document provide additional relevant information. Appendix A includes an overview of aircraft noise terminology. Appendix B includes the ANZ overlaid on Anne Arundel County tax maps. Appendix C includes the BWI Marshall Stakeholder Advisory Committee (SAC) roster and meeting materials, including meeting invitations, sign-in sheets, meeting minutes, and presentations. Appendix D includes Maryland Aviation Commission materials. Appendix E includes the information related to the Public Workshop and Hearing, including documentation of public notices, meeting invitations, presentation materials, and attendance information. Appendix F contains documentation of and responses to public comments following the public hearing.

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2. Noise Modeling Methodology

The State of Maryland uses the DNL metric as the measure of cumulative aircraft noise exposure for developing an ANZ. DNL represents the total noise exposure from aircraft operations during a 24-hour period, with an additional 10-dB weighting for noise generated during nighttime hours (10:00 p.m. to 7:00 a.m.). This weighting reflects studies showing that people are more sensitive to noise during nighttime hours. In practical terms, each aircraft operation occurring during the defined nighttime period is treated as equivalent to 10 daytime operations when calculating DNL. The aircraft operations used in these calculations represent an average day during a particular year, which for this analysis are 2025, 2030, and 2035. Appendix A includes an overview of aircraft noise terminology.

The noise environment around an airport is described by contours of equal noise exposure, representing the noise that occurs during an average 24-hour day. The BWI Marshall ANZ is depicted as a series of lines (noise contours) surrounding the airport. These lines connect points of equal noise exposure and result in the 65 dB, 70 dB, and 75 dB DNL noise contours. The ANZ contours provide boundaries for determining incompatible activities or land uses with airport operations. The limits for cumulative noise exposure for the State of Maryland are shown in Table 2-1 below.

Table 2-1. State of Maryland Limits for Cumulative Noise Exposure

Land Use	Area of Compatibility (Noise Levels)
Residences, schools, hospitals, libraries, churches, auditoriums, rest homes, nursing homes, concert halls	Up to 65 dB DNL
Transient lodging, hotels, motels, sports arenas, outdoor spectator sports, playgrounds, neighborhood parks, noise sensitive manufacturing and communications	Up to 70 dB DNL
Golf courses, riding stables, water recreation, cemeteries, office buildings, retail and wholesale establishments, movie theaters, restaurants, industry, manufacturing, utilities, livestock farming, animal breeding	Up to 75 dB DNL
Agriculture (except livestock), mining, fishing, aviation related uses	All

Source: COMAR. 11.03.03.03, Limits for Cumulative Noise Exposure, http://mdrules.elaws.us/comar/11.03.03.03

Maryland regulations require noise modeling as a prediction method to create ANZ noise contours.[8] Noise modeling software creates computer-generated DNL estimates depicted as equal-exposure noise contours, similar to topographic maps that indicate contours of equal elevation. DNL contours reflect average annual daily operating conditions, also referred to as an Average Annual Day (AAD) of operations, and account for the type of aircraft, average number of flights each day, time of day, how often each runway is used throughout the year, and where over the surrounding communities the aircraft normally fly.

[8] COMAR, 11.03.03.02, *Methods for Calculation and Measurement of Levels of Cumulative Noise Exposure*, http://mdrules.elaws.us/comar/11.03.03.02

The 2025 BWI Marshall ANZ document presents DNL noise contours for the following conditions:

- Base year 2025 conditions with the current airfield layout
- Five-year 2030 forecast conditions with the current airfield layout
- Ten-year 2035 forecast conditions with the Phase II and Phase III improvements to the airfield as depicted in the BWI Marshall Airport Layout Plan (ALP)[9]

[9] BWI Marshall Airport Planning Documents, *BWI Marshall Airport Future Airport Layout Plan*, Draft, November 2022, https://marylandaviation.com/wp-content/uploads/2024/04/Draft_BWI_ATCT_EA_Appendix_A_Planning_Docs.pdf

3. Noise Model Inputs

The 2025, 2030, and 2035 DNL contours were developed using the FAA Aviation Environmental Design Tool (AEDT) version 3g consistent with Section 11.03.03 of COMAR. The DNL contours were developed primarily from flight track data from BWI Marshall's Airport Noise and Operations Monitoring System (ANOMS) system.

AEDT requires noise model input data in three categories:

1. Airport physical inputs
   - Runway layout (including displaced landing or takeoff thresholds)
   - Flight track geometry and use
   - Terrain data
   - Meteorological conditions
2. Aircraft noise and performance data
   - Aircraft performance profiles
   - Noise level versus distance curves
3. Aircraft operational inputs
   - Number of aircraft operations
   - Aircraft fleet mix
   - Day-night split of operations
   - Runway utilization
   - Flight track geometry and utilization

AEDT inputs used in developing the base year and future year noise contours are presented in Sections 3.1 through 3.7.

3.1 Physical Description of the Airport Layout

BWI Marshall is located within unincorporated Anne Arundel County southeast of MD-295, north of MD-100 and west of Interstate 97. The Airport has three runways: Runway 10/28, Runway 15L/33R and Runway 15R/33L. Figure 3-1 presents an aerial photograph with the existing runway layout, the airport property line, and the helicopter operational area.

The end of each runway is designated by a number that, with the addition of a trailing "0", reflects the magnetic heading of the runway to the nearest 10 degrees, as seen by the pilot. The two parallel runways, 15R/33L and 15L/33R, are oriented on approximate magnetic headings of 155° and 335°. Runway 15R/33L is 9,501 feet long by 150 feet wide with displaced landing thresholds of 301 feet for Runway 15R and 500 feet for Runway 33L. Runway 15L/33R is 5,000 feet long by 100 feet wide. The parallel runways are distinguished from each other with letter endings "L", meaning left, and "R", meaning right, as seen by the pilot. Runway 10/28 is oriented on an approximate magnetic heading of 105° and 285° and is 10,503 feet

long by 150 feet wide. Runway 10 has a displaced landing threshold of 550 feet, and Runway 28 has a displaced landing threshold of 700 feet.

Aircraft departing on all runways except Runway 28 begin their takeoff roll at the physical end of the runway. Most aircraft departing on Runway 28 begin their takeoff roll at the intersection with Taxiway Uniform 1 (U1), approximately 700 feet west of the physical end of the runway. Aircraft that have a need (based on weight, length of flight, or other conditions) to use the full 10,503 feet of runway may begin their takeoff roll at the physical end of Runway 28.

BWI Marshall has a single helicopter operational area at the Airport, which serves corporate, general aviation, and law enforcement organizations. The helicopter operational area is located near the northeast corner of the airfield near the end of Runway 33R, in close proximity to the general aviation facility.

Available runway length, runway width, and instrumentation may affect which aircraft might use a particular runway and under what conditions, and therefore how often a runway would be used relative to the other runways at the airport. Table 3-1 presents the latitude and longitude inputs and configurations for each runway and helicopter operational area used for modeling in AEDT. No aircraft run-ups were observed at BWI Marshall in 2024, so no run-up locations were modeled for the base year.

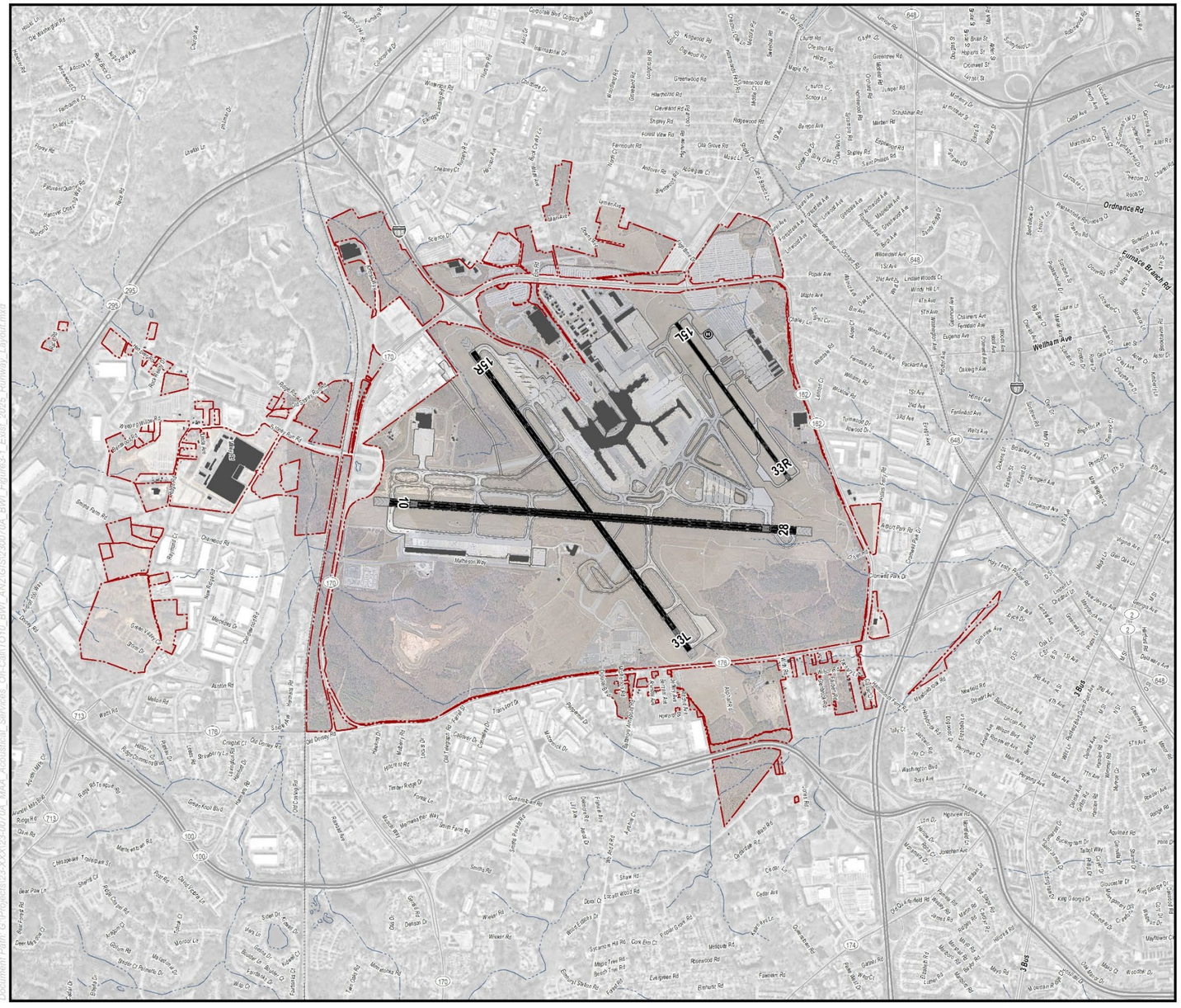


Figure 3-1. Existing/Base Year (2025) Airport Layout

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Table 3-1. Existing (2025) BWI Marshall Runway and Helipad Data

Runway	Latitude (degrees)	Longitude (degrees)	Length (feet)	Modeled Elevation (feet)	Displaced Landing Threshold (feet)	Approach Slope (degrees)	Threshold Crossing Height (feet)
Fixed-Wing Runways							
10	39.174747	-76.689618	10,503	139.0	550	3.0	71
28	39.172632	-76.652673	10,503	126.4	700	3.0	75
15L	39.187373	-76.663540	5,000	141.4	-	3.0	47
33R	39.176235	-76.653231	5,000	114.0	-	3.0	47
15R	39.185361	-76.681992	9,501	139.0	301	3.0	73
33L	39.164203	-76.662393	9,501	129.6	500	3.0	72
Helicopter Operations Areas							
H1	39.186529	-76.660582	-	141.4	-	-	-

Note: Latitude and longitude coordinates reference to North American Datum 1983 (NAD 83).
Source: FAA 5010, MAA, 2025

For the five-year 2030 forecast condition of the airport layout, no physical changes to the runways or helipads were made. For the ten-year 2035 forecast condition, the airport layout includes the Phase III improvements to the airfield as depicted in the ALP, which consist of a new planned runway parallel to Runway 10/28 and an extension of Runway 15R/33L. The existing Runway 10/28 would be renamed to Runway 10L/28R, and the new proposed runway would be named Runway 10R/28L.

Concerning future run-up locations, the future scenarios reflect changes to the airfield, including the closure of the Runway 10 hold block due to the construction of the airline maintenance facility. Limited run-up operations are permitted at the midfield cargo ramp with concurrence from Airport Operations. Run-ups are therefore permitted at the Runway 33L hold block, at the deice pad located on the north side of Runway 28 near the runway threshold, and at the midfield cargo ramp.

Table 3-2 and Table 3-3 present the latitude and longitude inputs and configurations for each runway for the five-year and ten-year forecast conditions, respectively. Figure 3-2 and Figure 3-3 present the BWI Marshall runway layout for use in developing the five-year and ten-year forecast contours, respectively, and include notations for MAA property boundaries, helicopter operational areas, and aircraft run-up locations.

Table 3-2. Five-Year (2030) Forecast Condition BWI Marshall Runway, Helipad, and Run-up Inputs

Runway	Latitude (degrees)	Longitude (degrees)	Length (feet)	Modeled Elevation (feet)	Displaced Landing Threshold (feet)	Approach Slope (degrees)	Threshold Crossing Height (feet)	Runway Width (feet)
Fixed-Wing Runways								
10	39.174747	-76.689618	10,503	139.0	550	3.0	50	150
28	39.172632	-76.652673	10,503	126.4	700	3.0	50	150
15L	39.187373	-76.663540	5,000	141.4	-	3.0	50	100
33R	39.176235	-76.653231	5,000	114.0	-	3.0	50	100
15R	39.185361	-76.681992	9,501	139.0	301	3.0	50	150
33L	39.164203	-76.662393	9,501	129.6	500	3.0	50	150
Helicopter Operations Areas								
H1	39.186529	-76.660582	-	141.4	-	-	-	-

Runway	Latitude (degrees)	Longitude (degrees)	Length (feet)	Modeled Elevation (feet)	Displaced Landing Threshold (feet)	Approach Slope (degrees)	Threshold Crossing Height (feet)	Runway Width (feet)
Run-Up Locations								
Airline Maintenance Facility	39.178976	-76.686047	-	139.0	-	-	-	-
Midfield Cargo Ramp (Idle)	39.171833	-76.685497	-	135.0	-	-	-	-
Midfield Cargo Ramp	39.172626	-76.686870	-	135.0	-	-	-	-
Runway 28 Deicing Pad	39.175501	-76.659727	-	126.4	-	-	-	-
Runway 33L Hold Block	39.166147	-76.660794	-	129.6	-	-	-	-

Notes:
Latitude and Longitude coordinates reference to North American Datum 1983 (NAD 83).
Elevations referenced to Mean Sea Level (MSL).
Source: MAA, 2025

Table 3-3. Ten-Year (2035) Forecast Condition BWI Marshall Runway, Helipad, and Run-Up Inputs

Runway	Latitude (degrees)	Longitude (degrees)	Length (feet)	Modeled Elevation (feet)	Displaced Landing Threshold (feet)	Approach Slope (degrees)	Threshold Crossing Height (feet)	Runway Width (feet)
Fixed-Wing Runways								
10L	39.174747	-76.689618	10,503	139.0	550	3.0	50	150
10R	39.167757	-76.687725	9,000	140.0	500	3.0	50	150
28R	39.172632	-76.652673	10,503	126.4	700	3.0	50	150
28L	39.165944	-76.656068	9,000	130.0	-	3.0	50	150
15L	39.187373	-76.663540	5,000	141.4	-	3.0	50	100
33R	39.176235	-76.653231	5,000	114.0	-	3.0	50	100
15R	39.185361	-76.681992	10,501	139.0	301	3.0	50	150
33L	39.161976	-76.66033	10,501	129.8	-	3.0	50	150
Helicopter Operations Areas								
H1	39.185181	-76.659115	-	129.0	-	-	-	-
Run-up Locations								
Airline Maintenance Facility	39.178976	-76.686047	-	139.0	-	-	-	-
Midfield Cargo Ramp (Idle)	39.171833	-76.685497	-	135.0	-	-	-	-
Midfield Cargo Ramp	39.172626	-76.686870	-	135.0	-	-	-	-
Runway 28 Deicing Pad	39.175501	-76.659727	-	126.4	-	-	-	-
Runway 33L Hold Block	39.165388	-76.660616	-	129.6	-	-	-	-

Notes:
Latitude and Longitude coordinates reference to North American Datum 1983 (NAD 83)
Elevations referenced to Mean Sea Level (MSL)
Source: MAA, 2025



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-2

Five-Year (2030) Forecast Condition
BWI Marshall Airport Layout

Runup Locations
Helicopter Operation Area
Runway
MAA Property Boundary
Roads
Railroad
Stream / Creek

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; Nearmap; HMMH Inc.

0 2,500 5,000 Feet

Figure 3-2. Five-Year (2030) Forecast Condition Airport Layout



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-3

Ten-Year (2035) Forecast Condition
BWI Marshall Airport Layout

- Runup Locations
- Helicopter Operation Area
- Runway
- 2035 Runway / Runway Extension
- MAA Property Boundary
- Roads
- Railroad
- Stream / Creek

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; Nearmap; HMMH Inc.

0 2,500 5,000 Feet

Figure 3-3. Ten-Year (2035) Forecast Condition Airport Layout

3.2 Aircraft Operations and Run-Ups

To create noise contours, AEDT requires details related to AAD operations as well as aircraft maintenance run-ups be included as inputs. AAD operations and run-up estimates were developed for the base year and future years.

Operations for 2025 were determined using 12 months of 2024 flight data and the 2024 edition of the FAA's Terminal Area Forecast (TAF), issued in January 2025. The FAA TAF reports operations in terms of the federal fiscal year, which runs from October 1 to September 30, whereas the calendar year runs from January 1 to December 31. Historical monthly data from the FAA Air Traffic Activity Data System (ATADS) for calendar year 2024 was analyzed, and this analysis indicated that adjusting the TAF federal fiscal year to a 2025 calendar year estimate would result in an overall decrease of about 1.4 percent of the total operations. Therefore, the TAF for 2025 was used unadjusted.

The detailed breakdown of operations by aircraft type for fixed-wing and helicopter civil aircraft at BWI Marshall was determined using the 12 months of 2024 flight data obtained from the MAA ANOMS. The flight data provided the primary aircraft fleet mix distributions for civilian aircraft, along with distributions over daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.). Calendar year 2024 FAA Traffic Flow Management System Counts were downloaded and used to check the aircraft types within the flight data and to provide the fleet mix for military aircraft. The data collected for 2024 were scaled to the 2025 operational totals shown in Table 3-4.

A small percentage of arrival operations were re-assigned to nighttime hours to account for new service to and from the western US with arrivals prior to 7:00 a.m. that began in early 2025.

Publicly available information for industry trends and for airlines operating at BWI Marshall[10] was used to scale the 2024 data to develop the 2030 and 2035 forecast operational totals shown in Table 3-6 and Table 3-7. All operations were scaled to the TAF 2030 and 2035 forecast operations totals shown in Table 3-4. The fleet mix in the same FAA operational categories (Air Carrier Cargo, Air Carrier Passenger, Air Taxi, General Aviation, and Military) was scaled to match the proposed operational totals. In the 2030 and 2035 forecast years, an increase in operations is expected to occur for aircraft types that operators plan to add to their fleets and for aircraft currently in production. A decrease in operations is expected to occur for some older aircraft types in the 2030 and 2035 forecast years.

In general, this study assumes that operations during the daytime and nighttime would grow at the same rate. The one exception is with Southwest Airlines and their recent scheduling changes to include additional red-eye flights. Press reports indicate Southwest Airlines may add to this trend after the 2025 calendar year, so the study accounts for adjusted Southwest arrivals to increase such operations.

For the 2030 forecast, total overall operations are forecast to increase by 12 percent over the base year. Air carrier passenger operations are forecast to increase 11 percent from the base year and air carrier cargo operations to increase by 38 percent. Air taxi operations increased by 6 percent and general aviation

[10] This information included Security and Exchange Commission filings, press releases, and aircraft manufacturer order and delivery reports for the top 12 airlines operating at BWI, in addition to general industry trend information.

operations are forecast to increase by 15 percent. Military operations remained unchanged from the base year.

In 2035, total overall operations are forecast to increase by 22 percent from the base year. Military operations remained unchanged from the base year. Air carrier passenger operations increased 21 percent from the base year, and air carrier cargo operations increased 71 percent. Air taxi operations increased 12 percent and general aviation operations increased 16 percent compared to the base year.

Table 3-4. Anticipated 2025, 2030 and 2035 Forecast Operations Levels

Year	Air Carrier	Air Taxi	General Aviation	Military	Total	AAD
2025	211,771	14,752	10,712	920	238,155	652.50
2030	238,385	15,612	12,340	920	267,257	732.12
2035	260,681	16,512	12,437	920	290,550	795.97

Source: FAA TAF issued January 2025; HMMH 2025

The modeled AAD operations are reported in Table 3-5 through Table 3-7 for the 2025 base year, 2030 five-year forecast, and 2035 ten-year forecast, respectively. The fleet mix distributions are reported by aircraft category and their associated arrivals and departures separated by both day and night activity. Representative aircraft profiles may be used if an exact aircraft type is not included in the AEDT database or if several aircraft variants have similar aerodynamic and acoustic characteristics. Analysis of the radar data showed that circuit operations do not occur on any regular basis at BWI Marshall and therefore were not modeled.

Table 3-5. Base Year (2025) Modeled Average Daily Aircraft Operations

Aircraft Category	Engine	AEDT Type	Aircraft Description	Day Arrivals	Night Arrivals	Day Departures	Night Departures	Total
Air Carrier Cargo	Jet	737800	Boeing 737-800	2.27	0.28	1.54	1.01	5.09
Air Carrier Cargo	Jet	7673ER	Boeing 767-300ER	5.33	2.23	5.48	2.08	15.12
Air Carrier Cargo	Jet	767CF6	Boeing 767-200	0.50	-	0.50	-	1.00
Air Carrier Cargo	Jet	A300-622R	Airbus A300-622R	0.10	1.13	0.78	0.46	2.47
Air Carrier Cargo	Jet	MD11GE	McDonnell Douglas MD-11	0.18	0.24	0.28	0.14	0.84
Air Carrier Cargo	Jet	MD11PW	McDonnell Douglas MD-11	0.21	0.35	0.38	0.18	1.14
Air Carrier Passenger	Jet	717200	Boeing 717-200	1.59	0.01	1.58	0.01	3.18
Air Carrier Passenger	Jet	737700	Boeing 737-700	74.15	13.08	76.07	11.16	174.47
Air Carrier Passenger	Jet	737800	Boeing 737-800	59.69	14.16	60.86	12.99	147.71
Air Carrier Passenger	Jet	777200	Boeing 777-200ER	0.39	0.08	0.30	0.17	0.95
Air Carrier Passenger	Jet	7378MAX	Boeing 737 MAX 8	51.91	11.65	52.95	10.61	127.12
Air Carrier Passenger	Jet	757PW	Boeing 757-200	5.09	1.70	5.82	0.98	13.59
Air Carrier Passenger	Jet	7878R	Boeing 787-8 Dreamliner	0.66	0.01	0.52	0.15	1.34
Air Carrier Passenger	Jet	A319-131	Airbus A319-131	1.38	0.53	1.54	0.37	3.82
Air Carrier Passenger	Jet	A320-211	Airbus A320-211	0.81	0.25	0.80	0.26	2.12
Air Carrier Passenger	Jet	A320-232	Airbus A320-232	7.16	1.91	6.59	2.48	18.14
Air Carrier Passenger	Jet	A320-270N	Airbus A320-270 Neo	9.34	2.54	9.54	2.34	23.76
Air Carrier Passenger	Jet	A321-232	Airbus A321-232	7.20	3.31	8.03	2.47	21.01
Air Carrier Passenger	Jet	CRJ9-ER	Bombardier CRJ900	1.20	0.64	1.02	0.82	3.69
Air Carrier Passenger	Jet	EMB170	Embraer ERJ170-100	1.64	0.25	1.74	0.15	3.77
Air Carrier Passenger	Jet	EMB175	Embraer ERJ170-200	3.71	0.43	3.90	0.25	8.30
Air Carrier Passenger	Jet	EMB190	Embraer ERJ190-100	0.77	0.01	0.73	0.05	1.56
Air Carrier Total	-	-	-	**235.28**	**54.79**	**240.95**	**49.13**	**580.19**

Aircraft Category	Engine	AEDT Type	Aircraft Description	Day Arrivals	Night Arrivals	Day Departures	Night Departures	Total
Air Taxi	Jet	CL600	Bombardier Challenger 600	3.29	0.21	3.31	0.20	7.00
Air Taxi	Jet	CL601	Bombardier Challenger 601	0.42	0.01	0.37	0.06	0.87
Air Taxi	Jet	CNA525C	Cessna 525 Citationjet	0.57	0.20	0.62	0.16	1.55
Air Taxi	Jet	CNA55B	Cessna 550 Citation Bravo	2.20	0.19	2.17	0.22	4.78
Air Taxi	Jet	CNA560XL	Cessna 560 Citation Excel	1.80	0.10	1.76	0.15	3.81
Air Taxi	Jet	CNA680	Cessna 680 Citation Sovereign	3.51	0.32	3.64	0.19	7.67
Air Taxi	Jet	CNA750	Cessna 750 Citation X	1.04	0.10	1.05	0.09	2.29
Air Taxi	Jet	EMB145	Embraer 145 ER	1.06	0.01	1.07	-	2.14
Air Taxi	Jet	GIV	Gulfstream GIV-SP	0.68	0.08	0.69	0.07	1.51
Air Taxi	Jet	LEAR35	LearJet 36	0.52	0.06	0.51	0.06	1.15
Air Taxi	Jet	MU3001	Mitsubishi MU-300/Raytheon Beechjet 400	0.64	0.02	0.62	0.05	1.33
Air Taxi	Turbo Prop	CNA208	Cessna 208 Caravan	1.49	1.07	1.37	1.19	5.12
Air Taxi	Turbo Prop	DHC6	DeHaviland Twin Otter	0.60	0.01	0.60	0.01	1.21
Air Taxi Total	**-**	**-**	**-**	**17.82**	**2.38**	**17.78**	**2.45**	**40.43**
General Aviation	Jet	CNA525C	Cessna 525 Citationjet	0.45	-	0.36	0.08	0.89
General Aviation	Jet	CNA55B	Cessna 550 Citation Bravo	1.07	0.09	1.09	0.08	2.33
General Aviation	Jet	CNA560U	Cessna 560 Citation Ultra	0.36	0.06	0.35	0.07	0.85
General Aviation	Jet	CNA680	Cessna 680 Citation Sovereign	0.16	0.01	0.16	0.01	0.34
General Aviation	Jet	CNA750	Cessna 750 Citation X	2.38	0.20	2.47	0.11	5.15
General Aviation	Jet	FAL900EX	Dassault Falcon 900EX	0.83	0.07	0.84	0.06	1.81
General Aviation	Jet	G650ER	Gulfstream GVI	0.83	0.05	0.77	0.10	1.75
General Aviation	Jet	GV	Gulfstream GVI	0.93	0.12	0.96	0.09	2.10
General Aviation	Jet	LEAR35	LearJet 36	0.39	0.01	0.39	0.01	0.80
General Aviation	Jet	MU3001	Mitsubishi MU-300/Raytheon Beechjet 400	0.40	0.08	0.40	0.08	0.96
General Aviation	Piston Prop	COMSEP	Generic Composite Single - Engine Piston Propeller General Aviation Aircraft	4.50	0.20	4.50	0.20	9.40
General Aviation	Turbo Prop	CNA208	Cessna 208 Caravan	0.79	0.04	0.81	0.03	1.67
General Aviation	Turbo Prop	DHC6	DeHaviland Twin Otter	0.61	0.02	0.57	0.06	1.26
General Aviation	Helicopter	S76	Sikorsky S-76	0.02	-	0.02	-	0.05
General Aviation Total	**-**	**-**	**-**	**13.72**	**0.95**	**13.69**	**0.98**	**29.36**
Military	Jet	767CF6	Boeing 767-200	0.17	-	0.17	-	0.35
Military	Jet	CNA560U	Cessna 560 Citation Ultra	0.32	-	0.32	-	0.65
Military	Jet	T-38A	Northrup Talon T-38	0.10	-	0.10	-	0.19
Military	Turbo Prop	DHC6	DeHaviland Twin Otter	0.67	-	0.67	-	1.33
Military Total	**-**	**-**	**-**	**1.26**	**-**	**1.26**	**-**	**2.52**
Grand Total	**-**	**-**	**-**	**268.08**	**58.1**	**273.68**	**52.56**	**652.50**

Note: Totals may not equal 100% due to rounding.

Table 3-6. Five-Year (2030) Forecast Modeled Average Daily Aircraft Operations

Aircraft Category	Engine	AEDT Type	Aircraft Description	Day Arrivals	Night Arrivals	Day Departures	Night Departures	Total
Air Carrier Cargo	Jet	737800	Boeing 737-800	3.41	0.42	2.39	1.44	7.66
Air Carrier Cargo	Jet	7673ER	Boeing 767-300ER	8.02	3.36	8.41	2.98	22.77
Air Carrier Cargo	Jet	767CF6	Boeing 767-200	0.31	-	0.31	-	0.62
Air Carrier Cargo	Jet	A300-622R	Airbus A300-622R	0.10	1.13	0.80	0.43	2.46
Air Carrier Cargo	Jet	MD11GE	McDonnell Douglas MD-11	0.18	0.24	0.29	0.13	0.84
Air Carrier Cargo	Jet	MD11PW	McDonnell Douglas MD-11	0.21	0.35	0.39	0.18	1.13
Air Carrier Passenger	Jet	717200	Boeing 717-200	0.87	<0.01	0.86	0.01	1.74
Air Carrier Passenger	Jet	737700	Boeing 737-700	42.47	8.58	45.06	5.98	102.09

Aircraft Category	Engine	AEDT Type	Aircraft Description	Day Arrivals	Night Arrivals	Day Departures	Night Departures	Total
Air Carrier Passenger	Jet	737800	Boeing 737-800	11.95	5.92	13.35	4.53	35.75
Air Carrier Passenger	Jet	7378MAX	Boeing 737 MAX 8	140.61	33.97	148.61	25.97	349.16
Air Carrier Passenger	Jet	757PW	Boeing 757-200	4.29	1.43	4.94	0.78	11.44
Air Carrier Passenger	Jet	777200	Boeing 777-200ER	0.39	0.08	0.31	0.16	0.94
Air Carrier Passenger	Jet	7878R	Boeing 787-8 Dreamliner	1.00	0.01	0.79	0.22	2.02
Air Carrier Passenger	Jet	A320-211	Airbus A320-211	0.25	0.02	0.24	0.03	0.54
Air Carrier Passenger	Jet	A320-232	Airbus A320-232	0.74	0.24	0.68	0.30	1.96
Air Carrier Passenger	Jet	A320-270N	Airbus A320-270 Neo	19.45	6.48	20.41	5.51	51.85
Air Carrier Passenger	Jet	A321-232	Airbus A321-232	14.39	6.11	16.15	4.35	41.00
Air Carrier Passenger	Jet	CRJ9-ER	Bombardier CRJ900	1.20	0.64	1.06	0.78	3.68
Air Carrier Passenger	Jet	EMB170	Embraer ERJ170-100	1.63	0.25	1.74	0.14	3.76
Air Carrier Passenger	Jet	EMB175	Embraer ERJ170-200	4.44	0.59	4.75	0.28	10.06
Air Carrier Passenger	Jet	EMB190	Embraer ERJ190-100	0.77	0.01	0.73	0.05	1.56
Air Carrier Total	**-**	**-**	**-**	**256.68**	**69.83**	**272.27**	**54.25**	**653.03**
Air Taxi	Jet	CL600	Bombardier Challenger 600	2.98	0.24	3.02	0.20	6.44
Air Taxi	Jet	CL601	Bombardier Challenger 601	0.42	0.01	0.38	0.06	0.87
Air Taxi	Jet	CNA525C	Cessna 525 Citationjet	0.72	0.25	0.79	0.19	1.95
Air Taxi	Jet	CNA55B	Cessna 550 Citation Bravo	2.78	0.24	2.76	0.26	6.04
Air Taxi	Jet	CNA560XL	Cessna 560 Citation Excel	2.28	0.13	2.23	0.18	4.82
Air Taxi	Jet	CNA680	Cessna 680 Citation Sovereign	3.95	0.36	4.08	0.22	8.61
Air Taxi	Jet	CNA750	Cessna 750 Citation X	1.17	0.11	1.18	0.10	2.56
Air Taxi	Jet	EMB145	Embraer 145 ER	1.06	0.01	1.07	-	2.14
Air Taxi	Jet	GIV	Gulfstream GIV-SP	0.68	0.08	0.69	0.07	1.52
Air Taxi	Jet	LEAR35	LearJet 36	0.38	0.04	0.38	0.04	0.84
Air Taxi	Jet	MU3001	Mitsubishi MU-300/Raytheon Beechjet 400	0.57	0.02	0.55	0.04	1.18
Air Taxi	Turbo Prop	CNA208	Cessna 208 Caravan	1.69	1.21	1.61	1.29	5.80
Air Taxi Total	**-**	**-**	**-**	**18.68**	**2.70**	**18.74**	**2.65**	**42.77**
General Aviation	Jet	CNA525C	Cessna 525 Citationjet	0.62	-	0.51	0.11	1.24
General Aviation	Jet	CNA55B	Cessna 550 Citation Bravo	1.49	0.13	1.52	0.10	3.24
General Aviation	Jet	CNA560U	Cessna 560 Citation Ultra	0.36	0.06	0.35	0.07	0.84
General Aviation	Jet	CNA750	Cessna 750 Citation X	2.16	0.17	2.23	0.10	4.66
General Aviation	Jet	FAL900EX	Dassault Falcon 900EX	0.83	0.07	0.85	0.06	1.81
General Aviation	Jet	G650ER	Gulfstream GVI	1.15	0.06	1.08	0.14	2.43
General Aviation	Jet	GV	Gulfstream GVI	0.93	0.12	0.96	0.09	2.10
General Aviation	Jet	MU3001	Mitsubishi MU-300/Raytheon Beechjet 400	0.35	0.07	0.36	0.07	0.85
General Aviation	Piston Prop	COMSEP	Generic Composite Single - Engine Piston Propeller General Aviation Aircraft	6.25	0.27	6.26	0.27	13.05
General Aviation	Turbo Prop	CNA208	Cessna 208 Caravan	1.10	0.06	1.13	0.03	2.32
General Aviation	Turbo Prop	DHC6	DeHaviland Twin Otter	0.61	0.02	0.58	0.05	1.26
General Aviation Total	**-**	**-**	**-**	**15.85**	**1.03**	**15.83**	**1.09**	**33.80**
Military	Jet	767CF6	Boeing 767-200	0.17	-	0.17	-	0.34
Military	Jet	CNA560U	Cessna 560 Citation Ultra	0.32	-	0.32	-	0.64
Military	Jet	T-38A	Northrup Talon T-38	0.10	-	0.10	-	0.20
Military	Turbo Prop	DHC6	DeHaviland Twin Otter	0.67	-	0.67	-	1.34
Military Total	**-**	**-**	**-**	**1.26**	**-**	**1.26**	**-**	**2.52**
Grand Total	**-**	**-**	**-**	**292.47**	**73.56**	**308.10**	**57.99**	**732.12**

Note: Totals may not equal 100% due to rounding.

Table 3-7. Ten-Year (2035) Forecast Modeled Average Daily Aircraft Operations

Aircraft Category	Engine	AEDT Type	Aircraft Description	Day Arrivals	Night Arrivals	Day Departures	Night Departures	Total
Air Carrier Cargo	Jet	737800	Boeing 737-800	4.16	0.51	2.94	1.73	9.34
Air Carrier Cargo	Jet	7673ER	Boeing 767-300ER	10.79	5.28	11.72	4.35	32.14
Air Carrier Cargo	Jet	A300-622R	Airbus A300-622R	0.12	1.13	0.82	0.43	2.50
Air Carrier Passenger	Jet	737700	Boeing 737-700	2.40	0.01	2.39	0.02	4.82
Air Carrier Passenger	Jet	737800	Boeing 737-800	6.55	3.88	7.52	2.91	20.86
Air Carrier Passenger	Jet	7378MAX	Boeing 737 MAX 8	211.37	52.95	224.46	39.87	528.65
Air Carrier Passenger	Jet	777200	Boeing 777-200ER	0.40	0.08	0.32	0.16	0.96
Air Carrier Passenger	Jet	7878R	Boeing 787-8 Dreamliner	1.22	0.01	0.96	0.26	2.45
Air Carrier Passenger	Jet	A320-270N	Airbus A320-270 Neo	21.93	7.33	23.04	6.22	58.52
Air Carrier Passenger	Jet	A321-232	Airbus A321-232	12.19	5.07	14.11	3.15	34.52
Air Carrier Passenger	Jet	CRJ9-ER	Bombardier CRJ900	1.23	0.64	1.09	0.78	3.74
Air Carrier Passenger	Jet	EMB170	Embraer ERJ170-100	1.67	0.25	1.77	0.14	3.83
Air Carrier Passenger	Jet	EMB175	Embraer ERJ170-200	4.53	0.59	4.84	0.28	10.24
Air Carrier Passenger	Jet	EMB190	Embraer ERJ190-100	0.78	0.01	0.75	0.05	1.59
Air Carrier Total	-	-	-	**279.34**	**77.74**	**296.73**	**60.35**	**714.16**
Air Taxi	Jet	CL600	Bombardier Challenger 600	3.18	0.26	3.22	0.22	6.88
Air Taxi	Jet	CL601	Bombardier Challenger 601	0.42	0.01	0.38	0.06	0.87
Air Taxi	Jet	CNA525C	Cessna 525 Citationjet	0.81	0.28	0.88	0.21	2.18
Air Taxi	Jet	CNA55B	Cessna 550 Citation Bravo	3.10	0.26	3.08	0.29	6.73
Air Taxi	Jet	CNA560XL	Cessna 560 Citation Excel	2.54	0.14	2.49	0.20	5.37
Air Taxi	Jet	CNA680	Cessna 680 Citation Sovereign	4.40	0.40	4.55	0.25	9.60
Air Taxi	Jet	CNA750	Cessna 750 Citation X	1.24	0.12	1.26	0.10	2.72
Air Taxi	Jet	EMB145	Embraer 145 ER	1.06	0.01	1.07	-	2.14
Air Taxi	Jet	GIV	Gulfstream GIV-SP	0.68	0.08	0.69	0.07	1.52
Air Taxi	Jet	MU3001	Mitsubishi MU-300/Raytheon Beechjet 400	0.50	0.02	0.49	0.04	1.05
Air Taxi	Turbo Prop	CNA208	Cessna 208 Caravan	1.81	1.28	1.71	1.38	6.18
Air Taxi Total	-	-	-	**19.74**	**2.86**	**19.82**	**2.82**	**45.24**
General Aviation	Jet	CNA525C	Cessna 525 Citationjet	0.63	-	0.52	0.11	1.26
General Aviation	Jet	CNA55B	Cessna 550 Citation Bravo	1.51	0.13	1.54	0.10	3.28
General Aviation	Jet	CNA560U	Cessna 560 Citation Ultra	0.36	0.06	0.35	0.07	0.84
General Aviation	Jet	CNA750	Cessna 750 Citation X	2.16	0.17	2.23	0.10	4.66
General Aviation	Jet	FAL900EX	Dassault Falcon 900EX	0.83	0.07	0.85	0.06	1.81
General Aviation	Jet	G650ER	Gulfstream GVI	1.17	0.06	1.10	0.14	2.47
General Aviation	Jet	GV	Gulfstream GVI	0.93	0.12	0.96	0.09	2.10
General Aviation	Jet	MU3001	Mitsubishi MU-300/Raytheon Beechjet 400	0.31	0.07	0.32	0.06	0.76
General Aviation	Piston Prop	COMSEP	Generic Composite Single - Engine Piston Propeller General Aviation Aircraft	6.36	0.28	6.36	0.27	13.27
General Aviation	Turbo Prop	CNA208	Cessna 208 Caravan	1.11	0.06	1.14	0.03	2.34
General Aviation	Turbo Prop	DHC6	DeHaviland Twin Otter	0.61	0.02	0.58	0.05	1.26
General Aviation Total	-	-	-	**15.98**	**1.04**	**15.95**	**1.08**	**34.05**
Military	Jet	767CF6	Boeing 767-200	0.17	-	0.17	-	0.34
Military	Jet	CNA560U	Cessna 560 Citation Ultra	0.32	-	0.32	-	0.64
Military	Jet	T-38A	Northrup Talon T-38	0.10	-	0.10	-	0.20
Military	Turbo Prop	DHC6	DeHaviland Twin Otter	0.67	-	0.67	-	1.34
Military Total	-	-	-	**1.26**	**-**	**1.26**	**-**	**2.52**
Grand Total	-	-	-	**316.32**	**81.64**	**333.76**	**64.25**	**795.97**

Note: Totals may not equal 100% due to rounding.

In addition to aircraft flight operations, aircraft maintenance run-ups occur at BWI Marshall. To calculate DNL, AEDT requires the inclusion of details related to aircraft maintenance run-ups. Required run-up information includes the location, direction, aircraft type, power settings, and frequency. The detailed breakdown of maintenance run-ups at BWI Marshall was determined based on the most recent data available regarding operations at the new airline maintenance facility,[11] per direction from the MAA, run-up activity logs from 2020 through 2024,[12] and information obtained from Air Transport International.[13]

No run-ups were reported in 2024 and thus are not modeled for the 2025 base year. Average daily aircraft run-ups for 2030 and 2035 are reported in Table 3-8. Future year run-up operations for the 2025 ANZ modeling were based on the most current assumptions from airport tenants and historical run-up data, and operations from the MAA's run-up activity logs were used to identify and update the aircraft types expected to conduct run-ups in 2030 and 2035. The run-up activity log also provided typical durations and locations of run-ups.

Table 3-8. Five- (2030) and Ten-Year (2035) Modeled Average Daily Aircraft Run-ups

AEDT Aircraft Type	Site Name	Latitude (degrees)	Longitude (degrees)	Magnetic Heading (degrees)	Day Run-Ups	Night Run-Ups	Duration per Run-Up (seconds)	Approximate Power Setting (% of Takeoff Thrust/RPM)
737700/ Boeing 737-700	Airline Maintenance Facility	39.178976	-76.686047	260	2.0649	1.3766	120	100%
737800/ Boeing 737-800	Airline Maintenance Facility	39.178976	-76.686047	260	1.0592	0.7062	120	100%
737MAX8/ Boeing 737-MAX7 and MAX8	Airline Maintenance Facility	39.178976	-76.686047	260	1.5524	1.0349	120	100%
737700/ Boeing 737-700	Runway 28 De-ice Pad	39.175501	-76.659727	190	0.0008	0.0000	120	100%
	Runway 33L Hold Block	39.165388	-76.660616	240	0.0015	0.0000	120	100%
737800/ Boeing 737-800	Runway 28 De-ice Pad	39.175501	-76.659727	190	0.0003	0.0005	120	100%
	Runway 33L Hold Block	39.165388	-76.660616	240	0.0005	0.0010	120	100%
7673ER/Boeing 767-300ER	Runway 28 De-ice Pad	39.175501	-76.659727	190	0.0010	0.0000	120	100%
	Runway 33L Hold Block	39.165388	-76.660616	240	0.0020	0.0000	120	100%
767CF6/Boeing 767-200	Midfield Cargo Facility	39.171833	-76.685497	235	0.0092	0.0000	300	10%
7673ER/Boeing 767-300ER	Midfield Cargo Facility	39.171833	-76.685497	235	0.1552	0.0000	300	10%

[11] Final Environmental Assessment and Draft Section 4(f) Determination, ALP Phase I Improvements at BWI Marshall Airport, November 2020
[12] MAA, email to HMMH, July 21, 2025
[13] Air Transport International, email to MAA, July 24, 2025

AEDT Aircraft Type	Site Name	Latitude (degrees)	Longitude (degrees)	Magnetic Heading (degrees)	Day Run-Ups	Night Run-Ups	Duration per Run-Up (seconds)	Approximate Power Setting (% of Takeoff Thrust/RPM)
767CF6/Boeing 767-200	Midfield Cargo Ramp	39.172626	-76.68687	105	0.0012	0.0003	20	100%
7673ER/Boeing 767-300ER	Midfield Cargo Ramp	39.172626	-76.68687	105	0.0207	0.0052	20	100%

Sources: MAA, 2025; MAA run-up logs, 2020-2024; Updated Final Environmental Assessment and Draft Section 4(f) Determination, ALP Phase I Improvements at BWI Marshall Airport, November 2020

3.3 Aircraft Noise and Performance Characteristics

AEDT includes a database of specific noise and performance data for most aircraft types operating at BWI Marshall. Noise data are included in the form of Sound Exposure Level (SEL) at a range of distances (from 200 feet to 25,000 feet) from a particular aircraft with engines at a specific thrust level. SEL is a measure of the total "noisiness" of an event and takes duration of the event into account. Performance data includes thrust, speed, and altitude data for takeoff and landing operations, often referred to as aircraft profiles. The AEDT database contains standard noise and performance data for over 300 different aircraft types, including both civilian and military aircraft. AEDT automatically accesses the noise and performance data for takeoff, landing, and touch-and-go or circuit operations by aircraft included in the database. For the BWI Marshall ANZ update, the standard aircraft noise and performance data contained within the AEDT database were utilized.

Within the AEDT database, aircraft takeoff or departure profiles are usually defined by a range of trip distances identified as "stage lengths." A longer trip distance or higher stage length is associated with a heavier aircraft due to the increase in fuel requirements for the flight. For example, a departure aircraft with a trip distance less than 500 nautical miles (nmi) would be assigned a stage length value of one, where a departure aircraft with a trip distance of 3,000 nmi would be assigned a stage length value of five. For civilian aircraft, stage length determinations were obtained from aircraft departure data obtained from the MAA ANOMS. Military aircraft were assigned a stage length value of one because for homeland security reasons there is no data from military operations in the MAA ANOMS, and thus no way to determine trip distances for military operations. Table 3-9 provides the stage length classifications by their associated trip distances.

Table 3-9. Stage Lengths by Trip Distance

Stage Length	Trip Distance (nmi)
1	0-500
2	501-1,000
3	1,001-1,500
4	1,501-2,500
5	2,501-3,500
6	3,501-4,500
7	4,501-5,500
8	5,501-6,500
9	6,501+

Table 3-10 presents the anticipated modeled stage length use percentages for departures for the 2025 base year. Table 3-11 and Table 3-12 present the anticipated stage length use percentages representing departures for both the five-year (2030) and ten-year (2035) forecast years, respectively.

Table 3-10. Base Year (2025) Modeled Departure Stage Length Usage by Aircraft Type

AEDT Aircraft Type	Stage Length 1 (Day)	Stage Length 2 (Day)	Stage Length 3 (Day)	Stage Length 4 (Day)	Stage Length 5 (Day)	Stage Length 1 (Night)	Stage Length 2 (Night)	Stage Length 3 (Night)	Stage Length 4 (Night)	Stage Length 5 (Night)
717200	90.5%	9.5%	-	-	-	90.8%	9.3%	-	-	-
737700	45.8%	41.3%	10.1%	2.9%	-	39.9%	39.5%	15.7%	4.9%	-
737800	35.2%	34.3%	18.8%	11.7%	-	47.5%	29.4%	12.2%	11.0%	-
777200	4.1%	3.9%	4.1%	2.8%	85.1%	-	-	-	-	100.0%
7378MAX	31.8%	32.5%	20.1%	15.5%	-	43.1%	33.0%	8.4%	15.6%	-
757PW	3.0%	97.0%	-	-	-	13.3%	74.1%	-	12.6%	-
7673ER	35.5%	36.2%	14.2%	13.5%	0.6%	37.0%	51.8%	1.7%	2.8%	6.7%
767CF6	40.1%	-	31.8%	28.1%	-	-	-	-	-	-
7878R	-	-	-	-	100.0%	-	-	-	-	100.0%
A300-622R	93.7%	6.3%	-	-	-	100.0%	-	-	-	-
A319-131	23.4%	57.5%	15.1%	4.0%	-	11.6%	88.4%	-	-	-
A320-211	20.3%	42.6%	28.4%	8.7%	-	22.4%	56.3%	17.3%	4.1%	-
A320-232	20.0%	42.9%	28.6%	8.6%	-	22.4%	56.3%	17.3%	4.1%	-
A320-270N	11.0%	51.5%	14.4%	23.2%	-	6.0%	54.4%	27.9%	11.7%	-
A321-232	15.7%	41.8%	21.9%	20.6%	-	22.6%	56.9%	17.6%	2.9%	-
CL600	50.3%	39.6%	4.7%	5.5%	-	59.8%	29.6%	4.9%	5.8%	-
CL601	62.5%	23.9%	6.7%	6.9%	-	62.8%	22.9%	7.6%	6.7%	-
CNA208	89.5%	10.5%	-	-	-	99.5%	0.6%	-	-	-
CNA525C	78.5%	21.5%	-	-	-	78.6%	21.4%	-	-	-
CNA55B	74.6%	23.9%	1.5%	-	-	93.5%	6.6%	-	-	-
CNA560U	81.1%	18.9%	-	-	-	66.7%	33.3%	-	-	-
CNA560XL	75.3%	24.7%	-	-	-	73.2%	26.8%	-	-	-
CNA680	72.0%	21.1%	4.3%	2.6%	-	70.5%	22.2%	5.0%	2.4%	-
CNA750	55.8%	30.7%	6.5%	6.9%	-	53.8%	31.5%	8.0%	6.8%	-
COMSEP	96.7%	3.3%	-	-	-	94.9%	5.1%	-	-	-
CRJ9-ER	100.0%	-	-	-	-	100.0%	-	-	-	-
DHC6	100.0%	-	-	-	-	100.0%	-	-	-	-
EMB145	4.3%	95.7%	-	-	-	-	-	-	-	-
EMB170	25.5%	74.5%	-	-	-	-	100.0%	-	-	-
EMB175	57.7%	22.3%	20.1%	-	-	56.6%	43.4%	-	-	-
EMB190	100.0%	-	-	-	-	100.0%	-	-	-	-
FAL900EX	57.1%	32.7%	-	10.2%	-	53.8%	37.1%	-	9.1%	-
G650ER	56.8%	43.3%	-	-	-	60.9%	39.1%	-	-	-
GIV	48.0%	30.9%	7.4%	13.8%	-	49.8%	30.0%	7.1%	13.0%	-
GV	62.0%	20.4%	1.0%	16.6%	-	60.3%	18.5%	6.9%	14.4%	-
LEAR35	73.1%	23.9%	3.0%	-	-	73.2%	22.5%	4.3%	-	-
MD11GE	100.0%	-	-	-	-	100.0%	-	-	-	-
MD11PW	100.0%	-	-	-	-	100.0%	-	-	-	-
MU3001	79.2%	20.8%	-	-	-	82.3%	17.7%	-	-	-
S76	100.0%	-	-	-	-	-	-	-	-	-
T-38A	100.0%	-	-	-	-	-	-	-	-	-

Note: Totals may not equal 100% due to rounding.

Table 3-11. Five-Year (2030) Forecast Modeled Departure Stage Length Usage by AEDT Aircraft Type

AEDT Aircraft Type	Stage Length 1 (Day)	Stage Length 2 (Day)	Stage Length 3 (Day)	Stage Length 4 (Day)	Stage Length 5 (Day)	Stage Length 1 (Night)	Stage Length 2 (Night)	Stage Length 3 (Night)	Stage Length 4 (Night)	Stage Length 5 (Night)
717200	90.5%	9.5%	-	-	-	90.8%	9.3%	-	-	-
737700	47.2%	40.4%	9.6%	2.8%	-	40.5%	39.3%	5.0%	-	-
737800	27.9%	26.8%	21.6%	23.8%	-	38.7%	37.4%	10.0%	-	-
777200	3.1%	4.0%	3.7%	3.1%	86.2%	-	-	-	100.0%	-
7378MAX	36.4%	35.5%	17.0%	11.1%	-	42.2%	35.3%	12.7%	-	-
757PW	0.4%	99.6%	-	-	-	10.3%	89.7%	-	-	-
7673ER	33.0%	37.9%	14.7%	13.6%	0.7%	38.5%	51.3%	1.8%	7.2%	-
767CF6	56.7%	-	0.6%	42.7%	-	-	-	-	-	-
7878R	-	-	-	-	100.0%	-	-	-	100.0%	-
A300-622R	94.8%	5.2%	-	-	-	99.9%	0.1%	-	-	-
A320-211	18.9%	66.5%	14.7%	-	-	17.3%	64.2%	-	-	-
A320-232	13.7%	42.8%	29.5%	14.1%	-	12.7%	61.4%	5.3%	-	-
A320-270N	9.8%	45.9%	15.3%	29.0%	-	5.0%	52.1%	13.3%	-	-
A321-232	24.2%	37.5%	20.2%	18.1%	-	35.6%	46.1%	7.4%	-	-
CL600	100.0%	-	-	-	-	100.0%	-	-	-	-
CL601	100.0%	-	-	-	-	100.0%	-	-	-	-
CNA208	100.0%	-	-	-	-	100.0%	-	-	-	-
CNA525C	100.0%	-	-	-	-	100.0%	-	-	-	-
CNA55B	100.0%	-	-	-	-	100.0%	-	-	-	-
CNA560U	100.0%	-	-	-	-	100.0%	-	-	-	-
CNA560XL	100.0%	-	-	-	-	100.0%	-	-	-	-
CNA680	100.0%	-	-	-	-	100.0%	-	-	-	-
CNA750	100.0%	-	-	-	-	100.0%	-	-	-	-
COMSEP	100.0%	-	-	-	-	100.0%	-	-	-	-
CRJ9-ER	100.0%	-	-	-	-	100.0%	-	-	-	-
DHC6	100.0%	-	-	-	-	100.0%	-	-	-	-
EMB145	1.8%	98.2%	-	-	-	-	-	-	-	-
EMB170	17.5%	82.5%	-	-	-	-	100.0%	-	-	-
EMB175	47.7%	27.1%	25.2%	-	-	46.4%	53.6%	-	-	-
EMB190	100.0%	-	-	-	-	100.0%	-	-	-	-
FAL900EX	100.0%	-	-	-	-	100.0%	-	-	-	-
G650ER	100.0%	-	-	-	-	100.0%	-	-	-	-
GIV	100.0%	-	-	-	-	100.0%	-	-	-	-
GV	100.0%	-	-	-	-	100.0%	-	-	-	-
LEAR35	100.0%	-	-	-	-	100.0%	-	-	-	-
MD11GE	100.0%	-	-	-	-	100.0%	-	-	-	-
MD11PW	100.0%	-	-	-	-	100.0%	-	-	-	-
MU3001	100.0%	-	-	-	-	100.0%	-	-	-	-
T-38A	100.0%	-	-	-	-	-	-	-	-	-

Note: Totals may not equal 100% due to rounding.

Table 3-12. Ten-Year (2035) Forecast Modeled Departure Stage Length Usage by AEDT Aircraft Type

AEDT Aircraft Type	Stage Length 1 (Day)	Stage Length 2 (Day)	Stage Length 3 (Day)	Stage Length 4 (Day)	Stage Length 5 (Day)	Stage Length 1 (Night)	Stage Length 2 (Night)	Stage Length 3 (Night)	Stage Length 4 (Night)	Stage Length 5 (Night)
737700	90.5%	9.5%	-	-	-	90.8%	9.3%	-	-	-
737800	15.1%	27.7%	19.6%	37.6%	-	28.7%	45.8%	13.1%	-	-
777200	3.1%	4.0%	3.7%	3.1%	86.0%	-	-	-	100.0%	-
7378MAX	37.2%	38.5%	15.1%	9.2%	-	37.6%	42.4%	10.2%	-	-
7673ER	40.7%	33.5%	13.0%	12.1%	0.7%	48.1%	42.3%	1.6%	7.1%	-
767CF6	100.0%	-	-	-	-	-	-	-	-	-
7878R	-	-	-	-	100.0%	-	-	-	100.0%	-
A300-622R	94.6%	5.4%	-	-	-	99.9%	0.1%	-	-	-
A320-270N	9.6%	44.7%	15.4%	30.3%	-	4.9%	51.7%	13.5%	-	-
A321-232	12.7%	34.2%	27.9%	25.2%	-	21.9%	45.7%	14.7%	-	-
CL600	100.0%	-	-	-	-	100.0%	-	-	-	-
CL601	100.0%	-	-	-	-	100.0%	-	-	-	-
CNA208	100.0%	-	-	-	-	100.0%	-	-	-	-
CNA525C	100.0%	-	-	-	-	100.0%	-	-	-	-
CNA55B	100.0%	-	-	-	-	100.0%	-	-	-	-
CNA560U	100.0%	-	-	-	-	100.0%	-	-	-	-
CNA560XL	100.0%	-	-	-	-	100.0%	-	-	-	-
CNA680	100.0%	-	-	-	-	100.0%	-	-	-	-
CNA750	100.0%	-	-	-	-	100.0%	-	-	-	-
COMSEP	100.0%	-	-	-	-	100.0%	-	-	-	-
CRJ9-ER	100.0%	-	-	-	-	100.0%	-	-	-	-
DHC6	100.0%	-	-	-	-	100.0%	-	-	-	-
EMB145	1.8%	98.2%	-	-	-	-	-	-	-	-
EMB170	17.5%	82.6%	-	-	-	-	100.0%	-	-	-
EMB175	47.7%	27.1%	25.2%	-	-	46.4%	53.6%	-	-	-
EMB190	100.00%	-	-	-	-	100.00%	-	-	-	-
FAL900EX	100.00%	-	-	-	-	100.00%	-	-	-	-
G650ER	100.00%	-	-	-	-	100.00%	-	-	-	-
GIV	100.00%	-	-	-	-	100.00%	-	-	-	-
GV	100.00%	-	-	-	-	100.00%	-	-	-	-
MU3001	100.00%	-	-	-	-	100.00%	-	-	-	-
T-38A	100.00%	-	-	-	-	-	-	-	-	-

Note: Totals may not equal 100% due to rounding.

3.4 Runway Utilization

The primary factor affecting runway use at airports is weather, specifically wind direction and wind speed. Additional factors that may affect runway use include the position of the facilities or ramps relative to the runways and length of the runways for aircraft performance considerations.

At BWI Marshall, the airport operates in two predominant operational flows referred to as east flow and west flow. Under west flow, aircraft primarily depart from Runway 28 but may also depart from Runways 33L or 33R, and primarily arrive on Runway 33L but may also arrive on Runways 28 or 33R. Likewise, under east flow, aircraft primarily depart from Runway 15R but may also depart from Runways 15L or 10, and primarily arrive on Runway 10 but may also arrive on Runways 15L or 15R. Historically, at BWI Marshall approximately 70 percent of operations occur under a west flow configuration, and approximately 30 percent of operations occur under east flow. In 2024, BWI Marshall operated in west flow approximately 62 percent of the time and 38 percent in east flow, which is a slightly lower percentage in west flow than in 2023 (66 percent west flow) and 2022 (67 percent west flow).

Based on 2024 data derived from the MAA ANOMS, the overall runway usage tables for BWI Marshall were compiled by operation types: arrival, departure, time of day (day or night), and category of operation (Air Carrier Cargo, Air Carrier Passenger, Air Taxi, General Aviation, and Military). For fixed-wing Runway 28 departures, most aircraft depart from Runway 28 at the U1 Taxiway intersection. However, a small percentage of aircraft have a need (based on weight, length of flight, or other conditions) to use the full 10,503 feet of runway and may begin their takeoff roll at the physical end of Runway 28. Full length departures from Runway 28 represent 0.4 percent of all Runway 28 departures, or an average of roughly one departure per day. For each respective aircraft category, full length departures are included in the overall runway utilization percentages for Runway 28 departures. For the other runways, it is assumed departure aircraft will utilize the full runway length for all departures. For helicopter operations, it is assumed all categories of operations will operate from Helipad H1.

For military fixed-wing operations, there was no data from the MAA ANOMS to determine runway usage. However, the military operations fleet mix is largely representative of that of fixed-wing air taxi operations derived from the MAA ANOMS. As such, this study used the runway utilization rate for fixed-wing air taxi operations and applied these rates to a majority of military operations. For KC-46 and T-38 military aircraft that require a runway longer than Runway 15L/33R, the runway utilization rate for fixed-wing air carrier operations was used. Table 3-13 through Table 3-15 present the runway and helipad utilization rates that were used for modeling the DNL contours for 2025 base year operations.

Table 3-13. Base Year (2025) Fixed-Wing Overall Runway Utilization Percentages

Runway	Day Arrivals	Night Arrivals	Day Departures	Night Departures
10	34.6%	34.1%	0.3%	0.6%
15L	2.2%	1.9%	3.0%	2.3%
15R	0.8%	4.5%	33.5%	35.3%
28	6.0%	4.0%	57.0%	57.6%
33L	51.9%	52.9%	1.2%	0.9%
33R	4.5%	2.6%	4.9%	3.3%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Notes:
For modeling purposes, all departure aircraft with a stage length greater than 4 utilized the full length of Runway 28 for departure.
Totals may not equal 100% due to rounding.

Table 3-14. Base Year (2025) Fixed-Wing Runway Utilization Percentages by Aircraft Category

Category	Propulsion Class	Operation Type	Time of Day	Runway 10	Runway 15L	Runway 15R	Runway 28[1]	Runway 33L	Runway 33R	Total
Air Carrier Cargo	Jet	Arrivals	Day	38.1%	0.0%	0.8%	6.3%	54.7%	0.0%	100.0%
Air Carrier Cargo	Jet	Arrivals	Night	31.1%	0.0%	6.8%	4.4%	57.7%	0.0%	100.0%
Air Carrier Cargo	Jet	Departures	Day	1.9%	0.0%	33.8%	62.7%	1.6%	0.0%	100.0%
Air Carrier Cargo	Jet	Departures	Night	1.7%	0.0%	42.3%	53.6%	2.4%	0.0%	100.0%
Air Carrier Passenger	Jet	Arrivals	Day	36.7%	0.0%	0.8%	6.2%	56.3%	0.0%	100.0%
Air Carrier Passenger	Jet	Arrivals	Night	36.0%	0.0%	4.5%	4.0%	55.5%	0.0%	100.0%
Air Carrier Passenger	Jet	Departures	Day	0.3%	0.0%	36.7%	61.8%	1.3%	0.0%	100.0%
Air Carrier Passenger	Jet	Departures	Night	0.5%	0.0%	37.1%	61.6%	0.8%	0.0%	100.0%
Air Taxi	Jet	Arrivals	Day	19.4%	17.7%	0.3%	4.6%	18.1%	39.9%	100.0%
Air Taxi	Jet	Arrivals	Night	17.3%	26.7%	2.3%	2.3%	12.5%	39.0%	100.0%
Air Taxi	Jet	Departures	Day	0.1%	27.3%	9.6%	19.7%	0.4%	43.0%	100.0%
Air Taxi	Jet	Departures	Night	0.0%	36.6%	4.9%	11.0%	0.2%	47.4%	100.0%
Air Taxi	Non-Jet	Arrivals	Day	4.5%	35.3%	0.3%	1.8%	1.9%	56.1%	100.0%
Air Taxi	Non-Jet	Arrivals	Night	4.6%	44.3%	0.7%	0.9%	1.4%	48.2%	100.0%
Air Taxi	Non-Jet	Departures	Day	0.2%	37.6%	1.9%	3.5%	0.0%	56.8%	100.0%
Air Taxi	Non-Jet	Departures	Night	0.4%	39.3%	0.4%	3.1%	0.2%	56.5%	100.0%
General Aviation	Jet	Arrivals	Day	22.5%	15.5%	0.7%	4.4%	24.3%	32.6%	100.0%
General Aviation	Jet	Arrivals	Night	21.8%	8.4%	3.4%	7.8%	34.1%	24.6%	100.0%
General Aviation	Jet	Departures	Day	0.3%	27.8%	7.9%	21.1%	0.7%	42.2%	100.0%
General Aviation	Jet	Departures	Night	0.5%	27.7%	7.3%	21.8%	0.0%	42.7%	100.0%
General Aviation	Non-Jet	Arrivals	Day	2.3%	34.6%	0.2%	2.3%	1.7%	58.9%	100.0%
General Aviation	Non-Jet	Arrivals	Night	6.7%	36.0%	0.0%	0.0%	1.3%	56.0%	100.0%
General Aviation	Non-Jet	Departures	Day	0.1%	32.5%	1.9%	2.1%	0.0%	63.5%	100.0%
General Aviation	Non-Jet	Departures	Night	1.1%	32.6%	2.2%	2.2%	0.0%	61.8%	100.0%
Military[2]	Jet	Arrivals	Day	19.4%	17.7%	0.3%	4.6%	18.1%	39.9%	100.0%
Military[2]	Jet	Arrivals	Night	17.3%	26.7%	2.3%	2.3%	12.5%	39.0%	100.0%
Military[2]	Jet	Departures	Day	0.1%	27.3%	9.6%	19.7%	0.4%	43.0%	100.0%
Military[2]	Jet	Departures	Night	0.0%	36.6%	4.9%	11.0%	0.2%	47.4%	100.0%
Military[2]	Non-Jet	Arrivals	Day	4.5%	35.3%	0.3%	1.8%	1.9%	56.1%	100.0%
Military[2]	Non-Jet	Arrivals	Night	4.6%	44.3%	0.7%	0.9%	1.4%	48.2%	100.0%
Military[2]	Non-Jet	Departures	Day	0.2%	37.6%	1.9%	3.5%	0.0%	56.8%	100.0%
Military[2]	Non-Jet	Departures	Night	0.4%	39.3%	0.4%	3.1%	0.2%	56.5%	100.0%

Notes:
[1] For modeling purposes, all departure aircraft with a stage length greater than 4 utilized the full length of Runway 28 for departure.
[2] Military runway utilization rates assumed to be identical to that of Air Taxi operations.
Totals may not equal 100% due to rounding.

Table 3-15. Helipad Utilization Percentages for All Years

Helicopter Category	Helipad	Day Arrivals	Night Arrivals	Day Departures	Night Departures
All Helicopters	H1	100.0%	100.0%	100.0%	100.0%

For the five-year forecast runway utilization, the overall runway usage tables for BWI Marshall are the same as the base year runway usage. Runway usage was compiled by aircraft operation type (arrivals and departures), time of day (day and night), and category of operation (Air Carrier, Air Taxi, General Aviation, and Military). As was the case for the 2025 base year, most fixed-wing aircraft departing from Runway 28 depart from the U1 Taxiway intersection, with a small percentage of aircraft requiring full length use. For the five-year forecast, the same percentage of aircraft conducting full length departures was the same as in

the base year, and these are included in the overall runway utilization percentages for Runway 28 departures for each respective aircraft category. For the five-year forecast runway utilization for all other runways, all departures utilized the full runway length. For helicopter operations, all categories of operations occurred from Helipad H1, and the helipad utilization remained the same as the 2025 base year.

For military fixed-wing operations, no data was available from the MAA ANOMS to determine runway usage. However, the military operations fleet mix is largely representative of that of fixed-wing air taxi operations derived from the MAA ANOMS. As such, the runway utilization rate for fixed-wing air taxi operations was applied to a majority of military operations. For KC-46 and T-38 military aircraft that require a runway longer than Runway 15L/33R, this study utilized the runway utilization rate for fixed-wing air carrier operations.

Table 3-16 and Table 3-17 present the runway utilization rates used to model the DNL contours for the 2030 forecast operations.

Table 3-16. Five-Year (2030) Forecast Fixed-Wing Overall Runway Utilization Percentages

Runway	Day Arrivals	Night Arrivals	Day Departures	Night Departures
10	34.6%	34.1%	0.3%	0.6%
15L	2.2%	1.9%	3.0%	2.3%
15R	0.8%	4.5%	33.5%	35.3%
28	6.0%	4.0%	57.0%	57.6%
33L	51.9%	52.9%	1.2%	0.9%
33R	4.5%	2.6%	4.9%	3.3%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Notes:
Totals may not equal 100% due to rounding.
For modeling purposes, all departure aircraft with a stage length greater than 4 utilized the full length of Runway 28 for departure.

Table 3-17. Five-Year (2030) Forecast Fixed-Wing Runway Utilization Percentages by Aircraft Category

Category	Propulsion Class	Operation Type	Time of Day	Runway 10	Runway 15L	Runway 15R	Runway 28[1]	Runway 33L	Runway 33R	Total
Air Carrier Cargo	Jet	Arrivals	Day	38.1%	0.0%	0.8%	6.3%	54.7%	0.0%	100.0%
Air Carrier Cargo	Jet	Arrivals	Night	31.1%	0.0%	6.8%	4.4%	57.7%	0.0%	100.0%
Air Carrier Cargo	Jet	Departures	Day	1.9%	0.0%	33.8%	62.7%	1.6%	0.0%	100.0%
Air Carrier Cargo	Jet	Departures	Night	1.7%	0.0%	42.3%	53.6%	2.4%	0.0%	100.0%
Air Carrier Passenger	Jet	Arrivals	Day	36.7%	0.0%	0.8%	6.2%	56.3%	0.0%	100.0%
Air Carrier Passenger	Jet	Arrivals	Night	36.0%	0.0%	4.5%	4.0%	55.5%	0.0%	100.0%
Air Carrier Passenger	Jet	Departures	Day	0.3%	0.0%	36.7%	61.8%	1.3%	0.0%	100.0%
Air Carrier Passenger	Jet	Departures	Night	0.5%	0.0%	37.1%	61.6%	0.8%	0.0%	100.0%
Air Taxi	Jet	Arrivals	Day	19.4%	17.7%	0.3%	4.6%	18.1%	39.9%	100.0%
Air Taxi	Jet	Arrivals	Night	17.3%	26.7%	2.3%	2.3%	12.5%	39.0%	100.0%
Air Taxi	Jet	Departures	Day	0.1%	27.3%	9.6%	19.7%	0.4%	43.0%	100.0%
Air Taxi	Jet	Departures	Night	0.0%	36.6%	4.9%	11.0%	0.2%	47.4%	100.0%
Air Taxi	Non-Jet	Arrivals	Day	4.5%	35.3%	0.3%	1.8%	1.9%	56.1%	100.0%
Air Taxi	Non-Jet	Arrivals	Night	4.6%	44.3%	0.7%	0.9%	1.4%	48.2%	100.0%
Air Taxi	Non-Jet	Departures	Day	0.2%	37.6%	1.9%	3.5%	0.0%	56.8%	100.0%
Air Taxi	Non-Jet	Departures	Night	0.4%	39.3%	0.4%	3.1%	0.2%	56.5%	100.0%
General Aviation	Jet	Arrivals	Day	22.5%	15.5%	0.7%	4.4%	24.3%	32.6%	100.0%
General Aviation	Jet	Arrivals	Night	21.8%	8.4%	3.4%	7.8%	34.1%	24.6%	100.0%
General Aviation	Jet	Departures	Day	0.3%	27.8%	7.9%	21.1%	0.7%	42.2%	100.0%
General Aviation	Jet	Departures	Night	0.5%	27.7%	7.3%	21.8%	0.0%	42.7%	100.0%

Category	Propulsion Class	Operation Type	Time of Day	Runway 10	Runway 15L	Runway 15R	Runway 28[1]	Runway 33L	Runway 33R	Total
General Aviation	Non-Jet	Arrivals	Day	2.3%	34.6%	0.2%	2.3%	1.7%	58.9%	100.0%
General Aviation	Non-Jet	Arrivals	Night	6.7%	36.0%	0.0%	0.0%	1.3%	56.0%	100.0%
General Aviation	Non-Jet	Departures	Day	0.1%	32.5%	1.9%	2.1%	0.0%	63.5%	100.0%
General Aviation	Non-Jet	Departures	Night	1.1%	32.6%	2.2%	2.2%	0.0%	61.8%	100.0%
Military[2]	Jet	Arrivals	Day	19.4%	17.7%	0.3%	4.6%	18.1%	39.9%	100.0%
Military[2]	Jet	Arrivals	Night	17.3%	26.7%	2.3%	2.3%	12.5%	39.0%	100.0%
Military[2]	Jet	Departures	Day	0.1%	27.3%	9.6%	19.7%	0.4%	43.0%	100.0%
Military[2]	Jet	Departures	Night	0.0%	36.6%	4.9%	11.0%	0.2%	47.4%	100.0%
Military[2]	Non-Jet	Arrivals	Day	4.5%	35.3%	0.3%	1.8%	1.9%	56.1%	100.0%
Military[2]	Non-Jet	Arrivals	Night	4.6%	44.3%	0.7%	0.9%	1.4%	48.2%	100.0%
Military[2]	Non-Jet	Departures	Day	0.2%	37.6%	1.9%	3.5%	0.0%	56.8%	100.0%
Military[2]	Non-Jet	Departures	Night	0.4%	39.3%	0.4%	3.1%	0.2%	56.5%	100.0%

Notes:
Totals may not equal 100% due to rounding.
[1] For modeling purposes, all departure aircraft with a stage length greater than 4 utilized the full length of Runway 28 for departure.
[2] Military runway utilization rates assumed to be identical to that of Air Taxi operations.

For the ten-year forecast conditions, which includes the planned parallel Runway 10R/28L and the planned extension of Runway 15R/33L, the runway utilization for BWI Marshall was derived from consultation with MAA. Anticipated changes to runway use include:

- Distributing operations between existing Runways 10/28 (future 10L/28R) and proposed parallel Runway 10R/28L,
- Shifting some daytime Air Carrier and Air Taxi departure operations associated with existing Runway 15R to utilize parallel Runways 10L and 10R,
- Shifting some nighttime Air Carrier and Air Taxi departure operations associated with existing Runway 15R to utilize parallel Runways 28L and 28R, and
- Making minor adjustments to the distribution of operations to the other runways based on anticipated changes in fleet mix for the 2035 ten-year forecast and aircraft performance requirements.

For the purposes of the ten-year 2035 forecast conditions, model tracks and operations from the existing Runway 10/28 (future Runways 10L/28R) were replicated to the planned Runway 10R/28L. It is assumed the flight tracks for 2035 operations will remain consistent with the assumptions and analysis of how the new runway will be utilized. These assumptions include the following:

- During busy periods, both the existing Runway 10/28 (future Runway 10L/28R) and the planned Runway 10R/28L could be used for departing aircraft at the same time and flight tracks would not cross.
- The existing Runway 28 (future Runway 28R) would be used for aircraft departing west and making right turns to the north and east, while the planned Runway 28L would be used for aircraft departing and making left turns for destinations to the south, east, and west.
- The existing Runway 10 (future Runway 10L) would be used for aircraft departing straight east and making left turns to the north and west, while the planned Runway 10R would be used for aircraft making right turns for destinations to the east, south, and west.
- If necessary, due to aircraft performance requirements, all departures that require extra runway length will continue to utilize the existing Runway 10/28 (future Runway 10L/28R) regardless of destination.

Table 3-18 and Table 3-19 present the runway utilization rates that were used to model DNL contours for the ten-year 2035 forecast operations based on these assumptions. For helicopter operations, all categories of operations were assumed to continue to operate from Helipad H1, and the helipad utilization remained the same as the 2025 base year.

Table 3-18. Ten-Year (2035) Forecast Fixed-Wing Overall Runway Utilization Percentages

Runway	Day Arrivals	Night Arrivals	Day Departures	Night Departures
10L	3.95%	19.83%	22.41%	1.02%
10R	26.34%	13.21%	3.68%	0.68%
15L	2.47%	1.33%	3.47%	1.88%
15R	1.90%	1.17%	5.82%	18.95%
28L	2.91%	2.62%	33.61%	43.38%
28R	0.97%	1.75%	23.61%	28.92%
33L	56.07%	57.34%	1.85%	1.77%
33R	5.39%	2.74%	5.56%	3.40%
Total	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Notes:
Totals may not equal 100% due to rounding.
For modeling purposes, all departure aircraft with a stage length greater than 4 utilized the full length of Runway 28 for departure. Based on analysis of BWI Marshall 2024 ANOMS operations data, this consists of a total of 0.4% of total Runway 28 departure operations.

Table 3-19. Ten-Year (2035) Forecast Fixed Wing Runway Utilization Percentages

Aircraft Category	Runway	Day Arrivals	Night Arrivals	Day Departures	Night Departures
Air Carrier	10L	4.00%	20.55%	24.50%	1.09%
Air Carrier	10R	28.50%	13.70%	4.00%	0.72%
Air Carrier	15L	-	-	-	-
Air Carrier	15R	2.00%	1.22%	6.00%	19.91%
Air Carrier	28L	3.00%	2.68%	37.30%	45.84%
Air Carrier	28R	1.00%	1.79%	26.20%	30.56%
Air Carrier	33L	61.50%	60.07%	2.00%	1.87%
Air Carrier	33R	-	-	-	-
Total	**-**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
Air Taxi	10L	3.20%	7.89%	14.19%	0.19%
Air Taxi	10R	13.61%	5.26%	2.50%	0.13%
Air Taxi	15L	17.08%	23.60%	22.14%	24.49%
Air Taxi	15R	1.60%	0.29%	2.61%	6.64%
Air Taxi	28L	2.40%	1.87%	12.63%	14.87%
Air Taxi	28R	0.80%	1.25%	8.87%	9.91%
Air Taxi	33L	27.88%	16.91%	1.25%	0.49%
Air Taxi	33R	33.44%	42.94%	35.80%	43.28%
Total	**-**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
General Aviation	10L	3.36%	9.79%	0.18%	0.14%
General Aviation	10R	14.04%	6.53%	0.03%	0.10%
General Aviation	15L	18.04%	19.04%	28.71%	29.59%
General Aviation	15R	0.69%	0.83%	8.58%	5.63%
General Aviation	28L	2.33%	1.63%	6.96%	4.75%
General Aviation	28R	0.78%	1.08%	4.89%	3.17%
General Aviation	33L	14.37%	12.62%	0.20%	0.11%
General Aviation	33R	46.39%	48.49%	50.45%	56.51%
Total	**-**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
Military	10L	17.13%	17.04%	0.33%	0.31%
Military	10R	8.56%	8.52%	0.06%	0.06%
Military	15L	7.78%	7.94%	43.96%	44.39%
Military	15R	0.89%	0.95%	11.81%	11.89%
Military	28L	1.38%	1.47%	13.36%	13.28%

Aircraft Category	Runway	Day Arrivals	Night Arrivals	Day Departures	Night Departures
Military	28R	0.46%	0.49%	8.91%	8.85%
Military	33L	33.68%	33.42%	0.04%	0.04%
Military	33R	30.13%	30.16%	21.52%	21.18%
Total	**-**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Notes:
Totals may not equal 100% due to rounding.
For modeling purposes, all departure aircraft with a stage length greater than 4 utilized the full length of Runway 28 for departure. Based on analysis of BWI Marshall 2024 ANOMS operations data, this consists of a total of 0.4% of total Runway 28 departure operations.

3.5 Flight Track Geometry and Use

Representative AEDT model tracks were developed using a method which entailed analyzing flight data from the MAA ANOMS system for BWI Marshall and splitting the flight tracks into similar and manageable groups. This was done by first separating tracks by phase of flight (e.g., arrival or departure) and then by runway end. Following this step, the flights were separated by destination direction, such as north, east, south, or west. Finally, flight tracks were analyzed and split into groups according to their degree of similar geometry.

Model tracks were developed for each geometrically similar group. For example, Runway 28 air carrier passenger jet departures with a west destination were split into five geometrically similar groups, and then backbone tracks[14] with sub-tracks were developed for each group. Each backbone track is assigned one or two sub-tracks on either side of the backbone, for a total of three or five tracks (one backbone and two or four dispersion) for each geometrically similar group.

In 2024, the FAA published new Performance Based Navigation (PBN) arrival and departure procedures at BWI Marshall. The representative AEDT model tracks were developed using the flight data for the periods following the implementation of the new PBN flight procedures: from July 11, 2024 through December 31, 2024 for departure operations, and from September 5, 2024 through December 31, 2024 for arrival operations.

For military fixed-wing operations, the MAA ANOMS does not contain data from to develop acceptable flight tracks for modeling. However, the military operations fleet mix is largely representative of that of fixed-wing air carrier and air taxi operations obtained from the MAA ANOMS. As such, the model tracks and track utilization developed for fixed-wing air carriers were used for military aircraft types KC-46 (767CF6) and T-38A and air taxi operations for C-35 (CNA560U) and DHC-6 military operations. Likewise, for helicopter operations, all helicopters utilized a common set of helicopter model tracks and utilization percentages regardless of category of operation. The location of model flight tracks and associated track utilization percentages are the same for both 2025 base year operations and 2030 five-year forecast operations.

For the five-year forecast scenario, the location of flight tracks and associated track utilization percentages are the same as those developed for 2025 base year operations and all categories of operations use the model flight tracks and utilization percentages as the 2025 base year.

[14] A backbone track is a representative model track depicting how an aircraft or group of aircraft assigned to that model track would operate as an arrival or departure from an airport; sub-tracks or dispersed tracks represent a modeled dispersion from the backbone.

Figure 3-4 through Figure 3-15 show the developed model flight tracks layered over the airport base map for fixed-wing jet, propeller, and helicopter operations, respectively, for the base and five-year scenarios. Figures are organized by operation status, tower category, and destination direction. Table 3-20 through Table 3-23 present the utilization rates for each of the developed model tracks. The relative ratio of flight track usage was preserved according to those ratios in the entire flight track dataset for fixed-wing and helicopter operations.

Table 3-20. Base Year (2025) and Five-Year Forecast (2030) Air Carrier Fixed-Wing Model Track Utilization Percentages

Runway	Engine	Category	Bundle Name (Arrivals)	Percent (Arrivals)	Bundle Name (Departures)	Percent (Departures)
10	Jets	Cargo	A10ACCJ01	7%	D10ACCJ01	14%
10	Jets	Cargo	A10ACCJ02	17%	D10ACCJ02	29%
10	Jets	Cargo	A10ACCJ03	15%	D10ACCJ03	20%
10	Jets	Cargo	A10ACCJ04	45%	D10ACCJ04	37%
10	Jets	Cargo	A10ACCJ05	6%	**Subtotal**	**100%**
10	Jets	Cargo	A10ACCJ06	2%	-	-
10	Jets	Cargo	A10ACCJ07	7%	-	-
10	Jets	Cargo	**Subtotal**	**100%**	-	-
10	Jets	Passenger	A10ACPJ01	3%	D10ACPJ01	3%
10	Jets	Passenger	A10ACPJ02	9%	D10ACPJ02	14%
10	Jets	Passenger	A10ACPJ03	<1%	D10ACPJ03	11%
10	Jets	Passenger	A10ACPJ04	16%	D10ACPJ04	13%
10	Jets	Passenger	A10ACPJ05	2%	D10ACPJ05	36%
10	Jets	Passenger	A10ACPJ06	2%	D10ACPJ06	11%
10	Jets	Passenger	A10ACPJ07	7%	D10ACPJ07	12%
10	Jets	Passenger	A10ACPJ08	<1%	**Subtotal**	**100%**
10	Jets	Passenger	A10ACPJ09	<1%	-	-
10	Jets	Passenger	A10ACPJ10	<1%	-	-
10	Jets	Passenger	A10ACPJ11	45%	-	-
10	Jets	Passenger	A10ACPJ12	5%	-	-
10	Jets	Passenger	A10ACPJ13	8%	-	-
10	Jets	Passenger	A10ACPJ14	1%	-	-
10	Jets	Passenger	**Subtotal**	**100%**	-	-
15R	Jets	Cargo	A15RACCJ01	12%	D15RACCJ01	11%
15R	Jets	Cargo	A15RACCJ02	27%	D15RACCJ02	60%
15R	Jets	Cargo	A15RACCJ03	29%	D15RACCJ03	12%
15R	Jets	Cargo	A15RACCJ04	24%	D15RACCJ04	8%
15R	Jets	Cargo	A15RACCJ05	7%	D15RACCJ05	1%
15R	Jets	Cargo	**Subtotal**	**100%**	D15RACCJ06	7%
15R	Jets	Cargo	-	-	**Subtotal**	**100%**
15R	Jets	Passenger	A15RACPJ01	5%	D15RACPJ01	10%
15R	Jets	Passenger	A15RACPJ02	29%	D15RACPJ02	3%
15R	Jets	Passenger	A15RACPJ03	4%	D15RACPJ03	14%
15R	Jets	Passenger	A15RACPJ04	3%	D15RACPJ04	26%
15R	Jets	Passenger	A15RACPJ05	12%	D15RACPJ05	9%
15R	Jets	Passenger	A15RACPJ06	46%	D15RACPJ06	5%
15R	Jets	Passenger	**Subtotal**	**100%**	D15RACPJ07	3%
15R	Jets	Passenger	-	-	D15RACPJ08	<1%
15R	Jets	Passenger	-	-	D15RACPJ09	2%
15R	Jets	Passenger	-	-	D15RACPJ10	10%
15R	Jets	Passenger	-	-	D15RACPJ11	3%
15R	Jets	Passenger	-	-	D15RACPJ12	5%
15R	Jets	Passenger	-	-	D15RACPJ13	11%
15R	Jets	Passenger	-	-	**Subtotal**	**100%**

Runway	Engine	Category	Bundle Name (Arrivals)	Percent (Arrivals)	Bundle Name (Departures)	Percent (Departures)
28	Jets	Cargo	A28ACCJ01	41%	D28ACCJ01	2%
28	Jets	Cargo	A28ACCJ02	14%	D28ACCJ02	71%
28	Jets	Cargo	A28ACCJ03	33%	D28ACCJ03	8%
28	Jets	Cargo	A28ACCJ04	12%	D28ACCJ04	6%
28	Jets	Cargo	**Subtotal**	**100%**	D28ACCJ05	1%
28	Jets	Cargo	-	-	D28ACCJ06	2%
28	Jets	Cargo	-	-	D28ACCJ07	9%
28	Jets	Cargo	-	-	D28ACCJ08	1%
28	Jets	Cargo	-	-	**Subtotal**	**100%**
28	Jets	Passenger	A28ACPJ01	5%	D28ACPJ01	<1%
28	Jets	Passenger	A28ACPJ02	9%	D28ACPJ02	<1%
28	Jets	Passenger	A28ACPJ03	9%	D28ACPJ03	53%
28	Jets	Passenger	A28ACPJ04	12%	D28ACPJ04	14%
28	Jets	Passenger	A28ACPJ05	4%	D28ACPJ05	13%
28	Jets	Passenger	A28ACPJ06	20%	D28ACPJ06	4%
28	Jets	Passenger	A28ACPJ07	38%	D28ACPJ07	3%
28	Jets	Passenger	A28ACPJ08	2%	D28ACPJ08	11%
28	Jets	Passenger	**Subtotal**	**100%**	**Subtotal**	**100%**
33L	Jets	Cargo	A33LACCJ01	8%	D33LACCJ01	92%
33L	Jets	Cargo	A33LACCJ02	10%	D33LACCJ02	8%
33L	Jets	Cargo	A33LACCJ03	24%	**Subtotal**	**100%**
33L	Jets	Cargo	A33LACCJ04	9%	-	-
33L	Jets	Cargo	A33LACCJ05	41%	-	-
33L	Jets	Cargo	A33LACCJ06	7%	-	-
33L	Jets	Cargo	A33LACCJ07	1%	-	-
33L	Jets	Cargo	**Subtotal**	**100%**	-	-
33L	Jets	Passenger	A33LACPJ01	5%	D33LACPJ01	46%
33L	Jets	Passenger	A33LACPJ02	15%	D33LACPJ02	20%
33L	Jets	Passenger	A33LACPJ03	6%	D33LACPJ03	14%
33L	Jets	Passenger	A33LACPJ04	11%	D33LACPJ04	4%
33L	Jets	Passenger	A33LACPJ05	3%	D33LACPJ05	5%
33L	Jets	Passenger	A33LACPJ06	11%	D33LACPJ06	11%
33L	Jets	Passenger	A33LACPJ07	45%	**Subtotal**	**100%**
33L	Jets	Passenger	A33LACPJ08	5%	-	-
33L	Jets	Passenger	A33LACPJ09	<1%	-	-
33L	Jets	Passenger	**Subtotal**	**100%**	-	-

Note: Totals may not equal 100% due to rounding.

Table 3-21. Base Year (2025) and Five-Year Forecast (2030) Air Taxi Fixed-Wing Model Track Utilization Percentages

Runway	Engine	Bundle Name (Arrivals)	Percent (Arrivals)	Bundle Name (Departures)	Percent (Departures)
10	Jets	A10ATJ01	48%	D10ATJ01	100%
10	Jets	A10ATJ02	4%	**Subtotal**	**100%**
10	Jets	A10ATJ03	11%	-	-
10	Jets	A10ATJ04	14%	-	-
10	Jets	A10ATJ05	9%	-	-
10	Jets	A10ATJ06	14%	-	-
10	Jets	**Subtotal**	**100%**	-	-
10	Non-Jets	A10ATNJ01	32%	D10ATNJ01	100%
10	Non-Jets	A10ATNJ02	21%	**Subtotal**	**100%**
10	Non-Jets	A10ATNJ03	47%	-	-
10	Non-Jets	**Subtotal**	**100%**	-	-

Runway	Engine	Bundle Name (Arrivals)	Percent (Arrivals)	Bundle Name (Departures)	Percent (Departures)
15L	Jets	A15LATJ01	24%	D15LATJ01	25%
15L	Jets	A15LATJ02	24%	D15LATJ02	12%
15L	Jets	A15LATJ03	13%	D15LATJ03	21%
15L	Jets	A15LATJ04	24%	D15LATJ04	8%
15L	Jets	A15LATJ05	8%	D15LATJ05	5%
15L	Jets	A15LATJ06	8%	D15LATJ06	2%
15L	Jets	**Subtotal**	**100%**	D15LATJ07	4%
15L	Jets	-	-	D15LATJ08	5%
15L	Jets	-	-	D15LATJ09	17%
15L	Jets	-	-	D15LATJ10	1%
15L	Jets	-	-	**Subtotal**	**100%**
15L	Non-Jets	A15LATNJ01	21%	D15LATNJ01	49%
15L	Non-Jets	A15LATNJ02	24%	D15LATNJ02	23%
15L	Non-Jets	A15LATNJ03	31%	D15LATNJ03	15%
15L	Non-Jets	A15LATNJ04	18%	D15LATNJ04	11%
15L	Non-Jets	A15LATNJ05	6%	D15LATNJ05	1%
15L	Non-Jets	**Subtotal**	**100%**	**Subtotal**	**100%**
15R	Jets	A15RATJ01	100%	D15RATJ01	56%
15R	Jets	**Subtotal**	**100%**	D15RATJ02	10%
15R	Jets	-	-	D15RATJ03	5%
15R	Jets	-	-	D15RATJ04	17%
15R	Jets	-	-	D15RATJ05	3%
15R	Jets	-	-	D15RATJ06	10%
15R	Jets	-	-	**Subtotal**	**100%**
15R	Non-Jets	A15RATNJ01	100%	D15RATNJ01	40%
15R	Non-Jets	**Subtotal**	**100%**	D15RATNJ02	60%
15R	Non-Jets	-	-	**Subtotal**	**100%**
28	Jets	A28ATJ01	22%	D28ATJ01	2%
28	Jets	A28ATJ02	27%	D28ATJ02	60%
28	Jets	A28ATJ03	16%	D28ATJ03	12%
28	Jets	A28ATJ04	22%	D28ATJ04	7%
28	Jets	A28ATJ05	13%	D28ATJ05	2%
28	Jets	**Subtotal**	**100%**	D28ATJ06	3%
28	Jets	-	-	D28ATJ07	14%
28	Jets	-	-	**Subtotal**	**100%**
28	Non-Jets	A28ATNJ01	100%	D28ATNJ01	42%
28	Non-Jets	**Subtotal**	**100%**	D28ATNJ02	58%
28	Non-Jets	-	-	**Subtotal**	**100%**
33L	Jets	A33LATJ01	5%	D33LATJ01	100%
33L	Jets	A33LATJ02	13%	**Subtotal**	**100%**
33L	Jets	A33LATJ03	19%	-	-
33L	Jets	A33LATJ04	5%	-	-
33L	Jets	A33LATJ05	11%	-	-
33L	Jets	A33LATJ06	42%	-	-
33L	Jets	A33LATJ07	1%	-	-
33L	Jets	A33LATJ08	2%	-	-
33L	Jets	A33LATJ09	2%	-	-
33L	Jets	**Subtotal**	**100%**	-	-
33L	Non-Jets	A33LATNJ01	100%	D33LATNJ01	100%
33L	Non-Jets	**Subtotal**	**100%**	**Subtotal**	**100%**
33R	Jets	A33RATJ01	14%	D33RATJ01	4%
33R	Jets	A33RATJ02	14%	D33RATJ02	3%
33R	Jets	A33RATJ03	10%	D33RATJ03	28%

Runway	Engine	Bundle Name (Arrivals)	Percent (Arrivals)	Bundle Name (Departures)	Percent (Departures)
33R	Jets	A33RATJ04	19%	D33RATJ04	15%
33R	Jets	A33RATJ05	8%	D33RATJ05	4%
33R	Jets	A33RATJ06	20%	D33RATJ06	9%
33R	Jets	A33RATJ07	12%	D33RATJ07	8%
33R	Jets	A33RATJ08	2%	D33RATJ08	19%
33R	Jets	A33RATJ09	1%	D33RATJ09	6%
33R	Jets	**Subtotal**	**100%**	D33RATJ10	2%
33R	Jets	-	-	D33RATJ11	3%
33R	Jets	-	-	**Subtotal**	**100%**
33R	Non-Jets	A33RATNJ01	12%	D33RATNJ01	12%
33R	Non-Jets	A33RATNJ02	28%	D33RATNJ02	8%
33R	Non-Jets	A33RATNJ03	20%	D33RATNJ03	43%
33R	Non-Jets	A33RATNJ04	5%	D33RATNJ04	17%
33R	Non-Jets	A33RATNJ05	26%	D33RATNJ05	20%
33R	Non-Jets	A33RATNJ06	9%	**Subtotal**	**100%**
33R	Non-Jets	**Subtotal**	**100%**	-	-

Note: Totals may not equal 100% due to rounding.

Table 3-22. Base Year (2025) and Five-Year Forecast (2030) General Aviation Fixed-Wing Model Track Utilization Percentages

Runway	Engine	Bundle Name (Arrivals)	Percent (Arrivals)	Bundle Name (Departures)	Percent (Departures)
10	Jets	A10GAJ01	34%	D10GAJ01	100%
10	Jets	A10GAJ02	10%	**Subtotal**	**100%**
10	Jets	A10GAJ03	27%	-	-
10	Jets	A10GAJ04	7%	-	-
10	Jets	A10GAJ05	22%	-	-
10	Jets	**Subtotal**	**100%**	-	-
10	Non-Jets	A10GANJ01	31%	D10GANJ01	100%
10	Non-Jets	A10GANJ02	69%	**Subtotal**	**100%**
10	Non-Jets	**Subtotal**	**100%**	-	-
15L	Jets	A15LGAJ01	30%	D15LGAJ01	4%
15L	Jets	A15LGAJ02	43%	D15LGAJ02	8%
15L	Jets	A15LGAJ03	26%	D15LGAJ03	39%
15L	Jets	**Subtotal**	**100%**	D15LGAJ04	12%
15L	Jets	-	-	D15LGAJ05	8%
15L	Jets	-	-	D15LGAJ06	8%
15L	Jets	-	-	D15LGAJ07	4%
15L	Jets	-	-	D15LGAJ08	9%
15L	Jets	-	-	D15LGAJ09	9%
15L	Jets	-	-	**Subtotal**	**100%**
15L	Non-Jets	A15LGANJ01	11%	D15LGANJ01	24%
15L	Non-Jets	A15LGANJ02	20%	D15LGANJ02	11%
15L	Non-Jets	A15LGANJ03	9%	D15LGANJ03	19%
15L	Non-Jets	A15LGANJ04	42%	D15LGANJ04	36%
15L	Non-Jets	A15LGANJ05	19%	D15LGANJ05	11%
15L	Non-Jets	**Subtotal**	**100%**	**Subtotal**	**100%**
15R	Jets	A15RGAJ01	100%	D15RGAJ01	17%
15R	Jets	**Subtotal**	**100%**	D15RGAJ02	25%
15R	Jets	-	-	D15RGAJ03	58%
15R	Jets	-	-	**Subtotal**	**100%**
15R	Non-Jets	A15RGANJ01	100%	D15RGANJ01	100%
15R	Non-Jets	**Subtotal**	**100%**	**Subtotal**	**100%**

Runway	Engine	Bundle Name (Arrivals)	Percent (Arrivals)	Bundle Name (Departures)	Percent (Departures)
28	Jets	A28GAJ01	59%	D28GAJ01	5%
28	Jets	A28GAJ02	41%	D28GAJ02	52%
28	Jets	**Subtotal**	**100%**	D28GAJ03	15%
28	Jets	-	-	D28GAJ04	9%
28	Jets	-	-	D28GAJ05	18%
28	Jets	-	-	**Subtotal**	**100%**
28	Non-Jets	A28GANJ01	100%	D28GANJ01	63%
28	Non-Jets	**Subtotal**	**100%**	D28GANJ02	38%
28	Non-Jets	-	-	**Subtotal**	**100%**
33L	Jets	A33LGAJ01	32%	D33LGAJ01	100%
33L	Jets	A33LGAJ02	26%	**Subtotal**	**100%**
33L	Jets	A33LGAJ03	6%	-	-
33L	Jets	A33LGAJ04	35%	-	-
33L	Jets	**Subtotal**	**100%**	-	-
33L	Non-Jets	A33LGANJ01	100%	**Subtotal**	**0%**
33L	Non-Jets	**Subtotal**	**100%**	-	-
33R	Jets	A33RGAJ01	27%	D33RGAJ01	6%
33R	Jets	A33RGAJ02	13%	D33RGAJ02	36%
33R	Jets	A33RGAJ03	14%	D33RGAJ03	16%
33R	Jets	A33RGAJ04	10%	D33RGAJ04	15%
33R	Jets	A33RGAJ05	24%	D33RGAJ05	6%
33R	Jets	A33RGAJ06	13%	D33RGAJ06	17%
33R	Jets	**Subtotal**	**100%**	D33RGAJ07	4%
33R	Jets	-	-	**Subtotal**	**100%**
33R	Non-Jets	A33RGANJ01	28%	D33RGANJ01	15%
33R	Non-Jets	A33RGANJ02	27%	D33RGANJ02	18%
33R	Non-Jets	A33RGANJ03	7%	D33RGANJ03	11%
33R	Non-Jets	A33RGANJ04	12%	D33RGANJ04	5%
33R	Non-Jets	A33RGANJ05	26%	D33RGANJ05	12%
33R	Non-Jets	**Subtotal**	**100%**	D33RGANJ06	24%
33R	Non-Jets	-	-	D33RGANJ07	9%
33R	Non-Jets	-	-	D33RGANJ08	6%
33R	Non-Jets	-	-	**Subtotal**	**100%**

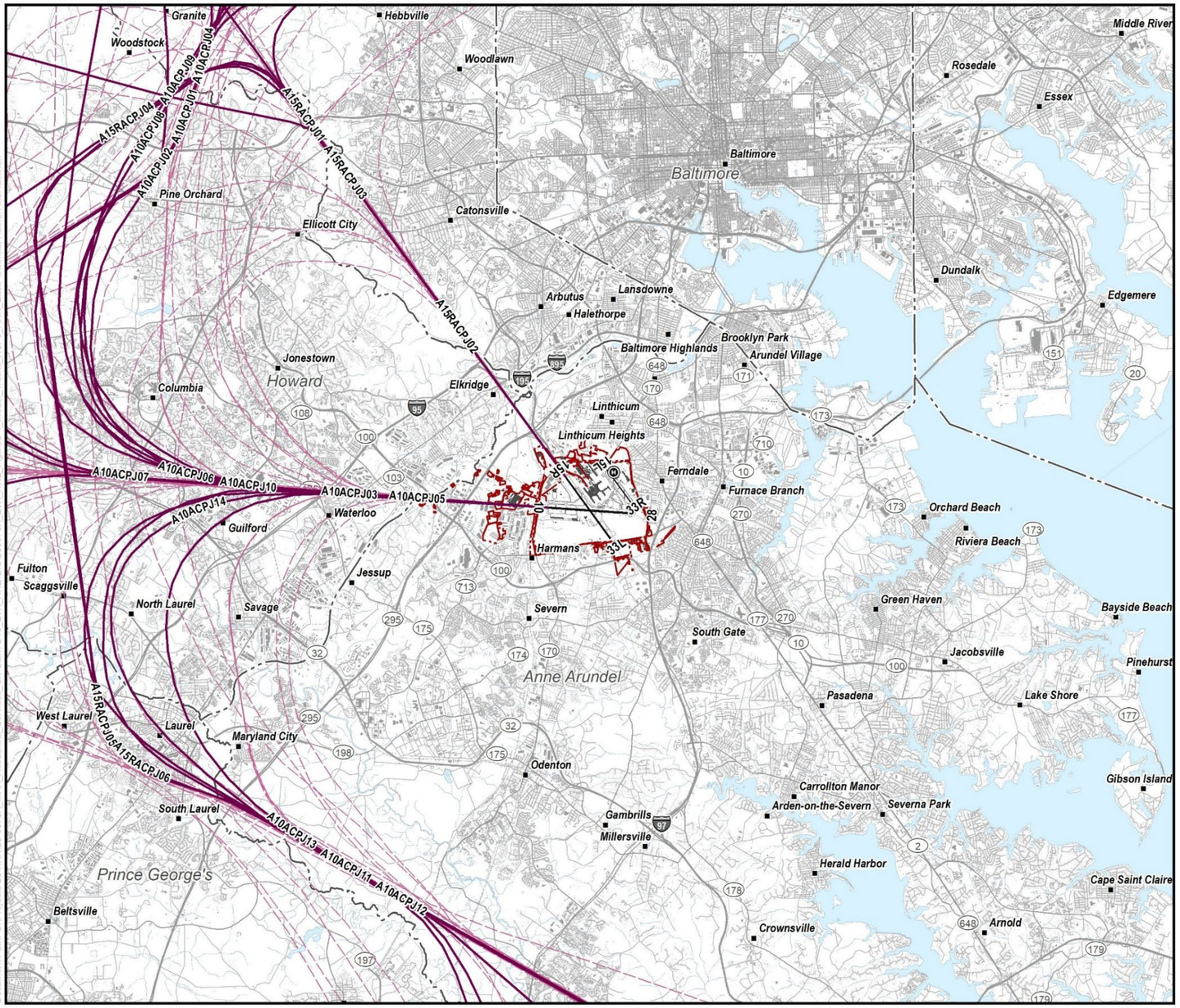
Note: Totals may not equal 100% due to rounding.

Table 3-23. Base Year (2025) and Five-Year Forecast (2030) Helicopter Model Track Utilization Percentages

Runway	Engine	Bundle Name (Arrivals)	Percent (Arrivals)	Bundle Name (Departures)	Percent (Departures)
H1	Helicopter	AH1H01	24%	DH1H01	53%
H1	Helicopter	AH1H02	24%	DH1H02	33%
H1	Helicopter	AH1H03	21%	DH1H03	14%
H1	Helicopter	AH1H04	21%	**Subtotal**	**100%**
H1	Helicopter	AH1H05	10%	-	-
H1	Helicopter	**Subtotal**	**100%**	-	-

Note: Totals may not equal 100% due to rounding.

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BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-4
Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks -
East Flow Air Carrier Passenger Jet Arrivals

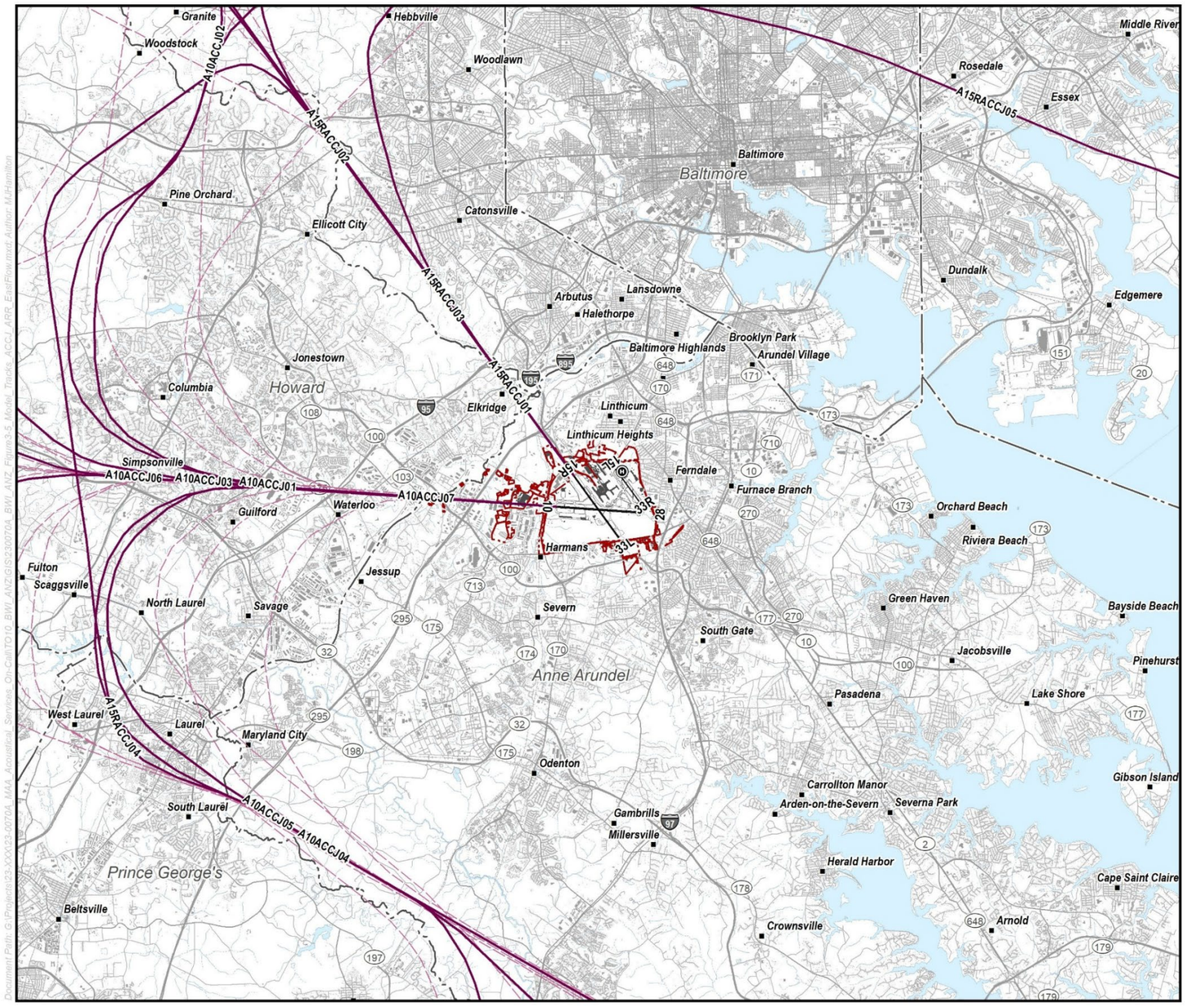
- Modeled Arrival Flight Track - Backbone (20)
- Modeled Arrival Flight Track - Dispersed (54)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
A10ACPJ01, A10ACPJ02, A10ACPJ03, A10ACPJ04, A10ACPJ05, A10ACPJ06, A10ACPJ07, A10ACPJ08, A10ACPJ09, A10ACPJ10, A10ACPJ11, A10ACPJ12, A10ACPJ13, A10ACPJ14, A15RACPJ01, A15RACPJ02, A15RACPJ03, A15RACPJ04, A15RACPJ05, A15RACPJ06

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-4. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – East Flow Air Carrier Passenger Jet Arrivals



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-5
Base Year (2025) and Five-Year Forecast (2030)
Modeled Flight Tracks -
East Flow Air Carrier Cargo Jet Arrivals

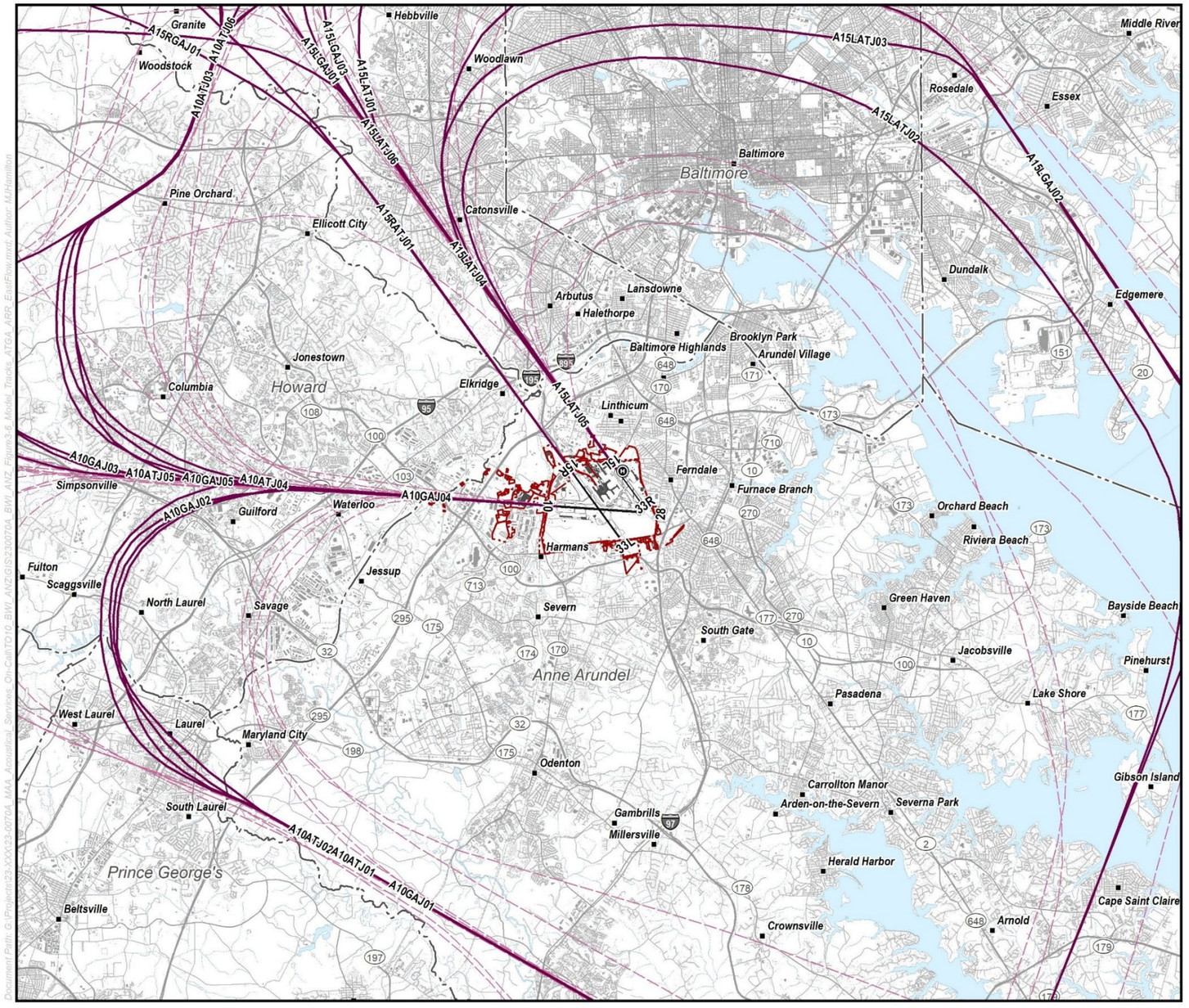
- Modeled Arrival Flight Track - Backbone (12)
- Modeled Arrival Flight Track - Dispersed (18)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
A10ACCJ01, A10ACCJ02, A10ACCJ03, A10ACCJ04, A10ACCJ05, A10ACCJ06, A10ACCJ07, A15RACCJ01, A15RACCJ02, A15RACCJ03, A15RACCJ04, A15RACCJ05

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-5. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – East Flow Air Carrier Cargo Jet Arrivals



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-6
Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks -
East Flow Air Taxi/General Aviation Jet Arrivals

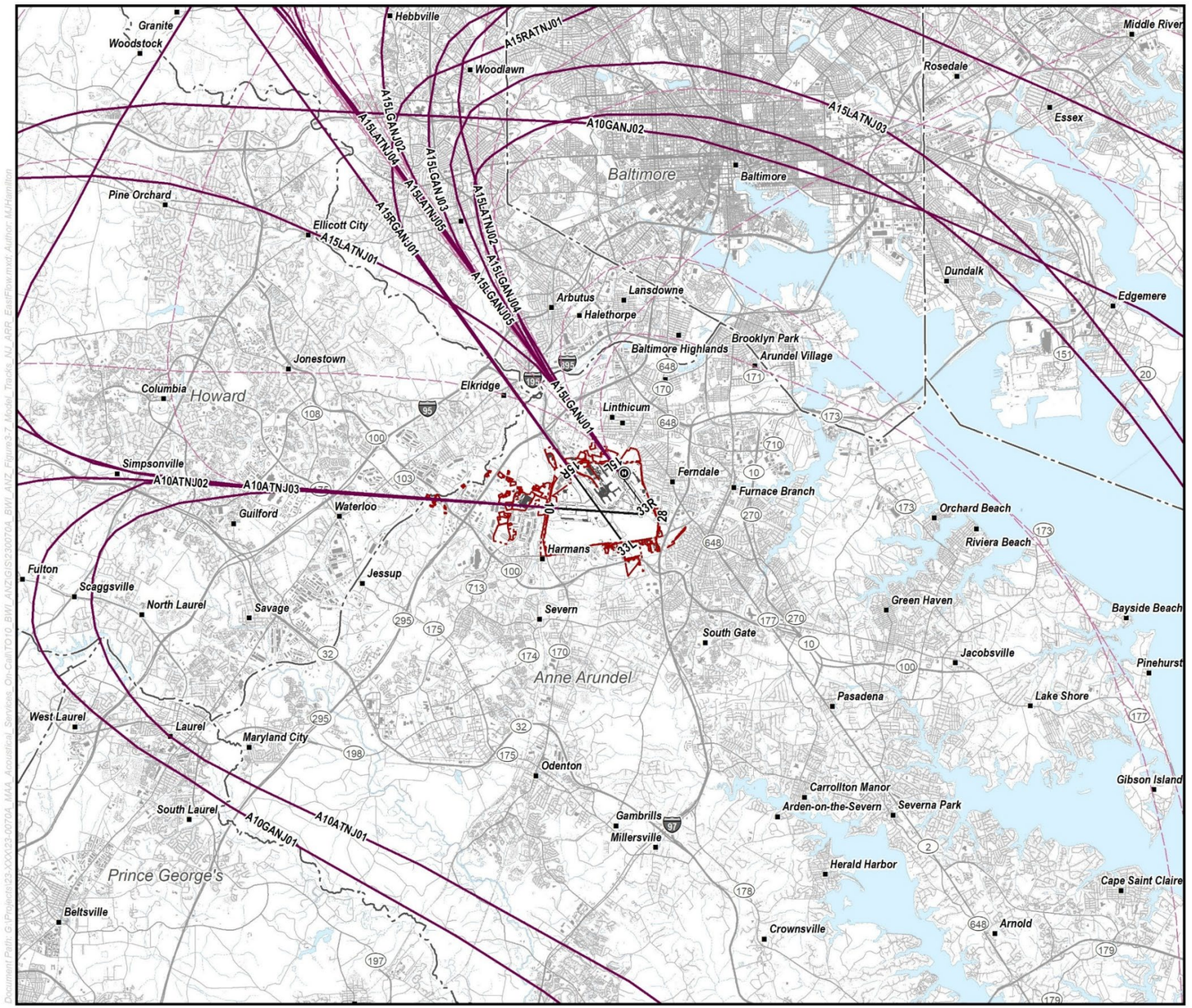
- Modeled Arrival Flight Track - Backbone (22)
- Modeled Arrival Flight Track - Dispersed (38)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
A10ATJ01, A10ATJ02, A10ATJ03, A10ATJ04, A10ATJ05, A10ATJ06, A10GAJ01, A10GAJ02, A10GAJ03, A10GAJ04, A10GAJ05, A15LATJ01, A15LATJ02, A15LATJ03, A15LATJ04, A15LATJ05, A15LATJ06, A15LGAJ01, A15LGAJ02, A15LGAJ03, A15RATJ01, A15RGAJ01

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-6. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – East Flow Air Taxi/General Aviation Arrivals



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-7
Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks -
East Flow Propeller Arrivals

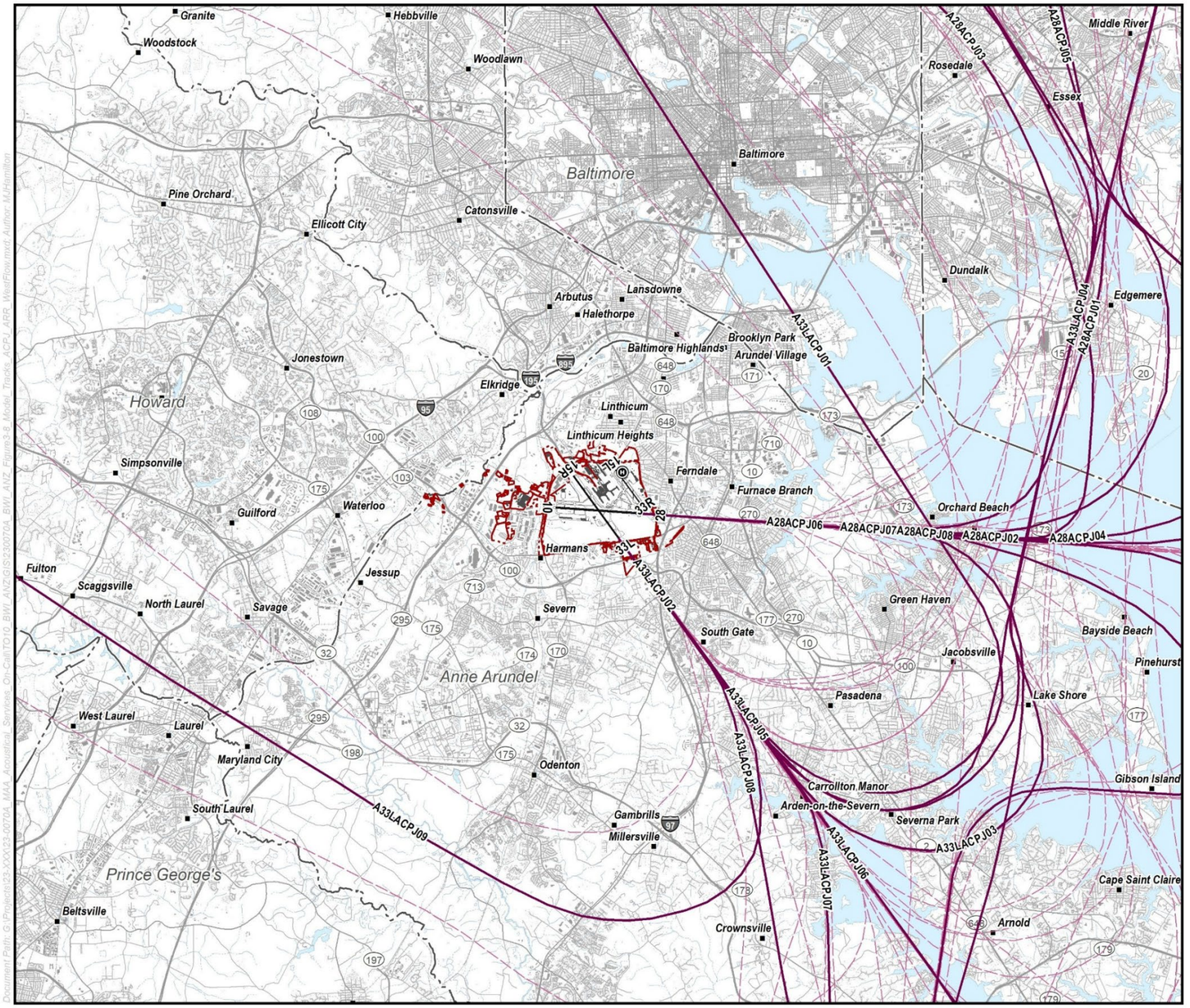
- Modeled Arrival Flight Track - Backbone (17)
- Modeled Arrival Flight Track - Dispersed (20)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
A10ATNJ01, A10ATNJ02, A10ATNJ03, A10GANJ01, A10GANJ02, A15LATNJ01, A15LATNJ02, A15LATNJ03, A15LATNJ04, A15LATNJ05, A15LGANJ01, A15LGANJ02, A15LGANJ03, A15LGANJ04, A15LGANJ05, A15RATNJ01, A15RGANJ01

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-7. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – East Flow Propeller Arrivals



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-8
Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks -
West Flow Air Carrier Passenger Jet Arrivals

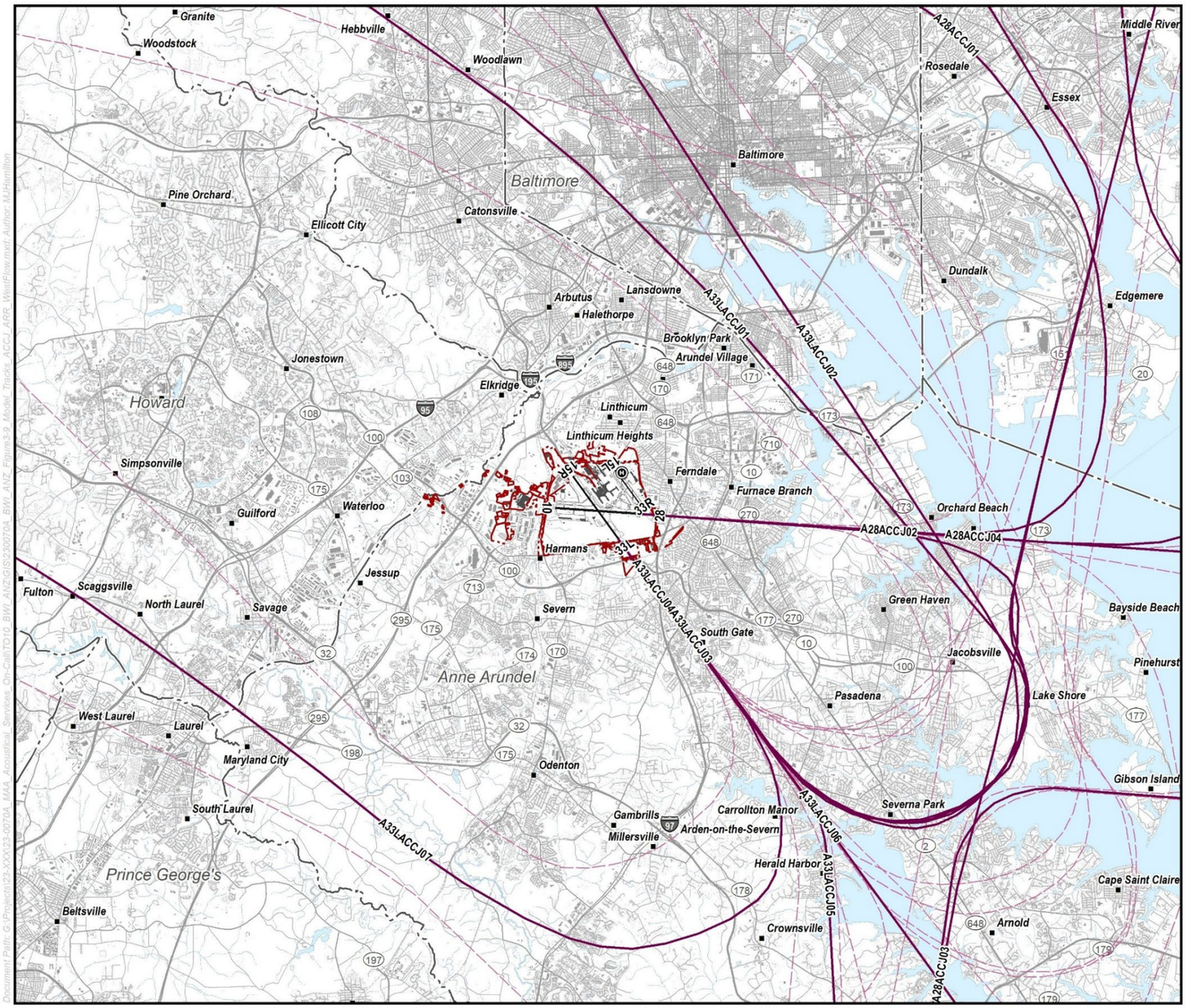
- Modeled Arrival Flight Track - Backbone (17)
- Modeled Arrival Flight Track - Dispersed (48)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
A28ACPJ01, A28ACPJ02, A28ACPJ03, A28ACPJ04, A28ACPJ05, A28ACPJ06, A28ACPJ07, A28ACPJ08, A33LACPJ01, A33LACPJ02, A33LACPJ03, A33LACPJ04, A33LACPJ05, A33LACPJ06, A33LACPJ07, A33LACPJ08, A33LACPJ09

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-8. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – West Flow Air Carrier Passenger Jet Arrivals



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-9
Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks -
West Flow Air Carrier Cargo Jet Arrivals

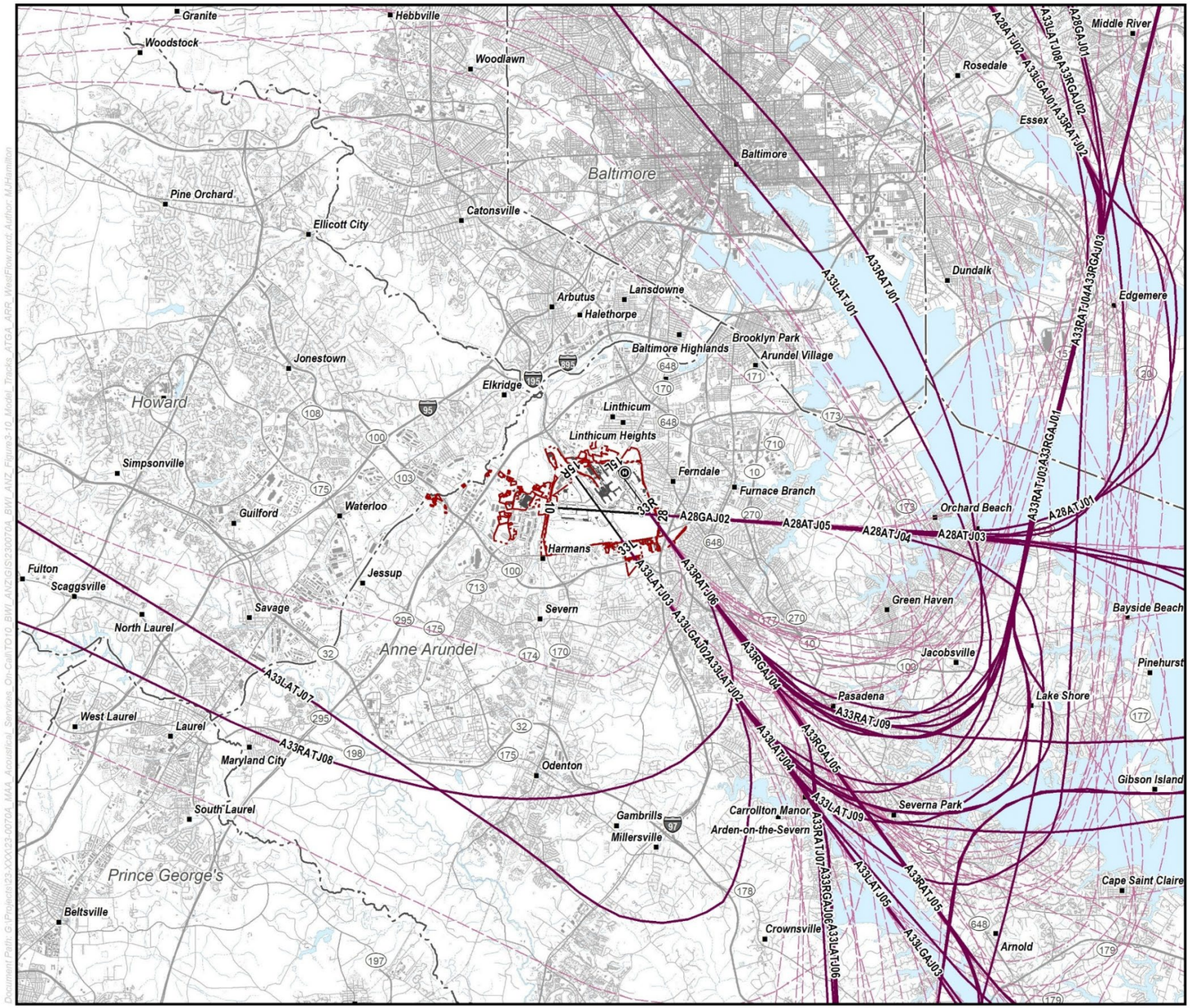
- Modeled Arrival Flight Track - Backbone (11)
- Modeled Arrival Flight Track - Dispersed (20)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
A28ACCJ01, A28ACCJ02, A28ACCJ03, A28ACCJ04, A33LACCJ01, A33LACCJ02, A33LACCJ03, A33LACCJ04, A33LACCJ05, A33LACCJ06, A33LACCJ07

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-9. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – West Flow Air Carrier Cargo Jet Arrivals



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-10
Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks -
West Flow Air Taxi/General Aviation Jet Arrivals

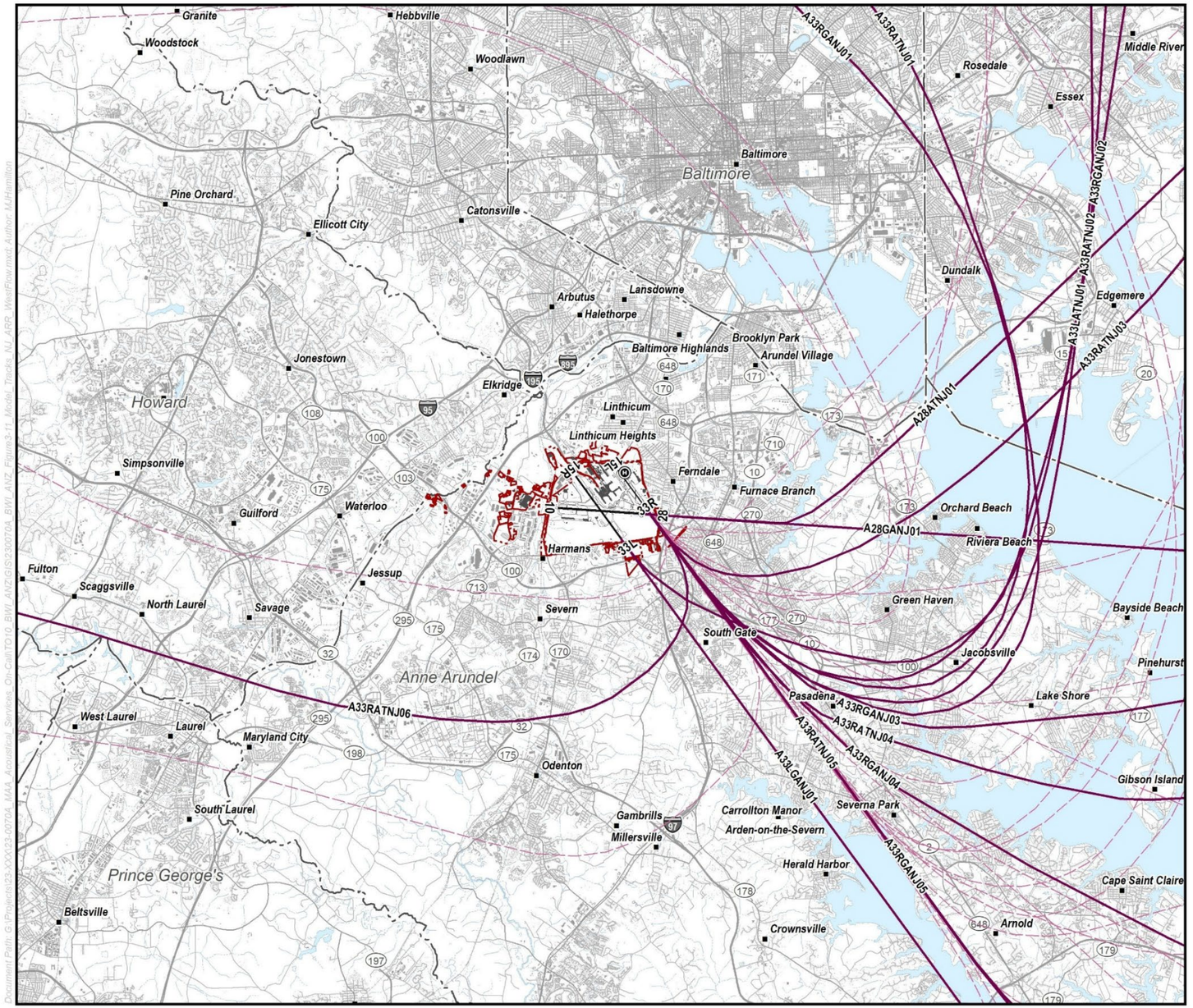
- Modeled Arrival Flight Track - Backbone (35)
- Modeled Arrival Flight Track - Dispersed (56)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
A28ATJ01, A28ATJ02, A28ATJ03, A28ATJ04, A28ATJ05, A28GAJ01, A28GAJ02, A33LATJ01, A33LATJ02, A33LATJ03, A33LATJ04, A33LATJ05, A33LATJ06, A33LATJ07, A33LATJ08, A33LATJ09, A33LGAJ01, A33LGAJ02, A33LGAJ03, A33LGAJ04, A33RATJ01, A33RATJ02, A33RATJ03, A33RATJ04, A33RATJ05, A33RATJ06, A33RATJ07, A33RATJ08, A33RATJ09, A33RGAJ01, A33RGAJ02, A33RGAJ03, A33RGAJ04, A33RGAJ05, A33RGAJ06

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-10. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – West Flow Air Taxi/General Aviation Jet Arrivals



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-11

Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks - West Flow Propeller Arrivals

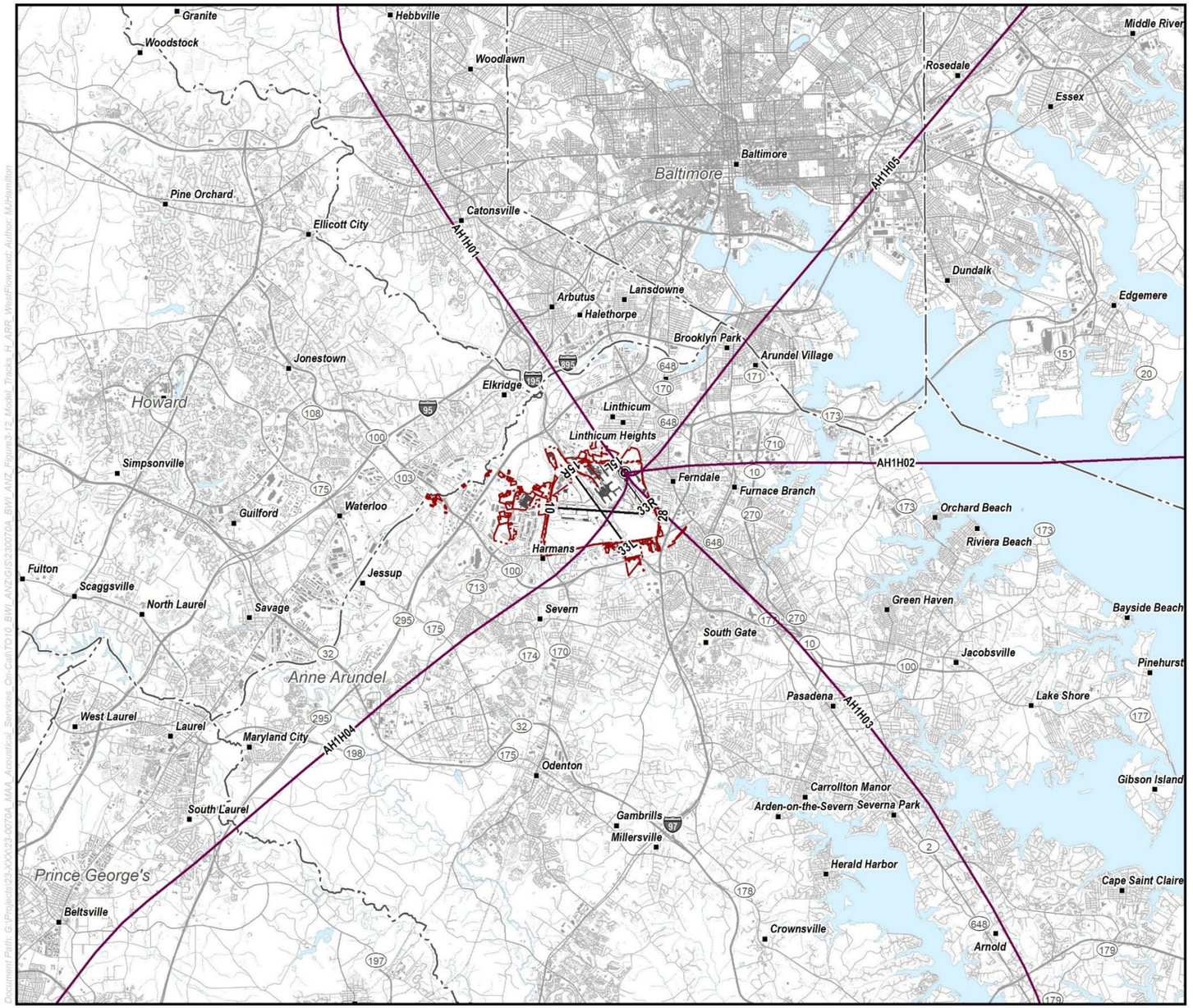
- Modeled Arrival Flight Track - Backbone (15)
- Modeled Arrival Flight Track - Dispersed (22)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
A28ATNJ01, A28GANJ01, A33LATNJ01, A33LGANJ01, A33RATNJ01, A33RATNJ02, A33RATNJ03, A33RATNJ04, A33RATNJ05, A33RATNJ06, A33RGANJ01, A33RGANJ02, A33RGANJ03, A33RGANJ04, A33RGANJ05

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-11. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – West Flow Propeller Arrivals



BWI Baltimore/Washington International Thurgood Marshall Airport

Airport Noise Zone Update

Figure 3-12

Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks - Helicopter Arrivals

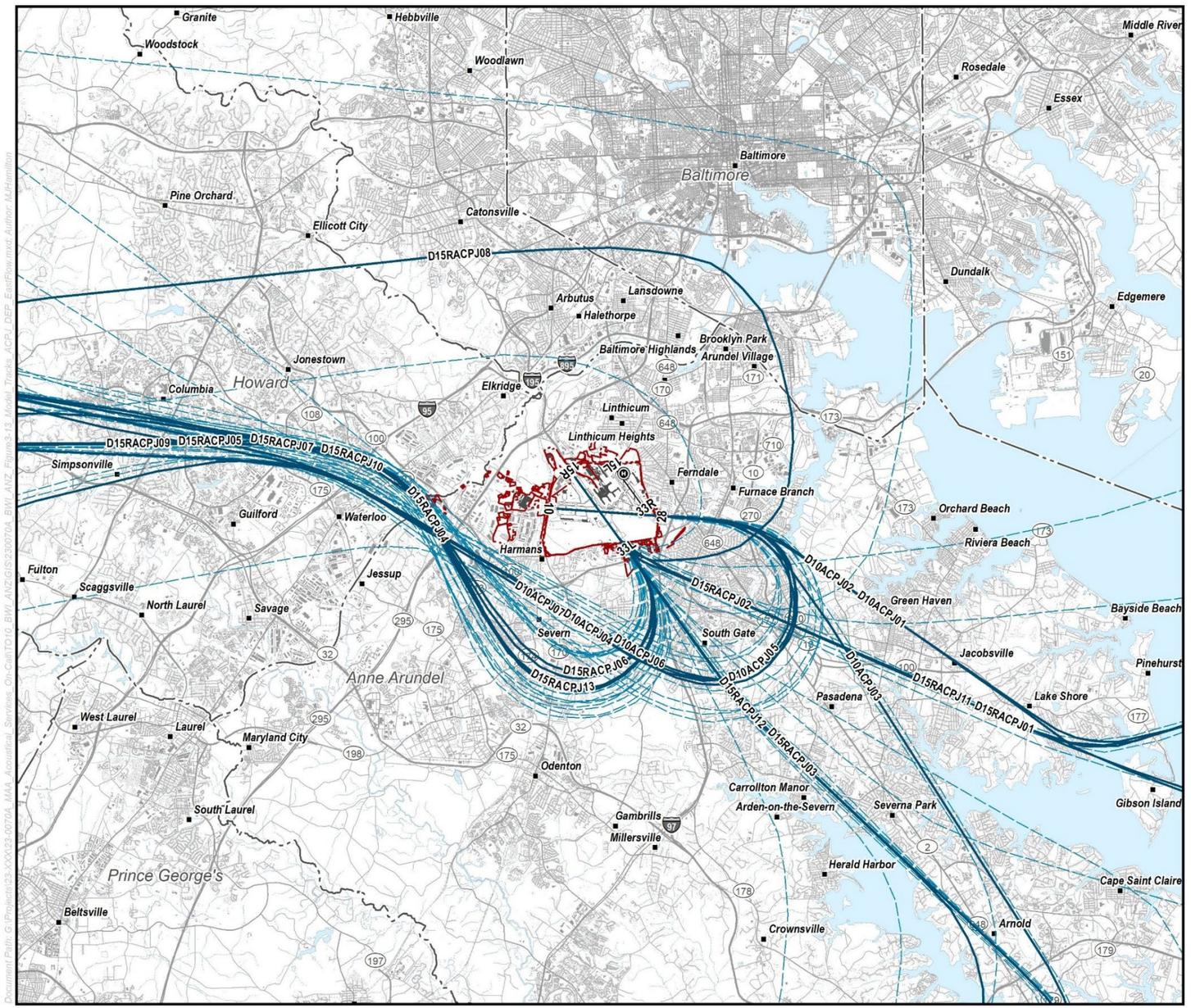
- Modeled Arrival Flight Track - Backbone (5)
- Modeled Arrival Flight Track - Dispersed (0)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
AH1H01, AH1H02, AH1H03, AH1H04, AH1H05

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-12. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – Helicopter Arrivals



BWI Marshall Airport

Airport Noise Zone Update

Figure 3-13

Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks -
East Flow Air Carrier Passenger Jet Departures

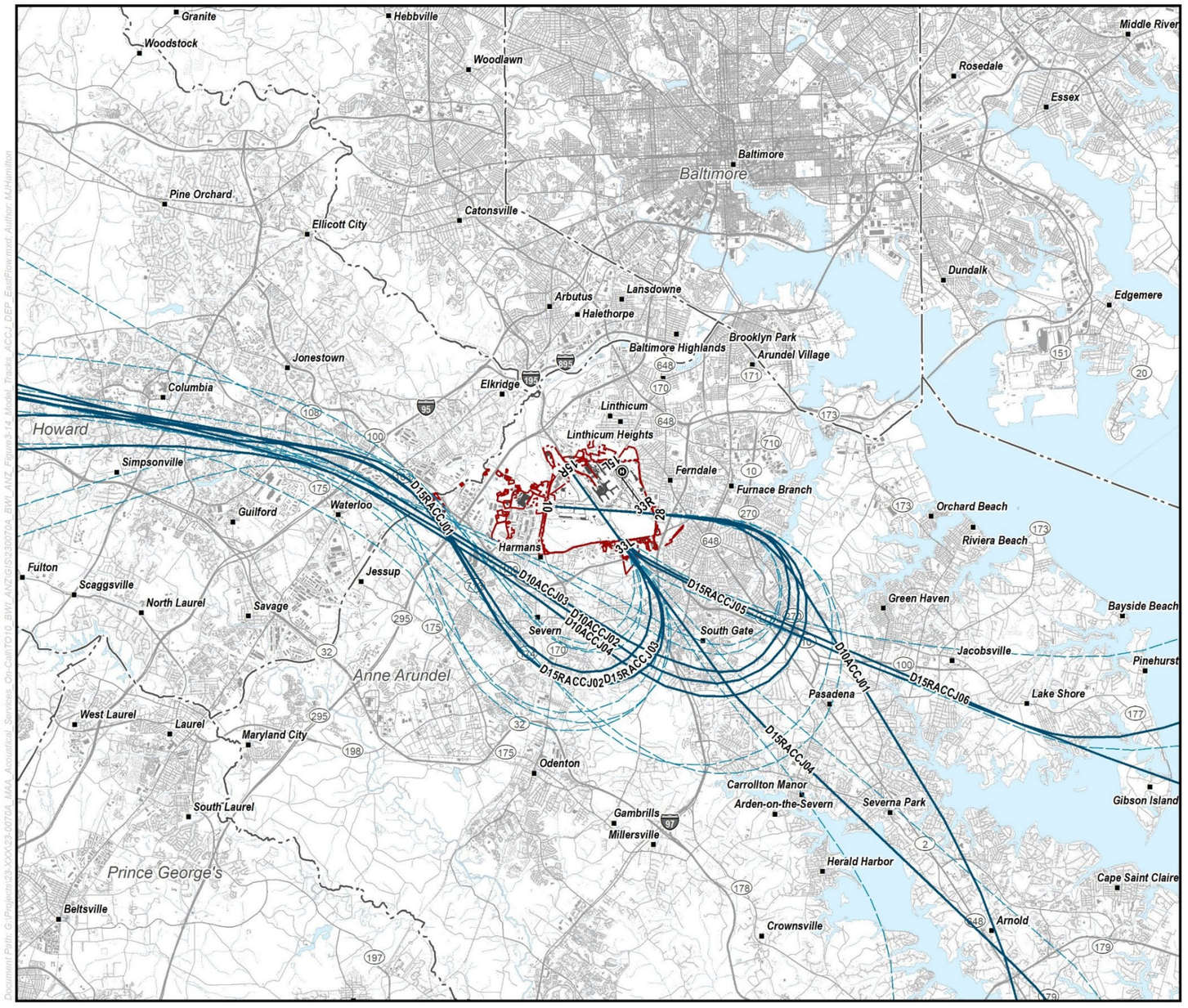
- Modeled Departure Flight Track - Backbone (20)
- Modeled Departure Flight Track - Dispersed (44)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
D10ACPJ01, D10ACPJ02, D10ACPJ03, D10ACPJ04, D10ACPJ05, D10ACPJ06, D10ACPJ07, D15RACPJ01, D15RACPJ02, D15RACPJ03, D15RACPJ04, D15RACPJ05, D15RACPJ06, D15RACPJ07, D15RACPJ08, D15RACPJ09, D15RACPJ10, D15RACPJ11, D15RACPJ12, D15RACPJ13

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-13. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – East Flow Air Carrier Passenger Jet Departures



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-14
Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks -
East Flow Air Carrier Cargo Jet Departures

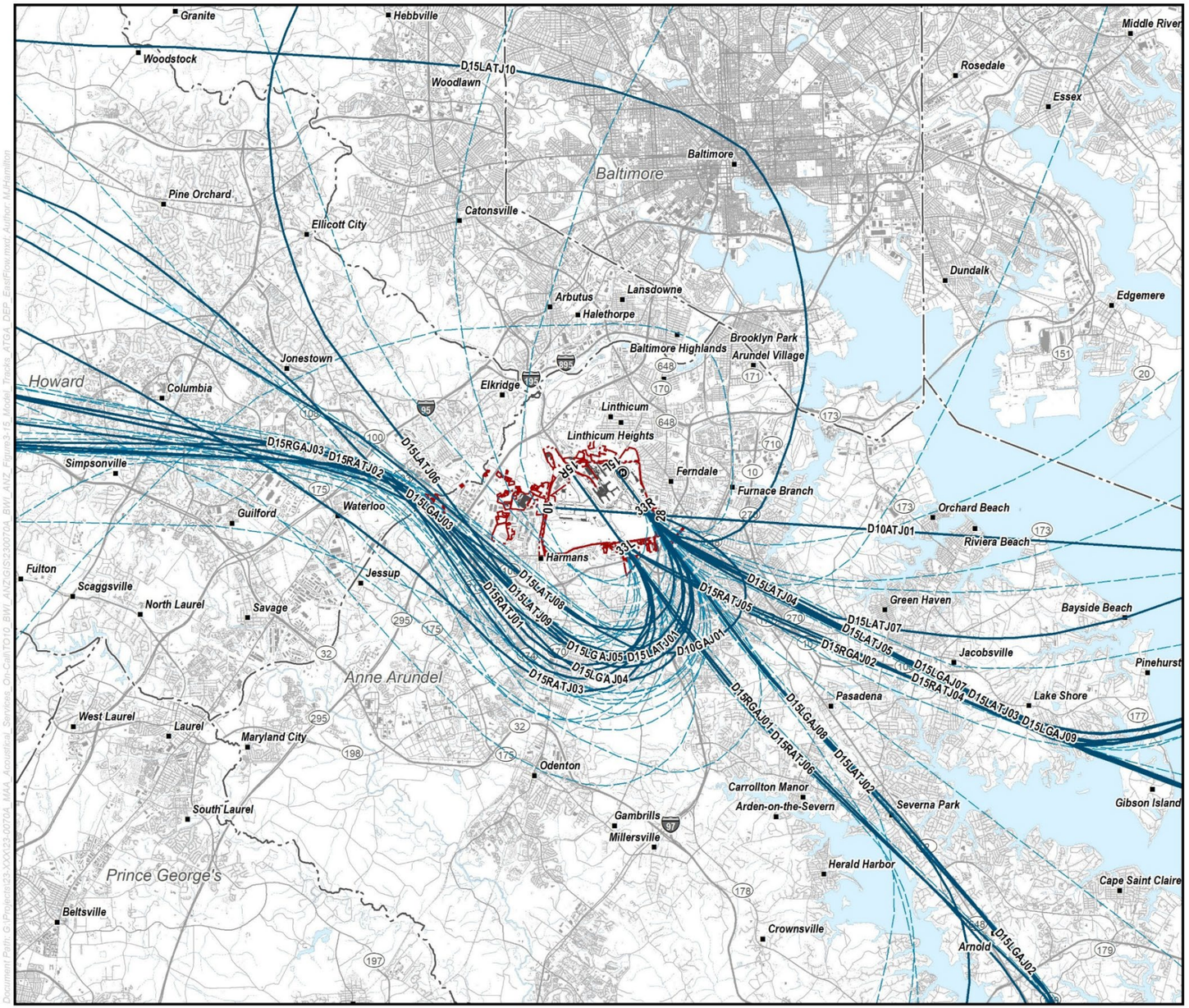
- Modeled Departure Flight Track - Backbone (10)
- Modeled Departure Flight Track - Dispersed (14)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
D10ACCJ01, D10ACCJ02, D10ACCJ03, D10ACCJ04, D15RACCJ01, D15RACCJ02, D15RACCJ03, D15RACCJ04, D15RACCJ05, D15RACCJ06

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-14. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – East Flow Air Carrier Cargo Jet Departures



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-15
Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks -
East Flow Air Taxi/General Aviation Departures

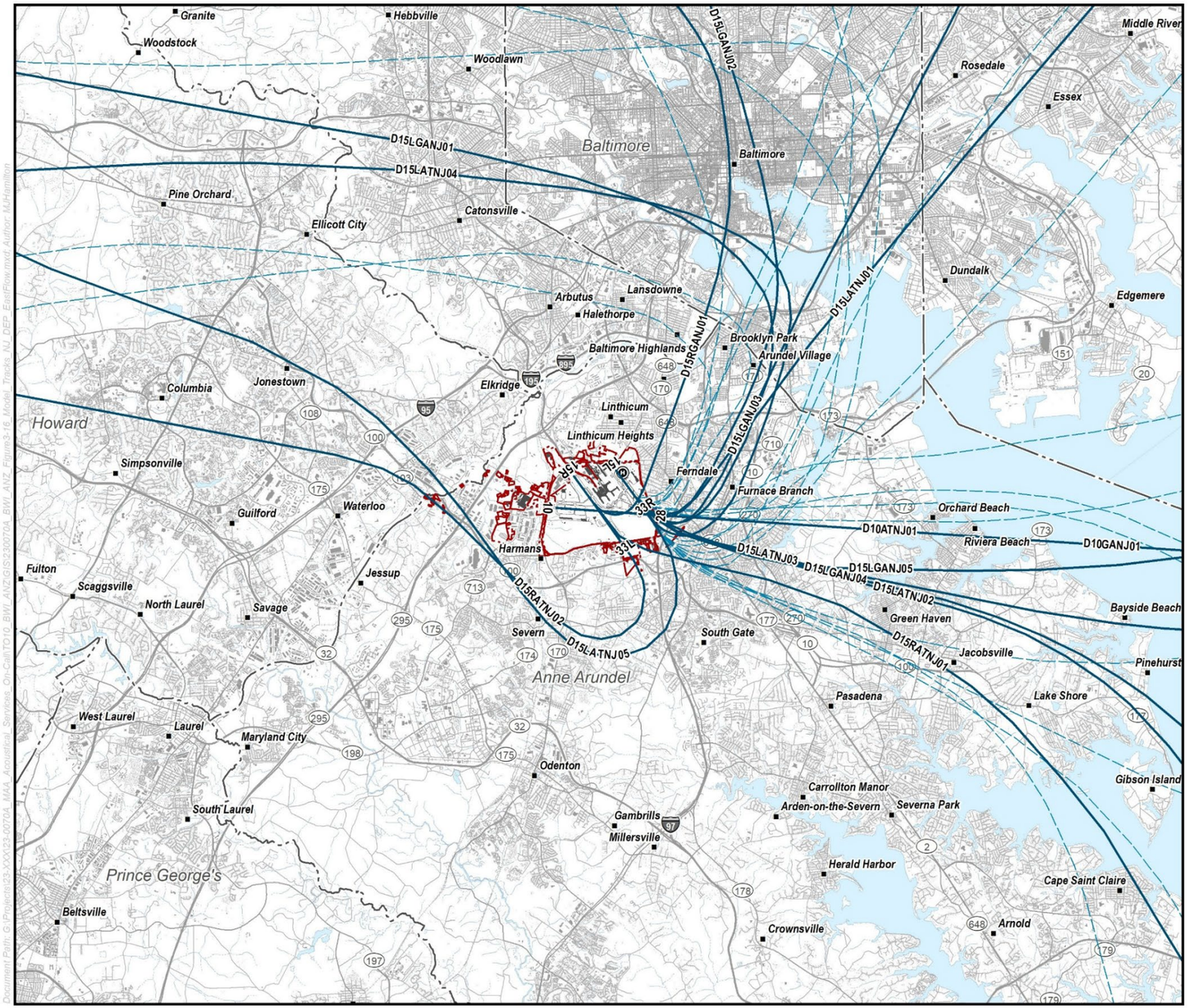
- Modeled Departure Flight Track - Backbone (30)
- Modeled Departure Flight Track - Dispersed (38)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
D10ATJ01, D10GAJ01, D15LATJ01, D15LATJ02, D15LATJ03, D15LATJ04, D15LATJ05, D15LATJ06, D15LATJ07, D15LATJ08, D15LATJ09, D15LATJ10, D15LGAJ01, D15LGAJ02, D15LGAJ03, D15LGAJ04, D15LGAJ05, D15LGAJ06, D15LGAJ07, D15LGAJ08, D15LGAJ09, D15RATJ01, D15RATJ02, D15RATJ03, D15RATJ04, D15RATJ05, D15RATJ06, D15RGAJ01, D15RGAJ02, D15RGAJ03

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-15. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – East Flow Air Taxi/General Aviation Departures



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-16
Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks -
East Flow Propeller Departures

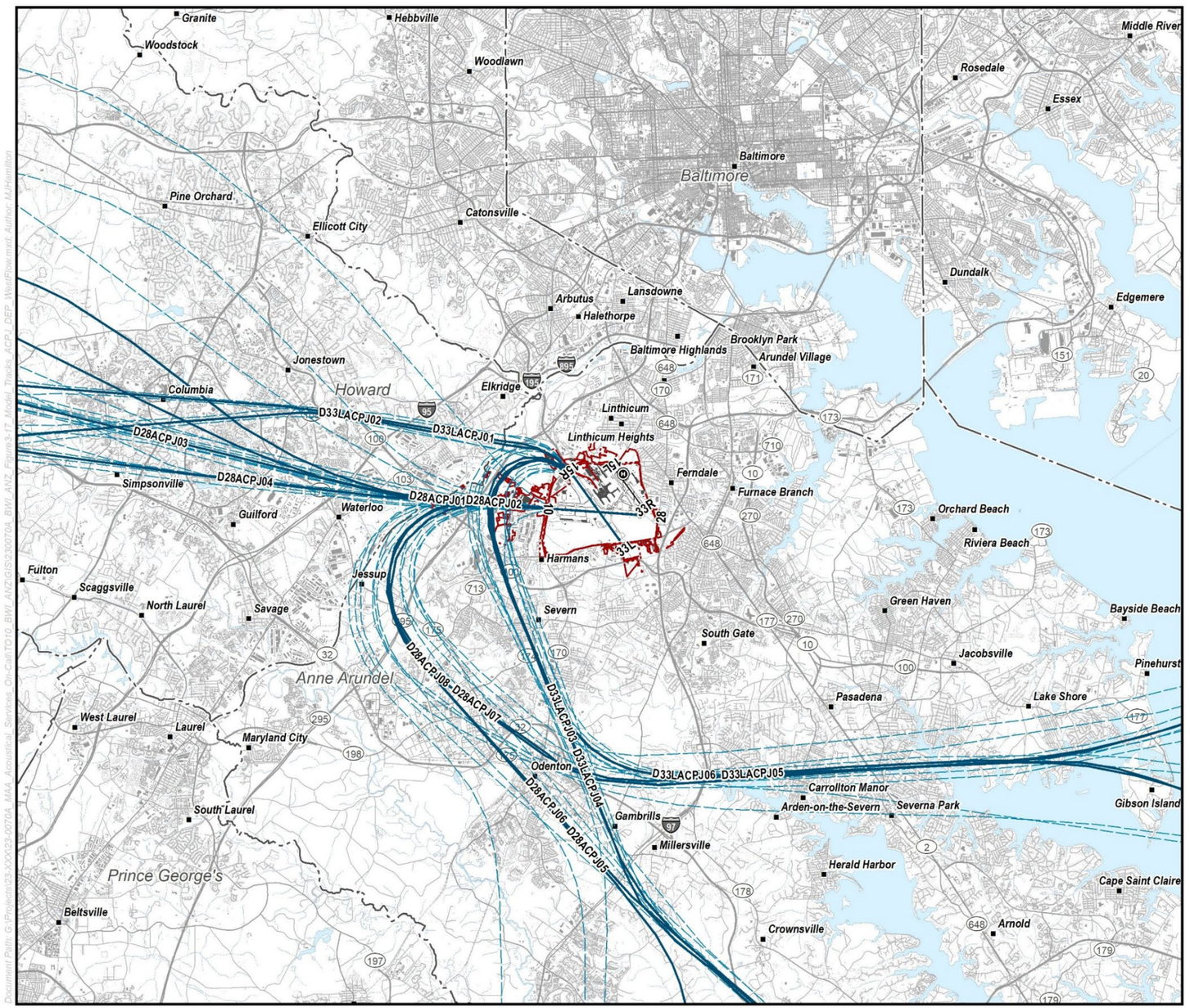
- Modeled Departure Flight Track - Backbone (15)
- Modeled Departure Flight Track - Dispersed (18)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
D10ATNJ01, D10GANJ01, D15LATNJ01, D15LATNJ02, D15LATNJ03, D15LATNJ04, D15LATNJ05, D15LGANJ01, D15LGANJ02, D15LGANJ03, D15LGANJ04, D15LGANJ05, D15RATNJ01, D15RATNJ02, D15RGANJ01

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-16. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – East Flow Propeller Departures



BWI BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-17
Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks -
West Flow Air Carrier Passenger Jet Departures

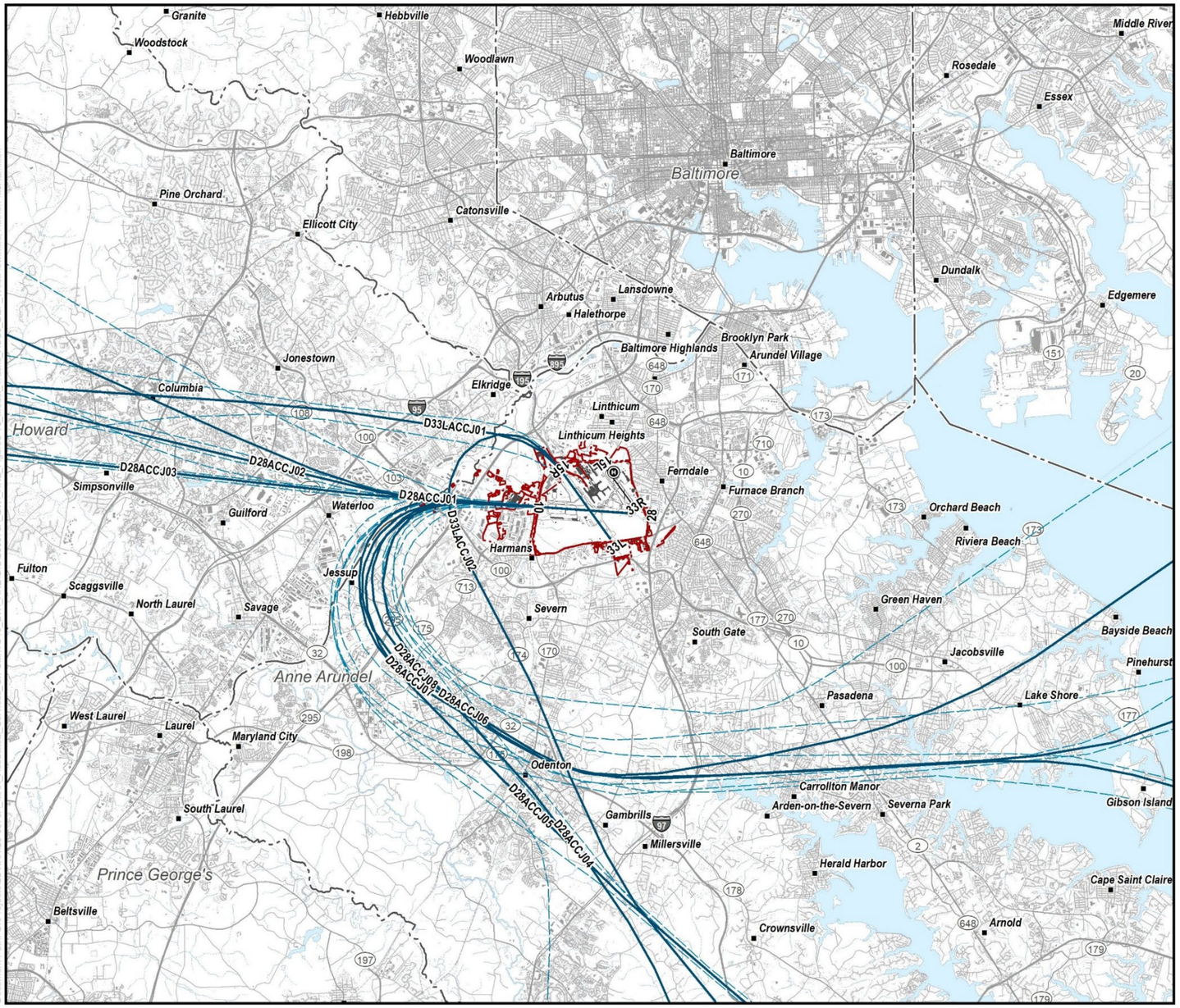
- Modeled Departure Flight Track - Backbone (14)
- Modeled Departure Flight Track - Dispersed (40)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
D28ACPJ01, D28ACPJ02, D28ACPJ03, D28ACPJ04, D28ACPJ05, D28ACPJ06, D28ACPJ07, D28ACPJ08, D33LACPJ01, D33LACPJ02, D33LACPJ03, D33LACPJ04, D33LACPJ05, D33LACPJ06

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-17. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – West Flow Air Carrier Passenger Jet Departures



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-18
Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks -
West Flow Air Carrier Cargo Jet Departures

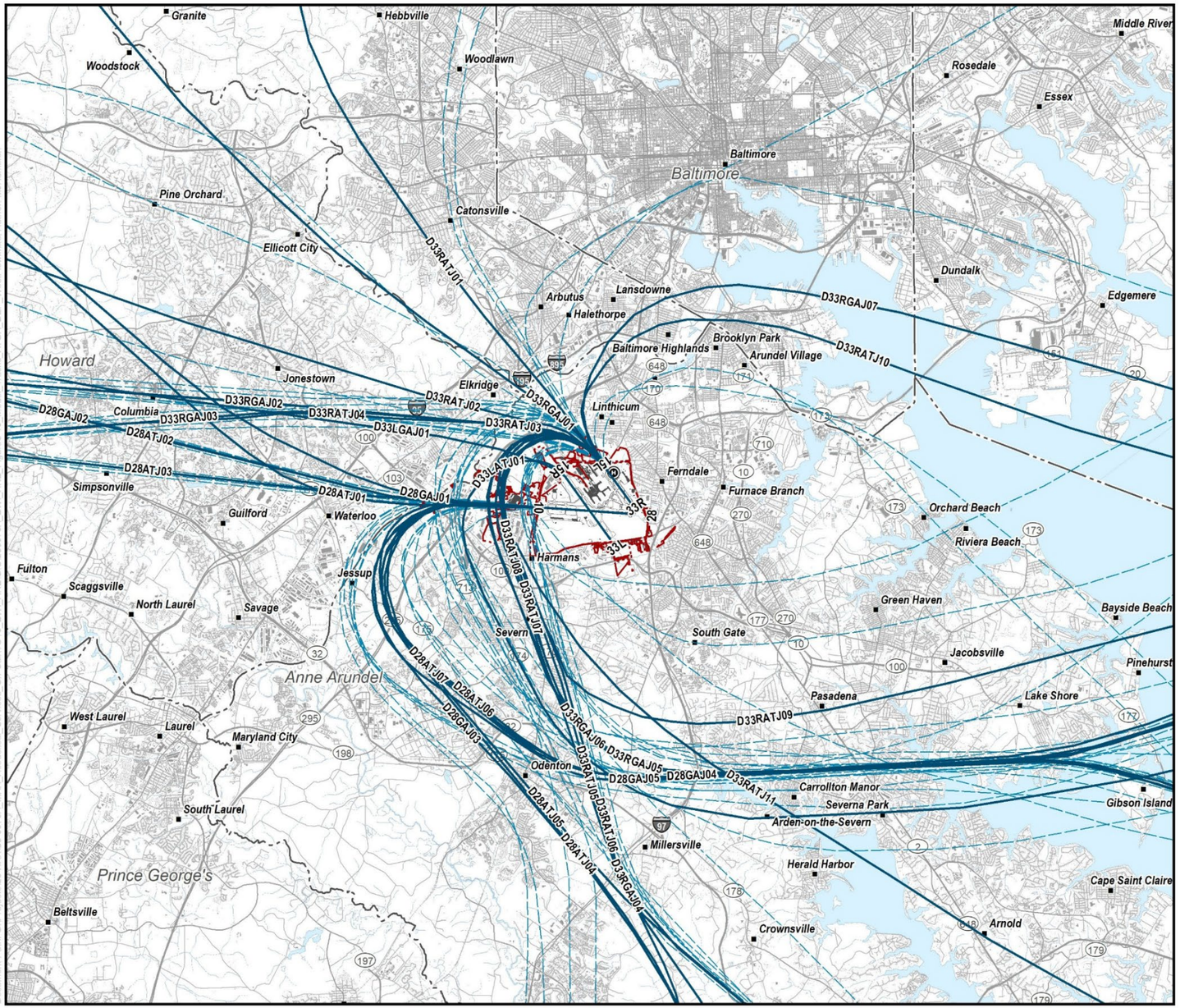
- Modeled Departure Flight Track - Backbone (10)
- Modeled Departure Flight Track - Dispersed (18)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
D28ACCJ01, D28ACCJ02, D28ACCJ03, D28ACCJ04, D28ACCJ05, D28ACCJ06, D28ACCJ07, D28ACCJ08, D33LACCJ01, D33LACCJ02

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-18. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – West Flow Air Carrier Cargo Jet Departures



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-19
Base Year (2025) and Five-Year Forecast (2030)
Modeled Flight Tracks -
West Flow Air Taxi/General Aviation Jet Departures

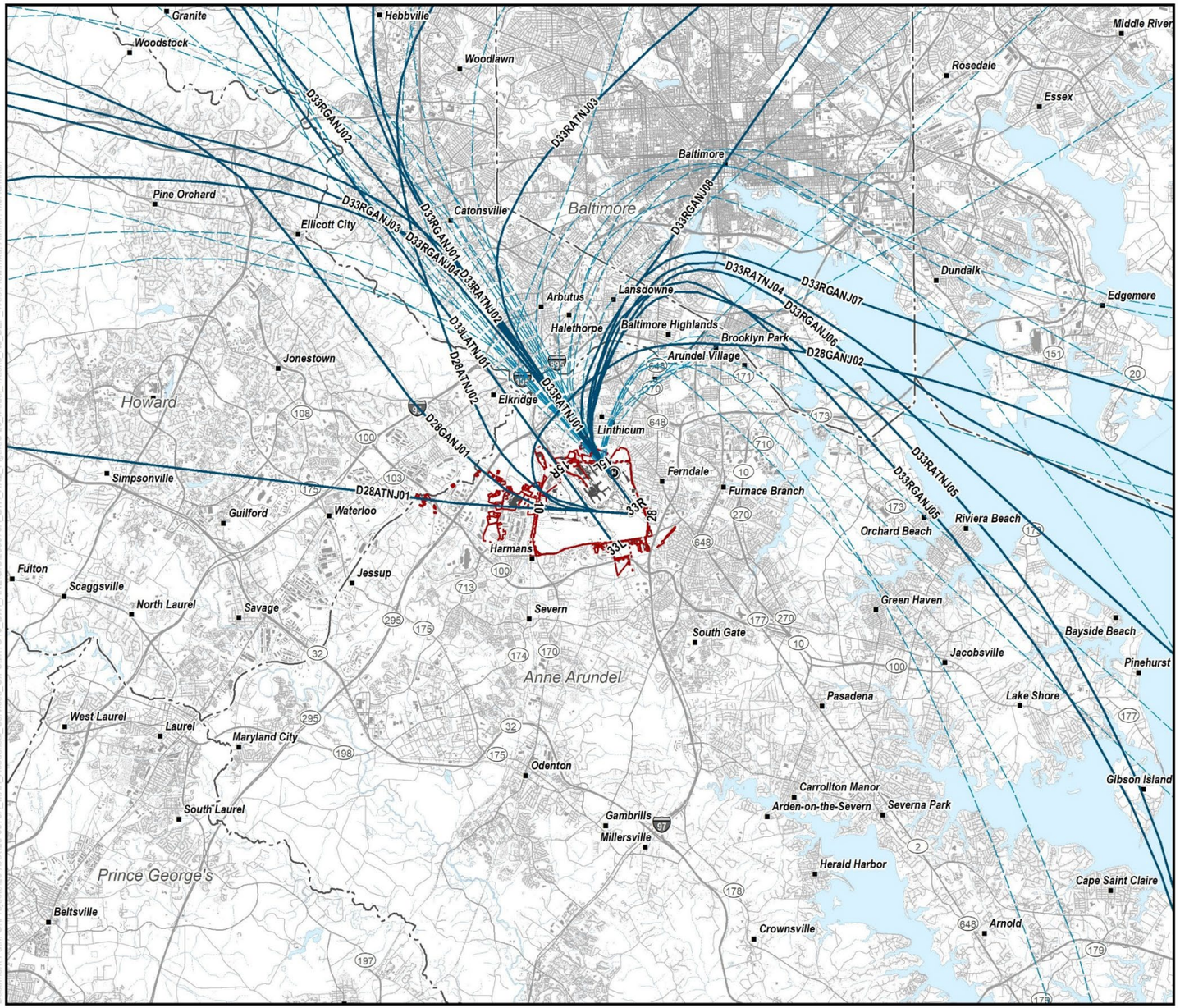
- Modeled Departure Flight Track - Backbone (32)
- Modeled Departure Flight Track - Dispersed (54)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
D28ATJ01, D28ATJ02, D28ATJ03, D28ATJ04, D28ATJ05, D28ATJ06, D28ATJ07, D28GAJ01, D28GAJ02, D28GAJ03, D28GAJ04, D28GAJ05, D33LATJ01, D33LGAJ01, D33RATJ01, D33RATJ02, D33RATJ03, D33RATJ04, D33RATJ05, D33RATJ06, D33RATJ07, D33RATJ08, D33RATJ09, D33RATJ10, D33RATJ11, D33RGAJ01, D33RGAJ02, D33RGAJ03, D33RGAJ04, D33RGAJ05, D33RGAJ06, D33RGAJ07

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-19. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – West Flow Air Taxi/General Aviation Jet Departures



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-20
Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks -
West Flow Propeller Departures

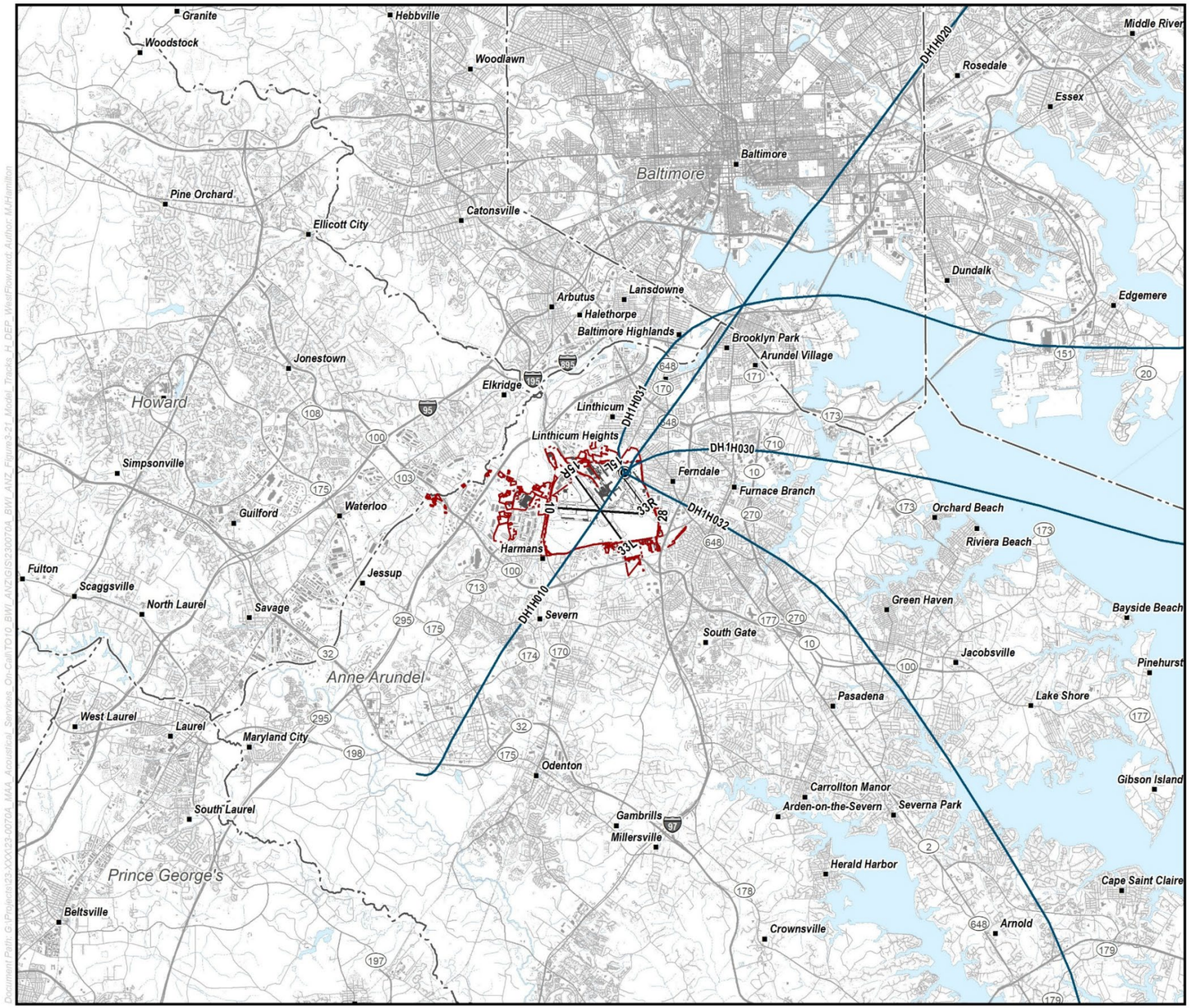
- Modeled Departure Flight Track - Backbone (18)
- Modeled Departure Flight Track - Dispersed (28)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
D28ATNJ01, D28ATNJ02, D28GANJ01, D28GANJ02, D33LATNJ01, D33RATNJ01, D33RATNJ02, D33RATNJ03, D33RATNJ04, D33RATNJ05, D33RGANJ01, D33RGANJ02, D33RGANJ03, D33RGANJ04, D33RGANJ05, D33RGANJ06, D33RGANJ07, D33RGANJ08

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-20. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – West Flow Propeller Departures



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Figure 3-21

Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks - Helicopter Departures

- Modeled Departure Flight Track - Backbone (5)
- Modeled Departure Flight Track - Dispersed (0)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
DH1H010, DH1H020, DH1H030, DH1H031, DH1H032

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-21. Base Year (2025) and Five-Year Forecast (2030) Modeled Flight Tracks – Helicopter Departures

For the purposes of the ten-year 2035 scenario, model tracks from the existing Runway 10/28 (future Runway 10L/28R) were replicated to the planned Runway 10R/28L consistent with the assumptions detailed in Section 3.4. Model tracks for Runway 15R/33L were also lengthened or shortened accordingly to reflect the planned extension to Runway 15R/33L consistent with changes to the airport layout for the ten-year 2035 scenario as detailed in Section 3.1. It is not anticipated there will be any changes to flight paths associated with Runways 15L/33R, and those flight tracks remain unchanged relative to the base year 2025 conditions.

Figure 3-22 through Figure 3-39 show the ten-year 2035 forecast model tracks layered over the airport base map for fixed-wing jet, propeller, and helicopter operations, respectively. Table 3-24 through Table 3-27 present the ten-year 2035 forecast utilization rates of each of the developed model tracks for fixed-wing Air Carrier, Air Taxi, and General Aviation aircraft, respectively. The relative ratio of flight track usage was preserved according to those ratios in the entire radar dataset for fixed-wing operations. For the helicopter flight tracks, the utilization percentages are not expected to vary from those identified in the 2025 base year.

Table 3-24. Ten-Year (2035) Air Carrier Fixed-Wing Model Track Utilization Percentages

Runway	Engine	Category	Bundle Name (Arrivals)	Percent (Arrivals)	Bundle Name (Departures)	Percent (Departures)
10	Jets	Cargo	A10ACCJ01	7%	D10ACCJ01	14%
10	Jets	Cargo	A10ACCJ02	17%	D10ACCJ02	29%
10	Jets	Cargo	A10ACCJ03	15%	D10ACCJ03	20%
10	Jets	Cargo	A10ACCJ04	45%	D10ACCJ04	37%
10	Jets	Cargo	A10ACCJ05	6%	**Subtotal**	**100%**
10	Jets	Cargo	A10ACCJ06	2%	-	-
10	Jets	Cargo	A10ACCJ07	7%	-	-
10	Jets	Cargo	**Subtotal**	**100%**	-	-
10	Jets	Passenger	A10ACPJ01	3%	D10ACPJ01	3%
10	Jets	Passenger	A10ACPJ02	9%	D10ACPJ02	14%
10	Jets	Passenger	A10ACPJ03	<1%	D10ACPJ03	11%
10	Jets	Passenger	A10ACPJ04	16%	D10ACPJ04	13%
10	Jets	Passenger	A10ACPJ05	2%	D10ACPJ05	36%
10	Jets	Passenger	A10ACPJ06	2%	D10ACPJ06	11%
10	Jets	Passenger	A10ACPJ07	7%	D10ACPJ07	12%
10	Jets	Passenger	A10ACPJ08	<1%	**Subtotal**	**100%**
10	Jets	Passenger	A10ACPJ09	<1%	-	-
10	Jets	Passenger	A10ACPJ10	<1%	-	-
10	Jets	Passenger	A10ACPJ11	45%	-	-
10	Jets	Passenger	A10ACPJ12	5%	-	-
10	Jets	Passenger	A10ACPJ13	8%	-	-
10	Jets	Passenger	A10ACPJ14	1%	-	-
10	Jets	Passenger	**Subtotal**	**100%**	-	-
15R	Jets	Cargo	A15RACCJ01	12%	D15RACCJ01	11%
15R	Jets	Cargo	A15RACCJ02	27%	D15RACCJ02	60%
15R	Jets	Cargo	A15RACCJ03	29%	D15RACCJ03	12%
15R	Jets	Cargo	A15RACCJ04	24%	D15RACCJ04	8%
15R	Jets	Cargo	A15RACCJ05	7%	D15RACCJ05	1%
15R	Jets	Cargo	**Subtotal**	**100%**	D15RACCJ06	7%
15R	Jets	Cargo	-	-	**Subtotal**	**100%**
15R	Jets	Passenger	A15RACPJ01	5%	D15RACPJ01	10%
15R	Jets	Passenger	A15RACPJ02	29%	D15RACPJ02	3%
15R	Jets	Passenger	A15RACPJ03	4%	D15RACPJ03	14%
15R	Jets	Passenger	A15RACPJ04	3%	D15RACPJ04	26%

Runway	Engine	Category	Bundle Name (Arrivals)	Percent (Arrivals)	Bundle Name (Departures)	Percent (Departures)
15R	Jets	Passenger	A15RACPJ05	12%	D15RACPJ05	9%
15R	Jets	Passenger	A15RACPJ06	46%	D15RACPJ06	5%
15R	Jets	Passenger	**Subtotal**	**100%**	D15RACPJ07	3%
15R	Jets	Passenger	-	-	D15RACPJ08	<1%
15R	Jets	Passenger	-	-	D15RACPJ09	2%
15R	Jets	Passenger	-	-	D15RACPJ10	10%
15R	Jets	Passenger	-	-	D15RACPJ11	3%
15R	Jets	Passenger	-	-	D15RACPJ12	5%
15R	Jets	Passenger	-	-	D15RACPJ13	11%
15R	Jets	Passenger	-	-	**Subtotal**	**100%**
28	Jets	Cargo	A28ACCJ01	41%	D28ACCJ01	2%
28	Jets	Cargo	A28ACCJ02	14%	D28ACCJ02	71%
28	Jets	Cargo	A28ACCJ03	33%	D28ACCJ03	8%
28	Jets	Cargo	A28ACCJ04	12%	D28ACCJ04	6%
28	Jets	Cargo	**Subtotal**	**100%**	D28ACCJ05	1%
28	Jets	Cargo	-	-	D28ACCJ06	2%
28	Jets	Cargo	-	-	D28ACCJ07	9%
28	Jets	Cargo	-	-	D28ACCJ08	1%
28	Jets	Cargo	-	-	**Subtotal**	**100%**
28	Jets	Passenger	A28ACPJ01	5%	D28ACPJ01	<1%
28	Jets	Passenger	A28ACPJ02	9%	D28ACPJ02	<1%
28	Jets	Passenger	A28ACPJ03	9%	D28ACPJ03	53%
28	Jets	Passenger	A28ACPJ04	12%	D28ACPJ04	14%
28	Jets	Passenger	A28ACPJ05	4%	D28ACPJ05	13%
28	Jets	Passenger	A28ACPJ06	20%	D28ACPJ06	4%
28	Jets	Passenger	A28ACPJ07	38%	D28ACPJ07	3%
28	Jets	Passenger	A28ACPJ08	2%	D28ACPJ08	11%
28	Jets	Passenger	**Subtotal**	**100%**	**Subtotal**	**100%**
33L	Jets	Cargo	A33LACCJ01	8%	D33LACCJ01	92%
33L	Jets	Cargo	A33LACCJ02	10%	D33LACCJ02	8%
33L	Jets	Cargo	A33LACCJ03	24%	**Subtotal**	**100%**
33L	Jets	Cargo	A33LACCJ04	9%	-	-
33L	Jets	Cargo	A33LACCJ05	41%	-	-
33L	Jets	Cargo	A33LACCJ06	7%	-	-
33L	Jets	Cargo	A33LACCJ07	1%	-	-
33L	Jets	Cargo	**Subtotal**	**100%**	-	-
33L	Jets	Passenger	A33LACPJ01	5%	D33LACPJ01	46%
33L	Jets	Passenger	A33LACPJ02	15%	D33LACPJ02	20%
33L	Jets	Passenger	A33LACPJ03	6%	D33LACPJ03	14%
33L	Jets	Passenger	A33LACPJ04	11%	D33LACPJ04	4%
33L	Jets	Passenger	A33LACPJ05	3%	D33LACPJ05	5%
33L	Jets	Passenger	A33LACPJ06	11%	D33LACPJ06	11%
33L	Jets	Passenger	A33LACPJ07	45%	**Subtotal**	**100%**
33L	Jets	Passenger	A33LACPJ08	5%	-	-
33L	Jets	Passenger	A33LACPJ09	<1%	-	-
33L	Jets	Passenger	**Subtotal**	**100%**	-	-

Note: Totals may not equal 100% due to rounding.

Table 3-25. Ten-Year (2035) Air Taxi Fixed-Wing Model Track Utilization Percentages

Runway	Engine	Bundle Name (Arrivals)	Percent (Arrivals)	Bundle Name (Departures)	Percent (Departures)
10	Jets	A10ATJ01	48%	D10ATJ01	100%
10	Jets	A10ATJ02	4%	**Subtotal**	**100%**
10	Jets	A10ATJ03	11%	-	-
10	Jets	A10ATJ04	14%	-	-
10	Jets	A10ATJ05	9%	-	-
10	Jets	A10ATJ06	14%	-	-
10	Jets	**Subtotal**	**100%**	-	-
10	Non-Jets	A10ATNJ01	32%	D10ATNJ01	100%
10	Non-Jets	A10ATNJ02	21%	**Subtotal**	**100%**
10	Non-Jets	A10ATNJ03	47%	-	-
10	Non-Jets	**Subtotal**	**100%**	-	-
15L	Jets	A15LATJ01	24%	D15LATJ01	25%
15L	Jets	A15LATJ02	24%	D15LATJ02	12%
15L	Jets	A15LATJ03	13%	D15LATJ03	21%
15L	Jets	A15LATJ04	24%	D15LATJ04	8%
15L	Jets	A15LATJ05	8%	D15LATJ05	5%
15L	Jets	A15LATJ06	8%	D15LATJ06	2%
15L	Jets	**Subtotal**	**100%**	D15LATJ07	4%
15L	Jets	-	-	D15LATJ08	5%
15L	Jets	-	-	D15LATJ09	17%
15L	Jets	-	-	D15LATJ10	1%
15L	Jets	-	-	**Subtotal**	**100%**
15L	Non-Jets	A15LATNJ01	21%	D15LATNJ01	49%
15L	Non-Jets	A15LATNJ02	24%	D15LATNJ02	23%
15L	Non-Jets	A15LATNJ03	31%	D15LATNJ03	15%
15L	Non-Jets	A15LATNJ04	18%	D15LATNJ04	11%
15L	Non-Jets	A15LATNJ05	6%	D15LATNJ05	1%
15L	Non-Jets	**Subtotal**	**100%**	**Subtotal**	**100%**
15R	Jets	A15RATJ01	100%	D15RATJ01	56%
15R	Jets	**Subtotal**	**100%**	D15RATJ02	10%
15R	Jets	-	-	D15RATJ03	5%
15R	Jets	-	-	D15RATJ04	17%
15R	Jets	-	-	D15RATJ05	3%
15R	Jets	-	-	D15RATJ06	10%
15R	Jets	-	-	**Subtotal**	**100%**
15R	Non-Jets	A15RATNJ01	100%	D15RATNJ01	40%
15R	Non-Jets	**Subtotal**	**100%**	D15RATNJ02	60%
15R	Non-Jets	-	-	**Subtotal**	**100%**
28	Jets	A28ATJ01	22%	D28ATJ01	2%
28	Jets	A28ATJ02	27%	D28ATJ02	60%
28	Jets	A28ATJ03	16%	D28ATJ03	12%
28	Jets	A28ATJ04	22%	D28ATJ04	7%
28	Jets	A28ATJ05	13%	D28ATJ05	2%
28	Jets	**Subtotal**	**100%**	D28ATJ06	3%
28	Jets	-	-	D28ATJ07	14%
28	Jets	-	-	**Subtotal**	**100%**
28	Non-Jets	A28ATNJ01	100%	D28ATNJ01	42%
28	Non-Jets	**Subtotal**	**100%**	D28ATNJ02	58%
28	Non-Jets	-	-	**Subtotal**	**100%**
33L	Jets	A33LATJ01	5%	D33LATJ01	100%
33L	Jets	A33LATJ02	13%	**Subtotal**	**100%**
33L	Jets	A33LATJ03	19%	-	-

Runway	Engine	Bundle Name (Arrivals)	Percent (Arrivals)	Bundle Name (Departures)	Percent (Departures)
33L	Jets	A33LATJ04	5%	-	-
33L	Jets	A33LATJ05	11%	-	-
33L	Jets	A33LATJ06	42%	-	-
33L	Jets	A33LATJ07	1%	-	-
33L	Jets	A33LATJ08	2%	-	-
33L	Jets	A33LATJ09	2%	-	-
33L	Jets	**Subtotal**	**100%**	-	-
33L	Non-Jets	A33LATNJ01	100%	D33LATNJ01	100%
33L	Non-Jets	**Subtotal**	**100%**	**Subtotal**	**100%**
33R	Jets	A33RATJ01	14%	D33RATJ01	4%
33R	Jets	A33RATJ02	14%	D33RATJ02	3%
33R	Jets	A33RATJ03	10%	D33RATJ03	28%
33R	Jets	A33RATJ04	19%	D33RATJ04	15%
33R	Jets	A33RATJ05	8%	D33RATJ05	4%
33R	Jets	A33RATJ06	20%	D33RATJ06	9%
33R	Jets	A33RATJ07	12%	D33RATJ07	8%
33R	Jets	A33RATJ08	2%	D33RATJ08	19%
33R	Jets	A33RATJ09	1%	D33RATJ09	6%
33R	Jets	**Subtotal**	**100%**	D33RATJ10	2%
33R	Jets	-	-	D33RATJ11	3%
33R	Jets	-	-	**Subtotal**	**100%**
33R	Non-Jets	A33RATNJ01	12%	D33RATNJ01	12%
33R	Non-Jets	A33RATNJ02	28%	D33RATNJ02	8%
33R	Non-Jets	A33RATNJ03	20%	D33RATNJ03	43%
33R	Non-Jets	A33RATNJ04	5%	D33RATNJ04	17%
33R	Non-Jets	A33RATNJ05	26%	D33RATNJ05	20%
33R	Non-Jets	A33RATNJ06	9%	**Subtotal**	**100%**
33R	Non-Jets	**Subtotal**	**100%**	-	-

Note: Totals may not equal 100% due to rounding.

Table 3-26. Ten-Year (2035) General Aviation Fixed-Wing Model Track Utilization Percentages

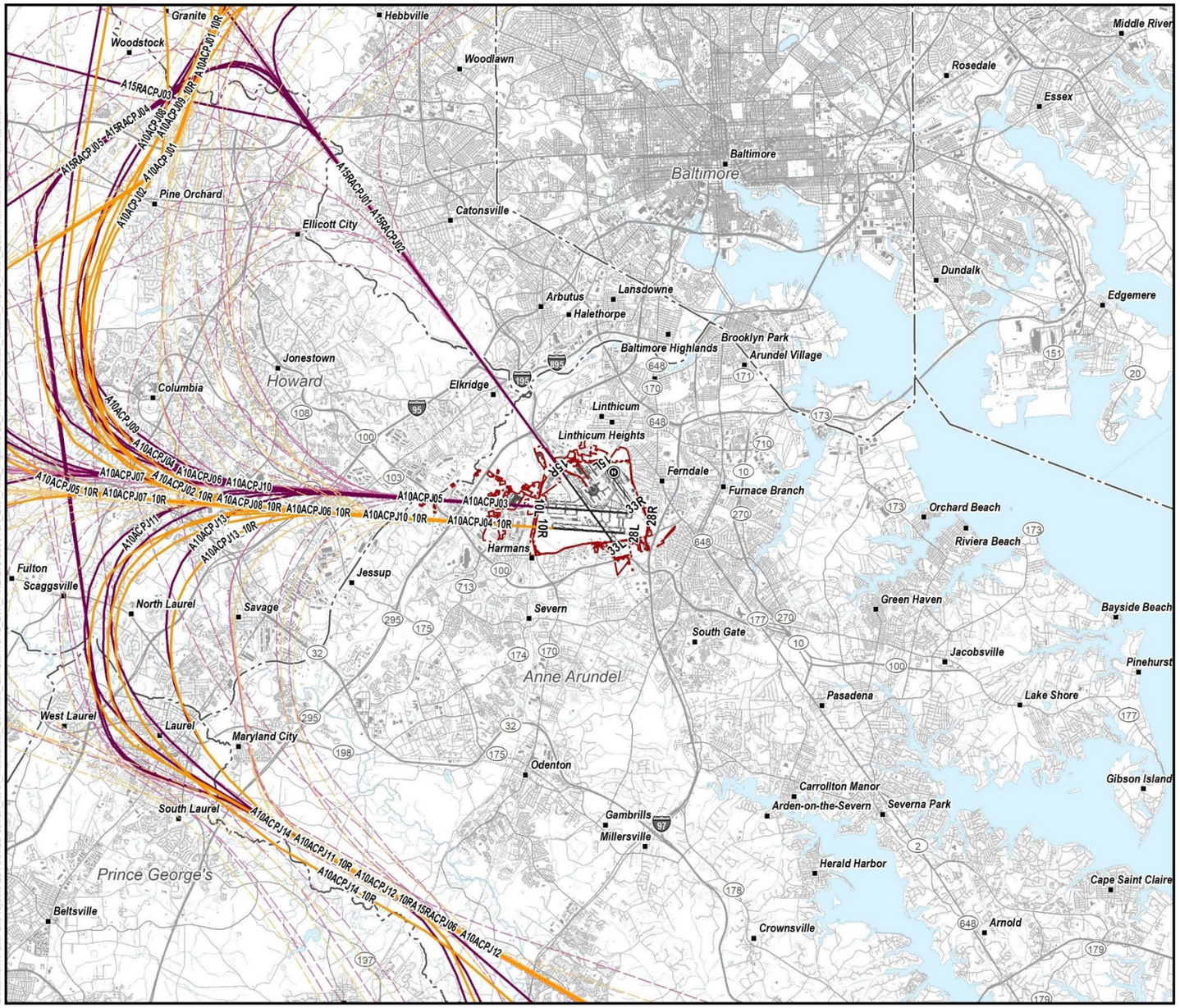
Runway	Engine	Bundle Name (Arrivals)	Percent (Arrivals)	Bundle Name (Departures)	Percent (Departures)
10	Jets	A10GAJ01	34%	D10GAJ01	100%
10	Jets	A10GAJ02	10%	**Subtotal**	**100%**
10	Jets	A10GAJ03	27%	-	-
10	Jets	A10GAJ04	7%	-	-
10	Jets	A10GAJ05	22%	-	-
10	Jets	**Subtotal**	**100%**	-	-
10	Non-Jets	A10GANJ01	31%	D10GANJ01	100%
10	Non-Jets	A10GANJ02	69%	**Subtotal**	**100%**
10	Non-Jets	**Subtotal**	**100%**	-	-
15L	Jets	A15LGAJ01	30%	D15LGAJ01	4%
15L	Jets	A15LGAJ02	43%	D15LGAJ02	8%
15L	Jets	A15LGAJ03	26%	D15LGAJ03	39%
15L	Jets	**Subtotal**	**100%**	D15LGAJ04	12%
15L	Jets	-	-	D15LGAJ05	8%
15L	Jets	-	-	D15LGAJ06	8%
15L	Jets	-	-	D15LGAJ07	4%
15L	Jets	-	-	D15LGAJ08	9%
15L	Jets	-	-	D15LGAJ09	9%
15L	Jets	-	-	**Subtotal**	**100%**

Runway	Engine	Bundle Name (Arrivals)	Percent (Arrivals)	Bundle Name (Departures)	Percent (Departures)
15L	Non-Jets	A15LGANJ01	11%	D15LGANJ01	24%
15L	Non-Jets	A15LGANJ02	20%	D15LGANJ02	11%
15L	Non-Jets	A15LGANJ03	9%	D15LGANJ03	19%
15L	Non-Jets	A15LGANJ04	42%	D15LGANJ04	36%
15L	Non-Jets	A15LGANJ05	19%	D15LGANJ05	11%
15L	Non-Jets	**Subtotal**	**100%**	**Subtotal**	**100%**
15R	Jets	A15RGAJ01	100%	D15RGAJ01	17%
15R	Jets	**Subtotal**	**100%**	D15RGAJ02	25%
15R	Jets	-	-	D15RGAJ03	58%
15R	Jets	-	-	**Subtotal**	**100%**
15R	Non-Jets	A15RGANJ01	100%	D15RGANJ01	100%
15R	Non-Jets	**Subtotal**	**100%**	**Subtotal**	**100%**
28	Jets	A28GAJ01	59%	D28GAJ01	5%
28	Jets	A28GAJ02	41%	D28GAJ02	52%
28	Jets	**Subtotal**	**100%**	D28GAJ03	15%
28	Jets	-	-	D28GAJ04	9%
28	Jets	-	-	D28GAJ05	18%
28	Jets	-	-	**Subtotal**	**100%**
28	Non-Jets	A28GANJ01	100%	D28GANJ01	63%
28	Non-Jets	**Subtotal**	**100%**	D28GANJ02	38%
28	Non-Jets	-	-	**Subtotal**	**100%**
33L	Jets	A33LGAJ01	32%	D33LGAJ01	100%
33L	Jets	A33LGAJ02	26%	**Subtotal**	**100%**
33L	Jets	A33LGAJ03	6%	-	-
33L	Jets	A33LGAJ04	35%	-	-
33L	Jets	**Subtotal**	**100%**	-	-
33L	Non-Jets	A33LGANJ01	100%	**Subtotal**	**0%**
33L	Non-Jets	**Subtotal**	**100%**	-	-
33R	Jets	A33RGAJ01	27%	D33RGAJ01	6%
33R	Jets	A33RGAJ02	13%	D33RGAJ02	36%
33R	Jets	A33RGAJ03	14%	D33RGAJ03	16%
33R	Jets	A33RGAJ04	10%	D33RGAJ04	15%
33R	Jets	A33RGAJ05	24%	D33RGAJ05	6%
33R	Jets	A33RGAJ06	13%	D33RGAJ06	17%
33R	Jets	**Subtotal**	**100%**	D33RGAJ07	4%
33R	Jets	-	-	**Subtotal**	**100%**
33R	Non-Jets	A33RGANJ01	28%	D33RGANJ01	15%
33R	Non-Jets	A33RGANJ02	27%	D33RGANJ02	18%
33R	Non-Jets	A33RGANJ03	7%	D33RGANJ03	11%
33R	Non-Jets	A33RGANJ04	12%	D33RGANJ04	5%
33R	Non-Jets	A33RGANJ05	26%	D33RGANJ05	12%
33R	Non-Jets	**Subtotal**	**100%**	D33RGANJ06	24%
33R	Non-Jets	-	-	D33RGANJ07	9%
33R	Non-Jets	-	-	D33RGANJ08	6%
33R	Non-Jets	-	-	**Subtotal**	**100%**

Note: Totals may not equal 100% due to rounding.

Table 3-27. Ten-Year (2035) Helicopter Model Track Utilization Percentages

Runway	Engine	Bundle Name (Arrivals)	Percent (Arrivals)	Bundle Name (Departures)	Percent (Departures)
H1	Helicopter	AH1H01	24%	DH1H01	53%
H1	Helicopter	AH1H02	24%	DH1H02	33%
H1	Helicopter	AH1H03	21%	DH1H03	14%
H1	Helicopter	AH1H04	21%	**Subtotal**	**100%**
H1	Helicopter	AH1H05	10%	-	-
H1	Helicopter	**Subtotal**	**100%**	-	-



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Figure 3-22

Ten-Year (2035) Forecast Modeled Flight Tracks - East Flow Air Carrier Passenger Jet Arrivals

- Forecast Modeled Arrival Flight Track - Backbone (14)
- Forecast Modeled Arrival Flight Track - Dispersed (40)
- Modeled Arrival Flight Track - Backbone (20)
- Modeled Arrival Flight Track - Dispersed (54)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

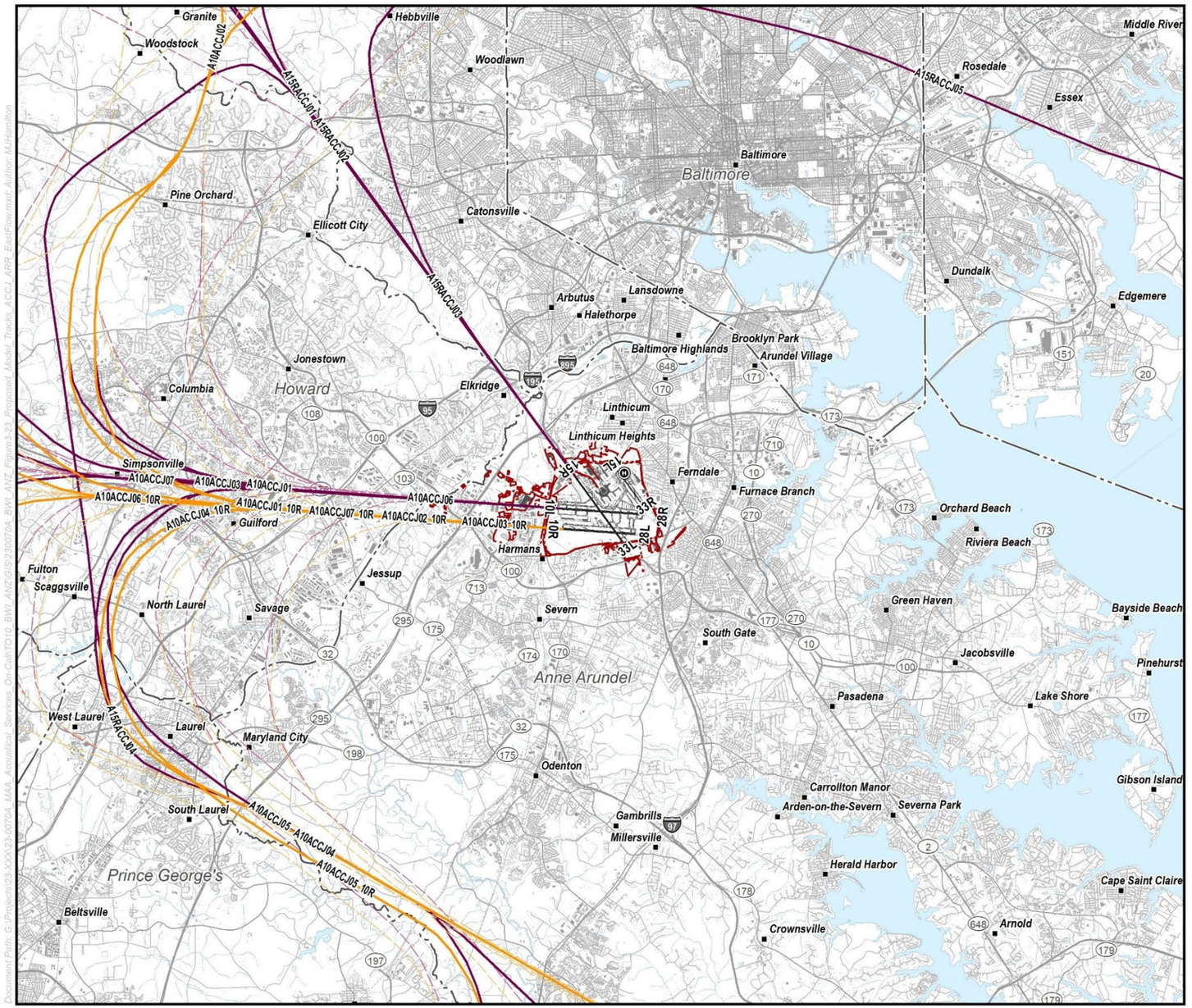
Modeled Tracks:
A10ACPJ01, A10ACPJ02, A10ACPJ03, A10ACPJ04, A10ACPJ05, A10ACPJ06, A10ACPJ07, A10ACPJ08, A10ACPJ09, A10ACPJ10, A10ACPJ11, A10ACPJ12, A10ACPJ13, A10ACPJ14, A15RACPJ01, A15RACPJ02, A15RACPJ03, A15RACPJ04, A15RACPJ05, A15RACPJ06

Forecast Modeled Tracks:
A10ACPJ01_10R, A10ACPJ02_10R, A10ACPJ03_10R, A10ACPJ04_10R, A10ACPJ05_10R, A10ACPJ06_10R, A10ACPJ07_10R, A10ACPJ08_10R, A10ACPJ09_10R, A10ACPJ10_10R, A10ACPJ11_10R, A10ACPJ12_10R, A10ACPJ13_10R, A10ACPJ14_10R

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-22. Ten-Year (2035) Modeled Flight Tracks – East Flow Air Carrier Passenger Jet Arrivals



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Figure 3-23

Ten-Year (2035) Forecast Modeled Flight Tracks - East Flow Air Carrier Cargo Jet Arrivals

- Forecast Modeled Arrival Flight Track - Backbone (7)
- Forecast Modeled Arrival Flight Track - Dispersed (14)
- Modeled Arrival Flight Track - Backbone (12)
- Modeled Arrival Flight Track - Dispersed (18)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

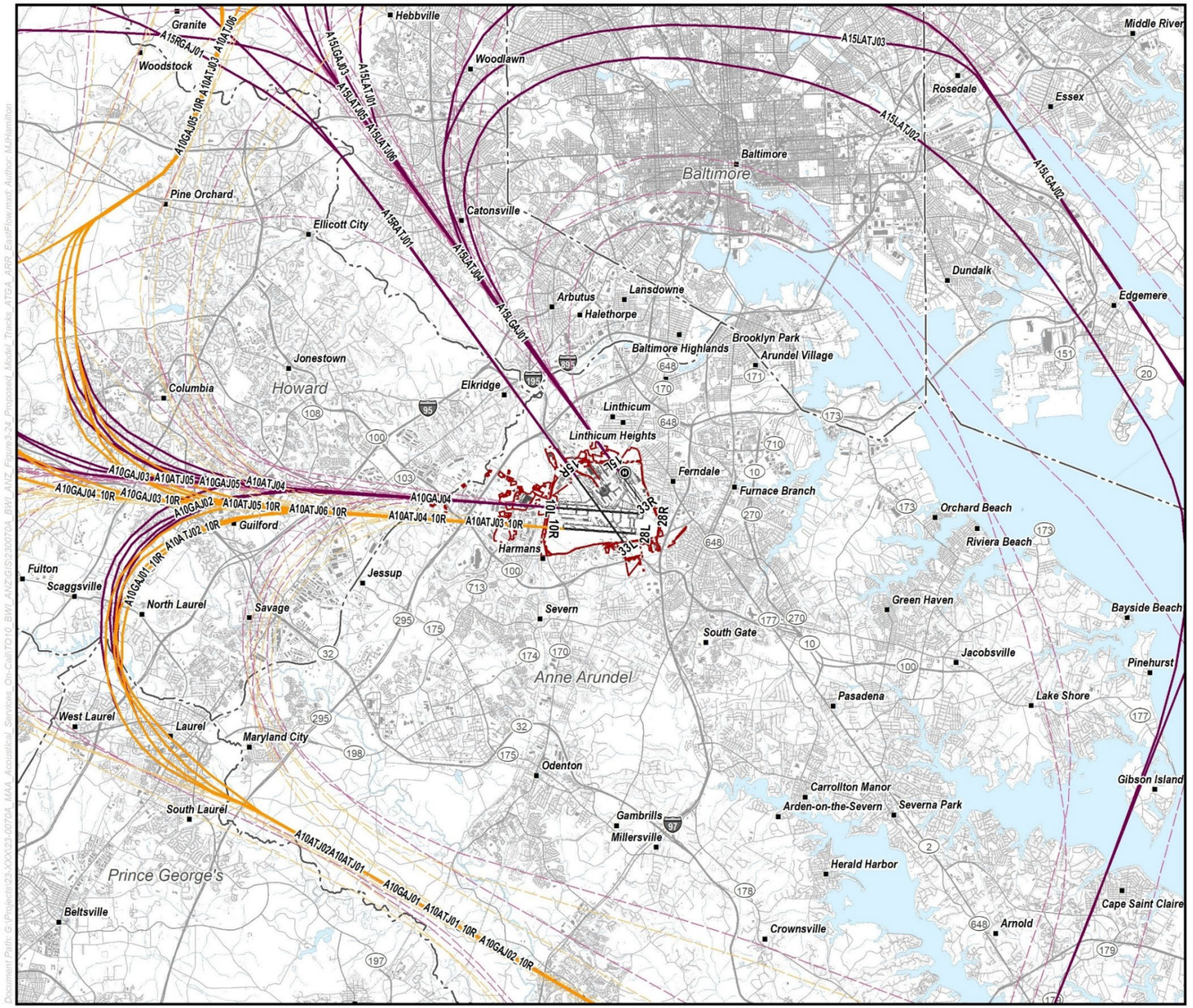
Modeled Tracks:
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Forecast Modeled Tracks:
A10ACCJ01_10R, A10ACCJ02_10R, A10ACCJ03_10R, A10ACCJ04_10R, A10ACCJ05_10R, A10ACCJ06_10R, A10ACCJ07_10R

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-23. Ten-Year (2035) Modeled Flight Tracks – East Flow Air Carrier Cargo Jet Arrivals



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-24

Ten-Year (2035) Forecast Modeled Flight Tracks - East Flow Air Taxi/General Aviation Jet Arrivals

- Forecast Modeled Arrival Flight Track - Backbone (11)
- Forecast Modeled Arrival Flight Track - Dispersed (20)
- Modeled Arrival Flight Track - Backbone (22)
- Modeled Arrival Flight Track - Dispersed (38)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

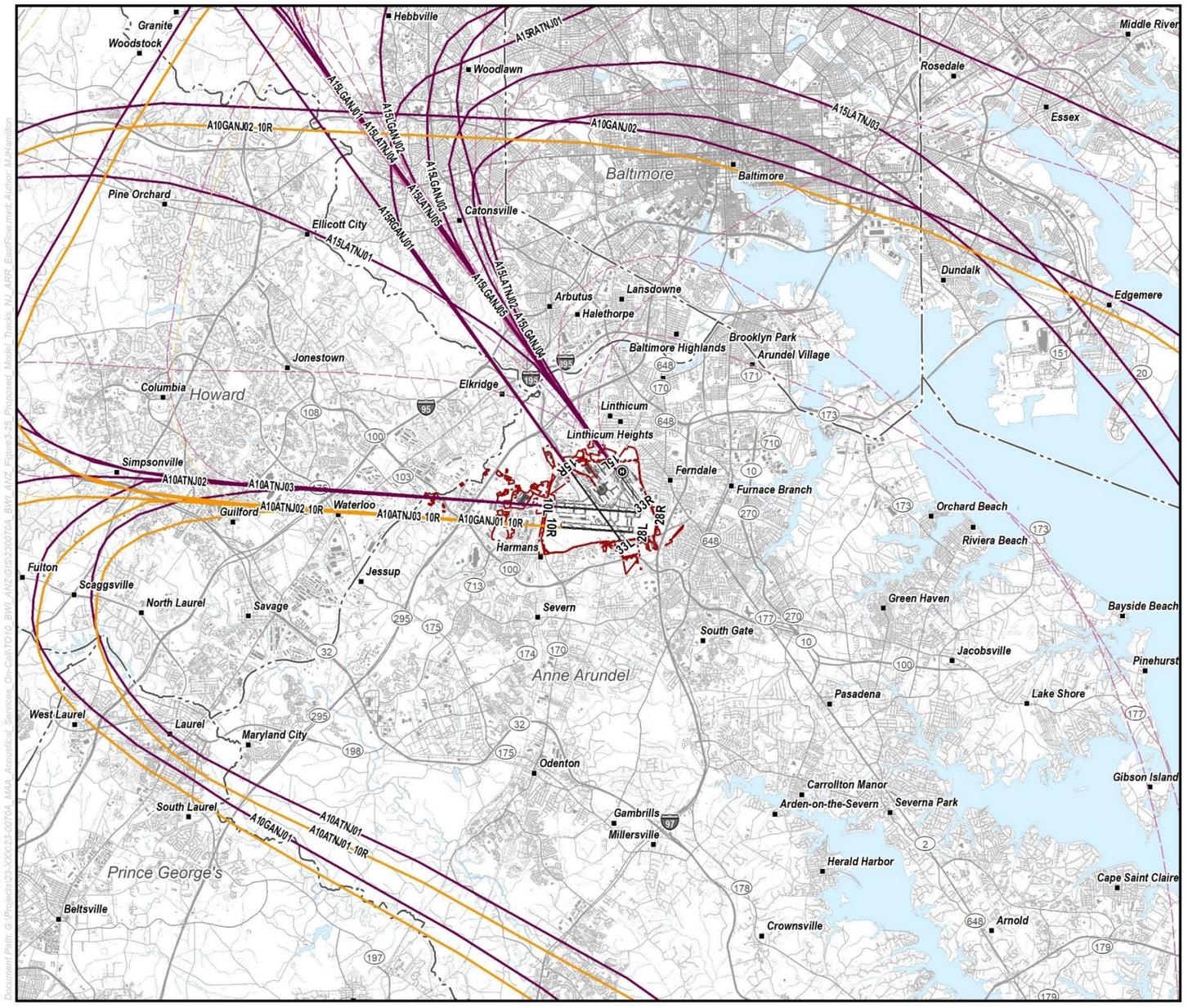
Modeled Tracks:
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Forecast Modeled Tracks:
A10ATJ01_10R, A10ATJ02_10R, A10ATJ03_10R, A10ATJ04_10R, A10ATJ05_10R, A10ATJ06_10R, A10GAJ01_10R, A10GAJ02_10R, A10GAJ03_10R, A10GAJ04_10R, A10GAJ05_10R

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-24. Ten-Year (2035) Modeled Flight Tracks – East Flow Air Taxi/General Aviation Jet Arrivals



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-25

Ten-Year (2035) Forecast Modeled Flight Tracks - East Flow Propeller Arrivals

- Forecast Modeled Arrival Flight Track - Backbone (5)
- Forecast Modeled Arrival Flight Track - Dispersed (2)
- Modeled Arrival Flight Track - Backbone (17)
- Modeled Arrival Flight Track - Dispersed (20)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

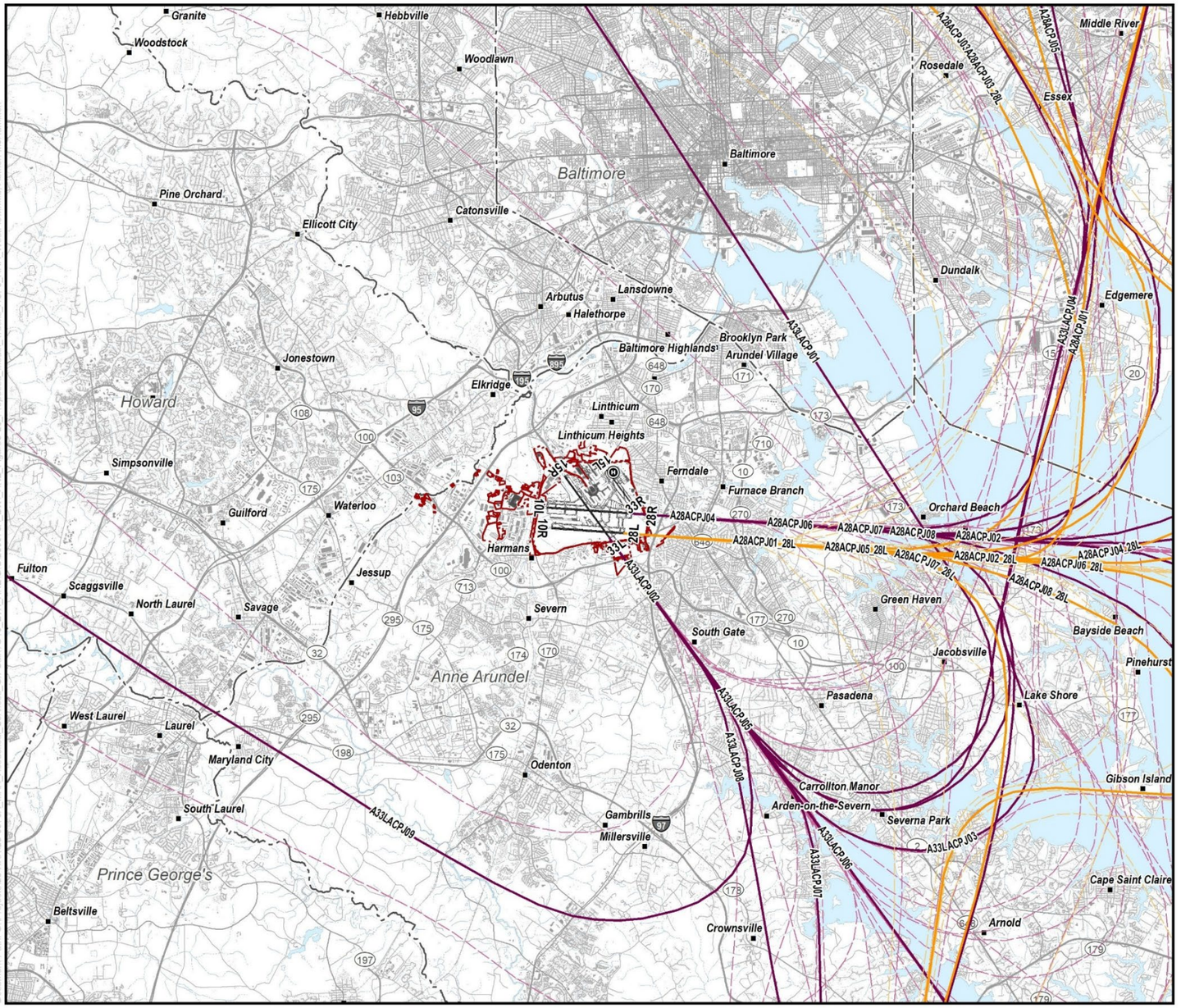
Modeled Tracks:
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Forecast Modeled Tracks:
A10ATNJ01_10R, A10ATNJ02_10R, A10ATNJ03_10R, A10GANJ01_10R, A10GANJ02_10R

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-25. Ten-Year (2035) Modeled Flight Tracks – East Flow Propeller Arrivals



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-26

Ten-Year (2035) Forecast Modeled Flight Tracks - West Flow Air Carrier Passenger Jet Arrivals

- Forecast Modeled Arrival Flight Track - Backbone (8)
- Forecast Modeled Arrival Flight Track - Dispersed (20)
- Modeled Arrival Flight Track - Backbone (17)
- Modeled Arrival Flight Track - Dispersed (48)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

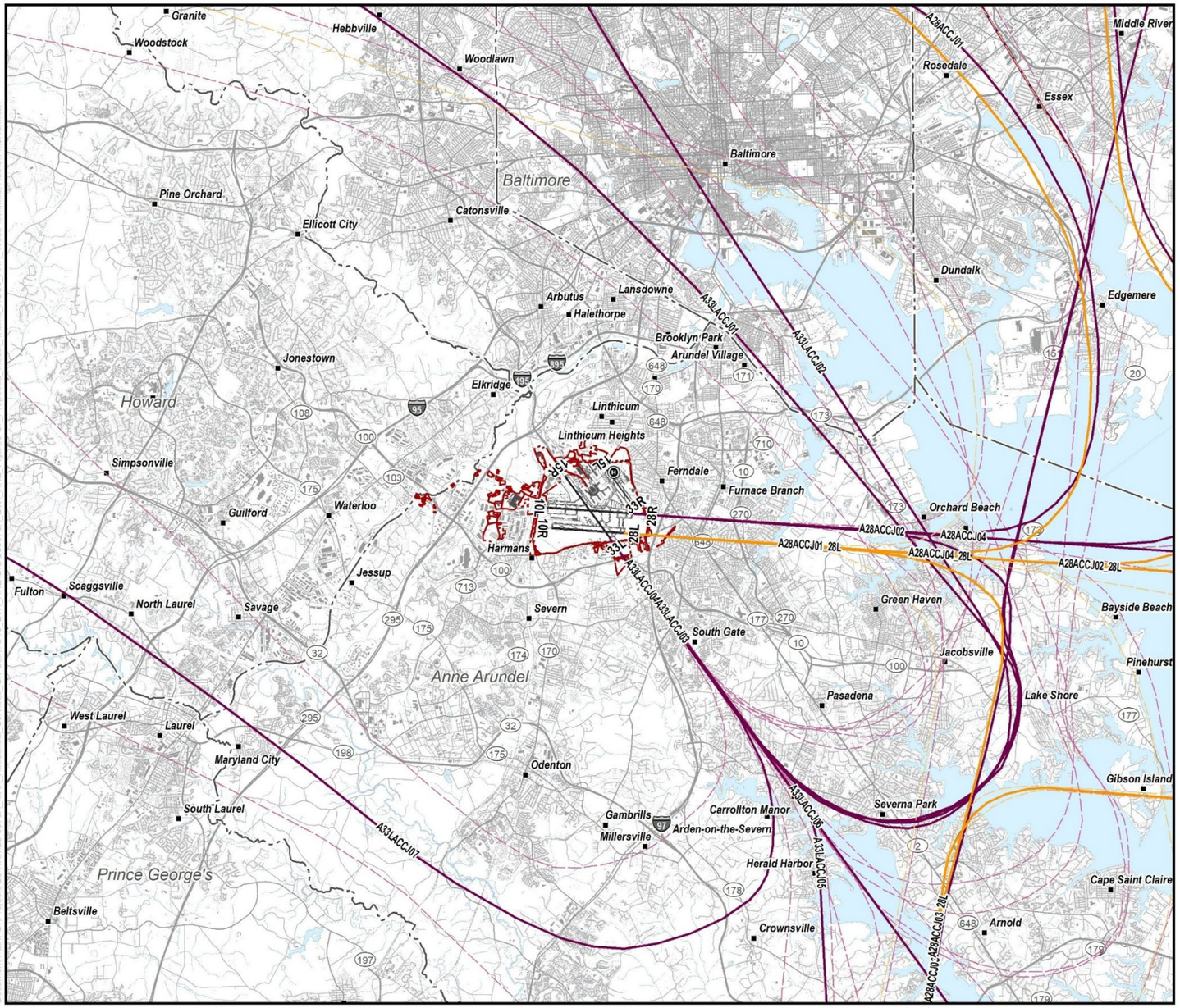
Modeled Tracks:
A28ACPJ01, A28ACPJ02, A28ACPJ03, A28ACPJ04, A28ACPJ05, A28ACPJ06, A28ACPJ07, A28ACPJ08, A33LACPJ01, A33LACPJ02, A33LACPJ03, A33LACPJ04, A33LACPJ05, A33LACPJ06, A33LACPJ07, A33LACPJ08, A33LACPJ09

Forecast Modeled Tracks:
A28ACPJ01_28L, A28ACPJ02_28L, A28ACPJ03_28L, A28ACPJ04_28L, A28ACPJ05_28L, A28ACPJ06_28L, A28ACPJ07_28L, A28ACPJ08_28L

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-26. Ten-Year (2035) Modeled Flight Tracks – West Flow Air Carrier Passenger Jet Arrivals



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-27

Ten-Year (2035) Forecast Modeled Flight Tracks - West Flow Air Carrier Cargo Jet Arrivals

- Forecast Modeled Arrival Flight Track - Backbone (4)
- Forecast Modeled Arrival Flight Track - Dispersed (6)
- Modeled Arrival Flight Track - Backbone (11)
- Modeled Arrival Flight Track - Dispersed (20)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

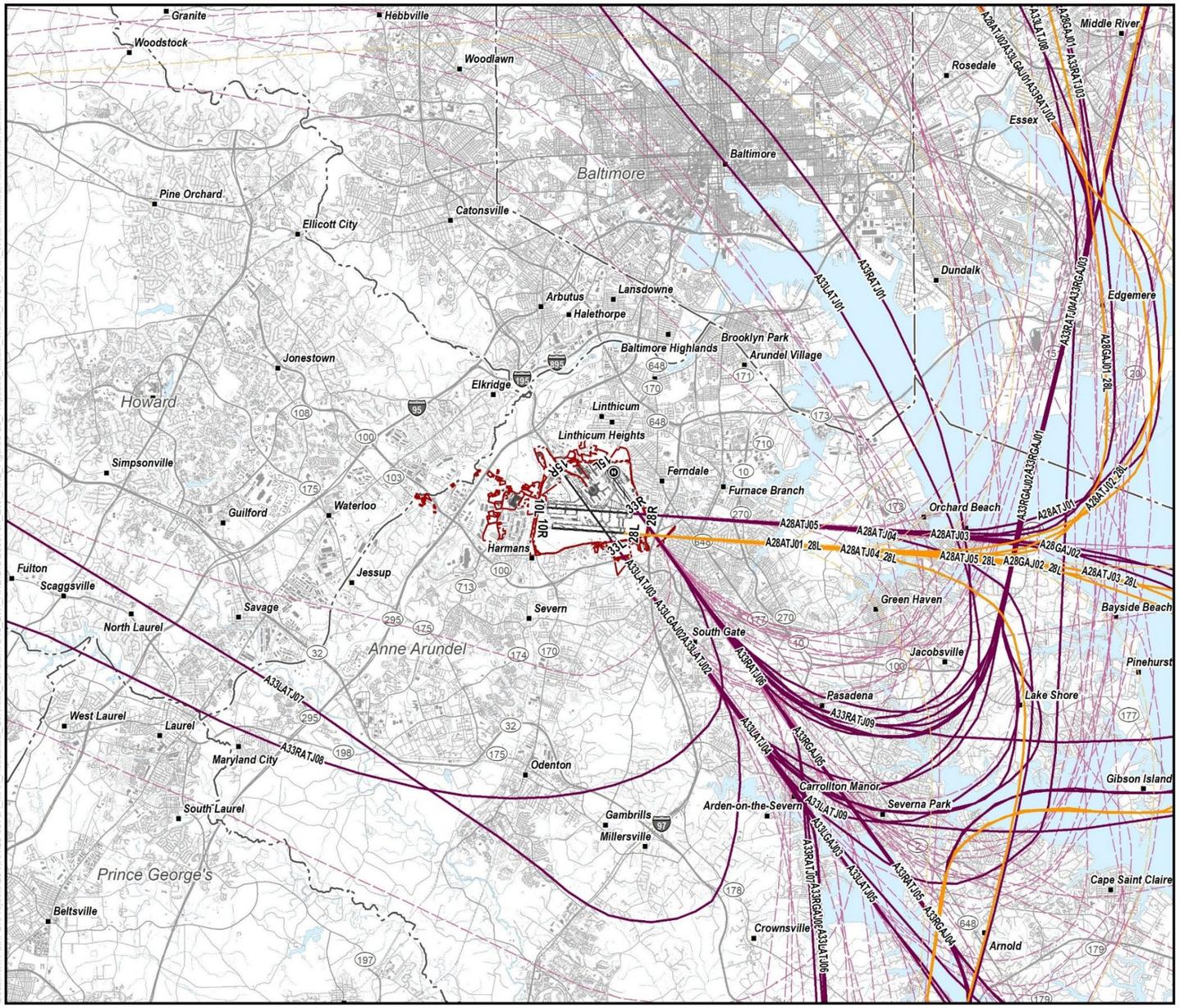
Modeled Tracks:
A28ACCJ01, A28ACCJ02, A28ACCJ03, A28ACCJ04, A33LACCJ01, A33LACCJ02, A33LACCJ03, A33LACCJ04, A33LACCJ05, A33LACCJ06, A33LACCJ07

Forecast Modeled Tracks:
A28ACCJ01_28L, A28ACCJ02_28L, A28ACCJ03_28L, A28ACCJ04_28L,

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-27. Ten-Year (2035) Modeled Flight Tracks – West Flow Air Carrier Cargo Jet Arrivals



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-28

Ten-Year (2035) Forecast Modeled Flight Tracks - West Flow Air Taxi/General Aviation Jet Arrivals

- Forecast Modeled Arrival Flight Track - Backbone (7)
- Forecast Modeled Arrival Flight Track - Dispersed (8)
- Modeled Arrival Flight Track - Backbone (35)
- Modeled Arrival Flight Track - Dispersed (56)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

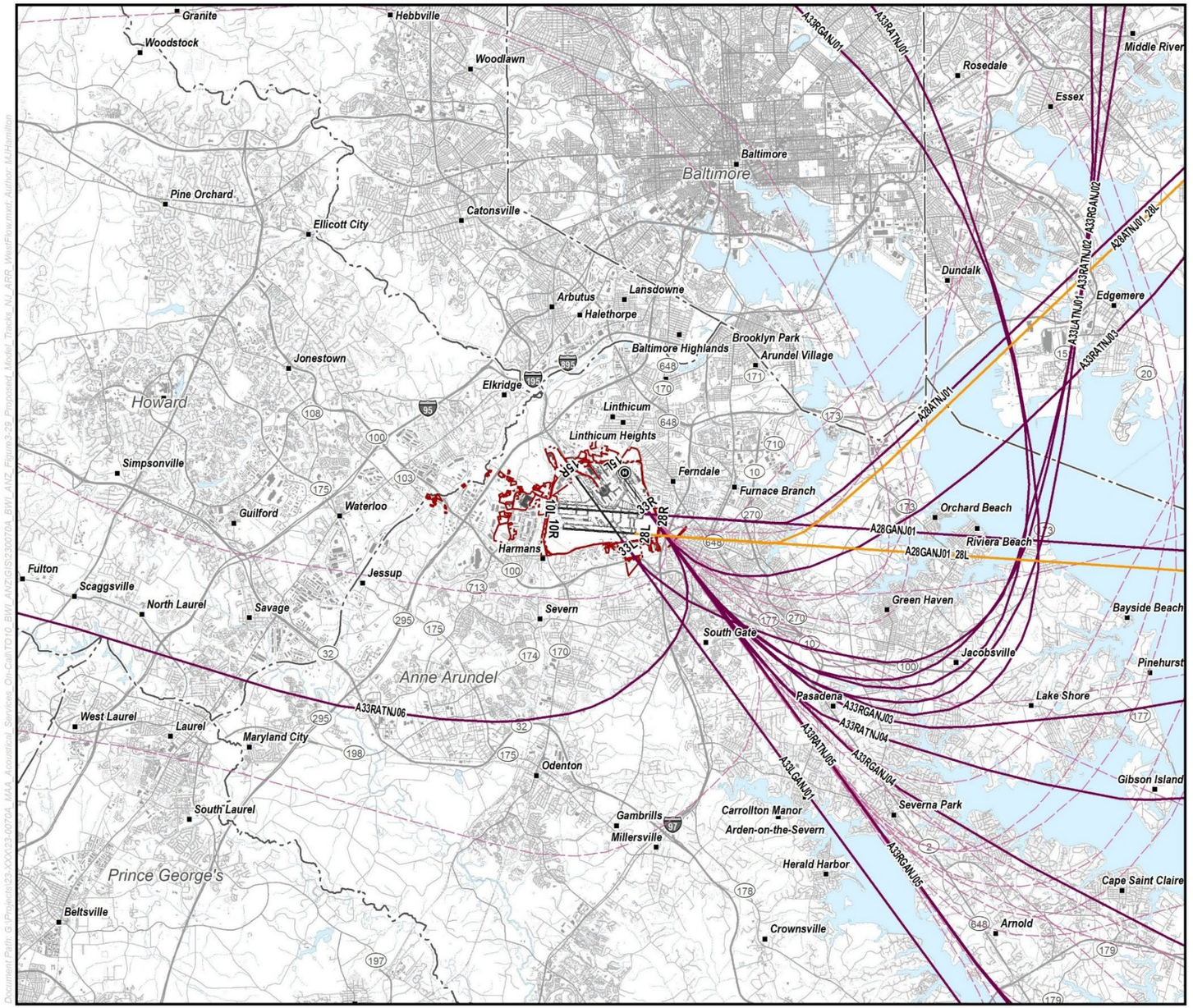
Modeled Tracks:
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Forecast Modeled Tracks:
A28ATJ01_28L, A28ATJ02_28L, A28ATJ03_28L, A28ATJ04_28L, A28ATJ05_28L, A28GAJ01_28L, A28GAJ02_28L

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-28. Ten-Year (2035) Modeled Flight Tracks – West Flow Air Taxi/General Aviation Jet Arrivals



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-29

Ten-Year (2035) Forecast Modeled Flight Tracks - West Flow Propeller Arrivals

- Forecast Modeled Arrival Flight Track - Backbone (2)
- Forecast Modeled Arrival Flight Track - Dispersed (0)
- Modeled Arrival Flight Track - Backbone (15)
- Modeled Arrival Flight Track - Dispersed (22)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

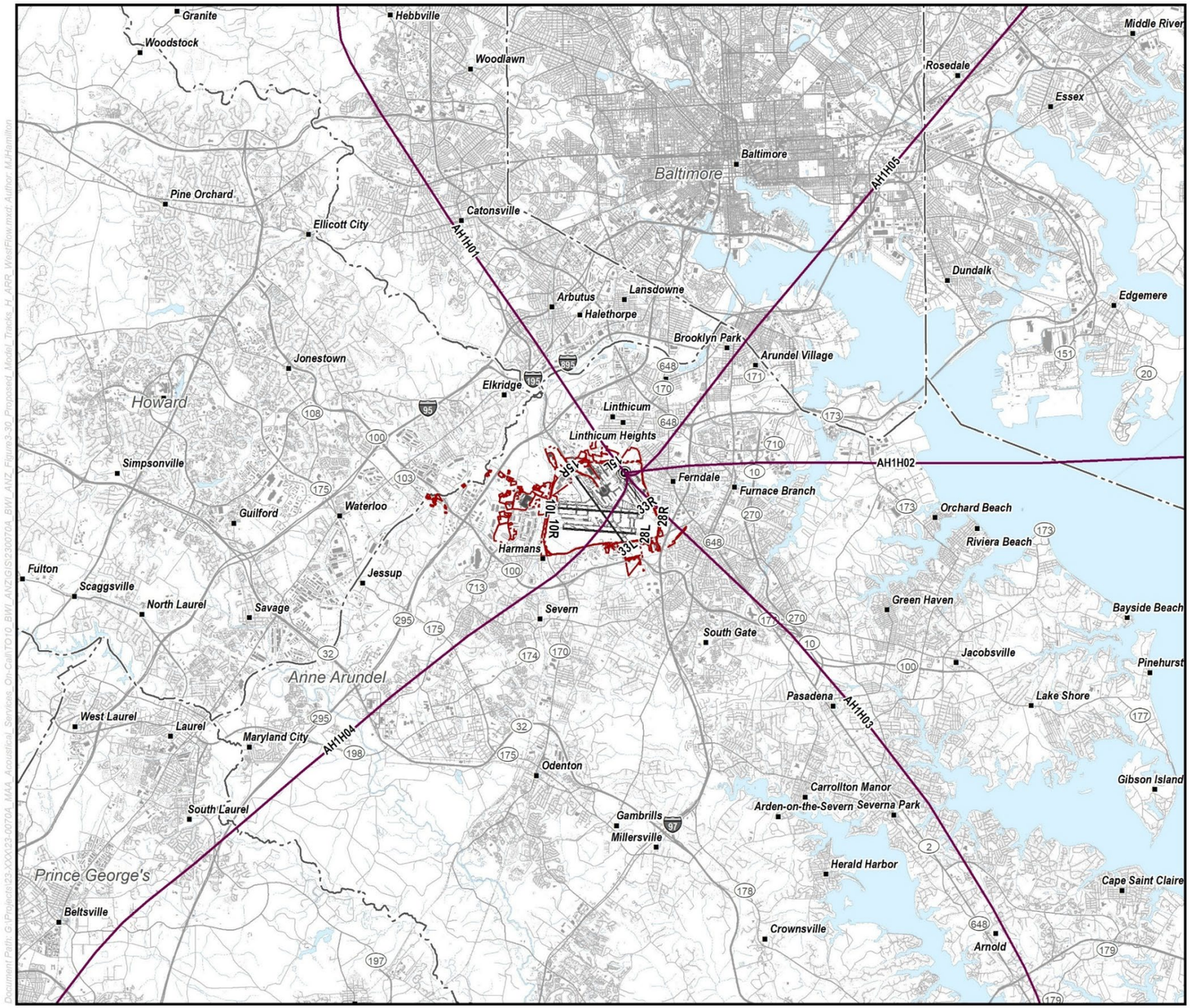
Modeled Tracks:
A28ATNJ01, A28GANJ01, A33LATNJ01, A33LGANJ01, A33RATNJ01, A33RATNJ02, A33RATNJ03, A33RATNJ04, A33RATNJ05, A33RATNJ06, A33RGANJ01, A33RGANJ02, A33RGANJ03, A33RGANJ04, A33RGANJ05

Forecast Modeled Tracks:
A28ATNJ01_28L, A28GANJ01_28L,

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-29. Ten-Year (2035) Modeled Flight Tracks – West Flow Propeller Arrivals



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-30

Ten-Year (2035) Forecast Modeled Flight Tracks - Helicopter Arrivals

- Forecast Modeled Arrival Flight Track - Backbone (0)
- Forecast Modeled Arrival Flight Track - Dispersed (0)
- Modeled Arrival Flight Track - Backbone (5)
- Modeled Arrival Flight Track - Dispersed (0)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

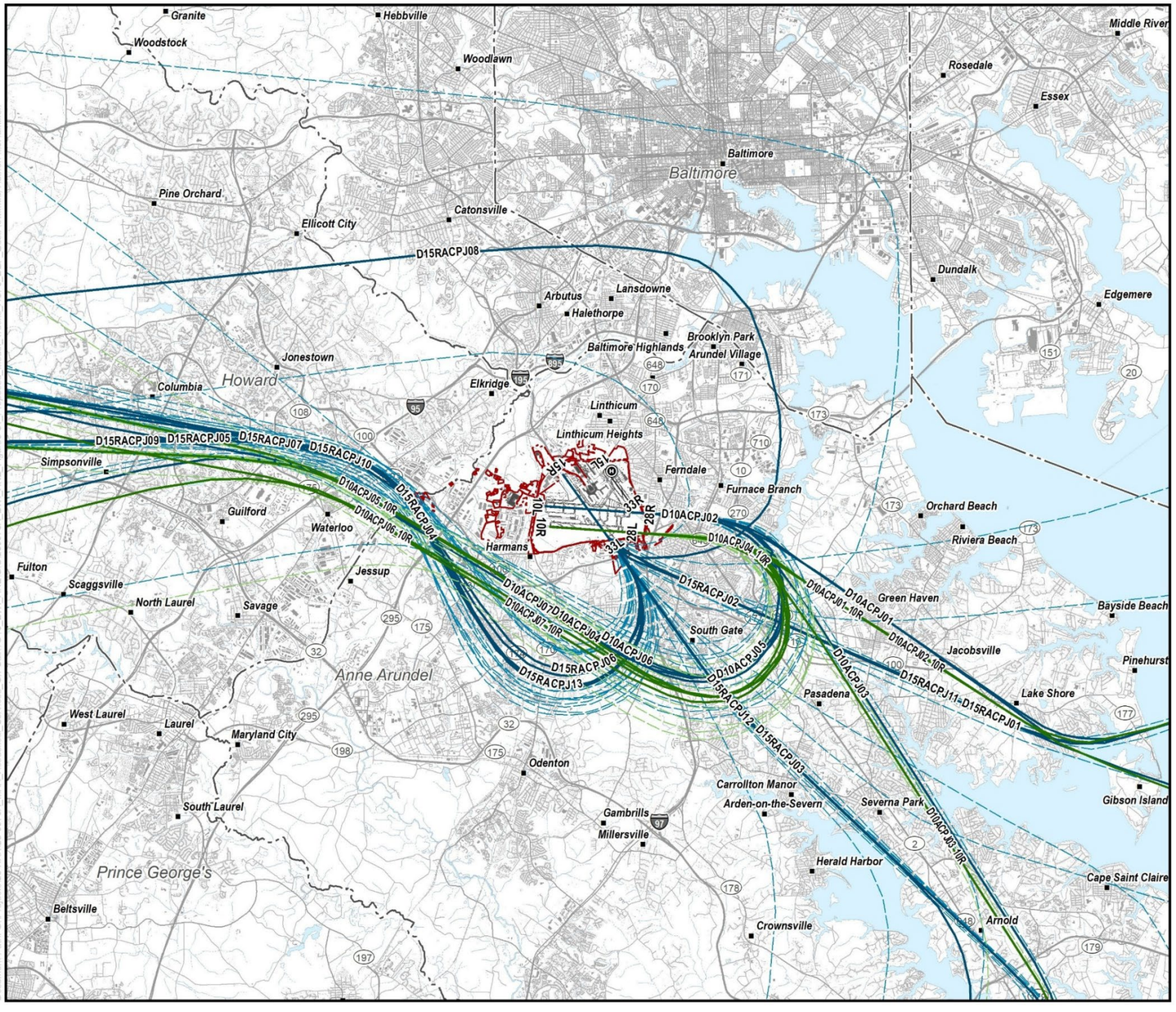
Modeled Tracks:
AH1H01, AH1H02, AH1H03, AH1H04, AH1H05

Forecast Modeled Tracks:

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-30. Ten-Year (2035) Modeled Flight Tracks – Helicopter Arrivals



BWI BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-31

Ten-Year (2035) Forecast Modeled Flight Tracks - East Flow Air Carrier Passenger Jet Departures

- Forecast Modeled Departure Flight Track - Backbone (7)
- Forecast Modeled Departure Flight Track - Dispersed (10)
- Modeled Departure Flight Track - Backbone (20)
- Modeled Departure Flight Track - Dispersed (44)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

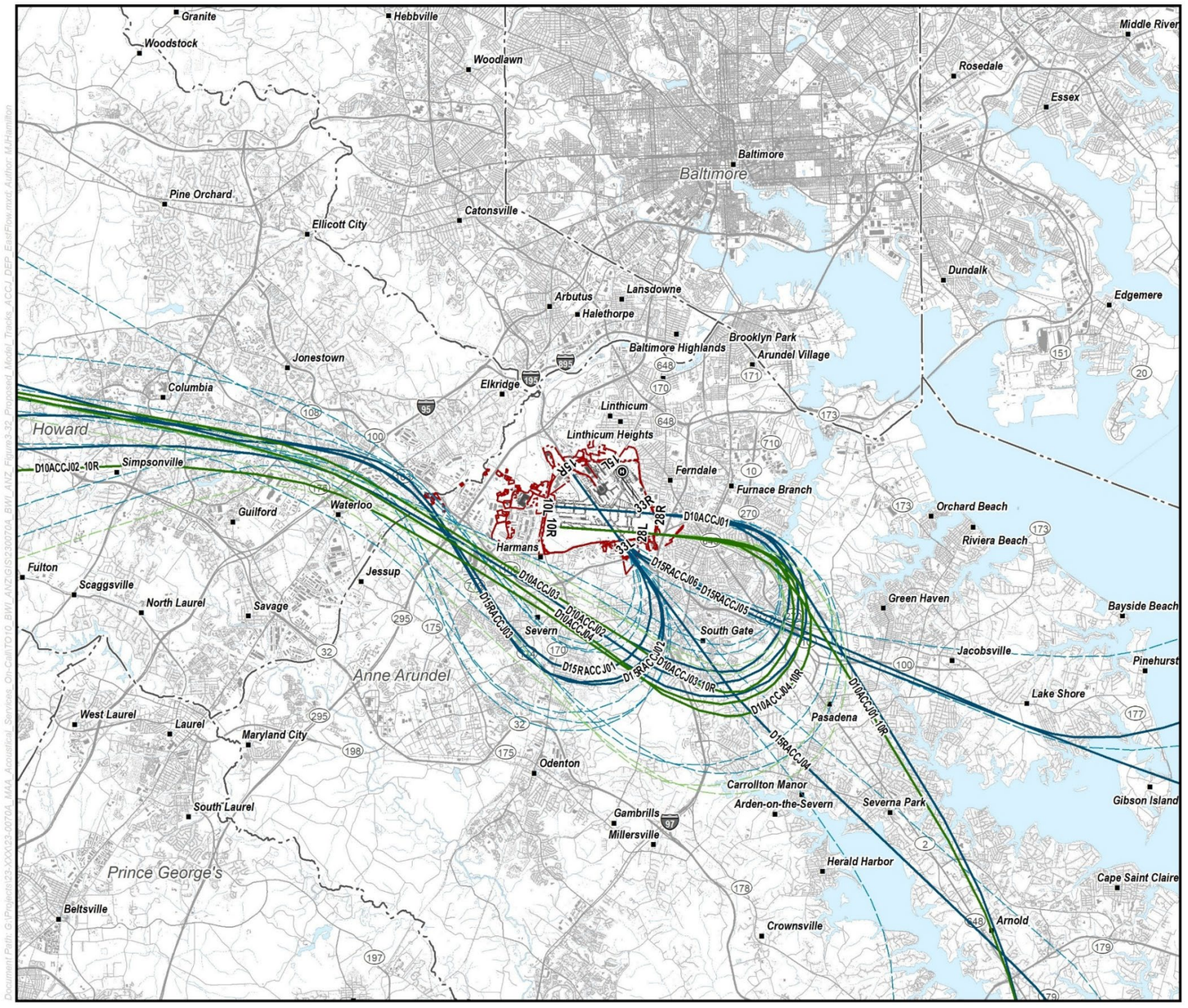
Modeled Tracks:
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Forecast Modeled Tracks:
D10ACPJ01_10R, D10ACPJ02_10R, D10ACPJ03_10R, D10ACPJ04_10R, D10ACPJ05_10R, D10ACPJ06_10R, D10ACPJ07_10R

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-31. Ten-Year (2035) Modeled Flight Tracks – East Flow Air Carrier Passenger Jet Departures



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-32

Ten-Year (2035) Forecast Modeled Flight Tracks - East Flow Air Carrier Cargo Jet Departures

- Forecast Modeled Departure Flight Track - Backbone (4)
- Forecast Modeled Departure Flight Track - Dispersed (4)
- Modeled Departure Flight Track - Backbone (10)
- Modeled Departure Flight Track - Dispersed (14)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

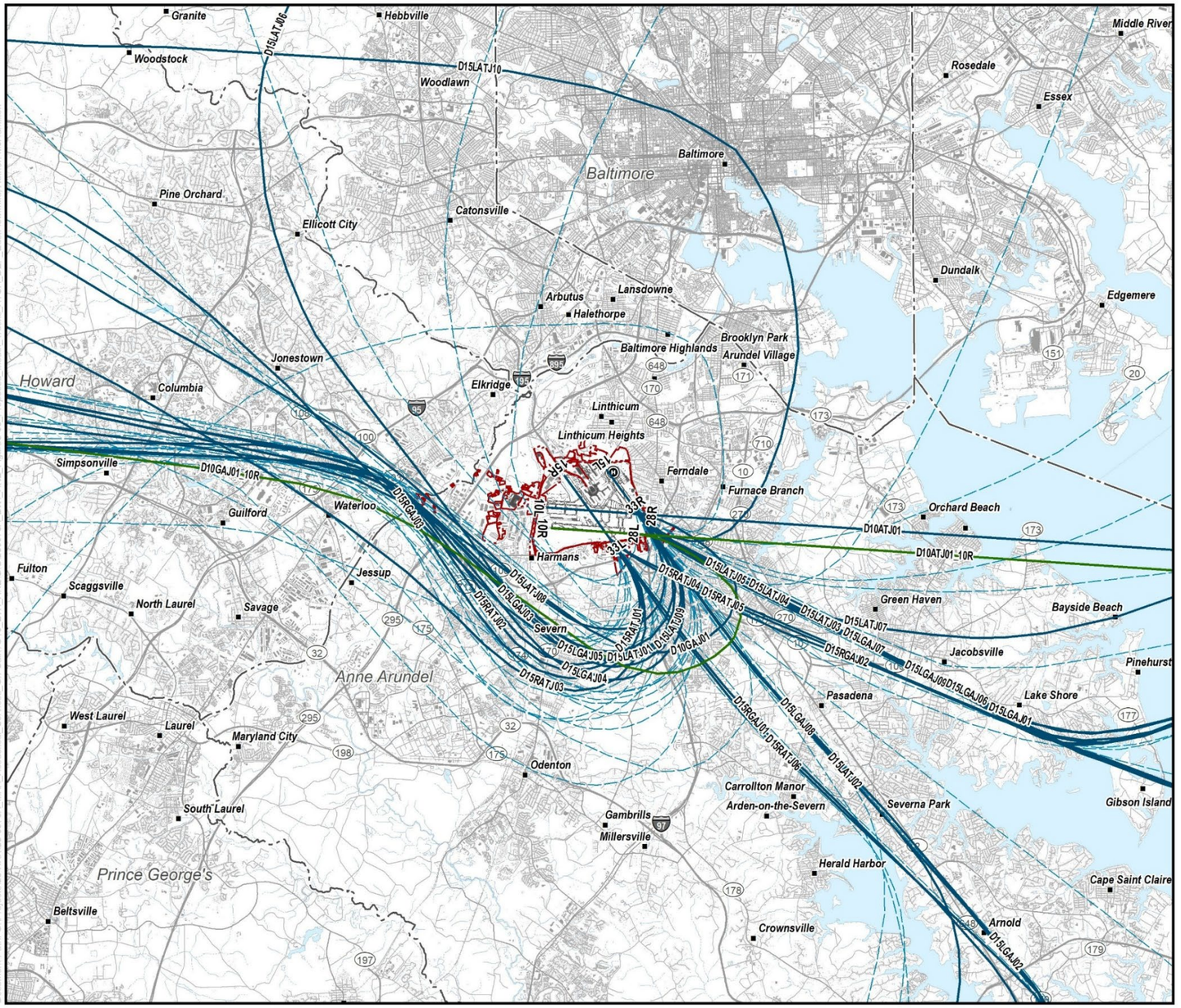
Modeled Tracks:
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Forecast Modeled Tracks:
D10ACCJ01_10R, D10ACCJ02_10R, D10ACCJ03_10R, D10ACCJ04_10R

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-32. Ten-Year (2035) Modeled Flight Tracks – East Flow Air Carrier Cargo Jet Departures



Airport Noise Zone Update

Figure 3-33

Ten-Year (2035) Forecast Modeled Flight Tracks - East Flow Air Taxi/General Aviation Departures

- Forecast Modeled Departure Flight Track - Backbone (2)
- Forecast Modeled Departure Flight Track - Dispersed (0)
- Modeled Departure Flight Track - Backbone (30)
- Modeled Departure Flight Track - Dispersed (38)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

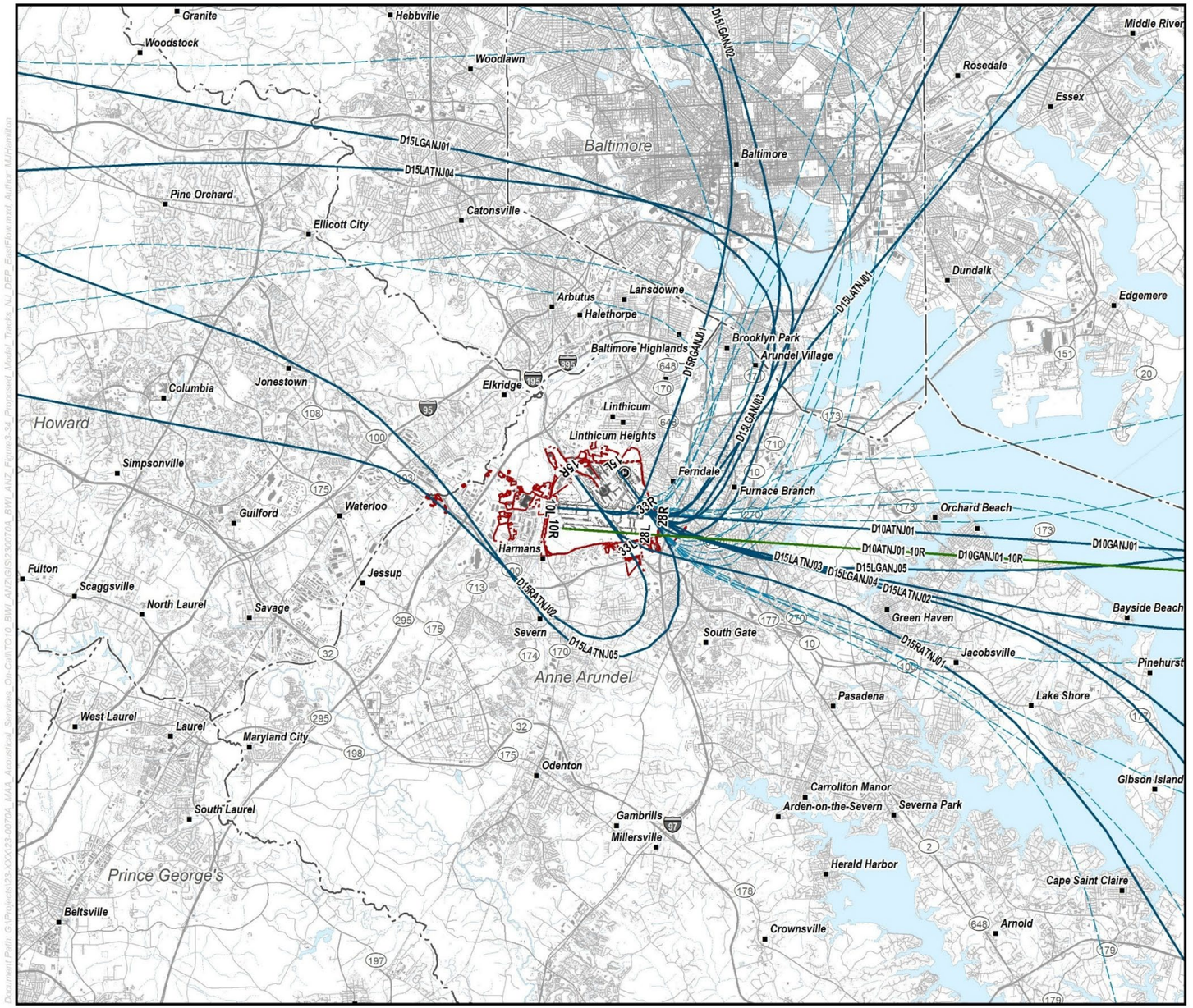
Modeled Tracks:
D10ATJ01, D10GAJ01, D15LATJ01, D15LATJ02, D15LATJ03, D15LATJ04, D15LATJ05, D15LATJ06, D15LATJ07, D15LATJ08, D15LATJ09, D15LATJ10, D15LGAJ01, D15LGAJ02, D15LGAJ03, D15LGAJ04, D15LGAJ05, D15LGAJ06, D15LGAJ07, D15LGAJ08, D15LGAJ09, D15RATJ01, D15RATJ02, D15RATJ03, D15RATJ04, D15RATJ05, D15RATJ06, D15RGAJ01, D15RGAJ02, D15RGAJ03

Forecast Modeled Tracks:
D10ATJ01_10R, D10GAJ01_10R

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-33. Ten-Year (2035) Modeled Flight Tracks – East Flow Air Taxi/General Aviation Jet Departures



BWI Marshall Airport

Airport Noise Zone Update

Figure 3-34

Ten-Year (2035) Forecast Modeled Flight Tracks - East Flow Propeller Departures

- Forecast Modeled Departure Flight Track - Backbone (2)
- Forecast Modeled Departure Flight Track - Dispersed (0)
- Modeled Departure Flight Track - Backbone (15)
- Modeled Departure Flight Track - Dispersed (18)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

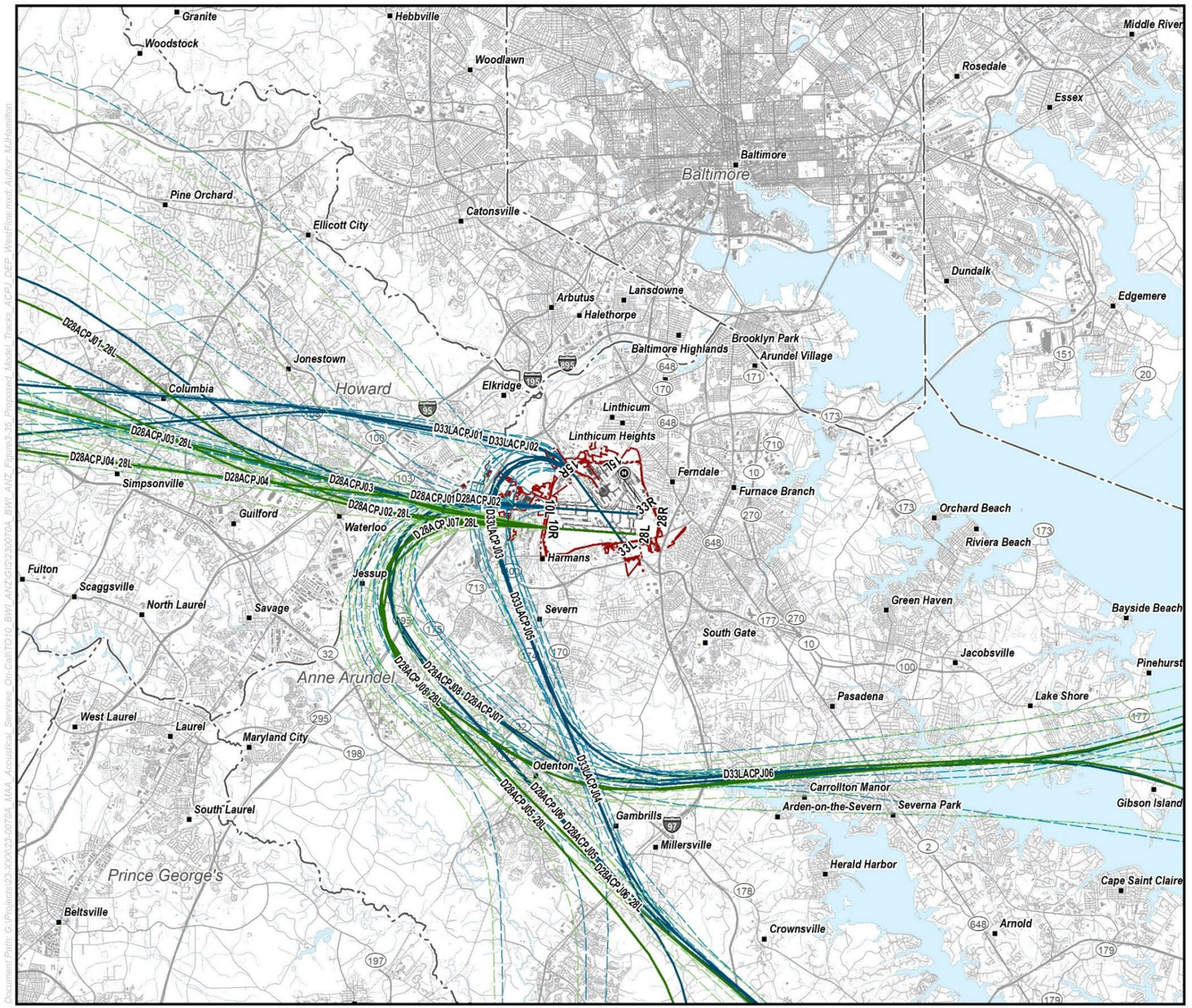
Modeled Tracks:
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Forecast Modeled Tracks:
D10ATNJ01_10R, D10GANJ01_10R

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-34. Ten-Year (2035) Modeled Flight Tracks – East Flow Propeller Departures



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-35

Ten-Year (2035) Forecast Modeled Flight Tracks - West Flow Air Carrier Passenger Jet Departures

- Forecast Modeled Departure Flight Track - Backbone (8)
- Forecast Modeled Departure Flight Track - Dispersed (28)
- Modeled Departure Flight Track - Backbone (14)
- Modeled Departure Flight Track - Dispersed (40)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

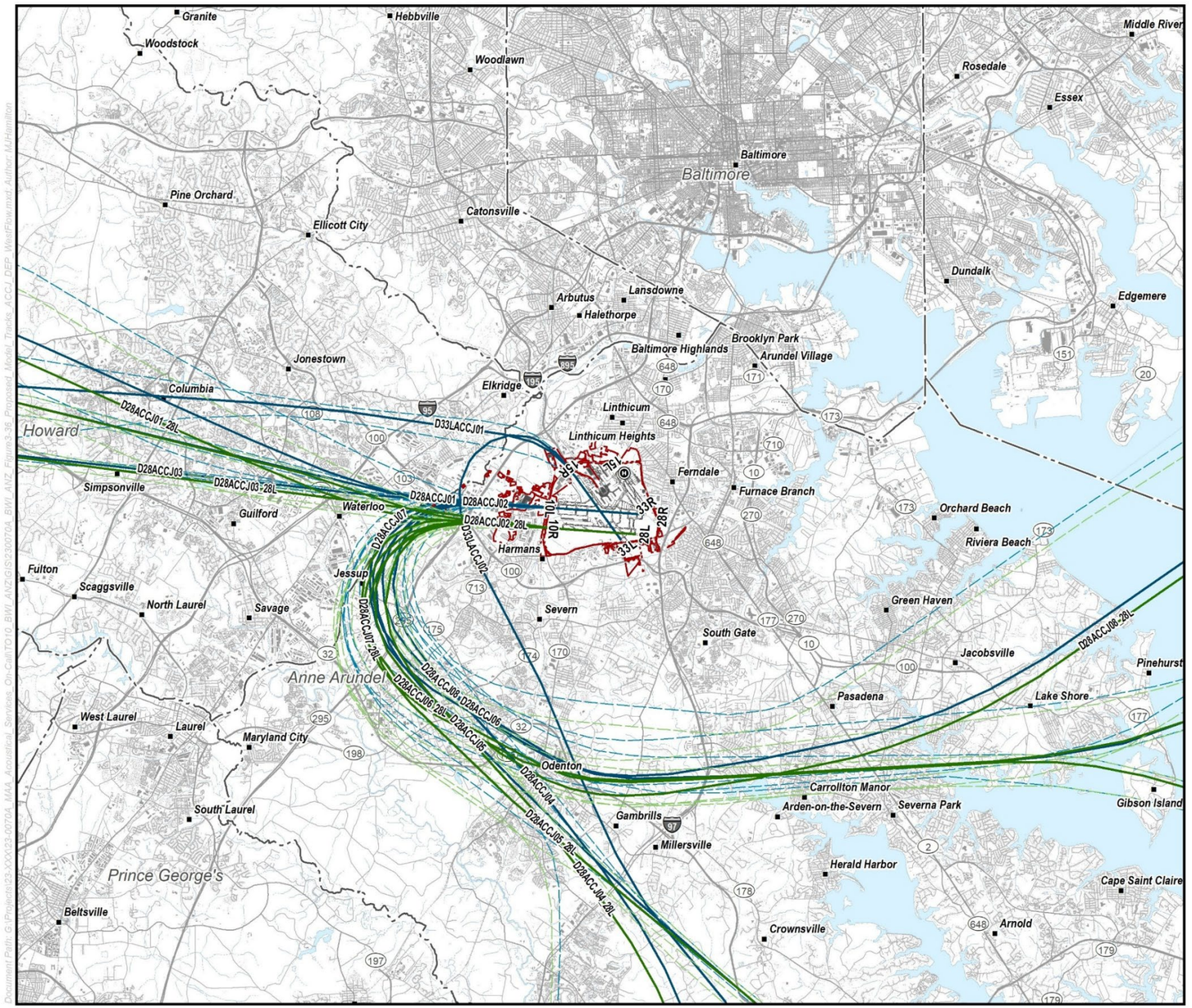
Modeled Tracks:
D28ACPJ01, D28ACPJ02, D28ACPJ03, D28ACPJ04, D28ACPJ05, D28ACPJ06, D28ACPJ07, D28ACPJ08, D33LACPJ01, D33LACPJ02, D33LACPJ03, D33LACPJ04, D33LACPJ05, D33LACPJ06

Forecast Modeled Tracks:
D28ACPJ01_28L, D28ACPJ02_28L, D28ACPJ03_28L, D28ACPJ04_28L, D28ACPJ05_28L, D28ACPJ06_28L, D28ACPJ07_28L, D28ACPJ08_28L

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-35. Ten-Year (2035) Modeled Flight Tracks – West Flow Air Carrier Passenger Jet Departures



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-36

Ten-Year (2035) Forecast Modeled Flight Tracks - West Flow Air Carrier Cargo Jet Departures

- Forecast Modeled Departure Flight Track - Backbone (8)
- Forecast Modeled Departure Flight Track - Dispersed (16)
- Modeled Departure Flight Track - Backbone (10)
- Modeled Departure Flight Track - Dispersed (18)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

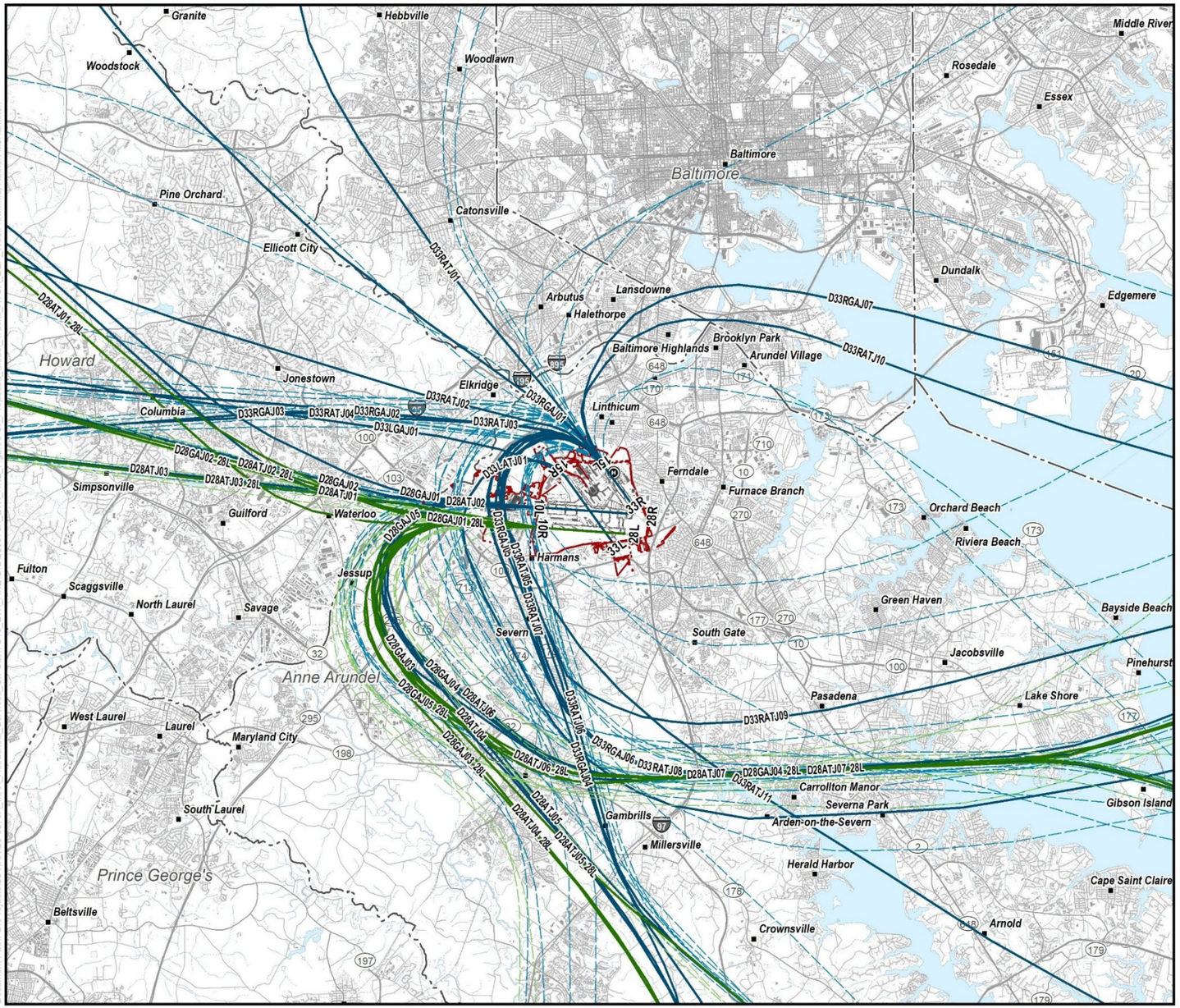
Modeled Tracks:
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Forecast Modeled Tracks:
D28ACCJ01_28L, D28ACCJ02_28L, D28ACCJ03_28L, D28ACCJ04_28L, D28ACCJ05_28L, D28ACCJ06_28L, D28ACCJ07_28L, D28ACCJ08_28L

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-36. Ten-Year (2035) Modeled Flight Tracks – West Flow Air Carrier Cargo Jet Departures



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 3-37

Ten-Year (2035) Forecast Modeled Flight Tracks - West Flow Air Taxi/General Aviation Jet Departures

- Forecast Modeled Departure Flight Track - Backbone (12)
- Forecast Modeled Departure Flight Track - Dispersed (18)
- Modeled Departure Flight Track - Backbone (32)
- Modeled Departure Flight Track - Dispersed (54)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

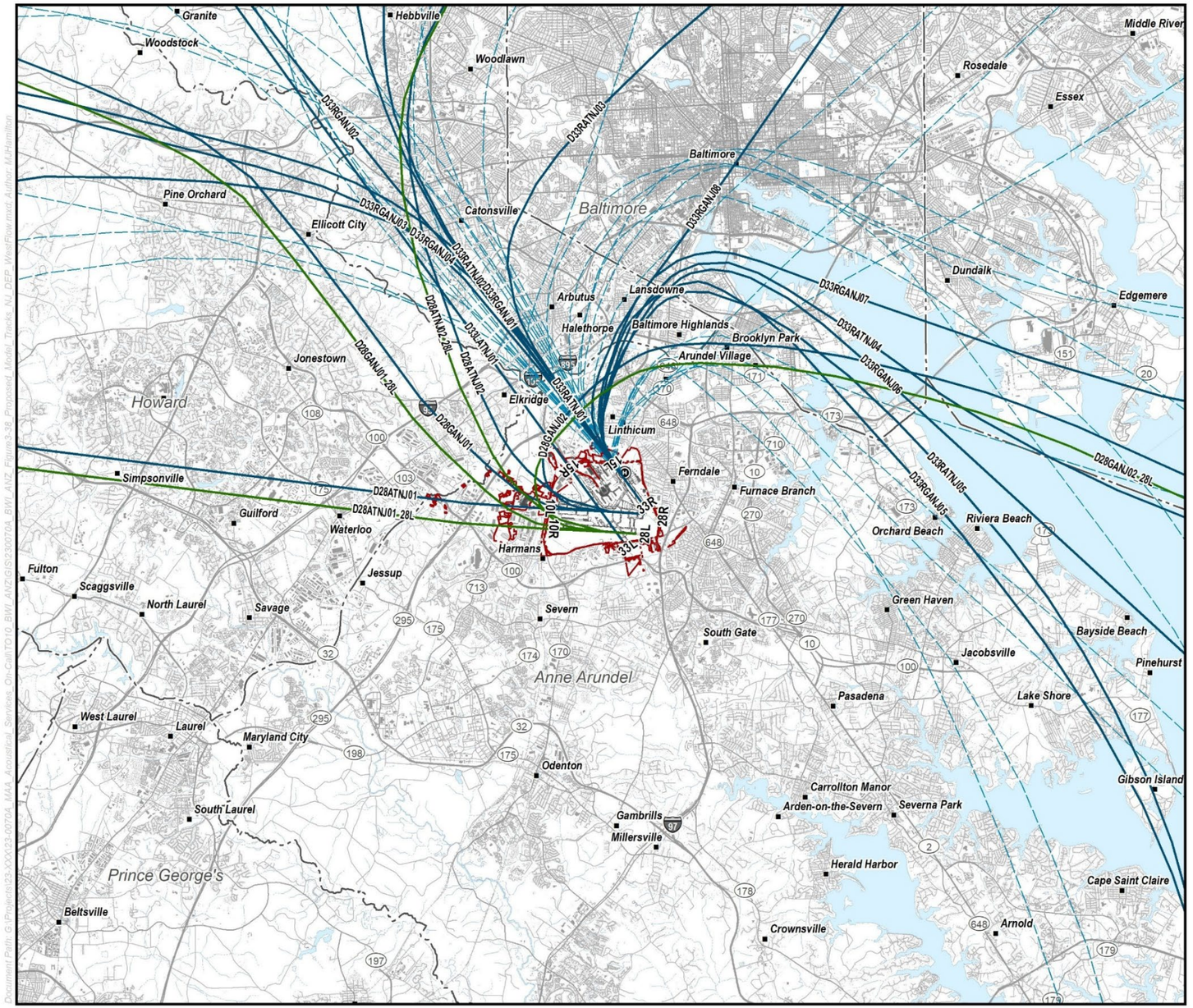
Modeled Tracks:
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Forecast Modeled Tracks:
D28ATJ01_28L, D28ATJ02_28L, D28ATJ03_28L, D28ATJ04_28L, D28ATJ05_28L, D28ATJ06_28L, D28ATJ07_28L, D28GAJ01_28L, D28GAJ02_28L, D28GAJ03_28L, D28GAJ04_28L, D28GAJ05_28L

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

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Figure 3-37. Ten-Year (2035) Modeled Flight Tracks – West Flow Air Taxi/General Aviation Jet Departures



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Figure 3-38

Ten-Year (2035) Forecast Modeled Flight Tracks - West Flow Propeller Departures

- Forecast Modeled Departure Flight Track - Backbone (4)
- Forecast Modeled Departure Flight Track - Dispersed (0)
- Modeled Departure Flight Track - Backbone (18)
- Modeled Departure Flight Track - Dispersed (28)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

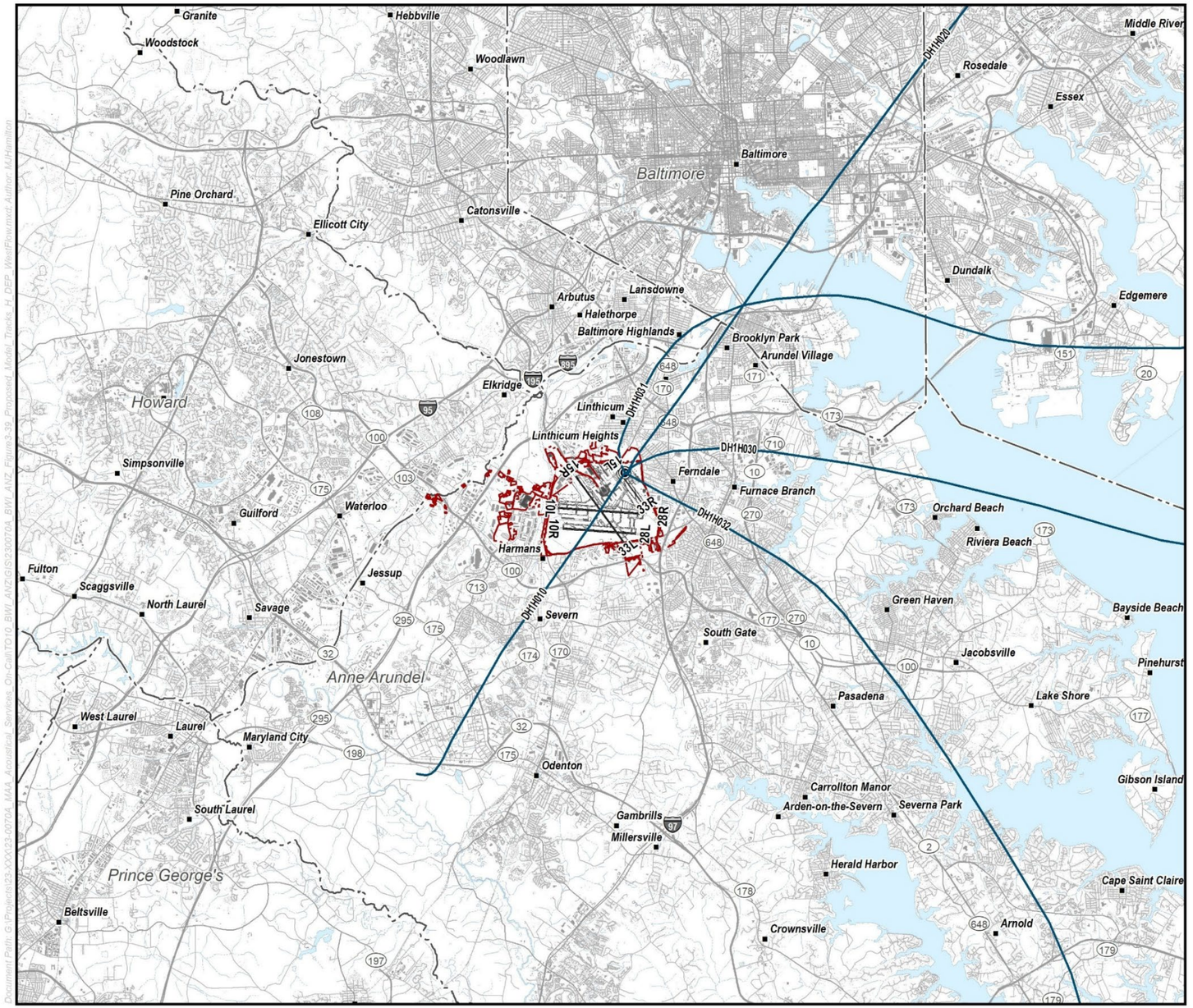
Modeled Tracks:
D28ATNJ01, D28ATNJ02, D28GANJ01, D28GANJ02, D33LATNJ01, D33RATNJ01, D33RATNJ02, D33RATNJ03, D33RATNJ04, D33RATNJ05, D33RGANJ01, D33RGANJ02, D33RGANJ03, D33RGANJ04, D33RGANJ05, D33RGANJ06, D33RGANJ07, D33RGANJ08

Forecast Modeled Tracks:
D28ATNJ01_28L, D28ATNJ02_28L, D28GANJ01_28L, D28GANJ02_28L

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

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Figure 3-38. Ten-Year (2035) Modeled Flight Tracks – West Flow Propeller Departures



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Airport Noise Zone Update

Figure 3-39

Ten-Year (2035) Forecast Modeled Flight Tracks - Helicopter Departures

- Forecast Modeled Departure Flight Track - Backbone (0)
- Forecast Modeled Departure Flight Track - Dispersed (0)
- Modeled Departure Flight Track - Backbone (5)
- Modeled Departure Flight Track - Dispersed (0)
- MAA Property Boundary
- Helicopter Operation Area
- Runway
- Airport Buildings
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Modeled Tracks:
DH1H010, DH1H020, DH1H030, DH1H031, DH1H032

Forecast Modeled Tracks:

Data Sources: Baltimore County Government Open Data Portal; Maryland Department of Transportation; Maryland Department of Planning; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 12,000 24,000 Feet

Figure 3-39. Ten-Year (2035) Modeled Flight Tracks – Helicopter Departures

3.6 Meteorological Conditions

AEDT has several settings that affect aircraft performance profiles and sound propagation based on meteorological data. Meteorological settings include average annual temperature, barometric pressure, and relative humidity at the airport. AEDT utilized the following values for annual average weather conditions at BWI Marshall, which are based on a 10-year average from 2014-2023:

- Temperature: 57.3° F
- Pressure: 1011.15 millibars
- Sea-level Pressure: 1017.38 millibars
- Relative Humidity 66.19%
- Dew Point: 46.1° F
- Wind Speed: 5.69 Knots

The AEDT annual average weather condition values detailed above were used in AEDT for generating the 2025 base year and 2030 and 2035 forecast noise contours for the BWI Marshall ANZ update.

3.7 Terrain Data

Terrain data describes the elevation of the ground surrounding the airport and on airport property. AEDT uses terrain data to set the ground level under the flight paths. The terrain data does not affect the aircraft's performance or noise levels, but it does affect the vertical distance between the aircraft and a noise "receiver" on the ground. This in turn affects noise propagation assumptions about how noise propagates over ground. The terrain data were obtained from the United States Geological Survey (USGS) National Map Data Download Application[15] on May 8, 2025. Elevation Dataset with one-third arc second (approximately 33 feet) resolution was selected. Terrain data was utilized in conjunction with the terrain feature of AEDT to generate the base, five-year, and ten-year noise contours for the BWI Marshall ANZ update.

[15] USGS, *National Map Data Download Application,* https://www.usgs.gov/tools/download-data-maps-national-map

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4. Study Results

This section describes the contours for each of the input years and for the 2025 ANZ and includes information on the people and area affected. Factors contributing to the differences in the individual contours and to the shape of the ANZ are also identified and discussed.

Land use data, which was used in the creation of the land use base map, was generated using multiple sources of data and graphics including aerial photography, airport layout and property boundaries, and identification of undeveloped land acquired by the MAA. Land use data was also obtained from Baltimore, Howard, and Anne Arundel counties, as well as the National Register of Historic Places (NRHP), and was validated during an inventory of the land use in the vicinity of the BWI Marshall contours in July 2025.

4.1 2025 Base Year Contours

Figure 4-1 presents the BWI Marshall 65, 70, and 75 dB DNL contours for the 2025 base year.

The 2025 base year 65 dB DNL contour reflects the following:

- The 65 dB DNL contour to the west of BWI Marshall extends approximately 2.6 miles west of the Runway 10 end. This contour lobe is primarily due to air carrier departures from Runway 28 and air carrier arrivals onto Runway 10.
- The 65 dB DNL contour to the southeast of the airport extends approximately 2.6 miles southeast of the Runway 33L end. This contour lobe is primarily due to air carrier arrivals to Runway 33L and air carrier departures from Runway 15R.
- The use of Runway 15L/33R for arrivals and departures by air taxi and general aviation jets and propeller aircraft is represented as an extended lobe to the northwest of the runway.
- The bulges in the contours off the Runway 15R end and Runway 28 end are generated by start-of-takeoff-roll noise.

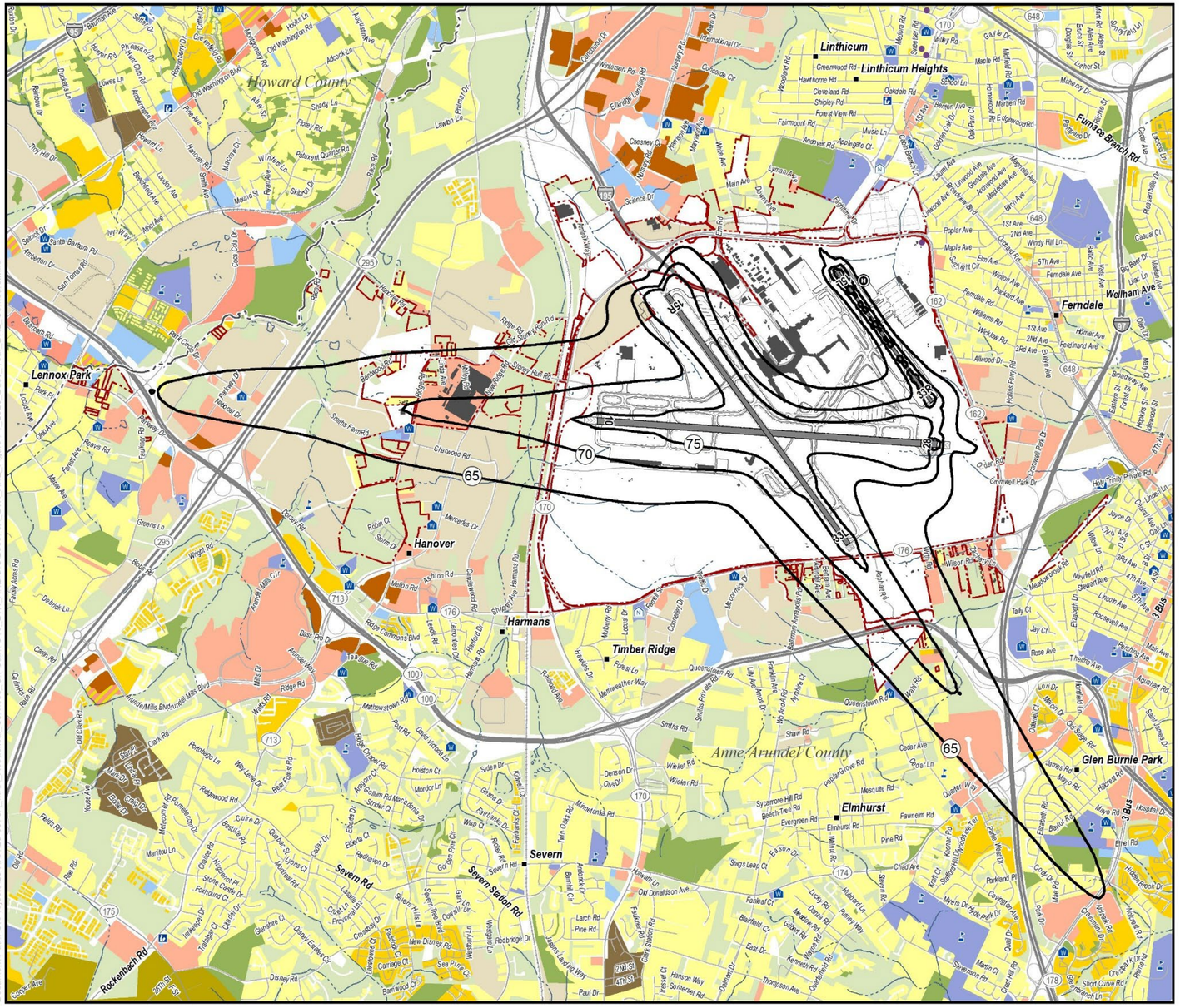
The 2025 base year contour exposes approximately 3,178 acres, 2,056 (64.7 percent) of which are on airport property, and, based on the 2020 US Census, an estimated 1,035 people and 361 estimated households to noise levels 65 dB DNL or greater as presented in Table 4-1.

Table 4-1. Households, Population, and Acreage within the 2025 Base Year Contour

DNL Contour Interval	Estimated Residential Population[1]	Estimated Residential Housing Units[1]	Area (acres)	On Airport (acres)	On Airport (%)	Off Airport (acres)	Off Airport (%)
65-70 dB	1,017	354	1,970	939	47.7%	1,031	52.3%
70-75 dB	18	7	770	681	88.4%	89	11.6%
>75 dB	0	0	438	436	99.5%	2	0.5%
Total	**1,035**	**361**	**3,178**	**2,056**	**64.7%**	**1,122**	**35.3%**

Sources: HMMH 2025, 2020 US Census

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Airport Noise Zone Update

Figure 4-1
2025 Base Year DNL Contours

- 2025 Base Year DNL Contours
- MAA Property Boundary
- Runup Locations
- Helicopter Operation Area
- Runway
- Airport Buildings
- Airport Pavement Edge
- Airport Pavement Shoulder
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Residential Use
- Multi-Family Residential Use
- Mobile Home
- Transient Lodging
- Mixed Use
- Public Use (Non-Compatible)
- Public Use (Compatible)
- Water
- Military Use
- Commercial Use
- Manufacturing / Production
- Vacant / Undeveloped
- Recreational / Open Space
- Golf
- Transportation / Utility
- School
- Library
- Place of Worship
- Hospital / Health Care
- Nursing / Assisted Living
- Historic Place (NRHP)

Data Sources: Maryland Aviation Administration; Anne Arundel County Open Data Portal (https://opendata.aacounty.org/); Howard County MD (https://data.howardcountymd.gov/); Baltimore County Government Open Data Portal (https://opendata.baltimorecountymd.gov/); MDDOT (https://data-maryland.opendata.arcgis.com/pages/mdot-data); Environmental Systems Research Institute (ESRI); AirNav.com; HMMH Inc.

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Figure 4-1. 2025 Base Year DNL Contours

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4.2 2030 Five-Year Forecast Contours

Figure 4-2 presents the 2030 five-year 65, 70, and 75 dB DNL contours at BWI Marshall.

The 2030 five-year forecast contours retain largely the same shape as the 2025 base year contours except for changes in two primary areas:

- Slight bulges in the 70-dB contour at the midfield cargo ramp, the southern end of Runway 15R/33L, and the eastern end of Runway 10/28 resulting from aircraft run-ups as described by ATI and estimated from MAA run-up records from 2020 through 2024.
- A 75-dB "island" within the 70-dB contour area and increases in the 70- and 65-dB contours west of the intersection of Runways 10/28 and 15R/33L due to aircraft run-ups that are expected to occur at the airline maintenance facility.

Though the 2030 five-year forecast contours retain the same overall shape as the 2025 base year, the 2030 contours are approximately 10 percent smaller in overall area than the 2025 base year due to the changes in fleet mix that are forecasted to occur during the 2030 five-year forecast period. Approximately 4 percent fewer households and 2 percent fewer people fall within the five-year contours compared to the base year contours.

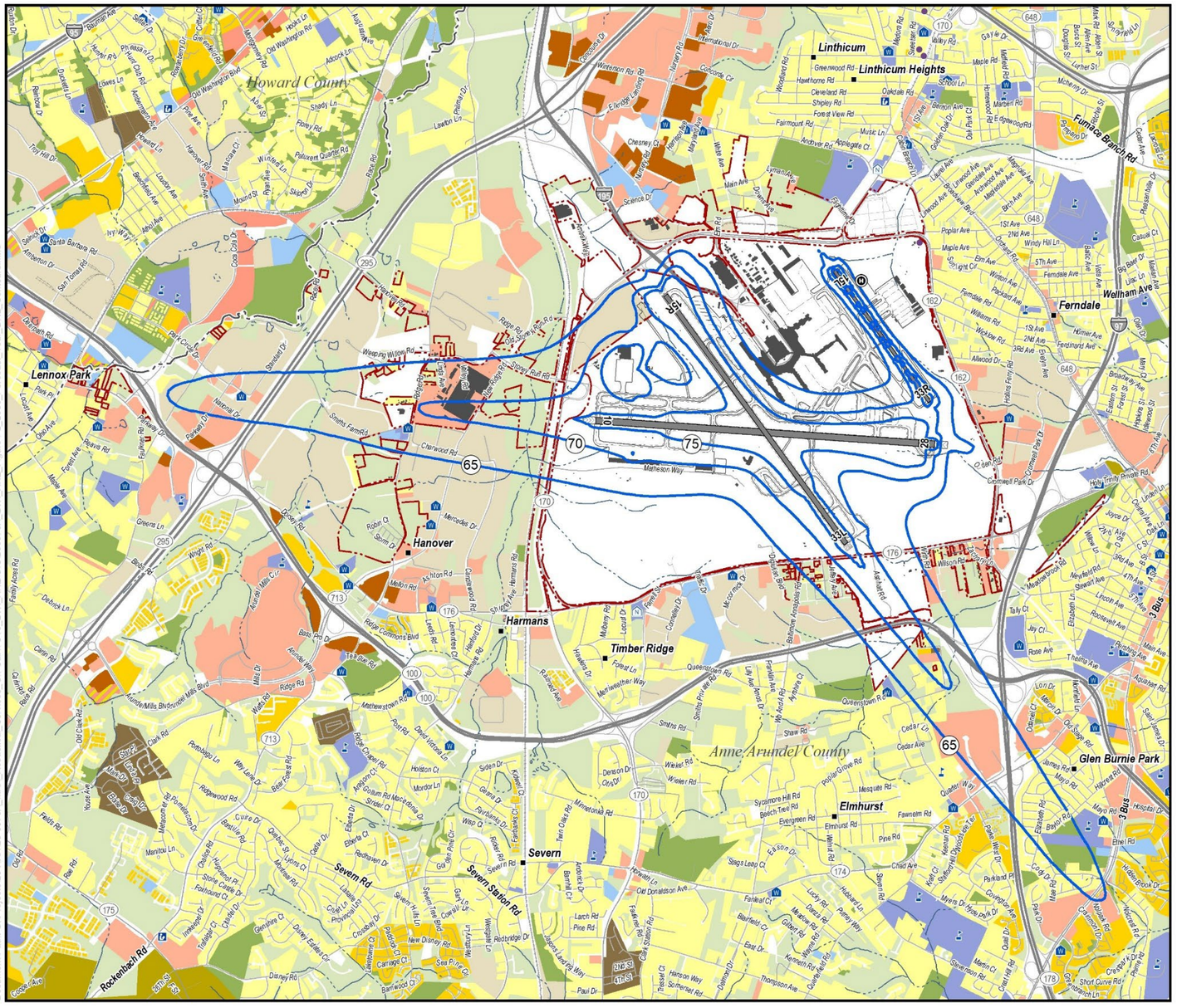
The 2030 five-year forecast contours expose approximately 2,866 acres, 1,904 (66.4 percent) of which are on airport property, and, based on the 2020 US Census, an estimated 1,011 people and 347 estimated households are exposed to noise levels greater than 65 dB DNL as presented in Table 4-2.

Table 4-2. Households, Population, and Acreage within 2030 Five-Year Forecast DNL Contours

DNL Contour Interval	Estimated Residential Population	Estimated Residential Housing Units	Area (acres)	On Airport (acres)	On Airport (%)	Off Airport (acres)	Off Airport (%)
65-70 dB	995	340	1,732	855	49.3%	878	50.7%
70-75 dB	16	7	702	618	88.1%	83	11.9%
>75 dB	0	0	432	431	99.8%	1	0.2%
Total	**1,011**	**347**	**2,866**	**1,904**	**66.4%**	**962**	**33.6%**

Sources: HMMH 2025; 2020 US Census

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Airport Noise Zone Update

Figure 4-2
2030 Five-Year Forecast DNL Contours

- 2030 Five-Year Forecast DNL Contours
- MAA Property Boundary
- Runup Locations
- Helicopter Operation Area
- Runway
- Airport Buildings
- Airport Pavement Edge
- Airport Pavement Shoulder
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Residential Use
- Multi-Family Residential Use
- Mobile Home
- Transient Lodging
- Mixed Use
- Public Use (Non-Compatible)
- Public Use (Compatible)
- Water
- Military Use
- Commercial Use
- Manufacturing / Production
- Vacant / Undeveloped
- Recreational / Open Space
- Golf
- Transportation / Utility
- School
- Library
- Place of Worship
- Hospital / Health Care
- Nursing / Assisted Living
- Historic Place (NRHP)

Data Sources: Maryland Aviation Administration; Anne Arundel County Open Data Portal (https://opendata.aacounty.org/); Howard County MD (https://data.howardcountymd.gov/); Baltimore County Government Open Data Portal (https://opendata.baltimorecountymd.gov/); MDDOT (https://data-maryland.opendata.arcgis.com/pages/mdot-data); Environmental Systems Research Institute (ESRI); AirNav.com; HMMH Inc.

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Figure 4-2. 2030 Five-Year Forecast DNL Contours

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4.3 2035 Ten-Year Forecast Contours

Figure 4-3 presents the 2035 ten-year 65, 70, and 75 dB DNL contours at BWI Marshall. The 2035 ten-year forecast contours expose approximately 3,101 acres, 2,122 (68.4 percent) of which are on airport property, and, based on the 2020 US Census, an estimated 1,616 people and 597 estimated households to noise levels greater than 65 dB DNL as presented in Table 4-3.

Table 4-3. Households, Population, and Acreage within 2035 Ten-Year Forecast DNL Contours

DNL Contour Interval	Estimated Residential Population	Estimated Residential Housing Units	Area (acres)	On Airport (acres)	On Airport (%)	Off Airport (acres)	Off Airport (%)
65-70 dB	1,598	589	1,854	963	51.9%	891	48.1%
70-75 dB	18	8	764	677	88.6%	87	11.4%
>75 dB	0	0	483	482	99.8%	1	0.2%
Total	**1,616**	**597**	**3,101**	**2,122**	**68.4%**	**979**	**31.6%**

Sources: HMMH 2025, 2020 US Census
Note: Inconsistencies in totals are due to rounding.

The 2035 ten-year forecast contours shift relative to the 2025 base year and 2030 five-year forecasts. The 2035 ten-year contours reflect anticipated changes in the future condition of the runway layout that are based on airport layout changes detailed in current BWI Marshall ALP. These changes include:

- The planned construction of parallel Runway 10R/28L, and
- The extension of the existing Runway 15R/33L from 9,501 feet to 10,501 feet, with the extension occurring on the southeast end of the runway.

With the construction of parallel Runway 10R/28L, the 2035 ten-year forecast contours also reflect anticipated changes in the usage of the runways relative to the 2025 base year and 2030 five-year forecast. These changes in runway use include:

- Distributing operations between existing Runways 10/28 (future 10L/28R) and proposed parallel Runway 10R/28L.
- Shifting some daytime Air Carrier and Air Taxi departure operations associated with existing Runway 15R to utilize parallel Runways 10L and 10R.
- Shifting some nighttime Air Carrier and Air Taxi departure operations associated with existing Runway 15R to utilize parallel Runways 28L and 28R.
- Minor adjustments to the distribution of operations to the other runways based on anticipated changes in fleet mix for the 2035 ten-year forecast and aircraft performance requirements.

The 2035 ten-year forecast contours are approximately 2 percent smaller in overall area relative to the 2025 base year contours, primarily resulting from the changes in fleet mix during the 2035 ten-year forecast period. Specifically, the 2035 ten-year forecast contours differ from the 2025 base year forecast in the following primary areas:

- An extension of the contours south of Runway 15R/33L due to the planned runway extension and elimination of the displaced threshold.
- A narrowing of the contours around Runway 10/28 (future Runway 10L/28R) and Runway 15R/33L associated with the shift in operations to reflect the utilization of the future parallel Runways 10/28.
- New lobes to the south of Runway 10/28 (future Runway 10L/28R) associated with the planned construction of the parallel Runway 10R/28L.
- A reduction of the contours west of Runway 10/28 (future Runway 10L/28R) associated with the distribution of arrival and departure operations between the parallel runways.
- Slight bulges in the 70-dB contour at the midfield cargo ramp and the eastern end of Runway 10/28 resulting from aircraft run-ups as described by Air Transport International and estimated from MAA run-up records from 2020 through 2024.
- A 75-dB "island" within the 70-dB contour area and a protrusion in the 70- and 65-dB contours west of the intersection of Runways 10/28 (future Runway 10L/28R) and 15R/33L due to aircraft run-ups that are expected to occur at the airline maintenance facility.
- A slight extension of the 65-dB contours at the east ends of the parallel Runways 10/28 associated with the shift of operations resulting from the additional runway.

Relative to the 2030 five-year forecast contours, the 2035 ten-year forecast contours contain an approximate 8 percent increase in acreage, 60 percent increase in estimated population, and 72 percent increase in estimated households exposed to noise levels greater than 65 dB DNL.

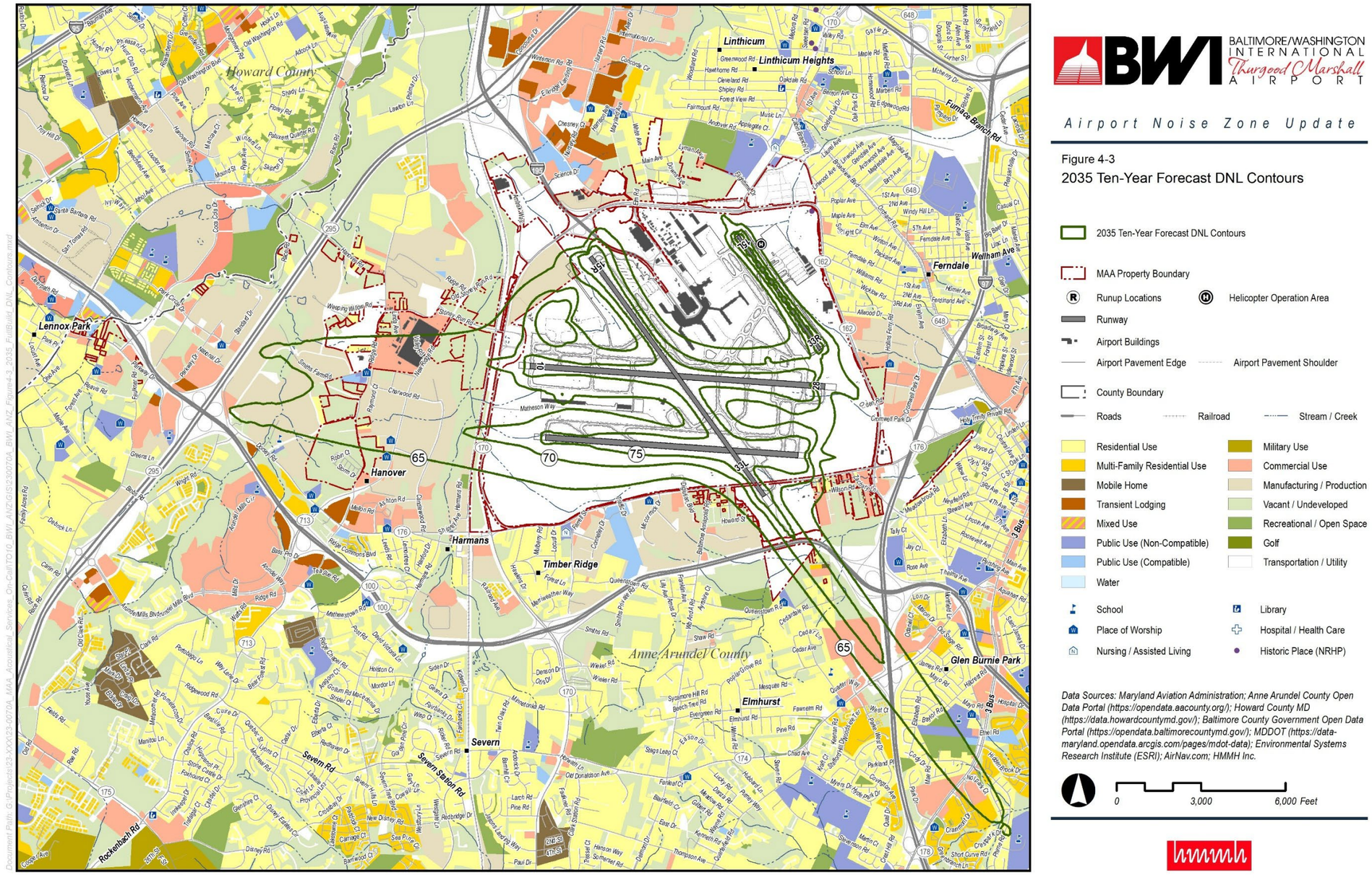


Figure 4-3. 2035 Ten-Year Forecast DNL Contours

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4.4 2025 ANZ Contours and Land Use Inventory

The 2025 BWI Marshall ANZ represents a composite of the 65, 70, and 75 dB DNL noise contours for three study years: the base year (2025) and two forecast years (2030 and 2035). The ANZ represents the outermost extent of the annual DNL contours for each of the three study years. As described in Section 1, the ANZ defines the largest area of the existing or future noise exposure contours for planning purposes.

The 2025 ANZ update process included an inventory of the latest land use within the ANZ DNL contour boundary as well as in the vicinity of BWI Marshall. Land use was evaluated using geographic information system (GIS) analysis. Maryland law considers all land uses compatible below 65 dB DNL.

Land use data was generated using multiple sources of data and graphics including aerial photography, airport layout and property boundaries, and identification of undeveloped land acquired by the MAA. Land use data was also obtained from Baltimore, Howard, and Anne Arundel counties and the NRHP and used in creation of the land use base map. The BWI Marshall 2025 ANZ contours were overlaid on the land use data within the study boundary to ensure accuracy. The total acreage within each noise contour interval was then calculated based on this information.

Figure 4-4 presents the 65, 70, and 75 decibel (dB) contours for the 2025 base year, 2030 five-year, and 2035 ten-year forecast DNL contours used to generate the 2025 ANZ.

The shape of the 2025 ANZ composite contours is driven by the 2025 base year contours and the 2035 ten-year contours. The resulting 2025 ANZ contours expose approximately 3,802 acres, an estimated 1,704 people based on the 2020 US Census, and 636 estimated households to noise levels greater than 65 dB DNL as presented in Table 4-4.

Table 4-4. Households, Population, and Acreage within the 2025 ANZ Contour

DNL Contour Interval	Estimated Residential Population	Estimated Residential Housing Units	Area (acres)	On Airport (acres)	On Airport (%)	Off Airport (acres)	Off Airport (%)
65-70 dB	1,685	628	2,152	875	40.7%	1,277	59.3%
70-75 dB	19	8	993	852	85.8%	140	14.2%
>75 dB	0	0	657	654	99.6%	2	0.4%
Total	**1,704**	**636**	**3,802**	**2,381**	**62.6%**	**1,419**	**37.4%**

Sources: HMMH 2025, 2020 US Census
Note: Inconsistencies in totals are due to rounding.

Figure 4-5 presents the 65, 70, and 75 dB DNL contours for the 2025 ANZ compared to the 2020 ANZ. The 2025 ANZ covers an overall smaller area than the 2020 ANZ. The 2025 ANZ encompasses a total of 3,802 acres exposed to noise levels greater than 65 dB DNL, a decrease of 31 percent compared to the size of the 2020 ANZ. The 2025 ANZ also contains an approximate 57 percent decrease in estimated population,[16] and a 59 percent decrease in the number of estimated households exposed to noise levels greater than 65 dB DNL relative to the 2020 ANZ, as presented in Table 4-5.

[16] The 2020 ANZ population and housing counts were based on the 2010 census, while the 2025 population and housing counts were based on the 2020 census.

On- and off-airport areas were not calculated for the 2020 ANZ; thus, no comparison against the 2025 ANZ contours is available.

Table 4-5. Households, Population, and Acreage within the 2025 ANZ Compared to the 2020 ANZ

	Estimated Residential Population	Estimated Residential Housing Units	Area (acres)
2025 ANZ	1,704	636	3,802
2020 ANZ	3,971	1,563	5,543
Difference	-2,267	-927	-1,742

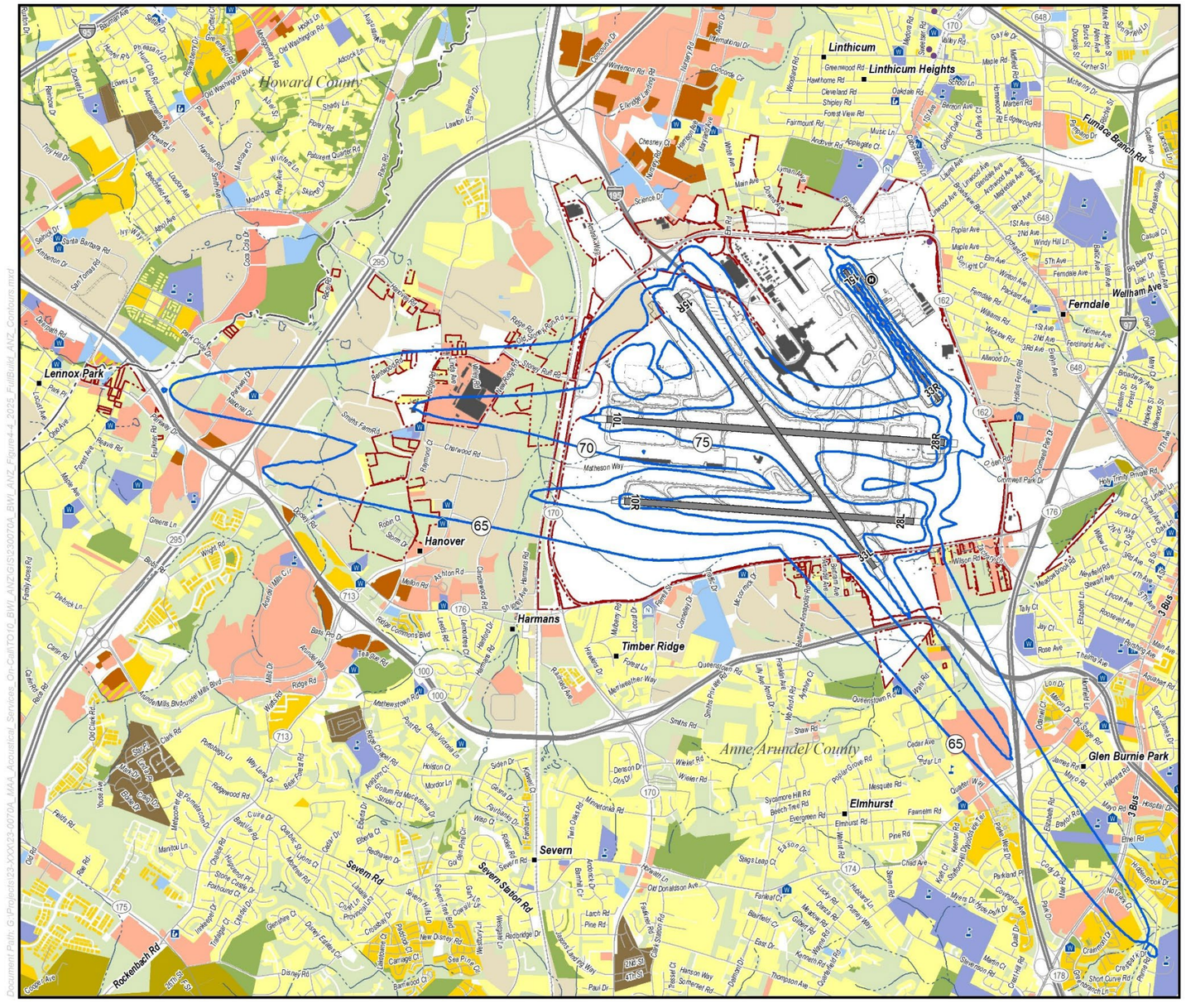
Sources: HMMH 2025; 2010 and 2020 US Census

As shown, the contours are similar in shape, but the 2025 ANZ covers a smaller area than the 2020 ANZ. The decrease in size, households, and population is due to a smaller number of operations relative to the 2020 ANZ, the implementation of new arrival and departure procedures in 2024, and changes to the fleet mix forecast for 2030 and 2035.

Some factors that help explain the differences between the 2020 and 2025 ANZ contours include:

- A reduced number of operations for the 2025 ANZ base year and the five- and ten-year forecasts compared to the 2020 ANZ and a forecasted shift in fleet mix towards quieter next generation aircraft types in 2030 and 2035, resulting in an overall decrease in contour area despite an overall increase in forecasted operations between 2025 and 2035.
- The implementation of new arrival and departure procedures in 2024. The FAA implemented new and updated arrival and departure procedures at BWI Marshall in July and September 2024 with new flight paths and altitudes, resulting in a reduction in the contour on the west side of the Runway 33L arrival lobe, north of Elmhurst and south of Route 100 and Runway 33L. This change is due to a southward shift in where Runway 33R departures begin the turn to the northwest.
- A change in the area of the contours northwest of the intersection of Runway 15R/33L and existing Runway 10/28 associated with a change in the numbers of aircraft maintenance run-ups due to the construction of the proposed airline maintenance facility, as well as the shift in fleet mix, compared to the 2020 ANZ.

Appendix B provides the 2025 ANZ contours overlaid on the county tax maps.



BWI Airport Noise Zone Update

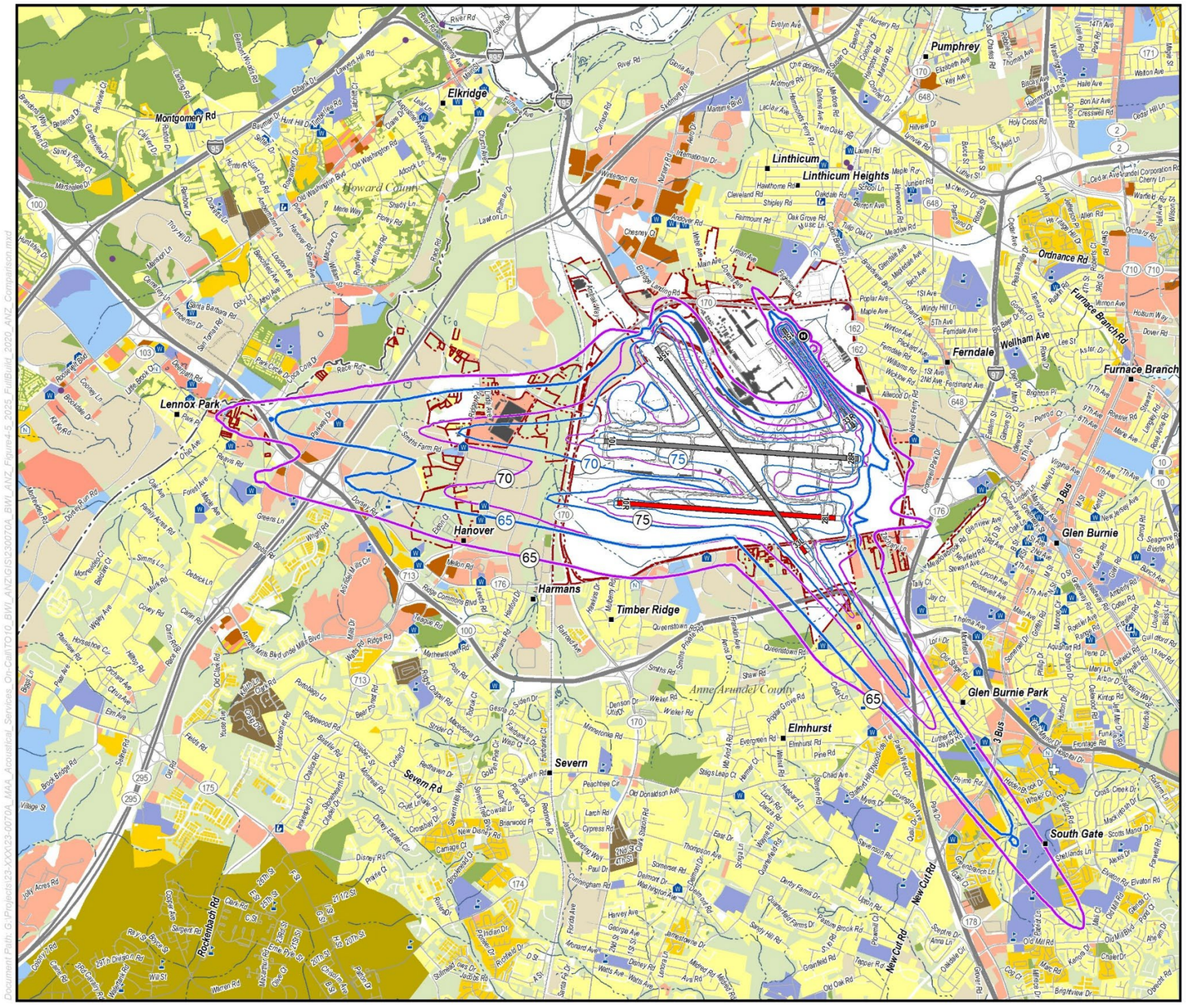
Figure 4-4
2025 ANZ Contours

- 2025 ANZ Contours
- MAA Property Boundary
- Runup Locations
- Helicopter Operation Area
- Runway
- Airport Buildings
- Airport Pavement Edge
- Airport Pavement Shoulder
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Residential Use
- Multi-Family Residential Use
- Mobile Home
- Transient Lodging
- Mixed Use
- Public Use (Non-Compatible)
- Public Use (Compatible)
- Water
- Military Use
- Commercial Use
- Manufacturing / Production
- Vacant / Undeveloped
- Recreational / Open Space
- Golf
- Transportation / Utility
- School
- Library
- Place of Worship
- Hospital / Health Care
- Nursing / Assisted Living
- Historic Place (NRHP)

Data Sources: Maryland Aviation Administration; Anne Arundel County Open Data Portal (https://opendata.aacounty.org/); Howard County MD (https://data.howardcountymd.gov/); Baltimore County Government Open Data Portal (https://opendata.baltimorecountymd.gov/); MDDOT (https://data-maryland.opendata.arcgis.com/pages/mdot-data); Environmental Systems Research Institute (ESRI); AirNav.com; HMMH Inc.

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Figure 4-4. BWI Marshall 2025 ANZ Contours



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Airport Noise Zone Update

Figure 4-5
2025 ANZ Compared to 2020 ANZ

- 2025 ANZ Contours
- 2020 ANZ Contours
- MAA Property Boundary
- Runup Locations
- Helicopter Operation Area
- Runway
- Future Runway / Extension
- Airport Buildings
- Airport Pavement Edge
- Airport Pavement Shoulder
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Residential Use
- Multi-Family Residential Use
- Mobile Home
- Transient Lodging
- Mixed Use
- Public Use (Non-Compatible)
- Public Use (Compatible)
- Water
- Military Use
- Commercial Use
- Manufacturing / Production
- Vacant / Undeveloped
- Recreational / Open Space
- Golf
- Transportation / Utility
- School
- Library
- Place of Worship
- Hospital / Health Care
- Nursing / Assisted Living
- Historic Place (NRHP)

Data Sources: Maryland Aviation Administration; Anne Arundel County Open Data Portal (https://opendata.aacounty.org/); Howard County MD (https://data.howardcountymd.gov/); Baltimore County Government Open Data Portal (https://opendata.baltimorecountymd.gov/); MDDOT (https://data-maryland.opendata.arcgis.com/pages/mdot-data); Environmental Systems Research Institute (ESRI); AirNav.com; HMMH Inc.

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Figure 4-5. 2025 ANZ Compared to 2020 ANZ

5. Noise Measurements

BWI Marshall ANOMS includes 24 permanent noise monitoring terminals (NMTs), weather sensors, flight tracking, noise complaint handling, and system integration software. The monitoring system collects flight track data to provide the MAA with information on historical flight paths and facilitate aircraft identification. The system collects noise measurements, determines noise events, and matches events with flight track data. The BWI Marshall ANOMS provides information on single noise events and calculates cumulative noise exposure from aircraft operations in the vicinity of BWI Marshall. MAA staff utilize the operations data to respond to noise complaints. The system also has an interactive web portal, WebTrak, for use by community members to view information about the MAA's permanent noise monitors and to file noise complaints, among other features.[17]

All noise monitors are certified as Type 1 Sound Level Meters, which implies that the noise monitors accurately measure noise to within ±1.5 dB.[18] Table 5-1 presents historical measured aircraft DNL levels for third and fourth quarters of 2024 and the first and second quarters of 2025.

Table 5-1. Measured Aircraft DNL Levels for Quarters 3 and 4 of 2024, Quarters 1 and 2 of 2025 at NMTs

NMT #[1]	Location	Q3 2024 Aircraft DNL	Q4 2024 Aircraft DNL	Q1 2025 Aircraft DNL	Q2 2025 Aircraft DNL
1	St. Augustine Church, Elkridge	45	44	46	51
5	Hebron-Harman Elementary, Hanover	50	47	46	50
6	Delmont United Methodist, Severn	53	52	51	54
7	Wicklow Woods, Ferndale	52	55	56	55
8	Richard H. Lee Elementary School, Glen Burnie	50	48	47	50
9	Maryland National Guard Armory, Glen Burnie	56	57	59	56
10	Margate Pumping Station, Glen Burnie	49	49	51	47
11	Jones Rd., Queenstown	69	69	68	70
12	Rippling Woods Elementary, Glen Burnie	61	63	62	62
13	Woodside Elementary, Glen Burnie	52	48	48	52
14	Runway 15R Approach	63	60	62	68
17	Timber Ridge Rd., Hanover	40	37	39	39
18	Runway 15L Approach	56	58	56	57
21	Glen Burnie Park Elementary, Glen Burnie	61	61	60	62
22	Lark Brown Road, Columbia	56	56	54	55
23	Quarterfield Elementary, Severn	60	58	57	60
24	Poplar Grove HOA, Elmhurst, Severn	49	47	46	47

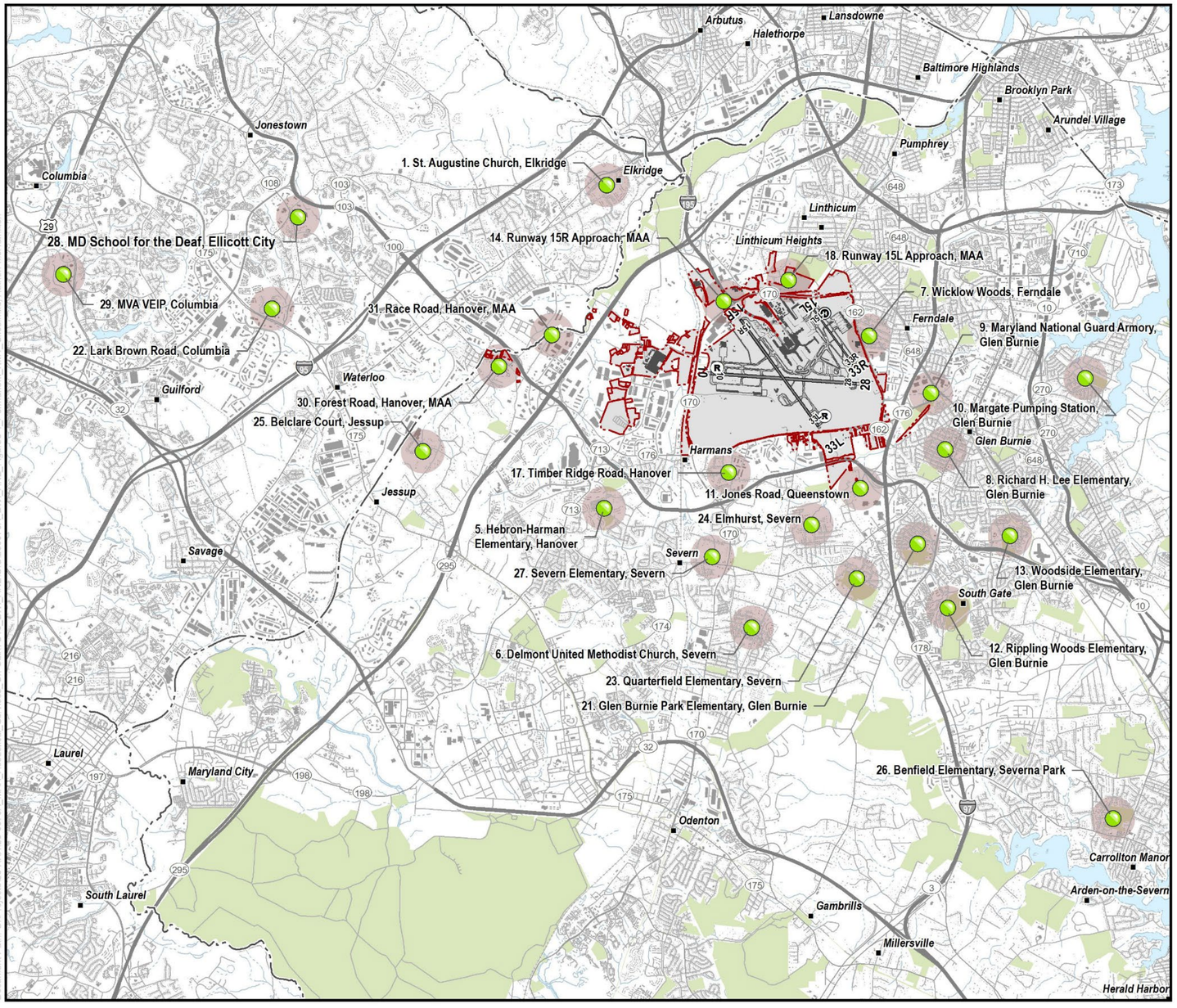
[17] MAA, *Aircraft Noise – Webtrack*, https://www.bwiairport.com/WebTrak

[18] Type 1 or Class 1 Sound Level Meters are designed to meet the requirements of the ANSI standards S1.4 and S1.43 and their equivalents of IEC 60651 and IEC 60804. The IEC 60651 and IEC 60804 have been superseded by IEC 61672-1:2002.

NMT #[1]	Location	Q3 2024 Aircraft DNL	Q4 2024 Aircraft DNL	Q1 2025 Aircraft DNL	Q2 2025 Aircraft DNL
25	Belclare Court, Jessup	52	54	52	53
26	Benfield Elementary, Severna Park	55	57	57	57
27	Severn Elementary School	48	43	51	48
28	Maryland School for the Deaf, Ellicott City	48	44	43	49
29	MDOT Motor Vehicle Administration, Columbia	52	52	49	49
30	Forest Ave, Hanover	64	64	62	63
31	Race Road, Hanover	61	62	60	60

Note:
[1] NMTs 2, 3, 4, 15, 16, 19, and 20 have been permanently decommissioned.
Source: MAA ANOMS 2024, 2025

Figure 5-1 shows the location of the existing NMT sites. Noise measurements are provided for informational purposes only. Noise measurements are not used to calibrate or verify the noise model.



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Figure 5-1

BWI Marshall Permanent Noise Monitor Locations

- NMT Location
- MAA Property Boundary
- Runup Locations
- Helicopter Operation Area
- Runway
- Airport Buildings
- Airport Pavement Edge
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Water

Data Sources: MDOT MAA; Anne Arundel County; Howard County; Baltimore County Government Open Data Portal; National Register of Historic Places (NRHP); Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

0 7,000 14,000 Feet

Figure 5-1. BWI Marshall Permanent Noise Monitor Locations

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Table 5-2 presents modeled annual data for the 2025 base year compared to the measured aircraft DNL levels for third and fourth quarters of 2024 and first and second quarters of 2025. Measured quarterly noise levels are unique to that three-month period and are not expected to result in an equivalent representation of the average of the events that would occur on an annual basis. The reasons for variations between measured and modeled values can include different percentages of aircraft flow (east or west) in each quarter when compared to the annual average. Additionally, noise monitors that average below the 65 dB DNL range are more easily influenced by community noise levels due to aircraft noise levels being relatively low.

It is critical to understand that measurements are historical and only document what has occurred; they are not predictive of future or expected noise levels. Modeled values are estimates generated by AEDT and reflect average annual daily operating conditions. Measured values may have non-aircraft noise source influence. The modeled base year DNL is representative of the modeled annual average day, not of any individual day or other measured time period.

Historical measured values and modeled results generally have good (within 3 dB) agreement with each other. NMTs that have historical measured levels close to 60 DNL and higher have the most similarity to the modeled levels. In general, modeled levels are higher than measured levels, indicating that the modeled noise levels provide a conservative estimate of actual noise.

Table 5-2. Measured Aircraft DNL Levels at NMTs Compared to 2025 Base Year Modeled DNL Levels at NMTs

NMT #[1]	Location	Q3 2024 Measured Aircraft DNL	Q4 2024 Measured Aircraft DNL	Q1 2025 Measured Aircraft DNL	Q2 2025 Measured Aircraft DNL	2025 Base Year Modeled Aircraft DNL
1	St. Augustine Church, Elkridge	45	44	46	51	49
5	Hebron-Harman Elementary, Hanover	50	47	46	50	53
6	Delmont United Methodist, Severn	53	52	51	54	54
7	Wicklow Woods, Ferndale	52	55	56	55	58
8	Richard H. Lee Elementary School, Glen Burnie	50	48	47	50	55
9	Maryland National Guard Armory, Glen Burnie	56	57	59	56	58
10	Margate Pumping Station, Glen Burnie	49	49	51	47	49
11	Jones Rd., Queenstown	69	69	68	70	70
12	Rippling Woods Elementary, Glen Burnie	61	63	62	62	64
13	Woodside Elementary, Glen Burnie	52	48	48	52	53
14	Runway 15R Approach	63	60	62	68	62
17	Timber Ridge Rd., Hanover	40	37	39	39	55
18	Runway 15L Approach	56	58	56	57	61
21	Glen Burnie Park Elementary, Glen Burnie	61	61	60	62	66
22	Lark Brown Road, Columbia	56	56	54	55	57
23	Quarterfield Elementary, Severn	60	58	57	60	59
24	Poplar Grove HOA, Elmhurst, Severn	49	47	46	47	56
25	Belclare Court, Jessup	52	54	52	53	55
26	Benfield Elementary, Severna Park	55	57	57	57	57
27	Severn Elementary School	48	43	51	48	52
28	Maryland School for the Deaf, Ellicott City	48	44	43	49	51

NMT #[1]	Location	Q3 2024 Measured Aircraft DNL	Q4 2024 Measured Aircraft DNL	Q1 2025 Measured Aircraft DNL	Q2 2025 Measured Aircraft DNL	2025 Base Year Modeled Aircraft DNL
29	MDOT Motor Vehicle Administration, Columbia	52	52	49	49	54
30	Forest Ave, Hanover	64	64	62	63	64
31	Race Road, Hanover	61	62	60	60	62

Sources: HMMH 2024, 2025; MAA ANOMS 2024, 2025

6. Noise Abatement Plan

Maryland state regulations regarding the ANZ process indicate that if an impacted land use area exists within a noise zone, the airport operator shall develop a noise abatement plan (NAP) to reduce the size of or eliminate the impacted land use area by altering the coverage of the noise zone through the application of the best available technology, at a reasonable cost, and without impairing safety of flight.[19]

In 1976, BWI Marshall adopted the first NAP, which was designed to minimize the noise of aircraft operations within the constraints of the Federal Air Traffic Control System and aircraft safety. The NAP was developed with the cooperation of airport users, the aviation industry, and local governments and is updated periodically. The NAP was reviewed and updated as part of the 2025 BWI Marshall ANZ update process to accurately reflect current operating conditions at BWI Marshall.

The NAP, which is developed by the MAA, includes the federal Noise Compatibility Program (NCP) voluntarily prepared by the MAA under Title 14 of the Code of Federal Regulations Part 150 (14 CFR Part 150, or Part 150) in 2006. The MAA submitted the NCP update to the FAA in August 2007, and the FAA provided a Record of Approval for the NCP on February 26, 2008. The 2007 NCP changes, as they affected the NAP, were discussed in the 2007 ANZ and reviewed in the 2020 ANZ. To secure federal funding for noise mitigation programs and to gain federal approval to implement certain noise abatement procedures, U.S. airports must develop a noise compatibility program under Part 150. Part 150 has two components: the Noise Exposure Maps (NEMs) and the NCP. In many areas, the NAP and the NCP overlap, though there are some differences due to different state and federal requirements.

In this update, notable changes to the NAP include the removal of references to the Interstate Visual 33L procedure, the addition of references to run-up authorization at the midfield cargo ramp and the MAA's Annual Noise and Operations Report, and additional detail on noise assistance programs. Other changes include the addition of a description of the preferential runway use program and discussions of the need for the preferential runway use, land use, and control of ground-based noise programs.

The BWI Marshall NAP is organized in two sections, noise abatement elements and land use elements, as explained in the subsections below.

6.1 Noise Abatement Elements

Noise abatement at BWI Marshall includes a wide variety of strategies that are intended to reduce noise impacts for communities around the Airport. Operational procedures, such as arrival and departure flight procedures and a preferential runway use system, are voluntary and are intended to direct aircraft operations over less populated areas when possible. The FAA Air Traffic Control Tower at BWI Marshall and Potomac Consolidated Terminal Radar Approach Control (TRACON) have primary responsibility for implementation of flight procedures and the preferential runway use system. Although encouraged to do

[19] Code of Maryland Regulations (COMAR) Title 11 Sections 03.03.04 and 03.01.12 and Sections 5-805, 5-806, and 5¬819 of the Transportation Article, Annotated Code of Maryland.

so, aircraft may not follow noise abatement procedures if deemed necessary by air traffic control (ATC) or flight crews to maintain operational safety.

The MAA manages ground noise generated by aircraft to reduce and minimize noise sources from airfield ramps and from maintenance operations, especially at night when ambient noise levels are lower in nearby communities. Additionally, the MAA has an established noise monitoring program using fixed and portable monitors, an online noise complaint portal, web-based flight tracking system known as "WebTrak", an email address, and a noise complaint hotline.

The following voluntary aircraft noise abatement procedures have been implemented by the MAA through the issuance of BWI Marshall Tenant Directives.[20]

6.1.1 Aircraft Noise Abatement Departure Procedures

Unless otherwise instructed by air traffic control or deviation is necessary to maintain operational safety or comply with published departure flight procedures, aircraft are to follow the noise abatement departure procedures detailed below:

a) Jet aircraft should commence departure turns for noise abatement utilizing specific distances based on either Distance Measuring Equipment (DME) from the BWI VHF Omni-directional Range Tactical Air Navigation (VORTAC), if equipped, or a distance from the departure end of the runway to reduce overflights over noise sensitive areas:

   a. Runway 15R - Two (2) DME or 1.7 nmi from the departure end of the runway when turning left, and one (1) DME or 0.7 nmi from the departure end of the runway when turning right.

   b. Runway 28 - Three (3) DME or 1.7 nmi from the departure end of the runway for all turns.

   c. Runway 10 - Two (2) DME or 1.6 nmi from the departure end of the runway for all turns.

b) Jet aircraft departures from Runway 33L will begin turns immediately upon becoming safely airborne, but not below 300 feet Above Ground Level (AGL) during Visual Flight Rules (VFR) conditions and not below 400 feet AGL during Instrument Flight Rules (IFR) conditions.

c) All aircraft departing Runway 33R to the north or east will maintain runway heading until one (1) nmi from the departure end of the runway before turning.

d) Multi-engine aircraft departing Runway 15L will maintain runway heading until 0.5 nmi from the departure end of the runway before turning.

The Aircraft Noise Abatement Departure Procedures are summarized in Table 6-1.

[20] https://marylandaviation.com/tenants/bwi-tenant-directives/

Table 6-1. Aircraft Noise Abatement Departure Procedures

Runway	Aircraft Type	Turn Direction	Distance	Notes
15R	Jet	Left	2 DME or 1.7 nmi from runway departure end	-
15R	Jet	Right	1 DME or 0.7 nmi from runway departure end	-
28	Jet	All	3 DME or 1.7 nmi from runway departure end	-
10	Jet	All	2 DME or 1.6 nmi from runway departure end	-
33L	Jet	ALL	Immediate Turns	VFR: Not below 300 feet AGL IFR: Not below 400 feet AGL
33R	All	North or East	Runway heading to 1 nmi from runway departure end	-
15L	Multi-Engine		Runway heading to 0.5 nmi from runway departure end	-

Definitions: AGL = Above Ground Level; DME = Distance Measuring Equipment; IFR = Instrument Flight Rules; nmi = nautical miles; VFR = Visual Flight Rules

6.1.2 Aircraft Noise Abatement Arrival Procedures

Unless instructed otherwise by air traffic control or if deviation is necessary to maintain operational safety or comply with published arrival flight procedures, aircraft are to follow the noise abatement arrival procedures detailed below:

a) Jet aircraft conducting visual approaches will turn onto final approach a minimum of four (4) nmi from the approach end of the runway.

b) All jet aircraft conducting visual approaches are expected to maintain 3,000 feet or above until 10 DME from the BWI VORTAC and, to the maximum extent possible, should remain at or above the Instrument Landing System (ILS) or Visual Approach Slope Indicator (VASI) for the landing runway, consistent with safe flight procedures.

6.1.3 Preferential Runway Use System

Preferential runways are designated runways used under specific conditions, such as during periods of low wind or when multiple runways are available, to minimize noise exposure to surrounding communities, enhance operational efficiency, or meet ATC requirements. By directing departures and arrivals over less populated areas, preferential runways help limit the number of people exposed to high noise levels. Since wind conditions usually dictate which runways are used, when winds are light, ATC can assign preferential runways to support noise abatement programs without compromising safety.

BWI Marshall's preferential runway use program is described below.

a) West operations, which concentrate jet departures on Runway 28, are preferred for noise abatement.

b) Runways 28 and 33L are the preferred runways for noise abatement between the hours of 2300 and 0500 local time. Traffic and weather permitting, aircraft should depart Runway 28 and arrive Runway 33L.

c) Runway 33R should not be assigned to departing aircraft from 2300 to 0500 local time. During these hours, Runway 15L should not be assigned to arriving aircraft except for unusual weather conditions, emergencies or medical flights requiring its use.

d) No touch-and-go and/or practice approaches are permitted on all runways by jet or turboprop aircraft between 2200 and 0700 local time unless approved by BWI Marshall Operations staff.

e) Noise Rule for Runway 15L/33R: Certain aircraft types, based on 14 CFR Part 36 certified noise levels or international equivalent, are restricted from use of Runway 15L/33R, except for emergencies or medical flights.[21] Prohibited aircraft are permitted and encouraged to use Runways 10/28 or 15R/33L.

6.1.4 Control of Ground-Based Noise Sources

Ground-based aircraft noise refers to noise generated while the aircraft is on the ground, as opposed to during takeoff, climb, or landing. It includes engine noise during idle and taxi, reverse thrust and aircraft braking, engine run-ups, and the use of Auxiliary Power Units (APUs) and other ground support equipment while parked.

BWI Marshall's measures to control ground-based noise are:

a) **Power-back Restrictions**: Reverse thrust power-back operations are limited to military aircraft on remote parking spots and are approved on a case-by-case basis by Airport Operations consistent with Tenant Directive 203.1.[22]

b) **Engine Maintenance Run-up Restrictions**: Maintenance engine run-up reporting procedures, locations, durations and prohibitions are restricted as described in Tenant Directive 501.1:[23]

> Prior permission must be obtained from the BWI Marshall Airport Operations Center. Permission shall be denied unless it can be shown that failure to conduct the run-up will delay departure of a scheduled passenger flight. A summary of engine maintenance run-up restrictions is contained in Table 6-2.

Table 6-2. Engine Maintenance Run-Up Restrictions

Location	Heading (degrees)	Duration
RWY 33L Hold Block	140-160	60 seconds or less
Runway 28 De-Ice Pad	190-220	60 seconds or less
Midfield Cargo Facility[1]	235 or 105	60 seconds or less

Notes:
Exempted run-ups must not exceed a total of five (5) minutes duration in intervals of 60 seconds or less.
Unless specifically exempted, run-ups are not authorized between 2300 and 0700.
[1] Midfield Cargo Facility use limited to Amazon contract carriers only.

[21] Any aircraft producing a value of 87.0 Effective Perceived Noise Level in decibels that is determined by averaging the take-off and sideline 14 CFR Part 36 certification measurements, is prohibited from operating on Runway 15L/33R, except for emergencies or medical flights. These certification values may be found in FAA AC 36-1H (or latest revision), the airplane's flight manual, or other suitable sources of the aircrafts' 14 CFR Part 36 noise level certification measurements. Prohibited aircraft are listed in BWI Marshall Tenant Directive 501.1.

[22] https://marylandaviation.com/wp-content/uploads/2020/07/TD-BWI-203.1.pdf

[23] https://marylandaviation.com/wp-content/uploads/2020/07/TD-BWI-501.1-BWI-Noise-Abatement-Plan-1.pdf

6.1.5 Continued Noise Monitoring

The MAA Office of Environmental Compliance and Sustainability, Noise Section, uses the following methods to provide continuous monitoring of BWI Marshall operations and noise concerns.

6.1.5.1 Noise Concerns

The MAA maintains a telephone service to enable citizens to register noise-related complaints regarding BWI Marshall aircraft operations at any time 24 hours per day, 7 days a week. The telephone number is 410-859-7021. Complaints are investigated if appropriate, and the complainant is provided with any relevant information. Complaints may also be provided via email to maanoiseabatement@bwiairport.com and via a noise complaint form available at https://complaint-us.emsbk.com/bwi6.

Additionally, citizens can monitor BWI Marshall aircraft operations and register complaints utilizing the MAA's WebTrak system (https://webtrak.emsbk.com/bwi3). WebTrak provides an interactive portal to view aircraft in the vicinity of BWI Marshall and Martin State Airport and provides the opportunity to submit noise complaints directly to the MAA. WebTrak includes aircraft type, altitude, origin and destination airports, and flight identification. WebTrak users can geolocate a place of interest (home, work, etc.) and view either current (16-minute delayed) or historical aircraft overflights. Complaints are investigated if appropriate and the complainant is provided with any relevant information following the investigation. Note: WebTrak does not include data on military aircraft flights or operations due to reasons of national security.

6.1.5.2 Airport Noise and Operations Monitoring System

The MAA has 24 permanent Noise Monitoring Terminals (NMTs) located within the communities surrounding BWI Marshall. The NMTs provide near real-time data on aircraft and community noise levels and NMT data is accessible through the WebTrak system.

The MAA also offers a residential portable monitoring program to interested homeowners. Upon request of a homeowner, the MAA provides noise monitoring equipment to measure noise levels in selected areas on a temporary basis (typically for a two-week period). The collected measurements are used to develop a report providing aircraft noise levels for each day, the percentage of east/west operations, and general information about noise measurements and airport operations. Portable Noise Monitoring Reports and applications for residential portable noise monitoring can be found online at the MAA's Aviation Noise website: https://marylandaviation.com/application-for-portable-noise-monitoring-form/.

6.1.5.3 Quarterly Report

The MAA prepares and publishes noise-related data for each quarter of the year. The report includes quarterly noise levels recorded by BWI Marshall's permanent NMT sites, aircraft operations levels, flight tracks, compliance with noise abatement procedures, runway utilization, and information regarding the numbers and locations of noise complaints. The quarterly report also includes details on the MAA's public outreach activities that were completed during each quarter, as well as information on the BWI Marshall ANZ and online resources available to residents for filing aircraft noise complaints and tracking BWI Marshall aircraft operations. BWI Marshall Quarterly Reports can be found online at the MAA's Aviation Noise website: https://marylandaviation.com/environmental/airport-noise/quarterly-noise-reports.

6.1.5.4 Annual Report

Beginning in 2025, the MAA prepares and publishes noise-related data for the previous year. The report includes annual data for noise levels recorded by BWI Marshall's permanent NMT sites, aircraft operations levels, flight tracks, compliance with noise abatement procedures, runway utilization, and information regarding the numbers and locations of noise complaints. The report also includes annual noise contours and flight track information. The Annual Reports can be found online at the MAA's Aviation Noise website: https://marylandaviation.com/environmental/airport-noise/quarterly-noise-reports.

6.2 Land Use Elements

Land use planning is a critical component of effective noise abatement strategies. Reductions in long-term exposure to disruptive or harmful sound levels can be achieved by locating homes, schools, hospitals, and other noise-sensitive land uses away from high-noise zones. Informed land use decisions not only help protect public health and well-being but also support regulatory compliance and minimize future conflicts.

6.2.1 Control of Incompatible Development

The State of Maryland established land use control programs to provide noise mitigation to known incompatible development areas and to prevent future incompatible development around BWI Marshall. These land use elements include the establishment of an ANZ and the provision of Noise Assistance Programs.

6.2.1.1 Airport Noise Zone (ANZ)

Maryland law requires the protection of citizens from the impact of transportation-related noise. COMAR requires the MAA to control incompatible land development in areas where noise levels are 65 dB DNL or more. To accomplish this, the MAA is required to develop and certify an ANZ that controls incompatible land development around BWI Marshall.

The BWI Marshall ANZ is depicted by noise contours surrounding BWI Marshall. These lines connect points of equal noise exposure and represent 65 dB, 70 dB, and 75 dB DNL noise contours up to 10 years in the future. These contours represent the boundaries for determining incompatible activities or land uses under Maryland regulations.[24] The State uses the noise contours adopted in the BWI Marshall ANZ to limit new development that would be incompatible with the cumulative noise exposure level acceptable for an area.

6.2.1.2 Board of Airport Zoning Appeals (BAZA)

The State of Maryland regulates land use within the BWI Marshall ANZ. Any person seeking to construct or modify a structure or land use within the ANZ is required to obtain an airport zoning permit. An application can be obtained from the MAA Office of Planning.[25] The MAA is required by law to approve or deny zoning permits based on the location relative to the BWI Marshall ANZ and the compatibility standards listed in Table 6-3.

[24] The applicable regulations governing control of incompatible land use at BWI can be found in Sections 11.03.03, 11.03.05, and 11.03.06 of Title 11, Transportation, Code of Maryland Regulations.

[25] https://www.marylandaviation.com/content/permitsandforms/constructionzoning/index.html

Table 6-3. Noise Compatibility Standards

Land Use	Areas Of Noise Compatibility (Noise Levels)
Residences, schools, hospitals, libraries, churches, auditoriums, rest homes, nursing homes, concert halls.	Up to 65 DNL
Transient lodging, hotels, motels, sports arenas, outdoor spectator sports, playgrounds, neighborhood parks, noise sensitive manufacturing.	Up to 70 DNL
Golf courses, riding stables, water recreation, cemeteries, office buildings, retail and wholesale establishments, movie theaters, restaurants, industry, manufacturing, utilities, livestock farming, animal breeding.	Up to 75 DNL
Agriculture (except livestock), mining, fishing, aviation related uses.	All

Source: Code of Maryland Regulations, Title 11. Department of Transportation, Subtitle 03. Maryland Aviation Administration, Chapter 11,03.03. Airport Noise Control Program, Sec. 11.03.03.03. Limits for Cumulative Noise Exposure: https://dsd.maryland.gov/regulations/Pages/11.03.03.03.aspx

For example, a person may wish to build a new housing development within the 65 dB DNL noise contour (i.e., within the ANZ). As the maximum limit for new residential land use is 65 dB DNL, the MAA would deny the permit application. In the event a permit application is denied by the MAA, the applicant may appeal to the Board of Airport Zoning Appeals (BAZA) for a variance. The BAZA was created in 1974 by the Maryland General Assembly and is composed of 10 citizen members appointed by the Governor. The BAZA may deny an appeal or grant a variance that would require the use of construction standards designed to reduce noise exposure to future occupants.

Under the current procedures, a house built within the ANZ would require a variance from BAZA. If the Board approves a variance, the applicant is typically required to meet the following conditions:

- Provide a report from an acoustical engineer demonstrating that the proposed construction will provide adequate sound insulation and achieve an interior noise level of 45 dB DNL.
- Agree to complete a post-construction noise test to demonstrate that the house meets the required interior noise level of 45 dB DNL.
- Agree not to apply for a Use and Occupancy Permit until BAZA approves the results of the post construction test.
- Agree to grant an avigation easement to the MAA that includes a provision relinquishing any right to receive remuneration or any other compensation or benefit under any program designed to allay, abate, or compensate for the effects of aircraft noise and emissions in connection with the operation of BWI Marshall.

Since the certification of the previous ANZ in April 2021, the BAZA has granted variances for five applications, including two single family homes and three public schools.

6.2.1.3 Noise Zone Notification in Real Estate Transactions

The MAA has undertaken efforts to help inform prospective homebuyers of a property's location within the BWI Marshall ANZ. An addendum form with required notices provided by the Anne Arundel County Association of Realtors includes language that provides notice that the subject property may be located within an ANZ and provides contact information for the MAA. The Howard County Notice and Disclosure

Addendum directs those that may be concerned about the existence of airports or heliports in the vicinity of the subject property to contact the Howard County Zoning Office.

6.2.2 Noise Assistance Programs

The MAA has established and administered noise assistance programs for residents and schools located in the BWI Marshall ANZ. These programs are intended to reduce the numbers of affected properties and the noise impacts for individuals, homes, and schools adversely affected by aircraft noise.

6.2.2.1 Voluntary Residential Property Acquisition Program

In 1985, the MAA instituted a program to voluntarily acquire residential properties with cumulative noise levels of 75 dB DNL and greater. The Voluntary Residential Property Acquisition program applies to eligible properties that have been zoned non-residential by local government. This program was expanded in 1988 to select properties that are exposed to cumulative noise levels of 70-75 dB DNL, provided the area has been zoned by local government to transition from residential to a noise compatible use; the MAA offers voluntary purchase and relocation to expedite transition to a compatible land use. Further expansion occurred in 2008 to include cumulative noise levels of 65 dB DNL as defined by the current FAA-accepted Part 150 NEM contour. Large residential properties where the owners have reasonable opportunities for non-residential resale without state or federal assistance are excluded from the program. Property owners who elect to participate are paid full market value for their property at its highest and best use and provided relocation assistance in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970. This program is subject to other federal laws, regulations, and guidelines.

As of 2025, 211 properties have been voluntarily acquired.

6.2.2.2 Homeowners Assistance Program

In 1988, the MAA began the Homeowners Assistance Program to offer sound insulation or resale assurance to homeowners residing in communities that are exposed to cumulative noise of 70-75 dB DNL and who are not eligible for the Voluntary Residential Property Acquisition Program. This voluntary program includes a Residential Sound Insulation Program and a Resale Assurance Program. Eligibility is determined by the location of the home with respect to the FAA-accepted NEM prepared under the 14 CFR Part 150 program, as well as other determinations such as the existing noise level reduction of the home and funding availability. In 2008, this program was further expanded to cumulative noise levels of 65 dB DNL as defined by the current FAA-accepted Part 150 NEM contour.

Under the Homeowners Assistance Program, the MAA assists eligible homeowners by making modifications to their houses with a goal of reducing interior noise levels to an average of 45 dB DNL. The type and extent of the improvements depend upon the noise reduction capabilities of the existing structure. Participation in the Homeowners Assistance Program is contingent upon the homeowner entering into a contract and granting the State an avigation easement per state law. The easement permits aircraft operations, noise and other effects of flight over and on a property and is binding upon future owners of the property. Participating properties are ineligible for participation in other assistance programs. This program is also subject to other federal laws, regulations, grant requirements and guidelines.

The Resale Assurance Program has been discontinued as of 2008.

7. Public Consultation

The ANZ update process included multiple public consultation efforts to ensure that BWI Marshall stakeholder input is reflected in the resulting ANZ contour and NAP documentation. This public involvement component included two major initiatives: (1) voluntarily forming and convening a Stakeholder Advisory Committee (SAC) and (2) conducting a public workshop and hearing.

7.1 Stakeholder Advisory Committee (SAC)

The SAC was formed to include representatives of community and industry stakeholder groups with an interest in airport activities to ensure they were kept informed of the 2025 BWI Marshall ANZ update process and methodology. Members of the SAC were invited to participate throughout the BWI Marshall ANZ update process by attending meetings and providing input on the process. SAC members were expected to share pertinent BWI Marshall ANZ update information with the groups or any interested citizens that they represent.

The SAC served in an advisory role to the MAA solely for purposes of the BWI Marshall ANZ update process. The SAC was composed of stakeholders representing all significant interests at BWI Marshall, including representatives from:

- Local government planning staff
- Community organizations
- DC Metroplex BWI Community Roundtable
- FAA Air Traffic Control Tower at BWI Marshall
- BWI Marshall tenants, including aircraft operators and airlines

The MAA encouraged SAC members to review study inputs, assumptions, analyses, and documentation. They were also encouraged to provide input, advice, and guidance related to the ANZ and NAP. SAC members were asked to review the land use inventory and planning considerations.

The SAC was convened three times to discuss major milestones in the ANZ update process. The first meeting of the BWI Marshall ANZ SAC was held on April 3, 2025 from 6 to 8 p.m. The meeting was held at the MAA offices located at 991 Corporate Boulevard, Linthicum, Maryland. During the first meeting, the MAA presented the purpose and objectives of the update process, roles and responsibilities of SAC members, and an overview of noise fundamentals and noise modeling inputs.

The second SAC meeting was held on June 25, 2025 from 6 to 8 p.m. at the same location. During the second meeting, the noise inputs were reviewed in detail and the existing NAP was reviewed and discussed. Prior to the second meeting, technical inputs to the noise model were shared with all SAC members for review.

The third SAC meeting was held on September 24, 2025, again at MAA offices. The presentation covered the results of the study, including a review of the contours and a summary of proposed updates to the BWI Marshall NAP, as well as an overview of the process to incorporate the ANZ update into COMAR.

All meeting materials, including the SAC committee roster, meeting invitations, sign-in sheets, meeting minutes, and presentations, are included in Appendix C.

7.2 Public Workshop and Hearing

As required by Maryland law, a public workshop and hearing concerning the 2025 BWI Marshall ANZ was held on March 19, 2026. The public workshop and hearing offered all interested people an opportunity to comment on proposed revisions to the BWI Marshall ANZ and NAP.

Two public workshops and hearings were held on March 19, 2026, from 3 p.m. to 5 p.m. and 6 p.m. to 8 p.m. at 991 Corporate Boulevard, Linthicum, Maryland. During the workshop, MAA and HMMH staff were available to discuss the BWI Marshall ANZ update process and outcomes, and public comments on the MAA's 2025 BWI Marshall ANZ and NAP were accepted during the hearing via a court reporter. Additional public comments were accepted via email or postal mail until April 20, 2026. Information concerning the public workshop and hearing is available at the MAA's Aviation Noise website: https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone.

Public Hearing and Workshop Information					
Date:	March 19, 2026	**Time:**	3:00 – 5:00 p.m. EST 6:00 – 8:00 p.m. EST	**Location:**	991 Corporate Boulevard Linthicum, MD

The MAA considered all oral and written comments received during the public comment period. Notification in the Maryland Register formally adopted the 2025 ANZ and NAP. The MAA certified and submitted the adopted ANZ to the Baltimore County Land Record Officer for use in land use planning and development.

The public workshop materials are provided in Appendix E, including documentation of public notices, invitations, attendance information, and presentation materials. Appendix F contains documentation of and the MAA's response to public comments received during the public meetings and during the comment period.

MARYLAND DEPARTMENT OF TRANSPORTATION

MARYLAND AVIATION ADMINISTRATION

2025 Airport Noise Zone Update

Appendices

Baltimore/Washington International Thurgood Marshall Airport

BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

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Appendix A. Aircraft Noise Terminology

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Noise is a complex physical quantity. The properties, measurement, and presentation of noise involve specialized terminology that can be difficult to understand. To provide a basic reference on these technical issues, this section introduces fundamentals of noise terminology, the effects of noise on human activity, and noise propagation.

A.1 Introduction to Noise Terminology

Analyses of potential impacts from changes in aircraft noise levels rely largely on a measure of cumulative noise exposure over an entire calendar year, expressed in terms of a metric called the Day-Night Average Sound Level (DNL/L_{dn}). However, DNL is not the only metric for measuring noise. A variety of metrics, which are further described in subsequent subsections, are used to describe noise, including:

- Sound Pressure Level, SPL, and the decibel, dB
- A-Weighted Decibel, dBA
- Maximum A-Weighted Sound Level, L_{max}
- Time Above, TA
- Sound Exposure Level, SEL
- Equivalent A-Weighted Sound Level, L_{eq}
- Day-Night Average Sound Level, DNL/L_{dn}

A.2 Sound Pressure Level, SPL, and the Decibel, dB

All sounds come from a sound source—a musical instrument, a voice speaking, an airplane passing overhead. It takes energy to produce sound. The sound energy produced by any sound source travels through the air in sound waves—tiny, quick oscillations of pressure just above and just below atmospheric pressure. The ear senses these pressure variations and, with much processing in our brain, translates them into "sound."

Our ears are sensitive to a wide range of sound pressures. The loudest sounds that we can hear without pain contain about one million times more energy than the quietest sounds we can detect. To allow us to perceive sound over this very wide range, our ear/brain "auditory system" compresses our response in a complex manner, represented by a term called sound pressure level (SPL), which is expressed in units called decibels (dB).

Mathematically, SPL is a logarithmic quantity based on the ratio of two sound pressures: the numerator being the pressure of the sound source of interest (P_{source}) and the denominator being a reference pressure ($P_{reference}$).[1]

$$\textit{Sound Pressure Level (SPL)} = 20 * Log\left(\frac{P_{source}}{P_{reference}}\right) dB$$

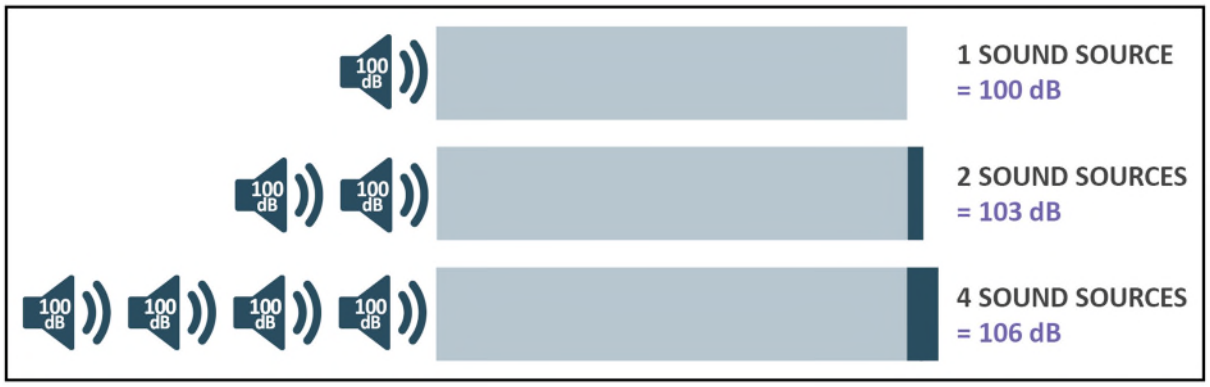
The logarithmic conversion of sound pressure to SPL means that the quietest sound that we can hear (the reference pressure) has a sound pressure level of about 0 dB, while the loudest sounds that we hear

[1] The reference pressure is approximately the quietest sound that a healthy young adult can hear.

without pain have sound pressure levels of about 120 dB. Most sounds in our day-to-day environment have sound pressure levels from about 40 to 100 dB.[2]

Because decibels are logarithmic quantities, we cannot use common arithmetic to combine them. For example, if two sound sources each produce 100 dB operating individually, when they operate simultaneously, they produce 103 dB, not the 200 dB we might expect. Increasing to four equal sources operating simultaneously will add another 3 dB of noise, resulting in a total SPL of 106 dB. For every doubling of the number of equal sources, the SPL increases by another 3 dB. This is illustrated in **Figure A-1**.

Figure A-1. Combined Sound Levels for Equal Sources



If one noise source is much louder than another is, the louder source "masks" the quieter one and the two sources together produce virtually the same SPL as the louder source alone. For example, a 100 dB and an 80 dB source produce approximately 100 dB of noise when operating together.

Two useful “rules of thumb” related to SPL are worth noting: (1) humans generally perceive a 6 to 10 dB increase in SPL to be about a doubling of loudness,[3] and (2) changes in SPL of less than about 3 dB for a particular sound are not readily detectable outside of a laboratory environment.

A.3 A-Weighted Decibel

An important characteristic of sound is its frequency, or "pitch.” This is the per-second oscillation rate of the sound pressure variation at our ear, expressed in units known as Hertz (Hz).

When analyzing the total noise of any source, acousticians often break the noise into frequency components (or bands) to consider the “low,” “medium,” and “high” frequency components. This breakdown is important for two reasons:

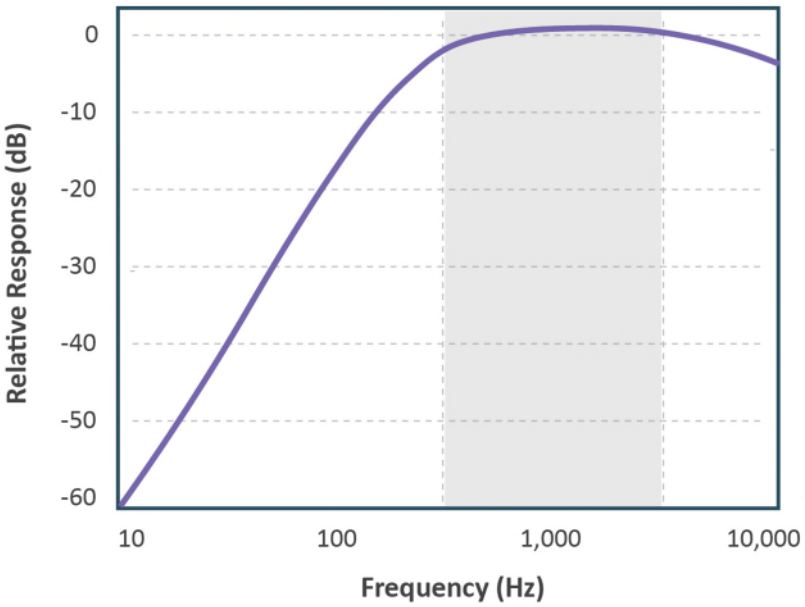
- Our ear is better equipped to hear middle and high frequencies and is least sensitive to lower frequencies. Thus, we find mid- and high-frequency noise more annoying.
- Engineering solutions to noise problems differ with frequency content. Low-frequency noise is generally harder to control.

[2] The logarithmic ratio used in its calculation means that SPL changes relatively quickly at low sound pressures and more slowly at high pressures. This relationship matches human detection of changes in pressure. We are much more sensitive to changes in level when the SPL is low (for example, hearing a baby crying in a distant bedroom), than we are to changes in level when the SPL is high (for example, when listening to highly amplified music).
[3] A “10 dB per doubling” rule of thumb is the most often used approximation.

The normal frequency range of hearing for most people extends from a low of about 20 Hz to a high of about 10,000 to 15,000 Hz. Most people respond to sound most readily when the predominant frequency is in the range of normal conversation, typically around 1,000 to 2,000 Hz. The acoustical community has defined several “filters,” which approximate this sensitivity of our ear and thus, help us to judge the relative loudness of various sounds made up of many different frequencies.

The so-called "A" filter (“A weighting”) generally does the best job of matching human response to most environmental noise sources, including natural sounds and sound from common transportation sources. “A-weighted decibels” are abbreviated “dBA.” Because of the correlation with our hearing, the U. S. Environmental Protection Agency (EPA) and nearly every other federal and state agency have adopted A-weighted decibels as the metric for use in describing environmental and transportation noise. **Figure A-2** depicts A-weighting adjustments to sound from approximately 20 Hz to 10,000 Hz.

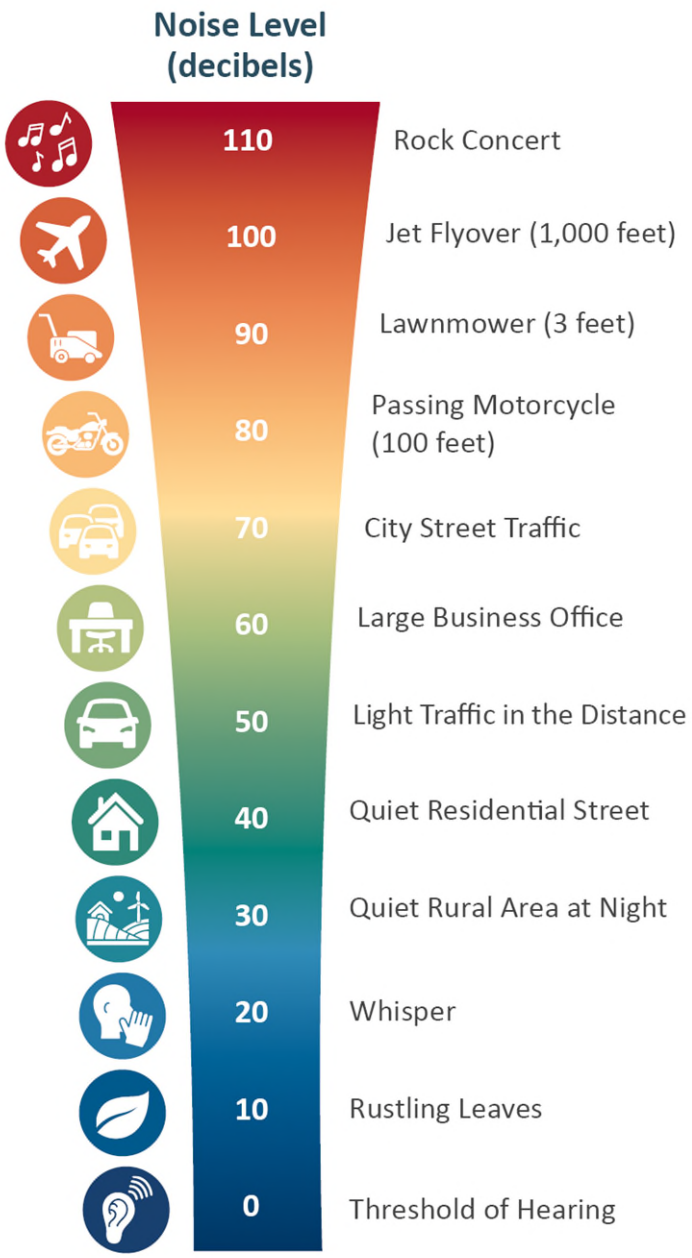
Figure A-2. A-Weighting Frequency Response



As the figure shows, A-weighting significantly de-emphasizes noise content at lower and higher frequencies where we do not hear as well, and has little effect, or is nearly "flat,” for mid-range frequencies between 1,000 and 5,000 Hz. All sound pressure levels presented in this document are A-weighted unless otherwise specified.

Figure A-3 depicts representative A-weighted sound levels for a variety of common sounds.

Figure A-3. A-Weighted Sound Levels for Common Sounds

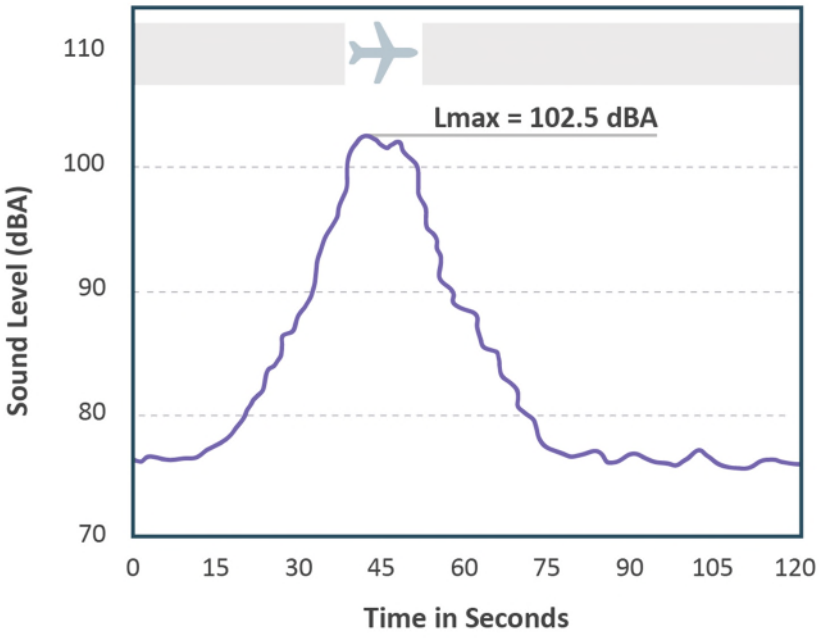


A.4 Maximum A-Weighted Sound Level, L_{max}

An additional dimension to environmental noise is that A-weighted levels vary with time. For example, the sound level increases as a car or aircraft approaches, then falls and blends into the background as the aircraft recedes into the distance. The background or “ambient” level continues to vary in the absence of a distinctive source, for example, due to birds chirping, insects buzzing, or leaves rustling. It is often convenient to describe a particular noise "event" (such as a vehicle passing by, a dog barking, etc.) by its maximum sound level, abbreviated as L_{max}.

Figure A-4 depicts this general concept, for a hypothetical noise event with an L_{max} of approximately 102 dB.

Figure A-4. Variation in A-Weighted Sound Level over Time and Maximum Noise Level



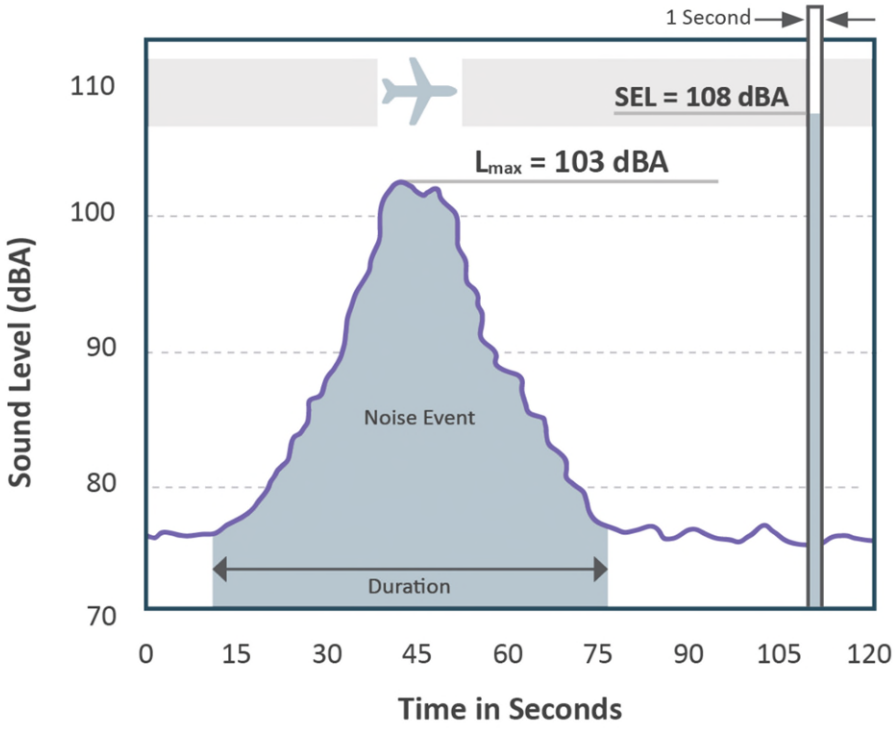
While the maximum level is easy to understand, it suffers from a serious drawback when used to describe the relative "noisiness" of an event such as an aircraft flyover, i.e., it describes only one dimension of the event and provides no information on the event's overall, or cumulative, noise exposure. In fact, two events with identical maximum levels may produce very different total exposures. One may be of very short duration, while the other may continue for an extended period and be judged to be much more annoying. The next section introduces a measure that accounts for this concept of a noise "dose," or the cumulative exposure associated with an individual "noise event" such as an aircraft flyover.

A.5 Sound Exposure Level, SEL

The most commonly used measure of cumulative noise exposure for an individual noise event, such as an aircraft flyover, is the Sound Exposure Level, or SEL. SEL is a summation of the A-weighted sound energy over the entire duration of a noise event. SEL expresses the accumulated energy in terms of the one-second-long steady-state sound level that would contain the same amount of energy as the actual time-varying level.

SEL provides a basis for comparing noise events that generally match our impression of their overall "noisiness," including the effects of both duration and level. The higher the SEL, the more annoying a noise event is likely to be. In simple terms, SEL "compresses" the energy for the noise event into a single second. **Figure A-5** depicts this compression. Note that the SEL is higher than the L_{max}.

Figure A-5. Graphical Depiction of Sound Exposure Level



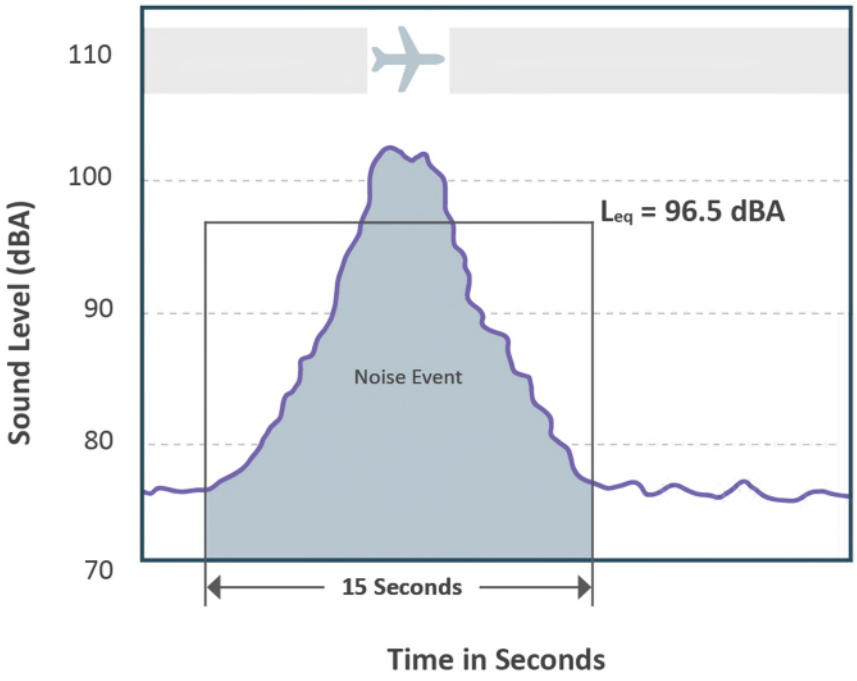
The "compression" of energy into 1 second means that a given noise event's SEL will almost always will be a higher value than its L_{max}. For most aircraft flyovers, SEL is roughly 5 to 12 dB higher than L_{max}. Adjustment for duration means that relatively slow and quiet propeller aircraft can have the same or higher SEL than faster, louder jets, which produce shorter duration events.

A.6 Equivalent A-Weighted Sound Level, L_{eq}

The Equivalent Sound Level, abbreviated L_{eq}, is a measure of the exposure resulting from the accumulation of sound levels over a particular period of interest, e.g., 1 hour, an 8-hour school day, nighttime, or a full 24-hour day. L_{eq} plots for consecutive hours can help illustrate how the noise dose rises and falls over a day or how a few loud aircraft significantly affect some hours.

L_{eq} may be thought of as the constant sound level over the period of interest that would contain as much sound energy as the actual varying level. It is a way of assigning a single number to a time-varying sound level. **Figure A-6** illustrates this concept for the same hypothetical event shown in **Figure A-4** and **A-5**. Note that the L_{eq} is lower than either the L_{max} or SEL.

Figure A-6. Example of a 15-Second Equivalent Sound Level



A.7 Day-Night Average Sound Level, DNL or L_{dn}

The FAA requires that airports use a measure of noise exposure that is slightly more complicated than L_{eq} to describe cumulative noise exposure—the Day-Night Average Sound Level or DNL.

The EPA identified DNL as the most appropriate means of evaluating airport noise based on the following considerations.[4]

- The measure should be applicable to the evaluation of pervasive long-term noise in various defined areas and under various conditions over long periods.
- The measure should correlate well with known effects of the noise environment and on individuals and the public.
- The measure should be simple, practical, and accurate. In principle, it should be useful for planning as well as for enforcement or monitoring purposes.
- The required measurement equipment, with standard characteristics, should be commercially available.
- The measure should be closely related to existing methods currently in use.
- The single measure of noise at a given location should be predictable, within an acceptable tolerance, from knowledge of the physical events producing the noise.
- The measure should lend itself to small, simple monitors, which can be left unattended in public areas for long periods.

[4] EPA. 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, EPA Report No. 550/9-74-004. Washington D.C.: EPA. March.

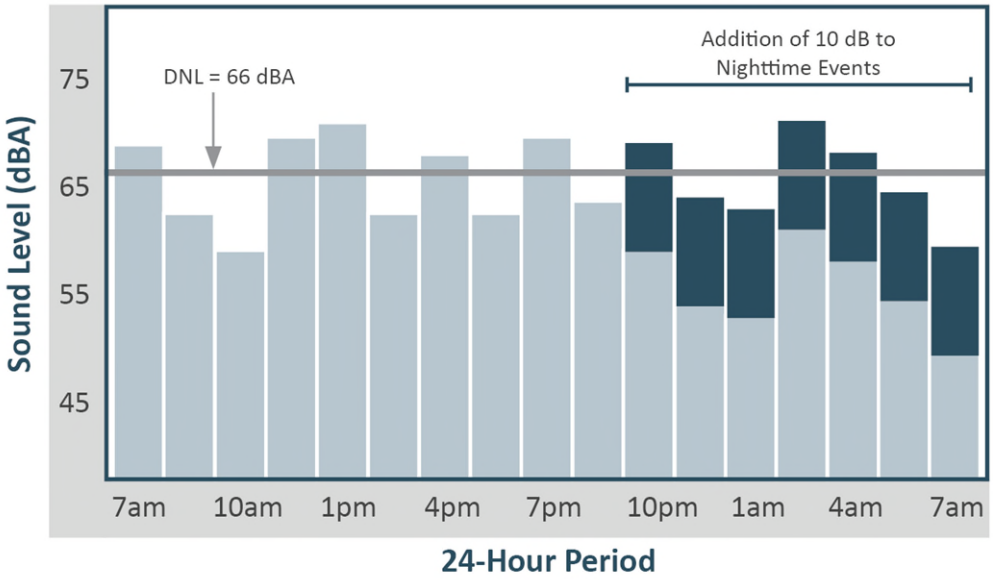
Most federal agencies dealing with noise have formally adopted DNL. The Federal Interagency Committee on Noise (FICON) reaffirmed the appropriateness of DNL in 1992. The FICON summary report stated, "There are no new descriptors or metrics of sufficient scientific standing to substitute for the present DNL cumulative noise exposure metric."[5] This determination was reaffirmed in 2018 in a report from the Federal Interagency Committee on Aviation Noise (FICAN), the successor to FICON. Additionally, in response to a requirement in the FAA Reauthorization Act of 2018 stating that the FAA "evaluate alternative noise metrics to current average day-night level standard, such as the use of actual noise sampling to address community airplane noise concerns",[6] in 2020 the FAA published a report that recommended the continued use of DNL for its decision-making regarding noise compatibility.

In simple terms, DNL is the 24-hour L_{eq} with one adjustment: all noises occurring at night (defined as 10 p.m. through 7 a.m.) are increased by 10 dB to reflect the added intrusiveness of nighttime noise events when background noise levels decrease. In calculating aircraft exposure, this 10 dB increase is mathematically identical to counting each nighttime aircraft noise event 10 times.

DNL can be measured or estimated. Measurements are practical only for obtaining DNL values for limited numbers of points, and, in the absence of a permanently installed monitoring system, only for relatively short periods. Most airport noise studies use computer-generated DNL estimates depicted as equal-exposure noise contours (much as topographic maps have contours of equal elevation).

The annual DNL is mathematically identical to the DNL for the average annual day, i.e., a day on which the number of operations is equal to the annual total divided by 365 (366 in a leap year). **Figure A-7** graphically depicts the manner in which the nighttime adjustment applies in calculating DNL.

Figure A-7. Example of a Day-Night Average Sound Level Calculation



[5] FICON. 1992. Federal Agency Review of Selected Airport Noise Analysis Issues. FICON. August. https://www.faa.gov/fican/about_ficon_findings_1992.pdf

[6] FAA Reauthorization Act of 2018, Pub. L. 115254, § 188, 132 Stat. 3186, https://www.congress.gov/115/plaws/publ254/PLAW-115publ254.pdf

A.8 Aircraft Noise Effects on Human Activity

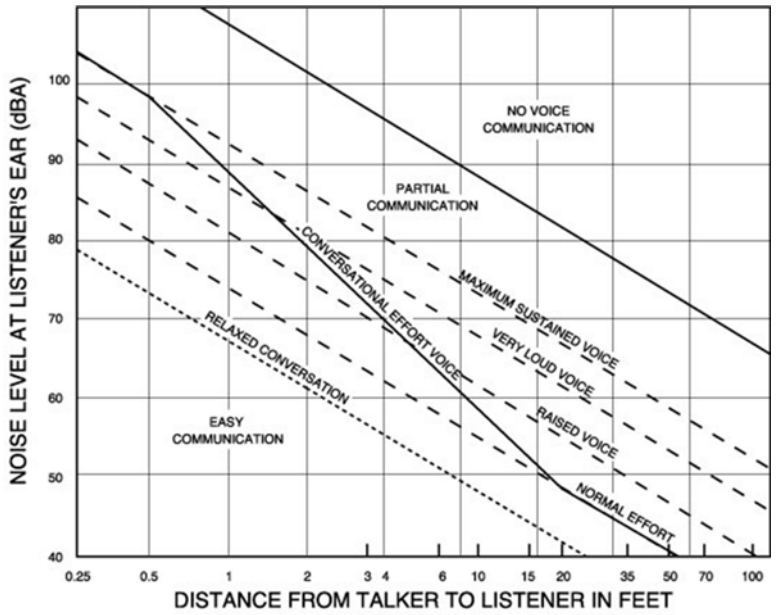
Aircraft noise can be an annoyance and a nuisance. It can interfere with conversation and listening to television, disrupt classroom activities in schools, and disrupt sleep. Relating these effects to specific noise metrics helps in the understanding of how and why people react to their environment.

Speech Interference

One potential effect of aircraft noise is its tendency to "mask" speech, making it difficult to carry on a normal conversation. The sound level of speech decreases as the distance between a talker and listener increases. As the background sound level increases, it becomes harder to hear speech.

Figure A-8 presents typical distances between talker and listener for satisfactory outdoor conversations, in the presence of different steady A-weighted background noise levels for raised, normal, and relaxed voice effort. As the background level increases, the talker must raise their voice, or the individuals must get closer together to continue talking.

Figure A-8. Outdoor Speech Intelligibility



Source: EPA, 1974, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*, March, p.D-5.

Satisfactory conversation does not always require hearing every word; 95 percent intelligibility is acceptable for many conversations. In relaxed conversation, however, we have higher expectations of hearing speech and generally require closer to 100 percent intelligibility. Any combination of talker-listener distances and background noise that falls below the bottom line in the figure (which roughly represents the upper boundary of 100 percent intelligibility) represents an ideal environment for outdoor speech communication. Indoor communication is generally acceptable in this region as well.

One implication of the relationships in **Figure A-8** is that for typical communication distances of 3 or 4 feet, acceptable outdoor conversations can be carried on in a normal voice as long as the background noise outdoors is less than about 65 dB. If the noise exceeds this level, as might occur when an aircraft passes

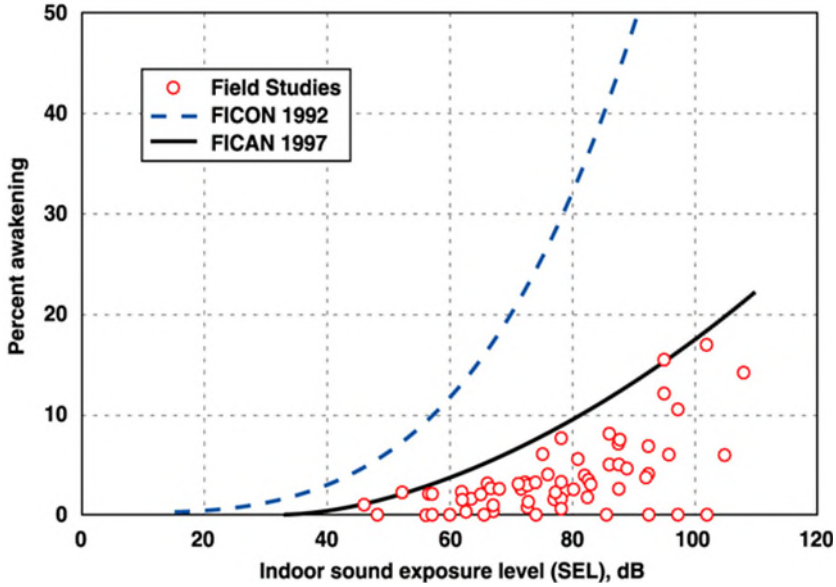
overhead, intelligibility would be lost unless vocal effort were increased or communication distance were decreased.

Indoors, typical distances, voice levels, and intelligibility expectations generally require a background level less than 45 dB. With windows partly open, housing generally provides about 10 to 15 dB of interior-to-exterior noise level reduction. Thus, if the outdoor sound level is 60 dB or less, there is a reasonable chance that the resulting indoor sound level will afford acceptable interior conversation. With windows closed, 24 dB of attenuation is typical.

Sleep Interference

Research on sleep disruption from noise has led to widely varying observations. In part, this is because (1) sleep can be disturbed without awakening, (2) the deeper the sleep the more noise it takes to cause arousal, and (3) the tendency to awaken increases with age and other factors. **Figure A-9** shows a summary of findings on the topic.

Figure A-9. Sleep Interference



Source: FICAN, 1997, *Effects of Aviation Noise on Awakenings from Sleep*, June, p. 6

Figure A-9 uses indoor SEL as the measure of noise exposure; current research supports the use of this metric in assessing sleep disruption. An indoor SEL of 80 dBA results in a maximum of 10 percent awakening.

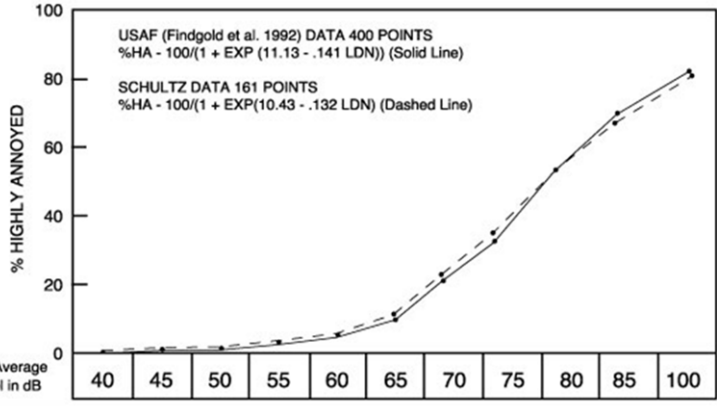
Community Annoyance

Numerous psychoacoustic surveys provide substantial evidence that individual reactions to noise vary widely with noise exposure level. Since the early 1970s, researchers have determined (and subsequently confirmed) that aggregate community response is generally predictable and relates reasonably well to cumulative noise exposure such as DNL. COMAR provides methods for the calculation of noise exposure including metrics and measurement methods.[7] **Figure A-10** depicts the widely recognized relationship

[7] COMAR. 11.03.03.02. Methods for Calculation and Measurement of Levels of Cumulative Noise Exposure. http://mdrules.elaws.us/comar/11.03.03.02

between environmental noise and the percentage of people "highly annoyed," with annoyance being the key indicator of community response usually cited in this body of research. This relationship is commonly referred to as the Schultz curve and has formed the basis for the significance threshold of DNL 65 dB.

Figure A-10. Percentage of People Highly Annoyed

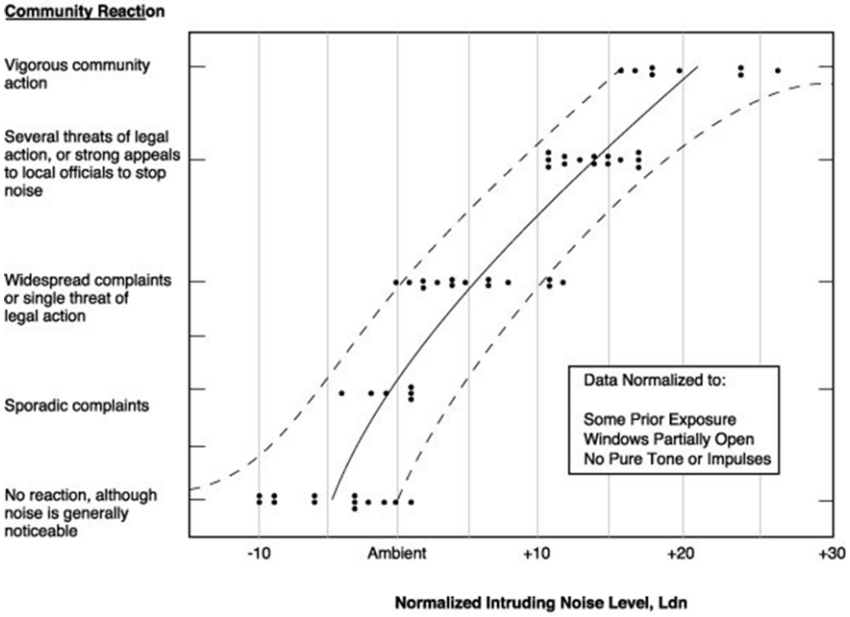


Day - Night Average Sound Level in dB		40	45	50	55	60	65	70	75	80	85	100
Calculated %HA Points	USAF	0.41	0.831	1.66	3.31	6.48	12.29	22.1	36.47	53.74	70.16	82.64
	SCHULTZ	0.576	1.11	2.12	4.03	7.52	13.59	23.32	37.05	53.25	68.78	81

Source: FICON, 1992, *Federal Agency Review of Selected Airport Noise Analysis Issues*, September

Separate work by the EPA has shown that overall community reaction to a noise environment also depends on DNL. **Figure A-11** depicts this relationship. Data summarized in the figure suggest that little reaction would be expected for intrusive noise levels five decibels below the ambient level, while widespread complaints can be expected as intruding noise exceeds background levels by about five decibels. Vigorous action is likely when levels exceed the background by 20 dB.

Figure A-11. Community Reaction as a Function of Outdoor DNL

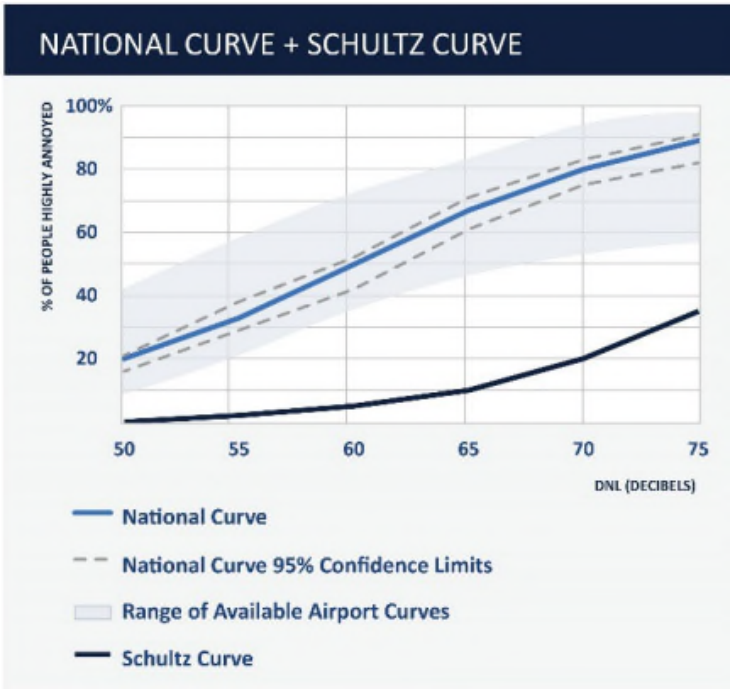


Source: Wyle Laboratories, 1971, *Community Noise*, prepared for the U.S. Environmental Protection Agency, Office of Noise Abatement and Control, Washington, D.C., December, p. 63

In 2017, the FAA initiated the Neighborhood Environmental Survey (NES), a multi-year research program to update scientific evidence on the relationship between aircraft noise exposure and its effects on communities around airports. The NES resulted in an updated dose-response curve for the percentage of people highly annoyed by environmental noise at varying levels of DNL. This updated curve shows a marked increase in the number of people highly annoyed by environmental noise at a given DNL compared to the Schultz curve, as shown in **Figure A-12**. The analysis of the NES data, published in 2021, notes that the Schultz curve is over 40 years old and aircraft operational environment at the time of Schultz's work was very different from today, with louder and less frequent operations.[8]

In 2023, the FAA initiated a review of its policies regarding civil aviation noise in response to public and stakeholder input on the FAA's ongoing research. This National Policy Review (NPR) includes a review of research on the effects of exposure to aviation noise and review and possible revision of the noise metrics used to describe exposure to aircraft and vehicle noise, the defined thresholds for significant noise exposure, and thresholds for land uses compatible with airport operations.[9] Specifically, the FAA is reviewing the use of DNL as the primary noise metric for cumulative aircraft noise exposure, as well as the threshold of DNL 65 dB for significant noise effects and land use compatibility.

Figure A-12. Comparison of Dose-Response Curves for Annoyance at a Given DNL



Source: FAA, 2023, Noise Policy Review, *The Foundational Elements of the FAA Civil Aviation Noise Policy: The Noise Measurement System, its Component Noise Metrics, and Noise Thresholds*, FAA Office of Environment and Energy, April 28

[8] FAA. 2021. Neighborhood Environmental Survey (NES) Technical Report. Washington, DC: U.S. Department of Transportation. January 2021, updated February 2021. https://www.faa.gov/regulations_policies/policy_guidance/noise/survey.

[9] FAA. 2023. *The Foundational Elements of the Federal Aviation Administration Civil Aviation Noise Policy: The Noise Measurement System, its Component Noise Metrics, and Noise Thresholds*. Washington, DC: U.S. Department of Transportation, April. https://www.faa.gov/sites/faa.gov/files/FAA-2023-0855-0002_attachment_1_0.pdf

A.9 Noise Propagation

This section presents information on sound-propagation effect due to weather, source-to-listener distance, and vegetation.

A.10 Weather-Related Effects

Weather (or atmospheric) conditions that can influence the propagation of sound include humidity, precipitation, temperature, wind, and turbulence (or gustiness). The effect of wind—turbulence in particular—is generally more important than the effects of other factors. Under calm wind conditions, the importance of temperature (in particular vertical "gradients") can increase, sometimes to very significant levels. Humidity generally has little significance relative to the other effects.

Influence of Humidity and Precipitation

Humidity and precipitation rarely affect sound propagation in a significant manner. Humidity can reduce propagation of high-frequency noise under calm-wind conditions. This is called "atmospheric absorption." In very cold conditions, listeners often observe that aircraft sound "tinny" because the dry air increases the propagation of high-frequency sound. Rain, snow, and fog also have little, if any noticeable effect on sound propagation. A substantial body of empirical data supports these conclusions.[10]

Influence of Temperature

The velocity of sound in the atmosphere is dependent on the air temperature.[11] As a result, if the temperature varies at different heights above the ground, sound will travel in curved paths rather than straight lines. During the day, temperature normally decreases with increasing height. Under such "temperature lapse" conditions, the atmosphere refracts ("bends") sound waves upwards and an acoustical shadow zone may exist at some distance from the noise source.

Under some weather conditions, an upper level of warmer air may trap a lower layer of cool air. Such a "temperature inversion" is most common in the evening, at night, and early in the morning when heat absorbed by the ground during the day radiates into the atmosphere.[12] The effect of an inversion is just the opposite of lapse conditions. It causes sound propagating through the atmosphere to refract downward.

The downward refraction caused by temperature inversions often allows sound rays with originally upward-sloping paths to bypass obstructions and ground effects, increasing noise levels at greater distances. This type of effect is most prevalent at night, when temperature inversions are most common and when wind levels often are very low, limiting any confounding factors.[13] Under extreme conditions, one study found that noise from ground-borne aircraft might be amplified 15 to 20 dB by a temperature inversion. In a

[10] Ingard, Uno. 1953. "A Review of the Influence of Meteorological Conditions on Sound Propagation," *Journal of the Acoustical Society of America*. Vol. 25, No. 3. May: p. 407.
[11] In dry air, the approximate velocity of sound can be obtained from the relationship:
$c = 331 + 0.6T_c$ (c in meters per second, T_c in degrees Celsius). Pierce, Allan D., *Acoustics: An Introduction to its Physical Principles and Applications.* McGraw-Hill. 1981. p. 29.
[12] Embleton, T.F.W., G.J. Thiessen, and J.E. Piercy. 1976. "Propagation in an inversion and reflections at the ground," *Journal of the Acoustical Society of America* Vol. 59, No. 2. February: p. 278.
[13] Ingard, Uno. 1953. "A Review of the Influence of Meteorological Conditions on Sound Propagation," *Journal of the Acoustical Society of America* Vol. 25, No. 3. May: p. 407.

similar study, noise caused by an aircraft on the ground registered a higher level at an observer location 1.8 miles away than at a second observer location only 0.2 miles from the aircraft.[14]

Influence of Wind

Wind has a strong directional component that can lead to significant variation in propagation. In general, receivers that are downwind of a source will experience higher sound levels, and those that are upwind will experience lower sound levels. Wind perpendicular to the source-to-receiver path has no significant effect.

The refraction caused by wind direction and temperature gradients is additive.[15] One study suggests that for frequencies greater than 500 Hz, the combined effects of these two factors tend towards two extreme values: approximately 0 dB in conditions of downward refraction (temperature inversion or downwind propagation) and -20 dB in upward refraction conditions (temperature lapse or upwind propagation). At lower frequencies, the effects of refraction due to wind and temperature gradients are less pronounced.[16]

Wind turbulence (or "gustiness") can also affect sound propagation. Sound levels heard at remote receiver locations will fluctuate with gustiness. In addition, gustiness can cause considerable attenuation of sound due to effects of eddies traveling with the wind. Attenuation due to eddies is essentially the same in all directions, with or against the flow of the wind, and can mask the refractive effects discussed above.[17]

A.11 Distance-Related Effects

People often ask how distance from an aircraft to a listener affects sound levels. Changes in distance may be associated with varying terrain, offsets to the side of a flight path, or aircraft altitude. The answer is a bit complex, because distance affects the propagation of sound in several ways.

The principal effect results from the fact that any emitted sound expands in a spherical fashion—like a balloon—as the distance from the source increases, resulting in the sound energy being spread out over a larger volume. With each doubling of distance, spherical spreading reduces instantaneous or maximum level by approximately 6 dB and SEL by approximately 3 dB.

A.12 Vegetation-Related Effects

Sound can be scattered and absorbed as it travels through vegetation. This results in a decrease in sound levels. The literature on the effect of vegetation on sound propagation contains several approaches to calculating its effect. Though these approaches differ in some aspects, they agree on the following:

- The vegetation must be dense and deep enough to block the line of sight.
- The noise reduction is greatest at high frequencies and least at low frequencies.

[14]Dickinson, P.J. 1976. "Temperature Inversion Effects on Aircraft Noise Propagation," (Letters to the Editor) *Journal of Sound and Vibration.* Vol. 47, No. 3, p. 442.
[15] Piercy JE and Embleton, TF. 1977. "Review of noise propagation in the atmosphere." *J Acoust Soc Am*. Jun;61(6):1403-18, p. 1412. Note, in addition, that as a result of the scalar nature of temperature and the vector nature of wind, the following is true: under lapse conditions, the refractive effects of wind and temperature add in the upwind direction and cancel each other in the downwind direction. Under inversion conditions, the opposite is true.
[16] Piercy JE and Embleton, TF. 1977. "Review of noise propagation in the atmosphere." *J Acoust Soc Am*. Jun;61(6):1403-18, p. 1413.
[17] Ingard, Uno, 1953, "A Review of the Influence of Meteorological Conditions on Sound Propagation," *Journal of the Acoustical Society of America*, Vol. 25, No. 3, May, pp. 409-410.

The International Standard ISO 9613-2[18] provides a useful example of the types of calculations employed in these methods. Originally developed for industrial noise sources, ISO 9613-2 is well-suited for the evaluation of ground-based aircraft noise sources under favorable meteorological conditions for sound propagation. ISO 9613-2's methodology for calculating sound propagation includes geometric dispersion from acoustical point sources, atmospheric absorption, the effects of areas of hard and soft ground, screening due to barriers, and reflections. The attenuation provided by dense foliage varies by octave band and by distance as shown in **Table A-1**.

For propagation through less than 10 m of dense foliage, no attenuation is assumed. For propagation through 10 m to 20 m of dense foliage, the total attenuation is shown in the first row of Table A-1.

For distances between 20 m and 200 m, the total attenuation is computed by multiplying the distance of propagation through dense foliage by the dB/m values shown in the second row of Table A-1.

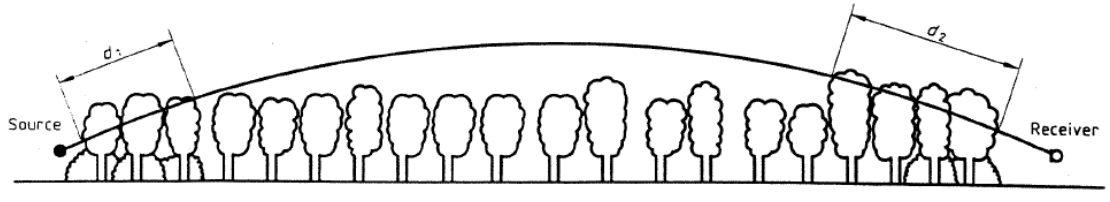
Table A-1. Dense Foliage Noise Attenuation

Propagation Distance	Nominal Midband Frequency (Hz)							
	63	125	250	500	1,000	2,000	4,000	8,000
10 m to 20 m (dB Attenuation)	0	0	1	1	1	1	2	3
20 m to 200 m (dB/m Attenuation)	0.02	0.03	0.04	0.05	0.06	0.08	0.09	0.12

Source: ISO 9613-2, Table A.1

ISO 9613-2 assumes a moderate downwind condition. The equations in the ISO Standard also hold, equivalently, for average propagation under a well-developed moderate ground-based temperature inversion, such as commonly occurs on clear, calm nights. In either case, the sound is refracted downward. The radius of this curved path is assumed to be 5 km. With this curved sound path, only portions of the sound path may travel through the dense foliage, as illustrated by **Figure A-13**. Thus, the relative locations of the source and receiver, the dimensions of the volume of dense foliage, and the contours of the intervening terrain are essential to the estimation of the noise attenuation.

Figure A-13. Downward Refracting Sound Path (source: ISO 9613-2)



As illustrated in **Figure A-13**, the foliage only provides attenuation if the sound path passes through the foliage. For aircraft in the air, the sound will pass through little, if any foliage. Additionally, either the noise source or receiver must be near the foliage for it to have an effect.

[18] International Organization for Standardization, 1996, *Acoustics – Attenuation of sound during propagation outdoors – Part 2: General Method of calculation*, International Standard ISO9613-2, Geneva, Switzerland, December.

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Appendix B. BWI Marshall 2025 Airport Noise Zone Overlaid on County Tax Maps

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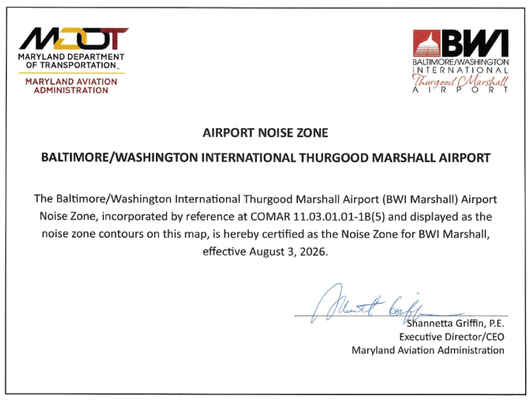
COMAR 11.03.01.01-1B(5)

Baltimore/Washington International Thurgood Marshall Airport

Airport Noise Zone

BALTIMORE / WASHINGTON INTERNATIONAL THURGOOD MARSHALL AIRPORT AIRPORT NOISE ZONE

Prepared by:
Maryland Aviation Administration


MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

AIRPORT NOISE ZONE

BALTIMORE/WASHINGTON INTERNATIONAL THURGOOD MARSHALL AIRPORT

The Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall) Airport Noise Zone, incorporated by reference at COMAR 11.03.01.01-1B(5) and displayed as the noise zone contours on this map, is hereby certified as the Noise Zone for BWI Marshall, effective August 3, 2026.

Shannetta Griffin, P.E.
Executive Director/CEO
Maryland Aviation Administration

Assisted by:
Harris Miller Miller & Hanson Inc.
Prepared October 15, 2025

COMAR 11.03.01.01-1B(5)

Baltimore/Washington International Thurgood Marshall Airport

Airport Noise Zone

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

AIRPORT NOISE ZONE

BALTIMORE/WASHINGTON INTERNATIONAL THURGOOD MARSHALL AIRPORT

The Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall) Airport Noise Zone, incorporated by reference at COMAR 11.03.01.01-1B(5) and displayed as the noise zone contours on this map, is hereby certified as the Noise Zone for BWI Marshall, effective August 3, 2026.

Shannetta Griffin, P.E.
Executive Director/CEO
Maryland Aviation Administration

Ldn 65
Ldn 70
Ldn 75

BWI Business District
BWI Airport
BALTIMORE WASHINGTON INTERNATIONAL AIRPORT

PARK

Data Sources: BWI Office of Facilities Planning, Noise Abatement Division; Maryland State Highway Administration; Maryland Department of Planning - 2011 MdProperyView; Environmental System Research Group, Inc.; Hems Miller Miller & Henson Inc.

0 4000 8000 Feet

2025 Airport Noise Zone

Howard County & Anne Arundel County, Maryland

2025 Airport Noise Zone
Prepared October 15, 2025

COMAR 11.03.01.01-1B(5)

Baltimore/Washington International Thurgood Marshall Airport

Airport Noise Zone

AA 3

AA 4

AA 8

AA 9

AA 15

Ldn 65

Ldn 70

Ldn 75

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

AIRPORT NOISE ZONE

BALTIMORE/WASHINGTON INTERNATIONAL THURGOOD MARSHALL AIRPORT

The Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall) Airport Noise Zone, incorporated by reference at COMAR 11.03.01.01-1B(5) and displayed as the noise zone contours on this map, is hereby certified as the Noise Zone for BWI Marshall, effective August 3, 2026.

Shannetta Griffin, P.E.
Executive Director/CEO
Maryland Aviation Administration

Data Sources: BWI Office of Facilities Planning, Noise Abatement Division; Maryland State Highway Administration; Maryland Department of Planning - 2011 MdProperty View; Environmental System Research Group, Inc.; Harris Miller Miller & Hanson Inc.

0 4000 8000 Feet

2025 Airport Noise Zone

Howard County & Anne Arundel County, Maryland

Tax Map Grid
Prepared October 15, 2025

422000 423000 424000 425000 426000 427000

172000 171000 170000 169000

BALTIMORE COUNTY

HOWARD COUNTY

PATAPSCO RIVER

COMAR 11.03.01.01-1B(5)

Baltimore/Washington International Thurgood Marshall Airport

Airport Noise Zone

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

BWI BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

AIRPORT NOISE ZONE

BALTIMORE/WASHINGTON INTERNATIONAL THURGOOD MARSHALL AIRPORT

The Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall) Airport Noise Zone, incorporated by reference at COMAR 11.03.01.01-1B(5) and displayed as the noise zone contours on this map, is hereby certified as the Noise Zone for BWI Marshall, effective August 3, 2026.

Shannetta Griffin, P.E.
Executive Director/CEO
Maryland Aviation Administration

Ldn 65 Ldn 70 Ldn 75

Data Sources: BWI Office of Facilities Planning; Noise Abatement Division; Maryland State Highway Administration; Maryland Department of Planning - 2011 MdPropertyView; Environmental System Research Group, Inc.; Hanis Miller Miller & Hanson Inc.

0 1200 2400 3600 Feet

2025 Airport Noise Zone

Anne Arundel County, Maryland

Tax Map
Prepared October 15, 2025

MAP NO.
AA 3

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

AIRPORT NOISE ZONE

BALTIMORE/WASHINGTON INTERNATIONAL THURGOOD MARSHALL AIRPORT

The Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall) Airport Noise Zone, incorporated by reference at COMAR 11.03.01.01-1B(5) and displayed as the noise zone contours on this map, is hereby certified as the Noise Zone for BWI Marshall, effective August 3, 2026.

Shannetta Griffin, P.E.
Executive Director/CEO
Maryland Aviation Administration

COMAR 11.03.01.01-1B(5)

Baltimore/Washington International Thurgood Marshall Airport

Airport Noise Zone

428000 429000 430000 431000 432000

172000 171000 170000 169000

BALTIMORE WASHINGTON INTERNATIONAL AIRPORT

Ldn 65
Ldn 70
Ldn 75

Data Sources: BWI Office of Facilities Planning, Noise Abatement Division; Maryland State Highway Administration; Maryland Department of Planning - 2011 MdProperyView; Environmental System Research Group, Inc.; Harris Miller Miller & Hanson Inc.

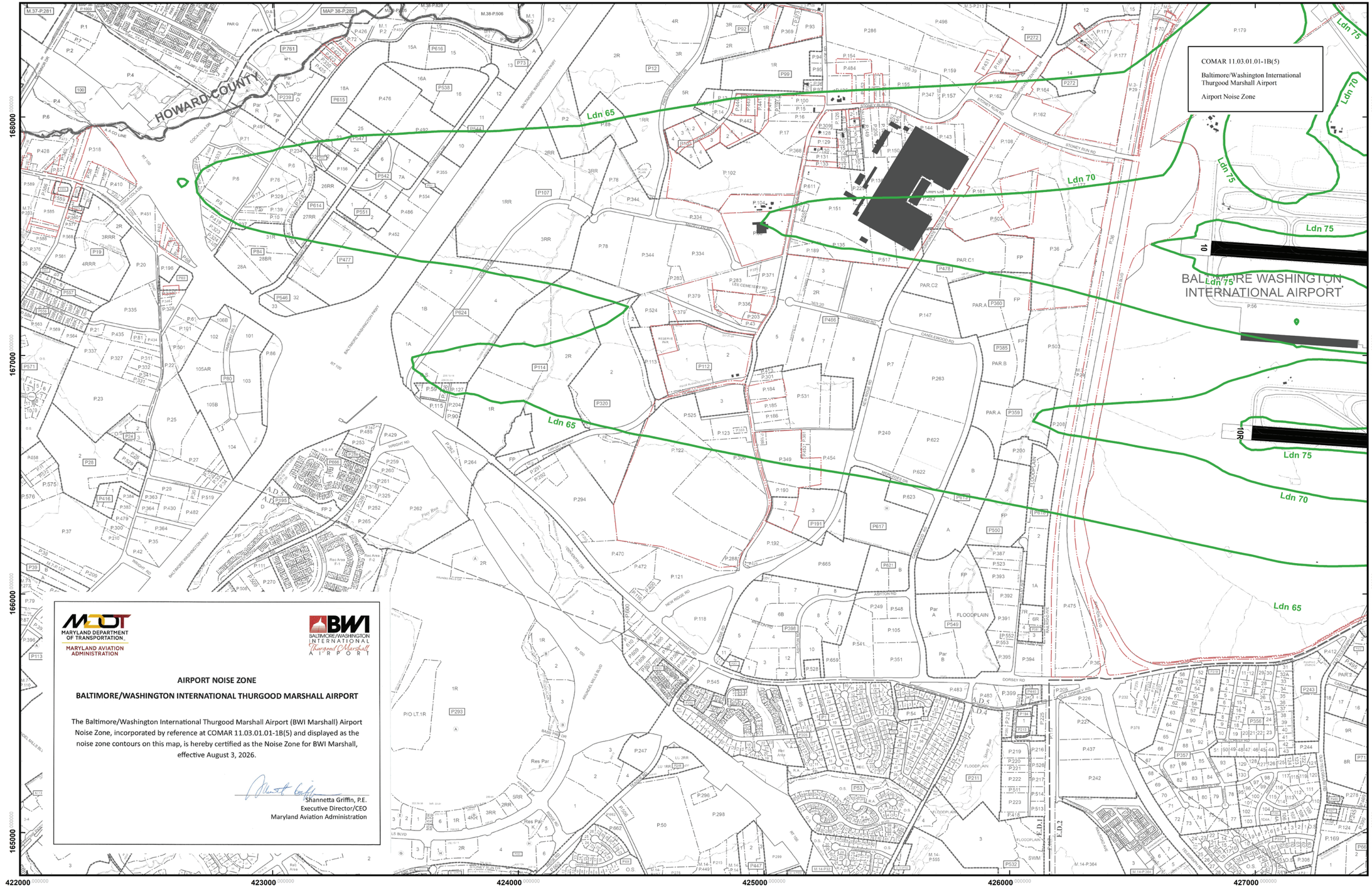
0 1200 2400 3600 Feet

2025 Airport Noise Zone

Anne Arundel County, Maryland

Tax Map
Prepared October 15, 2025

MAP NO.
AA 4



MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

BWI BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

AIRPORT NOISE ZONE

BALTIMORE/WASHINGTON INTERNATIONAL THURGOOD MARSHALL AIRPORT

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Shannetta Griffin, P.E.
Executive Director/CEO
Maryland Aviation Administration

Data Sources: BWI Office of Facilities Planning, Noise Abatement Division; Maryland State Highway Administration; Maryland Department of Planning - 2011 MdProperty View; Environmental System Research Group, Inc.; Harris Miller Miller & Hanson Inc.

0 1200 2400 3600 Feet

2025 Airport Noise Zone

Anne Arundel County, Maryland

Tax Map
Prepared October 15, 2025

MAP NO.
AA 8

428000 000000 | 429000 000000 | 430000 000000 | 431000 000000 | 432000 000000

168000 000000 | 167000 000000 | 166000 000000 | 165000 000000

COMAR 11.03.01.01-1B(5)

Baltimore/Washington International Thurgood Marshall Airport

Airport Noise Zone

BALTIMORE WASHINGTON INTERNATIONAL AIRPORT

Ldn 65
Ldn 70
Ldn 75

28
28L
33R
33L

E.D.1
E.D.2
A.D.3
A.D.4
A.D.5

RT100

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

BWI BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

AIRPORT NOISE ZONE

BALTIMORE/WASHINGTON INTERNATIONAL THURGOOD MARSHALL AIRPORT

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Shannetta Griffin, P.E.
Executive Director/CEO
Maryland Aviation Administration

Data Sources: BWI Office of Facilities Planning, Noise Abatement Division; Maryland State Highway Administration; Maryland Department of Planning - 2011 MdProperyView; Environmental System Research Group, Inc.; Harris Miller Miller & Hanson Inc.

0 1200 2400 3600 Feet

2025 Airport Noise Zone

Anne Arundel County, Maryland

Tax Map
Prepared October 15, 2025

MAP NO.
AA 9

428000 000000 | 429000 000000 | 430000 000000 | 431000 000000 | 432000 000000

164000 000000 | 163000 000000 | 162000 000000

COMAR 11.03.01.01-1B(5)

Baltimore/Washington International Thurgood Marshall Airport

Airport Noise Zone

Ldn 65

Ldn 70

Ldn 65

Ldn 65

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

BWI BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

AIRPORT NOISE ZONE

BALTIMORE/WASHINGTON INTERNATIONAL THURGOOD MARSHALL AIRPORT

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Shannetta Griffin, P.E.
Executive Director/CEO
Maryland Aviation Administration

Data Sources: BWI Office of Facilities Planning, Noise Abatement Division; Maryland State Highway Administration; Maryland Department of Planning - 2011 MdProperty View; Environmental System Research Group, Inc.; Harris Miller Miller & Hanson Inc.

N W E S

0 1200 2400 3600 Feet

2025 Airport Noise Zone

Anne Arundel County, Maryland

Tax Map
Prepared October 15, 2025

MAP NO.
AA 15

Appendix C. BWI Marshall Stakeholder Advisory Committee (SAC) Meeting Materials

Appendix C includes the BWI Marshall SAC roster, along with materials from the three SAC meetings held in April 2025, June 2025, and September 2025. Related materials include invitations, sign-in sheets, presentations, and meeting minutes.

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BWI Stakeholder Advisory Committee Roster and Attendance (2025 ANZ)

Company/Organization	Full Name	SAC1	SAC2	SAC3
ABX Air, Inc	Dean Cook			
Aircraft Owners and Pilots Association	Jon Gandy			
Airlines for America	Nicholas Calio			
Anne Arundel County	Mark Wildonger		X	X
Anne Arundel County	Samuel Meyers	X		
Anne Arundel County	Jenny Dempsey			
Anne Arundel County Council District 1	Pete Smith			
Anne Arundel County Council District 2	Allison Pickard		X	
Anne Arundel County Council District 2	Kristin Etzel	X		X
Atlas Air	Ray DuFour			
BWI Business Partnership	Gina Stewart	X	X	X
BWI Marshall Air Traffic Control Tower	Dana Plagmann	X	X	X
BWI Marshall Air Traffic Control Tower	Scott Proudfoot	X		
Carriage Pines at Lake Village Homeowners' Association	Mary DesChamps	X		
DC Metroplex BWI Community Roundtable	Dan Woomer	X		X
DC Metroplex BWI Community Roundtable	Drew Roth	X	X	X
DC Metroplex BWI Community Roundtable	Howard Johnson	X	X	
DC Metroplex BWI Community Roundtable	Suzzie Schuyler	X	X	X
Delta Airlines	Christofer Clisham			
Elmhurst Improvement Association	Ron K. Looper			
Glen Burnie Association	Andy Werner			
Glen Burnie Improvement Association	Sylvia Mentecki			
Greater Ferndale Community Civic Association	Monica Smearman			
Harmans Civic Association	Wayne Dixon		X	X
Howard County District 4	Deb Jung			
Howard County Office of Planning and Zoning	Lynda Eisenberg	X		
Linthicum-Shipley Improvement Association	Kevin Plessner			
Linthicum-Shipley Improvement Association	Jonathan McGowan			X
National Business Aviation Association	Paige Kroner			
North Linthicum Improvement Association	Steven Kooser	X	X	
Provinces Civic Association	Marjorie Deschenes	X	X	X
Provinces Civic Association	Shirley Singleton	X		X
Severn Improvement Association	Donna Kess	X		
Severn Improvement Association	Rodney Jones			
Signature Flight Support	John Hovis			

Company/Organization	Full Name	SAC1	SAC2	SAC3
Southwest Airlines	David Richardson			
Spirit Airlines	Ryan Rodosta			
Timber Ridge Improvement Association	Dana Carrington			
United Airlines	Ashley Zayed			
United Airlines	Terrail Dorsey Zoller			X
UPS	Jonathan Bonds			
	Marlene Durholz	X		

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

Wes Moore
Governor
Aruna Miller
Lieutenant Governor
Paul J. Wiedefeld
Secretary
Ricky D. Smith, Sr.
Executive Director/CEO

Dear Stakeholder,

The Maryland Department of Transportation Maryland Aviation Administration (MAA) has begun the process of updating the 2025 Airport Noise Zone (ANZ) for Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall). Updating the ANZ is required under the Code of Maryland Regulations (COMAR) and involves studying airport noise and developing noise contours for existing and future conditions at BWI Marshall, as well as a review of the existing BWI Marshall Noise Abatement Plan. The most recent ANZ study for BWI Marshall was completed in 2020 and can be reviewed at the following link: https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/. Community stakeholders' involvement is critical to the success of the BWI Marshall ANZ update. Therefore, we seek input from affected stakeholders.

This letter invites you or another representative of your organization to join the BWI Marshall ANZ **Stakeholder Advisory Committee (SAC).** The purpose of the SAC is to convene stakeholders affected by airport activities and to present the preliminary ANZ contour planning parameters as we prepare for this BWI Marshall ANZ update. Members of the SAC will collaborate with MAA during the BWI Marshall ANZ update process and be asked to share pertinent information with the groups or impacted citizens they represent. The SAC will include state and local government representatives, DC Metroplex BWI Roundtable, tenants of BWI Marshall, airlines, the consultant team, and other MAA representatives as appropriate. Your participation in the SAC is vital to the success of the BWI Marshall ANZ update process.

The first meeting of the **BWI Marshall ANZ SAC** is scheduled for **Thursday, April 3, 2025,** from **6:00 pm** to **8:00 pm**. It will be held at MAA facilities located at 991 Corporate Boulevard, Linthicum Heights, MD 21090. We appreciate your interest in airport issues and look forward to working with you to update the BWI Marshall ANZ.

If you have any questions or comments about this process, please contact me at 410-859-7813 or via email at brineer@bwiairport.com. To **RSVP** or register online to attend the BWI Marshall SAC meeting, please follow bit.ly/4bS07XZ.

Sincerely,

Bruce Rineer, Manager
Noise Program Section
Office of Environmental Compliance and Sustainability
Maryland Aviation Administration

PO Box 8766, BWI Airport, Maryland 21240-0766 | 410.859.7100 | 800.435.9294 | Maryland Relay TTY 410.859.7727 | marylandaviation.com

Outlook

Stakeholder Advisory Committee Invitation - Airport Noise Zone (ANZ) Update for Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall)

From MDOT-MAA-ANZ </O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=206F284807DB4D36AE03A613A44A148E-F885C2C8-95>

Date Thu 3/27/2025 9:50 AM

To [redacted]

1 attachment (134 KB)

MAA Stakeholder Advisory Committee Invite-BWI.pdf;

Good morning,

The Maryland Aviation Administration (MAA) is in the process of updating the 2025 Airport Noise Zone (ANZ) for BWI Marshall, and we are seeking input from key stakeholders like you!

On behalf of the Maryland Department of Transportation Maryland Aviation Administration (MDOT MAA), please find attached the formal invitation with details about the Stakeholder Advisory Committee (SAC) and the upcoming SAC meeting #1, scheduled for Thursday, April 3, 2025, from 6:00 to 8:00 PM at MAA facilities. Your participation is essential to this process, and we look forward to your engagement. For more information, please refer to the attached letter.

To RSVP, register online here: bit.ly/4bS07XZ

If you have any questions about the meeting, please contact our Outreach Team at 240-200-5176 or MDOT-MAA-ANZ@assedollc.com.

MAA BWI ANZ SAC 1 Reminder Emails
(sent through Eventbrite to all who RSVP'ed)

Reminder Email 1 – sent 04/03/2025:

This is a reminder that the first Stakeholder Advisory Committee (SAC) meeting for the Airport Noise Zone (ANZ) Update for BWI Marshall Airport is scheduled for today, Thursday, April 3, 2025, from 6:00 PM to 8:00 PM.

Meeting Details:

Date: Thursday, April 3, 2025
⏰ Time: 6:00 PM – 8:00 PM
Location: MAA Facilities - 991 Corporate Boulevard Linthicum Heights, MD 21090

The Maryland Department of Transportation Maryland Aviation Administration (MDOT MAA) is currently updating the 2025 Airport Noise Zone (ANZ) for BWI Marshall Ariport as required under the Code of Maryland Regulations (COMAR). This update involves studying airport noise, developing noise contours for current and future conditions, and reviewing the existing BWI Noise Abatement Plan.

The SAC is a key component of this process, bringing together include state and local government representatives, DC Metroplex BWI Roundtable, tenants of BWI Marshall, airlines, the consultant team, and other MAA representatives as appropriate. Your participation is critical in shaping this update and ensuring it reflects the needs of the impacted communities.

During the meeting, we will introduce the ANZ update process, present preliminary planning parameters, and outline the next steps. Your input will be instrumental in helping us develop effective noise management strategies for the airport.

If you have any questions before the meeting, please contact Bruce Rineer at BRineer@bwiairport.com. For assistance with logistics on the day of the meeting, please reach out to the MAA Outreach Team at 240-200-5176 or MDOT-MAA-ANZ@assedollc.com.

We look forward to seeing you there!

Reminder Email 2 – sent on 04/01/2025:

Your event is coming up soon!

MAA BWI Airport Noise Zone SAC Meeting #1

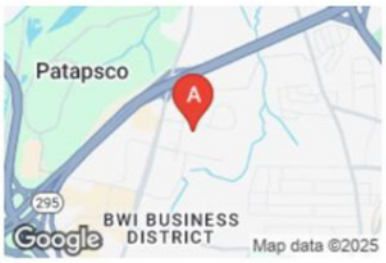
Thursday at 6:00 PM
Organized by Assedo Consulting

MAA BWI Airport Noise Zone SAC Meeting #1

Thursday, April 3, 2025 from 6:00 PM to 8:00 PM (EDT)

991 Corporate Blvd
991 Corporate Boulevard
Linthicum Heights, MD
21090

Add to my calendar:
Google · Outlook · iCal · Yahoo



MARYLAND DEPARTMENT OF TRANSPORTATION

MARYLAND AVIATION ADMINISTRATION

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Governor
Aruna Miller
Lieutenant Governor
Paul J. Wiedefeld
Secretary
Ricky D. Smith, Sr.
Executive Director/CEO

BWI Marshall
Airport Noise Zone Update
Stakeholder Advisory Committee (SAC) Meeting #1

AGENDA

Thursday, April 3, 2025, 6:00 PM – 8:00 PM
991 Corporate Boulevard
Linthicum Heights, MD 21090

- Welcome, Introductions, Opening Remarks
- Airport Noise Zone (ANZ)
- Noise Abatement Plan (NAP) Overview
- Stakeholder Advisory Committee (SAC)
- BWI Marshall Overview
- Fundamentals of Noise
- Noise Modeling Overview
- Schedule and Additional Resources

PO Box 8766, BWI Airport, Maryland 21240-0766 | 410.859.7100 | 800.435.9294 | Maryland Relay TTY 410.859.7727 | marylandaviation.com

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

Please Sign In

Baltimore International Thurgood Marshall Airport Noise Zone Update
Stakeholder Advisory Committee (SAC1)
April 3, 2025

BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

	NAME/TITLE	ORGANIZATION	PHONE	EMAIL	INITIALS
1.	DAN WOONER	LINTHICUM, MD BWI BT	443.956.3121	wooner dan@gmail.com	
2.	Donna Kess	Severn Improvement Assoc.	443-891-4363	donnakess543@gmail.com	DK
3.	Kristin Etzel, Leg. Asst.	Anne Arundel County Council D2	410-222-2412	Kristin.etzel@aacounty.org	KE
4.	Steve Roosen	N/A	443 623 3386	hedsixty9 Mustang Dyna	
5.	DREW ROTH	BWI ROUNDTABLE ELKRIDGE COMMUNITY ALLIANCE	443 459 1659	mrdrew@gmail.com	
6.	Aswdock Solnson	BWI Round Table	~~410-996-~~ 4109961637	NJS@comcast.com	NJ
7.	Gina Stewart	BWI Business Partnership	443-867-4596	gstewart@bwipartner.org	MC
8.					
9.					
10.					

7

2

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

Please Sign In

Baltimore International Thurgood Marshall Airport Noise Zone Update
Stakeholder Advisory Committee (SAC1)
April 3, 2025

BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

	NAME/TITLE	ORGANIZATION	PHONE	EMAIL	INITIALS
1.	Suzzie Schuyler	BWI Roundtable District 1 AARC	410-859-9317	suzquilt71@gmail.com	SKS
2.	Sam Meyers	Anne Arundel County OPZ	410 222 4088	pzmeye22@aacounty.org	Sum
3.	Scott Proudfoot	FAA	410-859-7255	scott.r.proudfoot@faa.gov	
4.	Marlene Duhon	—	410-419-2508	mDuhon@gmail.com	MD
5.	DANA PLAGMANN	FAA ATC	425-231-5837	BWIFACREP@comm1.com	DP
6.	Shirley Singleton	PCA-Province	443-562-2193	shirleysingleton1959@yahoo.com	SVS
7.	Marjorie Deutchman	PCA - PROVINCES	410-551-7182	marderchukes@hotmail.com	mhd
8.	Lynda Eisenberg	Howard Planning + County Zoning	410-313-2350	leisenberg@howardcountymd.gov	LDE
9.					
10.					

8

1

Airport Noise Zone Update
Stakeholder Advisory Committee

Meeting #1
Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall)

April 3, 2025
6:00 PM – 8:00 PM

1

Welcome to BWI Marshall

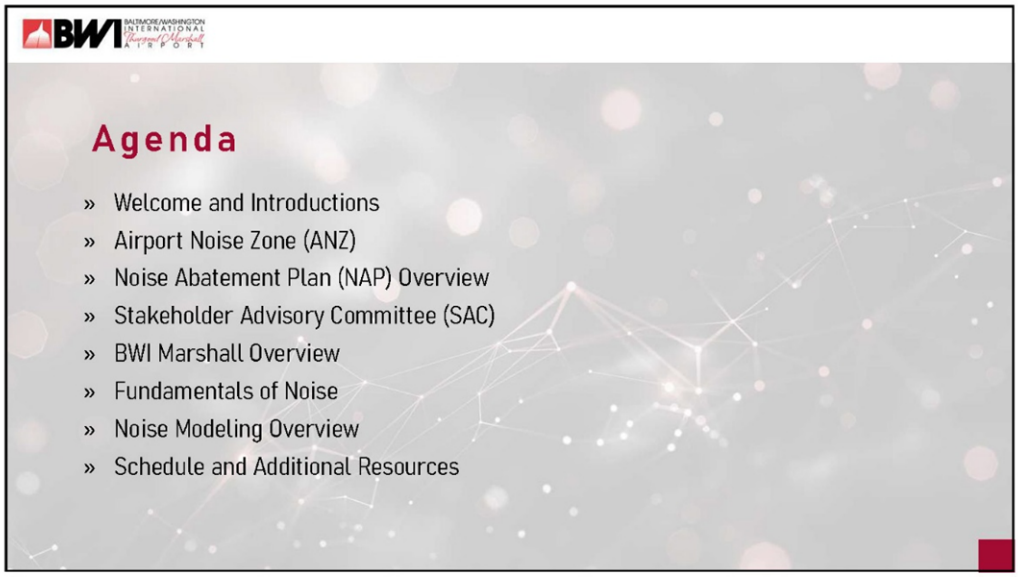
Safety Briefing

- Follow emergency exits
- Call 911
- Assist those who need assistance
- Be sure to take a head count during the emergency event
- Nearest AED – Hallway by restrooms
- Nearest fire extinguisher – Hallway by restrooms
- **Accountability Site:** Parking lot outside of front door of Building 991
- Always report any hazards in the meeting room

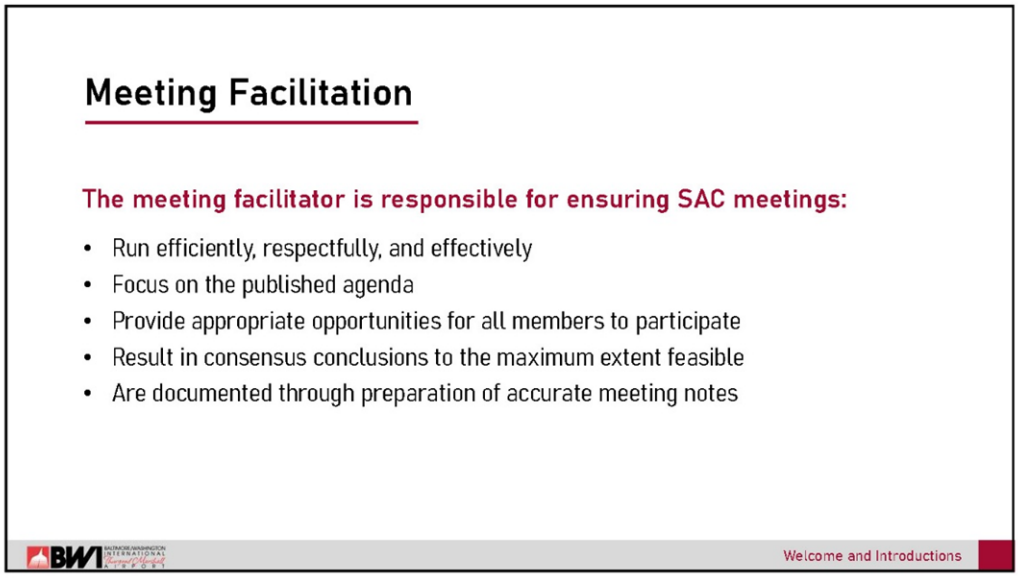


Source: MDOT MAA, Office of Planning, 2019

2


Agenda
» Welcome and Introductions
» Airport Noise Zone (ANZ)
» Noise Abatement Plan (NAP) Overview
» Stakeholder Advisory Committee (SAC)
» BWI Marshall Overview
» Fundamentals of Noise
» Noise Modeling Overview
» Schedule and Additional Resources

3


Meeting Facilitation
The meeting facilitator is responsible for ensuring SAC meetings:
• Run efficiently, respectfully, and effectively
• Focus on the published agenda
• Provide appropriate opportunities for all members to participate
• Result in consensus conclusions to the maximum extent feasible
• Are documented through preparation of accurate meeting notes
Welcome and Introductions

4

Introductions

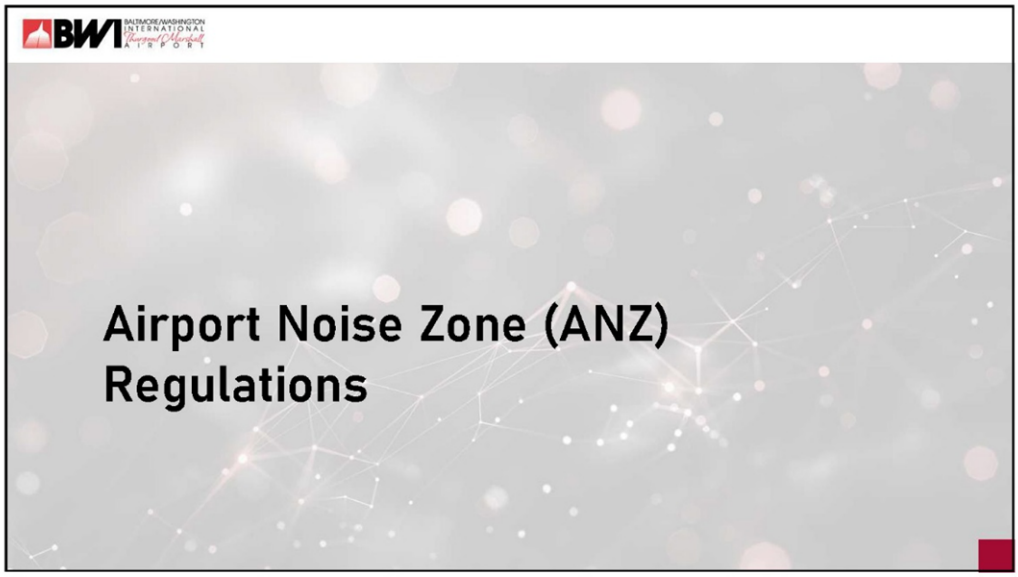
- Maryland Aviation Administration (MAA) representatives
- Stakeholder Advisory Committee (SAC) members
- Consultant team

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Expected Meeting Takeaways

- What is an Airport Noise Zone (ANZ)
- What is a Noise Abatement Plan (NAP)
- Why MAA is undertaking this process
- Role of the Stakeholders Advisory Committee (SAC)
- How noise is evaluated, especially with the Day-Night Noise Level (DNL or Ldn) metric
- What inputs go into the noise model
- What the end results of the study will be

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Maryland Airport Noise Zone (ANZ) Regulations

- Maryland Environmental Noise Act of 1974
  - *"Provide a positive basis for abatement of existing noise problems in communities near airports and to prevent new noise problems."*
- Maryland law requires MAA to complete an ANZ update approximately every 5 years
  - Maryland Statutes, Article Transportation, Section 5-805
- The certified ANZ consists of Day-Night Average Sound Level (DNL) contours at 65, 70, and 75 decibels
  - Printed on Airport Noise Zone Map

Airport Noise Zone

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State Law and Regulations

Transportation Code	COMAR (Code of Maryland Regulations)
Noise Zone Regulations Part I The purpose of this subtitle is to: (1) Provide a positive basis for abatement of existing noise problems in communities near airports and to prevent new noise problems; and (2) Protect the health and general welfare of the occupants of land near airports. Noise Zone Regulations Part II • Requires assessment of the noise environment, existing projected future use, following procedures the Executive Director establishes • Delineates a "noise zone" • Requires development of a noise abatement plan every five years	Chapter 11.03.03 • Defines the prediction method to be used to develop 'noise contours of equal noise exposure' (subject to the approval of the Executive Director) • Provides direction for development of contours, including 5 and 10 year, plus cumulative condition, provides methods for determination of impacted land use areas, and direction on noise abatement plans. Section 11.03.03.05 Provides a process for permits for construction within the Noise Zone Surrounding a State-Owned Airport

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ANZ Study Update

The ANZ update process includes status review of the NAP.

Airport Noise Zone (ANZ)	Noise Abatement Plan (NAP)
Provides the means to identify and control incompatible land development around BWI Marshall Is a composite of the farthest extents of the annual Day-Night Average (DNL or Ldn) contours for each of the study years (2025 base, 2030 and 2035 forecast)	Prescribes measures to monitor, reduce, and/or eliminate incompatible land use areas within the ANZ to the extent possible while maintaining efficient airport operations

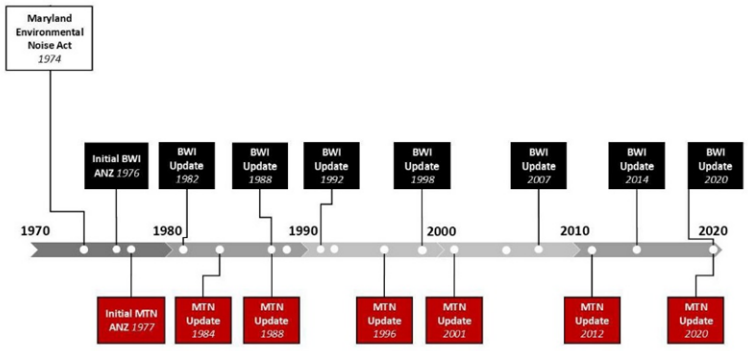
10

Major Components

- Models noise through current year, 5-year, and 10-year contours
- Models noise exposure using FAA's AEDT and airport operational data
- Mitigates noise through Noise Abatement Plan
- Land Use
- Flight Procedures
- State Funded – not eligible for Federal funding

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BWI's History of ANZ



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Land Use Planning Process

Airport Noise Zone (ANZ)
Certified ANZ is based on composite noise contours lines at specified noise levels (65, 70 and 75 DNL)
Land development within the ANZ is subject to Maryland law, which dictates that an applicant be denied approval if the proposed land use is found to be incompatible with the noise level
An applicant may petition the Board of Airport Zoning Appeals (BAZA) for a variance from the regulations. BAZA may issue conditions such as the addition of sound insulation components to buildings within the Certified ANZ

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Expectations for the ANZ

The ANZ provides a means to:

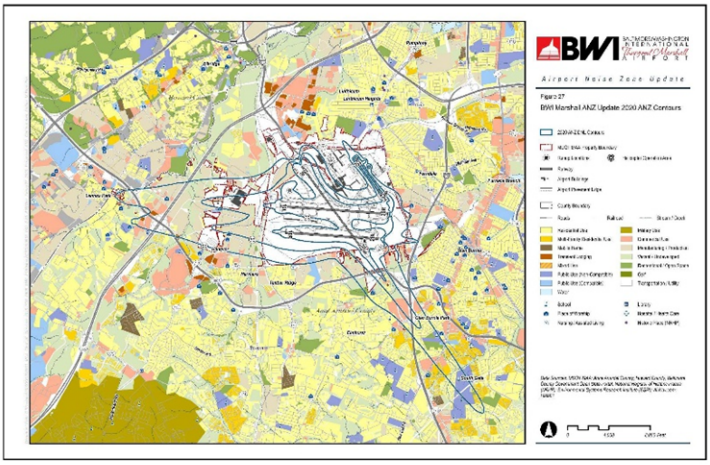
- Understand existing and future noise exposure around BWI Marshall
- Assist local land use jurisdictions in the control of potentially incompatible development
- Identifies potential strategies to mitigate noise, including voluntary noise abatement procedures

The ANZ cannot:

- Restrict the hours of operations
- Impose curfews or restrictions
- Require the FAA to change flight procedures
- Be used to limit demand or forecast growth

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BWI Marshall Airport Noise Zone (2020)



Airport Noise Zone

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Noise Abatement Plan (NAP) Overview

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Noise Abatement Plan (NAP)

NAP Goal: To the extent possible, reduce incompatible land use within ANZ while maintaining efficient airport operations.

- **General categories of NAP measures:**
  - Noise abatement elements
  - Land use elements
- NAP status review only at this time
  - Measures may be updated later as part of the 14 CFR Part 150 process.

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Existing Noise Abatement Plan Measures

Noise Abatement Measures	Programmatic Measures
Departure Procedures: Jet aircraft fly specific distances before commencing turns to maximize flights over compatible land uses	**Continued Monitoring and Annual Review:** Efforts to monitor the overall noise abatement program
Arrival Procedures: Attempt to keep arriving aircraft as high as possible and to take advantage of compatible land uses	**Land Use Measures**
Preferential Runway Use System: Identifies preferred runways to minimize noise exposure	**Control of Incompatible Development:** Includes the ANZ program, BAZA, and Noise Zone Notification in Real Estate transactions
Control of Ground Based Noise Sources: Efforts to minimize ground-based noise propagation	**Noise Assistance Programs:** For residents and schools in the ANZ, to reduce number of affected properties and noise impacts

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BWI Marshall NAP Caveats

Noise abatement procedures are voluntary:

- The FAA has primary responsibility for implementing flight procedures and the preferential runway use system at BWI Marshall.
- Aircraft may not follow noise abatement procedures if deemed necessary by air traffic control (ATC) or flight crews to maintain operational safety.
- The FAA has introduced new navigation technology and procedures that in some cases deviate from historic noise abatement procedures.

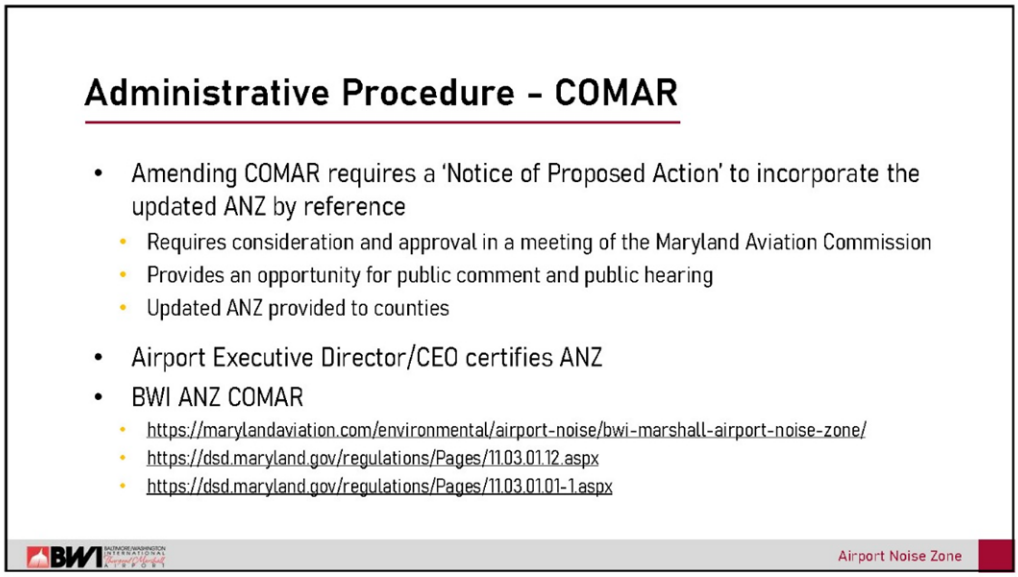
19

ANZ Update Scope and Process

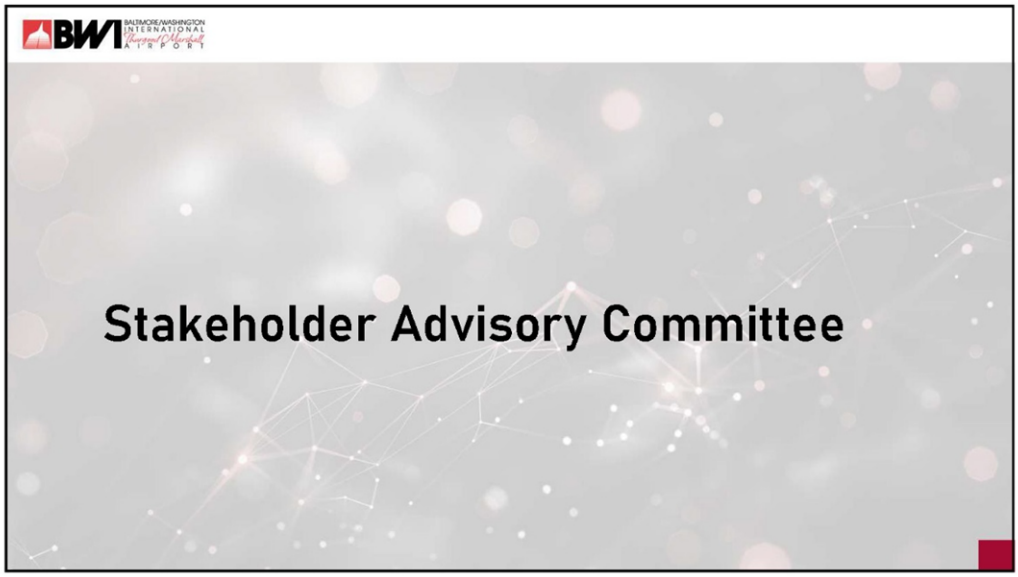
- **Form and engage with Stakeholder Advisory Committee (SAC)**
- Prepare base year, 5-year, 10-year forecast noise contours
- Compile ANZ (composite of the three contour sets)
- Conduct land use inventory within ANZ
- Review existing Noise Abatement Plan (NAP)
- Conduct public hearing/workshop
- Update Code of Maryland Regulations (COMAR)



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Administrative Procedure – COMAR
• Amending COMAR requires a 'Notice of Proposed Action' to incorporate the updated ANZ by reference
◦ Requires consideration and approval in a meeting of the Maryland Aviation Commission
◦ Provides an opportunity for public comment and public hearing
◦ Updated ANZ provided to counties
• Airport Executive Director/CEO certifies ANZ
• BWI ANZ COMAR
◦ https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/
◦ https://dsd.maryland.gov/regulations/Pages/11.03.01.12.aspx
◦ https://dsd.maryland.gov/regulations/Pages/11.03.01.01-1.aspx
Airport Noise Zone

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Stakeholder Advisory Committee

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SAC Roles and Responsibilities

- The SAC serves in an advisory role to the MAA solely for purposes of the BWI Marshall ANZ update process.
  - Review of study inputs, assumptions, analyses, documentation, etc.
  - Provide input, advice, and guidance related to Noise Abatement Plan
- SAC members are expected to provide two-way communication between the SAC and their organizations / constituents.
- MAA shall respect and consider SAC input but retains overall responsibility for the BWI Marshall ANZ update.

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SAC Responsibilities

- Contribute to study inputs
  - Discussion and feedback at SAC meetings
- Review modeling assumptions
  - Base year and forecasts
- Review analysis results
  - Base, 5-year, and 10-year contours
- Review documentation
  - NAP and Draft ANZ document

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SAC Makeup

- The SAC is composed of stakeholders representing a wide range of interests at BWI Marshall:
  - State and local agencies
  - Community organizations
  - Airport tenants and users
  - Aviation trade associations
- Members serve on a voluntary basis without compensation.

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We need you!

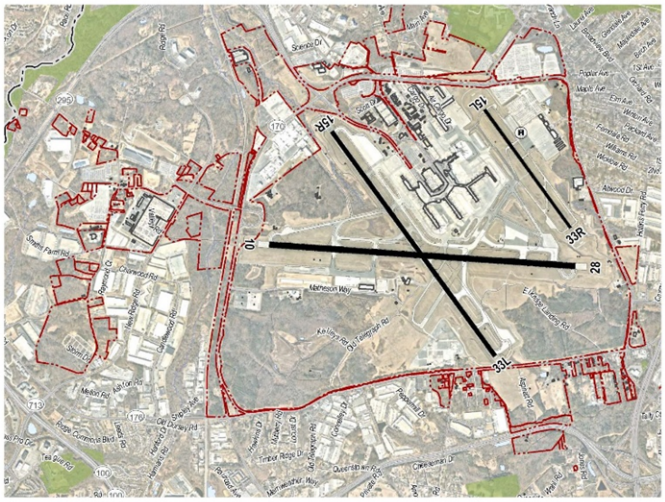
- To understand ANZ effects on stakeholders
- To review land use inventory and planning considerations
- To share information with your neighbors and organizations
- To review Noise Abatement Plan and provide insight
- To spread the word about future opportunities for public feedback

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BWI Marshall Overview

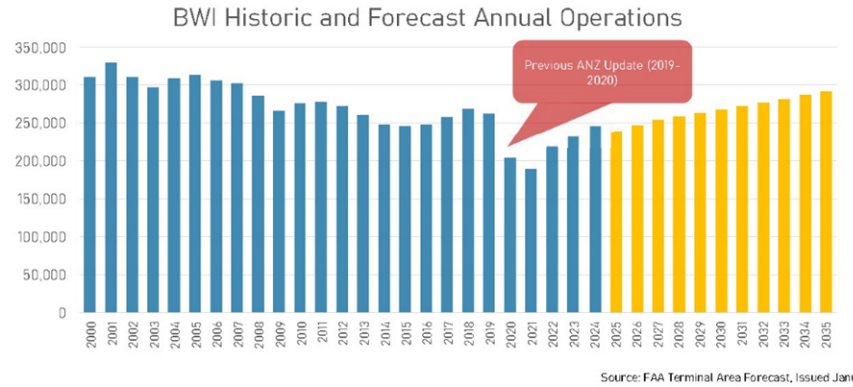
27

Existing Airport Layout



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Historic and Forecast Annual Operations



Source: FAA Terminal Area Forecast, Issued January 2025

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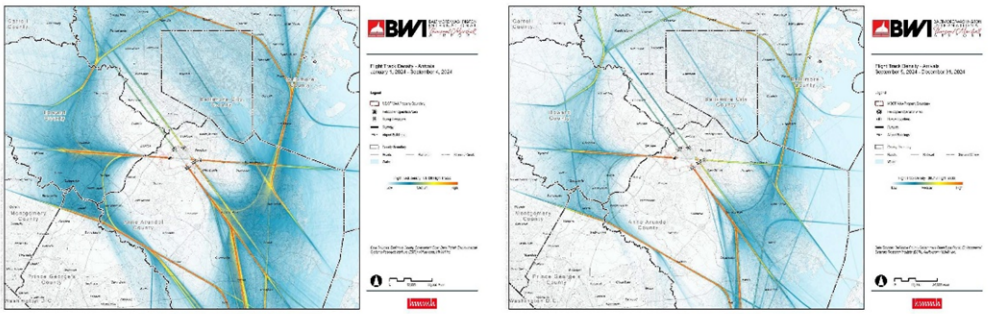
Changes Since the Last ANZ Update

- Aircraft fleet changes
- COVID recovery
- Aircraft arrival/departure procedure changes
  - https://marylandaviation.com/environmental/airport-noise/have-the-procedures-to-and-from-bwi-marshall-changed/
- Residential Sound Insulation Program (RSIP)

30

Changes Since the Last ANZ Update

Implementation of New Arrival Procedures



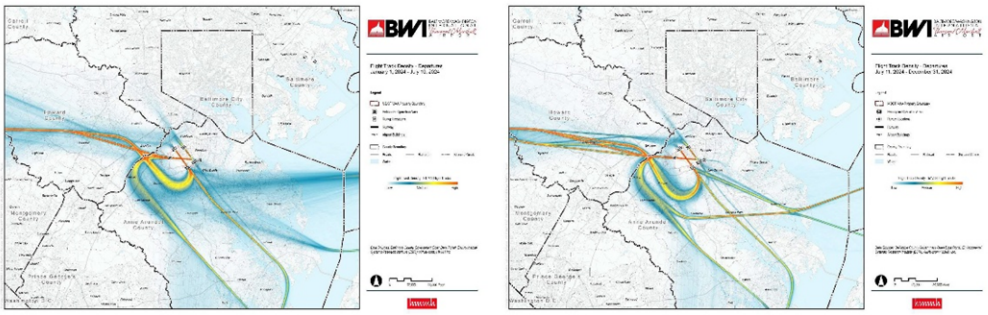
Jan – Sept 4, 2024 | Sept 5 – Dec 2024

BWI Marshall Overview

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Changes Since the Last ANZ Update

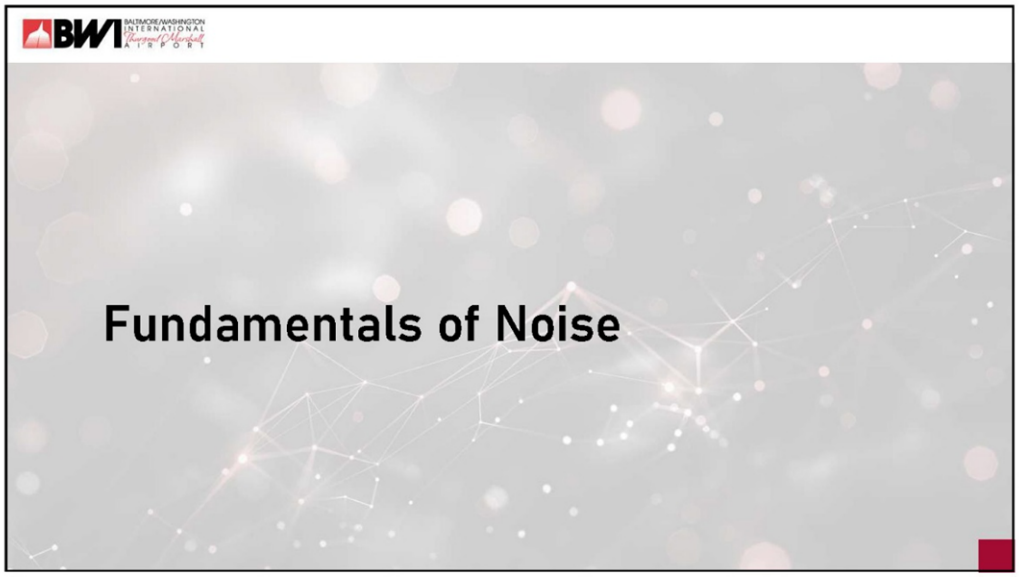
Implementation of New Departure Procedures



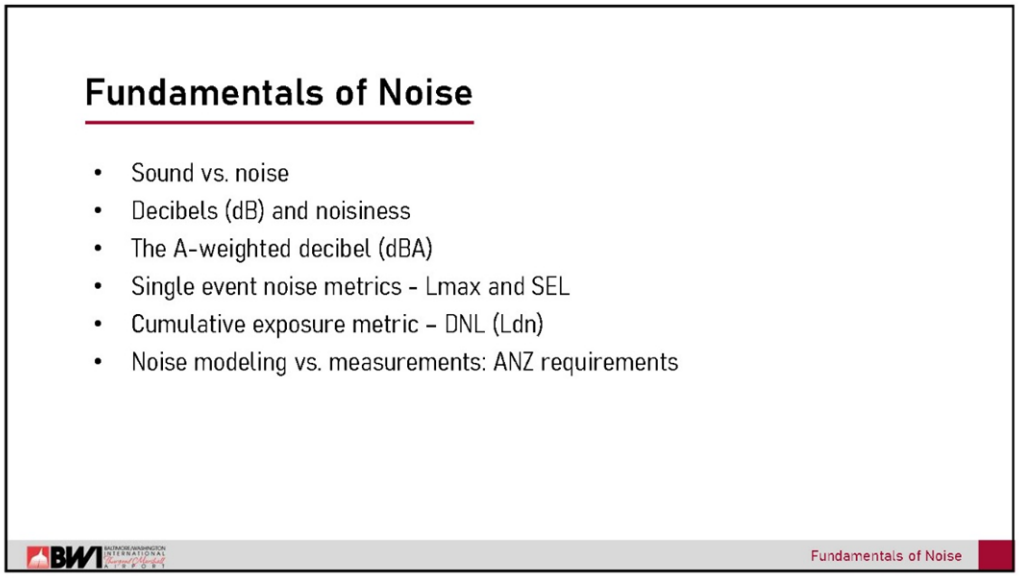
Jan – July 10, 2024 | July 11 – Dec 2024

BWI Marshall Overview

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Fundamentals of Noise

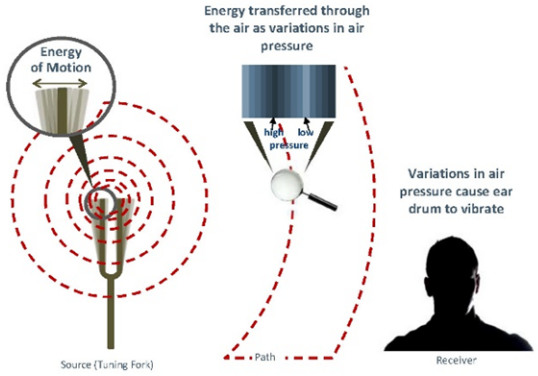
33


Fundamentals of Noise
Sound vs. noise
Decibels (dB) and noisiness
The A-weighted decibel (dBA)
Single event noise metrics - Lmax and SEL
Cumulative exposure metric – DNL (Ldn)
Noise modeling vs. measurements: ANZ requirements
Fundamentals of Noise

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Sound vs 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



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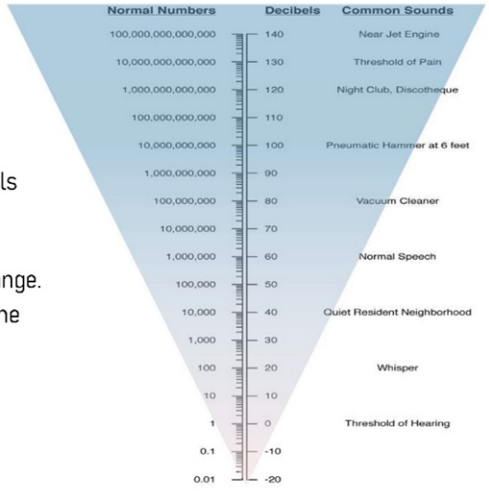
The Decibel Scale

Use a logarithmic scale

- Decibels (dB) used to express sound levels and noise levels

Why?

- We hear sound pressures over a HUGE range.
- Decibels compress this range to match the way we interpret sound pressures.
  - 0 to 140 dB
  - 0.000000003 to 0.003 lbs. per sq. inch (psi)
- We "hear" in decibels.



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Real-Time Decibel Change "Rules of Thumb"

- In a laboratory test, a 1 dB change is generally detectible.
- In a normal environment, a 3 dB change is generally the threshold of detectability for a careful listener.
  - Why? Distinct A:B comparisons are rare.
- A 6 dB change is clear in most day-to-day situations.
- In general, a 10 dB change seems twice as loud.
  - Ten times the sound energy
- Different rules of thumb apply to cumulative exposure.

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Caution: Decibel addition isn't ordinary math!

- Decibels are a logarithmic quantity, so...
  - Two equal sources:
    - 70 + 70 dB = ~~140 dB~~ **73 dB**
  - Four equal sources:
    - 70 + 70 + 70 + 70 dB = **76 dB**
  - Ten equal sources:
    - 70 + 70 + 70 + 70 + 70 + 70 + 70 + 70 + 70 + 70 dB = **80 dB**

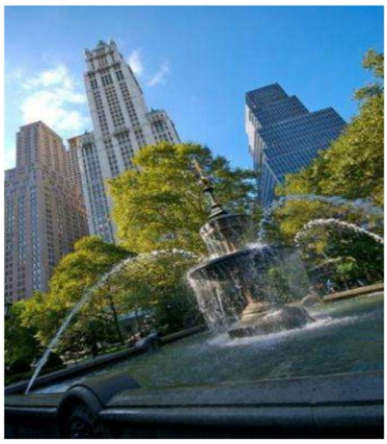
38

Judging Noisiness

Sound *quality* matters

- Sources with the same overall dB level may "sound" different





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Judging Noisiness

Duration matters

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





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Judging Noisiness

Time of day matters

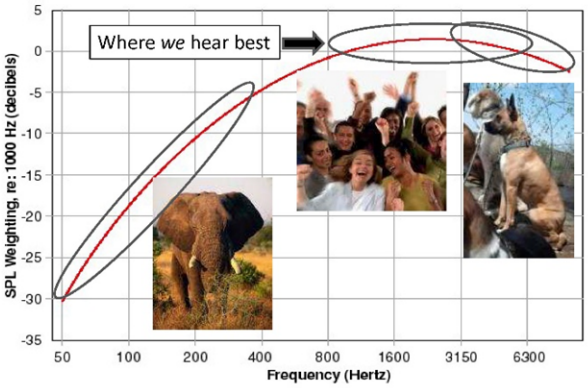




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COMAR Requires use of A-Weighted Sound Level

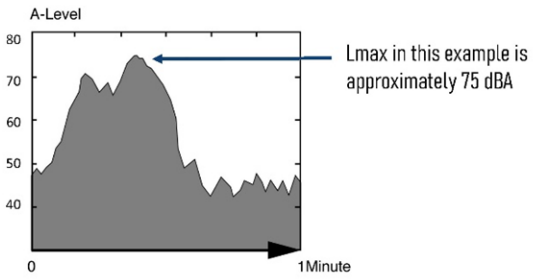
- Our ear is not equally sensitive to all frequencies
- A-weighted decibels (dB) measure sound the way we "hear" it
- Consistent with worldwide practice



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Maximum Sound Level (Lmax)

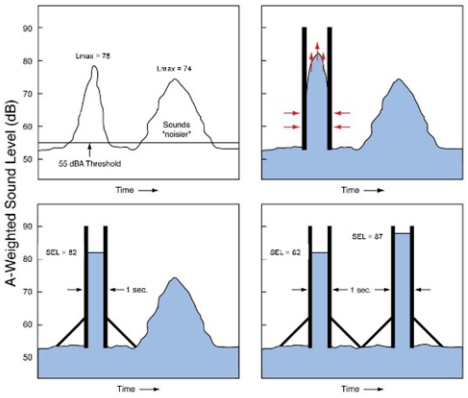
The simplest way to describe a discrete noise "event" is its maximum sound level (Lmax)



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Sound Exposure Level (SEL)

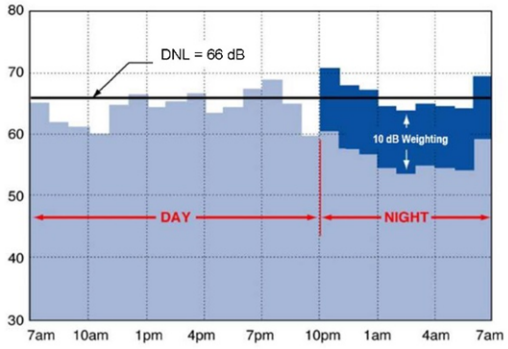
- Duration matters: A longer event may seem "noisier," even if it has a lower or equal maximum level
- SEL measures the total "noisiness" of an event by taking duration into account



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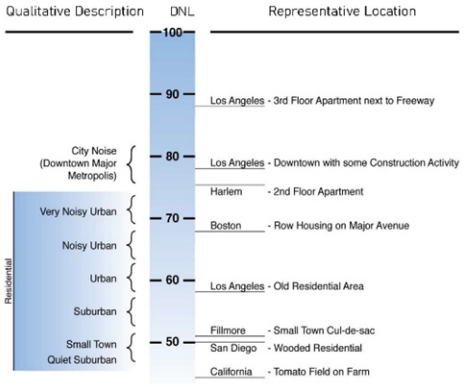
Day-Night Average Sound Level (DNL)

- Describes 24-hour exposure
- Noise from 10 pm to 7 am is factored up by 10 dB
  - "Weighting" is equal to counting each night aircraft 10 times
- Sometimes abbreviated Ldn (as in COMAR documents)
- DNL is the only metric that COMAR requires for ANZ



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Typical Community DNL Examples



Source: United States Environmental Protection Agency, Information on Levels Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, March 1974, p. 14.

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Interpreting Changes in DNL

1 - 2 dB change in level
- May be noticeable
- Abatement may be beneficial

2 - 5 dB change in level
- Generally noticeable
- Abatement should be beneficial

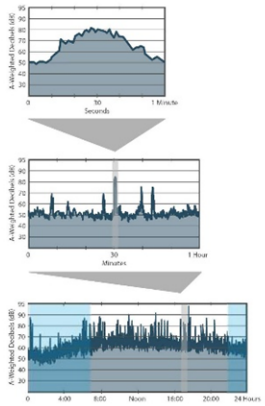
Over 5 dB change in level
- Community reaction is likely

These differ from previously cited "rules of thumb" for "real-time" change.

- 1 dB threshold of detectability in a laboratory test
- 3 dB threshold of detectability for a careful listener in a normal environment
- 6 dB in most day-to-day situations

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Why We Use DNL



DNL is a way to describe the noise dose for a 24-hour period

DNL accounts for each event's "noisiness" (intensity and duration)

DNL accounts for number of noise events (frequency of operations)

DNL provides an additional weighting for nighttime operations (time of occurrence)

The Aviation Safety and Noise Abatement Act of 1979 ("ASNA")

Established a single, uniform, repeatable system for considering aviation noise around airport communities.

Established a single system for determining noise exposure from aircraft, which takes into account noise intensity, duration of exposure, frequency of operations, and time of occurrence.

Identified land uses which are normally compatible with various exposures of individuals to noise.

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Noise Metric Summary

- The decibel is a complex logarithmic quantity based on sound pressure
- A-weighted decibels correlate well with how humans hear
- Noise levels can be expressed many ways, including but not limited to:
  - Instantaneous maximum (Lmax)
  - Single event dose (SEL)
  - Long-duration exposure (DNL)
- Best metric to use in a situation depends on purpose

COMAR considers all land uses compatible below DNL 65 dB.

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COMAR Requires Noise Modeling

Allows Noise Measurements

Sec. 11.03.03.02.

§C. Development of noise contours of equal noise exposure are to be determined using a prediction method in accordance with the procedures of §D, below. Measurements, undertaken in accordance with the procedure of §E of this regulation, may be used to confirm the locations of contours of equal noise exposure.

Source: http://www.dsd.state.md.us/comar/comarhtml/11/11.03.03.02.htm

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Measured vs Modeled

- Most airport noise studies use computer-generated DNL estimates depicted as equal-exposure noise contours (much like topographic maps that indicate contours of equal elevation).
- Modeled DNL contours reflect average annual conditions, accounting for
  - Average number of flights each day/night
  - Type of aircraft
  - How often each runway is used throughout the year
  - Where the aircraft normally fly over the surrounding communities

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Measured vs Modeled

Measured noise data (permanent or portable noise monitors) cannot be used for creating airport DNL contours:

1. Measured noise levels can contain non-aircraft noise sources.
2. It is not possible to measure at enough locations to draw contours from the results.
   - Modeling calculates DNL for a full year's airport operations at every point in a precise grid.
3. Measured noise levels cannot be used to predict future noise levels.
   - Measurements only document what has already occurred.

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Airport Noise and Operations Monitoring System

MAA maintains a Noise and Operations Monitoring System (NOMS) that:

- Manages and analyzes aircraft flight track data and associated noise and complaint data
- Supports MAA's BWI Noise Abatement Program
- Includes 24 noise monitor terminals

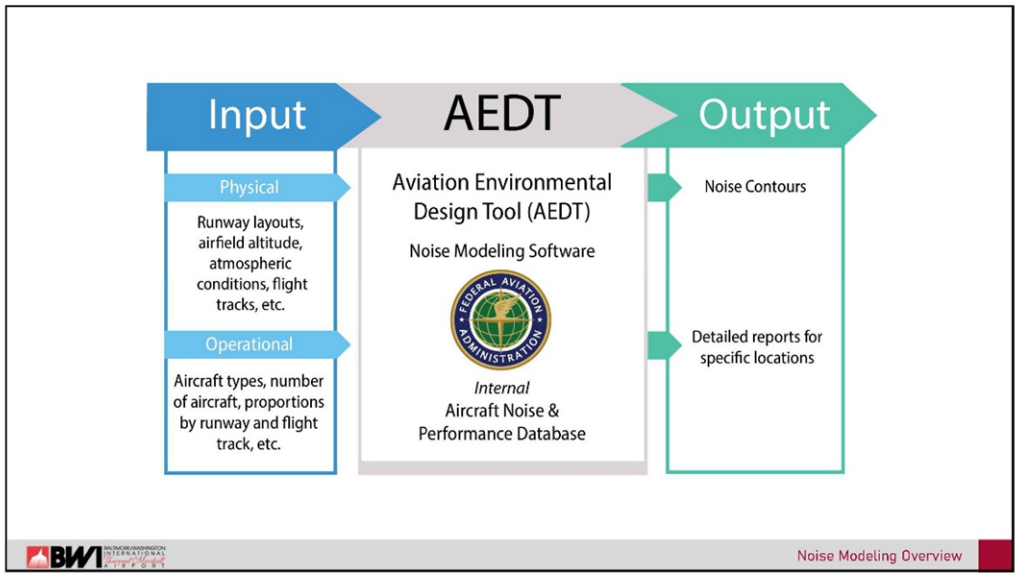
NOMS Purpose:

- Monitor flight operations at BWI and within the regional airspace
- Improve public understanding of BWI Marshall operations
- Assist in investigating and responding to noise complaints related to specific aircraft operations
- Monitor aircraft noise levels in local communities using both fixed and portable noise monitors
- Objectively document aircraft operations and noise exposure for historical records

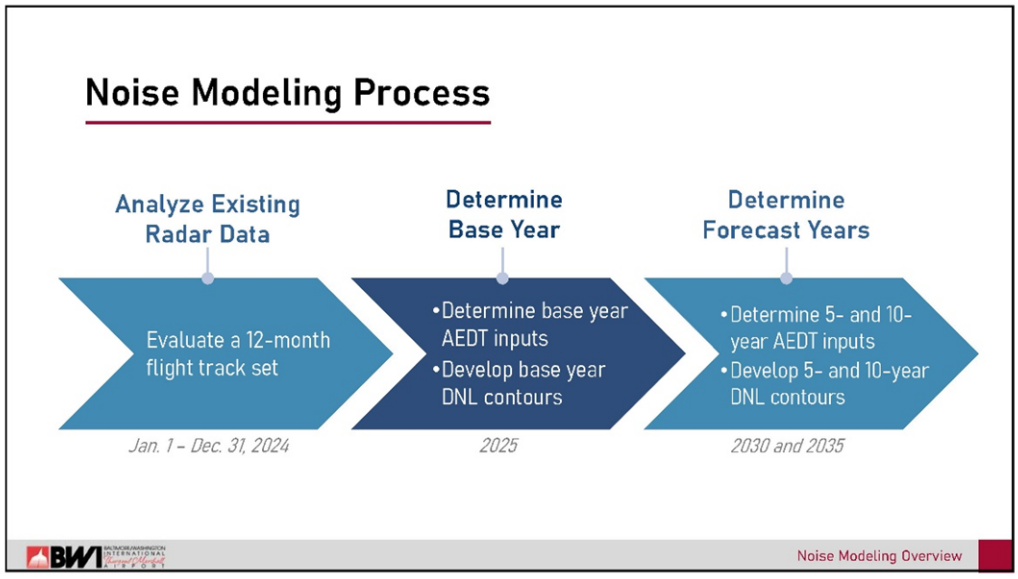
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Noise Modeling Overview

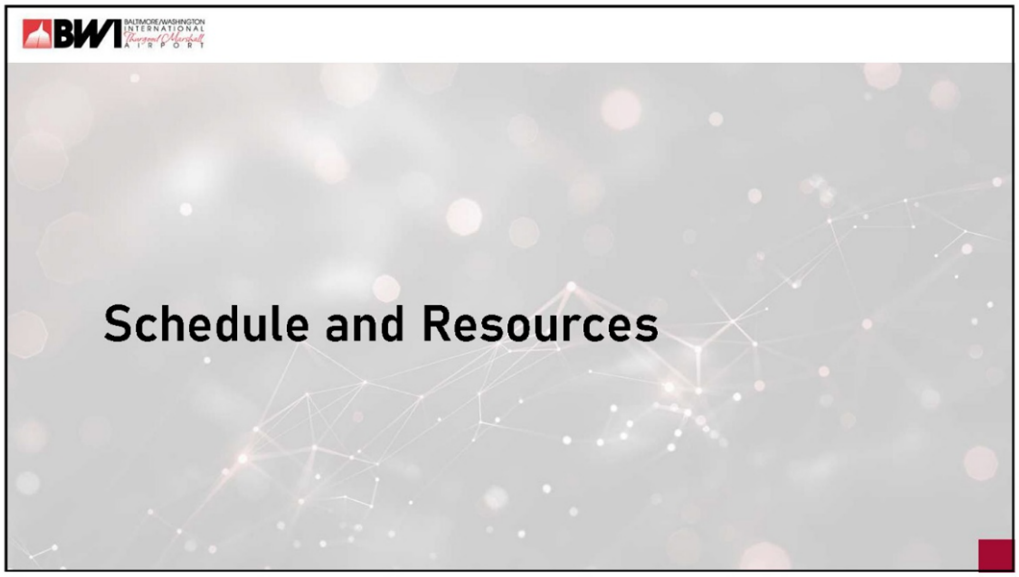
54


Input
AEDT
Output
Physical
Runway layouts, airfield altitude, atmospheric conditions, flight tracks, etc.
Operational
Aircraft types, number of aircraft, proportions by runway and flight track, etc.
Aviation Environmental Design Tool (AEDT)
Noise Modeling Software
Internal
Aircraft Noise & Performance Database
Noise Contours
Detailed reports for specific locations
Noise Modeling Overview

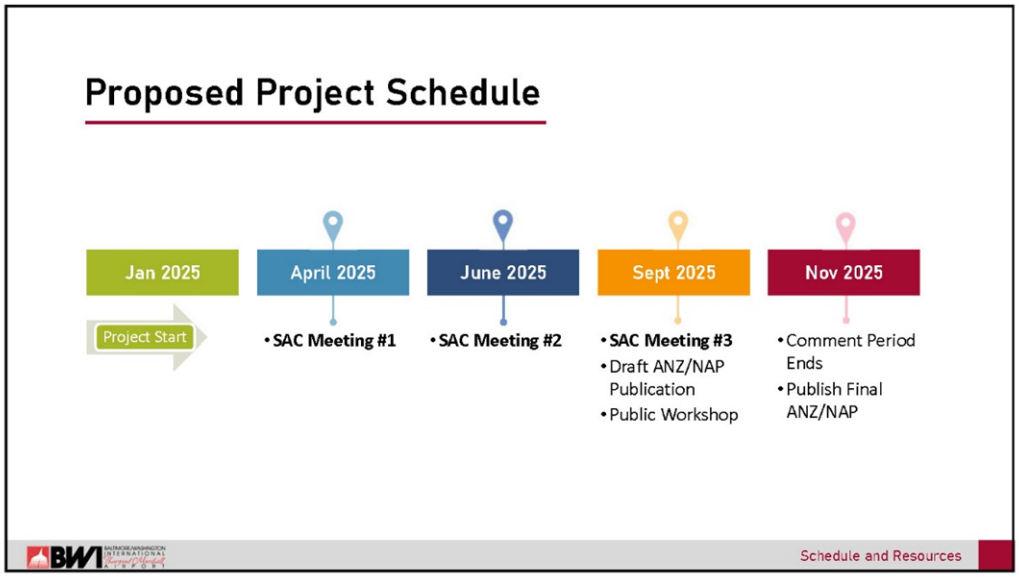
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Noise Modeling Process
Analyze Existing Radar Data
Evaluate a 12-month flight track set
Jan. 1 – Dec. 31, 2024
Determine Base Year
•Determine base year AEDT inputs
•Develop base year DNL contours
2025
Determine Forecast Years
•Determine 5- and 10-year AEDT inputs
•Develop 5- and 10-year DNL contours
2030 and 2035
Noise Modeling Overview

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Schedule and Resources

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Proposed Project Schedule
Jan 2025
Project Start
April 2025
• SAC Meeting #1
June 2025
• SAC Meeting #2
Sept 2025
• SAC Meeting #3
• Draft ANZ/NAP Publication
• Public Workshop
Nov 2025
• Comment Period Ends
• Publish Final ANZ/NAP
Schedule and Resources

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Project Contacts

Project Primary Contact

Email: MDOT-MAA-ANZ@assedollc.com

Phone: (240) 200-5176

MAA Project Manager

Bruce Rineer, Manager, Office of Environmental Compliance and Sustainability, Noise Section
BRineer@bwiairport.com

ANZ Project Managers

Sarah Yenson, Principal Consultant
syenson@hmmh.com

Rhea Hanrahan, Director, AES
rhanrahan@hmmh.com

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Additional Resources

2020 BWI Marshall ANZ

- https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/

BWI Marshall Roundtable

- https://marylandaviation.com/environmental/airport-noise/dc-metroplex-bwi-community-roundtable/

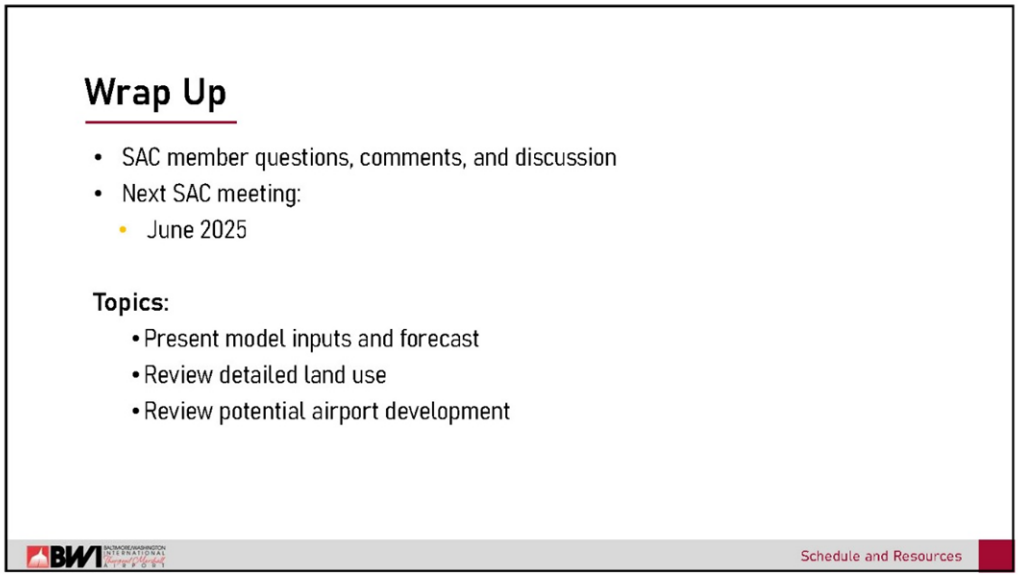
Quarterly Noise Reports

- https://marylandaviation.com/environmental/airport-noise/quarterly-noise-reports/

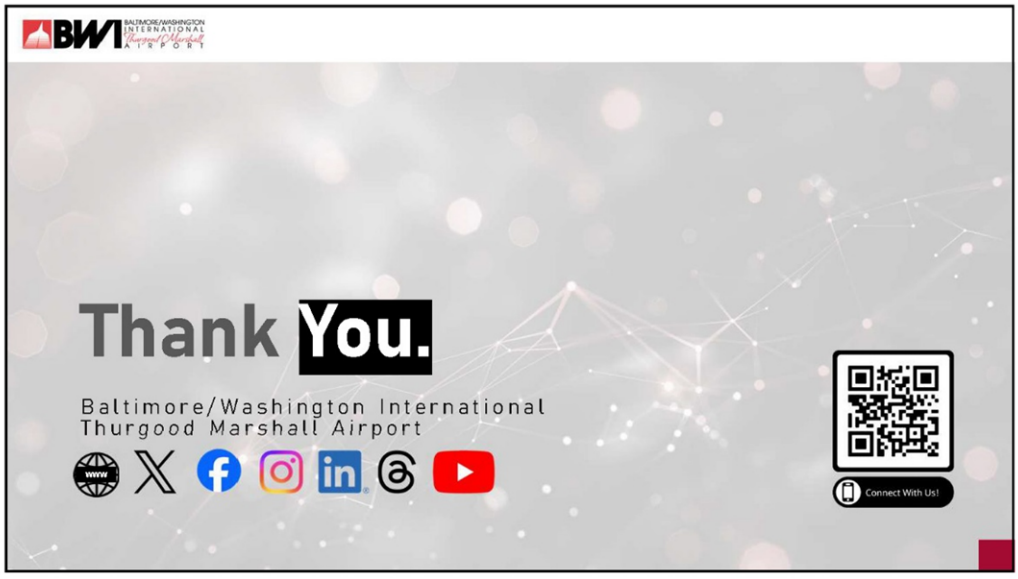
WebTrak

- https://webtrak.emsbk.com/bwi3

60


Wrap Up
• SAC member questions, comments, and discussion
• Next SAC meeting:
• June 2025
Topics:
• Present model inputs and forecast
• Review detailed land use
• Review potential airport development
Schedule and Resources

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Thank You.
Baltimore/Washington International
Thurgood Marshall Airport
Connect With Us!

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MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

Wes Moore
Governor
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Paul J. Wiedefeld
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Shannetta R. Griffin, P.E.
Executive Director/CEO

Baltimore/Washington International Thurgood Marshall Airport
Airport Noise Zone (ANZ) Update
Stakeholder Advisory Committee (SAC) Meeting 1

MEETING MINUTES

Thursday, April 3, 2025, 6:00 PM – 8:00 PM

MAA Facilities
991 Corporate Boulevard
Linthicum Heights, MD 21090

Discussion Item	Notes	Presenter
Welcome	The meeting began with Mr. Bruce Rineer welcoming attendees and providing a safety briefing. He reviewed emergency procedures, including the locations of exits, the AED and fire extinguisher, and the designated accountability site outside the building. Mr. Rineer emphasized the importance of reporting hazards and encouraged participants to contact MAA staff with questions or concerns.	Bruce Rineer
Introductions	Following the welcome, Ms. Odessa Phillip introduced herself as the meeting facilitator. She explained her role in keeping the meeting on track and creating space for all voices to be heard. Ms. Phillip then invited participants to introduce themselves. Attendees included representatives from MAA, the HMMH consultant team, airport tenants, local government, the BWI Roundtable, and various community and civic organizations.	Odessa Phillip
Expected Meeting Takeaways	After the introductions, Mr. Rineer returned to outline the evening's goals. He explained that this first Stakeholder Advisory Committee (SAC) meeting would provide foundational information about the Airport Noise Zone (ANZ) process, including key topics such as regulatory background, the Noise Abatement Plan (NAP), the SAC's role, and how noise is modeled. He shared that by the end of the meeting, participants should have a clear understanding of: • What the ANZ is and why it's required • The purpose and voluntary nature of the NAP • The SAC's advisory role • How noise is evaluated using the Day-Night Average Sound Level (DNL)	Bruce Rineer

- The inputs to the noise model and the expected study's outputs.

Participants represented diverse perspectives, including local civic associations, airport tenants, local government, the BWI Roundtable, and federal air traffic control.

Airport Noise Zone	Mr. Rineer explained that Maryland law mandates MAA to complete an update to the ANZ approximately every five years. The ANZ delineates boundaries where aircraft noise is projected to reach 65, 70, and 75 decibels DNL. These contours are used as a land use compatibility tool to guide development near the airport. He emphasized that while the ANZ identifies noise exposure, it does not restrict airport operations. The ANZ update is governed by the Maryland Environmental Noise Act of 1974 and the Code of Maryland Regulations (COMAR). The update includes noise modeling for a base year (2025), a five-year forecast (2030), and a ten-year forecast (2035). The certified ANZ is developed as a composite formed by the farthest extents of these three contours. Mr. Rineer noted that this program is entirely state-funded and not eligible for federal noise mitigation programs. Its purpose is to support local planning decisions and reduce future noise conflicts. The ANZ is also tied to permitting processes through the Board of Airport Zoning Appeals (BAZA), which can issue variances for developments proposed within the noise contours. Mr. Rineer explained that while the ANZ defines compatible land uses, it does not directly trigger noise mitigation programs like residential sound insulation. These programs are governed separately, typically through the FAA's Part 150 process. Mr. Drew Roth questioned whether the contours would consider runway development that has not occurred. Mr. Rineer responded that the contours reflect existing conditions and approved plans. Mr. Roth asked whether the noise contours accounted for aircraft operations associated with future runway development. Mr. Rineer clarified that only approved and funded projects within the planning horizon are included in the contours, and that this update does not assume the construction of a new runway unless it is part of an adopted capital	Bruce Rineer

	plan. As part of modeling, a 10-year contour with the parallel runway and one w/o the parallel runway will be developed. However, the ANZ contour will use the contour with the runway per regulations, and the contour w/o will be used as information only.	
Noise Abatement Plan Overview	Mr. Rineer introduced the Noise Abatement Plan (NAP) by describing it as a set of voluntary, community-driven practices that aim to reduce the effects of aircraft noise without restricting operations. He explained that while not enforceable, the plan is a key way to incorporate local noise-related concerns into daily airport mitigation practices. He encouraged SAC members to suggest revisions or additions to the plan, especially if there are recurring noise concerns within their communities that could be addressed through voluntary measures. He noted that the NAP is reviewed and updated as part of the ANZ process and that this committee's input could directly shape that effort. Several SAC members questioned specific flight corridors and reported challenges in certain neighborhoods. The team acknowledged the feedback and encouraged participants to continue tracking these issues and using WebTrak to log complaints and trends.	Bruce Rineer
Stakeholder Advisory Committee (SAC)	Mr. Rineer transitioned to discuss the purpose and structure of the SAC. He explained that the committee brings together a range of stakeholders, from community groups to airport tenants to local officials, to advise MAA during the ANZ update. Ms. Rhea Hanrahan emphasized that the SAC plays a critical role in reviewing technical materials, providing localized feedback, and helping to shape both the modeling inputs and public communications. She explained that members are encouraged to bring forward community concerns and share information with their networks to ensure transparency. Mr. Rineer described the SAC as a two-way communication forum: members will receive updates and materials before each meeting, and their feedback will be used to refine study assumptions, prioritize noise abatement considerations, and identify key outreach needs. Several members expressed interest in how the SAC's feedback would be documented and incorporated. Ms. Hanrahan confirmed that all	Bruce Rineer

	comments and recommendations would be logged, and summaries of each meeting would be shared for review. The team committed to ensuring follow-up and accountability throughout the process.	
BWI Overview	Mr. Rineer provided a high-level overview of BWI Marshall Airport's operations, layout, and tenants to give SAC members a better understanding of the context in which the ANZ update is being conducted. He explained that BWI is a joint-use facility that serves commercial passenger airlines, air cargo carriers, general aviation, and military operations. Mr. Rineer noted that it is one of the busiest airports in the region and continues to grow in activity and capacity. He discussed recent capital improvement projects and ongoing facility upgrades to support safe and efficient operations. These include terminal expansions, improvements to runway and taxiway infrastructure, and modernization of the airport's airfield lighting and navigational systems. Mr. Rineer emphasized the challenges with balancing the needs of multiple stakeholders, including the FAA, commercial airlines, and local jurisdictions. Also, BWI's growth affects how aircraft noise is distributed across surrounding communities. Understanding the airport's layout, including runway configurations and flight corridors, is essential for interpreting the modeled noise contours presented later in the process. Mr. Rineer reiterated the importance of grounding the ANZ study in accurate operational data and aligning it with the airport's existing layout and approved plans for future development.	Bruce Rineer
Fundamentals of Noise	Ms. Hanrahan led a foundational discussion on noise and how it is measured and evaluated in airport environments. She began by distinguishing the concept of sound from noise, explaining that while sound is a measurable physical phenomenon, noise is inherently subjective and influenced by individual perception. Ms. Hanrahan introduced the audience to key acoustic metrics used in aviation noise analysis. She explained that the decibel (dB) scale is logarithmic, meaning a 3 dB increase signifies a doubling of sound energy. Additionally, she noted that the human ear typically perceives a 10 dB increase as sounding twice as loud. This understanding helps clarify why even small increases in dB levels can lead to noticeable reactions from the community. She went on to describe the main noise metrics used to describe aircraft noise:	Rhea Hanrahan

- **Lmax**, the maximum sound level during a single noise event.
- **SEL** (Sound Exposure Level), which accounts for both the intensity and duration of a noise event.
- **DNL** (Day-Night Average Sound Level) aggregates noise levels over 24 hours and adds a 10 dB penalty for nighttime operations between 10:00 PM and 7:00 AM.

Ms. Hanrahan emphasized that DNL is the federally mandated metric for airport noise modeling and is required under the Code of Maryland Regulations (COMAR) to develop the ANZ. While it may not reflect every community's experience with noise, it allows for consistent comparison and planning across different airports and periods. She also addressed common misconceptions, such as why some areas experience high levels of annoyance even when the DNL is below 65 dB. Ms. Hanrahan noted that the frequency of events, time of day, and the tonal characteristics of aircraft can all influence public perception, reinforcing the importance of consistent methodology for analyzing data and community feedback.

Noise Modeling Overview	Mr. Paul Krusell led the technical presentation on the noise modeling process that generates the contours to define the updated ANZ. He explained that the study uses the FAA's Aviation Environmental Design Tool (AEDT), a standardized platform incorporating a range of data inputs to simulate aircraft noise exposure around the airport. Mr. Krusell outlined the data input in the model, including the number and type of aircraft operations, flight track information, runway use, altitude, time of day, and weather conditions. He noted that the modeling uses an average annual day to provide a consistent baseline and that special attention is given to nighttime operations due to their higher weight in the DNL calculation. He explained that the contours are generated for three periods: 2025 (base year), 2030 (five-year forecast), and 2035 (ten-year forecast). These contours are then overlaid with land use data to create the certified ANZ, which helps assess land use compatibility. Mr. Krusell emphasized that stakeholder input is important for validating the model's assumptions. He encouraged SAC members to review the forthcoming modeling input materials and provide feedback on anything inconsistent with lived experience or local understanding of airport operations.	Paul Krusell

	SAC members asked how the model accounts for variability in day-to-day operations and whether it reflects peak activity periods. Mr. Krusell clarified that while the model is designed around an average day, it uses representative operational data from recent years and FAA forecast data and includes typical and peak-period activity patterns. Ms. Hanrahan added that the contours do not represent single events or isolated peak days, but rather a long-term average exposure that helps to guide planning and land use policy.	
Schedule and Additional Resources	To close the meeting, Mr. Krusell provided an overview of the project timeline. He outlined the major milestones of the ANZ update, starting with the April 2025 SAC Meeting #1 and continuing through to final public engagement and codification: • **April 2025:** SAC Meeting #1 – Project kickoff and process overview • **June 2025:** SAC Meeting #2 – Review of modeling inputs and assumptions • **September 2025:** SAC Meeting #3 – Presentation of draft contours and preliminary recommendations • **Fall 2025:** Public workshop and comment period • **Winter 2025:** Finalization and codification of the ANZ in COMAR Mr. Rineer emphasized the importance of continued engagement and reiterated that all meeting materials would be shared. He reminded members that the MAA team can answer questions or receive input between meetings. Mr. Rineer also encouraged attendees to use the WebTrak tool, which allows the public to track aircraft in real time and submit noise complaints. While WebTrak is centered on BWI operations, it can help the public and the project team better understand regional noise patterns and concerns.	Paul Krusell
Q&A	Following the presentation on the project schedule, Mr. Rineer reopened the floor for questions and returned to the earlier slide on the 2020 BWI Marshall ANZ contours to help reinforce key points.	Bruce Rineer

Mr. Dan Woomer questioned the use of real noise monitoring data versus modeled data. He suggested that filtering non-aircraft noise (such as lawnmowers or vehicles) could enhance the comparison between measured and modeled noise levels. Ms. Hanrahan responded that while real-world measurements are valuable, the ANZ process focuses on forecasting future conditions using standardized modeling, as COMAR requires. Mr. Rineer added that comparisons between modeled and measured data show that the model often presents a more conservative (higher) estimate of noise exposure.

Ms. Gina Stewart asked for clarification on the contour lines shown in the slide. She wanted to know whether they represented current conditions or future projections. Mr. Rineer explained that the contours shown in the ANZ are composite forecasts that include current, five-year, and ten-year projections. For this ANZ update, these years would be 2025, 2030, and 2035. Ms. Hanrahan added that the modeling approach overlays all three forecast years to produce a worst-case scenario contour for planning purposes.

Mr. Samuel Meyers inquired about the number of annual residential permit applications MAA reviews and how many are typically approved. Mr. Rineer responded that only a few applications are submitted yearly and that approvals are rare. He cited one recent case where a permit was granted with strict conditions requiring interior noise levels to remain below 45 dB.

Mr. Royce Bassarab elaborated on the variance process, noting that applicants denied a permit due to being within the ANZ can appeal through the BAZA. He explained that applicants must demonstrate that the proposed structure will achieve sufficient interior noise reduction. Mr. Bassarab emphasized that most variances approved by the board include conditions to mitigate noise impacts through construction techniques.

Ms. Suzzie Schuyler appreciated the thoroughness of the presentations and thanked the project team for explaining complex technical concepts in an accessible way.

The discussion helped reinforce several earlier concepts and allowed the team to address specific areas of interest raised by attendees.

Adjournment	Mr. Rineer formally adjourned the meeting by thanking all participants for their attendance, input, and thoughtful discussion throughout the evening. He expressed appreciation for the time and effort each SAC member contributed and reaffirmed the value of their continued engagement in the ANZ update process. Mr. Rineer encouraged members to stay involved, review materials before the next meeting, and share information with their respective communities. He noted that the next SAC meeting would occur in June 2025 and that details would be shared in advance.	Bruce Rineer

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

Wes Moore
Governor
Aruna Miller
Lieutenant Governor
Paul J. Wiedefeld
Secretary
Shannetta R. Griffin, P.E.
Executive Director/CEO

April 9, 2025

Subject: Thank you for your participation!

Dear [STAKEHOLDER NAME],

Thank you for attending the initial Stakeholder Advisory Committee (SAC) meeting for the 2025 Airport Noise Zone (ANZ) Update for Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall) on April 3, 2025. The Maryland Department of Transportation Maryland Aviation Administration (MDOT MAA) appreciates your input and participation as a stakeholder on this important committee.

Details concerning the second SAC meeting, anticipated to occur in June 2025, are forthcoming. We plan on sharing the ANZ noise contours draft and related land-use inventory with all SAC members for review before the second SAC meeting. Members will have the opportunity to discuss this content in detail at the second meeting and provide input. As a reminder, the public involvement process includes a separate public hearing concerning the BWI ANZ update.

Please find the electronic version of the first SAC meeting presentation attached. If you have questions about the ANZ process, please email Bruce Rineer at BRineer@bwiairport.com. If you have questions or concerns related to the logistics of the next SAC meeting, contact the MAA Outreach Team at 240-200-5176 or email MDOT-MAA-ANZ@assedollc.com.

Sincerely,

Bruce Rineer, Manager
Noise Program Section
Office of Environmental Compliance and Sustainability
Maryland Aviation Administration

PO Box 8766, BWI Airport, Maryland 21240-0766 | 410.859.7100 | 800.435.9294 | Maryland Relay TTY 410.859.7727 | marylandaviation.com

Kayla Woods

From: MDOT-MAA-ANZ
Sent: Friday, April 18, 2025 2:22 PM
To: brineer@bwiairport.com
Subject: Save The Date: MAA BWI Marshall Airport SAC Meeting 2



BWI MARSHALL AIRPORT
SAC MEETING #2

Location: 991 Corporate Blvd, Linthicum Heights, MD 21090
Time: 6:00pm – 8:00pm
A formal invitation and additional information/resources will follow.

Regards,

BWI Marshall and Martin State Airport Noise Zone
Outreach Team
Phone: 240-200-5176
https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/
https://marylandaviation.com/environmental/airport-noise/martin-state-airport-noise-zone/

1

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

Wes Moore
Governor
Aruna Miller
Lieutenant Governor
Paul J. Wiedefeld
Secretary
Shannetta R. Griffin, P.E.
Executive Director/CEO

[Date]

[Name]
[Address]
[Address]

Dear [Name],

Thank you again for your continued participation in the Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall) Airport Noise Zone (ANZ) Update Stakeholder Advisory Committee (SAC). Your engagement, feedback, and community insight are crucial to the success of this process, and we appreciate your ongoing commitment. We are pleased to continue working with you as we prepare for our second SAC meeting.

The Maryland Department of Transportation, Maryland Aviation Administration (MAA), is continuing its effort to update the 2025 ANZ for BWI Marshall Airport (BWI). As required by the Code of Maryland Regulations (COMAR), this update includes modeling current and future aircraft noise conditions and reviewing the existing BWI Marshall Noise Abatement Plan. Your participation as a member of the SAC ensures that the study is informed by local expertise and aligns with the community's priorities.

We are excited to invite you to the second SAC meeting, which will take place on:

Wednesday, June 25, 2025
6:00 PM – 8:00 PM
MAA Facilities
991 Corporate Blvd, Linthicum Heights, MD

At this meeting, the project team will present preliminary modeling inputs and assumptions that will inform the development of updated noise contours, providing a foundation for future discussions and decisions. We'll also continue discussions around the Noise Abatement Plan and provide space for questions, feedback, and collaborative discussion. In addition, we will continue to welcome new SAC members as the process progresses. If you could not attend the first meeting, we encourage you to join us for SAC Meeting #2 and participate in the ongoing discussions.

We kindly request that all attendees confirm their participation at https://BwiAnzSAC2.eventbrite.com . Those who RSVP will receive the meeting materials beforehand, including the agenda, presentation slides, and the minutes from SAC Meeting #1, to ensure a productive and informed discussion.

If you have any questions or would like to discuss the meeting in more detail, please contact me at 410-859-7813 or brineer@bwiairport.com. We look forward to seeing you.

Sincerely,
Bruce Rineer, Manager
Noise Program Section
Office of Environmental Compliance and Sustainability

PO Box 8766, BWI Airport, Maryland 21240-0766 | 410.859.7100 | 800.435.9294 | Maryland Relay TTY 410.859.7727 | marylandaviation.com

Kayla Woods

From:	MDOT-MAA-ANZ
Sent:	Wednesday, June 18, 2025 3:30 PM
To:	Bruce Rineer
Subject:	Stakeholder Advisory Committee 2 Invitation - Airport Noise Zone (ANZ) Update for Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall)
Attachments:	2025__BWI_ANZ_SAC_Mtg2_Readahead.pdf

Good afternoon,

The Maryland Aviation Administration (MAA) is in the process of updating the 2025 Airport Noise Zone (ANZ) for **BWI Marshall**, and we are continuing to seek input from key stakeholders like you.

You received a formal invitation in the mail, and this is a reminder email for the upcoming **Stakeholder Advisory Committee (SAC) meeting #2**.
Your participation is essential to this process, and we appreciate your engagement.

Details of the meeting
Date: **Wednesday, June 25, 2025,**
Time: **6:00 PM – 8:00 PM**
Location: **MAA Facilities**
991 Corporate Blvd, Linthicum Heights, MD 21090

We have attached read-ahead materials; please take some time to look over these documents before the meeting. The **Agenda** for the meeting is as follows:

- Welcome and Introductions
- SAC Meeting #1 Recap
- ANZ Noise Modeling Process
- Noise Model Inputs
- ANZ Land Use Inventory
- Noise Abatement Plan (NAP)
- Schedule and Resources

To **RSVP**, please register online here: **https://BwiAnzSAC2.eventbrite.com**.

If you have any questions, please contact our Outreach Team at 240-200-5176 or at MDOT_MAA-ANZ@assedollc.com.

We look forward to working with you!

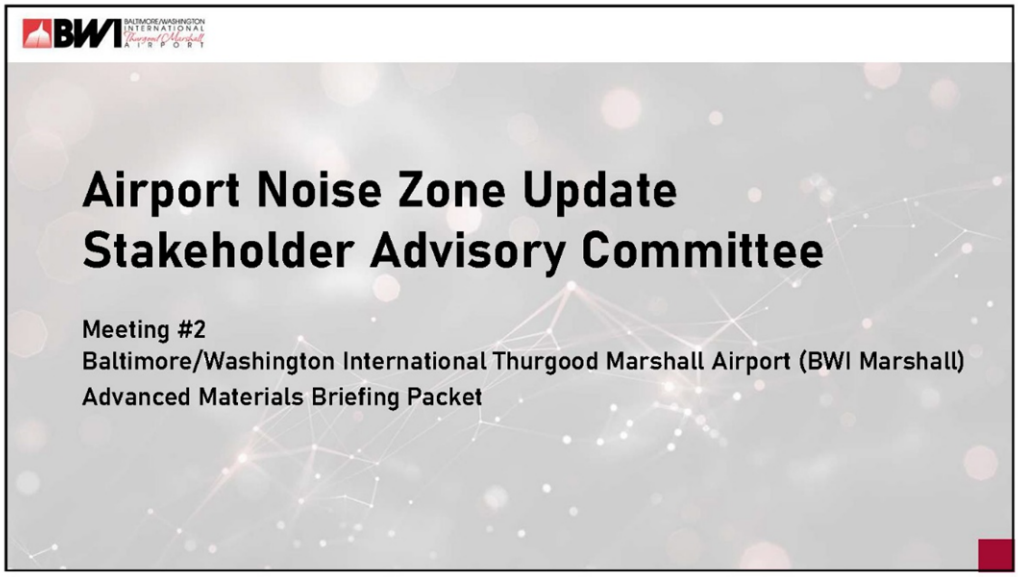
Regards,

Bruce Rineer,

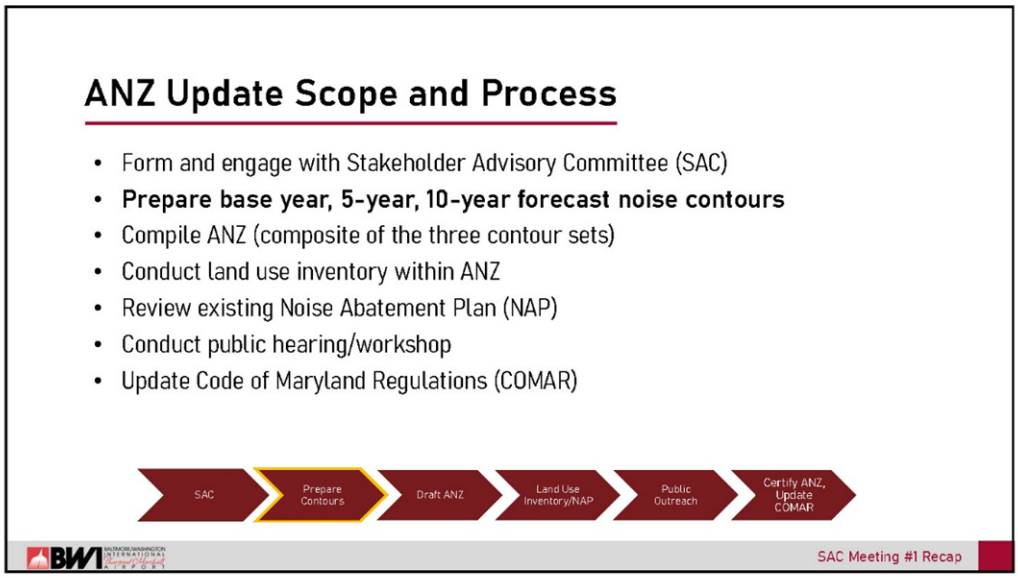
Manager Noise Program Section
Office of Environmental Compliance and Sustainability

https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/




Airport Noise Zone Update
Stakeholder Advisory Committee
Meeting #2
Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall)
Advanced Materials Briefing Packet

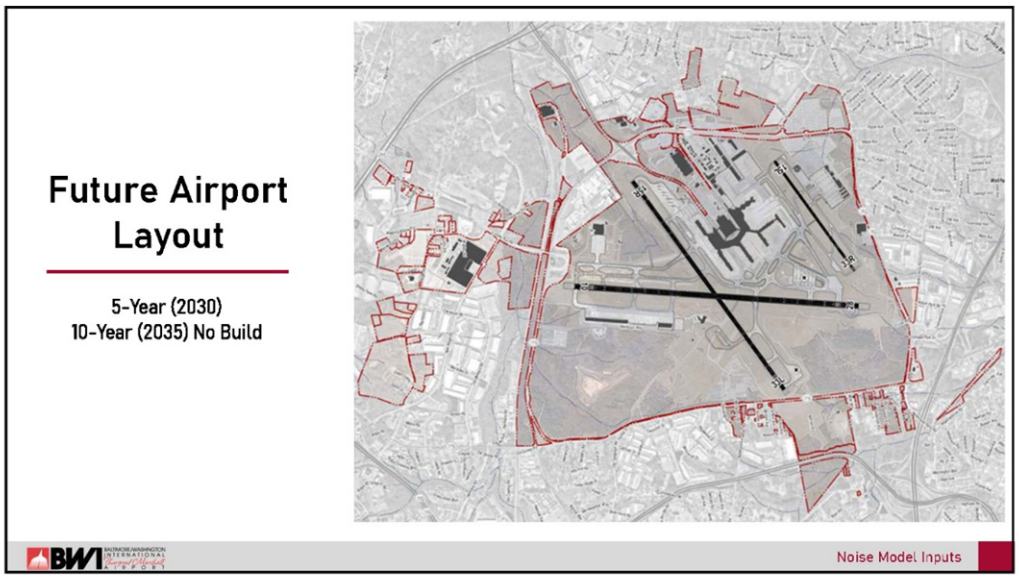
1


ANZ Update Scope and Process
Form and engage with Stakeholder Advisory Committee (SAC)
Prepare base year, 5-year, 10-year forecast noise contours
Compile ANZ (composite of the three contour sets)
Conduct land use inventory within ANZ
Review existing Noise Abatement Plan (NAP)
Conduct public hearing/workshop
Update Code of Maryland Regulations (COMAR)
SAC
Prepare Contours
Draft ANZ
Land Use Inventory/NAP
Public Outreach
Certify ANZ, Update COMAR
SAC Meeting #1 Recap

2


Existing
Airport Layout
Base Year (2025)
Noise Model Inputs

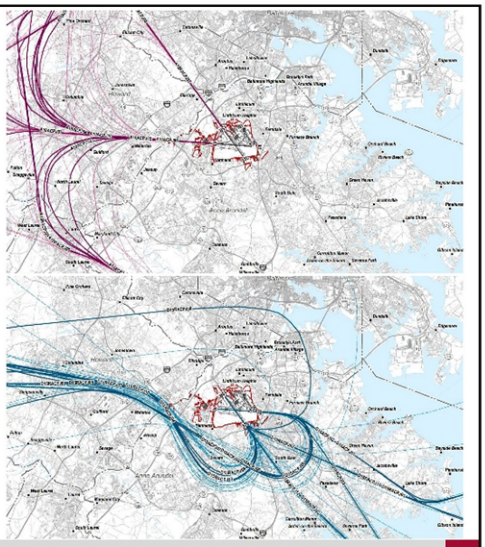
3


Future Airport
Layout
5-Year (2030)
10-Year (2035) No Build
Noise Model Inputs

4

Model Track Development

- Industry-standard method that splits radar flight tracks into smaller, similar groups
  - Groups separated by category (e.g., air carrier passenger), operation type (e.g., arrival, departure) and runway end, aircraft type (e.g., jet, non-jet, helicopter), and destination/direction
- Results in geometrically similar groups of the same category, operation type, runway end, aircraft type
  - Groups with wide dispersion are represented with a 'backbone' (bold) track and one, two, or three 'dispersion' sub-tracks (dashed) on either side of the backbone – resulting in three, five, or seven total tracks used to represent that group



5

Base Year (2025) Operations

- Operations levels determined from 2024 edition of the FAA's Terminal Area Forecast (issued Jan 2025)
  - Calendar year 2024 data scaled to 2025 TAF
- Aircraft fleet mix, runway use, and flight tracks derived from ANOMS data
  - Model flight tracks were created using flight data from July-Dec 2024 and Sept-Dec 2024
- No maintenance run-ups modeled

Operations Category	Operations Count	Operations Percentage
Air Carrier (AC) Passenger	202,403	85.0%
Air Carrier (AC) Cargo	9,368	3.9%
Air Taxi (AT)	14,752	6.2%
General Aviation (GA)	10,712	4.5%
Military (ML)	920	0.4%
Total	**238,155**	
Average Annual Day (AAD)	**652.5**	

6

Five-Year (2030) Operations

- No changes to airport layout
- Operations levels derived from 2024 TAF
- Flight tracks, runway use, and flight tracks are the same as the base year operations
- Maintenance runups based on prior ANZ

Operations Category	Operations Count	Operations Percentage
Air Carrier (AC) Passenger	225,419	84.3%
Air Carrier (AC) Cargo	12,966	5.0%
Air Taxi (AT)	15,612	5.8%
General Aviation (GA)	12,340	4.6%
Military (ML)	920	0.3%
Total	**267,257**	
Average Annual Day (AAD)	**732.2**	

7

Ten-Year (2035) No Buildout Operations

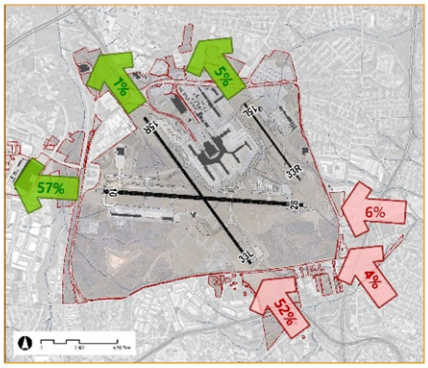
- No changes to airport layout
- Operations levels derived from 2024 TAF
- Flight tracks, runway use, and flight tracks are the same as the base year operations
- Maintenance runups based on prior ANZ

Operations Category	Operations Count	Operations Percentage
Air Carrier (AC) Passenger	244,629	84.2%
Air Carrier (AC) Cargo	16,052	5.5%
Air Taxi (AT)	16,512	5.7%
General Aviation (GA)	12,437	4.3%
Military (ML)	920	0.3%
Total	**290,550**	
Average Annual Day (AAD)	**796.0**	

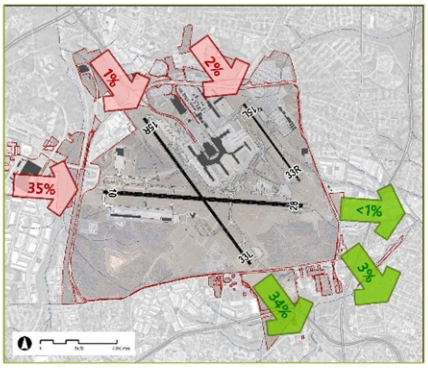
8

Runway Utilization

Base Year (2025), Five-Year (2030), Ten-Year (2035) No Build



West Flow 62%



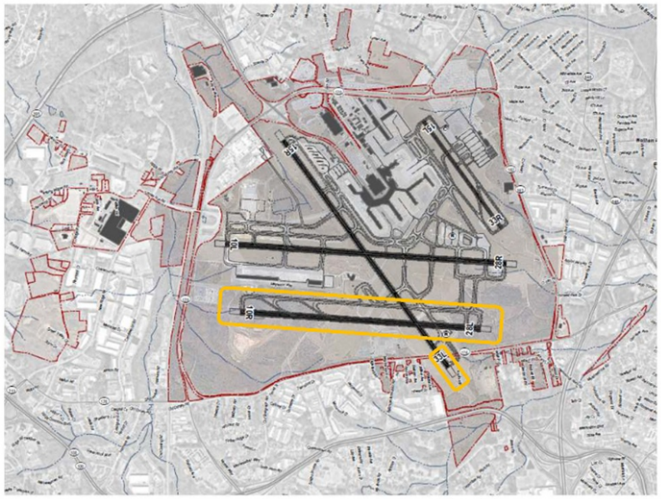
East Flow 38%

Noise Model Inputs

9

Full Build Airport Layout

10-Year Full Build (2035)



Noise Model Inputs

10

Ten-Year (2035) Full Buildout Operations

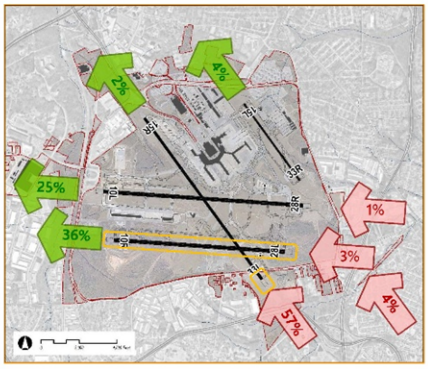
- Addition of parallel Runway 10L/28R and extension of Runway 15R/33L
- Operations levels derived from 2024 TAF
- Aircraft fleet mix, runway use, and flight tracks
  - Runway use based on consultation with the MAA
  - Parallel Runway 10R/28L tracks are based on translation of existing Runway 10/28 (future Runway 10L/28R) tracks
- Maintenance run-ups based on prior ANZ

Operations Category	Operations Count	Operations Percentage
Air Carrier (AC) Passenger	244,629	84.2%
Air Carrier (AC) Cargo	16,052	5.5%
Air Taxi (AT)	16,512	5.7%
General Aviation (GA)	12,437	4.3%
Military (ML)	920	0.3%
Total	**290,550**	
Average Annual Day (AAD)	**796.0**	

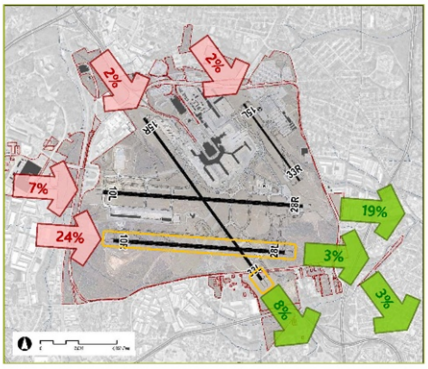
11

Runway Utilization

10-Year (2035) Full Build



West Flow 66%



East Flow 34%

12

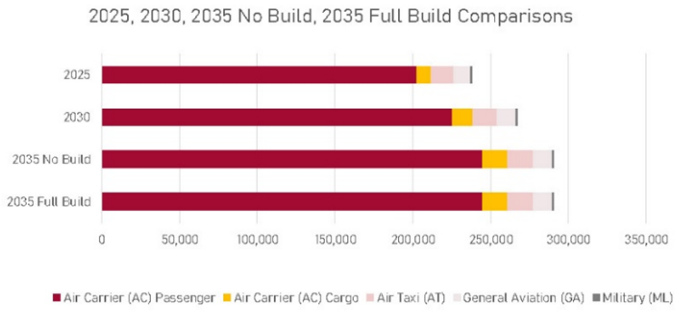
Runway Utilization Changes

10-Year (2035) Full Build

- The addition of the parallel Runway 10R/28L requires distribution of operations from the existing Runway 10/28 between the future Runway 10L/28R and Runway 10R/28L
- Some daytime Air Carrier and Air Taxi operations will shift from Runway 15R to Runways 10L/R
- Flight tracks for the existing Runway 15R/33L will be adjusted for the new runway end

13

Forecast Comparisons



14

Kayla Woods

From: MDOT-MAA-ANZ
Sent: Tuesday, June 24, 2025 4:56 PM
To: Bruce Rineer
Subject: Reminder: Stakeholder Advisory Committee 2 - Airport Noise Zone (ANZ) Update for Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall)

Good afternoon,

This is a friendly reminder about tomorrow's Stakeholder Advisory Committee (SAC) meeting to discuss the **BWI Marshall Airport Noise Zone (ANZ)** update.

Meeting Details:
Wednesday, June 25, 2025, from 6:00 PM – 8:00 PM
at MAA Facilities - 991 Corporate Boulevard, Linthicum Heights, MD 21090

Your participation is critical in shaping this update and ensuring it reflects the needs of the impacted communities.

The Agenda for this meeting is as follows:

- Welcome and Introductions
- SAC Meeting #1 Recap
- ANZ Noise Modeling Process
- Noise Model Inputs
- ANZ Land Use Inventory
- Noise Abatement Plan (NAP)
- Schedule and Resources

To **RSVP**, please register online here: **https://BwiAnzSAC2.eventbrite.com.** Thank you to those who have already done so.

If you have any questions, please contact our Outreach Team at 240-200-5176 or MDOT_MAA-ANZ@assedollc.com.

We look forward to working with you!

Regards,

Bruce Rineer,
Manager Noise Program Section
Office of Environmental Compliance and Sustainability

https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/
https://marylandaviation.com/environmental/airport-noise/martin-state-airport-noise-zone/

1

Maryland Aviation Administration

Please Sign In

Baltimore/Washington International Thurgood Marshall Airport
Airport Noise Zone Update
Stakeholder Advisory Committee (SAC 2)
June 25, 2025

	NAME/TITLE	ORGANIZATION	PHONE	EMAIL	INITIALS
1.	DANA PLAGMANN	FAA ATC	425-231-5837	BWIFACREP@gmail.com	DP
2.	MARK WILDANGER	AACOUNTY	410 - 222- 3292	PZWILD00@AACOUNTY.ORG	MW
3.	MARJORIE Deschenes	PROVINCES CIVIC ASSOCIATION	410-551-7182	MARDESCHENES	mdd
4.	Gina Stewart	BWI Business Partnership	410-859-1051	gstewart@bwi.partner.org	GS
5.	WAYNE Dixon/President	HARMAN Civic Assn Inc.	410.977.4544	dixon102@hotmail.com	WD
6.	Allison Pickard				
7.					
8.					
9.					
10.					

* Stakeholder Advisory Committee Member

Maryland Aviation Administration

Please Sign In

Baltimore/Washington International Thurgood Marshall Airport
Airport Noise Zone Update
Stakeholder Advisory Committee (SAC 2)
June 25, 2025

	NAME/TITLE	ORGANIZATION	PHONE	EMAIL	INITIALS
1.	Steve Schuyler	AACE		342guilt71@gmail.com	SAS
2.	Drew Roth	Roundtable/SAC / Elkridge Community Alliance		mrdrew@gmail.com	DR
3.	Howard Johnson	SAC		[illegible]	HJ
4.	Steve Koons	NCIA			
5.					
6.					
7.					
8.					
9.					
10.					

* Stakeholder Advisory Committee Member

Airport Noise Zone Update
Stakeholder Advisory Committee

Meeting #2
Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall)

June 25, 2025
6:00 PM – 8:00 PM

1

Welcome to BWI Marshall

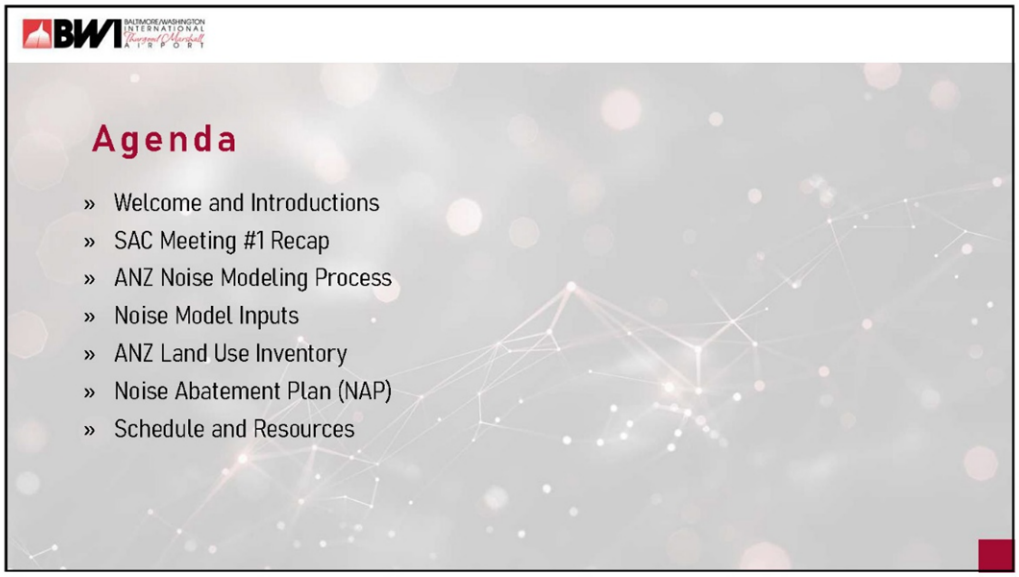
Safety Briefing

- Follow emergency exits
- Call 911
- Assist those who need assistance
- Be sure to take a head count during the emergency event
- Nearest AED – Hallway by restrooms
- Nearest fire extinguisher – Hallway by restrooms
- **Accountability Site:** Parking lot outside of front door of Building 991
- Always report any hazards in the meeting room

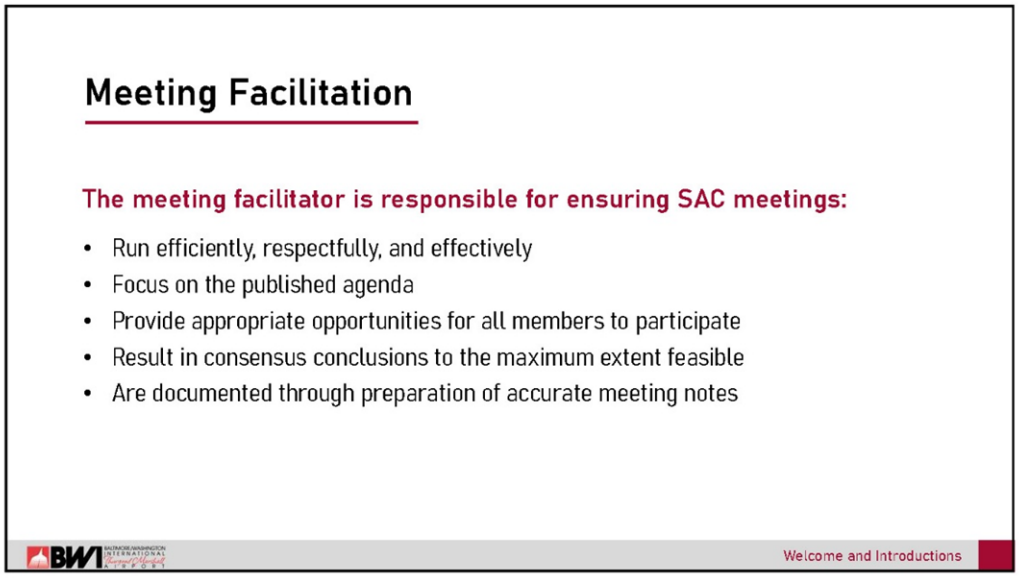


Source: MDOT MAA, Office of Planning, 2019

2


Agenda
» Welcome and Introductions
» SAC Meeting #1 Recap
» ANZ Noise Modeling Process
» Noise Model Inputs
» ANZ Land Use Inventory
» Noise Abatement Plan (NAP)
» Schedule and Resources

3


Meeting Facilitation
The meeting facilitator is responsible for ensuring SAC meetings:
• Run efficiently, respectfully, and effectively
• Focus on the published agenda
• Provide appropriate opportunities for all members to participate
• Result in consensus conclusions to the maximum extent feasible
• Are documented through preparation of accurate meeting notes
Welcome and Introductions

4

Introductions

- Maryland Aviation Administration (MAA) representatives
- Stakeholder Advisory Committee (SAC) members
- Consultant team

5

SAC Meeting #1 Recap

6

ANZ Update Scope and Process

- Form and engage with Stakeholder Advisory Committee (SAC)
- **Prepare base year, 5-year, 10-year forecast noise contours**
- Compile ANZ (composite of the three contour sets)
- Conduct land use inventory within ANZ
- Review existing Noise Abatement Plan (NAP)
- Conduct public hearing/workshop
- Update Code of Maryland Regulations (COMAR)



7

ANZ Study Update

The ANZ update process includes status review of the NAP.

Airport Noise Zone (ANZ)	Noise Abatement Plan (NAP)
Provides the means to identify and control incompatible land development around BWI Marshall Is a composite of the farthest extents of the annual Day-Night Average (DNL or Ldn) contours for each of the study years (2025 base, 2030 and 2035 forecast)	Prescribes measures to monitor, reduce, and/or eliminate incompatible land use areas within the ANZ to the extent possible while maintaining efficient airport operations

8

Maryland Airport Noise Zone (ANZ) Regulations

- Maryland Environmental Noise Act of 1974
  - *"Provide a positive basis for abatement of existing noise problems in communities near airports and to prevent new noise problems."*
- Maryland law requires MAA to complete an ANZ update approximately every 5 years
  - Maryland Statutes, Article Transportation, Section 5-805
- The certified ANZ consists of Day-Night Average Sound Level (DNL) contours at 65, 70, and 75 decibels
  - Printed on Airport Noise Zone Map
  - Is a composite of the base year (2025) and future year (2030, 2035) contours
  - Defined to provide the largest area of expected or future noise exposure contours for land planning purposes

9

Expectations for the ANZ

The ANZ provides a means to:

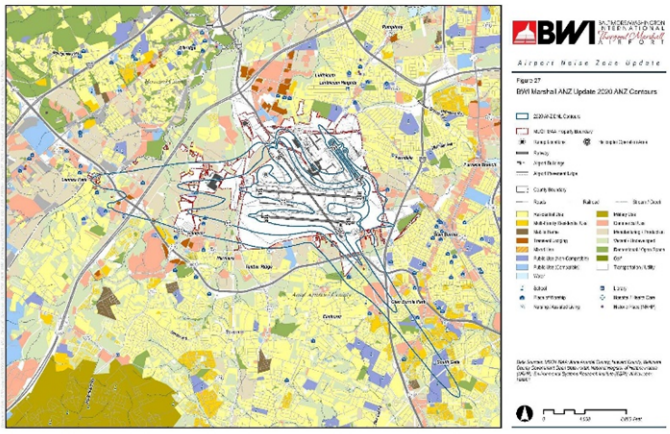
- Understand existing and future noise exposure around BWI Marshall
- Assist local land use jurisdictions in the control of potentially incompatible development
- Identifies potential strategies to mitigate noise, including voluntary noise abatement procedures

The ANZ cannot:

- Restrict the hours of operations
- Impose curfews or restrictions
- Require the FAA to change flight procedures
- Be used to limit demand or forecast growth

10

BWI Marshall Airport Noise Zone (2020)



SAC Meeting #1 Recap

11

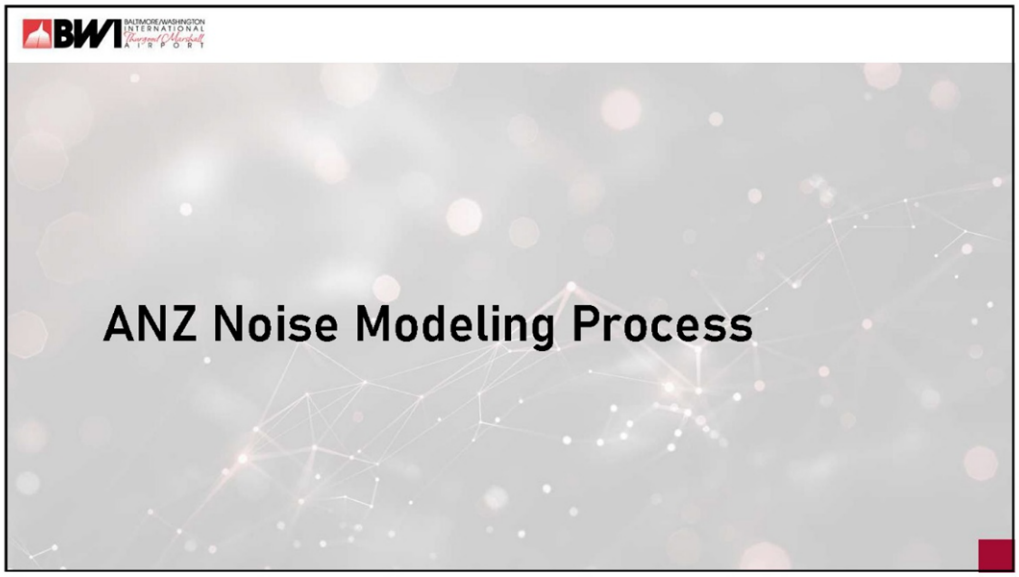
SAC Responsibilities

- Contribute to study inputs
  - Discussion and feedback at SAC meetings
  - Provide input, advice, and guidance related to Noise Abatement Plan
  - understand ANZ effects on stakeholders
- Review modeling assumptions
  - Base year and forecasts
- Review analysis results
  - Base, 5-year, and 10-year contours
- Review documentation
  - NAP and Draft ANZ document
- Provide two-way communication
  - Share information with your constituents, neighbors and organizations
  - Spread the word about future opportunities for public feedback

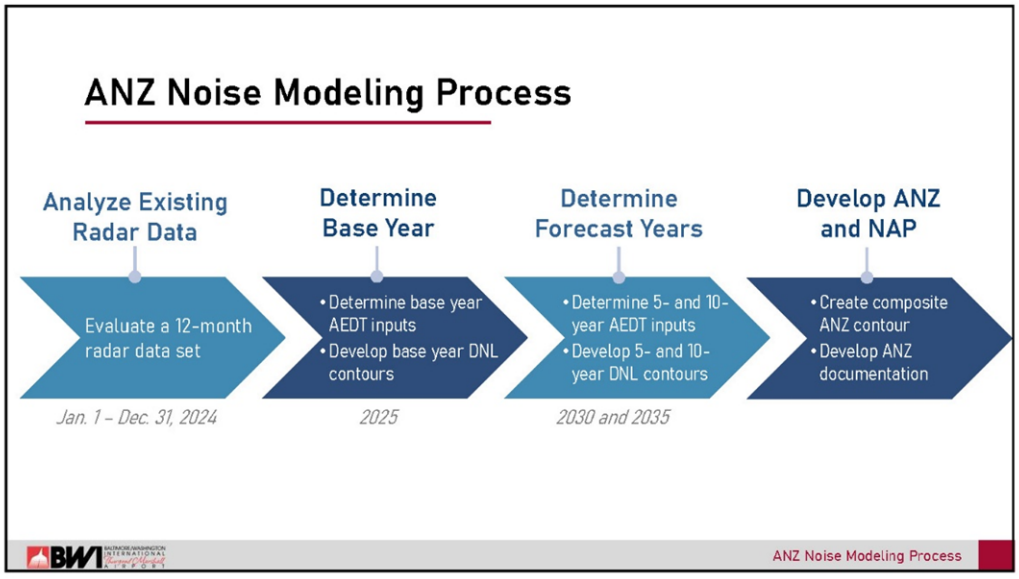
MAA will respect and consider SAC input but retains overall responsibility for the BWI Marshall ANZ update.

SAC Meeting #1 Recap

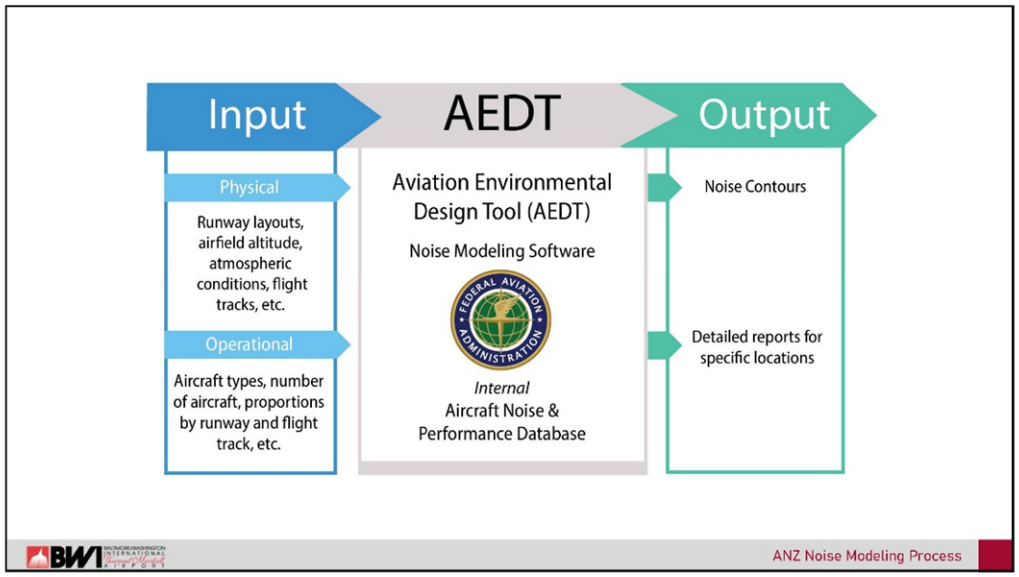
12


ANZ Noise Modeling Process

13


ANZ Noise Modeling Process
Analyze Existing Radar Data
Evaluate a 12-month radar data set
Jan. 1 – Dec. 31, 2024
Determine Base Year
• Determine base year AEDT inputs
• Develop base year DNL contours
2025
Determine Forecast Years
• Determine 5- and 10-year AEDT inputs
• Develop 5- and 10-year DNL contours
2030 and 2035
Develop ANZ and NAP
• Create composite ANZ contour
• Develop ANZ documentation
ANZ Noise Modeling Process

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Input
AEDT
Output
Physical
Runway layouts, airfield altitude, atmospheric conditions, flight tracks, etc.
Operational
Aircraft types, number of aircraft, proportions by runway and flight track, etc.
Aviation Environmental Design Tool (AEDT)
Noise Modeling Software
FEDERAL AVIATION ADMINISTRATION
Internal
Aircraft Noise & Performance Database
Noise Contours
Detailed reports for specific locations
ANZ Noise Modeling Process

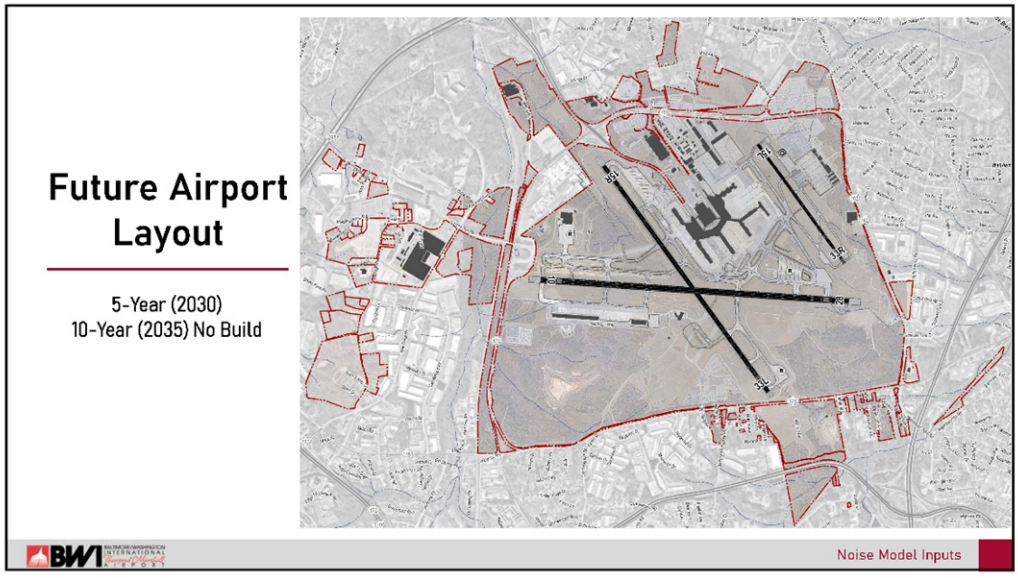
15


Noise Model Inputs

16


Existing
Airport Layout
Base Year (2025)
Noise Model Inputs

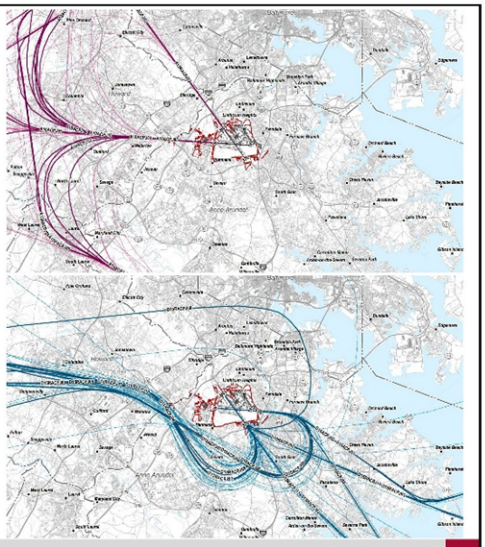
17


Future Airport
Layout
5-Year (2030)
10-Year (2035) No Build
Noise Model Inputs

18

Model Track Development

- Industry-standard method that splits radar flight tracks into smaller, similar groups
  - Groups separated by category (e.g., air carrier passenger), operation type (e.g., arrival, departure) and runway end, aircraft type (e.g., jet, non-jet, helicopter), and destination/direction
- Results in geometrically similar groups of the same category, operation type, runway end, aircraft type
  - Groups with wide dispersion are represented with a 'backbone' (bold) track and one, two, or three 'dispersion' sub-tracks (dashed) on either side of the backbone – resulting in three, five, or seven total tracks used to represent that group



Noise Model Inputs

19

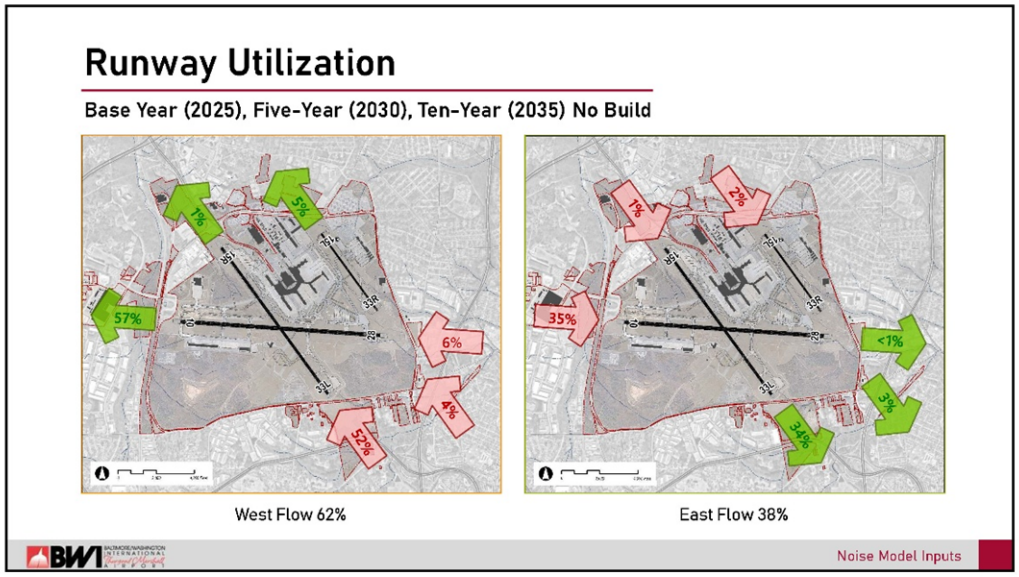
Base Year (2025) Operations

- Operations levels determined from 2024 edition of the FAA's Terminal Area Forecast (issued Jan 2025)
  - Calendar year 2024 data scaled to 2025 TAF
- Aircraft fleet mix, runway use, and flight tracks derived from ANOMS data
  - Model flight tracks were created using flight data from July-Dec 2024 and Sept-Dec 2024
- No maintenance runups modeled

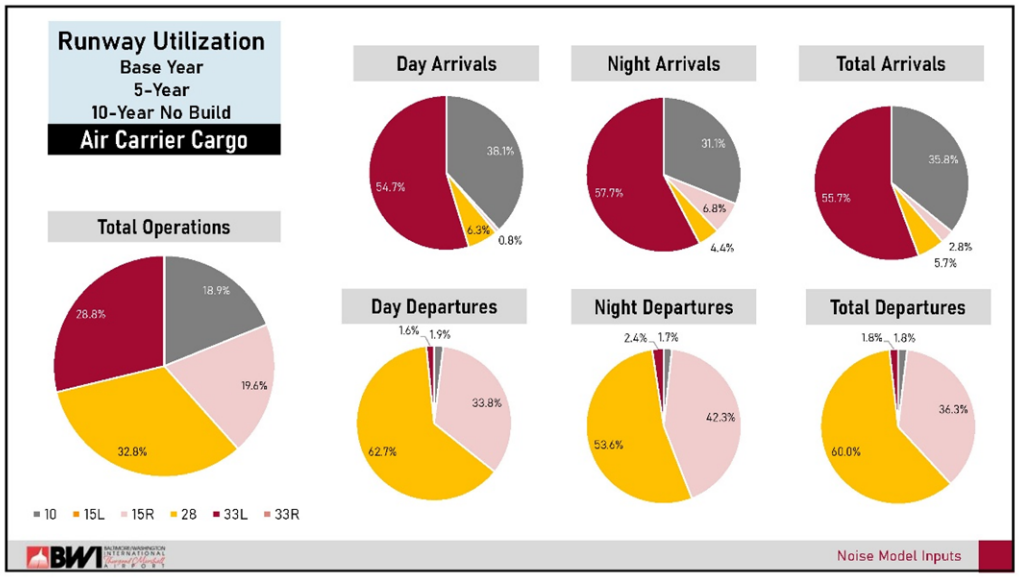
Operations Category	Operations Count	Operations Percentage
Air Carrier (AC) Passenger	202,403	85.0%
Air Carrier (AC) Cargo	9,368	3.9%
Air Taxi (AT)	14,752	6.2%
General Aviation (GA)	10,712	4.5%
Military (ML)	920	0.4%
Total	**238,155**	
Average Annual Day (AAD)	**652.5**	

Noise Model Inputs

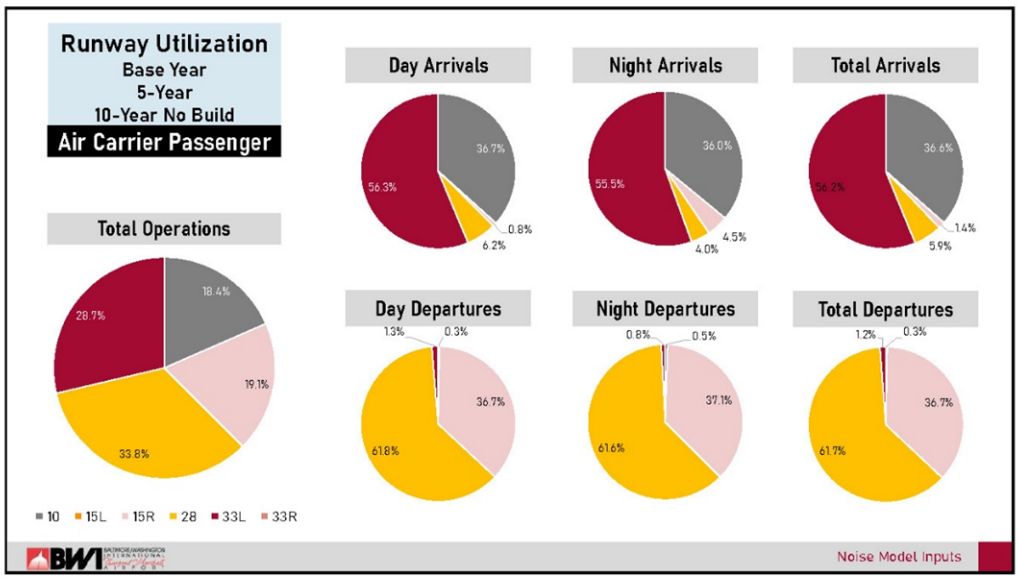
20


Runway Utilization
Base Year (2025), Five-Year (2030), Ten-Year (2035) No Build
5%
1%
57%
6%
4%
52%
1%
2%
35%
<1%
3%
34%
West Flow 62%
East Flow 38%
Noise Model Inputs

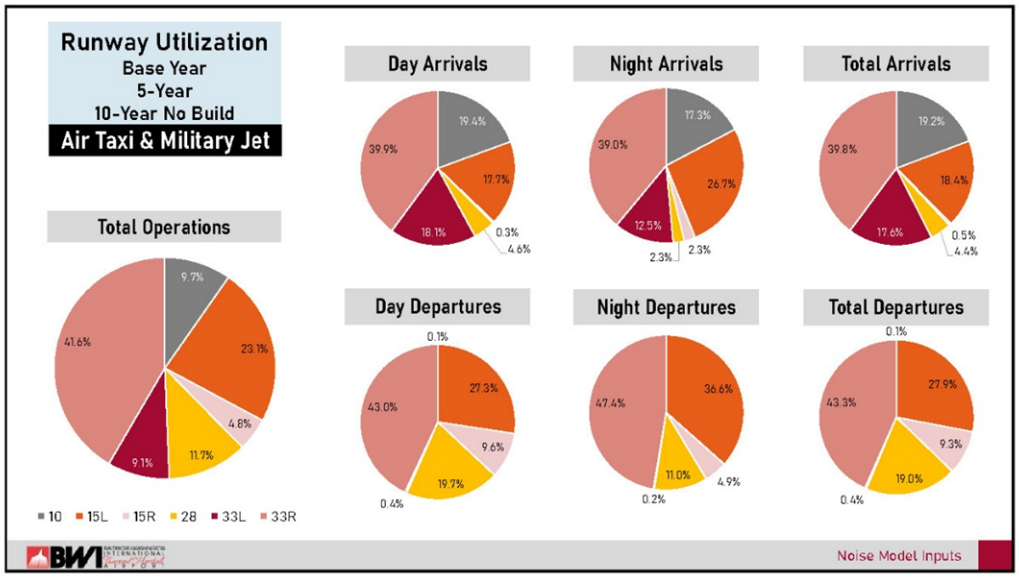
21


Runway Utilization
Base Year
5-Year
10-Year No Build
Air Carrier Cargo
Day Arrivals
38.1%
54.7%
6.3%
0.8%
Night Arrivals
31.1%
57.7%
6.8%
4.4%
Total Arrivals
35.8%
55.7%
2.8%
5.7%
Total Operations
18.9%
28.8%
19.6%
32.8%
Day Departures
1.6%
1.9%
33.8%
62.7%
Night Departures
2.4%
1.7%
42.3%
53.6%
Total Departures
1.8%
1.8%
36.3%
60.0%
10
15L
15R
28
33L
33R
Noise Model Inputs

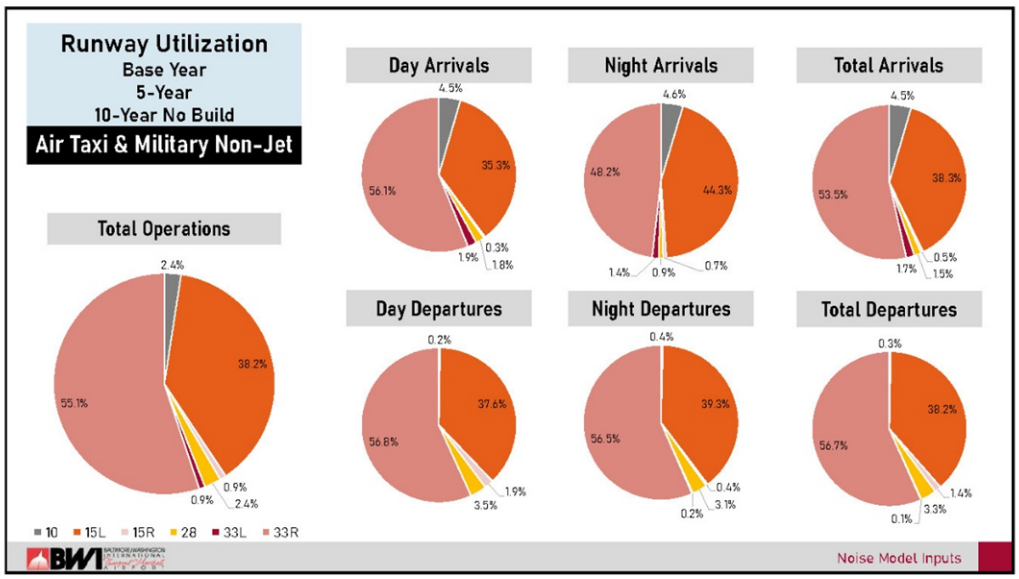
22


Runway Utilization
Base Year
5-Year
10-Year No Build
Air Carrier Passenger
Day Arrivals
36.7%
56.3%
0.8%
6.2%
Night Arrivals
36.0%
55.5%
4.5%
4.0%
Total Arrivals
36.6%
56.2%
1.4%
5.9%
Total Operations
18.4%
28.7%
19.1%
33.8%
Day Departures
1.3%
0.3%
36.7%
61.8%
Night Departures
0.8%
0.5%
37.1%
61.6%
Total Departures
1.2%
0.3%
36.7%
61.7%
10 15L 15R 28 33L 33R
Noise Model Inputs

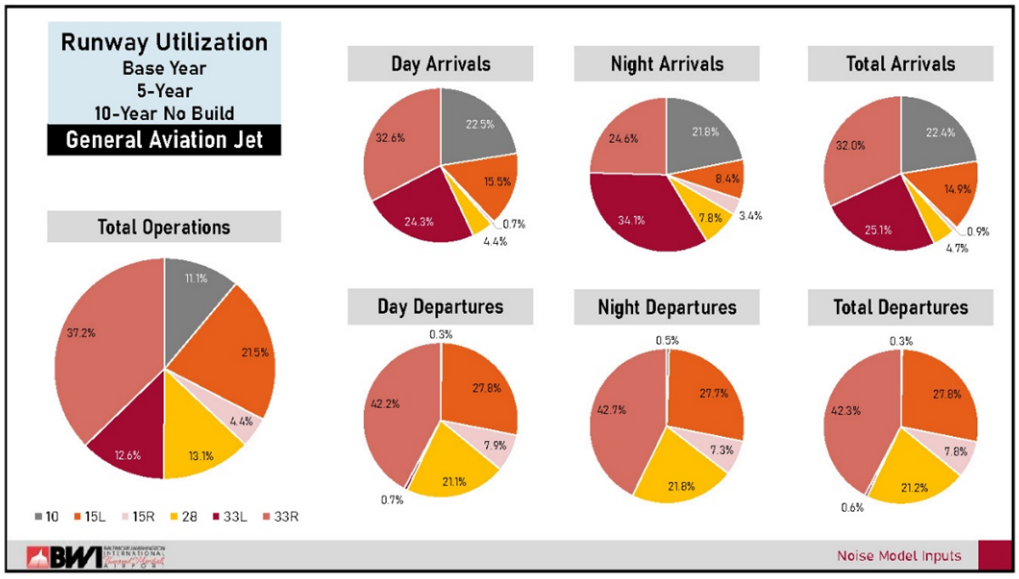
23


Runway Utilization
Base Year
5-Year
10-Year No Build
Air Taxi & Military Jet
Day Arrivals
19.4%
39.9%
17.7%
18.1%
0.3%
4.6%
Night Arrivals
17.3%
39.0%
26.7%
12.5%
2.3%
2.3%
Total Arrivals
19.2%
39.8%
18.4%
17.6%
0.5%
4.4%
Total Operations
9.7%
41.6%
23.1%
4.8%
11.7%
9.1%
Day Departures
0.1%
27.3%
43.0%
9.6%
19.7%
0.4%
Night Departures
47.4%
36.6%
11.0%
4.9%
0.2%
Total Departures
0.1%
27.9%
43.3%
9.3%
19.0%
0.4%
10 15L 15R 28 33L 33R
Noise Model Inputs

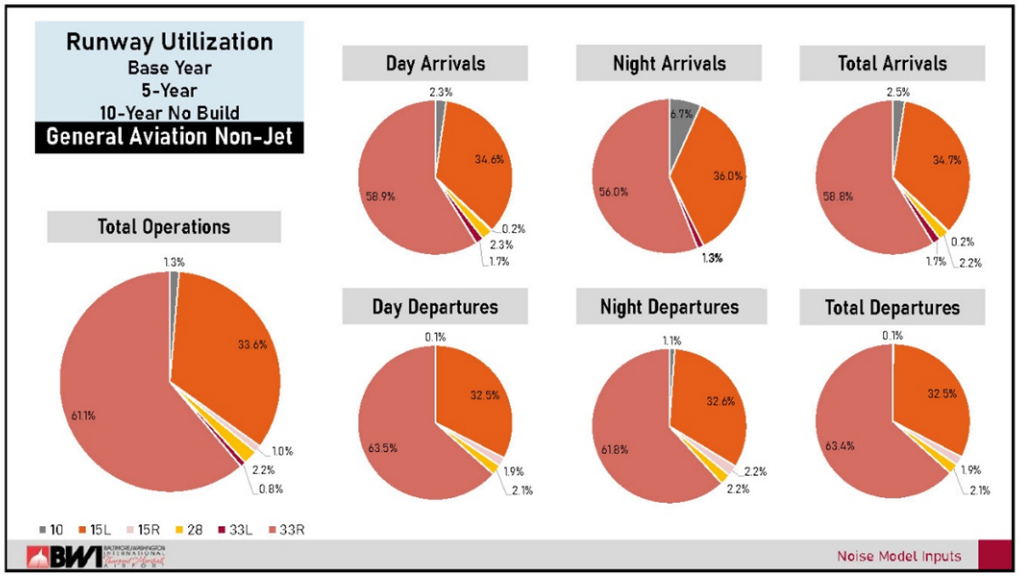
24


Runway Utilization
Base Year
5-Year
10-Year No Build
Air Taxi & Military Non-Jet
Day Arrivals
4.5%
35.3%
56.1%
1.9%
0.3%
1.8%
Night Arrivals
4.6%
48.2%
44.3%
1.4%
0.9%
0.7%
Total Arrivals
4.5%
38.3%
53.5%
1.7%
0.5%
1.5%
Total Operations
2.4%
38.2%
55.1%
0.9%
0.9%
2.4%
Day Departures
0.2%
37.6%
56.8%
1.9%
3.5%
Night Departures
0.4%
39.3%
56.5%
0.4%
3.1%
0.2%
Total Departures
0.3%
38.2%
56.7%
1.4%
3.3%
0.1%
10 15L 15R 28 33L 33R
Noise Model Inputs

25


Runway Utilization
Base Year
5-Year
10-Year No Build
General Aviation Jet
Day Arrivals
22.5%
32.6%
15.5%
0.7%
24.3%
4.4%
Night Arrivals
21.8%
24.6%
8.4%
34.1%
7.8%
3.4%
Total Arrivals
22.4%
32.0%
14.9%
0.9%
25.1%
4.7%
Total Operations
11.1%
37.2%
21.5%
4.4%
12.6%
13.1%
Day Departures
0.3%
27.8%
42.2%
7.9%
21.1%
0.7%
Night Departures
0.5%
27.7%
42.7%
7.3%
21.8%
Total Departures
0.3%
27.8%
42.3%
7.8%
21.2%
0.6%
10 15L 15R 28 33L 33R
Noise Model Inputs

26



27

Meteorological and Terrain Data

AEDT's database includes 10-year average weather for each airport.

For BWI:

- Temperature: 57.3°F
- Station pressure: 1011.2 millibars
- Sea level pressure: 1017.3 millibars
- Dew point: 46.1°F
- Relative humidity: 66.2%
- Wind speed: 5.7 knots

Terrain data were obtained from the United States Geological Survey National Elevation Dataset with 1/3 arc second (approximately 33 ft.) resolution covering the Study Area.

Noise Model Inputs

28

Five-Year (2030) Operations

- No changes to airport layout
- Operations levels derived from 2024 TAF
- Flight tracks, runway use, and flight tracks are the same as the base year operations
- Maintenance runups based on prior ANZ

Operations Category	Operations Count	Operations Percentage
Air Carrier (AC) Passenger	225,419	84.3%
Air Carrier (AC) Cargo	12,966	5.0%
Air Taxi (AT)	15,612	5.8%
General Aviation (GA)	12,340	4.6%
Military (ML)	920	0.3%
Total	**267,257**	
Average Annual Day (AAD)	**732.2**	

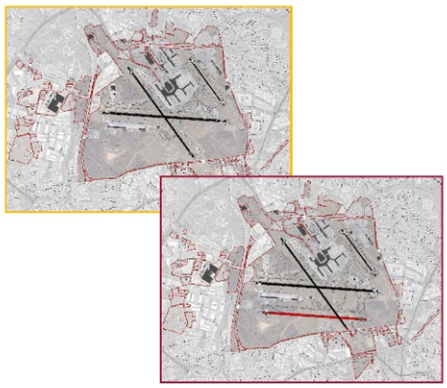
Noise Model Inputs

29

SY1

Ten-Year (2035) Forecast Contours

- Ten-Year No Buildout contours
  - No changes to airport layout
  - Most likely configuration in 2035
- Ten-Year Full Buildout contours
  - Parallel Runway 10R/28L
  - Extension of Runway 15R/33L
  - Represents most extensive airport configuration
  - Included in official ANZ



Noise Model Inputs

30

Ten-Year (2035) No Buildout Operations

- No changes to airport layout
- Operations levels derived from 2024 TAF
- Flight tracks, runway use, and flight tracks are the same as the base year operations
- Maintenance runups based on prior ANZ

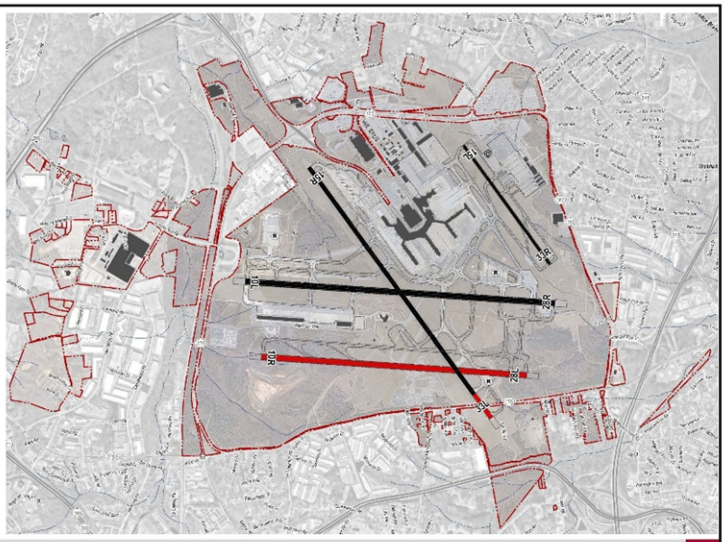
Operations Category	Operations Count	Operations Percentage
Air Carrier (AC) Passenger	244,629	84.2%
Air Carrier (AC) Cargo	16,052	5.5%
Air Taxi (AT)	16,512	5.7%
General Aviation (GA)	12,437	4.3%
Military (ML)	920	0.3%
Total	**290,550**	
Average Annual Day (AAD)	**796.0**	

Noise Model Inputs

31

Full Build Airport Layout

10-Year Full Build (2035)



Noise Model Inputs

32

Ten-Year (2035) Full Buildout Operations

- Addition of parallel Runway 10L/28R and extension of Runway 15R/33L
- Operations levels derived from 2024 TAF
- Aircraft fleet mix, runway use, and flight tracks
  - Runway use based on consultation with the MAA
  - Parallel Runway 10R/28L tracks are based on translation of existing Runway 10/28 (future Runway 10L/28R) tracks
- Maintenance runups based on prior ANZ

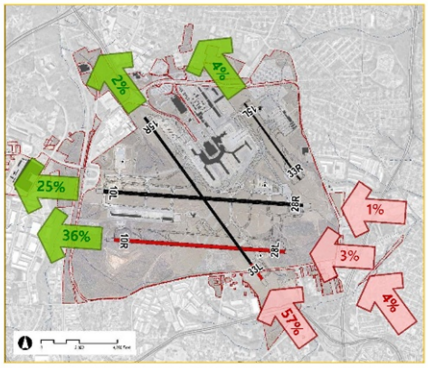
Operations Category	Operations Count	Operations Percentage
Air Carrier (AC) Passenger	244,629	84.2%
Air Carrier (AC) Cargo	16,052	5.5%
Air Taxi (AT)	16,512	5.7%
General Aviation (GA)	12,437	4.3%
Military (ML)	920	0.3%
Total	**290,550**	
Average Annual Day (AAD)	**796.0**	

Noise Model Inputs

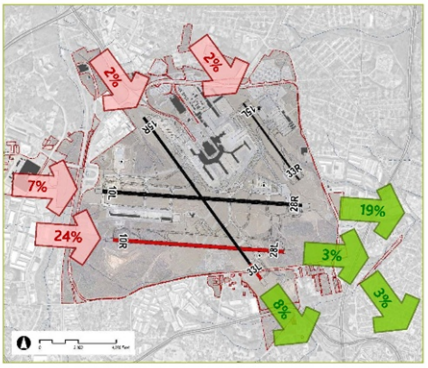
33

Runway Utilization

10-Year (2035) Full Build



West Flow 66%



East Flow 34%

Noise Model Inputs

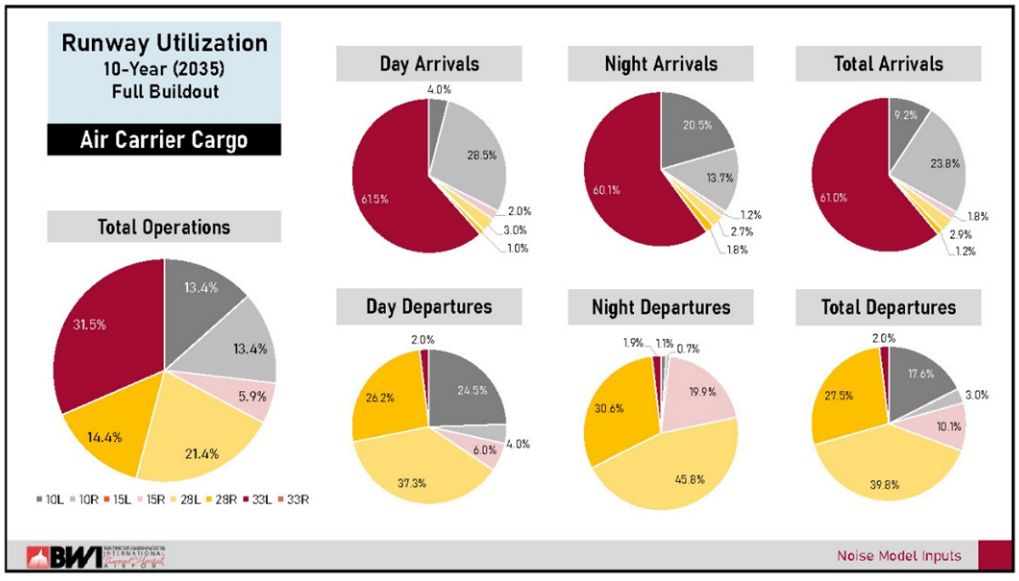
34

Runway Utilization Changes

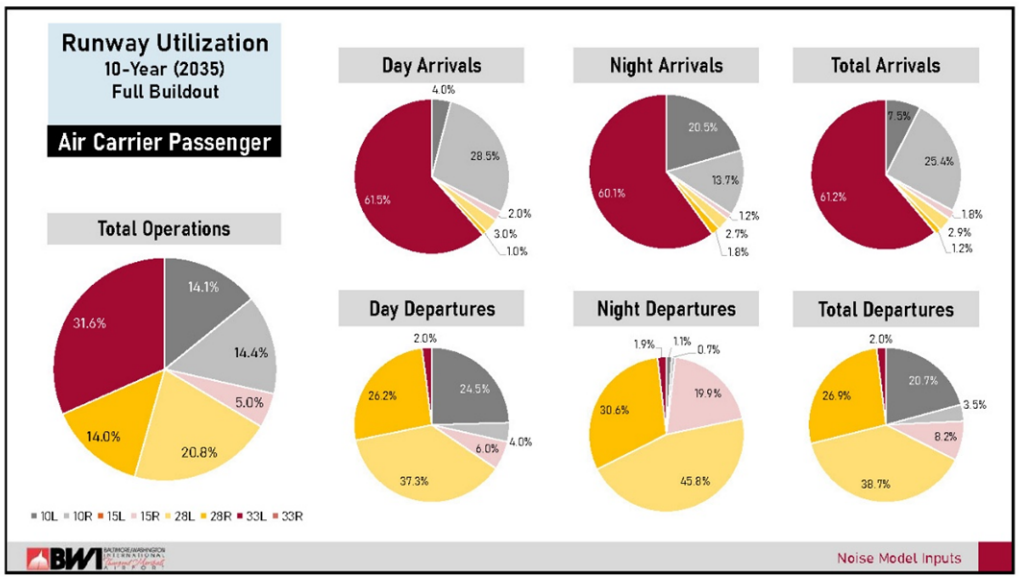
10-Year (2035) Full Build

- The addition of the parallel Runway 10R/28L requires distribution of operations from the existing Runway 10/28 between the future Runway 10L/28R and Runway 10R/28L
- Some daytime Air Carrier and Air Taxi operations will shift from Runway 15R to Runways 10L/R
- Flight tracks for the existing Runway 15R/33L will be adjusted for the new runway end

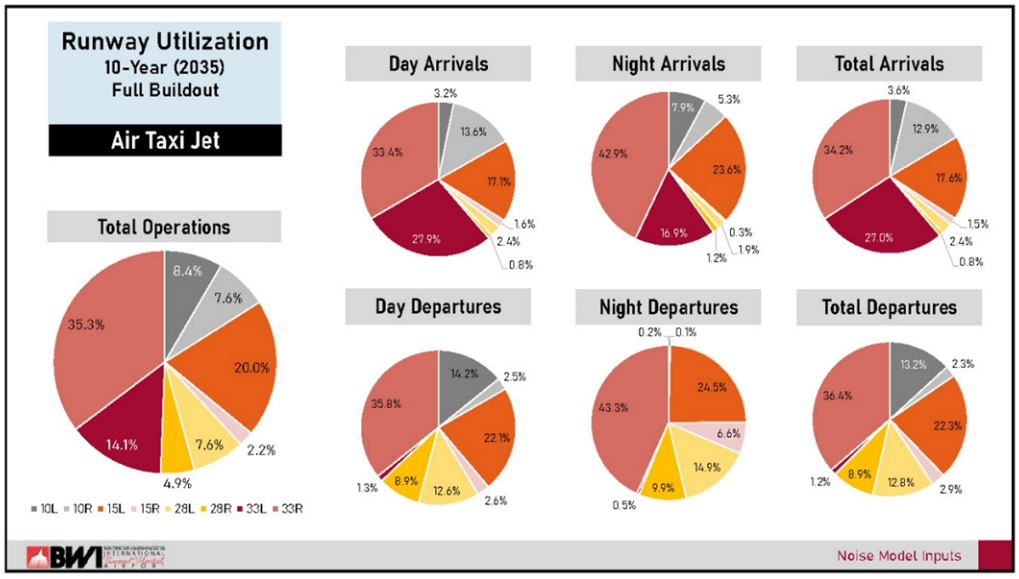
35



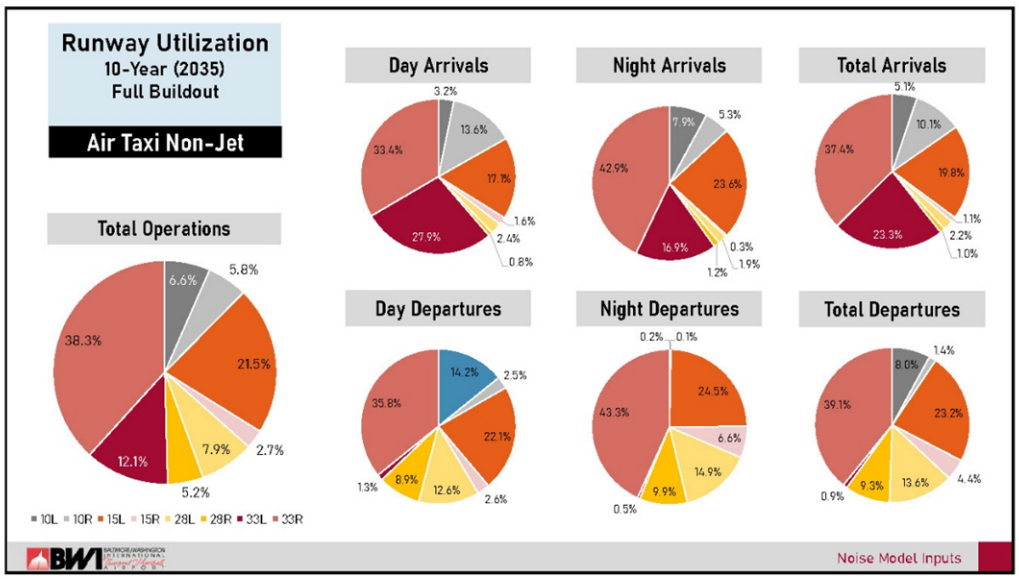
36


Runway Utilization
10-Year (2035)
Full Buildout
Air Carrier Passenger
Day Arrivals
4.0%
28.5%
61.5%
2.0%
3.0%
1.0%
Night Arrivals
20.5%
13.7%
60.1%
1.2%
2.7%
1.8%
Total Arrivals
7.5%
25.4%
61.2%
1.8%
2.9%
1.2%
Total Operations
14.1%
31.6%
14.4%
5.0%
14.0%
20.8%
Day Departures
2.0%
24.5%
26.2%
4.0%
6.0%
37.3%
Night Departures
1.9%
1.1%
0.7%
19.9%
30.6%
45.8%
Total Departures
2.0%
20.7%
3.5%
26.9%
8.2%
38.7%
10L 10R 15L 15R 28L 28R 33L 33R
Noise Model Inputs

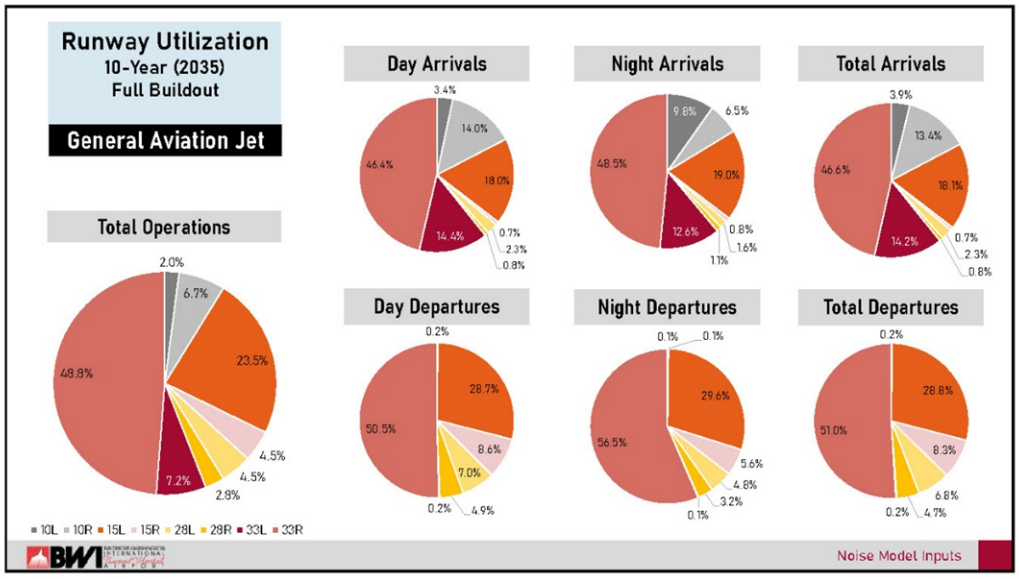
37


Runway Utilization
10-Year (2035)
Full Buildout
Air Taxi Jet
Day Arrivals
3.2%
13.6%
33.4%
17.1%
1.6%
27.9%
2.4%
0.8%
Night Arrivals
5.3%
7.9%
42.9%
23.6%
0.3%
16.9%
1.9%
1.2%
Total Arrivals
3.6%
12.9%
34.2%
17.6%
1.5%
27.0%
2.4%
0.8%
Total Operations
8.4%
7.6%
35.3%
20.0%
14.1%
7.6%
2.2%
4.9%
Day Departures
14.2%
2.5%
35.8%
22.1%
1.3%
8.9%
12.6%
2.6%
Night Departures
0.2%
0.1%
24.5%
43.3%
6.6%
14.9%
9.9%
0.5%
Total Departures
13.2%
2.3%
36.4%
22.3%
1.2%
8.9%
12.8%
2.9%
10L 10R 15L 15R 28L 28R 33L 33R
Noise Model Inputs

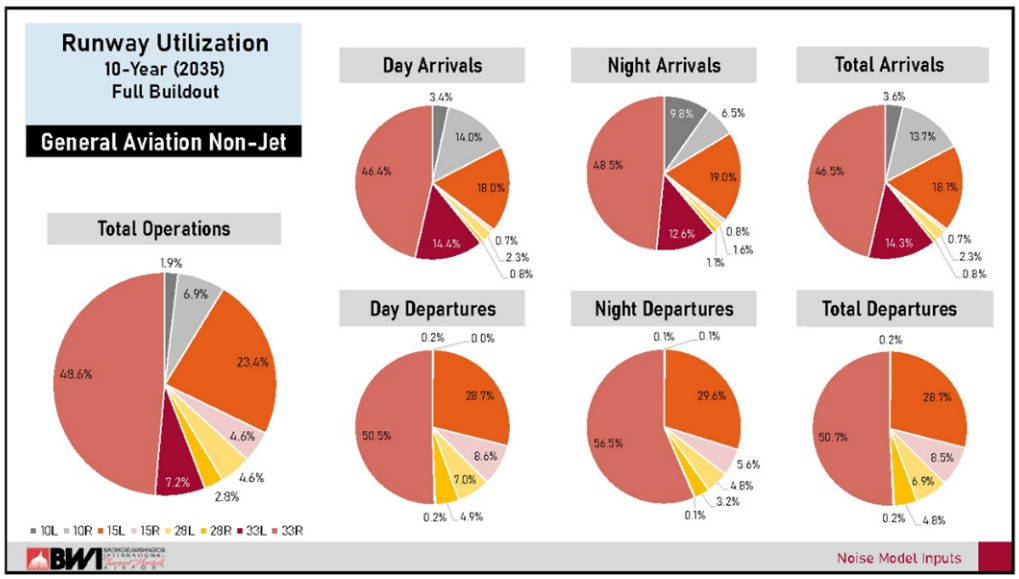
38


Runway Utilization
10-Year (2035)
Full Buildout
Air Taxi Non-Jet
Total Operations
6.6%
5.8%
38.3%
21.5%
12.1%
7.9%
2.7%
5.2%
10L 10R 15L 15R 28L 28R 33L 33R
Day Arrivals
3.2%
13.6%
33.4%
17.1%
1.6%
2.4%
27.9%
0.8%
Night Arrivals
7.9%
5.3%
42.9%
23.6%
0.3%
1.9%
16.9%
1.2%
Total Arrivals
5.1%
10.1%
37.4%
19.8%
1.1%
2.2%
23.3%
1.0%
Day Departures
14.2%
2.5%
35.8%
22.1%
1.3%
8.9%
12.6%
2.6%
Night Departures
0.2%
0.1%
24.5%
43.3%
6.6%
14.9%
9.9%
0.5%
Total Departures
1.4%
8.0%
39.1%
23.2%
4.4%
0.9%
9.3%
13.6%
Noise Model Inputs

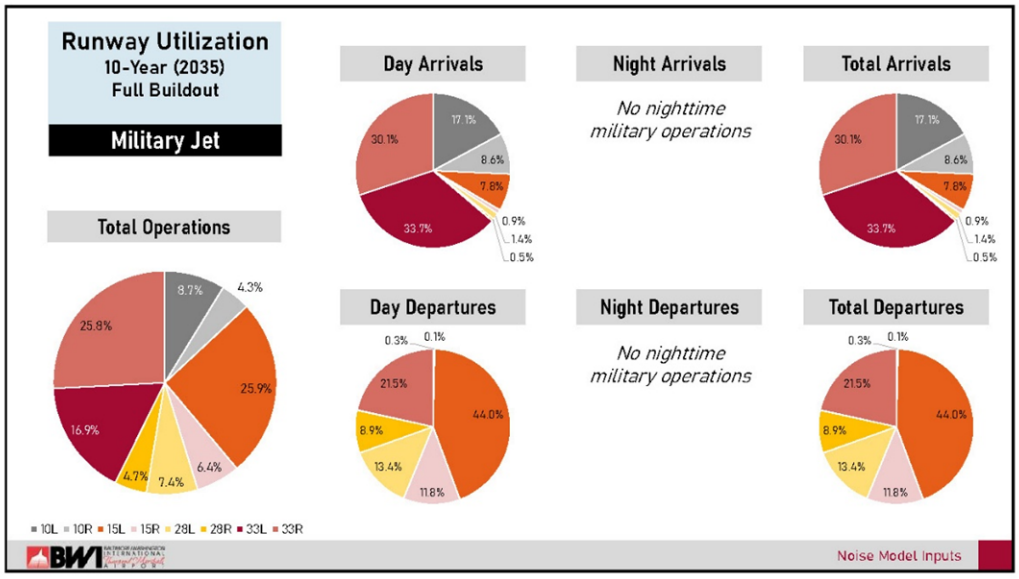
39


Runway Utilization
10-Year (2035)
Full Buildout
General Aviation Jet
Total Operations
2.0%
6.7%
48.8%
23.5%
4.5%
4.5%
7.2%
2.8%
10L 10R 15L 15R 28L 28R 33L 33R
Day Arrivals
3.4%
14.0%
46.4%
18.0%
0.7%
2.3%
14.4%
0.8%
Night Arrivals
9.8%
6.5%
48.5%
19.0%
0.8%
1.6%
12.6%
1.1%
Total Arrivals
3.9%
13.4%
46.6%
18.1%
0.7%
2.3%
14.2%
0.8%
Day Departures
0.2%
28.7%
50.5%
8.6%
7.0%
0.2%
4.9%
Night Departures
0.1%
0.1%
29.6%
56.5%
5.6%
4.8%
3.2%
0.1%
Total Departures
0.2%
28.8%
51.0%
8.3%
6.8%
0.2%
4.7%
Noise Model Inputs

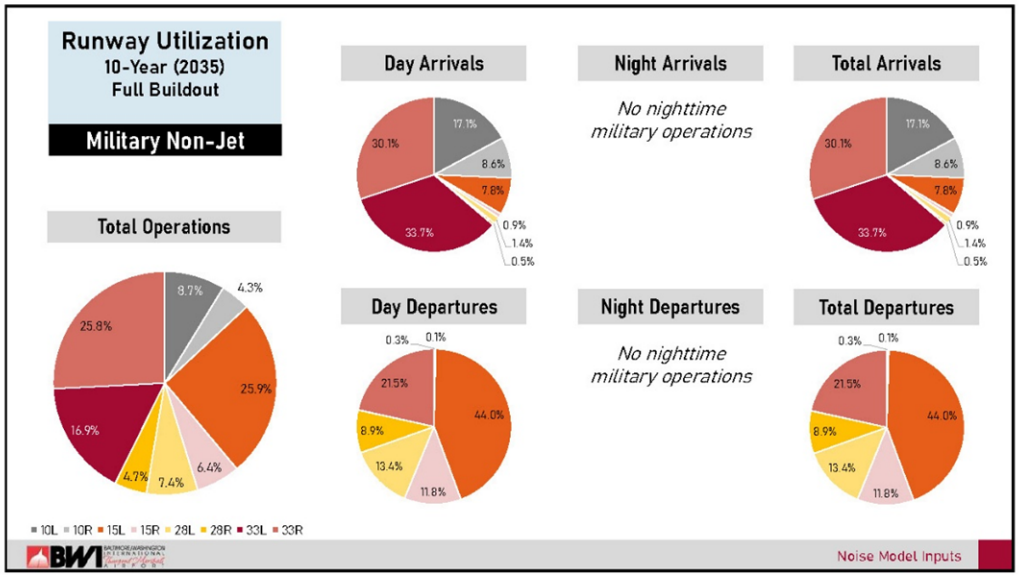
40


Runway Utilization
10-Year (2035)
Full Buildout
General Aviation Non-Jet
Day Arrivals
3.4%
14.0%
18.0%
46.4%
14.4%
0.7%
2.3%
0.8%
Night Arrivals
9.8%
6.5%
48.5%
19.0%
12.6%
0.8%
1.6%
1.1%
Total Arrivals
3.6%
13.7%
18.1%
46.5%
14.3%
0.7%
2.3%
0.8%
Total Operations
1.9%
6.9%
23.4%
48.6%
4.6%
4.6%
7.2%
2.8%
Day Departures
0.2%
0.0%
28.7%
50.5%
8.6%
7.0%
0.2%
4.9%
Night Departures
0.1%
0.1%
29.6%
56.5%
5.6%
4.8%
3.2%
0.1%
Total Departures
0.2%
28.7%
50.7%
8.5%
6.9%
0.2%
4.8%
10L 10R 15L 15R 28L 28R 33L 33R
Noise Model Inputs

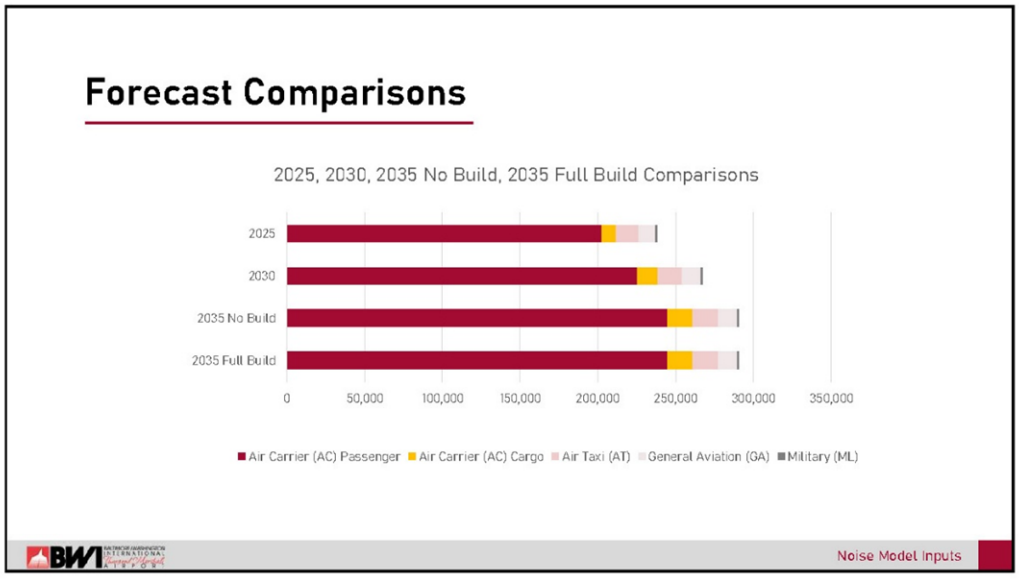
41


Runway Utilization
10-Year (2035)
Full Buildout
Military Jet
Day Arrivals
17.1%
30.1%
8.6%
7.8%
33.7%
0.9%
1.4%
0.5%
Night Arrivals
No nighttime
military operations
Total Arrivals
17.1%
30.1%
8.6%
7.8%
33.7%
0.9%
1.4%
0.5%
Total Operations
8.7%
4.3%
25.8%
25.9%
16.9%
4.7%
7.4%
6.4%
Day Departures
0.3%
0.1%
21.5%
44.0%
8.9%
13.4%
11.8%
Night Departures
No nighttime
military operations
Total Departures
0.3%
0.1%
21.5%
44.0%
8.9%
13.4%
11.8%
10L 10R 15L 15R 28L 28R 33L 33R
Noise Model Inputs

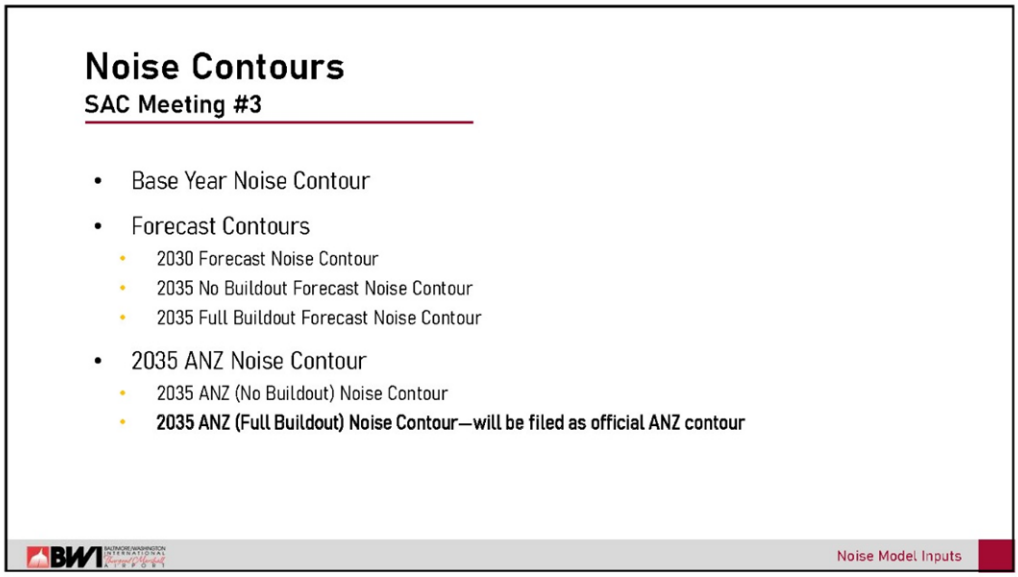
42


Runway Utilization
10-Year (2035)
Full Buildout
Military Non-Jet
Day Arrivals
17.1%
8.6%
7.8%
0.9%
1.4%
0.5%
33.7%
30.1%
Night Arrivals
No nighttime military operations
Total Arrivals
17.1%
8.6%
7.8%
0.9%
1.4%
0.5%
33.7%
30.1%
Total Operations
8.7%
4.3%
25.8%
25.9%
16.9%
4.7%
7.4%
6.4%
Day Departures
0.3%
0.1%
21.5%
44.0%
8.9%
13.4%
11.8%
Night Departures
No nighttime military operations
Total Departures
0.3%
0.1%
21.5%
44.0%
8.9%
13.4%
11.8%
10L 10R 15L 15R 28L 28R 33L 33R
Noise Model Inputs

43


Forecast Comparisons
2025, 2030, 2035 No Build, 2035 Full Build Comparisons
2025
2030
2035 No Build
2035 Full Build
0
50,000
100,000
150,000
200,000
250,000
300,000
350,000
Air Carrier (AC) Passenger
Air Carrier (AC) Cargo
Air Taxi (AT)
General Aviation (GA)
Military (ML)
Noise Model Inputs

44


Noise Contours
SAC Meeting #3
Base Year Noise Contour
Forecast Contours
2030 Forecast Noise Contour
2035 No Buildout Forecast Noise Contour
2035 Full Buildout Forecast Noise Contour
2035 ANZ Noise Contour
2035 ANZ (No Buildout) Noise Contour
2035 ANZ (Full Buildout) Noise Contour—will be filed as official ANZ contour
Noise Model Inputs

45


ANZ Land Use Inventory

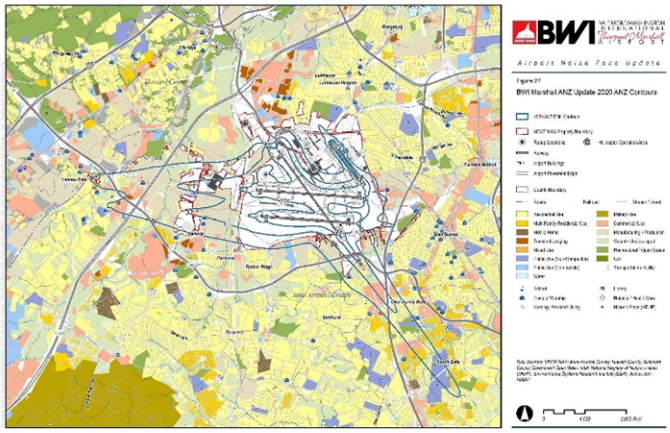
46

Land Use Inventory Process

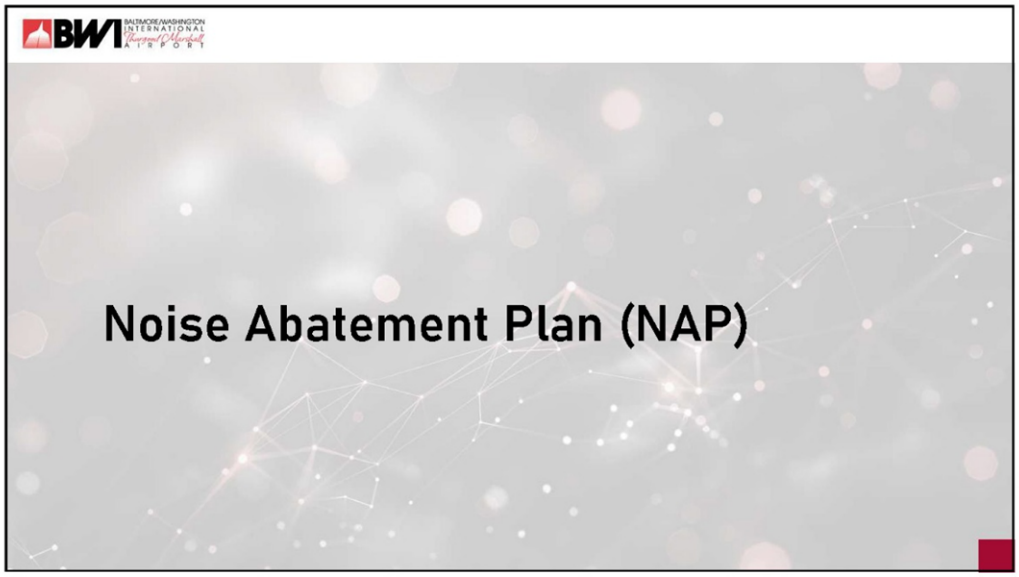
- Assemble and review land use, zoning, and population data
- Identify local land use policies referring to compatibility with airport operations
- Create existing land use maps
- Identify noise sensitive sites (churches, schools, etc.)
- Following contour development, survey and confirm use within the 60 DNL contour

47

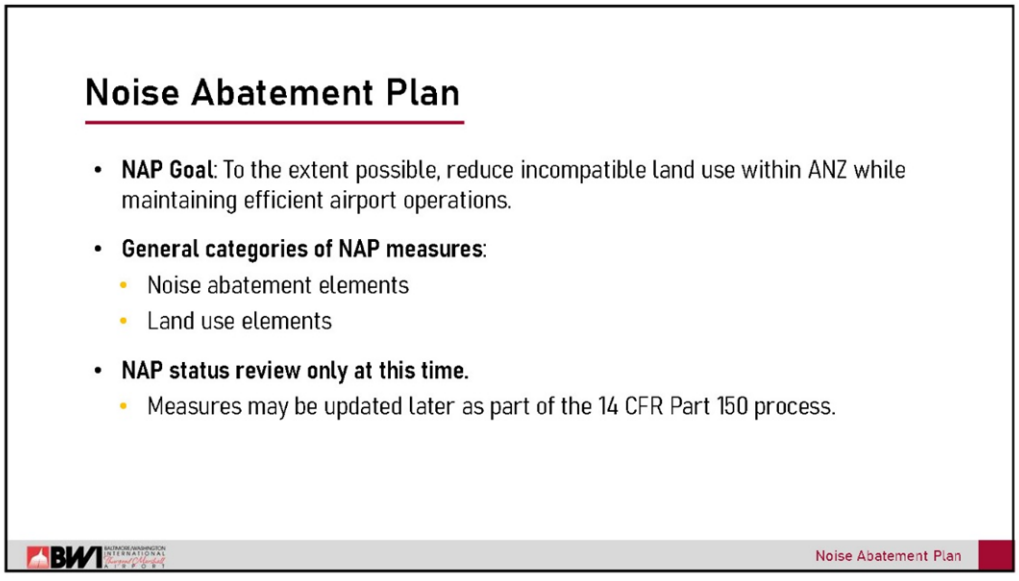
Existing Land Use



48


Noise Abatement Plan (NAP)

49


Noise Abatement Plan
NAP Goal: To the extent possible, reduce incompatible land use within ANZ while maintaining efficient airport operations.
General categories of NAP measures:
Noise abatement elements
Land use elements
NAP status review only at this time.
Measures may be updated later as part of the 14 CFR Part 150 process.
Noise Abatement Plan

50

Existing Noise Abatement Plan Measures

Noise Abatement Measures

Departure Procedures:
Jet aircraft fly specific distances before commencing turns to maximize flights over compatible land uses

Arrival Procedures:
Attempt to keep arriving aircraft as high as possible and to take advantage of compatible land uses

Preferential Runway Use System:
Identifies preferred runways to minimize noise exposure

Control of Ground Based Noise Sources:
Efforts to minimize ground-based noise propagation

Programmatic Measures

Continued Monitoring and Annual Review:
Efforts to monitor the overall noise abatement program

Land Use Measures

Control of Incompatible Development:
Includes the ANZ program, BAZA, and Noise Zone Notification in Real Estate transactions

Noise Assistance Programs:
For residents and schools in the ANZ, to reduce number of affected properties and noise impacts

51

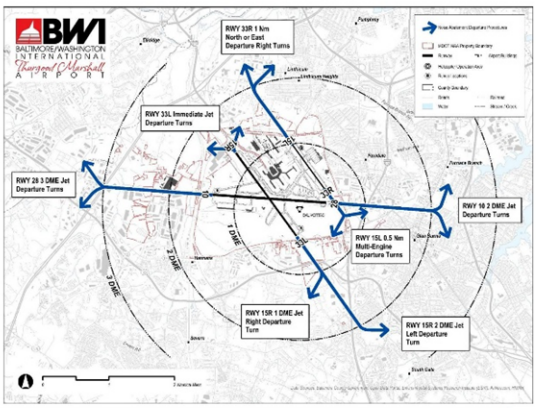
Noise Abatement Measures

Noise Abatement Jet Departure Procedures

- Review existing measures

Runway	Aircraft	Turn	Procedure Distance
15R	Jet	Right	2 DME/1.7 nmi from runway end
15R	Jet	Left	1 DME/0.7 nmi from runway end
28	Jet	All	3 DME/1.7 nmi from runway end
10	Jet	All	2 DME/1.6 nmi from runway end
33L	Jet	All	Immediate turns: In VFR, at or above 300' AGL In IFR, at or above 400' AGL
33R	All	North, east	Runway heading to 1 nmi from runway end
15L	Multi-engine		Runway heading to 0.5 nmi from runway end

- Discuss possible measures
- Discuss next steps

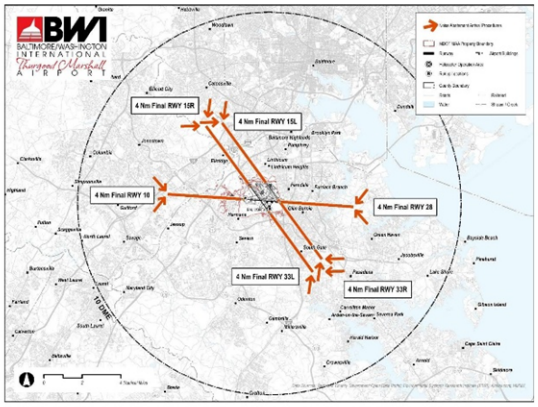


52

Noise Abatement Measures

Noise Abatement Jet Arrival Procedures

- Review existing measures
  - Jet aircraft conducting visual approaches
    - Turn onto final approach at least 4 nmi from runway approach end
    - Maintain 3,000 ft or above to 10 DME from BWI VORTAC and as best possible, remain at or above the ILS/VASI
- Discuss possible measures
- Discuss next steps



53

Noise Abatement Measures

Preferential Runway Use

- Review existing measures
  - West flow, which concentrates jet departures on Runway 28, is preferred for noise abatement
  - Between 11 p.m. and 5 a.m. local,
    - Runways 28 and 33L are preferred and should be used if traffic and weather permit
    - Runway 33R should not be assigned to departures
    - Runway 15L should not be assigned to arrivals, barring unusual weather, emergencies, or medical flights
  - Runway 15L/33R use is restricted for certain aircraft types (based on 14 CFR Part 36) except for emergencies and medical flights
- Discuss possible measures
- Discuss next steps



54

Noise Abatement Measures

Controlling Ground-Based Noise Sources

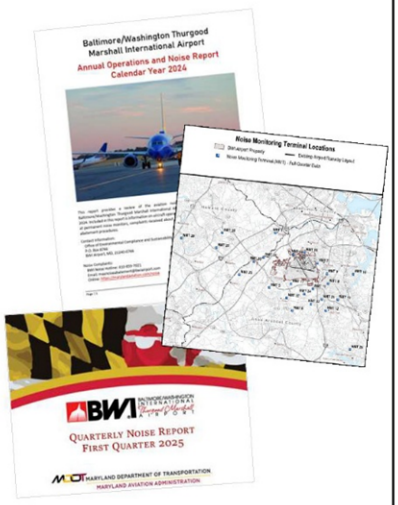
- Review existing measures
  - Engine maintenance runup restrictions
    - Require prior permission from Airport Operations
    - Will be denied unless failure to conduct runup will delay scheduled passenger flight departure
    - Limited to Runway 33L hold block
    - Limited to a total of 5 minutes in intervals of 60 s or less
    - Not authorized between 11 p.m. and 7 a.m. local
  - Reverse thrust power-back operations
    - Limited to military aircraft at remote parking spots
    - Requires case-by-case approval by Airport Operations per Tenant Directive 203.121
- Discuss possible measures
- Discuss next steps

55

Programmatic Strategies

Continued Monitoring and Annual Review

- Review existing measures
  - Noise complaint submission methods
  - 24 permanent noise monitoring terminals
  - Residential portable noise monitoring program, available by application
  - Quarterly noise reports
  - Annual noise report
- Discuss possible measures
- Discuss next steps



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Land Use Strategies

Controlling Incompatible Land Use Development

- Review existing measures
  - Establishment of the ANZ to identify areas of incompatible land use and restrict new development
  - Board of Airport Zoning Appeals to review permit applications for development within the ANZ
  - Noise zone notification for real estate transactions
- Discuss possible measures
- Discuss next steps

57

Land Use Strategies

Noise Assistance Programs

- Review existing measures
  - Voluntary residential property acquisition program
  - Sound insulation program
- Discuss possible measures
- Discuss next steps



58

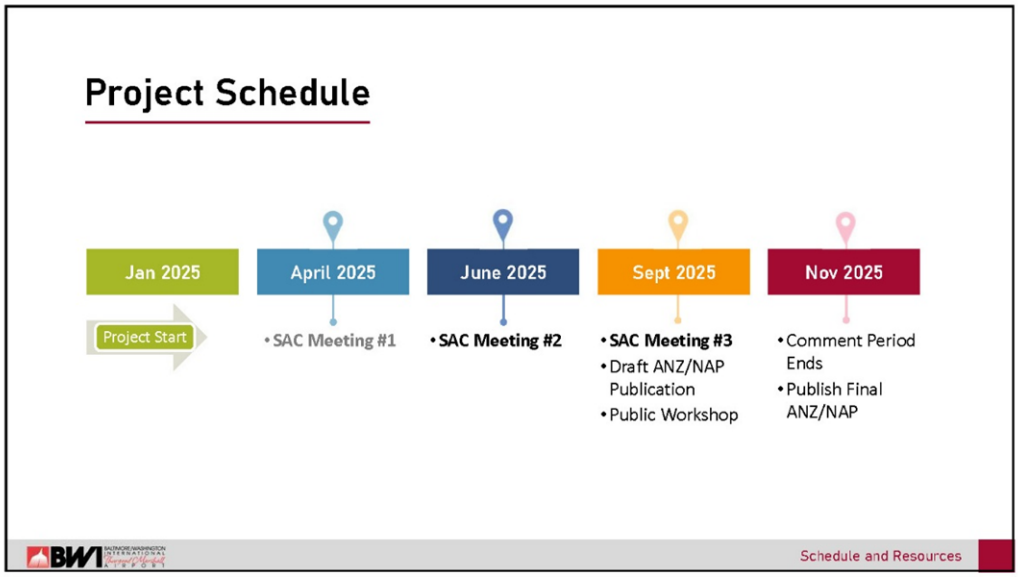
Noise Abatement Plan Caveats

- Noise abatement procedures are voluntary.
  - The FAA has primary responsibility for implementation of flight procedures and the preferential runway use system at BWI Marshall.
  - Aircraft may not follow noise abatement procedures if deemed necessary by air traffic control (ATC) or flight crews to maintain operational safety.
- Changes to local land use policies are under the purview of local governments.
  - The MAA cannot force local jurisdictions to change land use policies.
- The FAA has introduced new navigation technology and procedures that in some cases deviate from historic noise abatement procedures.

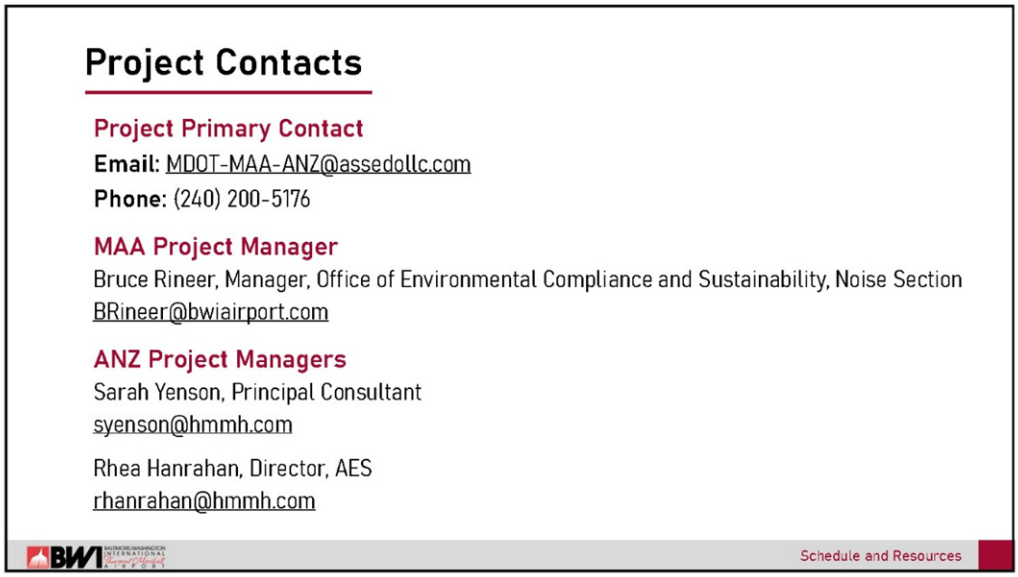
59

Schedule and Resources

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Project Schedule
Jan 2025
Project Start
April 2025
• SAC Meeting #1
June 2025
• SAC Meeting #2
Sept 2025
• SAC Meeting #3
• Draft ANZ/NAP Publication
• Public Workshop
Nov 2025
• Comment Period Ends
• Publish Final ANZ/NAP
Schedule and Resources

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Project Contacts
Project Primary Contact
Email: MDOT-MAA-ANZ@assedollc.com
Phone: (240) 200-5176
MAA Project Manager
Bruce Rineer, Manager, Office of Environmental Compliance and Sustainability, Noise Section
BRineer@bwiairport.com
ANZ Project Managers
Sarah Yenson, Principal Consultant
syenson@hmmh.com
Rhea Hanrahan, Director, AES
rhanrahan@hmmh.com
Schedule and Resources

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Additional Resources

2020 BWI Marshall ANZ

- https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/

BWI Marshall Roundtable

- https://marylandaviation.com/environmental/airport-noise/dc-metroplex-bwi-community-roundtable/

Noise Reports

- https://marylandaviation.com/environmental/airport-noise/quarterly-noise-reports/

WebTrak

- https://webtrak.emsbk.com/bwi3

63

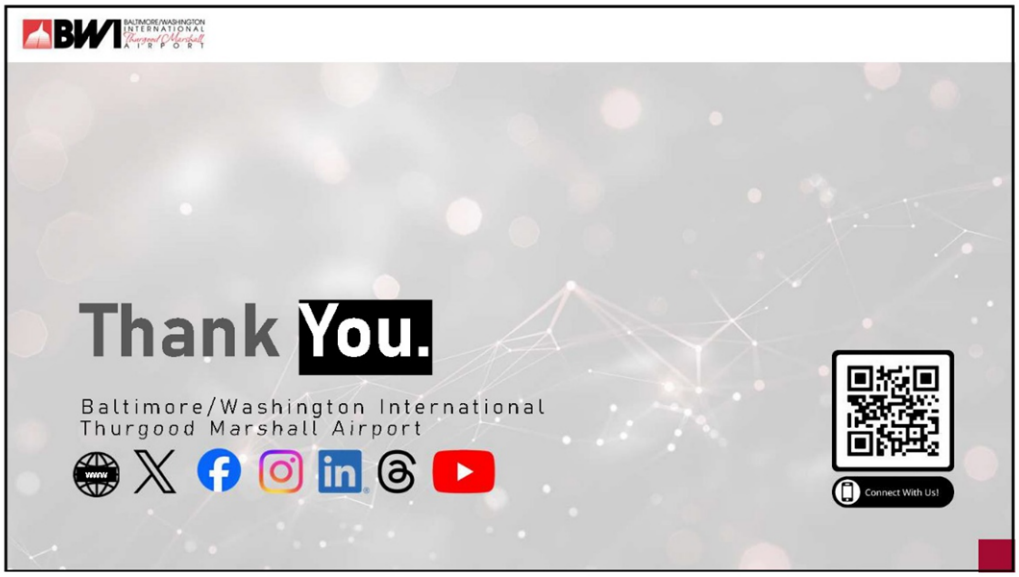
Wrap Up

- SAC member questions, comments, and discussion
- Next SAC meeting:
  - September 2025

Topics:

- Review and discuss ANZ contours
- Review and discuss NAP
- Public review and comment schedule
- ANZ finalization and COMAR

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Thank You.
Baltimore/Washington International
Thurgood Marshall Airport
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Baltimore/Washington International Thurgood Marshall Airport
Airport Noise Zone (ANZ) Update
Stakeholder Advisory Committee (SAC) Meeting #2

MEETING MINUTES

Wednesday, June 25, 2025, 6:00 PM – 8:00 PM

MAA Facilities
991 Corporate Boulevard
Linthicum Heights, MD 21090

Discussion Item	Notes	Presenter
Safety Briefing	Mr. Bruce Rineer opened the meeting with a safety briefing. He noted that the main exit was through the doors attendees used to enter, with an additional exit located down the hallway. Restrooms were available for convenience. Bruce pointed out the location of an AED device and fire extinguishers in the hallway and identified the designated accountability site outside the front of the building in the event of an evacuation. He encouraged participants to report any hazards they observed during the meeting.	Bruce Rineer
Welcome and Introductions	Mr. Rineer welcomed everyone to the second SAC meeting for the BWI Marshall Airport Noise Zone update and provided a brief preview of the agenda. He acknowledged that the meeting would focus on modeling inputs, the land use inventory, the Noise Abatement Plan (NAP), and the updated project schedule. Mr. Rineer noted that there would be no facilitator at this meeting, but that he and Ms. Rhea Hanrahan would stand in if needed. He also mentioned that, like last meeting, this meeting would be interactive. Participants were invited to ask questions or offer comments at any time during the presentations. He explained that the evening's presentations would be led by various team members, including Ms. Sarah Yenson, Ms. Hanrahan, Mr. Royce Bassarab, and himself, with each person taking the lead on relevant technical topics. Attendees then introduced themselves. In addition to MAA and HMMH project staff, participants included representatives from the BWI Business Partnership, the Provinces Civic Association, Anne Arundel	Bruce Rineer

	County Planning and Zoning, the BWI Roundtable, the Federal Aviation Administration (FAA), and various community and civic organizations.	
SAC Meeting #1 Recap	Ms. Yenson opened her remarks by briefly recapping the key points covered during the first SAC meeting. She reminded attendees that the SAC was created to ensure diverse stakeholder input throughout the ANZ update process. The first meeting focused on introducing the regulatory framework for the ANZ, reviewing the role of the SAC, and providing background on the fundamentals of airport noise and modeling. She emphasized that the ANZ is updated approximately every five years in accordance with the Maryland Environmental Noise Act of 1974 and the Code of Maryland Regulations (COMAR). These updates are important not only for forecasting future noise exposure but also for helping local jurisdictions plan compatible land use around the airport. The contours developed through this process are printed on Maryland tax parcels and can influence land use decisions. Ms. Yenson reiterated that the Noise Abatement Plan (NAP) is a separate but related component of the process. While the ANZ is required by regulation, the NAP is voluntary and shaped largely by community feedback. Both the ANZ and NAP are reviewed together during this update, allowing for a more comprehensive approach to addressing aircraft noise issues. She highlighted that the goal of this second SAC meeting was to share and discuss the specific inputs that will drive the noise model, including operational forecasts and assumptions about future airport activity. This information, she explained, is crucial to understanding how noise contours are generated and how they may shift over time.	Sarah Yenson
ANZ Noise Modeling Process	Ms. Yenson introduced the noise modeling portion of the presentation by explaining that the modeling process is central to the ANZ update. It helps determine where noise contours fall based on forecasted airport activity and ensures consistency with federal and state regulations. She described the FAA's Aviation Environmental Design Tool (AEDT) as the modeling platform used to simulate aircraft operations and their associated noise impacts around the airport. Ms. Hanrahan then elaborated on the modeling process, walking the group through each step. She explained that the model begins with inputting an average annual day of operations. This daily snapshot includes a representative sample of flight activity, types of aircraft, routes flown, and operational characteristics such as time of day and runway use.	Sarah Yenson

	Ms. Hanrahan noted that DNL (Day-Night Average Sound Level) is the federally accepted metric for measuring long-term noise exposure. It includes a 10-decibel weighting for nighttime operations between 10:00 PM and 7:00 AM, reflecting the higher sensitivity to noise during these hours. While DNL doesn't capture all aspects of how the public perceives noise, it provides a standardized basis for analysis and is required under COMAR. Ms. Yenson emphasized that the contours resulting from the model are used to update the ANZ boundaries, which in turn inform Maryland's land use and permitting regulations. She explained that while actual measurements from permanent noise monitors are valuable for comparison, the modeling tool uses predictive data to generate future scenarios, such as those expected in 2030 or 2035, not just present-day conditions. Ms. Hanrahan reiterated that the modeling process is designed to forecast, not document, noise exposure. It considers trends in aircraft technology, anticipated growth in operations, and other relevant inputs. She encouraged the group to keep this distinction in mind as they reviewed the modeling results in later meetings. Several SAC members requested clarification on whether community-specific complaints affect the modeling assumptions. Ms. Hanrahan explained that while complaints help shape community engagement and may inform the Noise Abatement Plan, they do not directly alter the modeling inputs, which are based on empirical and regulatory data. Ms. Yenson concluded by emphasizing that the contours generated through this modeling serve as the foundation for identifying areas of concern, engaging stakeholders, and updating the ANZ boundaries.	
Noise Model Inputs	Ms. Yenson transitioned into a deeper discussion on the data inputs required for the AEDT model. She explained that modeling an accurate DNL contour requires detailed and localized input data to reflect conditions at BWI Marshall. She began by describing how physical inputs, such as aircraft type, frequency, and flight tracks, are translated into modeled noise footprints. These operations are categorized over a full year and averaged to reflect a representative "annual average day," which is central to COMAR modeling requirements. Ms. Yenson shared that the base year for the ANZ update is 2025, with flight track data sourced from radar information collected in late 2024.	Sarah Yenson

	These tracks are bundled based on distribution patterns and verified through comparisons with actual operational data. She further explained how runway utilization patterns, especially the dominance of Runway 33L for commercial traffic, were derived from historical averages and current operating preferences. This information is paired with data on aircraft fleet mix, operations timing, and approach/departure paths to complete the core model inputs. Ms. Yenson addressed several community questions during this segment. Ms. Gina Stewart inquired about the impact of small personal jets, to which Ms. Yenson responded that general aviation operations, including private jets, are included in the model's general aviation segment and represent a small portion of overall noise exposure. Mr. Drew Roth asked about the term "air taxis," prompting Ms. Yenson to clarify that it refers to smaller, privately operated jets not associated with major airline carriers. Mr. Rineer added a clarifying question regarding the currentness of the operational assumptions. Ms. Yenson confirmed that, while certain model structures are maintained for consistency, updated operations data from 2024 and early 2025 were used to ensure accuracy and relevance. Ms. Yenson also discussed how meteorological data, specifically a 10-year average, was included to represent seasonal variability in wind patterns and temperature, which can affect runway usage and noise propagation. The section concluded with Ms. Yenson reiterating that these model inputs, aircraft operations, flight paths, runway preferences, and environmental conditions, form the backbone of the noise contour calculations, ensuring both accuracy and compliance with FAA guidance.	
ANZ Land Use Inventory	Ms. Yenson opened the discussion on the ANZ Land Use Inventory by explaining that once the noise forecast contours for 2025, 2030, and 2035 are finalized, the project team will overlay them with current land use data. This process will identify areas, such as residential neighborhoods, schools, churches, and hospitals, that fall within the modeled noise exposure contours. She explained that these overlays help assess whether land use is compatible or incompatible with forecasted noise levels and ultimately inform the certified ANZ boundary.	Sarah Yenson, Bruce Rineer, Royce Bassarab, Rhea Hanrahan

Ms. Yenson emphasized that the certified ANZ will be based on the largest extent of the three modeled forecast years, producing a composite contour that reflects the maximum potential noise exposure over the planning horizon. To confirm accuracy, the team will also conduct windshield surveys, visual checks by driving around areas to verify what is present on the ground.

Mr. Howard Johnson asked whether the land use inventory includes projected growth or population forecasts from local counties. Ms. Hanrahan responded that, yes, the team incorporates any published development plans or forecasts available through county planning departments. She encouraged members to share local insights and unofficial development knowledge, as the community often knows of pending projects before they appear in official records.

Mr. Roth referenced the Gateway Industrial Area Master Plan. Ms. Hanrahan acknowledged that the plan had been submitted and would be incorporated if finalized and published. If it remains a draft, it would not be included in the formal future land use assumptions, although the team has noted it for future reference.

Mr. Rineer expanded on MAA's process, explaining that finalized contours will be paired with GIS parcel-level data and zoning overlays to determine what falls within the 65, 70, and 75 dB DNL zones. This information is then used to support updated zoning recommendations and to clarify permits. He also addressed questions about coordination with local governments, emphasizing that Anne Arundel, Baltimore, and Howard Counties are looped in and routinely receive updated maps. Mr. Rineer noted that when development occurs near the airport, counties are required to consult with MAA to assess whether proposed uses are compatible.

Mr. Bassarab spoke to the role of the Board of Airport Zoning Appeals (BAZA), which reviews proposed noise sensitive development within the ANZ. New residential construction and schools must demonstrate that they can meet interior sound thresholds, typically no more than 45 dB indoors. Mr. Bassarab added that BAZA can issue variances with conditions like enhanced construction techniques or noise insulation.

Mr. Kevin Clarke added that MAA's coordination with county planning departments is ongoing and includes long-range efforts like Anne Arundel County's 2040 Plan. He explained that MAA receives and reviews 300–400 development applications annually within the four-mile airport zone. These reviews ensure that development is evaluated for both airspace protection and noise compatibility. He also clarified that this four-mile ring is centered on the airport reference point, a standard FAA-defined location.

	Ms. Stewart and Mr. Mark Wilde asked about timing, particularly whether recent changes to land use designations in Anne Arundel County would be reflected. Mr. Wilde noted that the most recent zoning and land use updates became effective just days before the SAC meeting. Mr. Rineer confirmed this timing is appropriate, as the ANZ update occurs every five years and aligns closely with the county's planning cycle. Ms. Yenson concluded the segment by reiterating that land use data is essential not only for aligning technical modeling with community realities but also for supporting a process that is transparent and defensible over time.	
Noise Abatement Plan (NAP)	Mr. Rineer introduced the Noise Abatement Plan (NAP) by noting that BWI Marshall has had a formal NAP in place since the 1970s. As required by COMAR regulations, the NAP must be implemented when an airport's noise zone extends beyond airport property. He emphasized that noise abatement is an ongoing commitment by MAA to minimize the impact of aircraft operations on surrounding communities. Mr. Rineer explained that the NAP encompasses multiple components, including departure and arrival procedures, land-use measures, and programmatic strategies. He emphasized that noise abatement involves more than just adjusting flight patterns; it also includes community-focused mitigation efforts, such as zoning, permitting restrictions, and operational protocols. He walked attendees through examples of current departure procedures, which are tailored to specific runways. These include requirements such as delaying turns until a designated distance from the runway (e.g., 2 DME) to avoid overflying residential areas. He acknowledged that traditional navigation measures, such as DME, are being phased out and replaced with GPS waypoints, which enable aircraft to follow more precise, programmable flight paths. Mr. Dana Plagmann elaborated that the FAA's newer GPS-based procedures enable consistent adherence to noise abatement protocols and reduce reliance on outdated technology. He clarified that while pilots still receive instructions from air traffic controllers, these new procedures are designed to be embedded in onboard systems, resulting in greater consistency. Mr. Plagmann noted that while jet aircraft largely follow these published procedures, propeller aircraft, often under visual control from the tower, may deviate based on safety and traffic considerations. Mr. Bassarab added context about MAA's role in ensuring that pilots and airport operations teams understand and implement these	Bruce Rineer, Royce Bassarab, Rhea Hanrahan

procedures. He explained that Mr. Rineer and his team regularly conduct outreach to airport tenants and operators to reinforce compliance with noise abatement policies. Mr. Bassarab also discussed how the NAP intersects with local permitting and BAZA reviews, reinforcing the need to ensure new development within the ANZ meets strict acoustic performance criteria.

Mr. Rineer added that the airport's recent annual review found that compliance with existing departure procedures is in the high 90% range. A new waypoint was also introduced to improve compliance and reduce early turns off certain runways.

The group also discussed arrival procedures, which are generally less impactful from a noise standpoint than departures. Ms. Hanrahan suggested that updates to arrival language could clarify which navigational aids are still active. Mr. Plagmann confirmed that arrival procedures, while still part of the NAP, are increasingly automated and coordinated with FAA airspace designers to align with existing noise abatement policies.

Mr. Rineer then shifted to other components of the NAP, including ground-based noise controls. These include limitations on engine run-ups, restrictions on reverse thrust operations, and requirements that operators notify airport staff before conducting loud activities. He shared that MAA has placed monitoring equipment on the airfield to investigate reports of night-time noise and continues to analyze that data.

Ms. Hanrahan provided an overview of programmatic strategies embedded within the NAP, such as maintaining a dedicated airport noise office, producing quarterly and annual noise reports, and providing public complaint mechanisms and mobile noise monitoring. She emphasized that many airports do not have such robust systems, and that Maryland's model, originating in the 1970s, was a forerunner to today's federal standards.

Mr. Wayne Dixon noted that his father had once chaired the original Airport Neighbors Committee and advocated for noise controls at the federal level. He suggested reinstating similar community-facing programs, such as ambassador visits to civic associations. Mr. Rineer responded that while current staffing limits have reduced regular outreach, MAA remains committed to community dialogue and will attend meetings upon request.

Finally, Mr. Rineer explained that MAA's long-term goal is to have the most effective noise office in North America. Recent improvements, such as a full replacement of the Airport Noise and Operations Monitoring System (ANOMS) and the development of a new annual

	noise report, reflect that ambition. He invited SAC members to share ideas on how the office can improve transparency, engagement, and effectiveness.	
Schedule and Resources	Ms. Hanrahan presented an overview of the project schedule and upcoming resources. She confirmed that the next SAC meeting is expected to take place around September 2025. That meeting will likely focus on draft documentation, including a summary of all technical elements presented so far. Ms. Hanrahan emphasized that while the team will aim to share draft contours or documents in advance, only materials that have undergone internal quality checks will be distributed. SAC members may see finalized contours for the first time at the next meeting. Ms. Hanrahan explained that the September meeting will soon be followed by a 30-day public comment period for the draft ANZ update report. This period will allow community members and SAC participants to review the document, submit written comments, and participate in a public workshop and hearing. She noted that MAA values the SAC's involvement in that event, especially in encouraging public turnout and helping explain the local context. Ms. Hanrahan also provided links to previous documentation and described what the final ANZ report will look like. She invited participants to review past reports posted on the project website for reference.	Rhea Hanrahan
Q&A and Open Discussion	Several questions and comments were raised during the wrap-up of the meeting: • Mr. Clarke asked the project team how SAC members could submit feedback on the Noise Abatement Plan. Ms. Hanrahan responded that suggestions can be sent via email, brought to the next SAC meeting, or submitted during the public comment period. She welcomed input on potential programmatic or procedural improvements, even those outside the 65 dB DNL contour. • Mr. Roth inquired about tracking changes in the aircraft fleet mix over time. Ms. Hanrahan confirmed that the documentation includes projections for each aircraft type and operator, showing anticipated changes across the 10-year forecast horizon. She explained how newer, quieter aircraft are gradually replacing older models, though these changes are incremental. • Mr. Dixon raised concerns about legacy aircraft noise, particularly from charter flights and military testing. Mr. Rineer responded that most older, noisier aircraft were retired following regulatory action and pandemic-related fleet reductions. Mr. Plagmann and Ms.	Rhea Hanrahan

Hanrahan added that lighter regional jets have also largely disappeared.

- Mr. Dixon and Ms. Suzzie Schuyler expressed concern about real estate disclosures and residents unaware of proximity to the airport. Ms. Hanrahan and Mr. Rineer explained that while the state recommends disclosure forms, enforcement is limited, especially during fast-paced real estate closings. Anne Arundel County has a standard addendum for real estate disclosures within the ANZ.

- SAC members also discussed other potential ideas, including lowering the DNL threshold for ANZ designation, offering tax credits for affected residents, exploring noise walls, and reinstating community outreach programs. Mr. Rineer acknowledged these ideas and encouraged members to submit them formally.

- Mr. Bassarab described MAA's responsiveness to residents doing due diligence before moving near the airport. He noted that MAA often receives calls from prospective buyers and provides detailed summaries of aircraft operations to help them make informed decisions.

- Ms. Stewart and Mr. Plagmann raised points about balancing noise concerns with the airport's broader economic impact. They noted that while noise affects a smaller subset of residents, the airport brings significant tax revenue and employment to the region.

Adjournment	Ms. Hanrahan closed the meeting by thanking attendees for their time and their thoughtful participation. She confirmed that all meeting materials, including a finalized version of these minutes, will be posted to the project website. While meeting minutes will not be emailed directly to participants, they will be accessible for future reference. Ms. Hanrahan emphasized the importance of continued feedback and reminded participants that now is a particularly useful time to submit suggestions for inclusion in the draft ANZ update. Mr. Rineer reiterated that any ideas sent to him directly will be forwarded to the project team for review. The meeting adjourned shortly before 8:00 PM.	Rhea Hanrahan

Kayla Woods

From: MDOT-MAA-ANZ
Sent: Tuesday, July 29, 2025 1:14 PM
To: Bruce Rineer
Subject: Thank you for your participation!

Dear Stakeholder,



Thank you for attending the second **Stakeholder Advisory Committee (SAC) meeting for the 2025 Airport Noise Zone (ANZ) Update for BWI Marshall** Airport on June 25, 2025. The Maryland Aviation Administration (MAA) appreciates your input and participation as a stakeholder on this important committee. Materials from the first and second SAC meetings, including meeting presentations, meeting minutes, and more, is available on the website: *BWI Marshall Airport Noise Zone - Maryland Aviation Administration*.

Details concerning the Third SAC meeting and the Public Information Workshop, both anticipated to occur in the Fall of 2025, are forthcoming.

If you have questions about the ANZ process, please email Bruce Rineer at *BRineer@bwiairport.com*. If you have questions or concerns related to the logistics of the upcoming .meetings, contact the MAA Outreach Team at 240-200-5176 or *MDOT-MAA-ANZ@assedollc.com*.

Sincerely,

Bruce Rineer, Manager

Noise Program Section

1

Office of Environmental Compliance and Sustainability

Maryland Aviation Administration



Kayla Woods

From: MDOT-MAA-ANZ
Sent: Wednesday, August 13, 2025 12:01 PM
To: Bruce Rineer
Subject: Save The Date: MAA BWI Marshall Airport SAC Meeting 3



Location: 991 Corporate Blvd, Linthicum Heights, MD 21090
Date: September 24, 2025
Time: 6:00pm – 8:00pm

A formal invitation and additional information/resources will follow.

Regards,

BWI Marshall and Martin State Airport Noise Zone
Outreach Team

Phone: 240-200-5176

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

Wes Moore
Governor

Aruna Miller
Lieutenant Governor

Samantha Biddle
Acting Secretary

Shannetta R. Griffin, P.E.
Executive Director/CEO

September 05, 2025

Dear Stakeholder,

On behalf of the Maryland Department of Transportation (MDOT), Maryland Aviation Administration (MAA), we invite you, or another representative of your organization, to attend the **third and final Stakeholder Advisory Committee (SAC) meeting** for the **Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall) Airport Noise Zone (ANZ)** update. At this meeting, SAC members will have an opportunity to discuss the draft ANZ noise contours and related land-use inventory. At the meeting, questions related to the materials will be addressed, allowing you to share relevant information with the stakeholders you represent.

The third SAC meeting is scheduled for **Wednesday, September 24, 2025, at 6:00 PM – 8:00 PM** The meeting will be held at the MAA Facilities at **991 Corporate Blvd, Linthicum Heights, MD.**

The BWI ANZ updated public involvement process will include a public workshop, anticipated to take place in *January 2026*. Additional representatives of your organization and all members of the public are welcome to participate in the public workshop. We appreciate your interest and look forward to working with you in updating the BWI ANZ.

We kindly request that all attendees confirm their participation at BWIANZsac3.eventbrite.com. Those who RSVP will receive the Read-ahead materials to ensure a productive and informed discussion. If you have any questions, please contact our outreach team at 240-200-5176 or by email MDOT-MAA-ANZ@assedollc.com. We look forward to seeing you there.

Sincerely,

Bruce Rineer, Manager
Noise Program Section
Office of Environmental Compliance and Sustainability
Maryland Aviation Administration

PO Box 8766, BWI Airport, Maryland 21240-0766 | 410.859.7100 | 800.435.9294 | Maryland Relay TTY 410.859.7727 | marylandaviation.com

Monica Watson

From: MDOT-MAA-ANZ
Sent: Friday, September 5, 2025 3:58 PM
To: Bruce Rineer
Subject: Stakeholder Advisory Committee 3 Invitation - Airport Noise Zone (ANZ) Update for Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall)
Attachments: 2025_09-05 MAA BWI ANZ SAC 3 email letter.pdf

Good afternoon,

The Maryland Aviation Administration (MAA) is in the process of updating the **2025 Airport Noise Zone (ANZ)** for **BWI Marshall Airport**, and we are seeking input from key stakeholders like you!

Your participation is essential to this process, and we appreciate your engagement. Please find attached the invitation with details about the upcoming **Stakeholder Advisory Committee (SAC) Meeting 3**. You also received a formal invitation in the mail.

Date: **Wednesday, September 24, 2025**

Time: **6:00 to 8:00 PM**

Location: **MAA Facilities, 991 Corporate Blvd, Linthicum Heights, MD 21090.**

To RSVP, register online here: **BWI ANZ Eventbrite**

If you have any questions, feel free to contact our Outreach Team.

Regards,

Bruce Rineer, Manager
Noise Program Section
Office of Environmental Compliance and Sustainability
Maryland Aviation Administration

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Monica Watson

From: MDOT-MAA-ANZ
Sent: Friday, September 19, 2025 12:48 PM
To: Bruce Rineer
Subject: Reminder: Stakeholder Advisory Committee 3 - Airport Noise Zone (ANZ) Update for Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall)

Good afternoon,

This is a friendly reminder about next week's Stakeholder Advisory Committee (SAC) meeting to discuss the **BWI Marshall Airport Noise Zone (ANZ)** update.

Meeting Details:
Wednesday, September 24, 2025, from 6:00 PM – 8:00 PM
at MAA Facilities - 991 Corporate Boulevard, Linthicum Heights, MD 21090

Your participation is critical in shaping this update and ensuring it reflects the needs of the impacted communities.

To **RSVP**, please register online here: **BWI ANZ Eventbrite**. Thank you to those who have already done so.

If you have any questions, please contact our Outreach Team at 240-200-5176 or MDOT-MAA-ANZ@assedollc.com.

We look forward to working with you!

Regards,

Bruce Rineer,
Manager Noise Program Section
Office of Environmental Compliance and Sustainability
https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/
https://marylandaviation.com/environmental/airport-noise/martin-state-airport-noise-zone/

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Monica Watson

From: MDOT-MAA-ANZ
Sent: Wednesday, September 24, 2025 2:59 PM
To: Bruce Rineer
Subject: Reminder & Readaheads: Stakeholder Advisory Committee 3 - Airport Noise Zone (ANZ) Update for Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall)Good afternoon,
Attachments: BWI_ANZ_SAC_Mtg3_Sept2025_Readahead.pdf

Good afternoon,

Thank you for registering for today's Stakeholder Advisory Committee (SAC) meeting to discuss the **BWI Marshall Airport Noise Zone (ANZ)** update. Readahead material for this event is attached.

Meeting Details:
Wednesday, September 24, 2025, from 6:00 PM – 8:00 PM
at MAA Facilities - 991 Corporate Boulevard, Linthicum Heights, MD 21090

Thank you for your participation in shaping this update and ensuring it reflects the needs of the impacted communities.

If you have any questions, please contact our Outreach Team at 240-200-5176 or MDOT-MAA-ANZ@assedollc.com.

We look forward to working with you!

Regards,

Bruce Rineer,
Manager Noise Program Section
Office of Environmental Compliance and Sustainability
https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/
https://marylandaviation.com/environmental/airport-noise/martin-state-airport-noise-zone/

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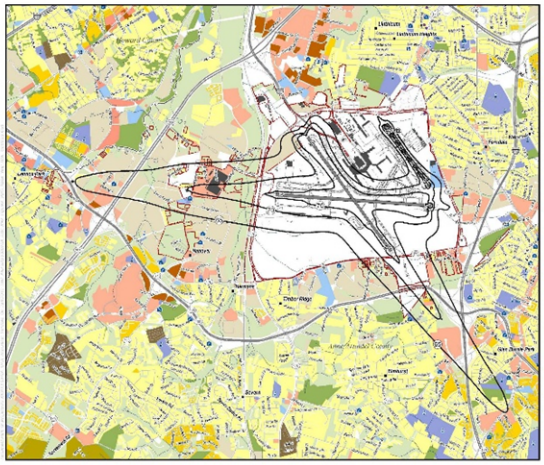
Airport Noise Zone Update
Stakeholder Advisory Committee

Meeting #3
Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall)
Advanced Materials Briefing Packet

1

Base Year (2025) Contours

- **Total Annual Operations: 238,155**
- **Total Area: 3,178 acres**
  - 2,056 acres (65%) on airport
  - 1,122 acres (35%) off airport
    - 1,031 acres in 65 dB contour
    - 89 acres in 70 dB contour
    - 2 acres in 75 dB contour
- **Estimated population: 1,035**
  - 1,017 people in 65 dB contour
  - 18 people in 70 dB contour
- **Estimated housing units: 361**
  - 354 units in 65 dB contour
  - 7 units in 70 dB contour



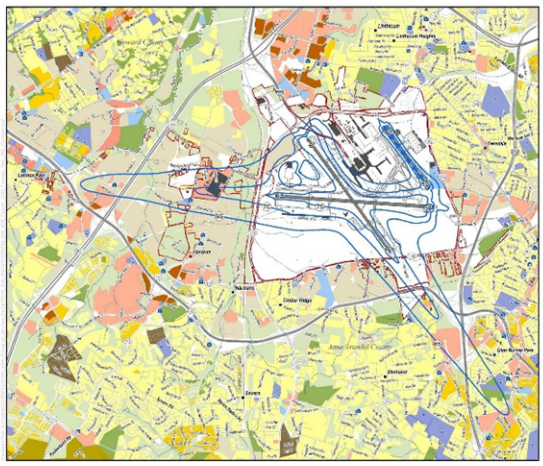


ANZ Contours and Land Use

2

Five-Year (2030) Contours

- **Total Annual Operations: 267,257**
- **Total Area: 2,866 acres**
  - 1,904 acres (67%) on airport
  - 962 acres (33%) off airport
    - 878 acres in 65 dB contour
    - 83 acres in 70 dB contour
    - 1 acres in 75 dB contour
- **Estimated population: 1,011**
  - 995 people in 65 dB contour
  - 16 people in 70 dB contour
- **Estimated housing units: 347**
  - 340 units in 65 dB contour
  - 7 units in 70 dB contour

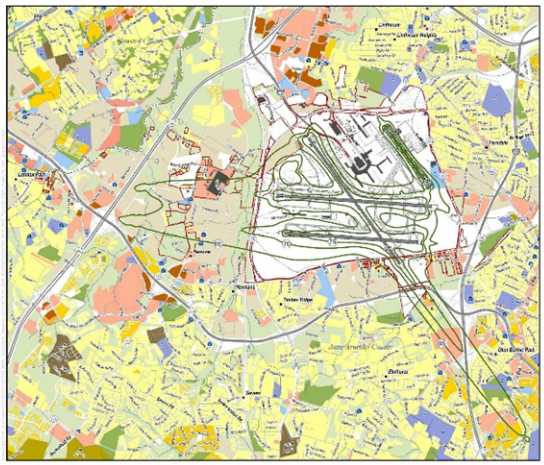




3

Ten-Year (2035) Full Build Contours

- **Total Annual Operations: 290,550**
- **Total Area: 3,100 acres**
  - 2,121 acres (68%) on airport
  - 979 acres (32%) off airport
    - 891 acres in 65 dB contour
    - 87 acres in 70 dB contour
    - 1 acres in 75 dB contour
- **Estimated population: 1,616**
  - 1,598 people in 65 dB contour
  - 18 people in 70 dB contour
- **Estimated housing units: 597**
  - 589 units in 65 dB contour
  - 8 units in 70 dB contour

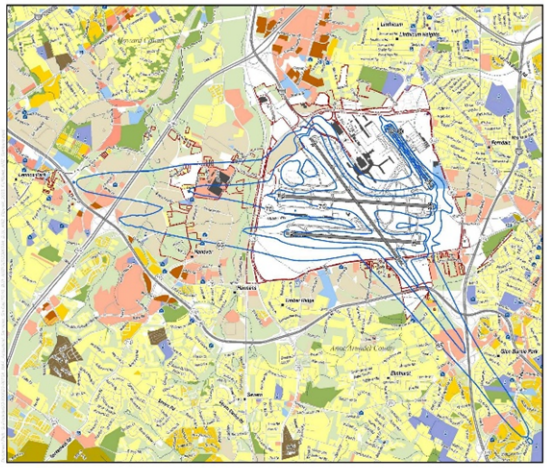




4

2025 ANZ Contours

- **Total Area: 3,802 acres**
  - 2,381 acres (63%) on airport
  - 1,420 acres (37%) off airport
    - 1,277 acres in 65 dB contour
    - 140 acres in 70 dB contour
    - 3 acres in 75 dB contour
- **Estimated population: 1,704**
  - 1,685 in 65 dB contour
  - 19 in 70 dB contour
- **Estimated housing units: 636**
  - 628 in 65 dB contour
  - 8 in 70 dB contour



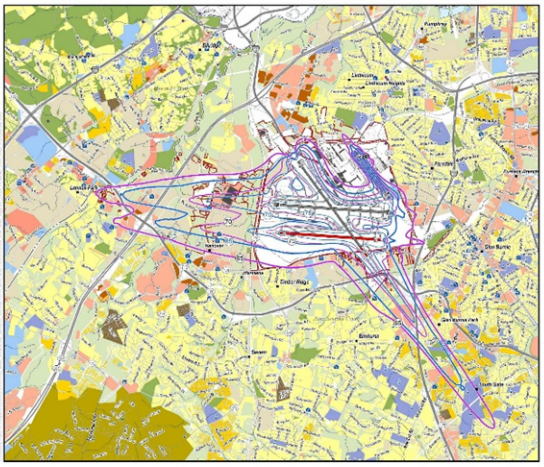


ANZ Contours and Land Use

5

2025 ANZ and 2020 ANZ Contours Comparison

- **Total Area: Decrease of 1,742 acres**
  - 896 fewer acres in 65 dB contour
  - 411 fewer acres in 70 dB contour
  - 434 fewer acres in 75 dB contour
- **Estimated population: Decrease of 2,267**
  - 2,171 fewer people in 65 dB contour
  - 94 fewer people in 70 dB contour
  - 2 fewer people in 75 dB contour
- **Estimated housing units: Decrease of 927 units**
  - 890 fewer units in 65 dB contour
  - 36 fewer units in 70 dB contour
  - 1 fewer units in 75 dB contour





ANZ Contours and Land Use

6

Maryland Aviation Administration

SIGN IN SHEET

Baltimore/Washington International Thurgood Marshall Airport
Airport Noise Zone Update
Stakeholder Advisory Committee (SAC 3)
Date: September 24, 2025

BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

NAME	ORGANIZATION/NEIGHBORHOOD	EMAIL ADDRESS	ZIP CODE	HOW DID YOU HEAR ABOUT THIS MEETING?
MARK WILDONGER	AACO PLANNING + ZONING	PZWILD00@AACOUNTY.ORG	21401	__ Web __ Email __ Social Media __Family/Friend __ DPW Newsletter __Other:
DANA PLAGMANN	FAA ATC	BWIFACREP@gmail.com		__ Web __ Email __ Social Media __Family/Friend __ DPW Newsletter __Other:
DAN WOOMER	LINTHICUM HGTS	woomer.dan@gmail.com	21090	__ Web __ Email __ Social Media __Family/Friend __ DPW Newsletter X Other: BWI-RT
Terral Dorsey Zoller	United Airlines	Terral.DorseyZoller@united.com		__ Web __ Email __ Social Media __Family/Friend __ DPW Newsletter X Other:
Suzzie Schuyler	BWI Round table			__ Web __ Email __ Social Media __Family/Friend __ DPW Newsletter __Other:
Shirley Singleton	PCA Provinces	Shirleysingleton1959@yahoo.com	21144	__ Web X Email __ Social Media __Family/Friend __ DPW Newsletter __Other:
Marjorie Deschenes	PCA PROVINCES	MARDeschenes@Hotmail.com	21144	__ Web X Email __ Social Media __Family/Friend __ DPW Newsletter __Other:
Gina Stewart	BWI Business Partnership	gstewart@bwipartner.org	21090	__ Web __ Email __ Social Media __Family/Friend __ DPW Newsletter __Other:
Kristin Etzel	Anne Arundel County Council PZ	kristin.etzel@aacounty.org	21401	__ Web __ Email __ Social Media __Family/Friend __ DPW Newsletter __Other:
Jonathan McGowan	LSIA	JMCGOWAN33@GMAIL.com	21090	__ Web __ Email __ Social Media __Family/Friend __ DPW Newsletter __Other:

Page 1 of 2

Maryland Aviation Administration

SIGN IN SHEET

Baltimore/Washington International Thurgood Marshall Airport
Airport Noise Zone Update
Stakeholder Advisory Committee (SAC 3)
Date: September 24, 2025

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NAME	ORGANIZATION/NEIGHBORHOOD	EMAIL ADDRESS	ZIP CODE	HOW DID YOU HEAR ABOUT THIS MEETING?
Wayne Dixon	HARMANS Civil Assoc, Inc.	D d709/0 @hotmail.com		__ Web __ Email __ Social Media __Family/Friend __ DPW Newsletter __Other:
DREW ROTH	ROUNDTABLE ELKRIDGE COMMUNITY ALLIANCE	mrdrew@gmail.com	21075	__ Web __ Email __ Social Media __Family/Friend __ DPW Newsletter __Other:
Kevin Clarke	MAA			__ Web __ Email __ Social Media __Family/Friend __ DPW Newsletter __Other:
				__ Web __ Email __ Social Media __Family/Friend __ DPW Newsletter __Other:
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				__ Web __ Email __ Social Media __Family/Friend __ DPW Newsletter __Other:

Airport Noise Zone Update
Stakeholder Advisory Committee

Meeting #3
Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall)

September 24, 2025
6:00 PM – 8:00 PM

1

Welcome to BWI Marshall

Safety Briefing

- Follow emergency exits
- Call 911
- Assist those who need assistance
- Be sure to take a head count during the emergency event
- Nearest AED – Hallway by restrooms
- Nearest fire extinguisher – Hallway by restrooms
- **Accountability Site:** Parking lot outside of front door of Building 991
- Always report any hazards in the meeting room

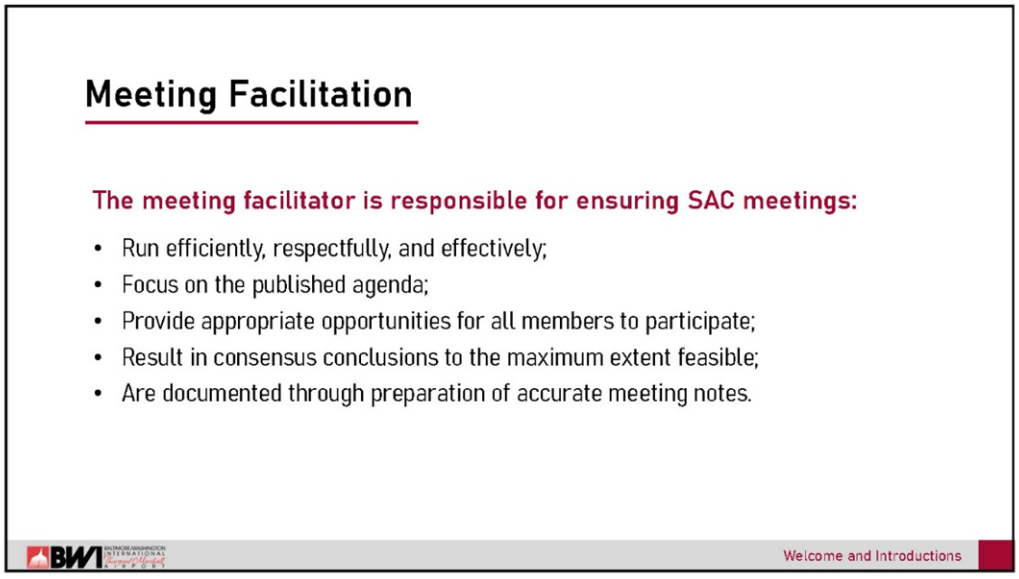


Source: MDOT MAA, Office of Planning, 2019

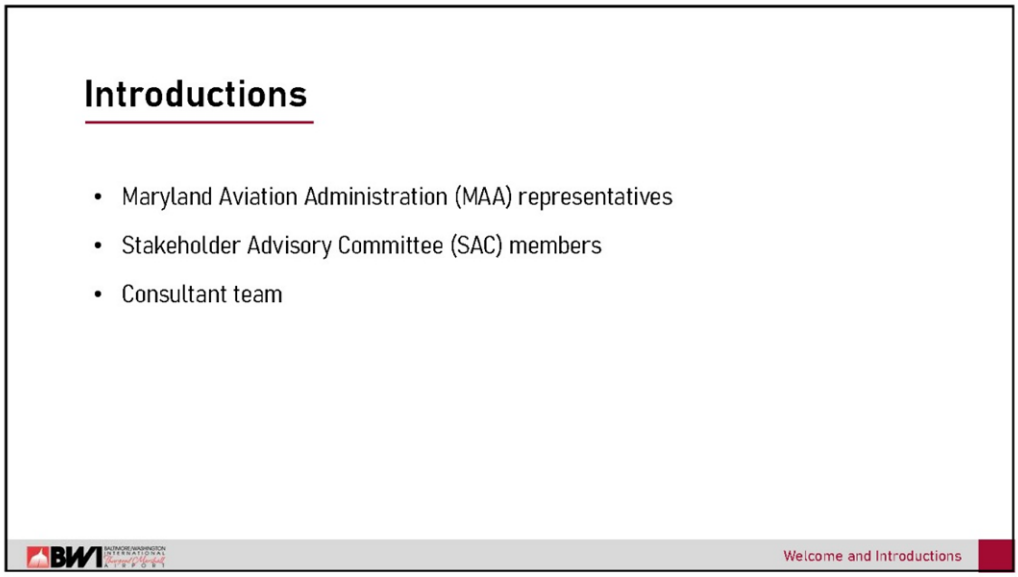
2


Agenda
» Welcome and Introductions
» SAC Meeting #2 Recap
» ANZ Contours and Land Use
» Supplemental Noise Contours
» Noise Abatement Plan (NAP)
» ANZ Certification
» Schedule and Resources

3


Meeting Facilitation
The meeting facilitator is responsible for ensuring SAC meetings:
• Run efficiently, respectfully, and effectively;
• Focus on the published agenda;
• Provide appropriate opportunities for all members to participate;
• Result in consensus conclusions to the maximum extent feasible;
• Are documented through preparation of accurate meeting notes.
Welcome and Introductions

4


Introductions
• Maryland Aviation Administration (MAA) representatives
• Stakeholder Advisory Committee (SAC) members
• Consultant team
Welcome and Introductions

5


SAC Meeting #2 Recap

6

ANZ Update Scope and Process

- Form and engage with Stakeholder Advisory Committee (SAC)
- Prepare base year, 5-year, 10-year forecast noise contours
- **Compile ANZ (composite of the three contour sets)**
- Conduct land use inventory within ANZ
- **Review existing Noise Abatement Plan (NAP)**
- Conduct public hearing/workshop
- Update Code of Maryland Regulations (COMAR)



7

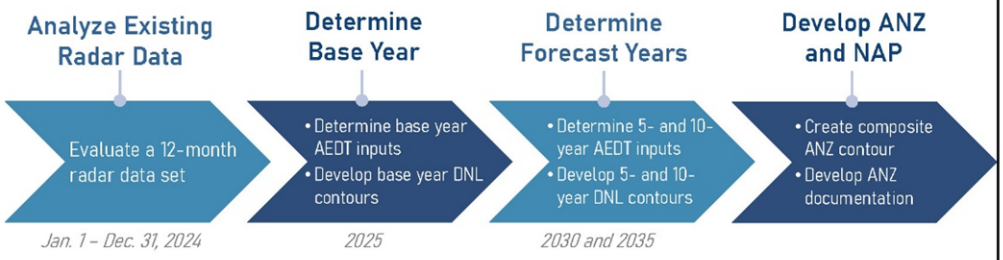
ANZ Study Update

The ANZ update process includes status review of the NAP.

Airport Noise Zone (ANZ)	Noise Abatement Plan (NAP)
Provides the means to identify and control incompatible land development around BWI Marshall Is a composite of the farthest extents of the annual Day-Night Average (DNL or Ldn) contours for each of the study years (2025 base, 2030 and 2035 forecast)	Prescribes measures to monitor, reduce, and/or eliminate incompatible land use areas within the ANZ to the extent possible while maintaining efficient airport operations

8

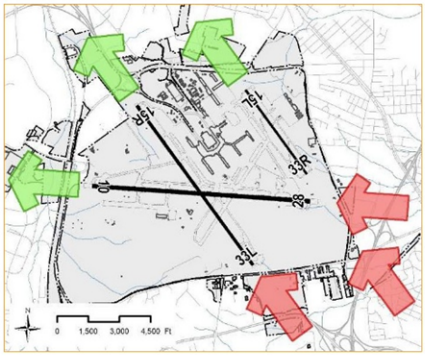
ANZ Noise Modeling Process



9

Noise Model Inputs Summary

- Airport Layouts
  - 2025 (base year), 2030 (five-year), 2035 No Build, 2035 Full Build
- Operations
  - Counts, fleet mix, runway use, flight tracks, runups
- Weather and Terrain



10

SAC Responsibilities

- Contribute to study inputs
  - Discussion and feedback at SAC meetings
  - Provide input, advice, and guidance related to Noise Abatement Plan
  - Understand the ANZ effects on stakeholders.
- Review modeling assumptions
  - Base year and forecasts
- Review analysis results
  - Base, 5-year, and 10-year contours
- Review documentation
  - NAP and Draft ANZ document
- Provide two-way communication
  - Share information with your constituents, neighbors and organizations
  - Spread the word about future opportunities for public feedback

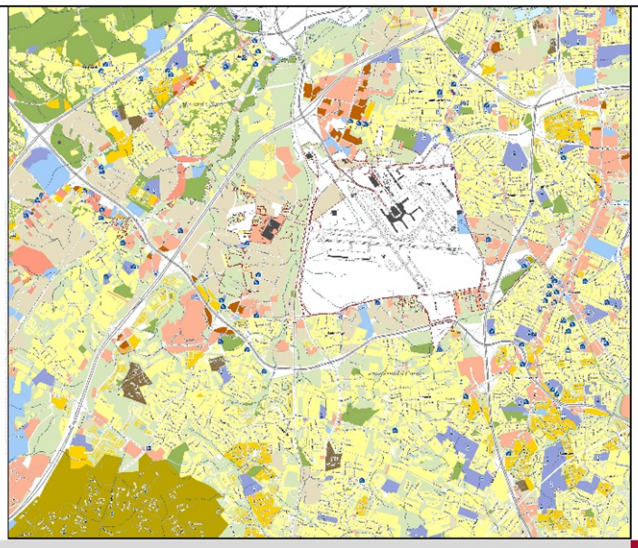
MAA will respect and consider SAC input but retains overall responsibility for the BWI Marshall ANZ update.

11

ANZ Contours and Land Use

12

Current Land Use



13

Land Use Inventory and Compatibility

- Assemble and review land use, zoning, and population data.
- Identify local land use policies referring to compatibility with airport operations.
- Create existing land-use maps.
- Identify noise-sensitive sites (churches, schools, etc.)
- Following contour development, survey and confirm use within the 65 DNL contour.

Per **11.03.03.03 in COMAR**, all land uses are compatible with aircraft noise exposure for DNL less than 65 dB.

14

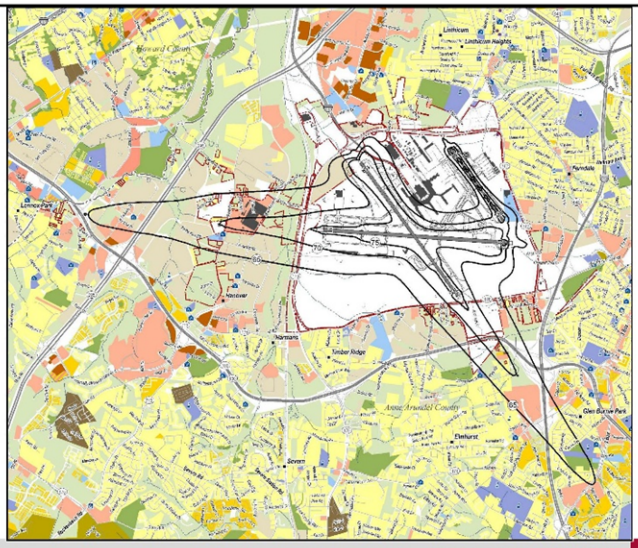
Noise Contours

- **Base Year Noise Contour**
- **Forecast Contours**
  - 2030 Forecast Noise Contour
  - 2035 Full Build Forecast Noise Contour
- **2025 ANZ Noise Contour**
- **Supplemental Noise Contours**

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Base Year (2025) Contours

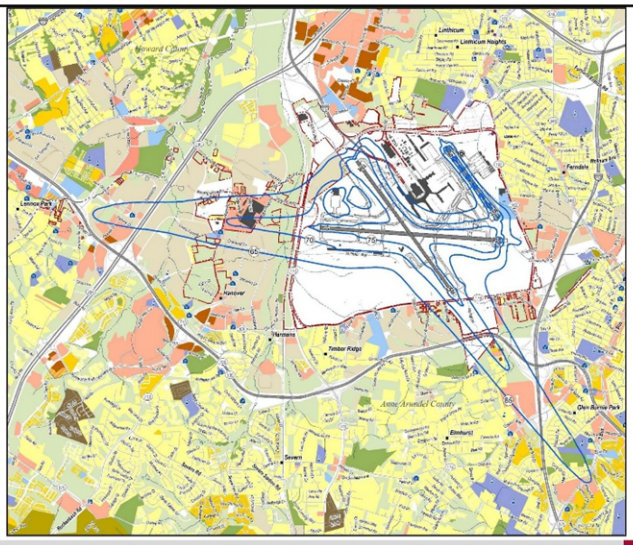
- **Total Annual Operations: 238,155**
- **Total Area: 3,178 acres**
  - 2,056 acres (65%) on airport
  - 1,122 acres (35%) off airport
    - 1,031 acres in 65 dB contour
    - 89 acres in 70 dB contour
    - 2 acres in 75 dB contour
- **Estimated population: 1,035**
  - 1,017 people in 65 dB contour
  - 18 people in 70 dB contour
- **Estimated housing units: 361**
  - 354 units in 65 dB contour
  - 7 units in 70 dB contour



16

Five-Year (2030) Contours

- **Total Annual Operations: 267,257**
- **Total Area: 2,866 acres**
  - 1,904 acres (67%) on airport
  - 962 acres (33%) off airport
    - 878 acres in 65 dB contour
    - 83 acres in 70 dB contour
    - 1 acre in 75 dB contour
- **Estimated population: 1,011**
  - 995 people in 65 dB contour
  - 16 people in 70 dB contour
- **Estimated housing units: 347**
  - 340 units in 65 dB contour
  - 7 units in 70 dB contour

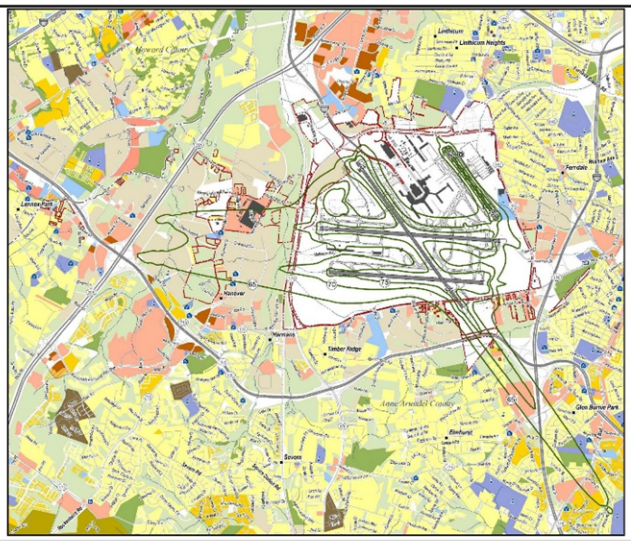


ANZ Contours and Land Use

17

Ten-Year (2035) Full Build Contours

- **Total Annual Operations: 290,550**
- **Total Area: 3,100 acres**
  - 2,121 acres (68%) on airport
  - 979 acres (32%) off airport
    - 891 acres in 65 dB contour
    - 87 acres in 70 dB contour
    - 1 acre in 75 dB contour
- **Estimated population: 1,616**
  - 1,598 people in 65 dB contour
  - 18 people in 70 dB contour
- **Estimated housing units: 597**
  - 589 units in 65 dB contour
  - 8 units in 70 dB contour

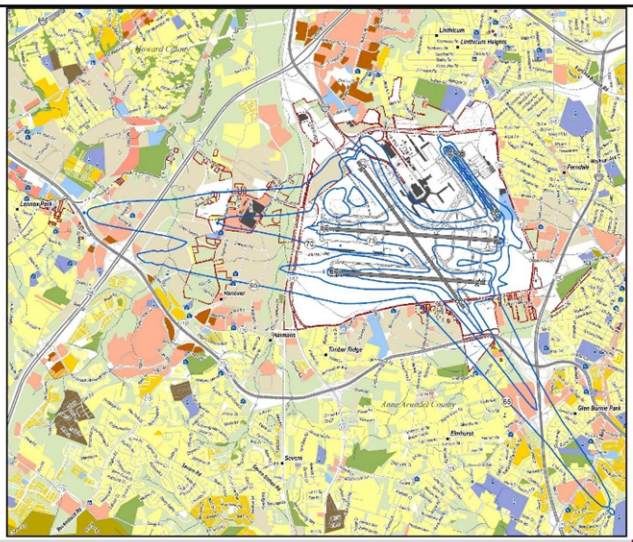


ANZ Contours and Land Use

18

2025 ANZ Contours

- **Total Area: 3,802 acres**
  - 2,381 acres (63%) on airport
  - 1,420 acres (37%) off airport
    - 1,277 acres in 65 dB contour
    - 140 acres in 70 dB contour
    - 3 acres in 75 dB contour
- **Estimated population: 1,704**
  - 1,685 in 65 dB contour
  - 19 in 70 dB contour
- **Estimated housing units: 636**
  - 628 in 65 dB contour
  - 8 in 70 dB contour

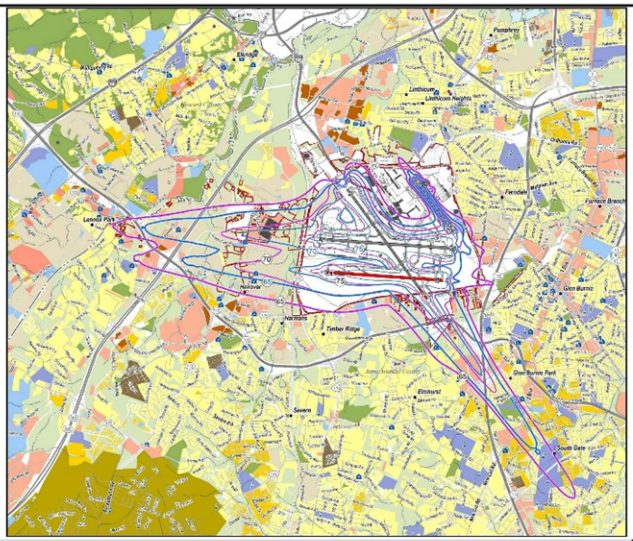


ANZ Contours and Land Use

19

2025 ANZ and 2020 ANZ Contours Comparison

- **Total Area: Decrease of 1,742 acres**
  - 896 fewer acres in 65 dB contour
  - 411 fewer acres in 70 dB contour
  - 434 fewer acres in 75 dB contour
- **Estimated population: Decrease of 2,267**
  - 2,171 fewer people in 65 dB contour
  - 94 fewer people in 70 dB contour
  - 2 fewer people in 75 dB contour
- **Estimated housing units: Decrease of 927 units**
  - 890 fewer units in 65 dB contour
  - 36 fewer units in 70 dB contour
  - 1 fewer unit in 75 dB contour



ANZ Contours and Land Use

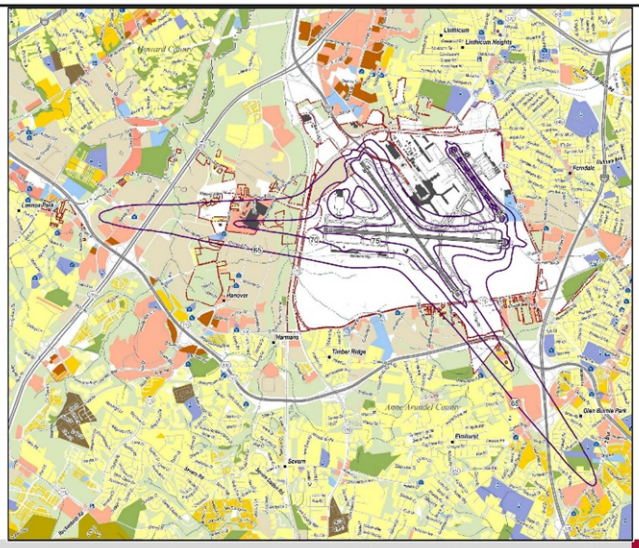
20

Supplemental Contours and Land Use

21

Ten-Year (2035) No Build Contours

- **Total Annual Operations: 290,550**
- **Total Area: 2,690 acres**
  - 1,815 acres (67%) on airport
  - 876 acres (33%) off airport
    - 805 acres in 65 dB contour
    - 70 acres in 70 dB contour
    - 1 acre in 75 dB contour
- **Estimated population: 962**
  - 949 people in 65 dB contour
  - 13 people in 70 dB contour
- **Estimated housing units: 332**
  - 326 units in 65 dB contour
  - 6 units in 70 dB contour

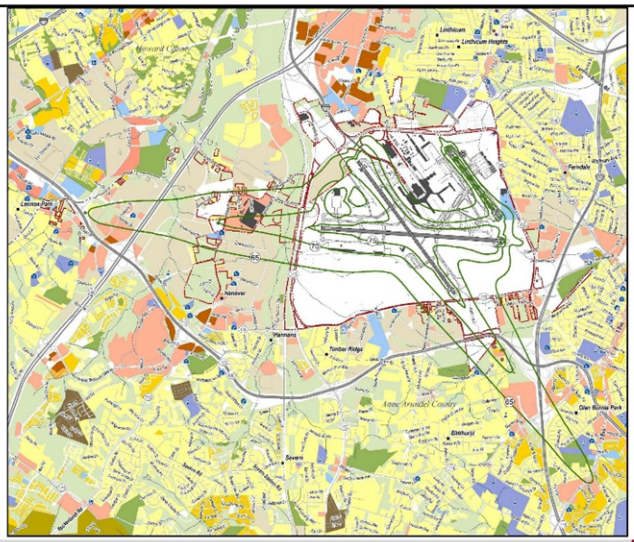


Supplemental Contours and Land Use

22

2025 No Build Composite Contours

- **Total Area: 3,198 acres**
  - 2,056 acres (64%) on airport
  - 1,142 acres (36%) off airport
    - 1,041 acres in 65 dB contour
    - 99 acres in 70 dB contour
    - 2 acres in 75 dB contour
- **Estimated population: 1,704**
  - 1,036 people in 65 dB contour
  - 18 people in 70 dB contour
- **Estimated housing units: 367**
  - 360 units in 65 dB contour
  - 7 units in 70 dB contour

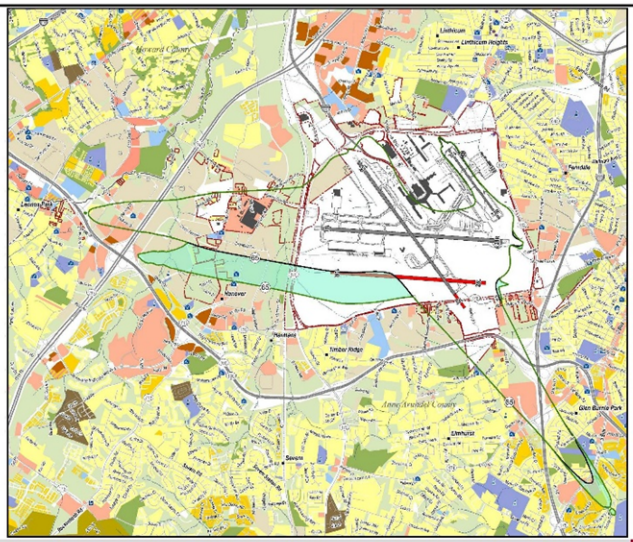


Supplemental Contours and Land Use

23

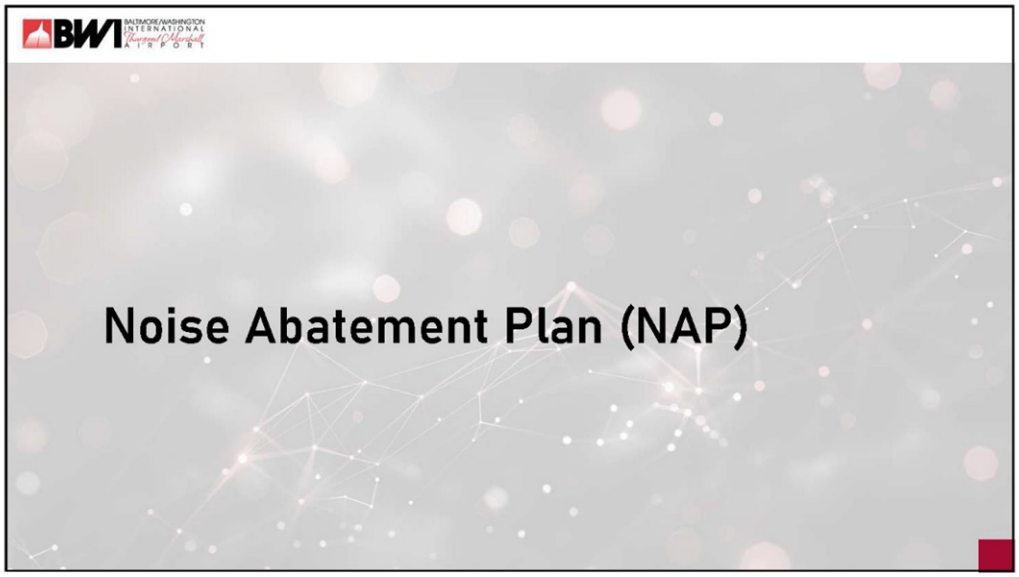
2025 ANZ and 2025 No Build Composite Contours Comparison

- **Total Area: 603 more acres in ANZ**
  - 325 more acres on airport
  - 278 more acres off airport
    - 237 more acres in 65 dB contour
    - 41 acres in 70 dB contour
- **Estimated population: 650 more people in ANZ**
  - 649 more people in 65 dB contour
  - 1 more person in 70 dB contour
- **Estimated housing units: 269 more units in ANZ**
  - 268 more units in 65 dB contour
  - 1 more unit in 70 dB contour

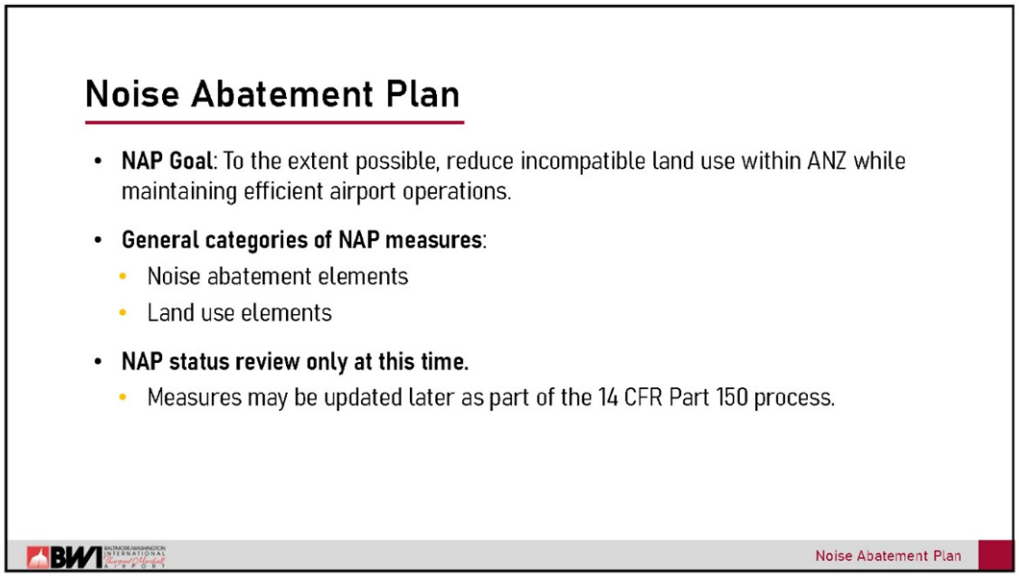


Supplemental Contours and Land Use

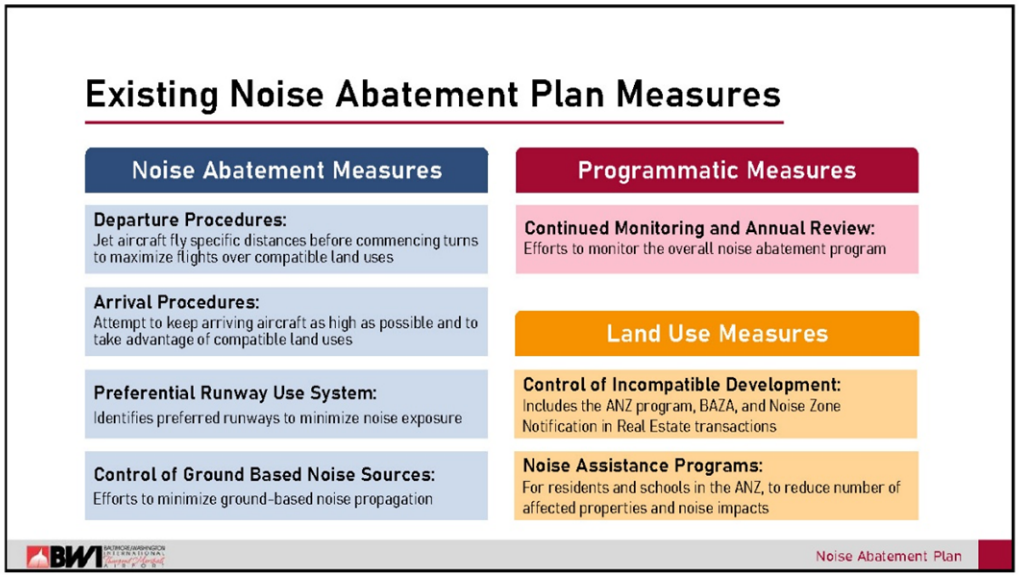
24


Noise Abatement Plan (NAP)

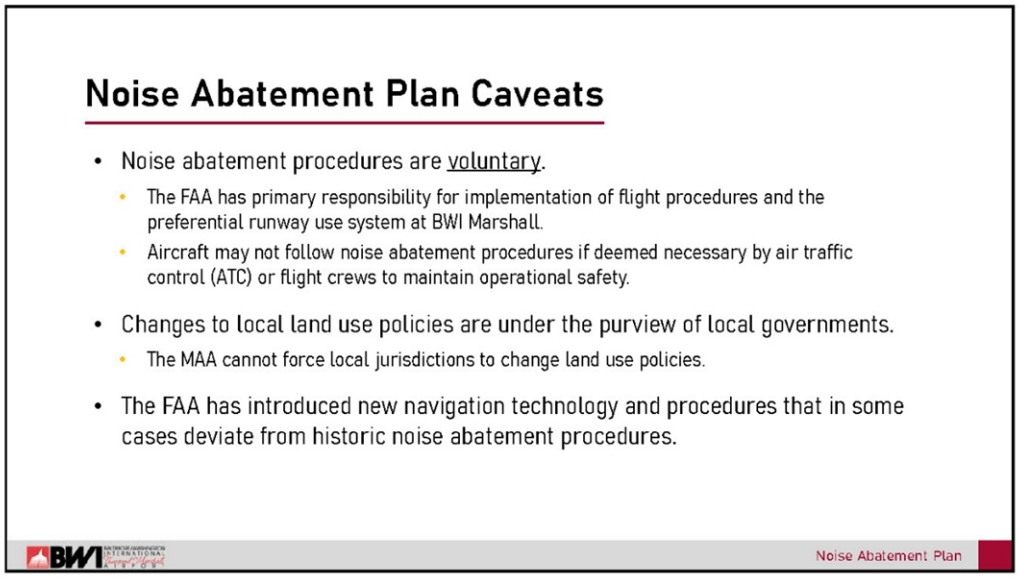
25


Noise Abatement Plan
NAP Goal: To the extent possible, reduce incompatible land use within ANZ while maintaining efficient airport operations.
General categories of NAP measures:
Noise abatement elements
Land use elements
NAP status review only at this time.
Measures may be updated later as part of the 14 CFR Part 150 process.
Noise Abatement Plan

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Existing Noise Abatement Plan Measures
Noise Abatement Measures
Departure Procedures:
Jet aircraft fly specific distances before commencing turns to maximize flights over compatible land uses
Arrival Procedures:
Attempt to keep arriving aircraft as high as possible and to take advantage of compatible land uses
Preferential Runway Use System:
Identifies preferred runways to minimize noise exposure
Control of Ground Based Noise Sources:
Efforts to minimize ground-based noise propagation
Programmatic Measures
Continued Monitoring and Annual Review:
Efforts to monitor the overall noise abatement program
Land Use Measures
Control of Incompatible Development:
Includes the ANZ program, BAZA, and Noise Zone Notification in Real Estate transactions
Noise Assistance Programs:
For residents and schools in the ANZ, to reduce number of affected properties and noise impacts
Noise Abatement Plan

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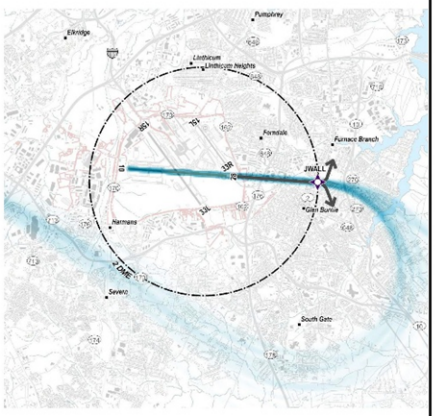

Noise Abatement Plan Caveats
Noise abatement procedures are voluntary.
The FAA has primary responsibility for implementation of flight procedures and the preferential runway use system at BWI Marshall.
Aircraft may not follow noise abatement procedures if deemed necessary by air traffic control (ATC) or flight crews to maintain operational safety.
Changes to local land use policies are under the purview of local governments.
The MAA cannot force local jurisdictions to change land use policies.
The FAA has introduced new navigation technology and procedures that in some cases deviate from historic noise abatement procedures.
Noise Abatement Plan

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Noise Abatement Elements

Runway 10 Jet Departures

Criteria	Description
Current Procedure	• Jet aircraft should commence departure turns two (2) DME from BWI VORTAC or 1.6 Nm from the departure end of the runway for all turns.
Applicability	• All departure procedures • Vectored Jet departures
Intent	• Minimize departure overflights over densely populated portions of Ferndale and Glen Burnie
Recommended Modifications to Measure	• None
Status	• Waypoint JWALL added to formalize NAPs as part of departure procedure implementation in 2024



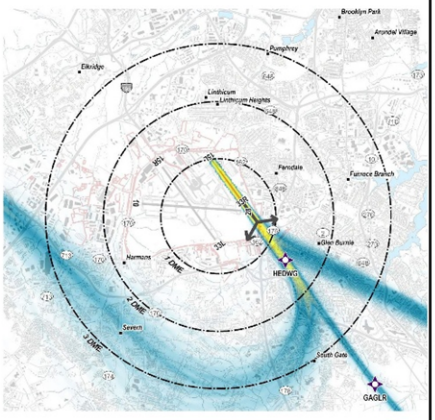
Noise Abatement Plan

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Noise Abatement Elements

Runway 15L Jet Departures

Criteria	Description
Current Procedure	• Multi-engine aircraft departing Runway 15L will maintain runway heading until 0.5 Nm from the departure end of the runway before turning
Applicability	• FOXHL, LINSE, TERPZ, DUKPN • Vectored departures
Intent	• Minimize departure overflights over densely populated portions of Glen Burnie
Recommended Modifications to Measure	• None
Status	• No change



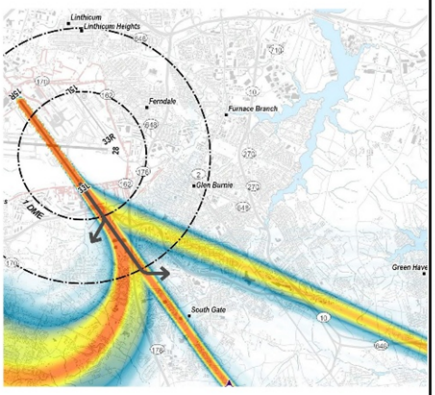
Noise Abatement Plan

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Noise Abatement Elements

Runway 15R Jet Departures

Criteria	Description
Current Procedure	• Right turns: one (1) DME from BWI VORTAC or 0.7 Nm from the departure end of the runway • Left turns: two (2) DME or 1.7 nautical miles (Nm) from the departure end of the runway
Applicability	• FOXHL, LINSE, TERPZ (left turn) • DUKPN (right turn) • Vectored departures
Intent	• Minimize departure overflights over densely populated portions of Glen Burnie
Recommended Modifications to Measure	• None
Status	• DUKPN departure procedure does not comply with this noise abatement procedure • Waypoint WARYN added to formalize NAPs as part of departure procedure implementation in 2024

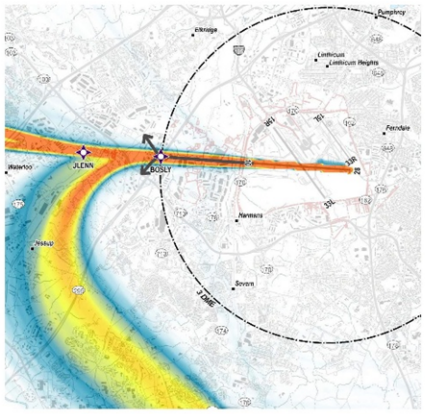


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Noise Abatement Elements

Runway 28 Jet Departures

Criteria	Description
Current Procedure	• Jet aircraft should commence left departure turns three (3) DME from BWI VORTAC or 1.7 Nm from the departure end of the runway.
Applicability	• CONLE, DUKPN, FIXET • TERPZ, LINSE, FOXHL • Vectored Jet departures
Intent	• Minimize departure overflights over densely populated portions of Hanover, Harmans, and Elkridge
Recommended Modifications to Measure	• None
Status	• Waypoints BOSLY and JLENN added to formalize NAPs as part of departure procedure implementation in 2024

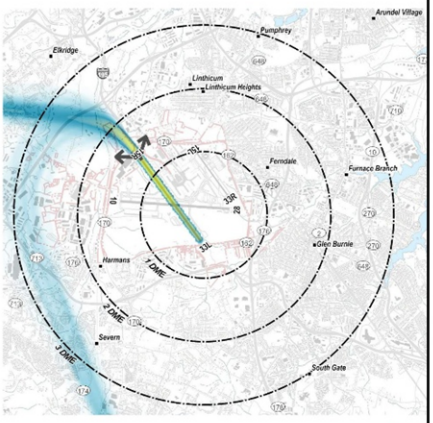


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Noise Abatement Elements

Runway 33L Jet Departures

Criteria	Description
Current Procedure	• Jets turn as soon as safe once airborne but not below 300 feet during Visual Flight Rules (VFR) conditions and not below 400 feet during Instrument Flight Rules (IFR) conditions
Applicability	• TERPZ, LINSE, FOXHL, FIXET, CONLE, DUKPN • Vectored Jet departures
Intent	• Minimize departure overflights over densely populated portions of Patapsco and Hanover
Recommended Modifications to Measure	• None
Status	• No change

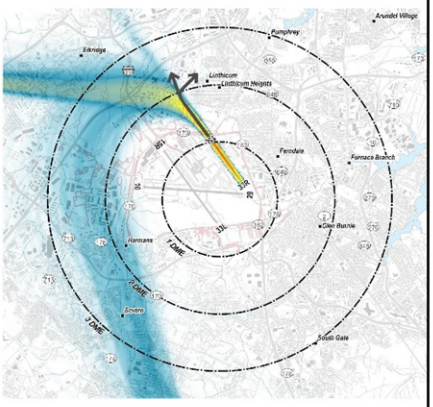


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Noise Abatement Elements

Runway 33R Jet Departures

Criteria	Description
Current Procedure	• All aircraft departing Runway 33R to the north or east will maintain runway heading until one (1) Nm from the departure end of the runway before turning.
Applicability	• Vectoring by ATC
Intent	• Minimize departure overflights over densely populated portions of Patapsco and Hanover
Recommended Modifications to Measure	• None
Status	• No change

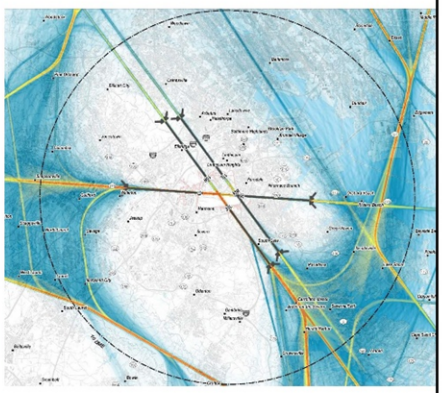


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Noise Abatement Elements

Jet Arrivals

Criteria	Description
Current Procedure	• Jet aircraft conducting visual approaches will turn onto final approach a minimum of four (4) Nm from the approach end of the runway. • All jet aircraft conducting visual approaches are expected to maintain 3,000 feet or above until 10 DME from the BWI VORTAC and, to the maximum extent possible, should remain at or above the Instrument Landing System (ILS) or Visual Approach Slope Indicator (VASI) for the landing runway, consistent with safe flight procedures. • When authorized by ATC, the Interstate Visual Runway 33L procedure is to be used by jet aircraft arriving on visual approaches from the south/southwest to Runway 33L.
Applicability	• All VFR and visual approach Jet arrivals
Intent	• Encourage Jet aircraft to maintain the highest possible altitude as long as possible
Recommended Modifications to Measure	• Remove Interstate Visual procedure
Status	• Will be updated in 2025 ANZ

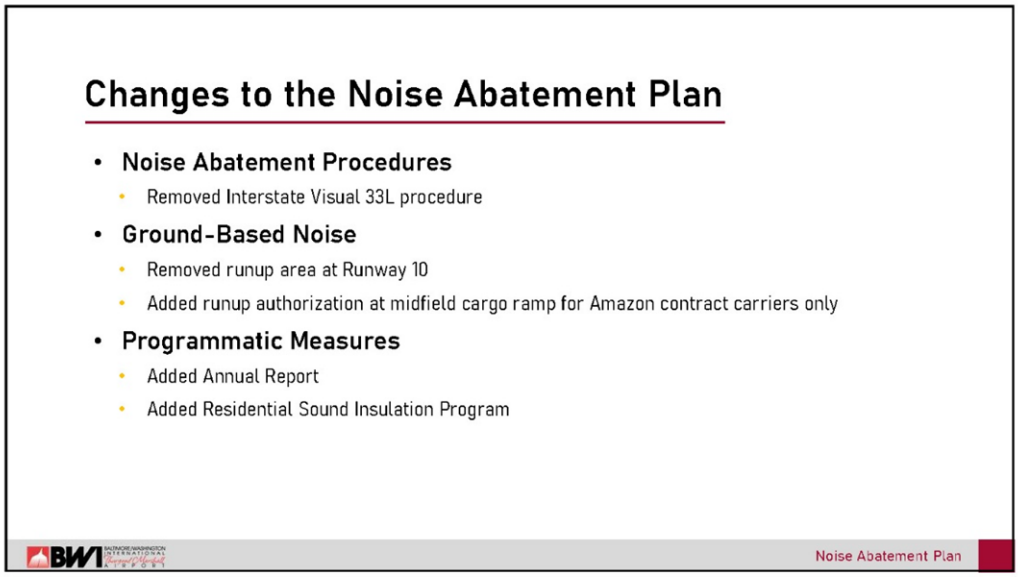


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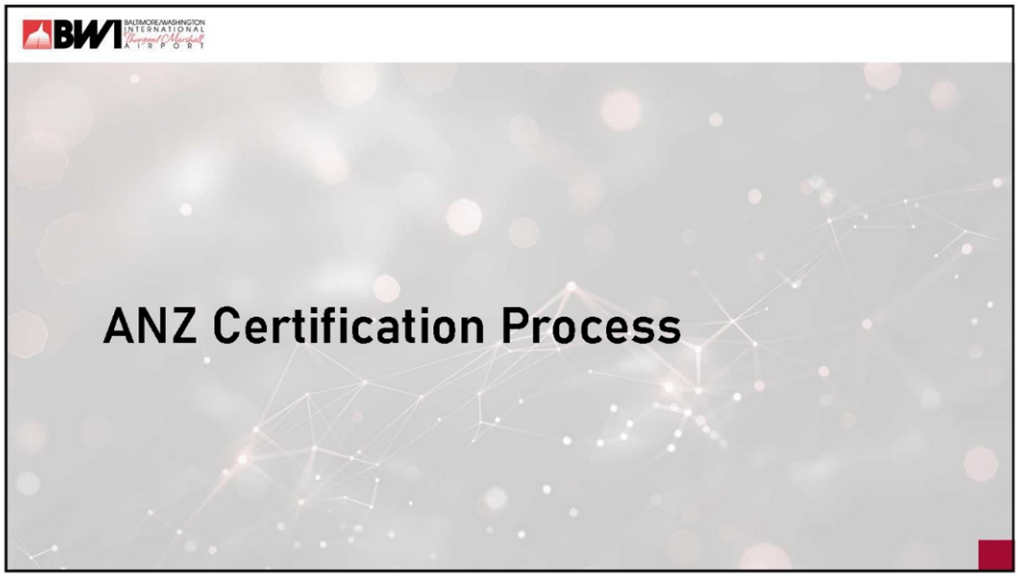
Control of Ground-Based Noise Sources

- **Current measures**
  - Engine maintenance runup restrictions
    - Require prior permission from Airport Operations
    - Will be denied unless failure to conduct runup will delay scheduled passenger flight departure
    - Limited to Runway 33L hold blocks and **midfield cargo facility**
      - **Midfield facility limited to Amazon contract carriers**
    - Limited to a total of 5 minutes in intervals of 60 s or less
    - Not authorized between 11 p.m. and 7 a.m. local
  - Reverse thrust power-back operations
    - Limited to military aircraft at remote parking spots
    - Requires case-by-case approval by Airport Operations per Tenant Directive 203.121

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Changes to the Noise Abatement Plan
Noise Abatement Procedures
Removed Interstate Visual 33L procedure
Ground-Based Noise
Removed runup area at Runway 10
Added runup authorization at midfield cargo ramp for Amazon contract carriers only
Programmatic Measures
Added Annual Report
Added Residential Sound Insulation Program
Noise Abatement Plan

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ANZ Certification Process

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Certifying the ANZ

- Current BWI Marshall ANZ
  - Certified in 2021
  - Referenced in COMAR Section 11.03.02.10
  - Incorporated by reference in COMAR Section 11.03.01.01-1(B)(5)
- Final 2025 BWI Marshall ANZ will be updated in COMAR
- Updating COMAR requires a regulatory process governed by the Maryland Administrative Procedure Act (APA)
- The Maryland Aviation Commission (MAC) is required to approve regulations prior to their adoption by the Executive Director of MAA.

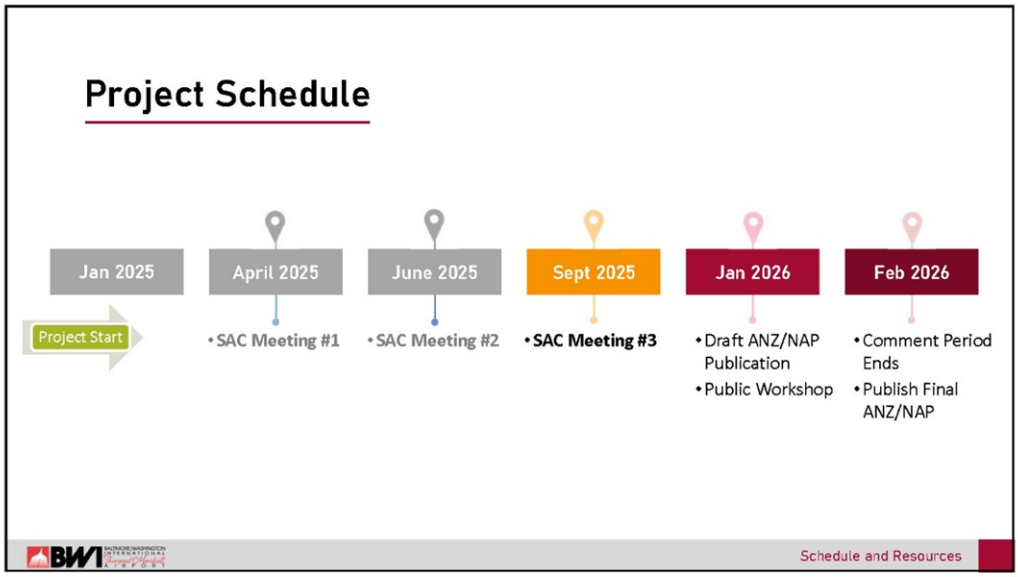


ANZ Certification Process

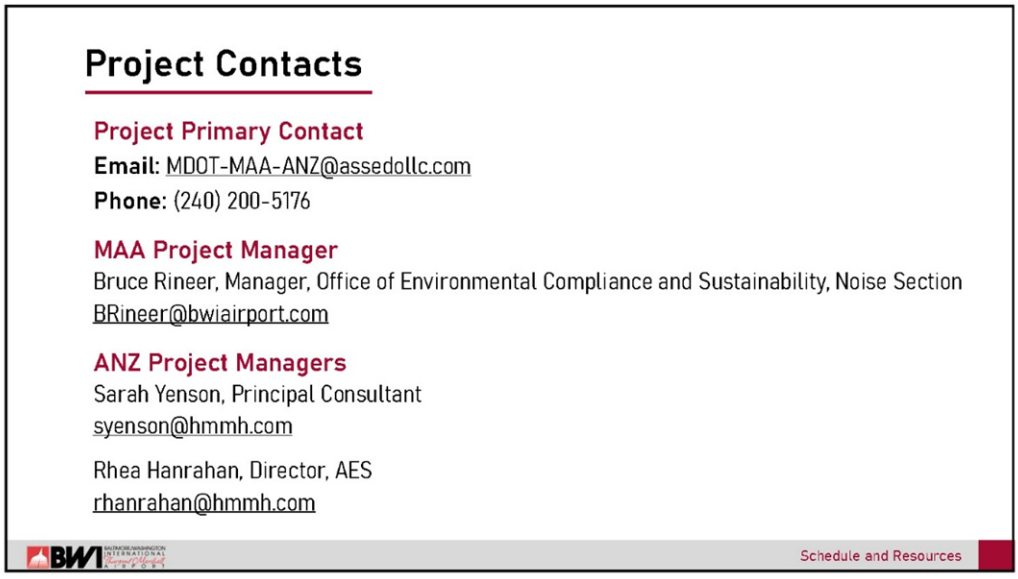
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Schedule and Resources

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Project Schedule
Jan 2025
April 2025
June 2025
Sept 2025
Jan 2026
Feb 2026
Project Start
• SAC Meeting #1
• SAC Meeting #2
• SAC Meeting #3
• Draft ANZ/NAP Publication
• Public Workshop
• Comment Period Ends
• Publish Final ANZ/NAP
Schedule and Resources

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Project Contacts
Project Primary Contact
Email: MDOT-MAA-ANZ@assedollc.com
Phone: (240) 200-5176
MAA Project Manager
Bruce Rineer, Manager, Office of Environmental Compliance and Sustainability, Noise Section
BRineer@bwiairport.com
ANZ Project Managers
Sarah Yenson, Principal Consultant
syenson@hmmh.com
Rhea Hanrahan, Director, AES
rhanrahan@hmmh.com
Schedule and Resources

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Additional Resources

2020 BWI Marshall ANZ

- https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/

BWI Marshall Roundtable

- https://marylandaviation.com/environmental/airport-noise/dc-metroplex-bwi-community-roundtable/

Noise Reports

- https://marylandaviation.com/environmental/airport-noise/quarterly-noise-reports/

WebTrak

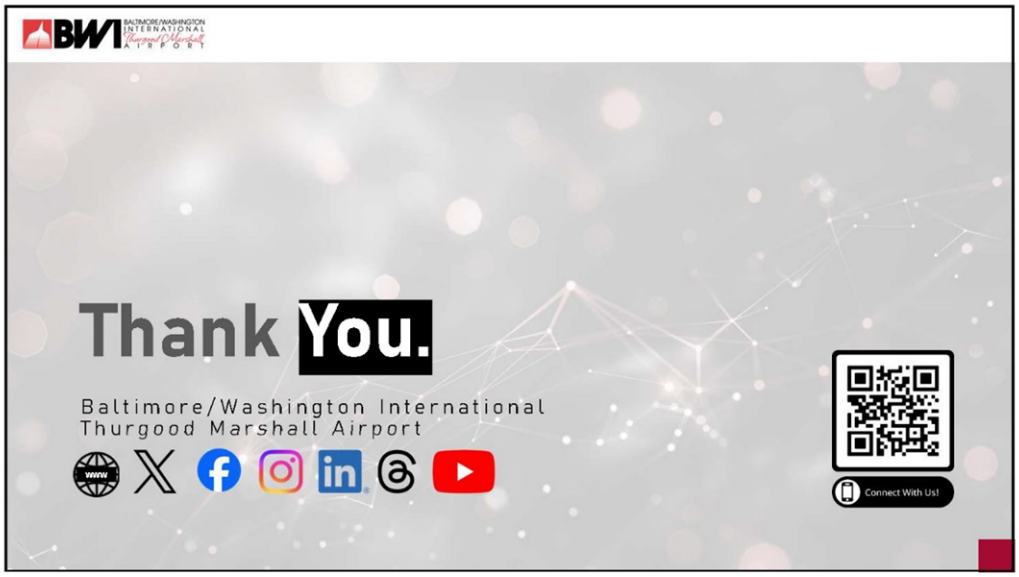
- https://webtrak.emsbk.com/bwi3

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Wrap Up

- SAC member questions, comments, and discussion
- Public workshop
  - January 2026

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Thank You.
Baltimore/Washington International
Thurgood Marshall Airport
Connect With Us!

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MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

Wes Moore
Governor

Aruna Miller
Lieutenant Governor

Samantha Biddle
Acting Secretary

Shannetta R. Griffin, P.E.
Executive Director/CEO

Baltimore/Washington International Thurgood Marshall Airport
Airport Noise Zone (ANZ) Update
Stakeholder Advisory Committee (SAC) Meeting #3

MEETING MINUTES

Wednesday, September 24, 2025, 6:00 PM – 8:00 PM

MAA Facilities
991 Corporate Boulevard
Linthicum Heights, MD 21090

Discussion Item	Notes	Presenter
Safety Briefing	The meeting was called to order by Mr. Bruce Rineer, Manager of the Office of Environmental Compliance and Sustainability, Noise Section at the Maryland Aviation Administration (MAA). Mr. Rineer began with a safety briefing, noting the nearest exits, the location of the automated external defibrillator (AED), and the locations of fire extinguishers. He explained that in the event of an emergency, participants should exit through the same doors they entered, assemble at the designated accountability site outside the building, and ensure that a head count was taken. He added that 911 should be called if necessary and that attendees should report any hazards they notice in the room.	Bruce Rineer
Welcome and Introductions	Following the safety briefing, Mr. Rineer welcomed participants to the third Stakeholder Advisory Committee (SAC) meeting for the BWI Marshall Airport Noise Zone (ANZ) Update. He explained that the SAC process is designed to ensure transparency, provide meaningful opportunities for input, and establish a shared understanding among stakeholders about the technical work and regulatory requirements guiding the ANZ update. He briefly reviewed the evening's agenda, noting that the meeting would cover a short recap of the second SAC meeting, presentation of the latest noise contour modeling and land use analysis, review of supplemental contours, discussion of the Noise Abatement Plan (NAP), and an overview of certification and next steps. He emphasized that questions and comments would be welcome throughout the discussion, and that the facilitator, Ms. Rhea Hanrahan with HMMH, would help maintain a productive and respectful flow of conversation.	Bruce Rineer

PO Box 8766, BWI Airport, Maryland 21240-0766 | 410.859.7100 | 800.435.9294 | Maryland Relay TTY 410.859.7727 | marylandaviation.com

	Mr. Rineer then invited introductions from attendees around the room. The SAC included representatives from MAA, leadership and staff from the Noise Program, the Federal Aviation Administration (FAA) Air Traffic Control Tower at BWI Marshall, consultants from HMMH and Assedo Consulting, airline industry representatives, local government staff, and elected officials' offices, as well as community representatives and members of the BWI Roundtable. In closing the introductions, Mr. Rineer reiterated that SAC members play a crucial role as conduits of information, helping ensure that the technical findings and proposed measures are communicated outward to communities and organizations, while also bringing local perspectives and concerns back into the process.	
SAC Meeting #2 Recap	Mr. Rineer provided a brief recap of SAC Meeting #2, emphasizing that the purpose of the ongoing update is to comply with the Code of Maryland Regulations (COMAR), which requires both the development of updated ANZ contours and a Noise Abatement Plan (NAP). He reminded members that the ANZ consists of noise contours representing areas exposed to aircraft noise at or above 65 DNL, while the NAP contains measures designed to mitigate and manage incompatible land uses within those contours. He described the technical steps that had already been completed, which included analyzing radar data for the base year (2025), the five-year forecast (2030), and the ten-year forecast (2035). These analyses considered operational counts, fleet mix, runway usage, flight tracks, and engine run-ups, as well as weather and terrain conditions. The data was processed through the FAA's AEDT model to generate noise contours. Mr. Rineer explained that the contours from each study year were overlaid to form the composite ANZ contour. He also noted that, based on SAC requests, supplemental scenarios had been developed, showing both a "build" and "no build" forecast for 2035, allowing for a comparison between future growth with and without planned runway projects. Finally, he reminded SAC members of their role: to review modeling assumptions, provide input on analysis results, examine the draft ANZ and NAP, and ensure information was shared with their constituencies. MAA, he stressed, would carefully consider SAC input, though the final responsibility for the ANZ update remained with the Administration. With this context established, Mr. Rineer transitioned to the next agenda item, handing the discussion to Ms. Sarah Yenson of HMMH to present the ANZ contours and land use analysis.	Bruce Rineer
ANZ Contours and Land Use	Ms. Sarah Yenson, Principal Consultant with HMMH, presented the updated ANZ contours and accompanying land use analysis. She began	Sarah Yenson

by reminding the group that ANZ is defined in COMAR and serves as the regulatory framework for managing and preventing incompatible land use around the airport. By definition, all land uses exposed to noise levels below 65 DNL are considered compatible, but once the threshold of 65 DNL or greater is reached, land use protections and planning considerations must be applied.

Ms. Yenson explained that the technical team developed three primary contour sets: the 2025 base year, the 2030 five-year forecast, and the 2035 ten-year forecast with a "full build" scenario that assumes an additional runway and runway extension identified in the airport's long-term planning documents. Each contour captures annualized aircraft operations, taking into account fleet mix, runway use, flight tracks, weather, terrain, and ground noise sources. These three sets were then combined into the official 2025 ANZ composite contour, which represents the broadest extents of aircraft noise exposure over the planning horizon.

She first reviewed the 2025 base year contour, noting that it encompassed approximately 3,178 acres. Of this total, 65 percent fell on airport property, and 35 percent extended beyond the airport. The contour area included about 1,031 acres in the 65 DNL range, 89 acres in the 70 DNL range, and two acres in the 75 DNL range. An estimated 1,035 residents and 361 housing units were within the base year contour.

The 2030 five-year contour forecast reflected an increase in operations, projected at approximately 267,000 annually, yet the contour itself shrank slightly. Ms. Yenson explained that this counterintuitive result stemmed from changes in the aircraft fleet mix; airlines are shifting to quieter Stage 5 aircraft, particularly the Boeing 737 MAX series and Airbus NEO models, which significantly reduce the overall noise footprint despite increased activity. As a result, the total affected area decreased to approximately 2,866 acres, encompassing an estimated 1,011 residents and 347 housing units.

Moving to the 2035 ten-year full build forecast, Ms. Yenson noted that the introduction of a new runway and a runway extension shifted the shape and extent of the contours. The total area increased to about 3,100 acres, with an estimated 1,616 residents and 597 housing units captured. This scenario reflects anticipated long-term development capacity and ensures that the ANZ accounts for the greatest possible extent of noise exposure.

When combined, these three scenarios produced the 2025 ANZ composite contour, covering 3,802 acres. Approximately 63 percent of

the contour is on airport property and 37 percent off airport, including an estimated 1,704 residents and 636 housing units. This composite contour, Ms. Yenson emphasized, forms the official ANZ boundary that will be incorporated into COMAR.

She then compared the 2025 ANZ to the existing 2020 ANZ, highlighting a decrease of approximately 1,742 acres, nearly 2,300 residents, and more than 900 housing units. The reduction is attributable to the accelerated adoption of quieter aircraft and updated operational forecasts following the COVID-19 recovery period. While the general shape of the contours remained similar, certain areas experienced shifts and reduction, resulting in fewer off-airport properties falling within the noise zone.

Ms. Yenson concluded by underscoring the importance of this analysis for land-use planning. The updated contours not only determine where protections apply but also serve as a planning tool for local jurisdictions, developers, and residents to understand both current and future noise exposure. She paused to invite questions, noting that the supplemental contour scenarios would be discussed next.

Supplemental Noise Contours	Continuing her presentation, Ms. Yenson introduced the supplemental contour analyses, which were prepared in response to requests from the SAC. These scenarios examine the implications of a no-build condition for the 2035 forecast year, modeling future operations without the planned additional runway and runway extension. She explained that while COMAR requires that the official ANZ reflect full build conditions for long-range planning, the supplemental scenarios provide valuable insight into how noise exposure could differ if those infrastructure projects do not occur.	Sarah Yenson

In the 2035 no-build contour, total operations remained consistent with the full build forecast at approximately 290,000 annually, but the contour area decreased to 2,690 acres, about 400 acres smaller than the full build scenario. The affected population also decreased, with an estimated 962 residents and 332 housing units within the noise exposure area. By contrast, the 2035 full build scenario captured 1,616 residents and 600 units. This difference, Ms. Yenson explained, was due to the way runway use changes the distribution of operations and reshapes the noise footprint.

She then presented the 2025 no-build composite contour, which overlays the base year and five-year forecasts with the ten-year no build condition. This composite totaled 3,198 acres, encompassing an estimated 1,704 residents and 367 housing units. Compared to the official 2025 ANZ composite contour, the no-build version is smaller

and impacts an estimated 650 fewer people and 269 fewer housing units.

The comparison between the 2025 ANZ and the 2025 no-build composite contour showed clear differences. The full build scenario extended over more acreage, affecting additional parcels of land and households. Ms. Yenson noted that from a land use protection perspective, the ANZ contour provides broader safeguards by ensuring that areas potentially exposed to future growth are incorporated within the regulated zone.

Members of the committee asked questions about the apparent reduction in contour size over time, despite higher forecast operations. Ms. Yenson reiterated that the shift in fleet mix toward quieter Stage 5 aircraft is the dominant factor, resulting in shrinking contours even as traffic levels increase. She emphasized that the supplemental analyses confirmed this trend, showing continued decreases in both acreage and affected population. However, the differences between the build and no-build scenarios became most apparent in the ten-year horizon.

At this point, Ms. Hanrahan added that including the runway extension and parallel runway in the official ANZ is not intended to predict exact future noise levels, but rather to provide land use protection for the maximum reasonable extent of development. By codifying the full extent of planned airfield development into COMAR, the state ensures that local planning accounts for the greatest possible footprint of noise exposure, avoiding future conflicts should long-term projects proceed.

The discussion shifted briefly to current zoning activities in Anne Arundel County. Mr. Kevin Clarke confirmed that some residential development projects had been scaled back near the airport following input from aviation planners, though other developments remain just outside the ANZ boundary. He explained that while the MAA cannot regulate land use, staff regularly advise developers and encourage them to implement mitigation measures, such as acoustically rated windows, to protect future residents from noise caused by aircraft overflights.

Committee members expressed appreciation for the inclusion of the supplemental contours, noting that this was the first time such analyses had been presented. They agreed that the additional scenarios gave a clearer picture of how the ANZ might evolve under different planning conditions and would help inform both local governments and community stakeholders in their future discussions.

Noise Abatement Plan (NAP)	Mr. Rineer resumed the presentation to review the NAP, explaining that BWI Marshall has maintained a robust set of noise abatement measures since the 1980s. The NAP works in tandem with the ANZ: while the ANZ defines the geographic extent of regulated noise exposure, the NAP outlines specific measures designed to reduce, manage, or mitigate incompatible land uses within those areas. He reminded the committee that the goal of the NAP is to reduce incompatible land use inside the noise zone to the greatest extent possible while maintaining safe and efficient airport operations. The NAP covers two broad categories: operational measures, such as departure and arrival procedures and preferential runway use, and land use measures, which include zoning restrictions, real estate notifications, and assistance programs for affected properties. Although the foundation of the NAP has remained consistent for decades, recent updates have been made. Voluntary departure and arrival procedures, for example, were formalized by the FAA through published waypoints, which improved compliance rates. Mr. Rineer noted that adherence to BWI's noise abatement procedures now reaches 95 to 99 percent, reflecting cooperation among airlines, FAA air traffic controllers, and the airport. He then described the operational measures in detail. Departing aircraft are generally required to maintain a runway heading or fly straight out to a designated distance before making turns, ensuring that densely populated areas, such as Ferndale, Glen Burnie, Hanover, and Elkridge, are overflown at higher altitudes. Specific runways have corresponding procedures: • Runway 10 departures fly straight for two (2) nautical miles (nm) before turning, a procedure recently formalized with the waypoint "JWALL." • Runway 15L departures direct aircraft to maintain heading for 0.5 nm before turning. • Runway 15R departures, a frequent point of concern, direct aircraft to fly either 0.7 nm or two (2) nm, depending on the procedure. The waypoint "WARYN" was added to ensure consistency, but this has concentrated noise over Severn neighborhoods, leading to ongoing review by the BWI Roundtable's Technical Committee. • Runway 28 departures direct a three (3) nm straight-out segment, formalized with the waypoints "BOSLY" and "JLENN." • Runway 33L departures are subject to restrictions on early turns, requiring aircraft to maintain a straight path until reaching a specified altitude. • Runway 33R departures direct aircraft to maintain heading for one (1) nm before turning.	Bruce Rineer

For arrival operations, procedures emphasize maintaining the aircraft at as high altitude as possible until close to the runway, with a target of 3,000 feet or higher until ten (10) nm out. These procedures help minimize impacts by encouraging continuous descents. The Interstate Visual 33L approach, which previously directed aircraft in on a low, direct path, has been discontinued and removed from the NAP due to its infrequent use.

Mr. Rineer also reviewed measures addressing ground-based noise. Restrictions on aircraft engine maintenance include that run-ups require prior permission, run-up locations are limited, and prohibitions of run-ups during overnight hours. Recently, the plan was updated to allow run-ups at the midfield cargo ramp, limited to Amazon's contract carriers, while removing the outdated run-up area at Runway 10.

The discussion then turned to land use and disclosure. Mr. Dan Woomer asked whether buyers are explicitly notified when purchasing property inside the 65 DNL contour. Mr. Rineer explained that Anne Arundel County requires a disclosure addendum, but the language is general and does not specify contour levels. Mr. Clarke pointed out that this can be misleading, since realtors may claim a property is "not in the noise zone" even when frequent overflights occur. He suggested that disclosures should be strengthened, and Ms. Gina Stewart agreed, asking if MAA could improve outreach to realtors. Mr. Rineer responded that other airports, such as Raleigh-Durham, have held realtor education programs, and MAA is considering similar efforts.

Ms. Stewart also asked whether pilots or airlines face consequences if they fail to follow procedures. Mr. Rineer explained that noise abatement measures are voluntary, and while MAA may raise concerns with the FAA or issue letters, there are no enforceable penalties associated with these measures. He emphasized that compliance remains very high, and the use of waypoints has increased consistency.

Committee members also raised questions about helicopter noise. Mr. Dana Plagmann of the FAA explained that most helicopter overflights are law enforcement, medevac, or military training flights between Baltimore and Washington. These flights often transit directly over the airport for safety but are not included in the ANZ contours unless they originate or land at BWI. While disruptive at times, these operations fall outside the regulatory framework of the ANZ.

In closing, Mr. Rineer summarized the most recent updates to the NAP, including the removal of the discontinued Interstate Visual procedure, the removal of the outdated Runway 10 run-up area, and the addition of the midfield cargo ramp run-up authorization. He also noted the addition of an annual reporting requirement and the continuation of the Residential Sound Insulation Program, which provides mitigation

	for homes and schools within the ANZ. While procedures remain voluntary, high compliance and continued monitoring have ensured that the program remains effective, striking a balance between operational needs and community impacts.	
ANZ Certification	Mr. Royce Bassarab, representing the MAA Noise Program, outlined the process for certifying the updated ANZ and NAP. He explained that while the technical work of developing contours and reviewing abatement measures is complete, certification is the step that formally incorporates the new ANZ into state regulation under the Code of Maryland Regulations (COMAR). Mr. Bassarab noted that the most recent BWI Marshall ANZ was certified in 2021, and the update now underway will replace that version. Once finalized, the 2025 ANZ and NAP will be written into COMAR through a structured regulatory process governed by the Maryland Administrative Procedure Act (APA). The process begins with MAA drafting the updated ANZ and NAP as a regulatory package. This draft is submitted to the Maryland Aviation Commission (MAC), which is responsible for approving regulations before they are further advanced. After Commission review, the proposed regulation is published in the Maryland Register, triggering a public comment period and at least one public meeting. Following the public comment process, MAA compiles all feedback, prepares responses, and presents them back to the MAC. Once the Commission approves the final document, the Executive Director of MAA formally certifies the ANZ and NAP, and they are officially incorporated into COMAR. Mr. Bassarab emphasized that this process is critical because, once codified, the ANZ and NAP become enforceable planning tools. Local governments, developers, and property owners can then rely on the updated contours for land use decisions, ensuring consistency and predictability. He also described the anticipated timeline. With technical work now complete and the SAC process nearing completion, the draft regulation will be presented to the MAC in November 2025. Publication in the Maryland Register is expected around January 2026, followed by a public meeting approximately two weeks later. The comment period will remain open for 30 days, allowing stakeholders to submit written feedback and participate in the public meeting. After comments are reviewed and addressed, MAA expects to return to the Commission in March for final approval, with formal certification projected for April 2026. During the discussion, Ms. Suzzie Schuyler asked whether comments submitted during the public period would be visible to the public as	Royce Bassarab

they are received. Mr. Bassarab clarified that comments are not posted live; instead, all comments are compiled and made available in the final documentation. He added that the 2020 ANZ update included a full appendix of submitted comments, and he expected a similar approach this time.

Ms. Stewart inquired about opportunities for submitting comments online for those unable to attend the public meeting. Mr. Bassarab confirmed that comments could be submitted electronically and emphasized that MAA intends to make the process as accessible as possible.

Mr. Woomer asked whether constituents would be able to see both the draft documents and the compiled comments. Mr. Bassarab confirmed that the draft ANZ and NAP will be publicly available online during the comment period, and that a final report, including a summary of comments and responses, will be published after certification.

In closing, Mr. Bassarab reiterated that certification of the ANZ is a state-driven process, distinct from the forthcoming federal Part 150 process that will follow in 2026. He noted that while the state process ensures the ANZ is legally incorporated into COMAR, the Part 150 process will provide opportunities for additional community involvement and will allow the FAA to consider potential changes to flight procedures.

With the certification framework and timeline outlined, Mr. Bassarab transitioned to the final presentation topic.

Schedule and Resources	Mr. Rineer provided an overview of the project schedule and the resources available to support stakeholders as the ANZ update moves into its final phases. He explained that the technical work of the study was complete, with the development of the noise contours, the review of land use conditions, and the status assessment of the NAP all presented to the SAC. The next steps would focus on regulatory certification and public engagement. The timeline began with the project kickoff in January 2025, followed by the first SAC meeting in April and the second in June. This third meeting in September marked the conclusion of the advisory committee's formal role in shaping the draft ANZ and NAP. Looking forward, the draft documents will be finalized and presented to the MAC in November 2025. If accepted, the package would then be published in the Maryland Register in January 2026. To ensure transparency and accessibility, Mr. Rineer highlighted several resources. The project team maintains a dedicated email address (MDOT-MAA-ANZ@assedollc.com) and phone line for inquiries, along with a project webpage on the Maryland Aviation	Bruce Rineer

	Administration's site. The webpage houses the current ANZ materials, including prior reports, quarterly noise reports, and access to WebTrak. This online tool allows the public to view real-time and historical flight and noise data. Additional background on the ANZ process, as well as links to the BWI Roundtable, is also available. He stressed that SAC members are encouraged to direct constituents to these resources, particularly once the draft ANZ and NAP are published in January. Providing clear avenues for the public to review, comment on, and stay informed about would be essential to maintaining trust and ensuring the certification process runs smoothly. At the conclusion of his remarks, Mr. Rineer invited any final questions before opening the floor to general discussion.	
Q&A and Open Discussion	Several questions and comments were raised during the discussion portion of the meeting: • Mr. Drew Roth and Mr. Woomer questioned why the contours appear to shrink even as operations increase. Ms. Yenson explained that the change is primarily due to the fleet mix, with quieter Stage 5 aircraft such as the Boeing 737 MAX and Airbus NEO replacing older, noisier models. Ms. Hanrahan confirmed that this trend reduces the overall noise footprint despite higher activity levels. • Mr. Roth asked whether cargo fleets are expected to modernize at the same pace as passenger fleets. Ms. Hanrahan responded that cargo operations are projected to continue using older aircraft types, which remain louder. Unlike passenger airlines, cargo carriers are not expected to transition rapidly to newer, quieter models. • Ms. Stewart asked about opportunities for public input once the draft ANZ and NAP are released. Mr. Bassarab confirmed that a 30-day public comment period will begin in January 2026, including an in-person public meeting. He added that comments may also be submitted online or by mail. • Mr. Woomer suggested to have the contact information included in the announcement of the draft release, so constituents know who to reach with questions. Ms. Hanrahan agreed this would be valuable, and Mr. Rineer encouraged members to share project links and resources with their communities. • Several participants noted that residents outside the 65 DNL contour still experience significant aircraft noise. Mr. Rineer	Rhea Hanrahan

	acknowledged these concerns but emphasized that COMAR requires the ANZ to be defined at 65 DNL or greater. While supplemental data can show impacts beyond the zone, only the 65 DNL threshold is recognized for regulatory purposes.	
	Committee members closed the discussion by expressing appreciation for the detailed presentations and advanced materials. They agreed that while not all community concerns fall within the scope of the ANZ, the update provides a valuable planning framework and a stronger foundation for communication with the public.	
Adjournment	As the discussion concluded, Mr. Rineer thanked the committee members for their active participation and thoughtful input throughout the evening. He emphasized that the questions and feedback offered by the SAC are a critical part of the ANZ update process, ensuring that both technical findings and community perspectives are carefully considered.	Bruce Rineer and Rhea Hanrahan
	Ms. Hanrahan reminded members that the next major milestone would be the release of the draft ANZ and NAP for public comment in early 2026. She encouraged participants to share the information broadly within their networks once the announcement is made and to direct interested stakeholders to the project webpage for updates and resources.	
	Committee members expressed their appreciation to the MAA team and consultants for the clarity of the presentations and their responsiveness to community concerns. Several attendees noted the importance of continuing outreach as the process transitions into the public phase. With no further questions or comments, the meeting adjourned a little after 7:00 PM.	

Kayla Woods

From: MDOT-MAA-ANZ
Sent: Tuesday, October 14, 2025 5:40 PM
To: Bruce Rineer
Subject: Thank you for your participation!

Dear BWI SAC Member,



Thank you for attending the third **Stakeholder Advisory Committee (SAC) meeting for the 2025 Airport Noise Zone (ANZ) Update for Baltimore/Washington International Thurgood Marshall (BWI)** on September 24, 2025.
The Maryland Aviation Administration (MAA) appreciates your input and participation as a stakeholder on this important committee. Materials from the SAC meetings are available on the website: *BWI Marshall Airport Noise Zone - Maryland Aviation Administration*.
Details concerning the upcoming Public Information Workshop followed by the Open Comment Period anticipated to occur in early 2026, are forthcoming.
If you have questions about the ANZ process, please email Bruce Rineer at BRineer@bwiairport.com. If you have questions or concerns related to the upcoming meetings, please contact the MAA Outreach Team at 240-200-5176 or MDOT-MAA-ANZ@assedollc.com.

Thank you,

BWI Marshall and Martin State Airport Noise Zone
Outreach Team
Phone: 240-200-5176
https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/
https://marylandaviation.com/environmental/airport-noise/martin-state-airport-noise-zone/

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Appendix D. Maryland Aviation Commission Materials

MAA staff presented a Decision Paper to the Maryland Aviation Commission in November 2025. The November 2025 Decision Paper discussed the update of the Airport Noise Zone (ANZ) and Noise Abatement Plan (NAP). At that meeting, the Maryland Aviation Commission approved the MAA to proceed with the update to the ANZ and NAP.

At the Maryland Aviation Commission meeting in June 2026, MAA staff presented a second Decision Paper, which discussed the results of the ANZ update and summarized the public hearing and the comments received on the ANZ. The Decision Paper recommended approving the adoption of regulations establishing the updated ANZ and revising the NAP. The Maryland Aviation Commission approved the BWI Marshall ANZ and NAP as proposed.

Materials presented at the Maryland Aviation Commission meetings are provided in this appendix.

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MARYLAND DEPARTMENT OF TRANSPORTATION

MARYLAND AVIATION ADMINISTRATION

Airport Noise Zone Update BWI Marshall Airport Proposed Action

Maryland Aviation Commission

November 12, 2025

Key Points/Overview

- The Maryland Environmental Noise Act of 1974 requires an “assessment of the noise environment”, delineation of a "noise zone“, and development of a noise abatement plan every five years*
- The Code of Maryland Regulations prescribes the noise metric, methodology, compatible land uses, consideration for noise abatement plan elements, and the permit process for construction within the Noise Zone
- The most recent ANZ for BWI Marshall, certified in 2021, is referenced in COMAR Section 11.03.01.12 and incorporated by reference in COMAR Section 11.03.01.01-1(B)(5)
- MAA initiated an update to the ANZ for BWI in January 2025, and has completed the technical work
- MAA proposes to update the references in COMAR to reflect an updated Airport Noise Zone (ANZ) and Noise Abatement Plan (NAP) for BWI
- The Maryland Aviation Commission is charged with the approval of regulations prior to their adoption by the MAA Executive Director

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*Transportation Article, §§5-805, 5-806, and 5-819, Annotated Code of Maryland

ANZ Scope & Process

- Establish Stakeholder Advisory Committee (SAC)
- Prepare base year, 5-year, 10-year forecast contours
- Compile composite Airport Noise Zone (ANZ)
- Prepare inventory of existing land use
- Update the Noise Abatement Plan

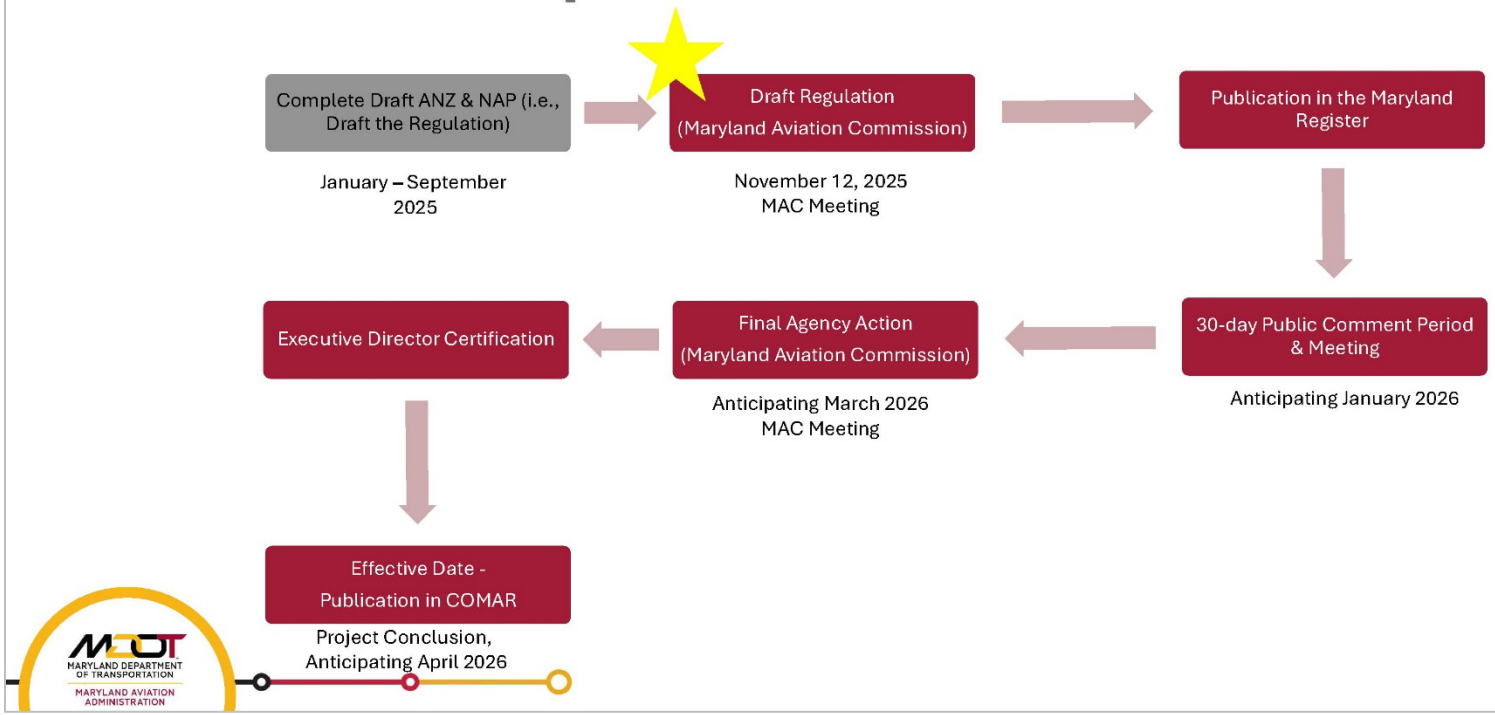
Completed, January 2025 – September 2025

- **Obtain approval from MAC to circulate proposed ANZ Update**
- Conduct public workshop/hearing
- Obtain approval from MAC to submit Certified ANZ Update for incorporation into COMAR



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Schedule to Update COMAR



Stakeholder Advisory Committee (SAC)

BWI Stakeholder Advisory Committee

- Elected Officials (Anne Arundel County Council District 1, Howard County District 4)
- County Gov't (Anne Arundel and Howard Counties Office of Planning and Zoning, Baltimore County Office of Planning)
- Community Associations (Roundtable, LSIA, Glen Burnie Improvement Assoc, etc)
- Airport Stakeholders (FAA, Southwest, United, Prime, FedEx, BWI Business Partnership, etc)



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Invited SAC Membership

Name	Organization
Drew Roth	D.C. Metroplex BWI Roundtable
Howard Johnson	D.C. Metroplex BWI Roundtable
Dan Woomer	D.C. Metroplex BWI Roundtable
Pete Smith	Anne Arundel County Council District 1
Allison Pickard	Anne Arundel County Council District 2
Deb Jung	Howard County Distirct 4
Jenny Dempsey	Anne Arundel County Office of Planning and Zoning
Steven Lafferty	Baltimore County Office of Planning
Amy Gowan	Howard County Office of Planning and Zoning
Gina Stewart	BWI Business Partnership
Scott Proudfoot	BWI Marshall Air Traffic Control Tower (BWI ATCT)
Kevin Plessner	Linthicum-Shipley Improvement Association
Steven Kooser	North Linthicum Improvement Assoc
Marjorie Deschenes	Provinces Civic Association
Rodney Jones	Severn Improvement Association
Mary DesChamps	Carriage Pines at Lake Village HOA
Andy Werner	Glen Burnie Association
Sylvia Mentecki	Glen Burnie Improvement Association

Name	Organization
Monica Smearman	Greater Ferndale Community Civic Assn.
Wayne Dixon	Harmans Civic Association
Ron K. Looper	Elmhurst Improvement Association
Howard Johnson	The Greater Elkridge Community Association
Ashley Zayed	United Airlines
	Amazon PrimeAir
Christofer Clisham	Delta Airlines
	FedEx
David Richardson	Southwest Airlines
Ryan Rodosta	Spirit Airlines
John Hovis	Signature Flight Support
Paige Kroner	National Business Aviation Association (NBAA)
Jonathan Bonds	UPS
Dean Cook	ABX Air, Inc
Jon Gandy	Aircraft Owners and Pilots Association
Nicholas Calio	Airlines for America
Ray DuFour	Atlas Air

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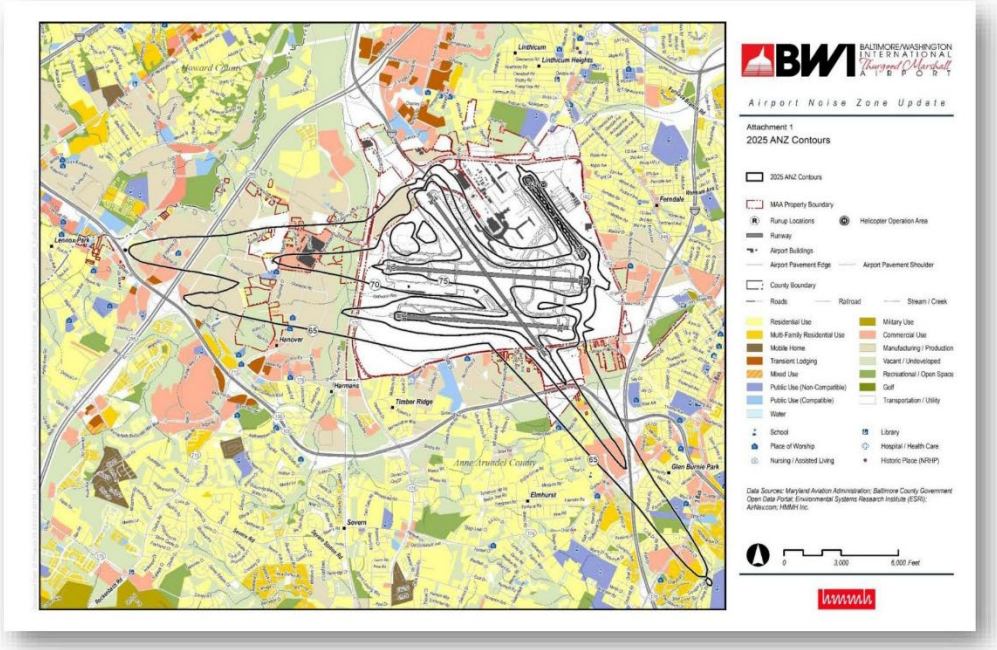
BWI ANZ Contours

- Noise contours are developed for existing (2025), a five-year forecast (2030) and a ten-year forecast (2035)
- Operations are based on the FAA's Terminal Area Forecast
- FAA's Aviation Environmental Design Tool (AEDT) is used to develop noise contours
- BWI Marshall Highlights
  - 652 average daily operations in 2025, increasing to 796 by 2035
  - 10-Year forecast includes Rwy 15R/33L extension and parallel Rwy 10/28 construction
  - Inclusion of 2024 updated PBN procedures

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2025 ANZ – BWI Marshall

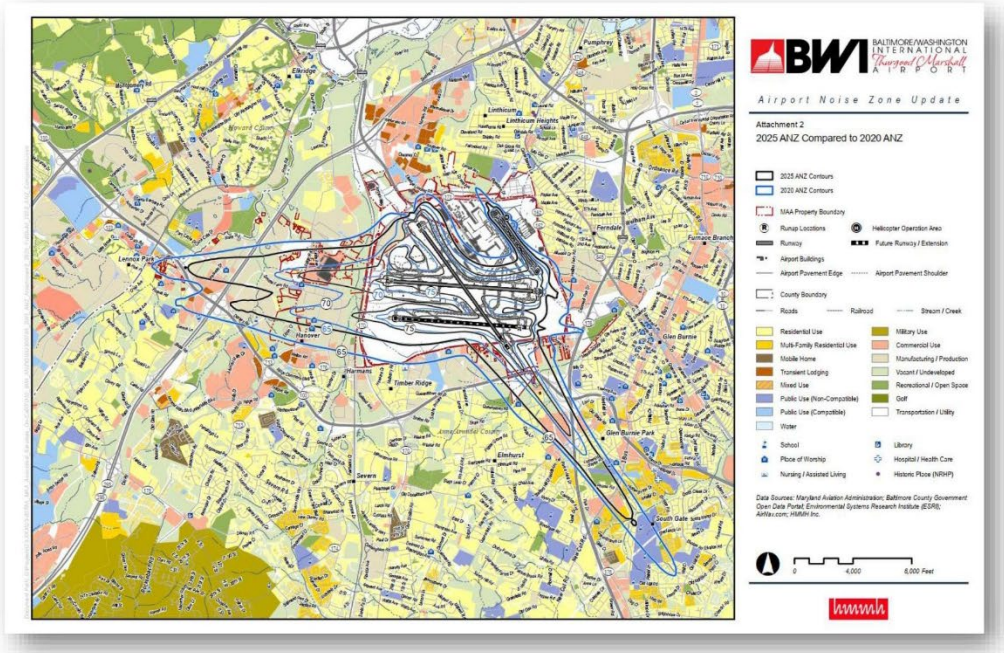
- Total Area: 3,802 acres
- 63% remains on airport; 37% off airport
- Estimated population: 1,704
- Estimated housing units: 636



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2025 ANZ vs 2020 ANZ – BWI Marshall

- 2025 ANZ decreases in total area by 1,742 acres (31 percent), 2,267 in estimated population and 927 housing units.
- Smaller contours are a result of:
  - Operations lower than forecast in 2020
  - Changes in aircraft fleet mix (retirement of MD80-series, increasing use of 737Max and A320-NEO)



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BWI Marshall NAP – Plan and Scope

- Noise abatement procedures are voluntary - the FAA has primary responsibility for implementation of flight procedures and the preferential runway use system at BWI Marshall
- The NAP was developed with the cooperation of airport users, the aviation industry, FAA, communities, and local governments. In 2024, FAA implemented new flight procedures that incorporated noise abatement procedures where possible
- The NAP has two general categories:
  - Noise Abatement Elements – Industry, FAA, and MAA
    - Strategies intended to reduce noise impacts for communities around the airport
    - Voluntary operational procedures such as control of ground-based noise sources, arrival and departure flight procedures, and a preferential runway use system
  - Land Use Elements – MAA
    - Summarizes the means of controlling and mitigating noise-sensitive development within the ANZ (Airport Zoning Permit approval or denial, appeals process, Residential Sound Insulation Program)
- BWI Marshall Measures
  - Removal of Interstate Visual procedure, update to available engine run-up locations
  - Otherwise, review only; may be updated later as part of the 14 CFR Part 150 process

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Updated BWI NAP Summary

Noise Abatement Elements

- Aircraft Noise Abatement Departure Procedures
  - Noise abatement flight tracks for jet and propeller aircraft, which specify turn locations, for each runway based on aircraft type
- Aircraft Noise Abatement Arrival Procedures
  - Visual approach/VFR jet noise abatement arrival procedures
- Preferential Runway Use System
  - West flow operations are preferred for noise abatement
  - For noise abatement, Runway 28 is the preferred runway for departures, and Runway 33L the preferred runway for arrivals (2300 – 0500)
  - Limitations on the use of Runway 33R for departures and Runway 15L for arrivals (2300 -0500)
  - Practice landings and approaches by Jet and turboprop aircraft are prohibited on all runways (2300 to 0700)
  - Noise Rule for Runway 15L/33R (prohibits certain louder aircraft from using Runway 15L/33R)
- Control of Ground Based Noise Sources
  - Powerback Restrictions
  - Engine Maintenance Runup Restrictions
- Continued Monitoring
  - Noise Hotline
  - Quarterly and Annual Report
  - Airport Noise and Operations Monitoring System

Land Use Elements

Control of Incompatible Development

- » Airport Noise Zone
- » Board of Airport Zoning Appeals (BAZA)
- » Noise Zone Notification in Real Estate Transactions

Noise Assistance Programs

- » Homeowners Assistance Program (Residential Sound Insulation Program, RSIP)
- » Voluntary Residential Property Acquisition Program

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Public Notice & Review

- Proposed Action (updating COMAR) will be published in advance in the Maryland Register. Public notice will be provided via posting in:
  - Baltimore Sun, Howard County Times, The Capital, Maryland Gazette
  - SAC members and Maryland State and Local elected officials will be notified directly
- Document will be available for public review at the following locations:
  - Electronically at MAA website
  - Anne Arundel County Library Branches (Linthicum, Severn, Brooklyn Park, Riviera Beach, Glen Burnie Regional, Severna Park), Howard County Library Branches (East Columbia, Central, Elkridge, Miller, Savage), Baltimore County Library (Arbutus Branch)
- Public Workshop and Hearing

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MARYLAND AVIATION ADMINISTRATION

MARYLAND AVIATION ADMINISTRATION
Decision Paper

Airport Noise Zone and Noise Abatement Plan Update
BWI Marshall Airport

1. SUBJECT/ISSUE

The Maryland Department of Transportation Maryland Aviation Administration (MAA) proposes to update the Code of Maryland Regulations (COMAR) to reflect an updated Airport Noise Zone (ANZ) and Noise Abatement Plan (NAP) for Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall). The MAA develops and certifies the BWI Marshall ANZ pursuant to the *Maryland Environmental Noise Act of 1974* (See Transportation Article, §§5-805, 5-806, and 5-819, Annotated Code of Maryland). The current ANZ for BWI Marshall, certified in 2021, is referenced in COMAR Section 11.03.01.12 - *Certified Baltimore/Washington International Thurgood Marshall Airport (BWI) Noise Zone* and incorporated by reference in COMAR Section 11.03.01.01-1(B)(5).

In accordance with the Annotated Code of Maryland, Transportation §5-201 (b)(2), the Maryland Aviation Commission is required to approve MAA regulations prior to their adoption by the Executive Director.

2. DISCUSSION

Maryland law requires that an assessment of the noise environment created by the operation and projected future use of an airport be regularly undertaken, which includes the delineation of an ANZ and identification of any impacted land use area. An ANZ and NAP were first established for BWI Marshall in 1976 and were updated in 1982, 1988, 1993, 1998, 2007, 2014 and 2020. The ANZ represents the boundaries for determining incompatible activities or land uses under Maryland law and is used to restrict noise-sensitive development that would be incompatible with the cumulative noise exposure level acceptable for an area.

Airport Noise Zone

The ANZ contour is determined by a composite of three Day Night Average Sound Level (DNL) contours: a base year contour, a 5-year forecast contour (2030), and a 10-year forecast contour (2035). The largest of the three contours in any area around the Airport determines the ANZ. The 2025 ANZ for BWI Marshall is shown on **Attachment 1**.

The 2025 ANZ encompasses approximately 3,802 acres (approximately 5.9 square miles) within the composite 65 DNL dB noise contour, 63% of which remains on MAA property, and is approximately 1,742 acres smaller than the 2020 ANZ contour (a decrease of 31%). The 2025 ANZ also represents a 57% decrease in estimated population, and a 59% decrease in estimated households, relative to the 2020 ANZ. Notable factors that result in the decrease in size, households, and population include a smaller number of operations relative to the 2020 ANZ, the implementation of new arrival and departure procedures in 2024, and changes to the fleet mix forecast for 2030 and 2035, including a continued shift towards quieter aircraft. A comparison of the 2020 and 2025 ANZ contours is shown on **Attachment 2**.

Review of NAP for BWI Marshall

MAA is required to implement an NAP at BWI Marshall if an impacted land use area exists within the ANZ. The NAP prescribes measures to monitor and reduce or eliminate impacted land use areas around BWI Marshall to the extent feasible, while maintaining safe and efficient airport operations. The NAP is designed to minimize the noise of aircraft operations within the constraints of the Federal Air Traffic Control System while ensuring aircraft safety.

BWI Marshall has a comprehensive NAP which has been developed over several decades, through extensive cooperative efforts with citizens and users of BWI Marshall. The program includes noise abatement measures, compatible land use measures and measures that focus on program implementation, communication, monitoring, and updating. This cooperative airport, citizen, and user effort has been, and will continue to be, the key to the success of the noise abatement program.

The review of the NAP as part of this process included a review and analysis of compliance with the historic noise abatement procedures, a refinement of the description of current NAP procedures to remove the unused Runway 33L Interstate Visual arrival procedure, and inclusion of programmatic measures such as MAA publication of the Annual Noise and Operations Report.

Public Participation

The 2025 BWI Marshall ANZ Update includes opportunities for public involvement and participation. A Stakeholder Advisory Committee (SAC) was convened at the onset of the study, which included representatives of stakeholder groups such as tenants, local planning and zoning officials, and representation from communities most affected by airport noise. The SAC was convened three times during the ANZ update process, in April, June, and September 2025 to solicit input, review materials, and provide a means to disseminate study findings. A public meeting and hearing offering the opportunity to provide comment will be held prior to the certification of the 2025 ANZ by the Executive Director.

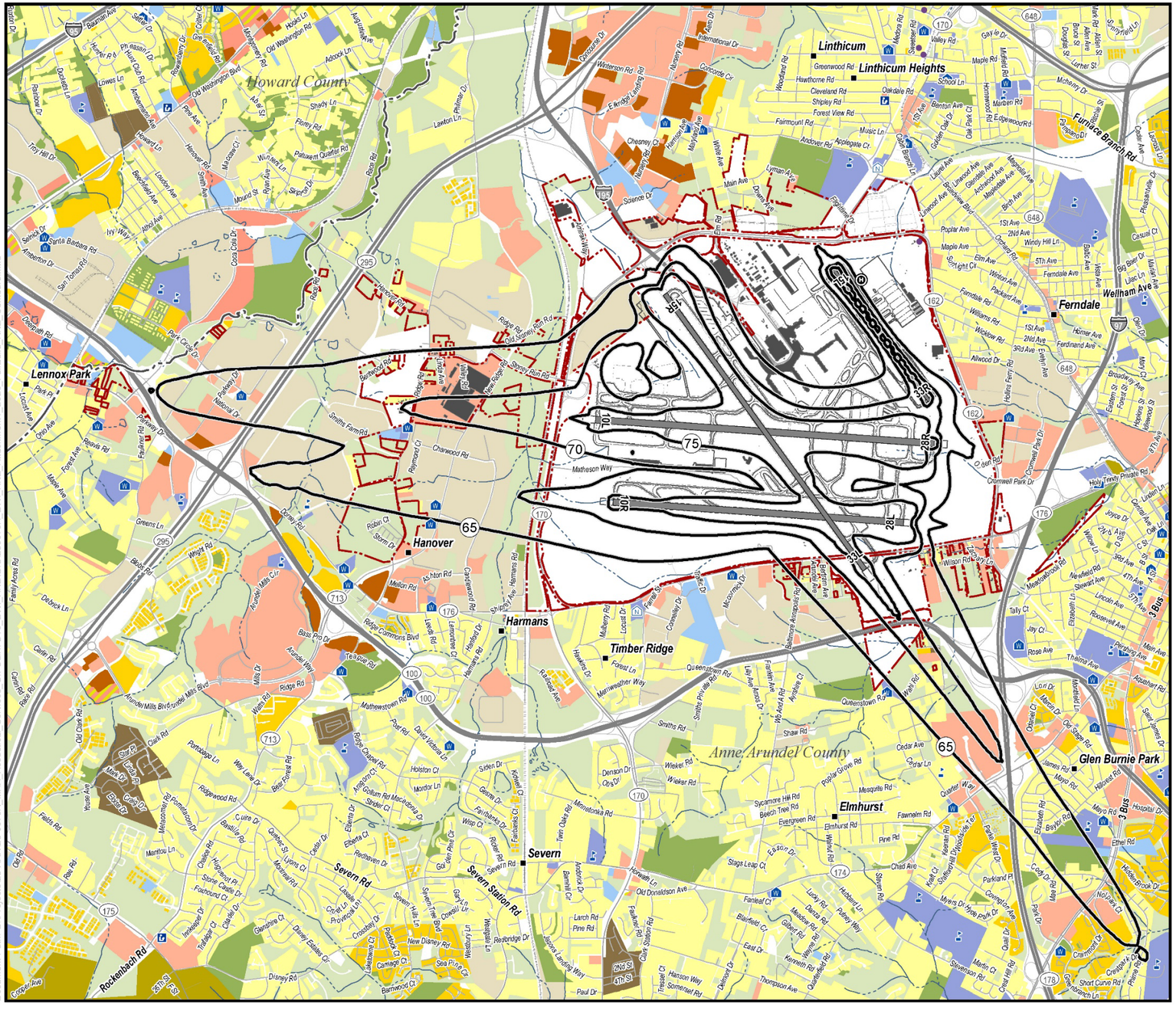
3. CONCLUSION

MAA has completed the technical work associated with updating the 2025 ANZ and NAP for BWI Marshall. The MAA proposes to proceed with the update of the ANZ and NAP for BWI Marshall in COMAR. MAA will publish both the proposed ANZ and NAP as a proposed action in the Maryland Register, and will hold a public hearing on the proposed action. The public will be able to comment on the proposed action at the public hearing. Maryland Aviation Commission approval will be sought prior to the final adoption of regulations establishing the updated ANZ and NAP for BWI Marshall.

4. RECOMMENDATION

MAA recommends that the Maryland Aviation Commission approve the proposed updates to the ANZ and NAP for BWI Marshall as to be provided for in amendments to COMAR 11.03.01.12 and 11.03.01.01-1(B)(5).

Approved ✓ Disapproved_____ Date 11/12/25



BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Attachment 1

2025 ANZ Contours

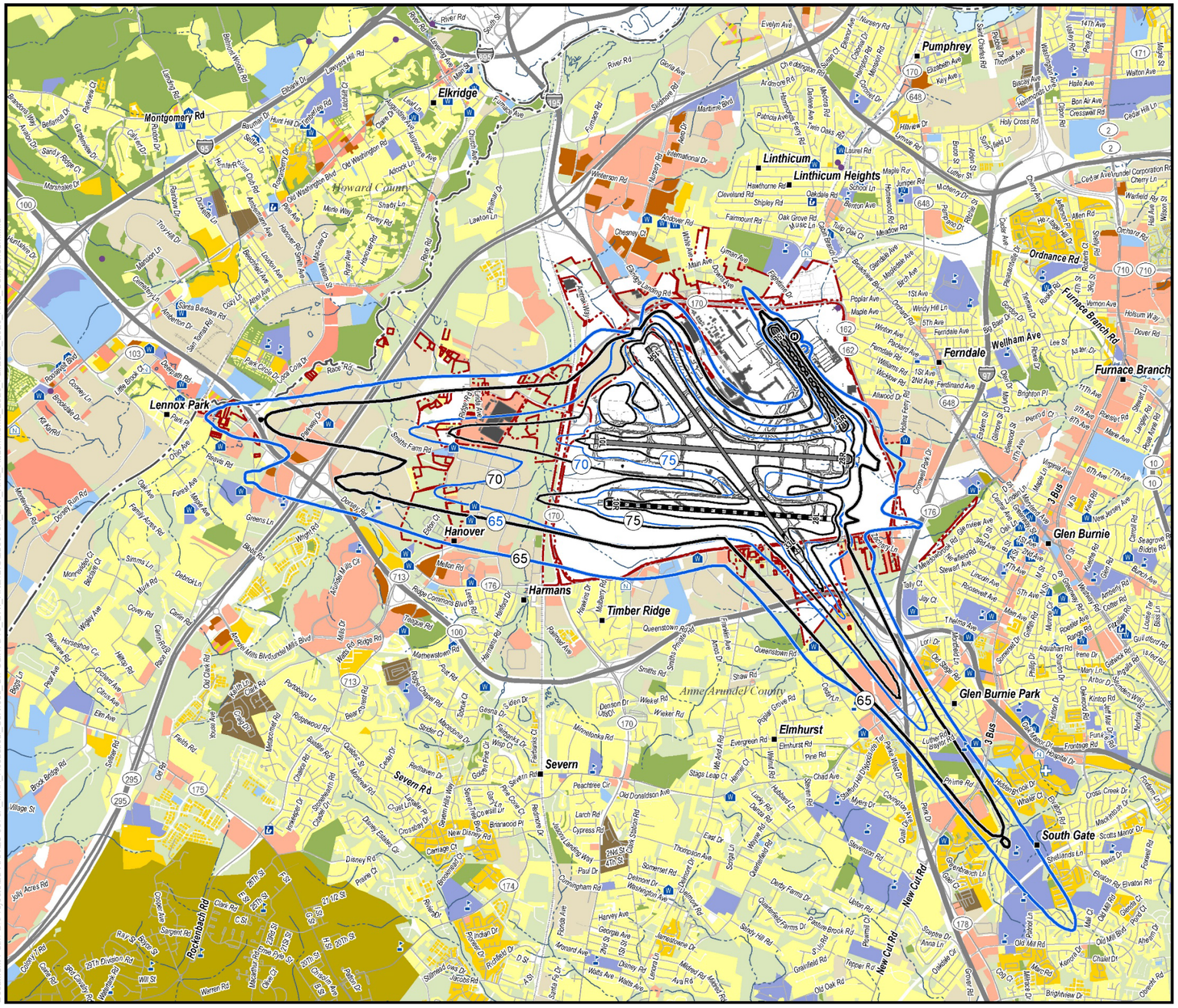
- 2025 ANZ Contours
- MAA Property Boundary
- Runup Locations
- Helicopter Operation Area
- Runway
- Airport Buildings
- Airport Pavement Edge
- Airport Pavement Shoulder
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Residential Use
- Multi-Family Residential Use
- Mobile Home
- Transient Lodging
- Mixed Use
- Public Use (Non-Compatible)
- Public Use (Compatible)
- Water
- Military Use
- Commercial Use
- Manufacturing / Production
- Vacant / Undeveloped
- Recreational / Open Space
- Golf
- Transportation / Utility
- School
- Library
- Place of Worship
- Hospital / Health Care
- Nursing / Assisted Living
- Historic Place (NRHP)

Data Sources: Maryland Aviation Administration; Baltimore County Government Open Data Portal; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH Inc.

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hmmh

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BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Airport Noise Zone Update

Attachment 2

2025 ANZ Compared to 2020 ANZ

- 2025 ANZ Contours
- 2020 ANZ Contours
- MAA Property Boundary
- Runup Locations
- Helicopter Operation Area
- Runway
- Future Runway / Extension
- Airport Buildings
- Airport Pavement Edge
- Airport Pavement Shoulder
- County Boundary
- Roads
- Railroad
- Stream / Creek
- Residential Use
- Multi-Family Residential Use
- Mobile Home
- Transient Lodging
- Mixed Use
- Public Use (Non-Compatible)
- Public Use (Compatible)
- Water
- Military Use
- Commercial Use
- Manufacturing / Production
- Vacant / Undeveloped
- Recreational / Open Space
- Golf
- Transportation / Utility
- School
- Library
- Place of Worship
- Hospital / Health Care
- Nursing / Assisted Living
- Historic Place (NRHP)

Data Sources: Maryland Aviation Administration; Baltimore County Government Open Data Portal; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH Inc.

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MARYLAND DEPARTMENT OF TRANSPORTATION

MARYLAND AVIATION ADMINISTRATION

Airport Noise Zone Update BWI Marshall & Martin State Airports Proposed Actions

Maryland Aviation Commission

June 17, 2026

Key Points/Overview

- The Maryland Environmental Noise Act of 1974 requires an “assessment of the noise environment”, delineation of a "noise zone“, and development of a noise abatement plan every five years*
- The Code of Maryland Regulations prescribes the noise metric, methodology, compatible land uses, consideration for noise abatement plan elements, and the permit process for construction within the Noise Zone
- The most recent ANZ for BWI Marshall, certified in 2021, is referenced in COMAR Section 11.03.01.12 and incorporated by reference in COMAR Section 11.03.01.01-1(B)(5)
- The most recent Airport Noise Zone (ANZ) for MTN, certified in 2021, is referenced in COMAR Section 11.03.02.10 and incorporated by reference in COMAR Section 11.03.01.01-1(B)(6)
- MAA initiated an update to the ANZs for BWI and MTN in January 2025, presented to the Commission in November 2026, and held a public workshop and hearing in March 2026.
- MAA proposes to update the references in COMAR to reflect an updated Airport Noise Zone (ANZ) and Noise Abatement Plan (NAP) for BWI and MTN
- The Maryland Aviation Commission is charged with the approval of regulations prior to their adoption by the MAA Executive Director

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*Transportation Article, §§5-805, 5-806, and 5-819, Annotated Code of Maryland

ANZ Scope & Process

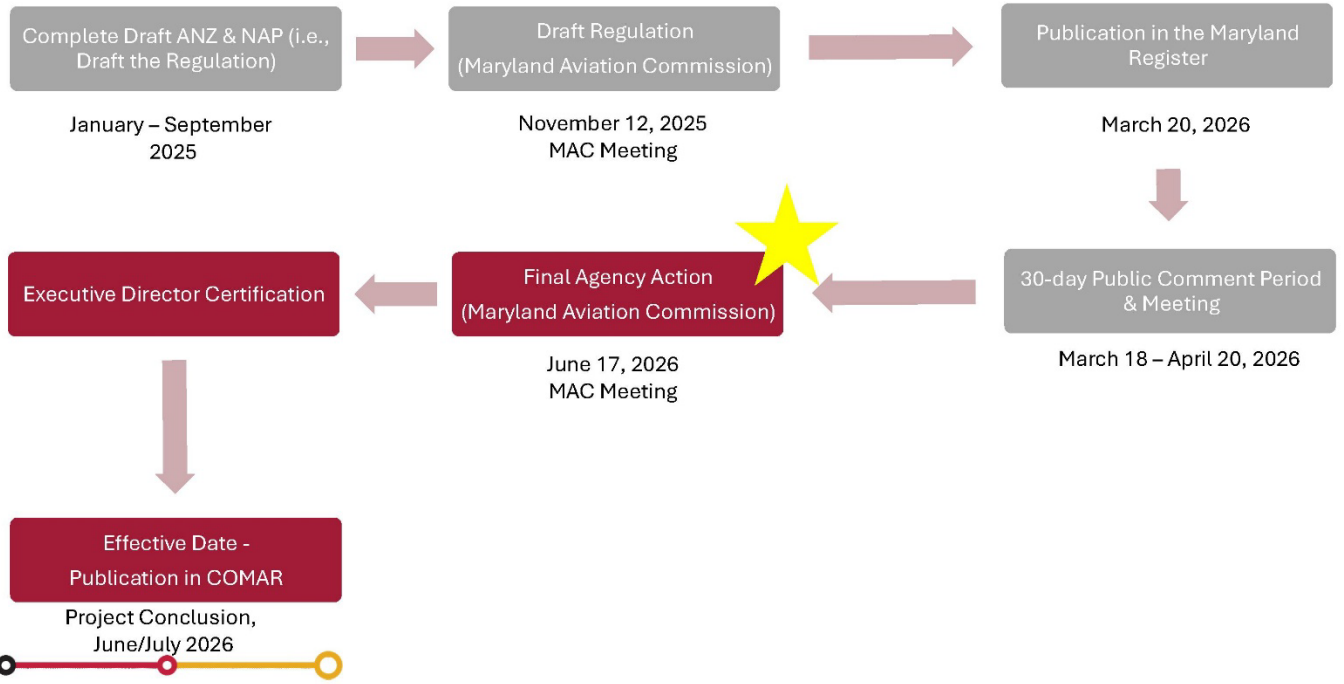
- Establish Stakeholder Advisory Committee (SAC)
- Prepare base year, 5-year, 10-year forecast contours
- Compile composite Airport Noise Zone (ANZ)
- Prepare inventory of existing land use
- Update the Noise Abatement Plan (NAP)
- Obtain approval from MAC to circulate proposed ANZ Update
- Conduct public workshop/hearing
- **Obtain approval from MAC to submit Certified ANZ Update for incorporation into COMAR**

Completed, January 2025 – April 2026



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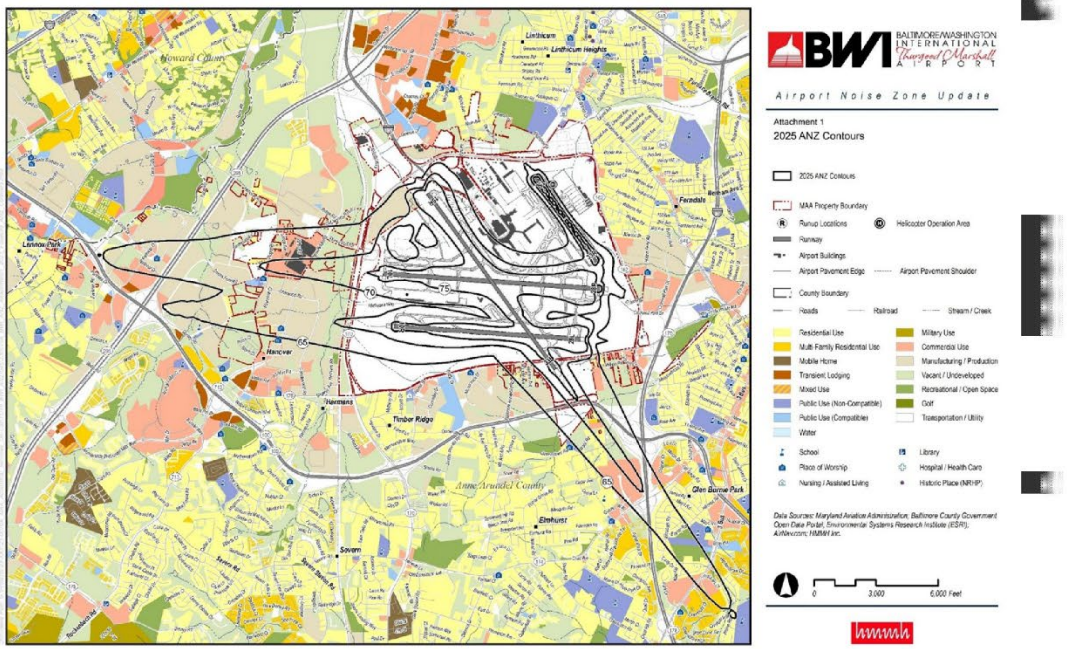
Schedule to Update COMAR



MARYLAND DEPARTMENT OF TRANSPORTATION
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2025 ANZ – BWI Marshall

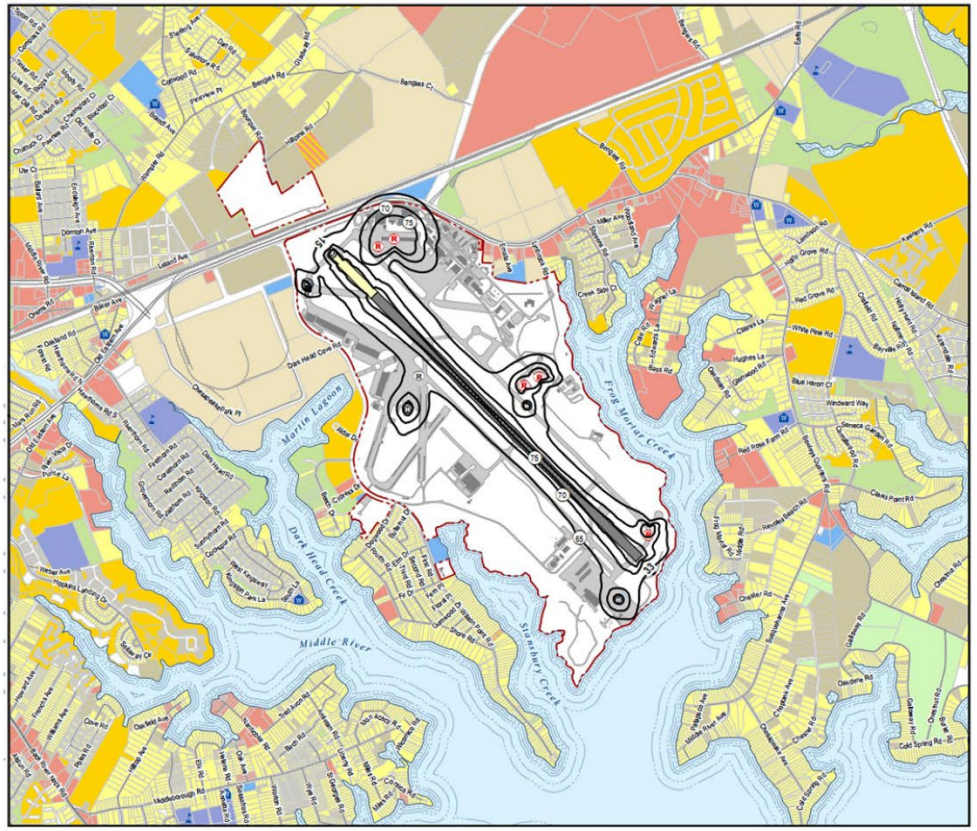
- Noise contours are developed for existing (2025), a five-year forecast (2030) and a ten-year forecast (2035), based on FAA's TAF
- 652 average daily operations in 2025, increasing to 796 by 2035
- 10-Year forecast includes Rwy 15R/33L extension and parallel Rwy 10/28 construction
- Includes estimated population of 1,704 in 636 housing units.



MARYLAND DEPARTMENT OF TRANSPORTATION
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MTN 2025 ANZ

- Largest extent of existing (2025), a five-year forecast (2030) and a ten-year forecast (2035) noise contours, including forecast operations
- 245 average daily operations in 2025, increasing to 262 by 2035
- Future forecast includes relocation of Runway 15/33 ends for civilian aircraft – from 6,997 to 7,430 ft.
- Comprises 286 acres, 95% remains on-airport
- No residential population or housing units affected



MARTIN STATE AIRPORT

Airport Noise Zone Update

Attachment 1
2025 ANZ DNL Contour

- 2025 ANZ DNL Contour (65-75 dB)
- Helicopter Operation Area
- Military Runup Location
- Civilian Runup Locations
- Civilian Runway
- Additional Runway Available for Military Operations
- Airport Buildings
- Taxiway / Apron
- Airport Boundary
- Roads
- Railroad
- Stream / Creek
- Residential Use
- Recreational / Open Space
- Multi-Family Residential Use
- Commercial Use
- Mixed Use
- Manufacturing / Production
- Public Use (Non-Compatible)
- Vacant / Undeveloped
- Public Use (Compatible)
- Transportation / Utility
- Agriculture
- Water
- School
- Library
- Place of Worship
- Hospital / Health Care

Data Sources: Baltimore County Government Open Data Portal; Environmental Systems Research Institute (ESRI); AirNav.com; HMMH

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MARYLAND AVIATION ADMINISTRATION

BWI Marshall

Noise Abatement Plans (NAP)

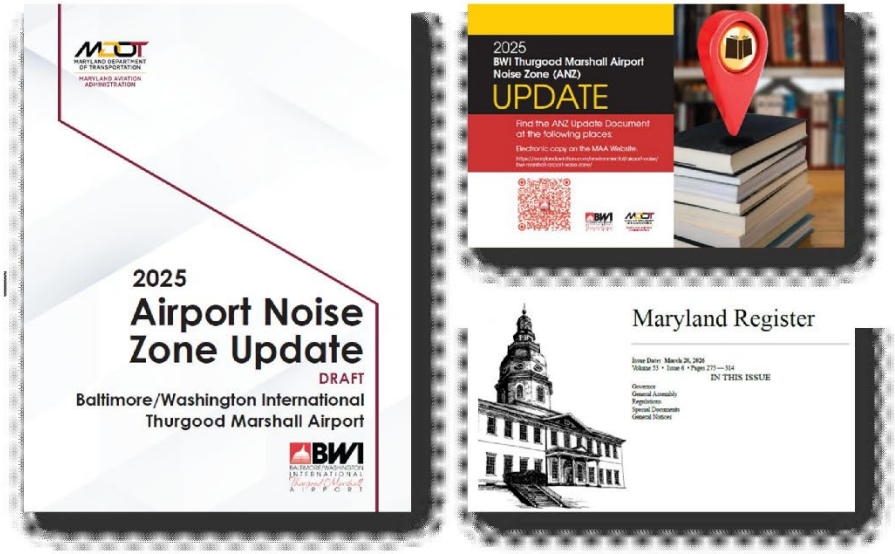
- Each NAP was developed with the cooperation of airport users, the aviation industry, FAA, communities, and local governments.
- Two general categories:
  - Noise Abatement Elements – Industry, FAA, and MAA
    - Strategies intended to **reduce** noise impacts for communities around the airport
    - Voluntary operational procedures such as control of ground-based noise sources, arrival and departure flight procedures, and a preferential runway use system
  - Land Use Elements – MAA
    - Summarizes the means of **controlling and mitigating** noise-sensitive development within the ANZ (Airport Zoning Permit approval or denial, appeals process, Residential Sound Insulation Program)
- 2025 Updates (BWI)
  - Removal of Interstate Visual procedure, update to available engine run-up locations
  - Otherwise, review only; updates will be considered as part of the 14 CFR Part 150 process
- 2025 Updates (MTN)
  - One new measure (*Measure F, Minimize Intersection Departures*)
  - Identified additional strategies to increase awareness of Noise Abatement Plan

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MARYLAND AVIATION ADMIN STRATION

BWI Marshall

Public Outreach for Workshops & Hearings

- Draft documents were made available for public review on January 20th, 2026 on the MAA website.
- Public notice provided via posting in Baltimore Sun (BWI, MTN), The Capital (BWI), The Avenue News (MTN) and the Dundalk Eagle (MTN).
- SAC members and Maryland State and Local elected officials notified directly via email.
- Hard copies were placed at 16 local libraries in Baltimore City and County, Anne Arundel County and Howard County.
- Proposed Action (updating COMAR) published in the Maryland Register.



BWI Public Workshop, Hearing and Comments

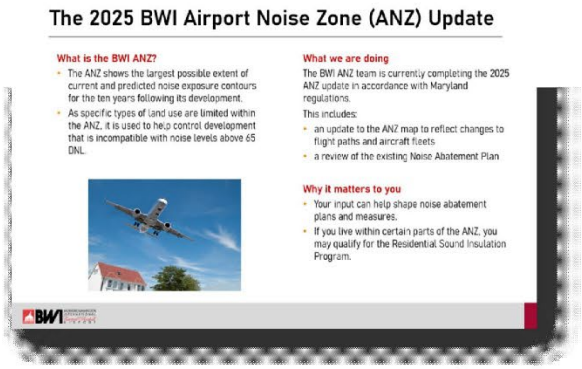
MAA hosted a public workshop & hearing on March 19, 2026, from 3:00 to 5:00 p.m. and 6:00 to 8:00 p.m. at MAA facilities at 991 Corporate Blvd.

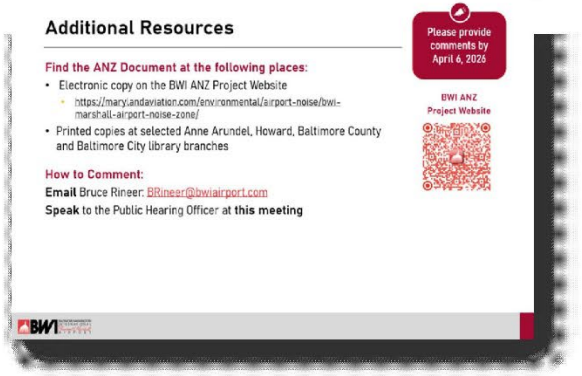
Meeting was attended by 26 residents; 19 comments were received from 16 individuals.

Commentors noted the concentration of aircraft departures from Runway 15R over the Severn community (a recent FAA procedure change which MAA is attempting to remedy with the FAA); that their property should be included in Anne Arundel County's property tax credit program or MAA's voluntary residential sound insulation program; dissatisfaction with the Day Night Average Sound Level (DNL) metric; and dissatisfaction with ground noise from aircraft operations.

Detailed responses provided in Decision Paper.

MAA considered all comments, none affected the technical results of the ANZ.





MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

MTN Public Workshop, Hearing and Comments

- MAA hosted a public workshop & hearing on March 18, 2026, from 6:00 to 8:00 p.m. at Martin State.
- Meeting was attended by 26 residents; 26 individuals submitted comments.
- Comments primarily focused on encouraging the MAA to adopt a formal “Fly Friendly” program similar to other airports around the country; to encourage flight school participation, to reduce the occurrences of intersection departures, and to modify flight paths.
- Detailed responses provided in Decision Paper.
- MAA updated the NAP to include one new measure and is pursuing strategies to increase awareness and compliance with noise abatement procedures.



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MARYLAND AVIATION ADMINISTRATION
Decision Paper

Airport Noise Zone and Noise Abatement Plan Update
BWI Marshall Airport
COMAR Final Action

June 17th, 2026

1. SUBJECT/ISSUE

The Maryland Department of Transportation Maryland Aviation Administration (MAA) proposes to update the Code of Maryland Regulations (COMAR) to reflect an updated Airport Noise Zone (ANZ) and Noise Abatement Plan (NAP) for Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall). The MAA develops and certifies the BWI Marshall ANZ pursuant to the *Maryland Environmental Noise Act of 1974* (See Transportation Article, §§5-805, 5-806, and 5-819, Annotated Code of Maryland). The current ANZ for BWI Marshall, certified in 2021, is referenced in COMAR Section 11.03.01.12 - *Certified Baltimore/Washington International Thurgood Marshall Airport (BWI) Noise Zone* and incorporated by reference in COMAR Section 11.03.01.01-1(B)(5).

In accordance with the Annotated Code of Maryland, Transportation §5-201 (b)(2), the Maryland Aviation Commission is required to approve MAA regulations prior to their adoption by the Executive Director.

2. DISCUSSION

Maryland law requires that an assessment of the noise environment created by the operation and projected future use of an airport be regularly undertaken, which includes the delineation of an ANZ and identification of any impacted land use area. An ANZ and NAP were first established for BWI Marshall in 1976 and were updated in 1982, 1988, 1993, 1998, 2007, 2014 and 2020. The ANZ represents the boundaries for determining incompatible activities or land uses under Maryland law and is used to restrict noise-sensitive development that would be incompatible with the cumulative noise exposure level acceptable for an area.

Previous Maryland Aviation Commission Action

MAA presented the proposed 2025 ANZ to the Commission on November 12th, 2025. The decision paper and presentation provided an overview of MAA's requirements to prepare an update to the ANZ, reviewed the scope, process, and Stakeholder Advisory Committee (SAC), presented the Draft 2025 BWI ANZ noise contours, provided an overview of the NAP, and highlighted the public notice and review process.

The Decision Paper from the November 12th, 2025 Maryland Aviation Commission meeting is included as **Attachment 1**. The Commission authorized MAA to proceed with updating both the ANZ and NAP and to publish the proposed amendment to the regulations in the Maryland Register.

MAA has subsequently completed and published the draft ANZ document, held a public workshop and hearing, reviewed and prepared responses to submitted public comments, and prepared the final BWI Marshall 2025 ANZ document.

Public Workshop and Public Hearing

Following the Commission's approval to move forward, MAA completed the Draft ANZ and made the draft document available on January 20th, 2026 on the MAA website. A public workshop and hearing was planned for Thursday, March 19th, 2026, and public notice was provided via the following means:

- Legal notice was published in the Baltimore Sun (March 8th) and the Capital (March 9th).
- Subscribers to MAA's eNews Express were notified directly via email.
- Elected and public officials were notified directly via email
- Email notifications were sent directly to members of the Stakeholder Advisory Committee.
- Hard copies were placed at 14 local libraries in Baltimore City and County, Anne Arundel County and Howard County.
- The Notice of Proposed Action, including the proposed changes to COMAR, was published in the Maryland Register, Volume 53, Issue 6, March 20th, 2026.

On Thursday, March 19th, 2026, from 3:00 p.m. to 5:00 p.m. and 6:00 p.m. to 8:00 p.m., MAA hosted an in-person public workshop and hearing at MAA offices at 991 Corporate Blvd in Linthicum Heights. There were twenty-six (26) people in attendance. The public workshop included display boards staffed by MAA and the consultant team, and the public hearing in an adjacent room allowed interested parties to provide comments to a court reporter.

MAA received 19 comments from 16 individuals. Many commentors reside in Severn and are impacted by a recent FAA procedure change which MAA is attempting to remedy with the Federal Aviation Administration. One attendee provided comments via the court reporter and submitted supporting data and ten letters with similar content, nine of which are copies of a form letter signed by other residents in Severn. This packet also included personal statements from two additional people. None of the comments received affect the technical results of the ANZ. The comments and MAA's responses are included in the Final ANZ and are summarized below.

Commentors noted the concentration of aircraft departures from Runway 15R over the Seven community.

MAA Response: Many of the commentors live in the Severn community. As part of FAA's July 2024 implementation of new departure procedures for westbound departures from BWI Marshall's Runway 15R (TERPZ EIGHT, LINSE ONE, and FOXHL ONE Standard Instrument Departures or SIDs), westbound aircraft are directed from Runway 15R to fly to a new waypoint (WARYN) prior to initiating a westbound turn. While this procedure mimics MAA's long-standing Runway 15R noise abatement departure procedure, the initiation of a departure turn at this specific location has resulted in a significant concentration of flight tracks over the Severn community. This concentration of flights has resulted in a notable increase in community concern, including an increase in noise complaints, attendance at Roundtable meetings, and correspondence with elected officials. The concentration of flights over the Severn community was an unintended consequence

of the addition of the WARYN waypoint. The use of the WARYN waypoint and this procedure is modeled in the ANZ and no changes to the ANZ are warranted.

Independent of this ANZ update, the MAA and Roundtable have requested that FAA remove the WARYN waypoint. Consultation with industry representatives has pointed towards the feasibility of a procedure which directs aircraft to climb to an altitude prior to initiating a westbound turn; such a procedure would both increase the altitude of departing aircraft and reduce flight track concentration. This approach could return the dispersion of aircraft to patterns that existed prior to implementation of NextGen. The MAA has formally petitioned the FAA to remove publication of the WARYN waypoint, and, instead, adopt a minimum altitude restriction prior to initiating the westbound turn, with the restricting altitude chosen to better balance the impacts over the Elmhurst and Severn communities. As of June 2026, MAA is awaiting the results of FAA's initial feasibility analysis and a clear definition of the next steps towards implementation. FAA has indicated that the timeline may be as long as five years for review and publication of any new procedure.

Commentors suggested that a portable noise monitor located directly under the westbound Runway 15R departure flight path would yield a different result in the ANZ contours, and asked that the final ANZ be adjusted to include additional residential land uses. Multiple commentors contested the ANZ based on noise monitor results.

MAA Response: Noise monitors are not, and can not be, used in the preparation of the Airport Noise Zone. Noise monitors measure noise levels at one discreet location and cannot be used to forecast future noise exposure. MAA relies on the FAA's Aviation Environmental Design Tool (AEDT), which uses reference aircraft noise data combined with actual runway use, flight track use, and wind and weather conditions to define cumulative noise levels on an average annual day.

The ANZ contours are presented in terms of the Day-Night Average Sound Level (DNL) metric, while the permanent (and portable) noise monitors can report single event noise levels. Commentors note that some single event noise levels from aircraft overflights can exceed 65 decibels at locations outside of the 65 DNL noise contour of the ANZ. MAA concurs, and notes that DNL is a cumulative noise metric that averages noise levels over a 24-hour period, with a nighttime penalty. The cumulative nature of the metric accounts for both the loudness and duration of all noise events. The ANZ presents an accurate estimate of cumulative noise based on the best available assumptions.

The modeling approach used to develop the ANZ is standard in the development of noise contours and follows the methodology outlined under State regulations. The noise contours presented in this document account for current flight procedures, including westbound departures from Runway 15R that overfly Severn.

For informational purposes, MAA offers portable noise monitoring, and requests for placement of a portable noise monitor at a residence may be made by completing the Application for Portable Noise Monitoring at https://marylandaviation.com/application-for-portable-noise-monitoring-form/. The noise monitor will be installed for a period of two weeks; following the monitoring period, a detailed technical report including data on aircraft and community noise levels will be provided to the requestor.

One commentor suggested their residence in Severn should be included in Anne Arundel County's property tax credit program or MAA's voluntary residential sound insulation program.

> **MAA Response**: Anne Arundel County Code § 4-2-303. *Airport Noise Zone,* describes the credit from County real property taxes levied on property within the BWI Marshall ANZ, provided the property is owner-occupied, residential property that is located entirely or in part within the 75 DNL noise contour. MAA does not collect property taxes from land uses around BWI Marshall and the credit is fully under the jurisdiction of Anne Arundel County.
>
> MAA does offer participation in a voluntary residential sound insulation program, based on FAA-eligibility criteria, including being located within the 65 DNL of the airport's current Noise Exposure Map under the FAA's 14 CFR Part 150 program. MAA is currently administering this program for eligible homes and intends to update the Part 150 beginning in late 2026. MAA does not expect participation in this program to expand beyond historical eligibility boundaries.

Commentors expressed dissatisfaction with the Day-Night Average Sound Level (DNL) metric and questioned the use of the FAA's required noise model.

> **MAA response**: Although the DNL metric is often criticized as confusing and not equivalent to the noise levels people hear, it remains the required metric for the development of the ANZs. The FAA is currently conducting a comprehensive Noise Policy Review to evaluate the possibility of supplementing or replacing DNL with other noise metrics, including single-event metrics. The MAA recognizes the critiques of DNL and is following the FAA's policy research.
>
> The FAA's Aviation Environmental Design Tool (AEDT) is the software used to develop noise contours for the BWI Marshall ANZ. AEDT uses a standard, scientifically rigorous method for noise modeling and ensures technical consistency and legal defensibility for the resulting noise contours.

One commentor expressed dissatisfaction with ground noise from aircraft operations.

> **MAA Response**: MAA acknowledges that aircraft noise exposure can be heard from aircraft on the ground, including the start of takeoff roll for departing aircraft, the use of reverse thrust for arriving aircraft, and ground run up operations. As part of the Noise Abatement Plan, the MAA includes provisions for the restriction and control of ground-based noise, such as reverse thrust and maintenance run-ups. These restrictions can be found in the ANZ document and the BWI Tenant Directives (https://marylandaviation.com/wp-content/uploads/2026/03/BWI-501.1-BWI-Noise-Abatement-Plan-A.pdf). Run-ups must be pre-approved and are limited in duration and location. Additionally, the MAA keeps annual run-up records; no run-ups were recorded in 2024 or 2025.

3. CONCLUSION

The proposed BWI Airport Noise Zone and Noise Abatement Plan should be adopted as proposed.

4. RECOMMENDATION

MAA recommends that the Maryland Aviation Commission approve the proposed amendment to Regulation .01, .01-1 and .12 under COMAR 11.03.01 Baltimore/Washington International Thurgood Marshall Airport.

Approved___ ✓ _____ Disapproved_____ Date__6/17/2026_____

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Appendix E. Public Workshop and Hearing Materials

Appendix E includes the information related to the Public Workshop and Hearing, including documentation of public notices, invitations, attendance information, and presentation materials.

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E.1 Maryland Register

Information About the Maryland Register and COMAR

MARYLAND REGISTER



Maryland Register

Issue Date: March 20, 2026
Volume 53 • Issue 6 • Pages 275 — 314

IN THIS ISSUE

Governor
General Assembly
Regulations
Special Documents
General Notices

Pursuant to State Government Article, §7-206, Annotated Code of Maryland, this issue contains all previously unpublished documents required to be published, and filed on or before March 2, 2026 5 p.m.

Pursuant to State Government Article, §7-206, Annotated Code of Maryland, I hereby certify that this issue contains all documents required to be codified as of March 2, 2026.

Gail S. Klakring
Administrator, Division of State Documents
Office of the Secretary of State

The Maryland Register is an official State publication published every other week throughout the year. A cumulative index is published quarterly.

The Maryland Register is the temporary supplement to the Code of Maryland Regulations. Any change to the text of regulations published in COMAR, whether by adoption, amendment, repeal, or emergency action, must first be published in the Register.

The following information is also published regularly in the Register:

- Governor's Executive Orders
- Attorney General's Opinions in full text
- Open Meetings Compliance Board Opinions in full text
- State Ethics Commission Opinions in full text
- Court Rules
- District Court Administrative Memoranda
- Courts of Appeal Hearing Calendars
- Agency Hearing and Meeting Notices
- Synopses of Bills Introduced and Enacted by the General Assembly
- Other documents considered to be in the public interest

CITATION TO THE MARYLAND REGISTER

The Maryland Register is cited by volume, issue, page number, and date. Example:

• 19:8 Md. R. 815—817 (April 17, 1992) refers to Volume 19, Issue 8, pages 815—817 of the Maryland Register issued on April 17, 1992.

CODE OF MARYLAND REGULATIONS (COMAR)

COMAR is the official compilation of all regulations issued by agencies of the State of Maryland. The Maryland Register is COMAR's temporary supplement, printing all changes to regulations as soon as they occur. At least once annually, the changes to regulations printed in the Maryland Register are incorporated into COMAR by means of permanent supplements.

CITATION TO COMAR REGULATIONS

COMAR regulations are cited by title number, subtitle number, chapter number, and regulation number. Example: COMAR 10.08.01.03 refers to Title 10, Subtitle 08, Chapter 01, Regulation 03.

DOCUMENTS INCORPORATED BY REFERENCE

Incorporation by reference is a legal device by which a document is made part of COMAR simply by referring to it. While the text of an incorporated document does not appear in COMAR, the provisions of the incorporated document are as fully enforceable as any other COMAR regulation. Each regulation that proposes to incorporate a document is identified in the Maryland Register by an Editor's Note. The Cumulative Table of COMAR Regulations Adopted, Amended or Repealed, found online, also identifies each regulation incorporating a document. Documents incorporated by reference are available for inspection in various depository libraries

Estimate of Economic Impact

The proposed action has no economic impact.

Economic Impact on Small Businesses

The proposed action has minimal or no economic impact on small businesses.

Impact on Individuals with Disabilities

The proposed action has no impact on individuals with disabilities.

Opportunity for Public Comment

Comments may be sent to Alexandra Bryden, Chief of Staff, Maryland Health Care Commission, 4160 Patterson Avenue Baltimore, MD 21215, or call 410-952-1045, or email to mhcc_regs.comment@maryland.gov. Comments will be accepted through April 20, 2026. A public hearing has not been scheduled.

Open Meeting

Final action on the proposal will be considered by the Maryland Health Care Commission during a public meeting to be held on May 21, 2026 at 1:00 pm, at 4160 Patterson Avenue, Room 100.

.07 Payments for Uncompensated Care Patients.

A.—B. (text unchanged)

C. An organization billing on behalf of trauma physicians or trauma health care practitioners eligible for uncompensated care payments shall:

(1) Designate a trauma service by appropriate coding of the **[**CPT Modifier] *U1 Modifier, or any successor modifier that includes that same data,* on the electronic ANSI 837 transaction or paper CMS 1500 claim in accordance with claims submission requirements; and

(2) (text unchanged)

D. Diagnosis Code.

[(1) Except as provided in §D(2) of this regulation, a diagnosis code shall fall between 800.00 — 959.9.

(2) If a diagnosis code does not fall between 800.0 — 959.9, a supplementary classification of external causes of injury and poisoning (E800 — E999) shall appear as a secondary diagnosis code.]

(1) Coding shall be consistent with CMS ICD-10 CM guidelines, or any successor guidelines.

(2) A diagnosis code shall fall between ICD-10 CM S00 - T88 range, or successor codes indicating trauma related diagnosis.

(3) External Cause Codes.

(a) A diagnosis code may also be accompanied by a secondary code or codes indicating external cause of injury, denoted by ICD-10 CM V, W, X, Y, or Z codes, or successor codes indicating external cause of injury.

(b) External cause codes may not be sequenced as the first-listed or principal diagnosis.

E.—K. (text unchanged)

MARCIA BOYLE
Acting Chair
Maryland Health Care Commission

Title 11
DEPARTMENT OF TRANSPORTATION
Subtitle 03 MARYLAND AVIATION ADMINISTRATION

Notice of Proposed Action

[26-008-P-I]

The Executive Director of the Maryland Aviation Administration proposes to amend:

(1) Regulations **.01-1** and **.12** under **COMAR 11.03.01 Baltimore/Washington International Thurgood Marshall Airport**; and

(2) Regulation **.10** under **COMAR 11.03.02 Martin State Airport**.

This action was considered the Maryland Aviation Commission in an open meeting on November 12, 2025, notice of which was given, pursuant to General Provisions Article, §3-302, Annotated Code of Maryland.

Statement of Purpose

The purpose of this action is to incorporate by reference the new certified Baltimore/Washington International Thurgood Marshall Airport (BWI) Noise Zone reflecting the noise contours for the new base year of 2025 and new future years of 2030 and 2035, as well as the new certified Martin State Airport (MTN) Noise Zone reflecting the noise contours for the new base year of 2025 and new future years of 2030 and 2035.

Estimate of Economic Impact

The proposed action has no economic impact.

Economic Impact on Small Businesses

The proposed action has minimal or no economic impact on small businesses.

Impact on Individuals with Disabilities

The proposed action has no impact on individuals with disabilities.

Opportunity for Public Comment

Comments may be sent to Stacey Hicks-Johnson, Regulations Coordinator , MAA, P.O. Box 8766, BWI Airport, MD 21240, or call 410-859-7351, or email to shicks-johnson@bwiairport.com. Comments will be accepted through April 20, 2026. A public hearing will be held on For Martin State Airport (MTN) Noise Zone, the hearing will be held on Wednesday, March 18th from 6:00-8:00pm at Martin State Airport, 701 Wilson Point Road, Middle River, MD 21220, Hanger 4. For Baltimore/Washington International Thurgood Marshall Airport (BWI) Noise Zone, the hearing will be held on Thursday, March 19th from 3:00-5:00pm then from 6:00-8:00pm at Maryland Aviation Administration located at 991 Corporate Drive, Linthicum, MD 21090, Assembly Room A/B.

11.03.01 Baltimore/Washington International Thurgood Marshall Airport

Authority: Transportation Article, §§5-202.1, 5-204, 5-208, 5-805, 5-806, and 5-819, Annotated Code of Maryland

.01-1 Incorporation by Reference.

A. (text unchanged)

B. Documents Incorporated.

(1)—(4) (text unchanged)

(5) The certified Baltimore/Washington International Thurgood Marshall Airport (BWI) Noise Zone, consisting of the 65, 70, and 75 L_{dn} contours overprinted on county tax maps as indicated below:

(a)—(b) (text unchanged)

(c) Anne Arundel County Tax Maps 3, 4, **[**7**]**, 8, 9, and 15;

[(d) Howard County Tax Map 44.]

(6)—(8) (text unchanged)

C. (text unchanged)

.12 Certified Baltimore/Washington International Thurgood Marshall Airport (BWI) Noise Zone.

A.(text unchanged)

B. BWI Noise Zone.

(1)—(2) (text unchanged)

(3) The certified Baltimore/Washington International Thurgood Marshall Airport (BWI) Noise Zone consists of the 65, 70, and 75 L_{dn} contours overprinted on county tax maps as indicated as follows:

(a)—(b) (text unchanged)

(c) Anne Arundel County Tax Maps 3, 4, **[**7**]**, 8, 9, and 15;

[(d) Howard County Tax Map 44.]

(4) The noise zone is a composite of the 65, 70, and 75 L_{dn} noise contours for the base year of **[**2020**]** *2025* and future years of **[**2025**]** *2030* and **[**2030**]** *2035*.

(5) (text unchanged)

C. (text unchanged)

11.03.02 Martin State Airport

Authority: Transportation Article, §§5-202.1, 5-204, 5-208, 5-426, 5-805, 5-806, and 5-819, Annotated Code of Maryland

.10 Certified Martin State Airport (MTN) Noise Zone.

A. (text unchanged)

B. MTN Airport Noise Zone.

(1)—(3) (text unchanged)

(4) The noise zone is a composite of the 65, 70, and 75 L_{dn} noise contours for the base year of **[**2019**]** *2025* and future years of **[**2025**]** *2030* and **[**2030**]** *2035*.

(5) (text unchanged)

C. (text unchanged)

SHANNETTA R. GRIFFIN
Director/CEO

Title 13A
STATE BOARD OF EDUCATION

Subtitle 01 STATE SCHOOL ADMINISTRATION

13A.01.05 Appeals to the State Board of Education

Authority: Education Article, §§2-205, 4-205, 6-202, and 7-305; State Government Article, §§10-122 and 10-201 et seq., Annotated Code of Maryland

Notice of Proposed Action

[26-018-P]

The State Board of Education proposes to amend Regulation **.12** and adopt new Regulation **.13** under **COMAR 13A.01.05 Appeals to the State Board of Education**. The original proposal as published in 52:17 Md.R. 889 (August 22, 2025) is being withdrawn. This action was considered by the State Board at its January 27, 2026 meeting.

Statement of Purpose

The purpose of this action is to add a process for request of interim relief during the period in between an individual's submission of a request for the State Board to issue charges for removal of a local member of a board of education and when the State Board issues a final decision on the removal request.

Estimate of Economic Impact

The proposed action has no economic impact.

Economic Impact on Small Businesses

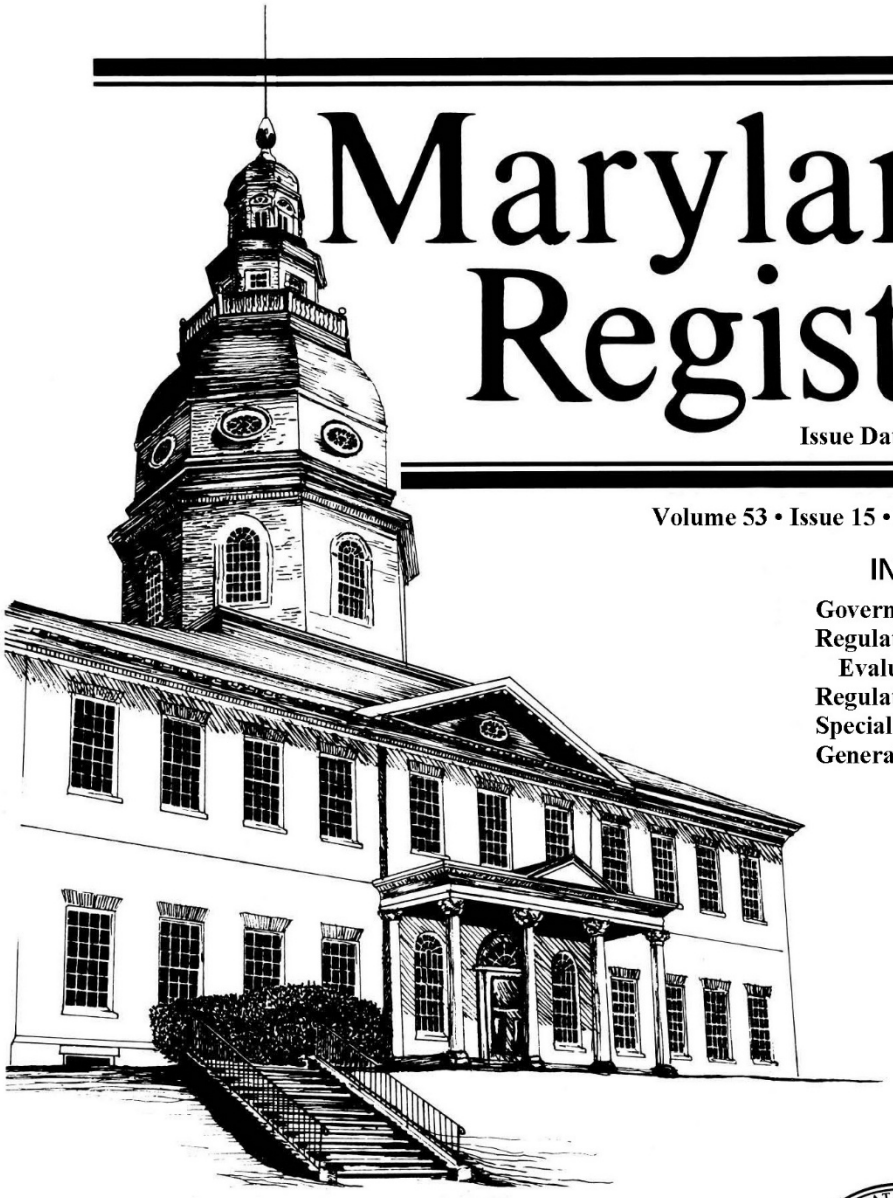
The proposed action has minimal or no economic impact on small businesses.

Impact on Individuals with Disabilities

The proposed action has no impact on individuals with disabilities.

Opportunity for Public Comment

Comments may be sent to Hannah Oakley, Deputy Director, State Board of Education, Maryland State Department of Education, 200 West Baltimore Street, Baltimore, MD 21201, or call 443-386-7990, or email to hannah.oakley@maryland.gov. Comments will be accepted through April 20, 2026. A public hearing has not been scheduled.



Maryland Register

Issue Date: July 24, 2026

Volume 53 • Issue 15 • Pages 655—678

IN THIS ISSUE

Governor
Regulatory Review and Evaluation
Regulations
Special Documents
General Notices

Pursuant to State Government Article, §7-206, Annotated Code of Maryland, this issue contains all previously unpublished documents required to be published, and filed on or before July 6, 2026, 5 p.m.

Pursuant to State Government Article, §7-206, Annotated Code of Maryland, I hereby certify that this issue contains all documents required to be codified as of July 6, 2026.

Gail S. Klakring
Administrator, Division of State Documents
Office of the Secretary of State

Title 11
DEPARTMENT OF TRANSPORTATION

Subtitle 03 MARYLAND AVIATION ADMINISTRATION

Notice of Final Action

[26-008-F-I]

On July 13, 2026, the Executive Director of the Maryland Aviation Administration adopted amendments to:

(1) Regulations **.01-1** and **.12** under **COMAR 11.03.01 Baltimore/Washington International Thurgood Marshall Airport**; and

(2) Regulation **.10** under **COMAR 11.03.02 Martin State Airport**.

This action, which was proposed for adoption in 53:6 Md. R. 297—298 (March 20, 2026), has been adopted as proposed.

Effective Date: August 3, 2026.

SHANNETTA R. GRIFFIN
Executive Director

E.2 Public Notices

THE BALTIMORE SUN MEDIA GROUP

509 S. Exeter St, Suite 300,
Baltimore, MD 21202
tel: 410-539-7700

WE HEREBY CERTIFY, that the annexed advertisement of Order No 39697

Sold To:
Assedo Consulting LLC - 136483
6100 Chevy Chase Dr
Laurel, MD 20707

Bill To:
Assedo Consulting LLC - 136483
6100 Chevy Chase Dr
Laurel, MD 20707

Was published in "The Baltimore Sun", "Daily", a newspaper printed and published in Baltimore City and/or surrounding counties on the following dates:

8 Mar 2026

The Baltimore Sun Media Group

By _____

Page 1 of 2

THE BALTIMORE SUN MEDIA GROUP

509 S. Exeter St, Suite 300,
Baltimore, MD 21202
tel: 410-539-7700

PUBLIC NOTICE
Maryland Department of Transportation
Maryland Aviation Administration

The Maryland Aviation Administration (MAA) will conduct a **Public Workshop and Public Hearing** in accordance with Section 5-806 (b) of the Annotated Code of Maryland Transportation Article, regarding the proposed Airport Noise Zone (ANZ) Update for **Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall).**

Thursday, March 19, 2026
3:00 p.m. to 5:00 p.m. and 6:00 p.m. to 8:00 p.m.
Maryland Aviation Administration Building 991 Corporate Blvd,
Linthicum Heights, MD 21090

The purpose of the **Public Workshop and Public Hearing** is to allow interested individuals the opportunity to learn about the ANZ, ask questions, and submit formal comments. The BWI Marshall ANZ will be incorporated into the Code of Maryland Regulations (COMAR).

The workshop and hearing will be held in two identical sessions: 3:00–5:00 p.m. and 6:00–8:00 p.m. to accommodate the public's schedules. The sessions will feature noise contour maps illustrating the existing and proposed boundaries of the BWI Marshall ANZ, along with an overview of the ANZ update process. The material will be presented in an open-house format with informational display boards.

MAA representatives will be available to answer questions and discuss points of interest throughout the session. Attendees will have the opportunity to submit formal comments throughout the event, which will be recorded by a hearing officer.

Written statements, in lieu of or in addition to oral or recorded comments at the hearing, may be submitted until April 20, 2026, to BRineer@bwiairport.com. The BWI Marshall ANZ draft document is available on the MAA website: https://marylandaviation.com/environmental/airport-noise/. Members of the public who cannot access the document online can find it at selected local libraries or contact the Outreach Team (see below) to request accommodations.

ADA and Limited English Proficiency Compliance Notice:

Individuals planning to attend the Public Workshop and Public Hearing who require auxiliary aids, services, or other accommodations, or who have limited ability to speak or understand English and wish to receive interpretation or translation services, are encouraged to contact the Outreach Team at least 48 hours in advance of the meeting. The Outreach Team may be reached by phone at 240-200-5176 or by email at MDOT-MAA-ANZ@assedollc.com.

Baltimore Sun March 8, 2026 39697

company's technology initiatives & projects. Work w/ business stakeholders, project teams & tech staff to translate reqs into models, applications & tools. Req: Masters in CS. Must have: exp. w/ Python, Java, C++; exp. w/ AI/ML frameworks (i.e. TensorFlow, PyTorch, scikitlearn); and knowledge of data engineering concepts, APIs and cloud based AI/ML platforms (AWS, Azure). Hybrid work location. Send resume to hr@versatechin c.com VersaTech, Inc. is based in Savage, MD

Medical Assistant

Perform administrative and certain clinical duties under the direction of a physician. Schedule appointments, maintain medical records, billing, and coding information for insurance purposes. Record vital signs and medical history, prepare patients for examination and administer medications as directed by physician. Salary $45344 Per/Year Req. FT, HS,24 Mon Exp. 40hrs/Wk. Resume at Personic Virtual Clinic LLC, 6095 Marshalee Drive, Suite 130, Elkridge, MD 21075

support Java/DB2 migrations.Req: Bachelor's 5 yr. Wages: $ 138549/yr. Relocate to unanticipated site. No International/National travel. Benefits: Health, dental & vision insurance; PTO; other applicable benefits. Send mail to Ref: COO/V9, 10320 Little Patuxent Parkway, Ste 200, Columbia, MD, 21044

Finance Manager

Preparing business activity reports, financial statements & forecasts for the company. Managing company finances & enforcing regulatory compliance, etc. Bachelor's degree in accounting, IT, Business Administration or foreign equivalent, OR 48 months of experience as a Finance Manager or related occupation. Wages: $193,544/yr. M-F, 40hrs/wk. Mail resume to STONE ACTION LLC. at 9010 Maier Rd, Ste 112, Laurel, MD, 20723.

developers to design, develop, test, deploy & maintain chatbot (virtual assistant). Req's: BSIor equiv.) 3 yrs. exp. Salary: $140,700-$179,800 per annum. Employees may also receive benefits package including a 401(k) company matched retirement savings plan, health plans, paid time off & holiday pay. Company is an equal opportunity employers & will consider all applications without regard to race, genetic information, sex, age, color, religion, national origin, veteran status, disability or any other characteristic protected by law. To view the EEO is the law poster click here https://www.eeoc.gov/sites/default/files/2022-10/EEOC_KnowYourRights_screen_reader_10_20_pdf. Applicants w/ disabilities that require an accommodation or assistance a position, email EmployeeRelations@teksystems.com. This is a dedicated line designed exclusively to assist job seekers whose disability prevents them from being able to apply online. Messages left for other purposes will not receive a response. Submit resume w/ ref. to Req.# L24-148160 to: resume@allegisgroup.com.

req'd. EMail Resume: HR, Alpha Ce thi@alphacentech.com.

Materials Manager

(Long Island City, NY) Monitor ma ate deterioration. Test whether mat tic laminate partitions are compati tions (e.g., moisture, heat, & wear). economic factors related to proce tives. Establish testing procedures incoming laminate & substrate mat properties, & inspect to ensure co implement fabrication processes procedures that meet cost, prod standards. Bach's Degree in Mater related engg field is reqrd. $84,054.00/yr. Send resume to Ur New York Inc at unal@mavineyork

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LEGAL NOTICE

PUBLIC NOTICE
Maryland Department of Transportation
Maryland Aviation Administration

The Maryland Aviation Administration (MAA) will conduct a **Public Workshop and Public Hearing** in accordance with Section 3-806 (b) of the Annotated Code of Maryland Transportation Article, regarding the proposed Airport Noise Zone (ANZ) Update for **Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall).**

Thursday, March 19, 2026
3:00 p.m. to 5:00 p.m. and 6:00 p.m. to 8:00 p.m.
Maryland Aviation Administration Building 991 Corporate Blvd, Linthicum Heights, MD 21090

The purpose of the **Public Workshop and Public Hearing** is to allow interested individuals the opportunity to learn about the ANZ, ask questions, and submit formal comments. The BWI Marshall ANZ will be incorporated into the Code of Maryland Regulations (COMAR).

The workshop and hearing will be held in two identical sessions: 3:00–5:00 p.m. and 6:00–8:00 p.m. to accommodate the public's schedules. The sessions will feature noise contour maps illustrating the existing and proposed boundaries of the BWI Marshall ANZ, along with an overview of the ANZ update process. The material will be presented in an open-house format with informational display boards.

MAA representatives will be available to answer questions and discuss points of interest throughout the session. Attendees will have the opportunity to submit formal comments throughout the event, which will be recorded by a hearing officer.

Written statements, in lieu of or in addition to oral or recorded comments at the hearing, may be submitted until April 20, 2026, to BRineer@bwiairport.com. The BWI Marshall ANZ draft document is available on the MAA website: https://marylandaviation.com/environmental/airport-noise/. Members of the public who cannot access the document online can find it at selected local libraries or contact the Outreach Team (see below) to request accommodations.

ADA and Limited English Proficiency Compliance Notice:

Individuals planning to attend the Public Workshop and Public Hearing who require auxiliary aids, services, or other accommodations, or who have limited ability to speak or understand English and wish to receive interpretation or translation services, are encouraged to contact the Outreach Team at least 48 hours in advance of the meeting. The Outreach Team may be reached by phone at 240-200-5176 or by email at MDOT-MAA-ANZ@assedutic.com.

Baltimore Sun March 8, 2026 39697

PUBLIC NOTICE
Maryland Department of Transportation Maryland Aviation Administration

The Maryland Aviation Administration (MAA) will conduct a **Public Workshop and Public Hearing** in accordance with the Annotated Code of Maryland, Transportation Article, Section 5-806 (b), regarding the proposed Airport Noise Zone (ANZ) Update for **Martin State Airport (MTN).**

Wednesday, March 18, 2026
6:00 p.m. to 8:00 p.m.
Martin State Airport, Hangar 4
701 Wilson Point Rd, Middle River, MD 21220

The purpose of the **Public Workshop and Public Hearing** is to allow interested individuals the opportunity to learn about the ANZ, ask questions, and submit formal comments. The MTN ANZ will be incorporated into the Code of Maryland Regulations (COMAR).

The session will feature contour maps illustrating the existing and proposed boundaries of the MTN ANZ, along with an overview of the ANZ update process. The material will be presented in an open-house format with display boards, followed by a live informational presentation at 6:30 p.m. MAA representativis will be available to answer questions and discuss points of interest throughout the session. Afterwards, attendees will have the opportunity to submit formal comments, which will be recorded by a hearing officer.

Written statements, in lieu of or in addition to oral or recorded comments at the hearing, may be submitted until April 20, 2026, to BRineer@bwiairport.com. The MTN ANZ document is available on the MAA website: https://marylandaviation.com/environmental/airport-noise/. Members of the public who cannot access the document online can find it at select local libraries or contact the Outreach Team (see below) to request accommodations.

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Baltimore Sun March 8, 2026 39719

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9 Mar 2026

The Baltimore Sun Media Group

By _____

THE BALTIMORE SUN MEDIA GROUP

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Baltimore, MD 21202
tel: 410-539-7700

PUBLIC NOTICE
Maryland Department of Transportation Maryland Aviation Administration

The Maryland Aviation Administration (MAA) will conduct a **Public Workshop and Public Hearing** in accordance with Section 5-806 (b) of the Annotated Code of Maryland Transportation Article, regarding the proposed Airport Noise Zone (ANZ) Update for **Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall).**

Thursday, March 19, 2026
3:00 p.m. to 5:00 p.m. and 6:00 p.m. to 8:00 p.m.
Maryland Aviation Administration Building 991
Corporate Blvd, Linthicum Heights, MD 21090

The purpose of the **Public Workshop and Public Hearing** is to allow interested individuals the opportunity to learn about the ANZ, ask questions, and submit formal comments. The BWI Marshall ANZ will be incorporated into the Code of Maryland Regulations (COMAR).

The workshop and hearing will be held in two identical sessions: 3:00–5:00 p.m. and 6:00–8:00 p.m. to accommodate the public's schedules. The sessions will feature noise contour maps illustrating the existing and proposed boundaries of the BWI Marshall ANZ, along with an overview of the ANZ update process. The material will be presented in an open-house format with informational display boards. MAA representatives will be available to answer questions and discuss points of interest throughout the session. Attendees will have the opportunity to submit formal comments throughout the event, which will be recorded by a hearing officer.

Written statements, in lieu of or in addition to oral or recorded comments at the hearing, may be submitted until April 20, 2026, to BRineer@bwiairport.com. The BWI Marshall ANZ draft document is available on the MAA website: https://marylandaviation.com/environmental/airport-noise/. Members of the public who cannot access the document online can find it at selected local libraries or contact the Outreach Team (see below) to request accommodations.

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THE BALTIMORE SUN MEDIA GROUP

509 S. Exeter St, Suite 300,
Baltimore, MD 21202
tel: 410-539-7700

phone at 240-200-5176 or by email at MDOT-MAA-ANZ@assedollc.com.

CAP 12/001 March 9, 2026 39706

LEGAL NOTICES

NOTICE OF PUBLIC HEARING UPON REQUEST

For Request of Federal and/or State Capital and Operating Assistance related to Large Urban; DHR TANF; ADA; SSTAP funding programs; and Ridesharing Funding for the Anne Arundel County Office of Transportation.

Applicant: Anne Arundel County Office of Transportation

Service Area: Anne Arundel County, Maryland

Program of Projects: The Anne Arundel County Office of Transportation contracts a Rideshare Coordinator responsible for administering the County Rideshare Program and selected operators to provide bus and paratransit service to the citizens of Anne Arundel County.

Budget and Financing: Anne Arundel County is requesting Federal and State capital and operating assistance related to Large Urban; DHR TANF; ADA; SSTAP funding programs; and Ridesharing Program funding. Project financing includes funds being applied for from the Maryland Department of Transportation Maryland Transit Administration (MDOT MTA) and the Federal Transit Administration (FTA).

Opportunity for a Public Hearing: A three-week period from the date of publication will be established during which interested persons may submit a written request for a public hearing on the Program of Projects and budget. Requests for a public hearing, written statements, exhibits, and comments may be submitted to the Anne Arundel County Office of Transportation by email at tmcg00@aacounty.org prior to the end of the three-week request period.

If no requests for a public hearing are received within the established period, a letter stating that no requests for a public hearing were received will be included as part of the application record.

Hearing Location:
Transportation Conference Room
Heritage Office Complex
2664 Riva Road, 1st Floor
Annapolis, MD 21401

Hearing Date and Time:
April 7, 2026 6:00 PM – 8:00 PM

Accommodations Statement: Anyone needing special accommodations must contact Crystal McGill-Belk at 410-222-7440 or by email at tmcg00@aacounty.org at least seven (7) days in advance of the event. TTY users may dial Maryland Relay 7-1-1. All materials are available in alternative formats upon request.

CAP 3/041 March 7 through March 28 39043

NATIONWIDE LIEN & RECOVERY INC, will sell at Public Auction for storage, repairs and other lawful charges, as agent for the undersigned Lienor's on 03/24/2026 at 11:00 A.M. at 468 Colonial Ridge Lane, Arnold, MD 21012. Inspection 1 week prior at Lienor's location. Terms: Cash or Bank Check +12% buyer premium. The Lienor reserves the right to bid. If you have an interest in any vehicle/vessel listed please visit www.lient.com for more information. **6340:** 2022 CHEVROLET VIN: 1G1ZC5ST9NF179602 **6352:** 2004 BMW VIN: WBAEV53454KM07354 **6353:** 2021 MERCEDES-BENZ VIN: 4JGFD6BB2MA986954 **6541:** 2021 KIA VIN: 5XXG64J29MG057365 **8542:** 2015 NISSAN VIN: 1N4AL3AP1FC574248 **8569:** 2002 FORD VIN: 1FAHP60A92Y109710 **10526:** 2017 MITSUBISHI VIN: JA4AZ3A38KZ038103 **10532:** 2019 FREIGHTLINER VIN: 3FVACWFCXKHR71645 **10533:** 2007 FREIGHTLINER VIN: 4UZAANDP0XCZ59779 **10534:** 2014 CHEVROLET VIN: 2G1FZ1EP9E9802060 **10535:** 1968 PONTIAC VIN: 223378U148042 **10536:** 2011 FORD VIN: 1FDUF5GY9BEA92599 **10537:** 2007 MINI VIN: WMWMF93577TJ68657 **10539:** 2024 HONDA VIN: 1FMFU2H88RED11260 **10540:** 2023 DODGE VIN: 1G4HD48G4PC598194 **10541:** 2010 CADILLAC VIN: 1G6DE5EG0A0141838 **10542:** 2019 HARLEY DAVIDSON VIN: 1HDEYJJ19MC014274 **10543:** 2020 JEEP VIN: 1C4HJXDG2LW154900 **10544:** 2019 MAZDA VIN: JM1DKFC78K1403818 NATIONWIDE LIEN & RECOVERY INC, will sell at Public Auction for storage, repairs and other lawful charges, as agent for the undersigned Lienor on 03/24/2026 at 10:00 A.M. at **468** Colonial Ridge Lane, Arnold, MD 21012. Terms: Same as above. ONE HARBOR, INC., 430 GREENLAND BEACH RD, BALTIMORE: **3224V** 1986 52 YACHTS 28FT IN $5,450.00 MD 6003 AP SSLIP610687SG LIBERTY MARINA LP, 64 OLD SOUTH RIVER RD, EDGEWATER: **6356V** 2001 CRUISERS 30FT IN $4,709.00 MD 3105 BK CRSCA060101 **6355V** 1986 SILVERTON 40FT IN $6,009.00 MD4504CR STNA005ZC686 **6356V** 2013 EURONAUTICS 21FT TN $14,500.00 MD 3089 CD EUN2E1070313 **6357V** 1996 BAYLINER 34FT GN $5,124.00 MD 3125 BE BLJA1BEEVN807 LIBERTY MARINA LP, 64 OLD SOUTH RIVER RD, EDGEWATER AUCTIONEER 4008967 P:410.626.7370 SERVICE@UENT.COM WWW.UENT.COM

CAP 12/004 March 9 & 16 39776

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PUBLIC NOTICE

Maryland Department of Transportation Maryland Aviation Administration

The Maryland Aviation Administration (MAA) will conduct a **Public Workshop and Public Hearing** in accordance with Section 5-806 (b) of the Annotated Code of Maryland Transportation Article, regarding the proposed Airport Noise Zone (ANZ) Update for **Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall).**

Thursday, March 19, 2026
3:00 p.m. to 5:00 p.m. and 6:00 p.m. to 8:00 p.m.
Maryland Aviation Administration Building 991
Corporate Blvd, Linthicum Heights, MD 21090

The purpose of the **Public Workshop and Public Hearing** is to allow interested individuals the opportunity to learn about the ANZ, ask questions, and submit formal comments. The BWI Marshall ANZ will be incorporated into the Code of Maryland Regulations (COMAR).

The workshop and hearing will be held in two identical sessions: 3:00–5:00 p.m. and 6:00–8:00 p.m. to accommodate the public's schedules. The sessions will feature noise contour maps illustrating the existing and proposed boundaries of the BWI Marshall ANZ, along with an overview of the ANZ update process. The material will be presented in an open house format with informational display boards. MAA representatives will be available to answer questions and discuss points of interest throughout the session. Attendees will have the opportunity to submit formal comments throughout the event, which will be recorded by a hearing officer.

Written statements, in lieu of or in addition to oral or recorded comments at the hearing, may be submitted until April 20, 2026, to BRincer@bwiairport.com. The BWI Marshall ANZ draft document is available on the MAA website: https://marylandaviation.com/environmental/airport-noise/. Members of the public who cannot access the document online can find it at selected local libraries or contact the Outreach Team (see below) to request accommodations.

ADA and Limited English Proficiency Compliance Notice:

Individuals planning to attend the Public Workshop and Public Hearing who require auxiliary aids, services, or other accommodations, or who have limited ability to speak or understand English and wish to receive interpretation or translation services, are encouraged to contact the Outreach Team at least 48 hours in advance of the meeting. The Outreach Team may be reached by phone at 240-200-5176 or by email at MDOT-MAA-ANZ@asuedolic.com.

CAP 12/009 March 9, 2026 39706



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Dear Information Officer,

The Maryland Aviation Administration (MAA) will conduct a **Public Workshop and Public Hearing** in accordance with Section 5-806 (b) of the Annotated Code of Maryland Transportation Article, regarding the proposed Airport Noise Zone (ANZ) Update for **Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall).**

Enclosed is the ANZ Update document. We are providing these documents to local libraries for interested citizens to review before the public hearing. The Public Workshop and Public Hearing details are as follows:

Thursday, March 19, 2026
3:00 p.m. to 5:00 p.m. and 6:00 p.m. to 8:00 p.m.
Maryland Aviation Administration Building
991 Corporate Blvd, Linthicum Heights, MD 21090

Identified libraries where the information is available are included here (see reverse) and on the MAA website at https://marylandaviation.com/environmental/airport-noise/. Please make these documents available to the public for review.

Written statements regarding the document may be submitted until April 6, 2026, to BRineer@bwiairport.com. The draft BWI Marshall ANZ document is available on the MAA website https://marylandaviation.com/environmental/airport-noise/.

If you have any questions or would like to discuss the meeting in more detail, please contact the Outreach Team at 240-200-5176 or by email at MDOT-MAA-ANZ@assedollc.com. We look forward to seeing you there.

Sincerely,

Bruce Rineer
Manager, Noise Program Section
MAA - Office of Environmental Compliance and Sustainability

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2026 BWI ANZ UPDATE LOCAL LIBRARY LOCATIONS

ANNE ARUNDEL COUNTY

Glen Burnie Regional Library
791 Eastway
Glen Burnie, MD 21060

Linthicum Community Library
400 Shipley Road
Linthicum Heights, MD 21090

Riviera Branch Community Library
1130 Duvall Hwy
Pasadena, MD 21122

Severn Community Library
2624 Annapolis Road
Severn, MD 21144

Severna Park Library
45 McKinsey Road
Severna Park, MD 21146

BALTIMORE CITY

Brooklyn Branch Library
300 E Patapsco Ave
Baltimore, MD 21225

Brooklyn Park Community Library
1 East 11Th Avenue
Baltimore, MD 21225

BALTIMORE COUNTY

Arbutus Branch Library
855 Sulphur Spring Road
Halethorpe, MD 21227

Lansdowne Branch Library
500 3Rd Ave
Halethorpe, MD 21227

HOWARD COUNTY

Central Branch Library
10375 Little Patuxent Pkwy
Columbia, MD 21044

East Columbia Branch Library
6600 Cradlerock Way
Columbia, MD 21045

Elkridge Branch Library
6540 Washington Blvd
Elkridge, MD 21075

Miller Branch Library2
9421 Frederick Road
Ellicott City, MD 21042

Savage Branch Library
9525 Durness Ln
Laurel, MD 20723

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2026 AIRPORT NOISE ZONE UPDATE

February 2026

I acknowledge receipt of the following documents:

1. Library Notice Document
2. ANZ Update Document
3. ANZ Map Set

Brooklyn Branch Library
Library Location

Gabriela Loren Guerrero
Print Name

Signature

2/18/26
Date of Signature

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Central Branch Library
Library Location

PENELOPE STOCKTON
Print Name

Signature

02/17/26
Date of Signature

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East Columbia Branch
Library Location

Teresa Rhoades
Print Name

Signature

2/17/26
Date of Signature

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I acknowledge receipt of the following documents:

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Howard County Library System - Elkridge Branch
Library Location

Justin Wineke
Print Name

Justin Wineke
Signature

2/17/26
Date of Signature

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1. Library Notice Document
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Glen Burnie Public Library 1010 Eastway Glen Burnie 21060
Library Location

Jayne Walters
Print Name

Signature

2/17/26
Date of Signature

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February 2026

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1. Library Notice Document
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3. ANZ Map Set

Linthicum Library
Library Location

Kathleen Riley
Print Name

Kathleen Riley
Signature

02/17/26
Date of Signature

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February 2026

I acknowledge receipt of the following documents:

1. Library Notice Document
2. ANZ Update Document
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_____
Library Location

Bruce Kweer
Print Name

Signature

2/17/26
Date of Signature

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3. ANZ Map Set

MILLER BRANCH, HCLS
Library Location

STEPHANIE DARBY
Print Name

Signature

2/17/26
Date of Signature

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2026 AIRPORT NOISE ZONE UPDATE

February 2026

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1. Library Notice Document
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3. ANZ Map Set

Riviera Branch
Library Location

Johanna Doty
Print Name

Johanna Doty
Signature

2/17/26
Date of Signature

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2026 AIRPORT NOISE ZONE UPDATE

February 2026

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1. Library Notice Document
2. ANZ Update Document
3. ANZ Map Set

Savage Branch Library Howard County MD
Library Location

Henry Staver
Print Name

Signature

2-17-26
Date of Signature

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2026 AIRPORT NOISE ZONE UPDATE

February 2026

I acknowledge receipt of the following documents:

1. Library Notice Document
2. ANZ Update Document
3. ANZ Map Set

SEVERN
Library Location

Ellie Mullen
Print Name

Signature

02/17/26
Date of Signature

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2026 AIRPORT NOISE ZONE UPDATE

February 2026

I acknowledge receipt of the following documents:

1. Library Notice Document
2. ANZ Update Document
3. ANZ Map Set

Severna Park Library - AACPL
Library Location

Samantha Zline
Print Name

Signature

2/17/26
Date of Signature

PO Box 8766, BWI Airport, Maryland 21240-0766 | 410.859.7100 | 800.435.9294 | Maryland Relay TTY 410.859.7727 | marylandaviation.com

E.4 Invitations

From: MDOT-MAA-ANZ@assedollc.com
Sent: 12/18/2025
To: Bruce Rineer
Subject: Save The Date: MAA BWI Marshall Airport Public Information Meeting and Hearing



BWI MARSHALL AIRPORT

PUBLIC INFORMATION
MEETING AND HEARING

Wednesday, February 11, 2026
3-5 pm and 6-8 pm
Maryland Aviation Administration Building
991 Corporate Blvd, Linthicum Heights, MD 21090

Thank you,

BWI Marshall and Martin State Airport Noise Zone
Outreach Team
Phone: 240-200-5176
https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/
https://marylandaviation.com/environmental/airport-noise/martin-state-airport-noise-zone/

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

From: MDOT-MAA-ANZ@assedollc.com
Sent: 12/19/2025
To: Bruce Rineer
Subject: Save The Date Clarification: MAA BWI Marshall Airport Public Information Meeting and Hearing

We apologize for the confusion regarding the meeting month in our previous email. The correct month is February.



Wednesday, February 11, 2026
3-5 pm and 6-8 pm
Maryland Aviation Administration Building
991 Corporate Blvd, Linthicum Heights, MD 21090
More details to come!

Thank you,

BWI Marshall and Martin State Airport Noise Zone
Outreach Team
Phone: 240-200-5176
https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/
https://marylandaviation.com/environmental/airport-noise/martin-state-airport-noise-zone/

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

From: MDOT-MAA-ANZ@assedollc.com
Sent: 01/29/2026
To: Bruce Rineer
Subject: Change of Date: BWI Marshall Airport Public Workshop/Hearing

Dear BWI SAC member,

Please note that the date for the previously announced **Public Workshop and Public Hearing** has changed.
New Date: March 19, 2026
Time: 3:00 - 5:00 p.m. and 6:00 - 8:00 p.m. (Two identical sessions to accommodate schedules)
Location: Maryland Aviation Administration Building, 991 Corporate Blvd, Assembly room A&B



All other details remain the same. We apologize for any inconvenience this change may cause and appreciate your understanding.
The ANZ draft document is available for review on the Maryland Aviation website
https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/
Thank you for your continued interest and participation.

Sincerely,

BWI Marshall and Martin State Airport Noise Zone
Outreach Team
Phone: 240-200-5176
https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/
https://marylandaviation.com/environmental/airport-noise/martin-state-airport-noise-zone/

From: MDOT-MAA-ANZ@assedollc.com
Sent: 03/09/2026
To: Bruce Rineer
Subject: BWI Marshall Airport Public Workshop/Hearing Invitation
Attachments: 2026_03-09 BWI Workshop SAC Invite FINAL.pdf

Dear SAC Member,

The Maryland Aviation Administration (MAA) is updating the **2025 Airport Noise Zone (ANZ)** for **BWI Marshall Airport**, and we are seeking input from key stakeholders like you!

Your participation is essential to this process, and we appreciate your engagement. *Please note that this will be the last meeting for this process.* Please find attached the invitation with details about the upcoming **Public Workshop and Public Hearing**.

Date: March 19, 2026
Time: 3:00 - 5:00 p.m. and 6:00 - 8:00 p.m. (Two identical sessions to accommodate schedules)
Location: Maryland Aviation Administration Building, 991 Corporate Blvd, Assembly room A&B

Thank you,

BWI Marshall and Martin State Airport Noise Zone
Outreach Team
Phone: 240-200-5176
https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/
https://marylandaviation.com/environmental/airport-noise/martin-state-airport-noise-zone/

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

Wes Moore
Governor
Aruna Miller
Lieutenant Governor
Kathryn Thomson
Acting Secretary
Shannetta R. Griffin, P.E.
Executive Director/CEO

March 09, 2026

Dear SAC Member,

The Maryland Aviation Administration (MAA) will conduct a **Public Workshop and Public Hearing** in accordance with the Annotated Code of Maryland, Transportation Article, Section 5-806 (b), regarding the proposed Airport Noise Zone (ANZ) Update for **Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall).**

Thursday, March 19, 2026
3:00 p.m. to 5:00 p.m. and 6:00 p.m. to 8:00 p.m.
Maryland Aviation Administration Building
991 Corporate Blvd, Linthicum Heights, MD 21090

The purpose of the **Public Workshop and Public Hearing** is to allow interested individuals the opportunity to learn about the ANZ, ask questions, and submit formal comments. The BWI Marshall ANZ will be incorporated by reference into the Code of Maryland Regulations (COMAR) and will then be used to control incompatible land development.

The workshop and hearing will be held in two identical sessions: 3:00–5:00 p.m. and 6:00–8:00 p.m. to accommodate the public's schedules. The sessions will feature noise contour maps illustrating the existing and proposed boundaries of the BWI Marshall ANZ, along with an overview of the ANZ update process. The material will be presented in an open-house format with informational display boards. MAA representatives will be available to answer questions and discuss points of interest throughout the session. Attendees will have the opportunity to submit formal comments throughout the event, which will be recorded by a hearing officer.

Written statements, in lieu of or in addition to oral or recorded comments at the hearing, may be submitted until April 20, 2026, to BRineer@bwiairport.com. The BWI Marshall ANZ draft document is available on the MAA website: https://marylandaviation.com/environmental/airport-noise/. Members of the public who cannot access the document online can find it at selected local libraries or contact the Outreach Team (see below) to request accommodations.

If you have any questions or would like to discuss the meeting or accommodations in more detail, please contact the Outreach Team at 240-200-5176 or by email at MDOT-MAA-ANZ@assedollc.com. We look forward to seeing you there.

Sincerely,

Bruce Rineer, Manager
Noise Program Section
Office of Environmental Compliance and Sustainability

PO Box 8766, BWI Airport, Maryland 21240-0766 | 410.859.7100 | 800.435.9294 | Maryland Relay TTY 410.859.7727 | marylandaviation.com

From: MDOT-MAA-ANZ@assedollc.com
Sent: 03/18/2026
To: Bruce Rineer
Subject: Reminder: BWI Marshall Airport Public Workshop/Hearing

Good afternoon,

This is a friendly reminder about this week's **Public Workshop and Public Hearing** to discuss the **BWI Marshall Airport Noise Zone (ANZ) Update.** Community members are encouraged to attend and share their comments. This meeting is open to all.

Meeting Details:
Thursday, March 19, 2026, from 3:00 p.m. – 5:00 p.m. and 6:00 p.m. – 8:00 p.m.
(two identical sessions to accommodate schedules)
at the Maryland Aviation Administration Facilities, 991 Corporate Blvd., Linthicum Heights, MD 21090

If you have any questions, please contact our Outreach Team at 240-200-5176 or MDOT-MAA-ANZ@assedollc.com.

We look forward to your participation!

Regards,

Bruce Rineer
Manager, Noise Section
Maryland Aviation Administration
Office of Environmental Compliance and Sustainability
Division of Planning & Engineering

https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/
https://marylandaviation.com/environmental/airport-noise/martin-state-airport-noise-zone/

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

Reminder - BWI Marshall Airport ANZ Public Workshop/Hearing

From BWI eNews Express <maabwienewsexpress-mdot.state.md.us@shared1.ccsend.com>
Date Thu 3/19/2026 10:26 AM
To [redacted]

Public Workshop/Hearing

BWI Marshall Airport Noise Zone - Updated Studies and Public Workshop/Hearing Notice

MAA is updating the Airport Noise Zone (ANZ) and Noise Abatement Plan (NAP) for both Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall) and Martin State Airport (MTN).

MAA will conduct a Public Workshop and Public Hearing for the BWI Marshall Airport ANZ study pursuant to the Annotated Code of Maryland Transportation Article Section 5-806(b). The purpose of the Public Workshop and Public Hearing is to afford all interested persons the opportunity to learn, ask questions, and comment on the ANZ.

The Public Workshop and Public Hearing on the **BWI Marshall ANZ** is scheduled for **March 19, 2026 from 3:00 p.m. to 5:00 p.m. and 6:00 p.m. to 8:00 p.m.**

The Draft document for the study is available on the Maryland Aviation website at www.marylandaviation.com\noise.

BWI NOISE HOTLINE
410-859-7021

VISIT US AT
marylandaviation.com

Office of Environmental Compliance and Sustainability | Noise Program

BWI Thurgood Marshall Airport | P.O. Box 8766 | BWI Airport, MD 21240 US

Unsubscribe | Update Profile | Constant Contact Data Notice

E.5 Notification to Public Officials

Outlook

2026 BWI Marshall Airport Noise Zone (ANZ) Update

From George III. Robinson <GRobinson1@bwiairport.com>
Date Fri 3/13/2026 1:16 PM
To Sandy.Bartlett@house.maryland.gov <sandy.bartlett@house.maryland.gov>
Cc Tara McDaniel <TMcDaniel@bwiairport.com>

1 attachment (522 KB)
989183e5-53e2-43b0-bbd9-52a71fde65ae.png;

EMAIL NOTIFICATION: Delegate Sandy Bartlett

Dear Delegate Bartlett,

The Maryland Aviation Administration (MAA) is in the process of updating the Airport Noise Zone (ANZ) and Noise Abatement Plan (NAP) for Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall). We would like to advise you that MAA will conduct a Public Workshop and Public Hearing in accordance with the Annotated Code of Maryland Transportation Article Section 5-806 (b), regarding the proposed ANZ for BWI Marshall.

The purpose of the Public Workshop and Public Hearing is to allow all interested individuals the opportunity to learn about the ANZ, ask questions, and submit formal comments. The BWI Marshall ANZ will be incorporated by reference into the Code of Maryland Regulations (COMAR) and will then be used to control incompatible land development.

The Public Workshop and Public Hearing on the BWI Marshall ANZ is scheduled for two identical sessions on March 19, 2026, from 3:00 p.m. to 5:00 p.m. and 6:00 p.m. to 8:00 p.m., at MAA offices at 991 Corporate Blvd, Linthicum Heights. The information will be presented in an open house gallery-style format with informational display boards and a subtitled informational video shown on a continuous loop. The sessions will feature noise contour maps illustrating the existing and proposed ANZ boundaries, along with an overview of the ANZ update process. MAA representatives will be available to answer questions and discuss points of interest throughout the session. Attendees will have the opportunity to submit formal comments, which will be recorded by a hearing officer and accepted throughout the event. The Draft ANZ is posted for review at marylandaviation.com/noise.

If you have any questions or would like to discuss the meeting or accommodations in more detail, please contact the Outreach Team at 240-200-5176 or by email at MDOT-MAA-ANZ@assedollc.com. We look forward to seeing you there.

Sincerely,
George

MARYLAND DEPARTMENT OF TRANSPORTATION
Easy come, easy go.
BWI BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

George R. Robinson III
Legislative Affairs Manager
Maryland Aviation Administration (MAA)
Mobile | 667.967.8097
Email | Grobinson1@bwiairport.com

MAA - BWI AIRPORT Terminal Building: Upper Level
P.O. Box 8766, BWI Airport, MD 21240-0766
www.marylandaviation.com

Outlook

2026 BWI Marshall Airport Noise Zone (ANZ) Update

From George III. Robinson <GRobinson1@bwiairport.com>
Date Fri 3/13/2026 1:25 PM
To Beidle, Pamela Senator <pamela.beidle@senate.state.md.us>
Cc Tara McDaniel <TMcDaniel@bwiairport.com>

1 attachment (522 KB)
989183e5-53e2-43b0-bbd9-52a71fde65ae.png;

EMAIL NOTIFICATION: Senator Pam Beidle

Dear Senator Beidle,

The Maryland Aviation Administration (MAA) is in the process of updating the Airport Noise Zone (ANZ) and Noise Abatement Plan (NAP) for Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall). We would like to advise you that MAA will conduct a Public Workshop and Public Hearing in accordance with the Annotated Code of Maryland Transportation Article Section 5-806 (b), regarding the proposed ANZ for BWI Marshall. We previously delivered this notification to your Annapolis office on February 25th. This email serves as a friendly reminder.

The purpose of the Public Workshop and Public Hearing is to allow all interested individuals the opportunity to learn about the ANZ, ask questions, and submit formal comments. The BWI Marshall ANZ will be incorporated by reference into the Code of Maryland Regulations (COMAR) and will then be used to control incompatible land development.

The Public Workshop and Public Hearing on the BWI Marshall ANZ is scheduled for two identical sessions on March 19, 2026, from 3:00 p.m. to 5:00 p.m. and 6:00 p.m. to 8:00 p.m., at MAA offices at 991 Corporate Blvd, Linthicum Heights. The information will be presented in an open house gallery-style format with informational display boards and a subtitled informational video shown on a continuous loop. The sessions will feature noise contour maps illustrating the existing and proposed ANZ boundaries, along with an overview of the ANZ update process. MAA representatives will be available to answer questions and discuss points of interest throughout the session. Attendees will have the opportunity to submit formal comments, which will be recorded by a hearing officer and accepted throughout the event. The Draft ANZ is posted for review at marylandaviation.com/noise.

If you have any questions or would like to discuss the meeting or accommodations in more detail, please contact the Outreach Team at 240-200-5176 or by email at MDOT-MAA-ANZ@assedollc.com. We look forward to seeing you there.

Sincerely,
George

MARYLAND DEPARTMENT OF TRANSPORTATION
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George R. Robinson III
Legislative Affairs Manager
Maryland Aviation Administration (MAA)
Mobile | 667.967.8097
Email | Grobinson1@bwiairport.com

MAA - BWI AIRPORT Terminal Building: Upper Level
P.O. Box 8766, BWI Airport, MD 21240-0766
www.marylandaviation.com

Outlook

2026 BWI Marshall Airport Noise Zone (ANZ) Update

From George III. Robinson <GRobinson1@bwiairport.com>
Date Fri 3/13/2026 1:17 PM
To Mark.Chang@house.maryland.gov <mark.chang@house.maryland.gov>
Cc Tara McDaniel <TMcDaniel@bwiairport.com>

1 attachment (522 KB)
989183e5-53e2-43b0-bbd9-52a71fde65ae.png;

EMAIL NOTIFICATION: Delegate Mark Chang

Dear Delegate Chang,

The Maryland Aviation Administration (MAA) is in the process of updating the Airport Noise Zone (ANZ) and Noise Abatement Plan (NAP) for Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall). We would like to advise you that MAA will conduct a Public Workshop and Public Hearing in accordance with the Annotated Code of Maryland Transportation Article Section 5-806 (b), regarding the proposed ANZ for BWI Marshall.

The purpose of the Public Workshop and Public Hearing is to allow all interested individuals the opportunity to learn about the ANZ, ask questions, and submit formal comments. The BWI Marshall ANZ will be incorporated by reference into the Code of Maryland Regulations (COMAR) and will then be used to control incompatible land development.

The Public Workshop and Public Hearing on the BWI Marshall ANZ is scheduled for two identical sessions on March 19, 2026, from 3:00 p.m. to 5:00 p.m. and 6:00 p.m. to 8:00 p.m., at MAA offices at 991 Corporate Blvd, Linthicum Heights. The information will be presented in an open house gallery-style format with informational display boards and a subtitled informational video shown on a continuous loop. The sessions will feature noise contour maps illustrating the existing and proposed ANZ boundaries, along with an overview of the ANZ update process. MAA representatives will be available to answer questions and discuss points of interest throughout the session. Attendees will have the opportunity to submit formal comments, which will be recorded by a hearing officer and accepted throughout the event. The Draft ANZ is posted for review at marylandaviation.com/noise.

If you have any questions or would like to discuss the meeting or accommodations in more detail, please contact the Outreach Team at 240-200-5176 or by email at MDOT-MAA-ANZ@assedollc.com. We look forward to seeing you there.

Sincerely,
George

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BWI BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

George R. Robinson III
Legislative Affairs Manager
Maryland Aviation Administration (MAA)
Mobile | 667.967.8097
Email | Grobinson1@bwiairport.com

MAA - BWI AIRPORT Terminal Building: Upper Level
P.O. Box 8766, BWI Airport, MD 21240-0766
www.marylandaviation.com

Outlook

2026 BWI Marshall Airport Noise Zone (ANZ) Update

From George III. Robinson <GRobinson1@bwiairport.com>
Date Fri 3/13/2026 2:27 PM
To Ethan Hunt <exhunt23@aacounty.org>
Cc Tara McDaniel <TMcDaniel@bwiairport.com>

1 attachment (522 KB)
989183e5-53e2-43b0-bbd9-52a71fde65ae.png;

Hello, Mr. Hunt:

I hope all is well.

I wanted to reach out to ensure that you and the County Executive's team are aware of an upcoming action that will impact your constituents: we are updating the Airport Noise Zones (ANZ) and Noise Abatement Plans (NAP) at BWI Marshall. This email serves as a notification of the upcoming Public Workshops and Public Hearings.

The purpose of the Public Workshop and Public Hearing is to allow all interested individuals the opportunity to learn about the ANZ, ask questions, and submit formal comments. The BWI Marshall ANZ will be incorporated by reference into the Code of Maryland Regulations (COMAR) and will then be used to control incompatible land development.

The Public Workshop and Public Hearing on the BWI Marshall ANZ is scheduled for two identical sessions on March 19, 2026, from 3:00 p.m. to 5:00 p.m. and 6:00 p.m. to 8:00 p.m., at MAA offices at 991 Corporate Blvd, Linthicum Heights. The information will be presented in an open house gallery-style format with informational display boards and a subtitled informational video shown on a continuous loop. The sessions will feature noise contour maps illustrating the existing and proposed ANZ boundaries, along with an overview of the ANZ update process. MAA representatives will be available to answer questions and discuss points of interest throughout the session. Attendees will have the opportunity to submit formal comments, which will be recorded by a hearing officer and accepted throughout the event. The Draft ANZ is posted for review at marylandaviation.com/noise.

Sincerely,
George

MARYLAND DEPARTMENT OF TRANSPORTATION
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BWI BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

George R. Robinson III
Legislative Affairs Manager
Maryland Aviation Administration (MAA)
Mobile | 667.967.8097
Email | Grobinson1@bwiairport.com

MAA - BWI AIRPORT Terminal Building: Upper Level
P.O. Box 8766, BWI Airport, MD 21240-0766
www.marylandaviation.com

Outlook

2026 BWI Marshall Airport Noise Zone (ANZ) Update

From George III. Robinson <GRobinson1@bwiairport.com>
Date Fri 3/13/2026 2:21 PM
To Eva.Lewis@mail.house.gov <eva.lewis@mail.house.gov>
Cc Tara McDaniel <TMcDaniel@bwiairport.com>

1 attachment (522 KB)
989183e5-53e2-43b0-bbd9-52a71fde65ae.png;

Hello, Eva:

I hope all is well.

I wanted to reach out to ensure that you and the Congresswoman's team are aware of an upcoming action that will impact your constituents: we are updating the Airport Noise Zones (ANZ) and Noise Abatement Plans (NAP) at BWI Marshall. This email serves as a notification of the upcoming Public Workshops and Public Hearings.

The purpose of the Public Workshop and Public Hearing is to allow all interested individuals the opportunity to learn about the ANZ, ask questions, and submit formal comments. The BWI Marshall ANZ will be incorporated by reference into the Code of Maryland Regulations (COMAR) and will then be used to control incompatible land development.

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Sincerely,
George

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Email | Grobinson1@bwiairport.com

MAA - BWI AIRPORT Terminal Building: Upper Level
P.O. Box 8766, BWI Airport, MD 21240-0766
www.marylandaviation.com

Outlook

2026 BWI Marshall Airport Noise Zone (ANZ) Update

From George III. Robinson <GRobinson1@bwiairport.com>
Date Fri 3/13/2026 1:24 PM
To mike.rogers@house.maryland.gov <mike.rogers@house.maryland.gov>
Cc Tara McDaniel <TMcDaniel@bwiairport.com>

1 attachment (522 KB)
989183e5-53e2-43b0-bbd9-52a71fde65ae.png;

EMAIL NOTIFICATION: Delegate Mike Rogers

Dear Delegate Rogers,

The Maryland Aviation Administration (MAA) is in the process of updating the Airport Noise Zone (ANZ) and Noise Abatement Plan (NAP) for Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall). We would like to advise you that MAA will conduct a Public Workshop and Public Hearing in accordance with the Annotated Code of Maryland Transportation Article Section 5-806 (b), regarding the proposed ANZ for BWI Marshall. We previously delivered this notification to your Annapolis office on February 25th. This email serves as a friendly reminder.

The purpose of the Public Workshop and Public Hearing is to allow all interested individuals the opportunity to learn about the ANZ, ask questions, and submit formal comments. The BWI Marshall ANZ will be incorporated by reference into the Code of Maryland Regulations (COMAR) and will then be used to control incompatible land development.

The Public Workshop and Public Hearing on the BWI Marshall ANZ is scheduled for two identical sessions on March 19, 2026, from 3:00 p.m. to 5:00 p.m. and 6:00 p.m. to 8:00 p.m., at MAA offices at 991 Corporate Blvd, Linthicum Heights. The information will be presented in an open house gallery-style format with informational display boards and a subtitled informational video shown on a continuous loop. The sessions will feature noise contour maps illustrating the existing and proposed ANZ boundaries, along with an overview of the ANZ update process. MAA representatives will be available to answer questions and discuss points of interest throughout the session. Attendees will have the opportunity to submit formal comments, which will be recorded by a hearing officer and accepted throughout the event. The Draft ANZ is posted for review at marylandaviation.com/noise.

If you have any questions or would like to discuss the meeting or accommodations in more detail, please contact the Outreach Team at 240-200-5176 or by email at MDOT-MAA-ANZ@assedollc.com. We look forward to seeing you there.

Sincerely,
George

MARYLAND DEPARTMENT OF TRANSPORTATION
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BWI BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

George R. Robinson III
Legislative Affairs Manager
Maryland Aviation Administration (MAA)
Mobile | 667.967.8097
Email | Grobinson1@bwiairport.com

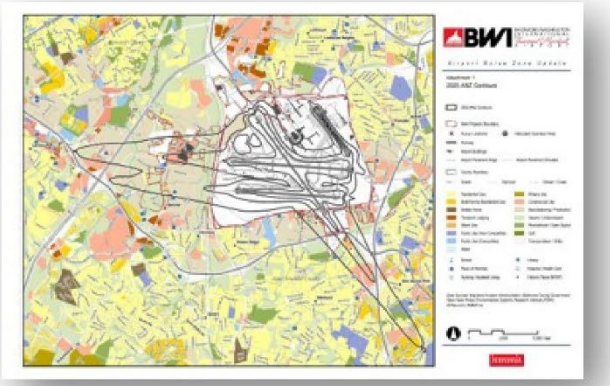
MAA - BWI AIRPORT Terminal Building: Upper Level
P.O. Box 8766, BWI Airport, MD 21240-0766
www.marylandaviation.com

Airport Noise Zone Update Studies

BWI Marshall and Martin State Airports

The **Maryland Aviation Administration** is updating the **Airport Noise Zone (ANZ)** and **Noise Abatement Plan (NAP)** for BWI Marshall Airport and Martin State Airports. The ANZ provides the means to identify and control incompatible land development around each Airport, and is a composite of the farthest extents of the annual Day-Night Average (DNL) contours for each of three study years (2025 base, 2030 forecast and 2035 forecast).

MAA will host a **public workshop and hearing** for each study in March – interested parties are encouraged to review the study and attend the workshop and hearing.



BWI Marshall Airport
Thursday, March 19th
3:00 – 5:00 or 6:00 – 8:00 p.m.
991 Corporate Blvd
Linthicum Heights, MD 21090



Martin State Airport
Wednesday, March 18th
6:00 – 8:00 p.m.
Martin State Airport, Hangar 4
701 Wilson Point Rd,
Middle River, MD 21220

For more Information:

BWI

MTN

MARYLAND DEPARTMENT OF TRANSPORTATION
MARYLAND AVIATION ADMINISTRATION

E.6 Public Workshop Materials

MARYLAND DEPARTMENT OF TRANSPORTATION

Please Sign In

Baltimore International Thurgood Marshall Airport Noise Zone Update
Public Hearing/Workshop
March 19, 2025
3-5pm Session

BWI BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

	NAME/TITLE	ORGANIZATION	PHONE	EMAIL	INITIALS
1.	Marcie P.			vze36jhj@verizon.net	MP
2.	Glen H	LSIA	410 340 7117	glen.haller@verizon.net	GH
3.	Ricky Powell-Graves	Sen. Alsobrooks			RPG
4.	Derek Heiss	Resident	443-995-4849	derek.heiss@gmail.com	DCH
5.	Kathleen Spinnato	Catonsville / Rollingwood	410-402-0722	kathspinn6@aol.com	
6.	Sam Meyer	AACo OPZ	410 222 4088	pzmeye22@aacounty.org	SWM
7.	Laura Donovan				
8.	Eva Lewis	Rep. Sarah Elfreth	202 921 8662	eva.lewis@mail.house.gov	ERL
9.	Renee AJ Lyons				
10.					

1 of 2

MARYLAND DEPARTM
OF TRANSPORTATIC

Please Sign In

Baltimore International Thurgood Marshall Airport Noise Zone Update
Public Hearing/Workshop
March 19, 2025
3-5 pm Session

BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

	NAME/TITLE	ORGANIZATION	PHONE	EMAIL	INITIALS
1.	Dr. Christine Sandoval	Resident of Severn	443-223-8456	christine.c.sandoval@gmail.com	CS
2.	JIMMY TADLOCK	Resident of Severn	443677 1705	netadlocks@hotmail.com	
3.	Kyle Roser	Resident of Severn	443-306-5935	roserK@hotmail.com	KR
4.	Doris Roser	Resident of Severn	443-851-7046	dorisroser@hotmail.com	
5.	DAN CRYAN	RESIDENT OF LINTHICUM	410 684 4982	DANCRYAN@MSN.COM	
6.	DANA PLAGMANN	FAA ATC	425-231-5837	BWIFACREP@gmail.com	
7.	LINDA + Bill LOVING	Resident Severn	410-551-0560		L.L.
8.	Howard Johnson				
9.	Michelle Holland	Linthicum resident	410 404 3899	Michelle.c.holland@gmail	MH
10.					

2 of 2

MARYLAND DEPARTM
OF TRANSPORTATIC

Please Sign In

Baltimore International Thurgood Marshall Airport Noise Zone Update
Public Hearing/Workshop
March 19, 2025
6-8pm Session

BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

	NAME/TITLE	ORGANIZATION	PHONE	EMAIL	INITIALS
1.	Dennis Schuman	Home Owner	410-852-2206	Schuman1274@gmail	DES
2.	Jimmy Pheasant	Home Owner	443-631-0313		JP
3.	Marjorie Deschenes	Provinces Civic Assn	410-551-7182	mardeschenes@hotmail.com	mkd
4.	Debbie Welker	Linthicum	301-580-7900		
5.	Don Gaither	Brooklyn Park	(410) 206-5080	dcg724@gmail.com	DG
6.		END			
7.					
8.					
9.					
10.					

MARYLAND DEPARTM
OF TRANSPORTATIC

Please Sign In

Baltimore International Thurgood Marshall Airport Noise Zone Update
Public Hearing/Workshop
March 19, 2025
6-8pm session

BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

	NAME/TITLE	ORGANIZATION	PHONE	EMAIL	INITIALS
1.	Rae Roe	self	443-722-7391	rae.roe915@gmail.com	
2.	Laura Donovan				
3.		END			
4.					
5.					
6.					
7.					
8.					
9.					
10.					

2 of 2

The 2025 BWI Airport Noise Zone (ANZ) Update

What is the BWI ANZ?

- The ANZ shows the largest possible extent of current and predicted noise exposure contours for the ten years following its development.
- As specific types of land use are limited within the ANZ, it is used to help control development that is incompatible with Day-Night Average Sound Levels (DNL) above 65 decibels.



What we are doing

The BWI ANZ team is currently completing the 2025 ANZ update in accordance with Maryland regulations.

This includes:

- An update to the ANZ map to reflect changes to flight paths and aircraft fleets.
- A review of the existing Noise Abatement Plan.
- A public meeting to review the ANZ and collect feedback and comments.

Why it matters to you

- Your input can help shape noise abatement plans and measures.
- The ANZ helps control incompatible land use development around the airport.

Maryland Airport Noise Zone (ANZ) Regulations

Maryland Environmental Noise Act of 1974

- "Provide a positive basis for abatement of existing noise problems in communities near airports and to prevent new noise problems."
- Maryland law requires MAA to complete an ANZ update approximately every 5 years.
- The certified ANZ consists of Day-Night Average Sound Level (DNL) contours at 65, 70, and 75 decibels.

Code of Maryland Regulations (COMAR)

Chapter 11.03.03

- Defines the prediction method to be used to develop noise contours of equal noise exposure.

Section 11.03.03.05

- Provides a process for permits for construction within the noise zone surrounding a state-owned airport.

ANZ Study Update

Airport Noise Zone (ANZ)	Noise Abatement Plan (NAP)
Provides the means to identify and control incompatible land development around BWI Marshall. Is a composite of the farthest extents of the annual Day-Night Average (DNL or Ldn) contours for each of the study years (2025 base, 2030 and 2035 forecast).	Prescribes measures to monitor, reduce, and/or eliminate incompatible land use areas within the ANZ to the extent possible while maintaining efficient airport operations.

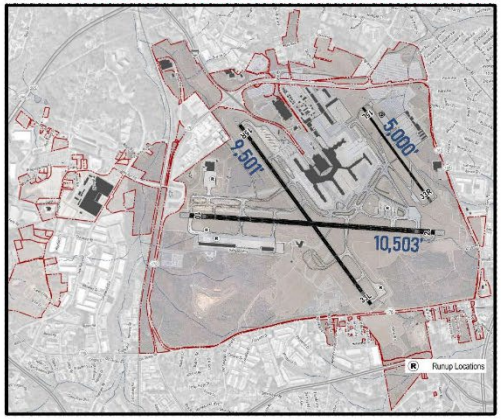
Airport Noise Zone (ANZ) Update Scope and Process

- Form and engage with Stakeholder Advisory Committee (SAC)
- Prepare base year, 5-year, and 10-year forecast noise contours
- Compile ANZ (composite of the three contour sets)
- Conduct land use inventory within ANZ
- Review existing Noise Abatement Plan (NAP)
- **Conduct public hearing and workshop**
- Update Code of Maryland Regulations (COMAR)

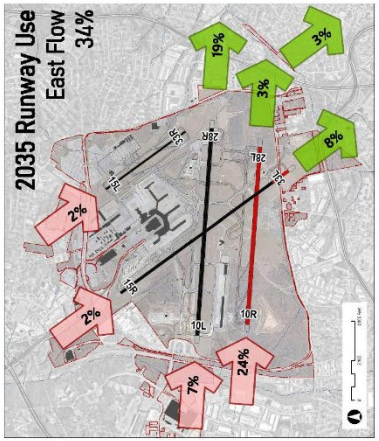


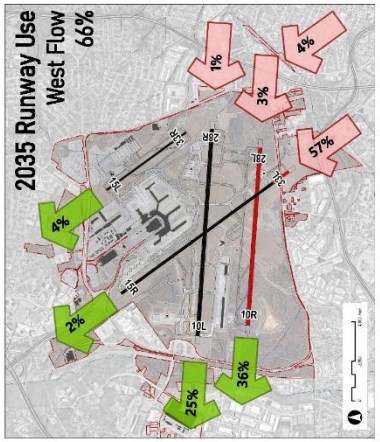
Airport Layout

Base Year (2025) and Five-Year (2030)

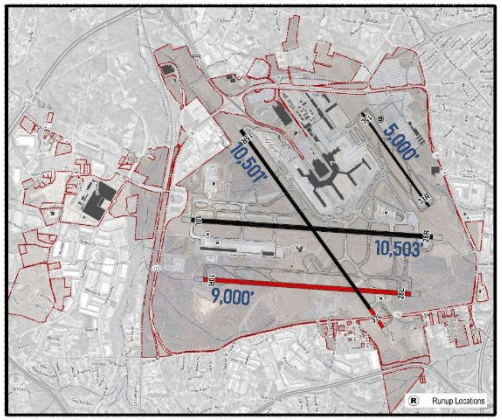


The 2030 forecast condition does not include any physical changes to runways or the helipad.

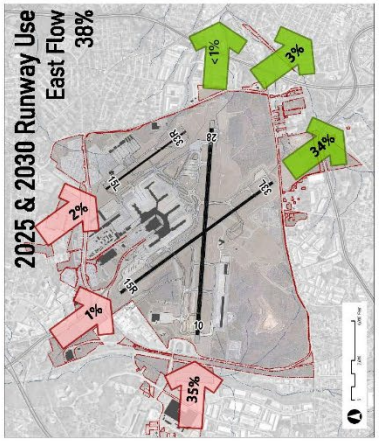


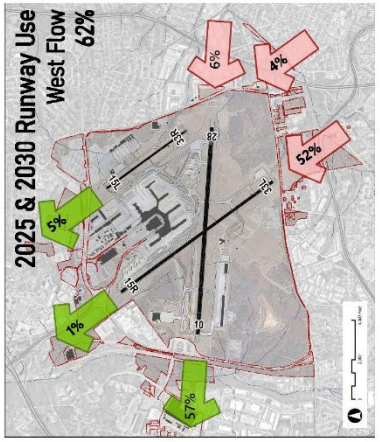


Ten-Year (2035)



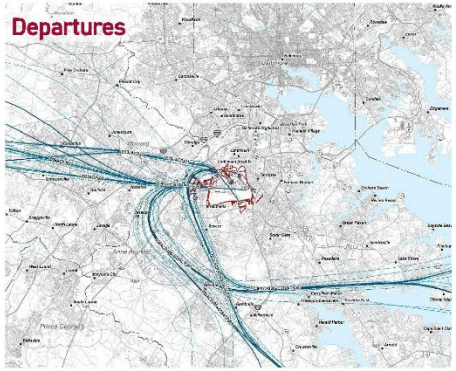
The ten-year 2035 forecast condition airport layout includes the Phase III improvements to the airfield as depicted in the BWI Marshall Airport Layout Plan (ALP), which includes a new planned runway parallel to Runway 10/28 and an extension of Runway 15R/33L. These potential changes would be subject to separate environmental review under the National Environmental Policy Act (NEPA).



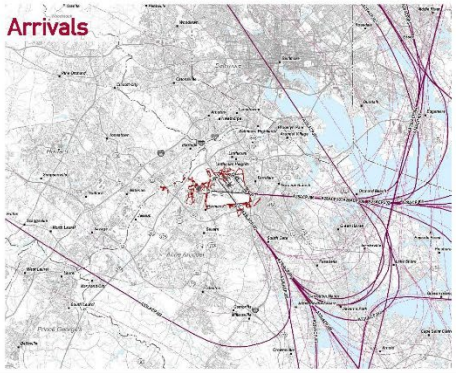


Passenger Jet Flight Tracks (2025 & 2030)

West Flow



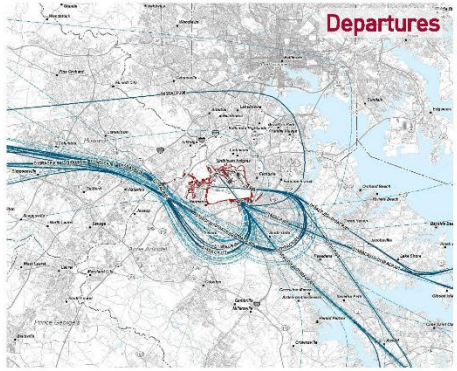
Modeled departure backbone track
Modeled departure dispersion track



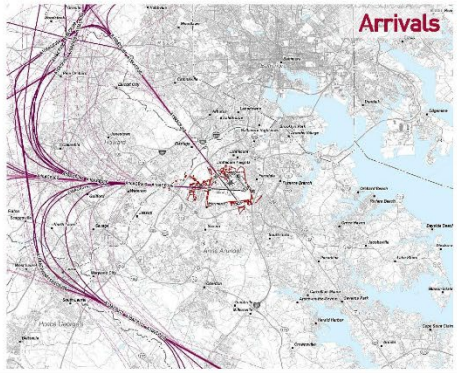
Modeled arrival backbone track
Modeled arrival dispersion track

Passenger Jet Flight Tracks (2025 & 2030)

East Flow



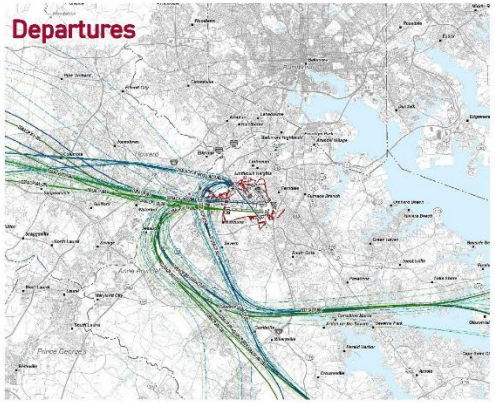
Modeled departure backbone track
Modeled departure dispersion track



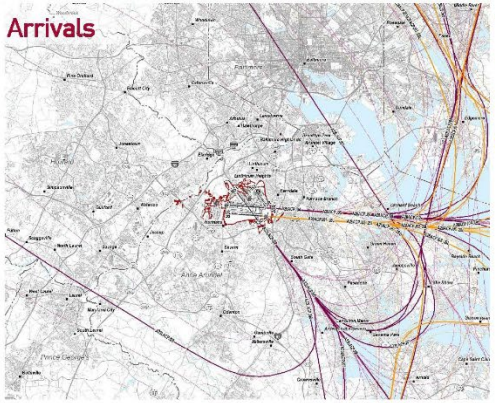
Modeled arrival backbone track
Modeled arrival dispersion track

Passenger Jet Flight Tracks (2035)

West Flow



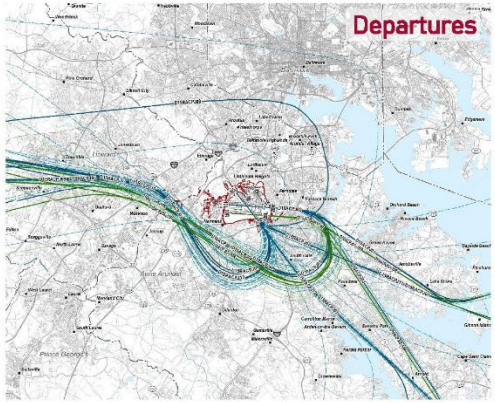
- Modeled departure backbone track
- Modeled departure dispersion track
- Forecast modeled departure backbone track
- Forecast modeled departure dispersion track



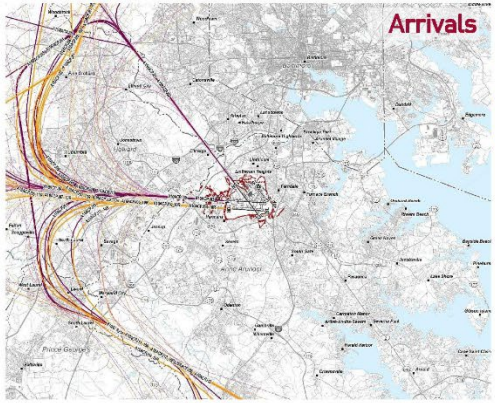
- Modeled arrival backbone track
- Modeled arrival dispersion track
- Forecast modeled arrival backbone track
- Forecast modeled arrival dispersion track

Passenger Jet Flight Tracks (2035)

East Flow



- Modeled departure backbone track
- Modeled departure dispersion track
- Forecast modeled departure backbone track
- Forecast modeled departure dispersion track



- Modeled arrival backbone track
- Modeled arrival dispersion track
- Forecast modeled arrival backbone track
- Forecast modeled arrival dispersion track

Annual Flight Operations

Scenario Year	Air Carrier	Air Taxi	General Aviation	Military	Total	Average Annual Daily Operations
2025	211,771	14,752	10,712	920	238,155	652.50
2030	238,385	15,612	12,340	920	267,257	732.12
2035	260,681	16,512	12,437	920	290,550	795.97

Source: FAA Terminal Area Forecast



Air Carrier Example
(Boeing 737-700)



Air Taxi Example
(Bombardier Challenger 600)

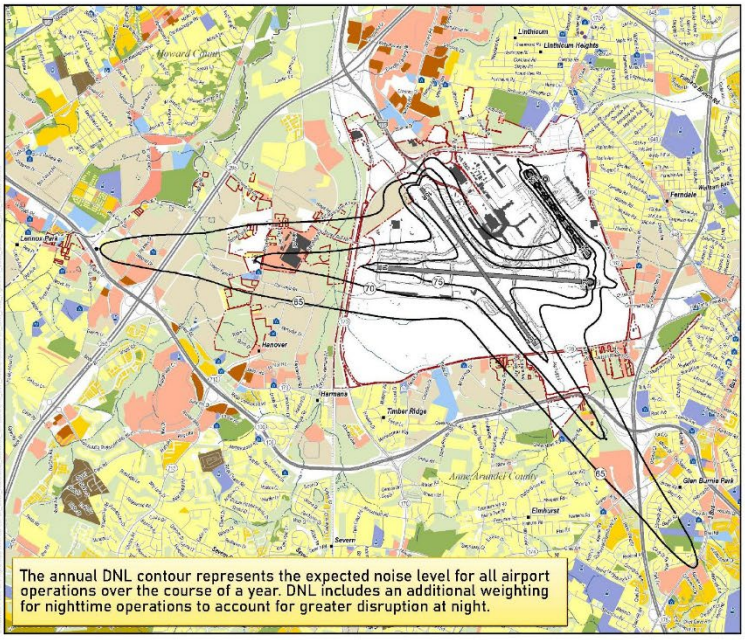


General Aviation Example
(Cessna 208 Caravan)



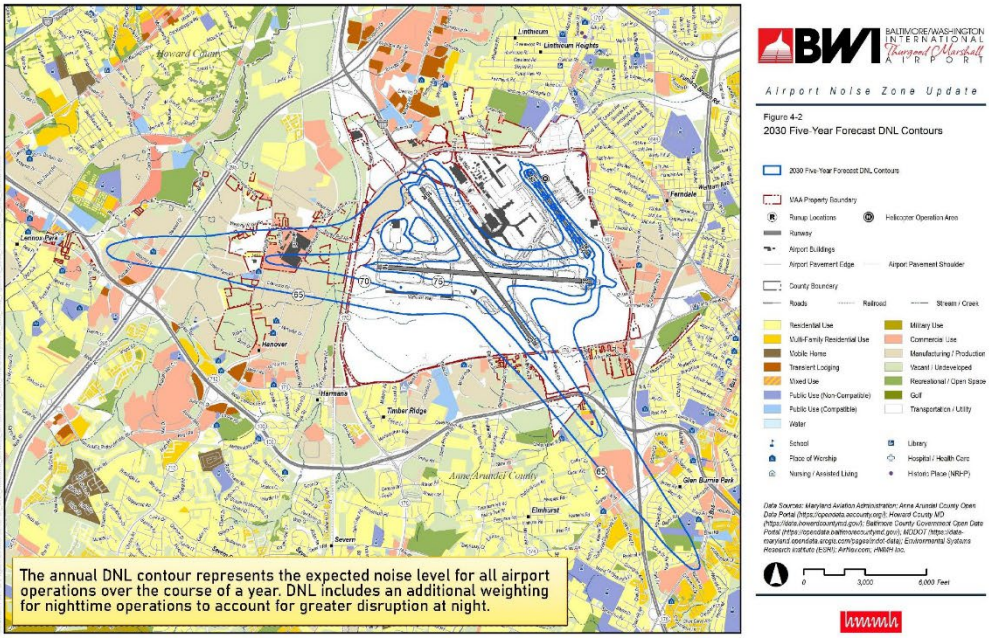
Military Example
(Northrop Talon T-38)

Base Year (2025) DNL Contours

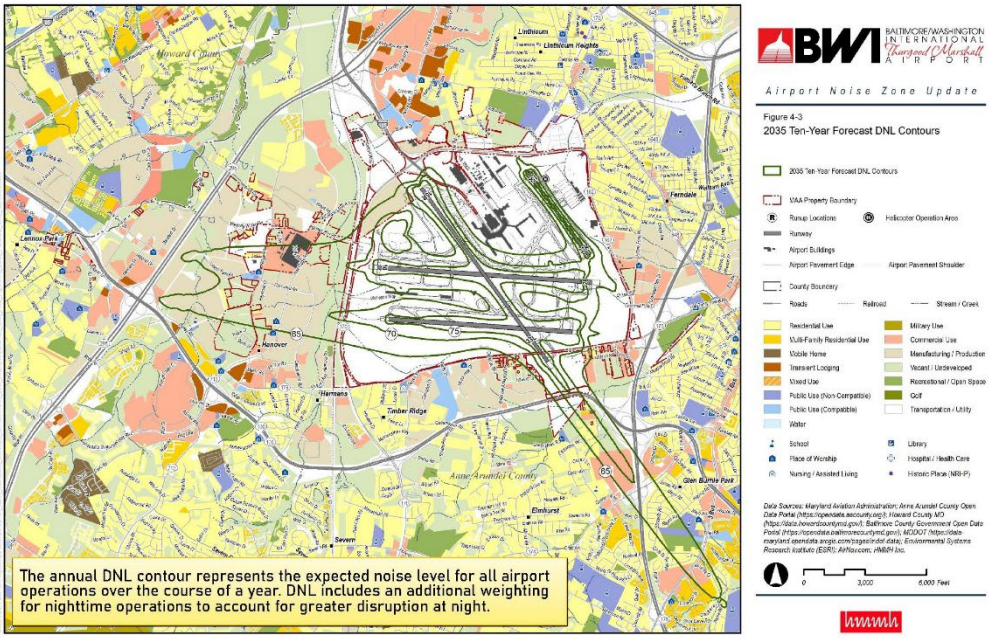




Five-Year (2030) Forecast DNL Contours



Ten-Year (2035) Forecast DNL Contours



DNL Contour Comparison

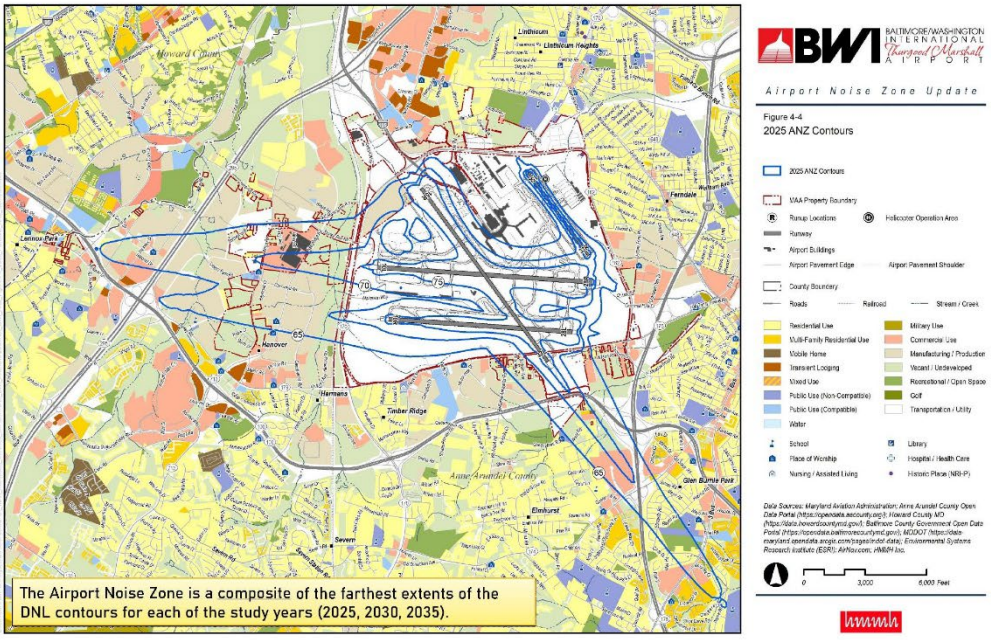
DNL Scenarios

	Residential Population			Residential Housing Units			Area Off Airport (acres)		
DNL Contour Level	2025	2030	2035	2025	2030	2035	2025	2030	2035
65-70 dB	1,017	995	1,598	354	340	589	1,031	878	891
70-75 dB	18	16	18	7	7	8	89	83	87
> 75 dB	0	0	0	0	0	0	2	1	1
Total	1,035	1,011	1,616	361	347	597	1,122	962	979

2025 ANZ

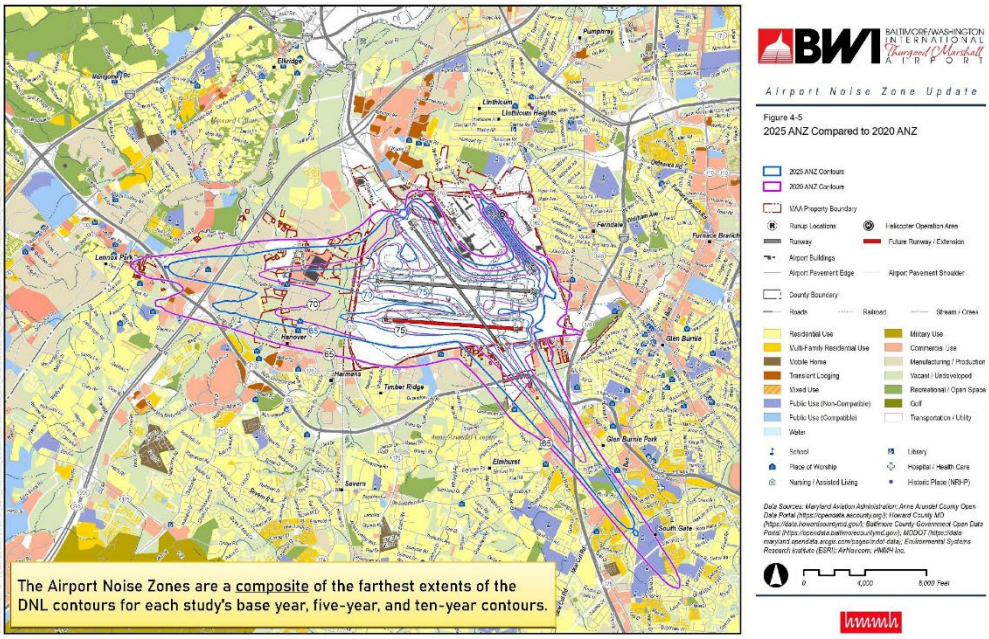
DNL Contour Level	Residential Population	Residential Housing Units	Area Off Airport (acres)
65-70 dB	1,685	628	1,277
70-75 dB	19	8	140
> 75 dB	0	0	2
Total	1,704	636	1,419

2025 BWI Airport Noise Zone



The Airport Noise Zone is a composite of the farthest extents of the DNL contours for each of the study years (2025, 2030, 2035).

2020 & 2025 Airport Noise Zone Comparison



Noise Abatement Plan Measures

Noise Abatement Measures

Departure Procedures:
Jet aircraft fly specific distances before commencing turns to maximize flights over compatible land uses

Arrival Procedures:
Attempt to keep arriving aircraft as high as possible and to take advantage of compatible land uses

Preferential Runway Use System:
Identifies preferred runways to minimize noise exposure

Control of Ground Based Noise Sources:
Efforts to minimize ground-based noise propagation

Programmatic Measures

Continued Monitoring and Annual Review:
Efforts to monitor the overall noise abatement program

Land Use Measures

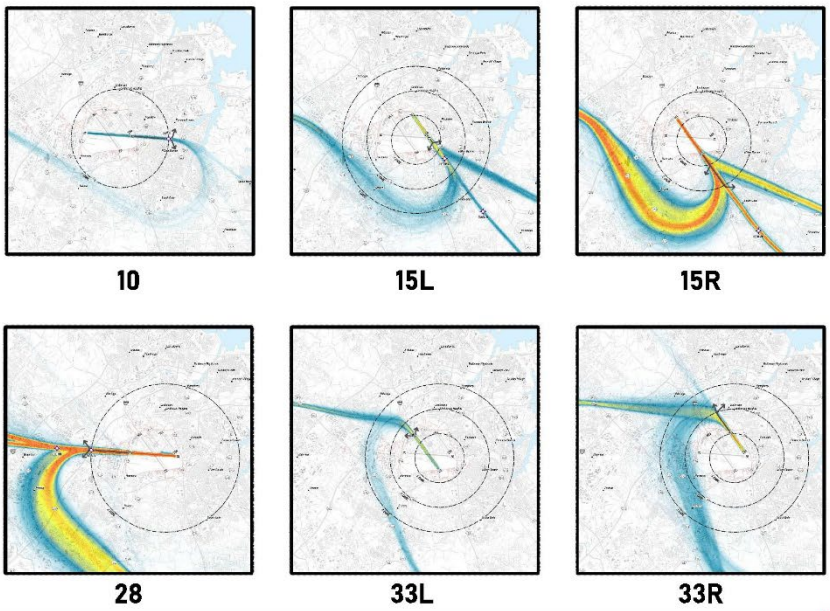
Control of Incompatible Development:
Includes the ANZ program, BAZA, and Noise Zone Notification in Real Estate transactions

Noise Assistance Programs:
For residents and schools in the ANZ, to reduce number of affected properties and noise impacts

Noise Abatement Elements (Departures)

Run-way	Turn Direction	Distance
10	All	2 DME or 1.7 nmi from runway departure end
15L	All	0.5 nmi from runway departure end
15R	Left	2 DME or 1.7 nmi from runway departure end
15R	Right	1 DME or 0.7 nmi from runway departure end
28	All	3 DME or 1.7 nmi from runway departure end
33L	All	Immediate
33R	N or E	1 nmi from runway departure end

DME = Distance Measuring Equipment
nmi = nautical mile(s)



Noise Abatement Elements (Arrivals)

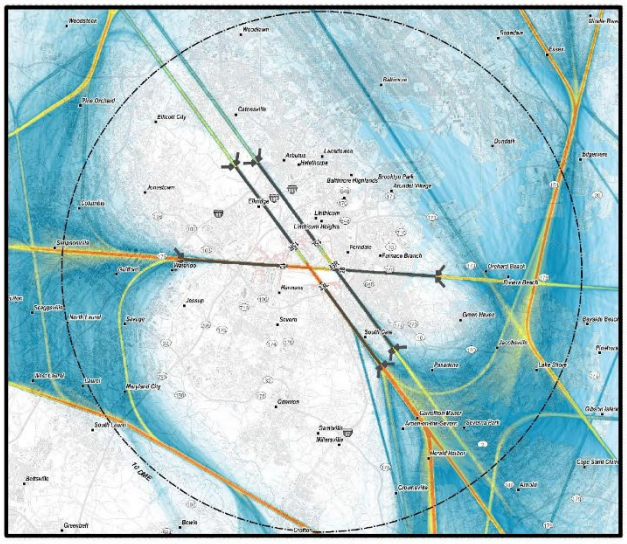
For Jets on Visual Approach

- Turn onto final approach minimum of 4 nmi from runway end
- Maintain 3,000 feet or above until 10 DME
- Remain at or above Instrument Landing System (ILS) or Visual Approach Slope Indicator (VASI)

Changes

- Removed Runway 33L Interstate Visual procedure

DME = Distance Measuring Equipment
nmi = nautical mile(s)



Ground-Based Noise Source Control

Run-up Restrictions

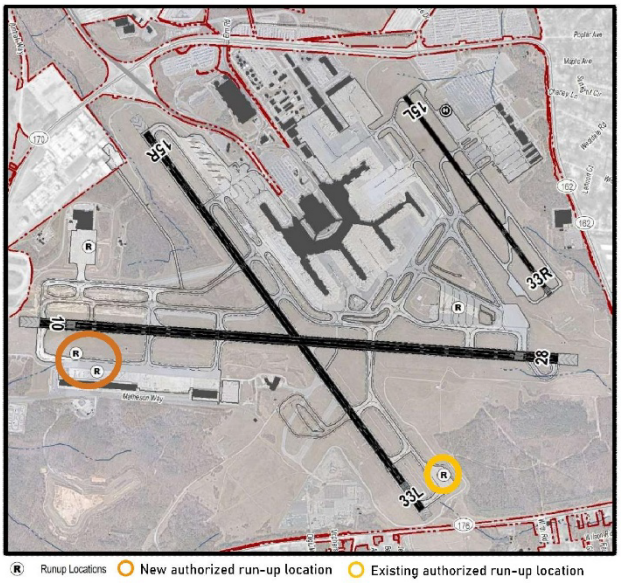
- Require permission from Airport Operations
- Allowed if failure to conduct run-up will delay passenger flight departure
- Total of 5 minutes in intervals 60 s or less
- Not authorized between 11 p.m. and 7 a.m.

Reverse Thrust

- Limited to military aircraft at remote parking spots
- Case-by-case approval by Airport Operations

Changes

- Removed Runway 10 run-up area
- Added run-up authorization at midfield cargo facility (Amazon contract carriers)



Additional Resources

Find the ANZ Document at the following places:

- Electronic copy on the BWI ANZ Project Website
  - https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/
- Printed copies at selected Anne Arundel, Howard, Baltimore County and Baltimore City library branches

Please provide comments by April 20, 2026

BWI ANZ Project Website

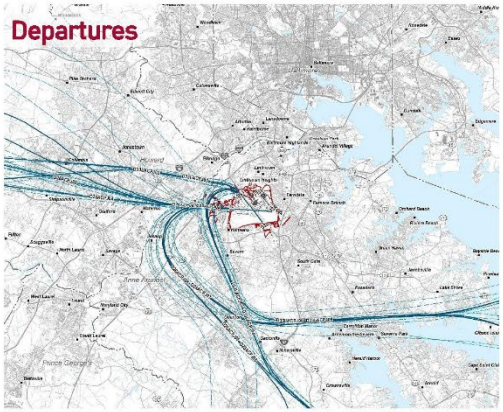
How to Comment:

Email Bruce Rineer: BRineer@bwiairport.com

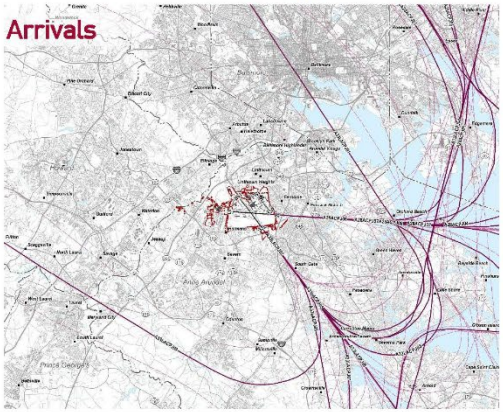
Speak to the Public Hearing Officer at **this meeting**

Passenger Jet Flight Tracks (2025 & 2030)

West Flow



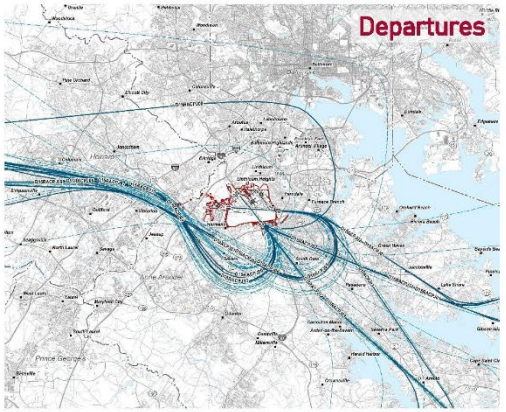
Modeled departure backbone track
Modeled departure dispersion track



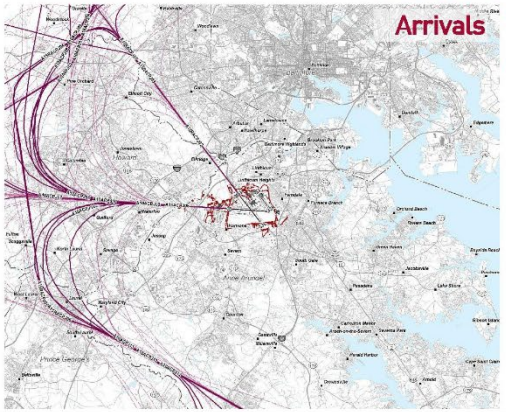
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Modeled arrival dispersion track

Passenger Jet Flight Tracks (2025 & 2030)

East Flow



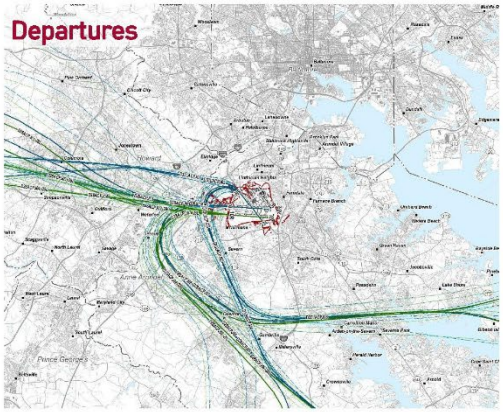
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Modeled departure dispersion track



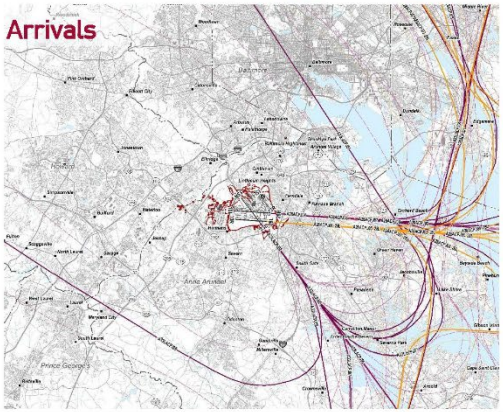
Modeled arrival backbone track
Modeled arrival dispersion track

Passenger Jet Flight Tracks (2035)

West Flow



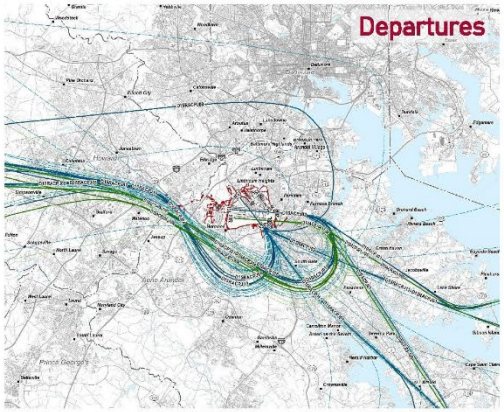
- Modeled departure backbone track
- Modeled departure dispersion track
- Forecast modeled departure backbone track
- Forecast modeled departure dispersion track



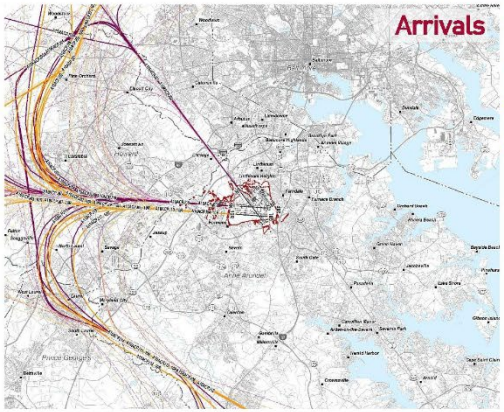
- Modeled arrival backbone track
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Passenger Jet Flight Tracks (2035)

East Flow



- Modeled departure backbone track
- Modeled departure dispersion track
- Forecast modeled departure backbone track
- Forecast modeled departure dispersion track



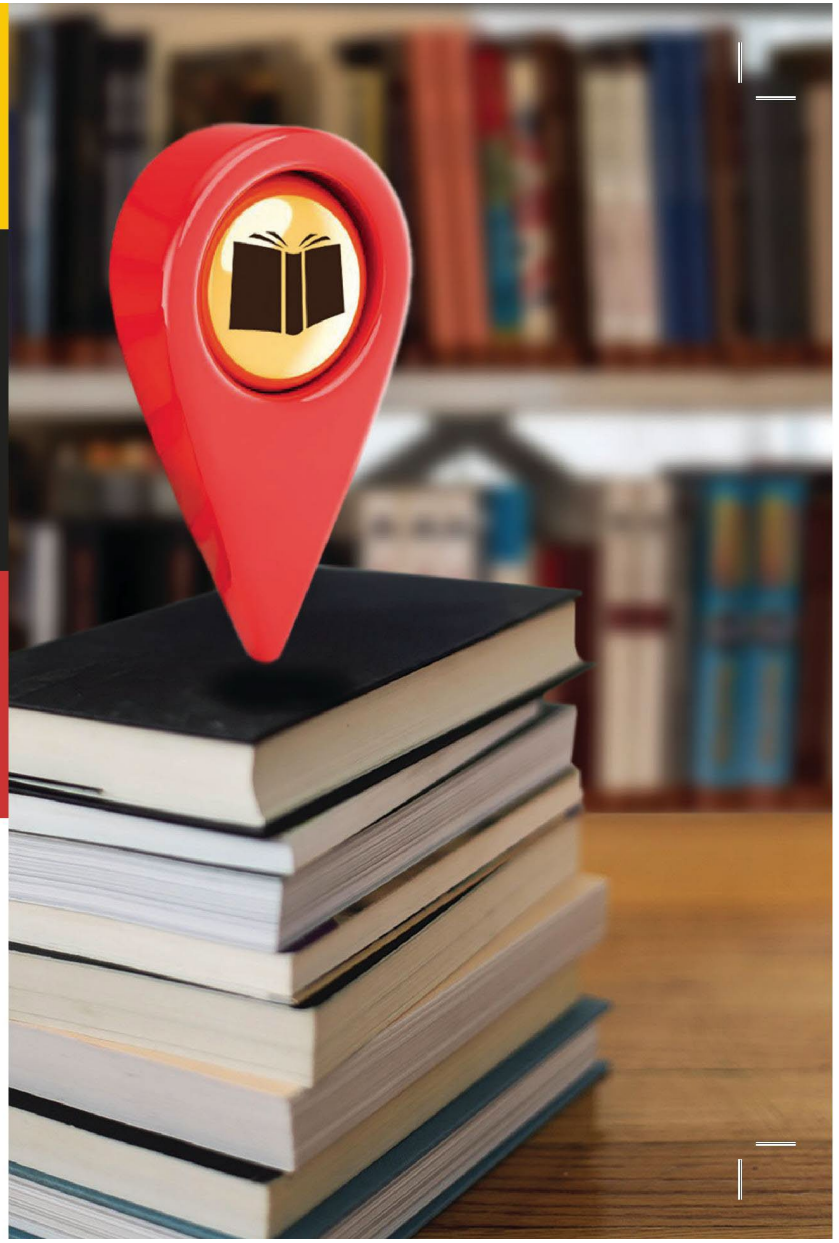
- Modeled arrival backbone track
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2025
BWI Thurgood Marshall Airport Noise Zone (ANZ)
UPDATE

Find the ANZ Update Document at the following places:

Electronic copy on the MAA Website:

https://marylandaviation.com/environmental/airport-noise/bwi-marshall-airport-noise-zone/



Printed copies at selected local libraries listed below.

ANNE ARUNDEL COUNTY

Glen Burnie Regional Library
791 East Wy.
Glen Burnie, MD 21060

Linthicum Community Library
400 Shipley Rd.
Linthicum Heights, MD 21090

Riviera Branch Community Library
1130 Duvall Hwy.
Pasadena, MD 21122

Severn Community Library
2624 Annapolis Rd.
Severn, MD 21144

Severna Park Library
45 McKinsey Rd.
Severna Park, MD 21146

BALTIMORE CITY

Brooklyn Branch Library
300 E Patapsco Ave.
Baltimore, MD 21225

Brooklyn Park Community Library
1 East 11th Ave.
Baltimore, MD 21225

BALTIMORE COUNTY

Arbutus Branch Library
855 Sulphur Spring Rd.
Halethorpe, MD 21227

Lansdowne Branch Library
500 3rd Ave.
Halethorpe, MD 21227

HOWARD COUNTY

Central Branch Library
10375 Little Patuxent Pkwy.
Columbia, MD 21044

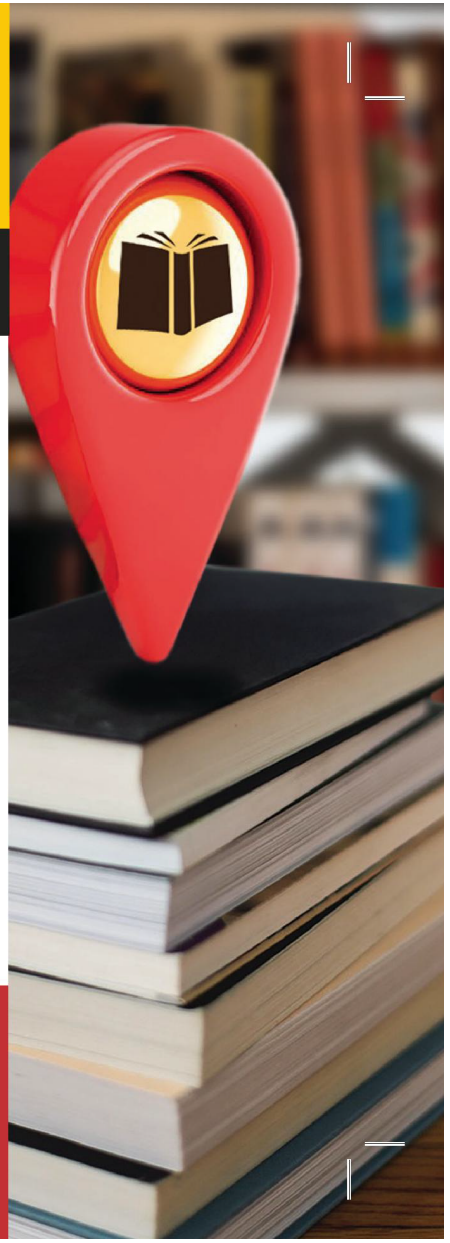
East Columbia Branch Library
6600 Cradlerock Wy.
Columbia, MD 21045

Elkridge Branch Library
6540 Washington Blvd.
Elkridge, MD 21075.

Miller Branch Library
9421 Frederick Rd.
Ellicott City, MD 21042

Savage Branch Library
9525 Durness Ln.
Laurel, MD 20723

Written formal comments, in lieu of or in addition to an oral or recorded comment at this hearing, may be submitted until **April 20, 2026**, by email to **BRineer@bwiairport.com**.



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Appendix F. Public Comments

Appendix F contains public comments and responses submitted on the Draft 2025 BWI Marshall Airport Noise Zone (ANZ) and Noise Abatement Plan (NAP). All comments were provided either via spoken testimony to the on-site Court Reporter and/or submitted as written testimony during the public meeting. No additional comments were received. The MAA has reviewed and considered all comments and has provided a written response herein. None of the comments affected the technical results of the ANZ study.

Nineteen unique individuals provided 21 comments. Seven comments were recorded by a court reporter during the public hearing, and the remaining comments were included in a document submitted by a commenter who attended the public hearing. Of the comments included in the packet, nine were copies of the same letter signed by 11 separate individuals.

Many commenters reside in Severn and are impacted by a recent Federal Aviation Administration (FAA) procedure change that MAA is attempting to remedy with the FAA. Other comments focused on the use of the day-night average sound level (DNL) metric and the bounds of the ANZ.

Table F-1 serves as both a summary and an index to the public comments received during the Draft ANZ comment period. Each commenter is assigned a commenter number. In the sections that follow the table, each commenter's full original comment is presented first. Bracketed comment numbers are inserted within each original comment and portions of the text are underlined to organize the comment into numbered topics for response purposes. Each number combines the commenter number with a subnumber, such as Comment 1.1. MAA responses to the numbered topics are provided after the commenter's full original comment.

Table F-1. Summary and Index of Public Comments Received for the 2025 BWI Marshall ANZ

Comment ID	Topic	Commenter
1.1	Noise monitor variability during banking and climbing departures	Doris Roser
1.2	Request to revise noise contour maps based on observed conditions	Doris Roser
1.3	Request for temporary portable noise monitoring in the neighborhood	Doris Roser
2.1	Support for neighborhood noise monitoring before future map updates	Kyle Roser
3.1	Increased flight concentration and departure pattern changes over Severn	Linda Loving
3.2	Question regarding tax credit eligibility for homes in the airport noise zone	Linda Loving
3.3	Concern about projected future noise increases by 2035	Linda Loving
4.1	Objection to using DNL as the primary aircraft noise metric	Laura Donovan

Comment ID	Topic	Commenter
5.1	Question about ANZ designation and eligibility for noise mitigation	Rae Roe
6.1	Concerns about aircraft maintenance run-up noise	Debbie Wellens
7.1	General support for the presentation and information provided	Don Gaither
8.1	Written submission contesting monitor placement and requesting neighborhood monitoring	Doris Roser
9.1	Written support for direct neighborhood monitoring and map accuracy	Kyle Roser
10-20.1	Request to extend the 65 DNL contour to include Athena Lane and nearby homes	Commenters 10–20
10-20.2	Noise monitor variability during banking and climbing departures	Commenters 10–20
10-20.3	Question about ANZ margin of error	Commenters 10–20
10-20.4	Question regarding model transparency	Commenters 10–20
10-20.5	Request for portable noise monitoring to validate banking and swing impacts	Commenters 10–20
21.1	Request to extend the 65 DNL contour to include Athena Lane and nearby homes	Jimmy Tadlock
21.2	Noise monitor variability during banking and climbing departures	Jimmy Tadlock
21.3	Request for portable noise monitoring	Jimmy Tadlock
21.4	Request for information regarding model validity	Jimmy Tadlock

COMMENTS AND RESPONSES

Commenter 1: Doris Roser

Submission Method: Hearing Court Reporter

Original Comment: *Good afternoon. My name is Doris Roser, and I am a resident of the Severn Corridor. I live at 8206 Athena Lane, Severn, Maryland, since 2002, and I'm fortunate to live in a close-knit neighborhood with many of the same neighbors still present since we moved in. I'm submitting a citizen observation packet in this orange folder for inclusion in its entirety in the official public record of this hearing.*

This packet contains statements from myself and my husband, as well as documented aircraft departure observations using publicly available WebTrack data. It includes structured flight lists, mapped screenshot flight path sequences across multiple noise monitors, and supporting documentation of real-world noise impacts over residential areas. It highlights both Hanover Hook and Belmont Hook departure patterns with noise monitor readings.

[Comment 1.1] *For example, the same banking and climbing flight may read below 65 decibels at Belmont Church Monitor at lower altitude under north wind conditions, while later readings above 65dB at the Hebron-Harman Elementary monitor in Hanover at higher altitude. After passing over Athena Lane near the center of the flight path, which is our neighborhood. This demonstrates that while aircraft noise remains clearly audible and impactful over residential areas during both daytime and nighttime operations, monitor readings can vary significantly depending on flight path and position.*

The materials are organized with an index page, followed by interpretation of the data, documented flight sequences, representative flight lists, supporting maps, runway utilization context with the question and signed resident statements.

[Comment 1.2] *Based on these observations, I contest the current noise contour maps* and ***[Comment 1.3]*** *respectfully request consideration of a 30-day portable noise monitor placement. I would like to offer our backyard as a location for that purpose. My card with address, phone number, and email is in the folder. Thank you for your time.*

Responses to Commenter 1

Response to Comment 1.1: The MAA concurs that noise monitors may show variability in noise levels throughout a flight. This may be due to the bank angle of the flight, engine power settings, wind and weather conditions, and other variables. Noise levels from aircraft overflights may also be subject to interference from noise from other sources, such as passing automobile traffic. These observations do not reflect shortcomings in the ANZ.

The ANZ contours are presented in terms of the DNL metric, while noise monitors, both permanent and portable, can report single-event noise levels. The MAA concurs that some single-event noise levels from

aircraft overflights can exceed 65 dB at locations outside of the 65 DNL noise contour of the ANZ, and notes that DNL is a cumulative noise metric that averages noise levels over a 24-hour period, including an additional weighting for nighttime operations. The cumulative nature of the metric accounts for both the loudness and duration of all noise events. The ANZ presents an accurate estimate of cumulative noise based on the best available input data and forecast assumptions.

Response to Comment 1.2: Noise monitors are not, and cannot be, used in the preparation of the ANZ. Noise monitors measure noise levels at one discrete location and cannot be used to forecast future noise exposure. MAA relies on the FAA's Aviation Environmental Design Tool (AEDT), which uses reference aircraft noise data combined with actual runway use, flight track use, and wind and weather conditions to define cumulative noise levels on an average annual day. This approach is standard in the development of noise contours and follows the methodology outlined under regulations defining the ANZ. The noise contours presented in this document account for current flight procedures, including westbound departures from Runway 15R that overfly Severn. The ANZ presents an accurate estimate of cumulative noise based on the best available input data and forecast assumptions.

Response to Comment 1.3: For informational purposes, MAA offers portable noise monitoring, and requests for placement of a portable noise monitor at a residence may be made by completing the Application for Portable Noise Monitoring at https://marylandaviation.com/application-for-portable-noise-monitoring-form/. The noise monitor will be installed for a period of two weeks; following the monitoring period, a detailed technical report including data on aircraft and community noise levels will be provided to the requestor.

Commenter 2: Kyle Roser

Submission Method: Public Hearing Court Reporter

Original Comment: *My name is Kyle Roser, and I also live on Athena Lane in Severn. Doris is my wife, and I'd like to add a short citizen perspective to the observation she just presented. Anyone who knows my wife Doris knows that when she starts researching something, she doesn't do it halfway. In her medical research, she spends a lot of time analyzing data and looking for patterns. So, when she began collecting thousands of WebTrack screenshots and organizing them into flight paths and monitoring readings, I knew she was serious.*

What she showed you today reflects many hours of careful observation using the airport's own system. I happen to be an RF engineer, so I tend to think about signals and how they propagate. Jet engines produce broadband noise across a wide range of frequencies, with much of the energy in the mid-frequency range, roughly a few hundred hertz to several kilohertz. This travels efficiently and is easily perceived by people on the ground, even by people like me who have a hearing impairment.

This is exactly what residents experience under these departure paths, often three, five and ten-minute intervals with only 15 to 20-minute breaks in between. When aircraft use the hook maneuver over our area -- and Severn planes often pass over our neighborhood repeatedly while banking and climbing -- you can hear clearly the change in engine direction as they turn overhead, and it becomes very noticeable when it

happens flight after flight, especially early in the morning or later at night. But it's just the same during the day when we spend time outdoors.

That's actually what led Doris to start documenting the flights on WebTrack in the first place. We're not here to accuse anyone of anything. We simply want to make sure that the residents -- what they experience on the ground is accurately reflected in the monitoring and in the noise maps that affect our community.

So, I support the request Doris made that ***[Comment 2.1]*** *monitoring be conducted directly in our neighborhood before future noise maps are finalized, and if any temporary monitoring needs a location, our backyard is available anytime. Thank you.*

Response to Commenter 2

Response to Comment 2.1: Comment noted. Responses to this submission are provided under Commenter 1.

Commenter 3: Linda Loving

Submission Method: Public Hearing Court Reporter

Original Comment: *Hi. My name is Linda Loving. I live on Loving Road in Severn, Maryland. I'm here to support Doris and Kyle Roser who have put in a statement regarding the noise of the flights in the Severn and Athena area.* ***[Comment 3.1]*** *And what we're hoping to achieve is there to be consideration for the patterns that are taking place, because everything has increased considerably.*

[Comment 3.2] *And more importantly, we were under the impression that one of the developments, maybe a quarter of a mile up the road, called Redbridge, was under an umbrella of being in the airport area for getting a rebate because of noise -- of a tax break for that. But now I've heard when I went into your display that they're no longer in that, that they've got everything just at the airport, and all the other people are left hanging.*

I really feel that we as homeowners who have lived there most of our lives -- I've been there for 38 years, on Loving Road, and my husband's family were farmers who lived there, and we have noticed in the last year and a half to two years the increase that when you're sitting outside, you can't hear someone talking to you because of the noise, because they make turns and the lowness before they get up high.

So, that's really it, that we really want consideration for the increase that you've got scheduled coming. ***[Comment 3.3]*** *That's saying about 2035 that it's supposed to be a higher percentage of noise in the area. And so, that's only going to make it worse than what it already is. So, that's, I guess, all that I'd like to say.*

Hi. My name is Linda Loving, and I have a follow-up statement that I didn't mention. We are supporting Doris and Kyle Roser for the noise abatement situation in the area of Athena and Loving Road.

The statement that I wanted to add is in your presentation out in the conference room, there was a gentleman that spoke to us and told us that he had trees, a number of trees that were agreed upon by the

group of people that are in charge of trying to make a difference or helping people with the noise, that they would remove these trees. And he said it has been seven years, and not one tree has been removed for him.

And I feel like that's something that should be taken into consideration, that we as homeowners in the area here of Anne Arundel County near Loving Road, we want to be heard, and to be heard means you may make a difference. You just don't listen.

And all the people come and come to these presentations, and nothing changes. It needs someone with gumption and structure to make a difference for this, not to just continually leave it as is and then change and say in 2035, you're going to have more air traffic taking place, and nothing is going to be changed with what already is a problem. And I guess I'll leave it at that. Thank you.

Responses to Commenter 3

Response to Comment 3.1: As part of FAA's July 2024 implementation of new departure procedures for westbound departures from BWI Marshall's Runway 15R (TERPZ EIGHT, LINSE ONE, and FOXHL ONE Standard Instrument Departures or SIDs), westbound aircraft are directed from Runway 15R to fly to a new waypoint (WARYN) prior to initiating a westbound turn. While this procedure mimics MAA's long-standing Runway 15R noise abatement departure procedure, the initiation of a departure turn at this specific location has resulted in a significant concentration of flight tracks over the Severn, Maryland community. This concentration of flights has resulted in a notable increase in community concern, including an increase in noise complaints, attendance at Roundtable meetings, and correspondence with elected officials. The concentration of flights over the Severn community was an unintended consequence of the addition of the WARYN waypoint. The use of the WARYN waypoint and this procedure is modeled in the ANZ and no changes to the ANZ are warranted.

Independent of this ANZ update, the MAA and Roundtable have requested that FAA remove the WARYN waypoint. Consultation with industry representatives has pointed towards the feasibility of a procedure which directs aircraft to climb to an altitude prior to initiating a westbound turn; such a procedure would both increase the altitude of departing aircraft and reduce flight track concentration. This approach could return the dispersion of aircraft to patterns that existed prior to implementation of NextGen. The MAA has formally petitioned the FAA to remove publication of the WARYN waypoint, and, instead, adopt a minimum altitude restriction prior to initiating the westbound turn, with the restricting altitude chosen to better balance the impacts over the Elmhurst and Severn communities. As of June 2026, MAA is awaiting the results of FAA's initial feasibility analysis and a clear definition of the next steps towards implementation. FAA has indicated that the timeline may be as long as five years for review and publication of any new procedure.

Response to Comment 3.2: Anne Arundel County Code § 4-2-303, Airport Noise Zone, describes the credit from County real property taxes levied on property within the BWI Marshall ANZ, provided the property is owner-occupied, residential property that is located entirely or in part within the 75 DNL noise contour. MAA does not collect property taxes from land uses around BWI Marshall and the credit is fully under the jurisdiction of Anne Arundel County.

Response to Comment 3.3: While operations are forecast to increase over time, the cumulative exposure to noise is expected to decrease due to a continued transition to quieter aircraft.

Commenter 4: Laura Donovan

Submission Method: Public Hearing Court Reporter

Original Comment: *This is Laura Donovan, my statement. Off the top of my head, I was not prepared for this. In terms of the ANZ, it goes back to DNL. Myself and many, many others are not pleased with the DNL. If you have a plane go over 200dB, it can be thinned down to 65dB just by the amount of traffic. And if they are at a low level of decibels theirselves. So, averaging does not work for this. It does not help me insulate my house. It does not protect my hearing.*

The ANZ is just off the runways and I am not in the current ANZ. I am to the side of the airport and I get noise over 100dB proven by a noise report many years ago done by Strong. It also does not account for the noise levels in places like Columbia, Severn, Annapolis and all over. If this is for MAA, you're familiar with the territory and who's being bothered.

[Comment 4.1] *So, the DNL is the biggest problem here. And in terms of the people who live immediately close to the airport, there needs to be protection from the ground noise. It has to be ascertained where it's coming from, and something needs to happen with it. It's been on the books for years, and nothing ever happens except that there are bigger corridors, more baggage, dodgy bathrooms, et cetera. It's time to take care of the neighborhood now. That's it.*

Response to Commenter 4

Response to Comment 4.1: The ANZ contours are presented in terms of the DNL metric, while noise monitors, both permanent and portable, can report single-event noise levels. The MAA concurs that some single-event noise levels from aircraft overflights can exceed 65 dB at locations outside of the 65 DNL noise contour of the ANZ, and notes that DNL is a cumulative noise metric that averages noise levels over a 24-hour period, including an additional weighting for nighttime operations. The cumulative nature of the metric accounts for both the loudness and duration of all noise events. The ANZ presents an accurate estimate of cumulative noise based on the best available input data and forecast assumptions.

Although DNL is often criticized for its inability to capture the impact of single noise events, it is the required metric for the development of ANZs. However, the FAA is currently conducting a comprehensive Noise Policy Review to evaluate the possibility of supplementing or replacing DNL with other noise metrics, including single-event metrics. Changes to metrics used for development of the ANZ would require changes to federal and state policy and legislation prior to applying them to the development of the ANZ. Until those modifications are made, the MAA is required to continue to use DNL and the 65 DNL contour as the metric and threshold of record.

Commenter 5: Rae Roe

Submission Method: Public Hearing Court Reporter

Original Comment: *My name is Rae Roe. I live at 7948 Myers Drive, Glen Burnie, Maryland 21061. So, I'm here today. First, I'd like to say that I've been a citizen of this community since I've been four. I'm 60. So, I've grown up within the five-mile span of BWI. I've lived in Hanover, grew up in Severn, which was very close at that time. I live in Glen Burnie/Severn right off of Quarterfield. And then I owned two homes in Severn, as well as besides living with my parents.*

So, I have always dealt with the airport within the last, since 2001 when I bought a home in Glen Burnie Park. That is part of -- considered the flight path and all that good stuff. So, I'm very aware of looking into things to see what a community can do to reduce the noise. So, I moved in my current home in 2015, and I would say from 2015 to 2020, 2021, the flights were not as bad as they currently are.

I had you guys come out last year and put up a, a two-week measurement situation. And I got the results of that, which I felt -- so, in summary -- so, first I'd like to ask something. If a plane flies wherever a plane flies, is that considered the flight path? Okay. So, according to the draft noise report and the flight plans that you guys have, I have been in contact with Dan Steigerwald for at least the last six years about the noise situation. That's all on record. He has a copy of the MAA report. And you guys indicated that I was not in the flight path and that the average decibels was 61 of the 10,000 flights that went through.

However, of those 10,000 arrivals and flights, 2246 -- that's over a quarter, were louder than the 65 decibels. Only 250 events were quieter. And some of the loudest reached 88 -- I mean 82 to 88 decibels. So, the average long-term noise level from aircraft was 61 decibels, which follows the FAA 65 decibel compatibility threshold. But this does not -- but this is cumulative metric and does not reflect how frequently loud signal events occurred.

So, I need the Maryland Aviation Administration to explain to me how I am not in the flight path when I have many, many videos of flights coming directly over my house. They're getting worse with the times. I can hear when Southwest starts up their planes in the morning. That's how loud the sound is. I hear them when they're ready to take off. I know -- so, that's -- I'm not necessarily talking about that sound, but I'm telling you the sound that I can hear.

And really, in that MAA report, I don't think it's really fair to the citizens of a community that you're going to take a whole cumulative year and average it out to 61 decibels when over 80 percent of the time in my test, it was over 65 decibels, and many were at the 80 decibel limit.

So, I'm trying to resolve in my mind how you're telling me, one, ***[Comment 5.1]*** *I'm not in the flight path when they go directly over my house, and two, how I don't qualify for some kind of program, sound reduction program. I don't get a tax break because you guys say, I'm not in a flight path, and I need you to explain to me how I'm not in the flight path when you come directly over my house. Directly. And I have plenty of videos to demonstrate. That's about all. Okay.*

Response to Commenter 5

Response to Comment 5.1: The 65 dB DNL contour used by both the FAA and the MAA in development of legally binding noise zones is not a strict geographical or physical boundary for noise levels; instead, it is a legal boundary similar to state, county, or school district boundaries. It connects points where modeled noise exposure is 65 dB DNL. However, being located under a concentration of flight tracks does not mean that the cumulative modeled noise exposure will necessarily fall within the 65 DNL required to be in the ANZ.

Anne Arundel County Code § 4-2-303, Airport Noise Zone, describes the credit from County real property taxes levied on property within the BWI Marshall ANZ, provided the property is owner-occupied, residential property that is located entirely or in part within the 75 DNL noise contour. MAA does not collect property taxes from land uses around BWI Marshall and the credit is fully under the jurisdiction of Anne Arundel County.

Commenter 6: Debbie Wellens

Submission Method: Public Hearing Court Reporter

Original Comment: *Hi. This is Debbie Wellens, and I have concerns about the run-ups taking place for long periods of time and frequently. And I live in the Linthicum area, and I hear this pretty regularly at a high level. And I also have a friend who lives on the border of Linthicum and Glen Burnie, and they also hear it, but they don't live like they aren't my immediate neighbor, and they also hear it. So,* ***[Comment 6.1]*** *I just have concerns about that run-up noise, and if there's anything they can do to prevent that run-up noise.*

Response to Commenter 6

Response to Comment 6.1: The MAA acknowledges that aircraft noise exposure may be heard from aircraft on the ground, including the start of takeoff roll for departing aircraft, the use of reverse thrust for arriving aircraft, and ground run-up operations. As part of the Noise Abatement Plan, the MAA includes provisions for the restriction and control of ground-based noise, such as reverse thrust and maintenance run-ups. These restrictions can be found in the ANZ document and the BWI Tenant Directives (https://marylandaviation.com/wp-content/uploads/2026/03/BWI-501.1-BWI-Noise-Abatement-Plan-A.pdf). Run-ups must be pre-approved and are limited in duration and location. Additionally, the MAA keeps annual run-up records; in 2024, no run-ups were approved or recorded.

Commenter 7: Don Gaither

Submission Method: Public Hearing Court Reporter

Original Comment: *Hello. My name is Don Gaither. I'm a resident of Brooklyn Park, Maryland.* ***[Comment 7.1]*** *My comment about the update for BWI Airport Noise Zone was a very good presentation. I'd like to give*

kudos to Ms. Rhea. I forgot her last name, but she explained things very well to me and especially concerning the noise reduction or not the noise reduction, but the noise decibel levels and the areas that are affected by it.

Basically, I came with the interests of my community, and it looks like my community is not affected at all by the noise and the future growth of the -- she also pointed out that they are the plans to build another runway on -- it looks like the south end of the airport, but I could be wrong, but the new runway that they're planning on building and looks like the areas may be affected is roughly Hanover and Ferndale, which is, again, not my community, but it was a very knowledgeable presentation and I'm thankful that I showed up and came. Other than that, I thank everyone very much.

Response to Commenter 7

Response to Comment 7.1: Comment noted.

Commenter 8: Doris Roser

Submission Method: Written Comment

Original Comment: *Good afternoon. My name is Doris Roser. I live on Athena Lane in Severn since 2002 and directly under the departure corridor of BWI. A copy of my full statement is included in the folder in case I exceed the three-minute limit. I will try to keep my remarks within the allotted time. I'm not here today to complain. I'm here to show you something I observed using the airport's own WebTrak system. I did a study because over flights have increased over the years.*

I have been observing aircraft departures over the past several months using the airport's WebTrak system. During that time, I collected thousands of screenshots from hundreds of flights from December to March, focusing on aircraft altitude, noise monitor readings as aircraft pass with gradual rise and fall of such readings, banking and climbing and climbing only, wind direction, and flight path geometry. What these observations consistently show is that aircraft use two "hook maneuver" departures over the Hanover and the Severn area on a daily basis.

*In one direction, aircraft depart on **runway 28** heading west and then immediately bank left, passing three **Hanover and Jessup monitors** before turning south and south-east over Severn. In the opposite direction, aircraft depart from **runway 15R** heading south-east and then perform a mirrored banking maneuver toward the west. In this case the aircraft loop around the **Delmont Church monitor** in what appears to be a slingshot-shaped pattern, often passing over Bonnie Acres, Ridgeway, and then the Athena Lane neighborhood going over Hanover, then west.*

*The **orange folder packet I handed out earlier** contains several example flights on various dates showing these paths with the noise monitor readings recorded at various altitudes, aircraft types, wind directions, and times of day, including nighttime operations and a list of some of the flights observed.*

*One observation that stands out is that **several monitors on the Hanover and Jessup side** are positioned **outside** the hook maneuver and capture aircraft noise during climbing turns.*

*On the Severn side, however, the Delmont Church monitor appears to be located **inside** the loop of the maneuver, and aircraft engines during the banking climb often point **away** from that monitor. At the same time, the same aircraft later produce readings of **65 dB or higher** at the **Hebron-Harman Elementary monitor in Hanover at much higher altitudes.***

*These observations suggest that the noise levels experienced in the neighborhoods beneath these banking departure paths may not be fully represented by the current **monitor** placement as well as Lack of these in most of the flight path.*

The packet also includes, besides the screenshots, a list of additional flights with date and time so that anyone can verify them directly on WebTrak.

*Based on these observations, **[Comment 8.1]** I respectfully request that monitoring be conducted directly in our neighborhoods before finalizing future noise maps. I would be willing to host a temporary monitor in my backyard, and I ask that monitoring be conducted for **at least 30 days** in order to capture a representative sample of operations. **Thank you.***

Response to Commenter 8

Response to Comment 8.1: Responses for this submission are provided under Commenter 1, Comments 1.1 through 1.3.

Commenter 9: Kyle Roser

Submission Method: Written Comment

Original Comment: *Good afternoon. My name is Kyle Roser and I also live on Athena Lane in Severn. Doris is my wife, and I'd like to add a short citizen perspective to the observations she just presented.*

Anyone who knows Doris knows that when she starts researching something, she doesn't do it halfway. In her medical research work she spends a lot of time analyzing data and looking for patterns, so when she began collecting thousands of WebTrak screenshots and organizing them into flight paths and monitor readings, I knew she was serious. What she showed you today reflects many hours of careful observation using the airport's own system.

I happen to be an RF engineer, so I tend to think about signals and how they propagate. Jet engines produce broadband noise across a wide range of frequencies, with much of the energy in the mid-frequency range, roughly a few hundred Hertz to several kilohertz, which travels efficiently and is easily perceived by people on the ground. Even by people like me that have a hearing impairment.

And that's exactly what residents experience under these departure paths. Often in 3, 5 and 10 minute intervals with only 15 to 20 minute breaks in between.

When aircraft use the hook maneuver over our area, planes often pass over our neighborhood repeatedly while banking and climbing. You can clearly hear the change in engine direction as they turn overhead, and

it becomes very noticeable when it happens flight after flight, especially early in the morning or later at night, but it's just the same during the day when we spend time outdoors.

That's actually what led Doris to start documenting the flights on WebTrak in the first place. We're not here to accuse anyone of anything. We simply want to make sure that what residents experience on the ground is accurately reflected in the monitoring and in the noise maps that affect our community. So ***[Comment 9.1]*** *I support the request Doris made that monitoring be conducted directly in our neighborhood before future noise maps are finalized. And if a temporary monitor needs a location, our backyard is available.*
Thank you.

Response to Commenter 9

Response to Comment 9.1: Responses to this submission are provided under Commenter 2.

Commenters 10–20: Min Z. Beverly and David L. Laetz, Brian A. Paulus, David Knighton, Jay Bordwell, Linda Loving, James McNamee, Wail Higazi, Nathaniel Curtis, Mr. and Mrs. William Sandoval

Submission Method: Written Comment via Doris Roser

Original Comment:

Date: March 19, 2026
To: Maryland Aviation Administration (MAA) Office of Environmental Services
Attn: Mr. Bruce Rineer, ANZ Project Manager
Re: Public Comment on the 2025-2035 RW1 Marshall Airport Noise Zone (ANZ) Update

To the MAA Noise Office:

I am a resident of the Severn community writing to formally contest the current draft of the 2025-2035 Airport Noise Zone map. Specifically, I am ***[Comment 10-20.1]*** *requesting that the* ***65 DNL contour be extended approximately 1,500 feet West*** *to include Athena Lane and surrounding streets, based on the following technical observations of aircraft operations:*

1. ***The Banking Turn Impact (Runway 15R):*** *When aircraft depart South and perform the* ***TERPZ/LINSE*** *"hook" to the West, they bank directly over our neighborhood. This banking maneuver directs the* ***engine noise cone straight toward the ground,*** *creating a significantly higher noise footprint than modeled in standard straight-line computer simulations.*
2. ***Verification via Site #19 (Delmont Church): [Comment 10-20.2]*** *Your own permanent monitor at Site #19 consistently records* ***Single Event (Lmax) spikes between 85 and 90+ dB.*** *Because these aircraft regularly "swing" east of the intended corridor, these 90 dB events occur directly over our properties, causing total speech interference in our gardens, pools and outdoor recreation areas.*
3. ***Arbitrary 1/4 Mile Cutoff:*** *The 65 DNL "square" currently stops just past Redbridge Road, just about a quarter-mile from our homes. At jet takeoff speeds, this represents only* ***10-12 seconds of flight***

time. [Comment 10-20.3] *There is no geographic barrier justifying such a sharp drop in noise levels over this short distance; therefore, our streets fall within the logical margin of error for the 65 DNL zone.*

4. ***Atmospheric & Seasonal Amplification:*** *Our impact is most severe during the summer "pool season" when high humidity and heat result in* ***slower aircraft climb rates.*** *Furthermore, low cloud ceilings create a reverberation effect that traps 90 dB engine thrust over our neighborhood,* ***[Comment 10-20.4]*** *a variable we believe is under-represented in the current modeling.*

Formal Request: [Comment 10-20.5] *We request that the MAA conduct a* ***Portable Noise Monitoring study*** *on Athena Lane to validate these "swing" and "banking" impacts. We ask that the final certified 2025-2035 map be adjusted to include our block in the protected Noise Zone.*

Responses to Commenters 10-20

Response to Comment 10-20.1: The response to this submission is provided under Commenter 1, Comment 1.2.

Response to Comment 10-20.2: The response to this submission is provided under Commenter 1, Comment 1.1.

Response to Comment 10-20.3: The 65 dB DNL contour used by both the FAA and the MAA in development of legally binding noise zones is not a strict geographical or physical boundary for noise levels; instead, it is a legal boundary similar to state, county, or school district boundaries. It connects points where modeled noise exposure is 65 dB DNL. However, being located under a concentration of flight tracks does not mean that the cumulative modeled noise exposure will necessarily fall within the 65 DNL required to be in the ANZ.

Response to Comment 10-20.4: The FAA's Aviation Environmental Design Tool (AEDT) is the federally mandated software used to develop noise contours for the BWI Marshall ANZ. AEDT uses a standard, scientifically rigorous method for noise modeling and ensures technical consistency and legal defensibility for the resulting noise contours. Data from noise monitors provides a snapshot of aircraft noise levels at specific locations but is subject to interference from other noise sources; additionally, it cannot predict noise levels for future years as required for the development of the ANZ. Modeled data uses actual radar flight tracks, performance data, and forecast information to generate future year noise contours and to represent aircraft noise without interference from other noise sources.

Response to Comment 10-20.5: The response to this submission is provided under Commenter 1, Comment 1.3.

Commenter 21: Jimmy Tadlock

Submission Method: Written Comment via Doris Roser

Original Comment:

March 19, 2026

Jimmy Tadlock
8202 Athena Lane
Severn, MD 21144

Maryland Aviation Administration (MAA)
Office of Environmental Services
Atten: Bruce Rineer, ANZ Project Manager
991 Corporate Boulevard
Linthicum Heights, MD 21090

RE: Formal Technical Comment & Objection: 2026-2035 BWI Marshall Airport Noise Zone (ANZ) Update

Dear Mr. Rineer,

As a resident of the Severn community specifically impacted by the Runway 16R departure corridor, ***I*** *am writing to formally challenge the draft 2025-2035 Airport Noise Zone (ANZ) map.* ***[Comment 21.1]*** *We request that the* ***65 DNL contour be extended approximately 1,600 feet West to*** *include Athena Lane and the surrounding residential cluster.*

Our challenge is based on the following technical discrepancies between the current modeling and observed operational realities:

- ***Acoustic Impact of Banking Maneuvers (TERPZ/LINSE):*** *Standard integrated noise models often underrepresent the "noise cone" shift during the Westward hook. As aircraft bank over our neighborhood, the engine exhaust is directed toward the ground rather than trailing behind the airframe. This creates a localized noise intensity that we believe exceeds the modeled 65 DNL threshold.*
- ***Operational Deviation and Site #19 Validation:*** *Data from Permanent Monitor Site #19 (Delmont Church) consistently shows spikes between 85 and 90+ dB.* ***[Comment 21.2]*** *These levels confirm that aircraft regularly swing East of the intended corridor, placing our properties directly under the high-decibel flight path. The current draft fails to account for this frequent operational variance.*
- ***Lack of Topographic Attenuation:*** *The current 65 DNL boundary terminates abruptly near Redbridge Road. There is no geographic or topographic barrier between that point and Athena Lane (a distance representing ten seconds of flight time) that Justifies a significant drop in cumulative noise exposure. We contend our neighborhood falls within the logical margin of error for the 65 DNL zone.*
- ***Environmental Amplification Factors:*** *Our community experiences significant "noise trapping" during high-humidity summer months and low-ceiling overcast conditions. These atmospheric variables result in slower climb rates and reverberation that we believe are underweighted in the current annualized DNL averages.*

Formal Requests for Action:

1. ***On-Site Validation: [Comment 21.3]*** *We request the MAA deploy* ***Portable Noise Monitoring*** *on Athena Lane for a minimum of 14 days to capture the specific banking and "swing" impacts described above.*

2. ***Model Transparency: [Comment 21.4]*** *We request a written explanation of how the current model accounts for the lateral "noise spill" created by the Runway 15R banking maneuver.*

3. ***Boundary Adjustment*** *Based on the results of the requested monitoring, we ask that the final, certified 2025-2035 ANZ map be adjusted to include our neighborhood, thereby granting us the same protections and mitigation considerations as our neighbors to the East.*

We look forward to your technical response and a scheduled date for portable monitoring.

Sincerely,
Jimmy Tadlock
443-667-1705
netadocks@hotmail.com

Responses to Commenter 21

Response to Comment 21.1: The response to this submission is provided under Commenter 1, Comment 1.2.

Response to Comment 21.2: The response to this submission is provided under Commenter 1, Comment 1.1.

Response to Comment 21.3: The response to this submission is provided under Commenter 1, Comment 1.3.

Response to Comment 21.4: The response to this submission is provided under Commenter 10-20, Comment 10-20.4.

F.1 Oral Comments Received

MARYLAND AVIATION ADMINISTRATION

DC METROPLEX COMMUNITY ROUNDTABLE

BWI AIRPORT NOISE ZONE

PUBLIC INFORMATIONAL SESSION AND HEARING

March 19, 2026

MARYLAND AVIATION ADMINISTRATION

991 CORPORATE BOULEVARD

LINTHICUM HEIGHTS, MARYLAND

Transcribed by:

CRC Salomon, Inc.

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Don Gaither 14

P R O C E E D I N G S

MS. ROSER: Good afternoon. My name is Doris Roser, and I am a resident of the Severn Corridor. I live at 8206 Athena Lane, Severn, Maryland, since 2002, and I'm fortunate to live in a close-knit neighborhood with many of the same neighbors still present since we moved in. I'm submitting a citizen observation packet in this orange folder for inclusion in its entirety in the official public record of this hearing.

There you go, sir.

UNIDENTIFIED SPEAKER: Thank you.

MS. ROSER: This packet contains statements from myself and my husband, as well as documented aircraft departure observations using publicly available WebTrack data. It includes structured flight lists, mapped screenshot flight path sequences across multiple noise monitors, and supporting documentation of real-world noise impacts over residential areas. It highlights both Hanover Hook and Belmont Hook departure patterns with noise monitor readings.

For example, the same banking and climbing

flight may read below 65 decibels at Belmont Church Monitor at lower altitude under north wind conditions, while later readings above 65dB at the Hebron-Harman Elementary monitor in Hanover at higher altitude. After passing over Athena Lane near the center of the flight path, which is our neighborhood. This demonstrates that while aircraft noise remains clearly audible and impactful over residential areas during both daytime and nighttime operations, monitor readings can vary significantly depending on flight path and position.

The materials are organized with an index page, followed by interpretation of the data, documented flight sequences, representative flight lists, supporting maps, runway utilization context with the question and signed resident statements.

Based on these observations, I contest the current noise contour maps and respectfully request consideration of a 30-day portable noise monitor placement. I would like to offer our backyard as a location for that purpose. My card with address, phone number, and email is in the folder. Thank you for your

time.

MR. ROSER: Okay. Good afternoon. My name is Kyle Roser, and I also live on Athena Lane in Severn. Doris is my wife, and I'd like to add a short citizen perspective to the observation she just presented. Anyone who knows my wife Doris knows that when she starts researching something, she doesn't do it halfway. In her medical research, she spends a lot of time analyzing data and looking for patterns. So, when she began collecting thousands of WebTrack screenshots and organizing them into flight paths and monitoring readings, I knew she was serious.

What she showed you today reflects many hours of careful observation using the airport's own system. I happen to be an RF engineer, so I tend to think about signals and how they propagate. Jet engines produce broadband noise across a wide range of frequencies, with much of the energy in the mid-frequency range, roughly a few hundred hertz to several kilohertz. This travels efficiently and is easily perceived by people on the ground, even by people like me who have a hearing

impairment.

This is exactly what residents experience under these departure paths, often three, five and ten-minute intervals with only 15 to 20-minute breaks in between. When aircraft use the hook maneuver over our area -- and Severn planes often pass over our neighborhood repeatedly while banking and climbing -- you can hear clearly the change in engine direction as they turn overhead, and it becomes very noticeable when it happens flight after flight, especially early in the morning or later at night. But it's just the same during the day when we spend time outdoors.

That's actually what led Doris to start documenting the flights on WebTrack in the first place. We're not here to accuse anyone of anything. We simply want to make sure that the residents -- what they experience on the ground is accurately reflected in the monitoring and in the noise maps that affect our community.

So, I support the request Doris made that monitoring be conducted directly in our neighborhood

before future noise maps are finalized, and if any temporary monitoring needs a location, our backyard is available anytime. Thank you.

MS. LOVING: Hi. My name is Linda Loving. I live on Loving Road in Severn, Maryland. I'm here to support Doris and Kyle Roser who have put in a statement regarding the noise of the flights in the Severn and Athena area. And what we're hoping to achieve is there to be consideration for the patterns that are taking place, because everything has increased considerably.

And more importantly, we were under the impression that one of the developments, maybe a quarter of a mile up the road, called Redbridge, was under an umbrella of being in the airport area for getting a rebate because of noise -- of a tax break for that. But now I've heard when I went into your display that they're no longer in that, that they've got everything just at the airport, and all the other people are left hanging.

I really feel that we as homeowners who have lived there most of our lives -- I've been there for 38 years, on Loving Road, and my husband's family were

farmers who lived there, and we have noticed in the last year and a half to two years the increase that when you're sitting outside, you can't hear someone talking to you because of the noise, because they make turns and the lowness before they get up high.

So, that's really it, that we really want consideration for the increase that you've got scheduled coming. That's saying about 2035 that it's supposed to be a higher percentage of noise in the area. And so, that's only going to make it worse than what it already is. So, that's, I guess, all that I'd like to say.

Hi. My name is Linda Loving, and I have a follow-up statement that I didn't mention. We are supporting Doris and Kyle Roser for the noise abatement situation in the area of Athena and Loving Road.

The statement that I wanted to add is in your presentation out in the conference room, there was a gentleman that spoke to us and told us that he had trees, a number of trees that were agreed upon by the group of people that are in charge of trying to make a difference or helping people with the noise, that they would remove

these trees. And he said it has been seven years, and not one tree has been removed for him.

And I feel like that's something that should be taken into consideration, that we as homeowners in the area here of Anne Arundel County near Loving Road, we want to be heard, and to be heard means you may make a difference. You just don't listen.

And all the people come and come to these presentations, and nothing changes. It needs someone with gumption and structure to make a difference for this, not to just continually leave it as is and then change and say in 2035, you're going to have more air traffic taking place, and nothing is going to be changed with what already is a problem. And I guess I'll leave it at that. Thank you.

MS. DONOVAN: This is Laura Donovan, my statement. Off the top of my head, I was not prepared for this. In terms of the ANC, it goes back to DNL. Myself and many, many others are not pleased with the DNL. If you have a plane go over 200dB, it can be thinned down to 65dB just by the amount of traffic. And

if they are at a low level of decibels theirselves. So, averaging does not work for this. It does not help me insulate my house. It does not protect my hearing.

The ANC is just off the runways and I am not in the current ANC. I am to the side of the airport and I get noise over 100dB proven by a noise report many years ago done by Strong. It also does not account for the noise levels in places like Colombia, Severn, Annapolis and all over. If this is for MAA, you're familiar with the territory and who's being bothered.

So, the DNL is the biggest problem here. And in terms of the people who live immediately close to the airport, there needs to be protection from the ground noise. It has to be ascertained where it's coming from, and something needs to happen with it. It's been on the books for years, and nothing ever happens except that there are bigger corridors, more baggage, dodgy bathrooms, et cetera. It's time to take care of the neighborhood now. That's it.

MS. ROE: My name is Rae Roe. I live at 7948 Myers Drive, Glen Burnie, Maryland 21061. So, I'm here

today. First, I'd like to say that I've been a citizen of this community since I've been four. I'm 60. So, I've grown up within the five-mile span of BWI. I've lived in Hanover, grew up in Severn, which was very close at that time. I live in Glen Burnie/Severn right off of Quarterfield. And then I owned two homes in Severn, as well as besides living with my parents.

So, I have always dealt with the airport within the last, since 2001 when I bought a home in Glen Burnie Park. That is part of -- considered the flight path and all that good stuff. So, I'm very aware of looking into things to see what a community can do to reduce the noise. So, I moved in my current home in 2015, and I would say from 2015 to 2020, 2021, the flights were not as bad as they currently are.

I had you guys come out last year and put up a, a two-week measurement situation. And I got the results of that, which I felt -- so, in summary -- so, first I'd like to ask something. If a plane flies wherever a plane flies, is that considered the flight path?

COURT REPORTER: I'm just the court reporter.

MS. ROE: Okay. You can't -- so, you're not a --

COURT REPORTER: No. I'm taking statements.

MS. ROE: To go to them?

COURT REPORTER: Yes.

MS. ROE: Okay. So, according to the draft noise report and the flight plans that you guys have, I have been in contact with Dan Steigerwald for at least the last six years about the noise situation. That's all on record. He has a copy of the MAA report. And you guys indicated that I was not in the flight path and that the average decibels was 61 of the 10,000 flights that went through.

However, of those 10,000 arrivals and flights, 2246 -- that's over a quarter, were louder than the 65 decibel. Only 250 events were quieter. And some of the most loudest reached 88 -- I mean 82 to 88 decibels. So, the average long-term noise level from aircraft was 61 decibels, which follows the FAA 65 decibel compatibility threshold. But this does not -- but this is cumulative metric and does not reflect how frequently loud signal

events occurred.

So, I need the Maryland Aviation Administration to explain to me how I am not in the flight path when I have many, many videos of flights coming directly over my house. They're getting worse with the times. I can hear when Southwest starts up their planes in the morning. That's how loud the sound is. I hear them when they're ready to take off. I know -- so, that's -- I'm not necessarily talking about that sound, but I'm telling you the sound that I can hear.

And really, in that MAA report, I don't think it's really fair to the citizens of a community that you're going to take a whole cumulative year and average it out to 61 decibels when over 80 percent of the time in my test, it was over 65 decibels, and many were at the 80 decibel limit.

So, I'm trying to resolve in my mind how you're telling me, one, I'm not in the flight path when they go directly over my house, and two, how I don't qualify for some kind of program, sound reduction program. I don't get a tax break because you guys say, I'm not in a flight

path, and I need you to explain to me how I'm not in the flight path when you come directly over my house. Directly. And I have plenty of videos to demonstrate. That's about all. Okay.

MS. WELLENS: Hi. This is Debbie Wellens, and I have concerns about the run-ups taking place for long periods of time and frequently. And I live in the Linthicum area, and I hear this pretty regularly at a high level. And I also have a friend who lives on the border of Linthicum and Glen Burnie, and they also hear it, but they don't live like they aren't my immediate neighbor, and they also hear it. So, I just have concerns about that run-up noise, and if there's anything they can do to prevent that run-up noise.

MR. GAITHER: Hello. My name is Don Gaither. I'm a resident of Brooklyn Park, Maryland. My comment about the update for BWI Airport Noise Zone was a very good presentation. I'd like to give kudos to Ms. Rae. I forgot her last name, but she explained things very well to me and especially concerning the noise reduction or not the noise reduction, but the noise decibel levels and

the areas that are affected by it.

Basically, I came with the interests of my community, and it looks like my community is not affected at all by the noise and the future growth of the -- she also pointed out that they are the plans to build another runway on -- it looks like the south end of the airport, but I could be wrong, but the new runway that they're planning on building and looks like the areas may be affected is roughly Hanover and Ferndale, which is, again, not my community, but it was a very knowledgeable presentation and I'm thankful that I showed up and came. Other than that, I thank everyone very much.

(Meeting adjourned.)

C E R T I F I C A T E

I, Vivian Saxe, hereby certify that I transcribed from audio file the proceedings to the best of my ability in the foregoing-entitled matter; and I further certify that the foregoing is a full, true, and correct transcript of the audio files produced.

IN WITNESS THEREOF, I have subscribed my name on March 30, 2026.

Vivian Saxe

Vivian Saxe, CET

Transcriber

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F.2 Written Comments Received

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MAA Noise Contour Meeting – March 19, 2026

Citizen Observation Packet – Severn Corridor

LEFT POCKET – Statements

1. Personal Statement – Doris Roser
2. Personal Statement – Kyle Roser
3. Resident Statements – Athena Lane

RIGHT POCKET – Observations & Supporting Data

1. Interpretation of Aircraft Noise Patterns
(Screenshot Sequences)

2. Documented Flight Sequences
(WebTrak Screenshots)
- Delmont Hook Departures
  (monitor-proximate examples)
- Hanover Hook Departures
  (monitor-proximate examples)
- Nighttime Cargo Departures
  ("Wake-up flights" – representative examples)

3. Flight Lists
(3 pages – representative sample of observed flights)

4. Example Documentation of Aircraft Departures
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5. Runway Utilization – February 2026
(Departure distribution and related question)

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SUMMARY OF OBSERVATIONS USING WEBTRAK BWI (https://us.webtrak.aero/bwi3)

Good afternoon. My name is Doris Roser. I live on Athena Lane in Severn since 2002 and directly under the departure corridor of BWI. A copy of my full statement is included in the folder in case I exceed the three-minute limit. I will try to keep my remarks within the allotted time. I'm not here today to complain. I'm here to show you something I observed using the airport's own WebTrak system. I did a study because over flights have increased over the years.

I have been observing aircraft departures over the past several months using the airport's WebTrak system. During that time, I collected thousands of screenshots from hundreds of flights from December to March, focusing on aircraft altitude, noise monitor readings as aircraft pass with gradual rise and fall of such readings, banking and climbing and climbing only, wind direction, and flight path geometry.

What these observations consistently show is that aircraft use two "hook maneuver" departures over the Hanover and the Severn area on a daily basis.

In one direction, aircraft depart on **runway 28** heading west and then immediately bank left, passing three **Hanover and Jessup monitors** before turning south and south-east over Severn. In the opposite direction, aircraft depart from **runway 15R** heading south-east and then perform a mirrored banking maneuver toward the west. In this case the aircraft loop around the **Delmont Church monitor** in what appears to be a slingshot-shaped pattern, often passing over Bonnie Acres, Ridgeway, and then the Athena Lane neighborhood going over Hanover, then west.

The **orange folder packet I handed out earlier** contains several example flights on various dates showing these paths with the noise monitor readings recorded at various altitudes, aircraft types, wind directions, and times of day, including nighttime operations and a list of some of the flights observed.

One observation that stands out is that **several monitors on the Hanover and Jessup side** are positioned **outside** the hook maneuver and capture aircraft noise during climbing turns.

On the Severn side, however, the Delmont Church monitor appears to be located **inside** the loop of the maneuver, and aircraft engines during the banking climb often point **away** from that monitor. At the same time, the same aircraft later produce readings of **65 dB or higher** at the **Hebron-Harman Elementary monitor in Hanover at much higher altitudes**.

These observations suggest that the noise levels experienced in the neighborhoods beneath these banking departure paths may not be fully represented by the current monitor placement as well as Lack of these in most of the flight path.

The packet also includes, besides the screenshots, a list of additional flights with date and time so that anyone can verify them directly on WebTrak.

Based on these observations, I respectfully request that monitoring be conducted directly in our neighborhoods before finalizing future noise maps. I would be willing to host a temporary monitor in my backyard, and I ask that monitoring be conducted for **at least 30 days**, in order to capture a representative sample of operations. **Thank you.**

Citizen Perspective - Kyle Roser

Good afternoon. My name is Kyle Roser and I also live on Athena Lane in Severn.

Doris is my wife, and I'd like to add a short citizen perspective to the observations she just presented.

Anyone who knows Doris knows that when she starts researching something, she doesn't do it halfway. In her medical research work she spends a lot of time analyzing data and looking for patterns, so when she began collecting thousands of WebTrak screenshots and organizing them into flight paths and monitor readings, I knew she was serious.

What she showed you today reflects many hours of careful observation using the airport's own system.

I happen to be an RF engineer, so I tend to think about signals and how they propagate. Jet engines produce broadband noise across a wide range of frequencies, with much of the energy in the mid-frequency range, roughly a few hundred Hertz to several kilohertz, which travels efficiently and is easily perceived by people on the ground. Even by people like me that have a hearing impairment.

And that's exactly what residents experience under these departure paths. Often in 3, 5 and 10 minute intervals with only 15 to 20 minute breaks in between.

When aircraft use the hook maneuver over our area, planes often pass over our neighborhood repeatedly while banking and climbing. You can clearly hear the change in engine direction as they turn overhead, and it becomes very noticeable when it happens flight after flight, especially early in the morning or later at night, but it's just the same during the day when we spend time outdoors.

That's actually what led Doris to start documenting the flights on WebTrak in the first place.

We're not here to accuse anyone of anything. We simply want to make sure that what residents experience on the ground is accurately reflected in the monitoring and in the noise maps that affect our community.

So I support the request Doris made --- that monitoring be conducted directly in our neighborhood before future noise maps are finalized.

And if a temporary monitor needs a location, our backyard is available.

Thank you.

Date: March 19, 2026

To: Maryland Aviation Administration (MAA) Office of Environmental Services

Attn: Mr. Bruce Rineer, ANZ Project Manager

Re: Public Comment on the 2025-2035 BWI Marshall Airport Noise Zone (ANZ) Update

To the MAA Noise Office:
I am a resident of the Severn community writing to formally contest the current draft of the 2025-2035 Airport Noise Zone map. Specifically, I am requesting that the **65 DNL contour be extended approximately 1,500 feet West** to include **Athena Lane and surrounding streets,** based on the following technical observations of aircraft operations:

1. **The Banking Turn Impact (Runway 15R):** When aircraft depart South and perform the **TERPZ/LINSE** "hook" to the West, they bank directly over our neighborhood. This banking maneuver directs the **engine noise cone straight toward the ground**, creating a significantly higher noise footprint than modeled in standard straight-line computer simulations.
2. **Verification via Site #19 (Delmont Church):** Your own permanent monitor at Site #19 consistently records **Single Event (Lmax) spikes between 85 and 90+ dB**. Because these aircraft regularly "swing" east of the intended corridor, these 90 dB events occur directly over our properties, causing total speech interference in our gardens, pools and outdoor recreation areas.
3. **Arbitrary 1/4 Mile Cutoff:** The 65 DNL "square" currently stops just past Redbridge Road, just about a quarter-mile from our homes. At jet takeoff speeds, this represents only **10-12 seconds of flight time.** There is no geographic barrier justifying such a sharp drop in noise levels over this short distance; therefore, our streets fall within the logical margin of error for the 65 DNL zone.
4. **Atmospheric & Seasonal Amplification:** Our impact is most severe during the summer "pool season" when high humidity and heat result in **slower aircraft climb rates.** Furthermore, low cloud ceilings create a **reverberation effect** that traps 90 dB engine thrust over our neighborhood, a variable we believe is under-represented in the current modeling.

Formal Request: We request that the MAA conduct a **Portable Noise Monitoring study** on Athena Lane to validate these "swing" and "banking" impacts. We ask that the final certified 2025-2035 map be adjusted to include our block in the protected Noise Zone.

Name: MIN Z. BEVERLY and DAVID L. LAETZ

Address: 1063 LOVING ROAD, SEVERN, MD 21144

Signature: Min Beverly and David L Laetz

Date: March 19, 2026

To: Maryland Aviation Administration (MAA) Office of Environmental Services

Attn: Mr. Bruce Rineer, ANZ Project Manager

Re: Public Comment on the 2025-2035 BWI Marshall Airport Noise Zone (ANZ) Update

To the MAA Noise Office:
I am a resident of the Severn community writing to formally contest the current draft of the 2025-2035 Airport Noise Zone map. Specifically, I am requesting that the **65 DNL contour be extended approximately 1,500 feet West** to include **Athena Lane and surrounding streets,** based on the following technical observations of aircraft operations:

1. **The Banking Turn Impact (Runway 15R):** When aircraft depart South and perform the **TERPZ/LINSE** "hook" to the West, they bank directly over our neighborhood. This banking maneuver directs the **engine noise cone straight toward the ground,** creating a significantly higher noise footprint than modeled in standard straight-line computer simulations.
2. **Verification via Site #19 (Delmont Church):** Your own permanent monitor at Site #19 consistently records **Single Event (Lmax) spikes between 85 and 90+ dB.** Because these aircraft regularly "swing" east of the intended corridor, these 90 dB events occur directly over our properties, causing total speech interference in our gardens, pools and outdoor recreation areas.
3. **Arbitrary 1/4 Mile Cutoff:** The 65 DNL "square" currently stops just past Redbridge Road, just about a quarter-mile from our homes. At jet takeoff speeds, this represents only **10-12 seconds of flight time.** There is no geographic barrier justifying such a sharp drop in noise levels over this short distance; therefore, our streets fall within the logical margin of error for the 65 DNL zone.
4. **Atmospheric & Seasonal Amplification:** Our impact is most severe during the summer "pool season" when high humidity and heat result in **slower aircraft climb rates.** Furthermore, low cloud ceilings create a **reverberation effect** that traps 90 dB engine thrust over our neighborhood, a variable we believe is under-represented in the current modeling.

Formal Request: We request that the MAA conduct a **Portable Noise Monitoring study** on Athena Lane to validate these "swing" and "banking" impacts. We ask that the final certified 2025-2035 map be adjusted to include our block in the protected Noise Zone.

Name: Brian K. Paulus

Address: 8222 Athena LN., Severn MD 21144

Signature: Brian K. Paulus

Date: March 19, 2026

To: Maryland Aviation Administration (MAA) Office of Environmental Services

Attn: Mr. Bruce Rineer, ANZ Project Manager

Re: Public Comment on the 2025-2035 BWI Marshall Airport Noise Zone (ANZ) Update

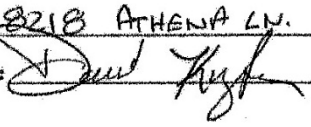
To the MAA Noise Office:
I am a resident of the Severn community writing to formally contest the current draft of the 2025-2035 Airport Noise Zone map. Specifically, I am requesting that the **65 DNL contour be extended approximately 1,500 feet West** to include **Athena Lane and surrounding streets,** based on the following technical observations of aircraft operations:

1. **The Banking Turn Impact (Runway 15R):** When aircraft depart South and perform the **TERPZ/LINSE** "hook" to the West, they bank directly over our neighborhood. This banking maneuver directs the **engine noise cone straight toward the ground,** creating a significantly higher noise footprint than modeled in standard straight-line computer simulations.
2. **Verification via Site #19 (Delmont Church):** Your own permanent monitor at Site #19 consistently records **Single Event (Lmax) spikes between 85 and 90+ dB.** Because these aircraft regularly "swing" east of the intended corridor, these 90 dB events occur directly over our properties, causing total speech interference in our gardens, pools and outdoor recreation areas.
3. **Arbitrary 1/4 Mile Cutoff:** The 65 DNL "square" currently stops just past Redbridge Road, just about a quarter-mile from our homes. At jet takeoff speeds, this represents only **10-12 seconds of flight time.** There is no geographic barrier justifying such a sharp drop in noise levels over this short distance; therefore, our streets fall within the logical margin of error for the 65 DNL zone.
4. **Atmospheric & Seasonal Amplification:** Our impact is most severe during the summer "pool season" when high humidity and heat result in **slower aircraft climb rates.** Furthermore, low cloud ceilings create a **reverberation effect** that traps 90 dB engine thrust over our neighborhood, a variable we believe is under-represented in the current modeling.

Formal Request: We request that the MAA conduct a **Portable Noise Monitoring study** on Athena Lane to validate these "swing" and "banking" impacts. We ask that the final certified 2025-2035 map be adjusted to include our block in the protected Noise Zone.

Name: DAVID KNIGHTON

Address: 8218 ATHENA LN. SEVERN, MD 21144

Signature: 

Date: March 19, 2026

To: Maryland Aviation Administration (MAA) Office of Environmental Services

Attn: Mr. Bruce Rineer, ANZ Project Manager

Re: Public Comment on the 2025-2035 BWI Marshall Airport Noise Zone (ANZ) Update

To the MAA Noise Office:
I am a resident of the Severn community writing to formally contest the current draft of the 2025-2035 Airport Noise Zone map. Specifically, I am requesting that the **65 DNL contour be extended approximately 1,500 feet West** to include **Athena Lane and surrounding streets,** based on the following technical observations of aircraft operations:

1. **The Banking Turn Impact (Runway 15R):** When aircraft depart South and perform the **TERPZ/LINSE** "hook" to the West, they bank directly over our neighborhood. This banking maneuver directs the **engine noise cone straight toward the ground**, creating a significantly higher noise footprint than modeled in standard straight-line computer simulations.
2. **Verification via Site #19 (Delmont Church):** Your own permanent monitor at Site #19 consistently records **Single Event (Lmax) spikes between 85 and 90+ dB.** Because these aircraft regularly "swing" east of the intended corridor, these 90 dB events occur directly over our properties, causing total speech interference in our gardens, pools and outdoor recreation areas.
3. **Arbitrary 1/4 Mile Cutoff:** The 65 DNL "square" currently stops just past Redbridge Road, just about a quarter-mile from our homes. At jet takeoff speeds, this represents only **10-12 seconds of flight time.** There is no geographic barrier justifying such a sharp drop in noise levels over this short distance; therefore, our streets fall within the logical margin of error for the 65 DNL zone.
4. **Atmospheric & Seasonal Amplification:** Our impact is most severe during the summer "pool season" when high humidity and heat result in **slower aircraft climb rates.** Furthermore, low cloud ceilings create a **reverberation effect** that traps 90 dB engine thrust over our neighborhood, a variable we believe is under-represented in the current modeling.

Formal Request: We request that the MAA conduct a **Portable Noise Monitoring study** on Athena Lane to validate these "swing" and "banking" impacts. We ask that the final certified 2025-2035 map be adjusted to include our block in the protected Noise Zone.

Name: Jay Bordwell

Address: 8211 Athena Lane, Severn MD 21144

Signature: Jay Bordwell

March 19, 2026

Jimmy Tadlock
8202 Athena Lane
Severn, MD 21144

Maryland Aviation Administration (MAA)
Office of Environmental Services
Atten: Bruce Rineer, ANZ Project Manager
991 Corporate Boulevard
Linthicum Heights, MD 21090

RE: Formal Technical Comment & Objection: 2025–2035 BWI Marshall Airport Noise Zone (ANZ) Update

Dear Mr. Rineer,

As a resident of the Severn community specifically impacted by the Runway 15R departure corridor, I am writing to formally challenge the draft 2025–2035 Airport Noise Zone (ANZ) map. We request that the **65 DNL contour be extended approximately 1,500 feet West** to include Athena Lane and the surrounding residential cluster.

Our challenge is based on the following technical discrepancies between the current modeling and observed operational realities:

- **Acoustic Impact of Banking Maneuvers (TERPZ/LINSE):** Standard integrated noise models often underrepresent the "noise cone" shift during the Westward hook. As aircraft bank over our neighborhood, the engine exhaust is directed toward the ground rather than trailing behind the airframe. This creates a localized noise intensity that we believe exceeds the modeled 65 DNL threshold.
- **Operational Deviation and Site #19 Validation:** Data from Permanent Monitor Site #19 (Delmont Church) consistently shows spikes between 85 and 90+ dB. These levels confirm that aircraft regularly swing East of the intended corridor, placing our properties directly under the high-decibel flight path. The current draft fails to account for this frequent operational variance.
- **Lack of Topographic Attenuation:** The current 65 DNL boundary terminates abruptly near Redbridge Road. There is no geographic or topographic barrier between that point and Athena Lane (a distance representing ten seconds of flight time) that justifies a significant drop in cumulative noise exposure. We contend our neighborhood falls within the logical margin of error for the 65 DNL zone.

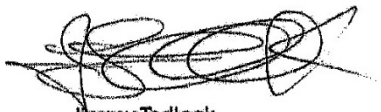
- **Environmental Amplification Factors:** Our community experiences significant "noise trapping" during high-humidity summer months and low-ceiling overcast conditions. These atmospheric variables result in slower climb rates and reverberation that we believe are underweighted in the current annualized DNL averages.

Formal Requests for Action:

1. **On-Site Validation:** We request the MAA deploy **Portable Noise Monitoring** on Athena Lane for a minimum of 14 days to capture the specific banking and "swing" impacts described above.
2. **Model Transparency:** We request a written explanation of how the current model accounts for the lateral "noise spill" created by the Runway 15R banking maneuver.
3. **Boundary Adjustment:** Based on the results of the requested monitoring, we ask that the final, certified 2025–2035 ANZ map be adjusted to include our neighborhood, thereby granting us the same protections and mitigation considerations as our neighbors to the East.

We look forward to your technical response and a scheduled date for portable monitoring.

Sincerely,



Jimmy Tadlock
443-677-1705
netadocks@hotmail.com

Date: March 19, 2026

To: Maryland Aviation Administration (MAA) Office of Environmental Services

Attn: Mr. Bruce Rineer, ANZ Project Manager

Re: Public Comment on the 2025-2035 BWI Marshall Airport Noise Zone (ANZ) Update

To the MAA Noise Office:
I am a resident of the Severn community writing to formally contest the current draft of the 2025-2035 Airport Noise Zone map. Specifically, I am requesting that the **65 DNL contour be extended approximately 1,500 feet West** to include **Athena Lane and surrounding streets**, based on the following technical observations of aircraft operations:

1. **The Banking Turn Impact (Runway 15R):** When aircraft depart South and perform the **TERPZ/LINSE** "hook" to the West, they bank directly over our neighborhood. This banking maneuver directs the **engine noise cone straight toward the ground**, creating a significantly higher noise footprint than modeled in standard straight-line computer simulations.
2. **Verification via Site #19 (Delmont Church):** Your own permanent monitor at Site #19 consistently records **Single Event (Lmax) spikes between 85 and 90+ dB**. Because these aircraft regularly "swing" east of the intended corridor, these 90 dB events occur directly over our properties, causing total speech interference in our gardens, pools and outdoor recreation areas.
3. **Arbitrary 1/4 Mile Cutoff:** The 65 DNL "square" currently stops just past Redbridge Road, just about a quarter-mile from our homes. At jet takeoff speeds, this represents only **10-12 seconds of flight time.** There is no geographic barrier justifying such a sharp drop in noise levels over this short distance; therefore, our streets fall within the logical margin of error for the 65 DNL zone.
4. **Atmospheric & Seasonal Amplification:** Our impact is most severe during the summer "pool season" when high humidity and heat result in **slower aircraft climb rates.** Furthermore, low cloud ceilings create a **reverberation effect** that traps 90 dB engine thrust over our neighborhood, a variable we believe is under-represented in the current modeling.

Formal Request: We request that the MAA conduct a **Portable Noise Monitoring study** on Athena Lane to validate these "swing" and "banking" impacts. We ask that the final certified 2025-2035 map be adjusted to include our block in the protected Noise Zone.

Name: LINDA LOVING

Address: 1066 Loving Rd., Severn, Md. 21144

Signature: Linda Loving

Date: March 19, 2026

To: Maryland Aviation Administration (MAA) Office of Environmental Services

Attn: Mr. Bruce Rineer, ANZ Project Manager

Re: Public Comment on the 2025-2035 BWI Marshall Airport Noise Zone (ANZ) Update

To the MAA Noise Office:
I am a resident of the Severn community writing to formally contest the current draft of the 2025-2035 Airport Noise Zone map. Specifically, I am requesting that the **65 DNL contour be extended approximately 1,500 feet West** to include **Athena Lane and surrounding streets,** based on the following technical observations of aircraft operations:

1. **The Banking Turn Impact (Runway 15R):** When aircraft depart South and perform the **TERPZ/LINSE** "hook" to the West, they bank directly over our neighborhood. This banking maneuver directs the **engine noise cone straight toward the ground,** creating a significantly higher noise footprint than modeled in standard straight-line computer simulations.
2. **Verification via Site #19 (Delmont Church):** Your own permanent monitor at Site #19 consistently records **Single Event (Lmax) spikes between 85 and 90+ dB.** Because these aircraft regularly "swing" east of the intended corridor, these 90 dB events occur directly over our properties, causing total speech interference in our gardens, pools and outdoor recreation areas.
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4. **Atmospheric & Seasonal Amplification:** Our impact is most severe during the summer "pool season" when high humidity and heat result in **slower aircraft climb rates.** Furthermore, low cloud ceilings create a **reverberation effect** that traps 90 dB engine thrust over our neighborhood, a variable we believe is under-represented in the current modeling.

Formal Request: We request that the MAA conduct a **Portable Noise Monitoring study** on Athena Lane to validate these "swing" and "banking" impacts. We ask that the final certified 2025-2035 map be adjusted to include our block in the protected Noise Zone.

Name: James McNamee

Address: 1067 Wayne Road, Severn, MD 21144

Signature: James McNamee

Date: March 19, 2026

To: Maryland Aviation Administration (MAA) Office of Environmental Services

Attn: Mr. Bruce Rineer, ANZ Project Manager

Re: Public Comment on the 2025-2035 BWI Marshall Airport Noise Zone (ANZ) Update

To the MAA Noise Office:
I am a resident of the Severn community writing to formally contest the current draft of the 2025-2035 Airport Noise Zone map. Specifically, I am requesting that the **65 DNL contour be extended approximately 1,500 feet West** to include **Athena Lane and surrounding streets,** based on the following technical observations of aircraft operations:

1. **The Banking Turn Impact (Runway 15R):** When aircraft depart South and perform the **TERPZ/LINSE** "hook" to the West, they bank directly over our neighborhood. This banking maneuver directs the **engine noise cone straight toward the ground**, creating a significantly higher noise footprint than modeled in standard straight-line computer simulations.
2. **Verification via Site #19 (Delmont Church):** Your own permanent monitor at Site #19 consistently records **Single Event (Lmax) spikes between 85 and 90+ dB**. Because these aircraft regularly "swing" east of the intended corridor, these 90 dB events occur directly over our properties, causing total speech interference in our gardens, pools and outdoor recreation areas.
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4. **Atmospheric & Seasonal Amplification:** Our impact is most severe during the summer "pool season" when high humidity and heat result in **slower aircraft climb rates.** Furthermore, low cloud ceilings create a **reverberation effect** that traps 90 dB engine thrust over our neighborhood, a variable we believe is under-represented in the current modeling.

Formal Request: We request that the MAA conduct a **Portable Noise Monitoring study** on Athena Lane to validate these "swing" and "banking" impacts. We ask that the final certified 2025-2035 map be adjusted to include our block in the protected Noise Zone.

Name: Neil Higgins

Address: 8303 Athena Ln Severn, MD 21144

Signature: Neil Higgins

Date: March 19, 2026

To: Maryland Aviation Administration (MAA) Office of Environmental Services

Attn: Mr. Bruce Rineer, ANZ Project Manager

Re: Public Comment on the 2025-2035 BWI Marshall Airport Noise Zone (ANZ) Update

To the MAA Noise Office:
I am a resident of the Severn community writing to formally contest the current draft of the 2025-2035 Airport Noise Zone map. Specifically, I am requesting that the **65 DNL contour be extended approximately 1,500 feet West** to include **Athena Lane and surrounding streets**, based on the following technical observations of aircraft operations:

1. **The Banking Turn Impact (Runway 15R):** When aircraft depart South and perform the **TERPZ/LINSE** "hook" to the West, they bank directly over our neighborhood. This banking maneuver directs the **engine noise cone straight toward the ground**, creating a significantly higher noise footprint than modeled in standard straight-line computer simulations.
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Name: Nathaniel Curtis

Address: 8207 Athena Lane Severn MD 21144

Signature:

Date: March 19, 2026

To: Maryland Aviation Administration (MAA) Office of Environmental Services

Attn: Mr. Bruce Rineer, ANZ Project Manager

Re: Public Comment on the 2025-2035 BWI Marshall Airport Noise Zone (ANZ) Update

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1. **The Banking Turn Impact (Runway 15R):** When aircraft depart South and perform the **TERPZ/LINSE** "hook" to the West, they bank directly over our neighborhood. This banking maneuver directs the **engine noise cone straight toward the ground**, creating a significantly higher noise footprint than modeled in standard straight-line computer simulations.
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Formal Request: We request that the MAA conduct a **Portable Noise Monitoring study** on Athena Lane to validate these "swing" and "banking" impacts. We ask that the final certified 2025-2035 map be adjusted to include our block in the protected Noise Zone.

Name: Mr. + Mrs. William Sandoval

Address: 1075 Loving Rd, Severn, MD 21144

Signature:

OBSERVATION

Significant dB reductions were observed in monitor readings at similar aircraft altitudes during lateral 'slingshot' maneuvers at Delmont Church. These reductions could be attributed to **wind direction**, increased **slant distance** and **acoustic shadowing** caused by the aircraft's bank angle, which shields the noise monitor from **direct engine noise**, while residents directly beneath the aircraft still experience the sound.

Summary of Observations at **Ridgeview (approx.. 0.8 miles** from Delmont Church) and **Bonnie Acres (approx.. 1.2 miles** from Delmont Church)

Estimated dB reductions with wind coming from the NORTH and aircraft passing on the southside of Delmont Church Monitor:

Point	Total Drop	Slant Distance Contribution	Shadowing/Attenuation
0.8 Miles (Ridgeway)	~14-16dB	~10-12dB	~3-4dB (Initial banking/shielding)
1.2 Miles (Bonnie Acres)	~16-20dB	~15-16dB	~4-5dB (Max bank & ground absorption)

Information:

1. Steeper Bank Angle (Turning *Away* from Monitor)
If the aircraft banks more sharply (e.g., from 30° to 45°), the **acoustic shadowing** effect intensifies.

- **Physical Blockage**: The fuselage and wings act as a more effective barrier between the engines and the ground. This can add an additional **3–5 dB** of reduction.
- **Directivity Shift**: Because the engine's primary noise "cone" is directed downward from the belly of the plane, a steep bank points that cone toward the sky or the horizon opposite your monitor, leaving the monitor in a deeper "dead zone".
- **Result**: At 1.2 miles, a steeper bank could push your 20 dB drop even lower, potentially reaching **23–25 dB**.

2. Shallower Bank Angle (Flat Turn)
If the aircraft performs a "lazy" or shallow turn with less bank:

- **Reduced Shadowing**: The monitor maintains a clearer "line-of-sight" to the engines. Without the fuselage in the way, you lose that "shadow" bonus, and the noise level could increase by **3–6 dB** compared to the full bank.

- **Elevation Angle**: A shallow turn often means the aircraft is staying slightly "flatter" to the horizon. While the slant distance remains the same, the lack of shielding means the monitor captures more of the direct sound pressure.
- **Result**: Your 20 dB drop at 1.2 miles might shrink to only **14–16 dB**, as the reduction would be driven almost entirely by distance rather than airframe shielding.

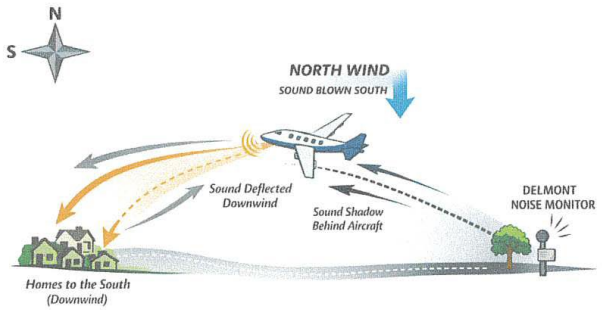
3. Impact of Banking *Toward* the Monitor
If the aircraft banks **toward** the monitor (the belly of the plane is "aimed" at the sensor):

- **Noise Spike**: Instead of a drop, you might see a relatively higher reading than expected for that distance. You are now in the "peak" of the directivity pattern, and there is zero shadowing.
- **Result**: Even at 0.8 miles, the drop might only be **6–8 dB** (purely from distance), as the "loud" side of the aircraft is perfectly exposed to your equipment.

Bank Scenario	Estimated Change at 1.2 Miles	Primary Driver
Steeper Bank (Away)	**-23 to -25 dB**	Maximum Acoustic Shadowing
Current Observed Bank	**-20 dB**	Slant Distance + Shadowing
Shallower Bank	**-14 to -17 dB**	Slant Distance (Minimal Shadowing)
Bank Toward Monitor	**-10 to -12 dB**	No Shadowing (Direct Exposure)

Heavy aircraft would possibly read even more.

Note: I am not an expert, but it seems this area is significantly under represented.



Possible Causes of Reduced Readings at Delmont Monitor During Aircraft Turns with North Wind.

What the following Screenshot Sequences show:

The closer aircraft pass to the **Delmont Church Monitor** during the Hook Departure of Aircraft at comparable altitudes, the higher the recorded noise levels.

Closer overflights occur less frequently but are consistently observable due to overall flight volume.
These give gradual rise and falls with a peak of the **monitor readings at 70-75 dB**.
Most departures follow a wider arc around Delmont at similar altitudes. These typically register:

- **65–68 dB** when passing over **Ridgeway (south of Delmont)**
- **65 dB but mostly lower** when passing **further south over Bonnie Acres**

Observations were made under varying wind conditions. Lower readings fluctuate when passing in a wide arc.

Aircraft are **still at lower altitudes when passing directly over Athena Lane** or nearby surrounding neighborhoods.

As demonstrated in these examples, **increased altitude during climbing and banking does not necessarily reduce ground-level noise**, as engine orientation directs sound downward during these departures. While traditional assumptions may apply to straight flight, repeated observations of hundreds of flights using WebTrak screenshot sequences consistently demonstrate a different effect, observed in these data and consistent with known aviation noise behavior:

"Turning Noise Footprint Asymmetry."

Aircraft also consistently show higher dB readings at higher altitudes at the Hanover/Harmans monitors than at the Delmont monitor, while direct overflight areas such as Athena Lane and Warfield have no monitors to record noise.

Additional Context

The following pages present additional flight sequences in a more condensed format.

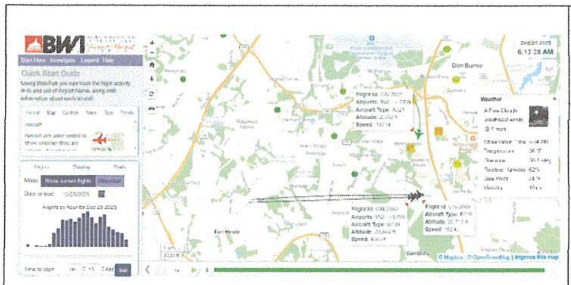
Included are examples of **high-noise nighttime departures**, particularly from heavy cargo aircraft (e.g., UPS, FedEx), which:

- climb more slowly
- remain at lower altitudes longer
- operate under high thrust conditions

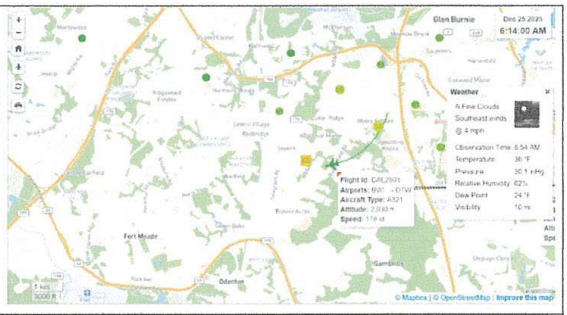
These events are referred to here as **"wake-up flights"**, as they frequently occur at around **12 - 1 am** and later between **5 - 7 am with passenger aircraft**, directly impacting residential areas. These show consistent noise monitor readings of **70dB -76db across their flight paths**.

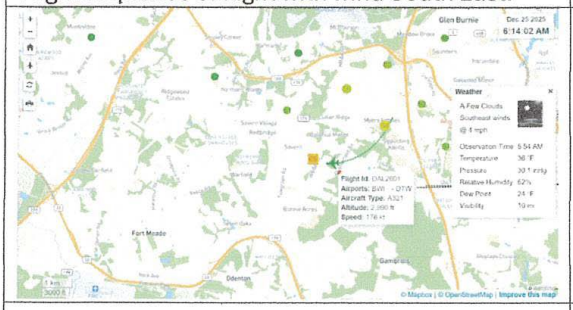
For comparison, some **Hanover Hook departures** are also included, showing aircraft passing multiple monitors with readings between 65–70+ dB (depending on proximity to each monitor) during the maneuver, versus the Hook maneuver at Delmont where aircraft mostly "slingshot" around a single monitor in a wider arc, often recording below 65 dB, especially when wind direction is from the north and aircraft pass south of the monitor.
Many of these Hanover Hook flights also pass over the Athena Lane neighborhoods, as shown in my "WebTrak plus photos taken in my backyard" list.

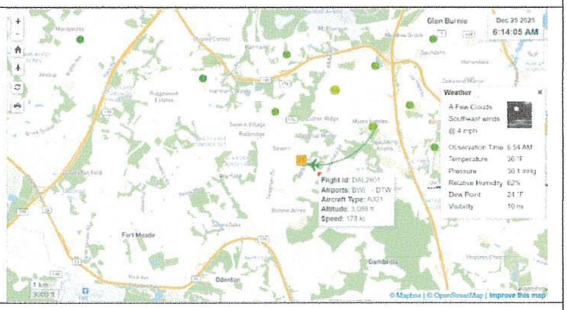
(1) December 25th 2025	6:14am	DAL 2601	Night time (10pm-7am)	Delmont Hook

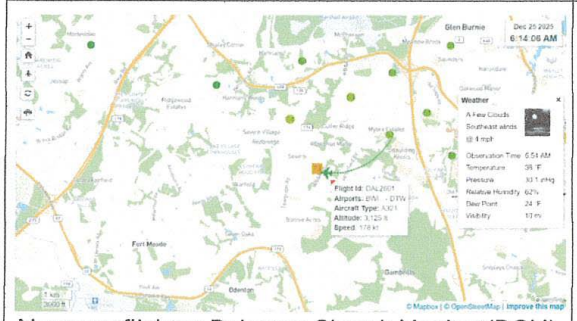


Flight sequence of flight with wind South East.

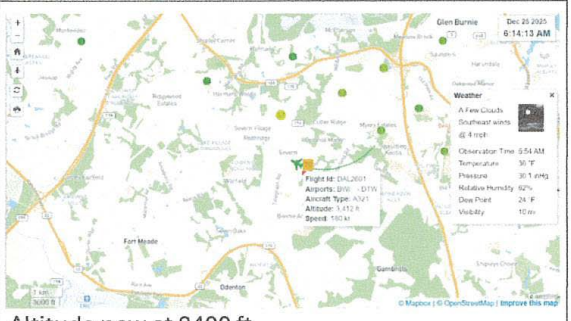




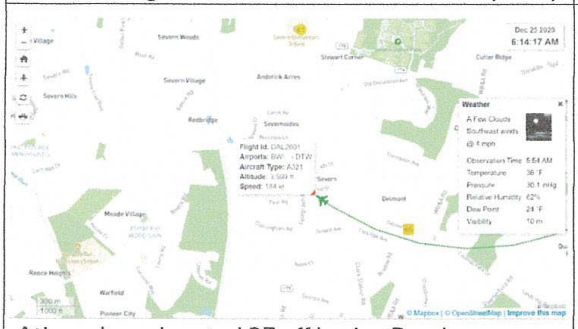




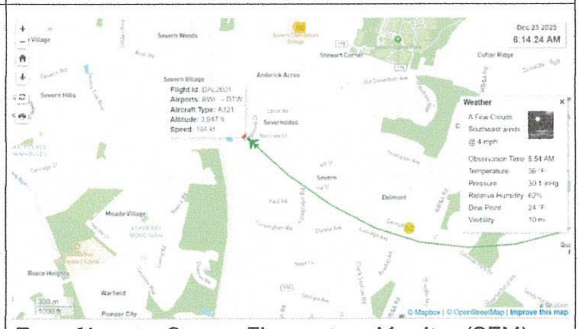
Near overflight at Delmont-Church Monitor (DCM)



Altitude now at 3400 ft



Athena Lane located SE off Loving Road



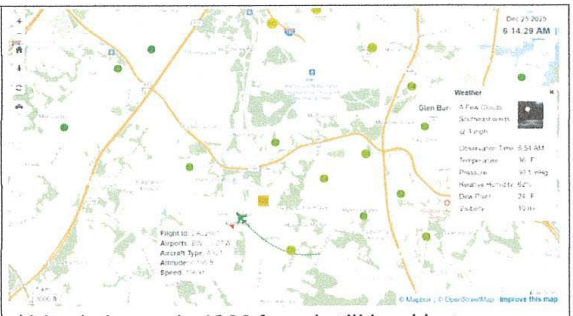
Top of image: Severn Elementary Monitor (SEM)

Note: Please observe the aircraft altitudes as they pass the noise monitors, as well as the banking-climbing pattern indicated by the curved flight trail.

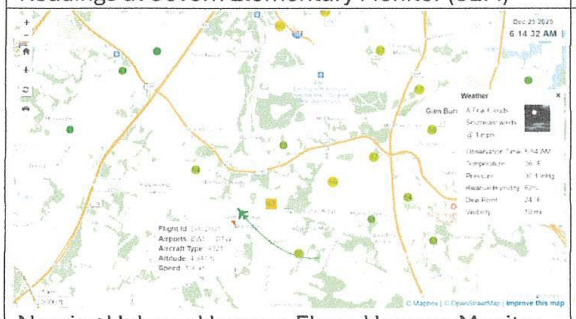
(2) December 25th 2025	6:14am	DAL 2601	Night time (10pm-7am)	Delmont Hook



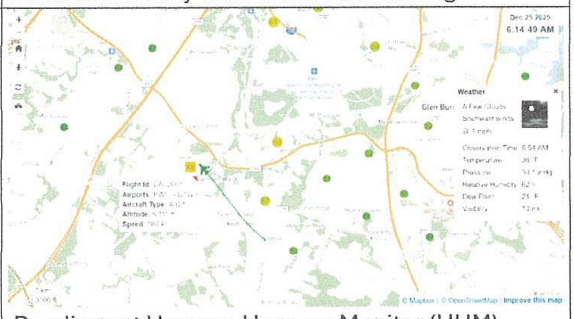
Readings at Severn Elementary Monitor (SEM)



Altitude is nearly 4200 ft and still banking



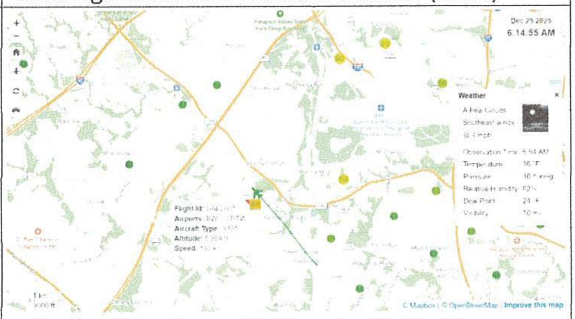
Nearing Hebron-Harman-Elem. Hanover Monitor



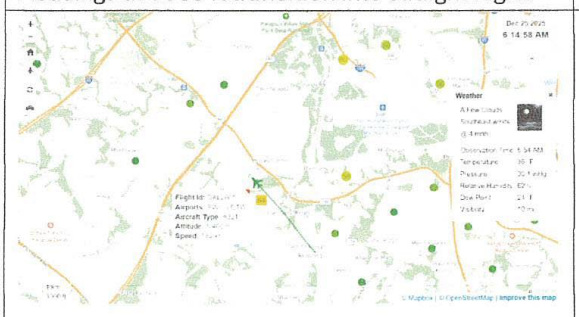
Readings at Harman-Hanover Monitor (HHM)

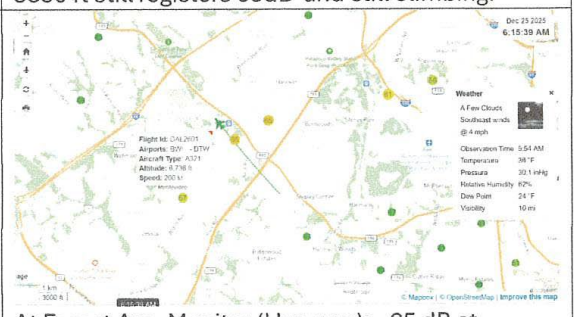


Readings at 5300 ft transition into straight flight.



5350 ft still registers 68dB and still climbing.

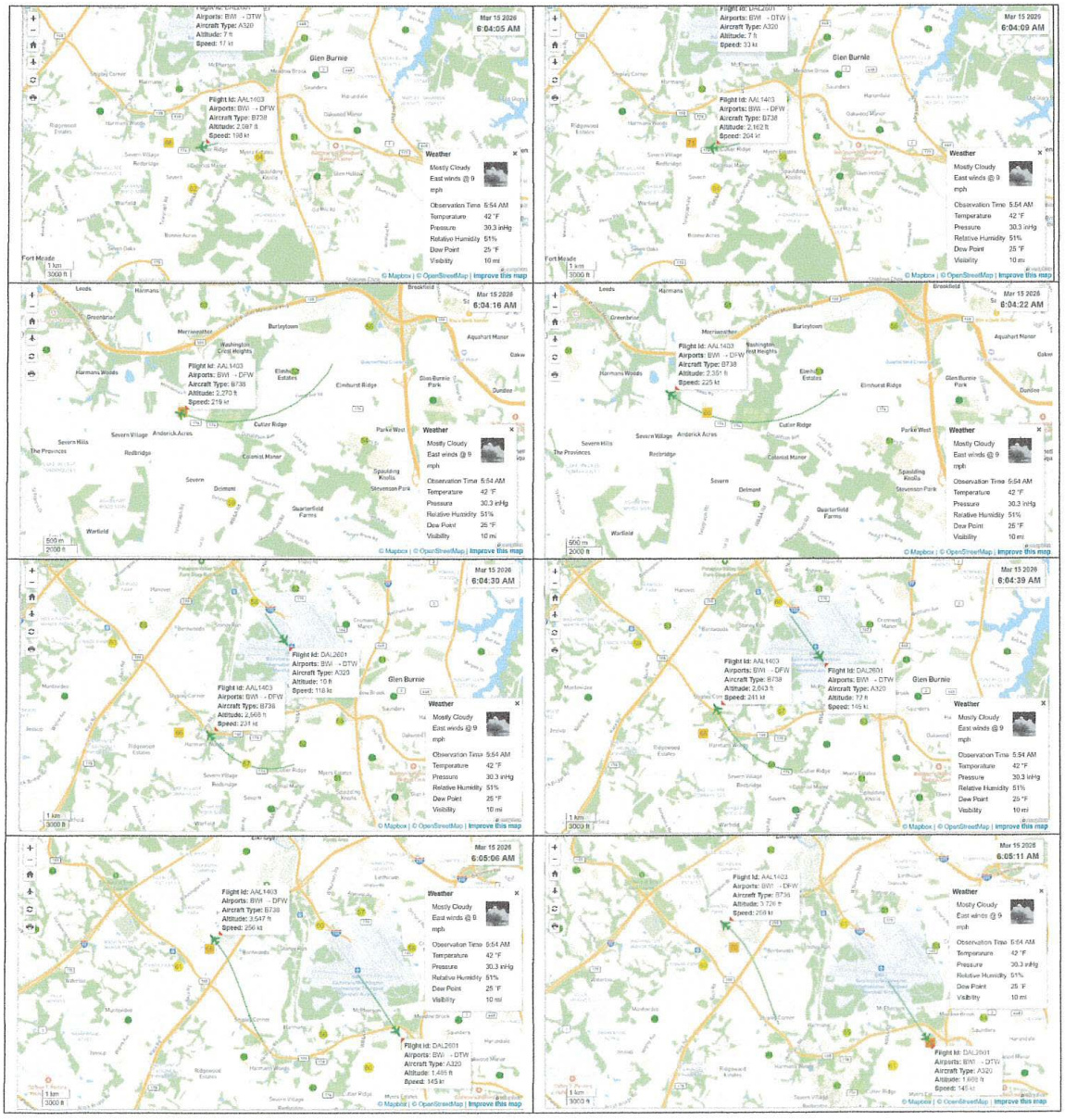




At Forest Ave. Monitor (Hanover): ~65 dB at 6,700 ft and still climbing.

(1) March 15th 2026	6:00 am	**AAL 1403**	Night time (10pm-7am)	Delmont Hook

(This flight was a **"wake-up flight"**, though it did not pass near or directly over our neighborhood.)
Please observe **altitudes and wind direction** as the aircraft passes the various monitors.
As shown in the sequence, **DAL 2601** (same flight number as the example from December 25th, 2025) is already lined up and followed by many additional departures throughout the morning.
Some of these flights pass **close to or directly over the referenced neighborhoods.**
Departing aircraft climb between **2200–7500 ft**, noise levels fluctuate around 65 dB at 7500 ft, and only remain consistently **below 65 dB** at approximately **7900–8000 ft**, as observed at the Hanover monitors.



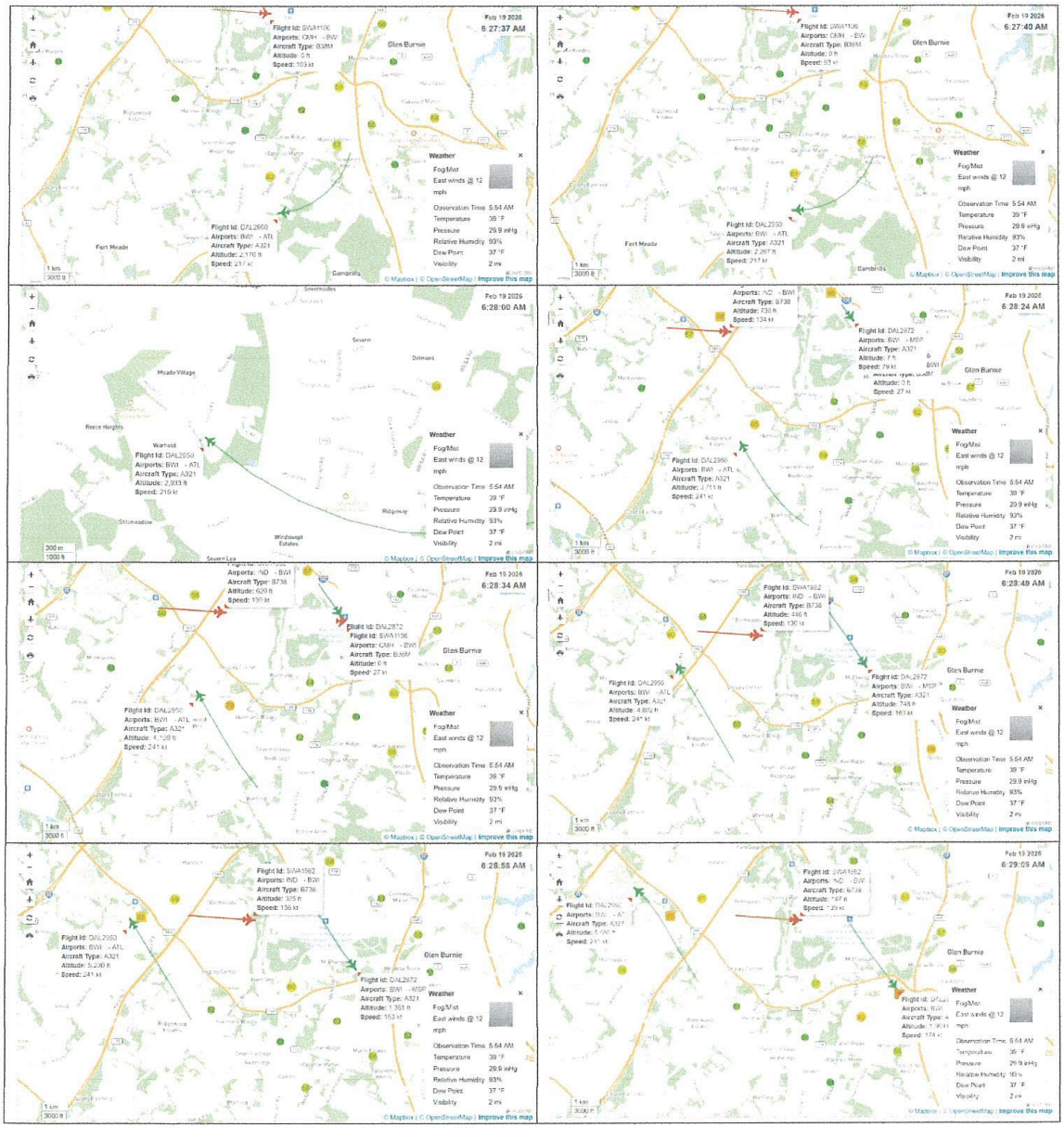
(1) March 15th 2026	6:14 am	DAL 2601	Night time (10pm-7am)	Delmont Hook

This is the same flight (DAL 2601) previously shown on Dec. 25th, now observed under East Wind conditions. The aircraft passes south of the Delmont monitor at approximately 3,050 ft, where the monitor briefly records 65–66 dB as the wind carries the noise westward. It then flies almost directly over Athena Lane at low altitude (no monitor present), and continues west (downwind) past the Harmans/Hanover monitor, still recording 64 dB at approximately 6,000 ft. Similar readings are observed at the Forest Ave. Hanover monitor at ~6,500 ft.
This demonstrates that wind direction significantly influences monitor readings and that lower readings at one location do not necessarily reflect lower noise exposure in nearby communities.



February 19th 2026	6:27 am	DAL 2950	Night time (10pm-7am)	Delmont Hook

This flight passes south of the Delmont monitor at approximately 2200 ft, where it records only 64 dB at its highest. It then flies over Athena Lane at 2900 ft **("wake-up flight")**.
As the aircraft continues, the Harmans/Hanover monitor gradually rises to ~70 dB at approximately 4,100 ft, and similar levels are observed at the Forest Ave. Hanover monitor.
This pattern of lower readings at Delmont and higher readings at Hanover can be observed repeatedly on WebTrak with following flights and across many flights over extended periods days and nights.



(1)January 14th 2026	10:28 pm	FDX 1217	Night time (10pm-7am)	Delmont Hook

These cargo aircraft frequently operate during nighttime hours and are perceived as **"wake-up flights."** They typically pass over the area between 10 pm and 2 am and are notably loud as they climb and bank at high thrust levels. Common operators include FDX, UPS, SCX, and ABX.

Nighttime penalties of apply to all operations between 10 pm and 7 am.

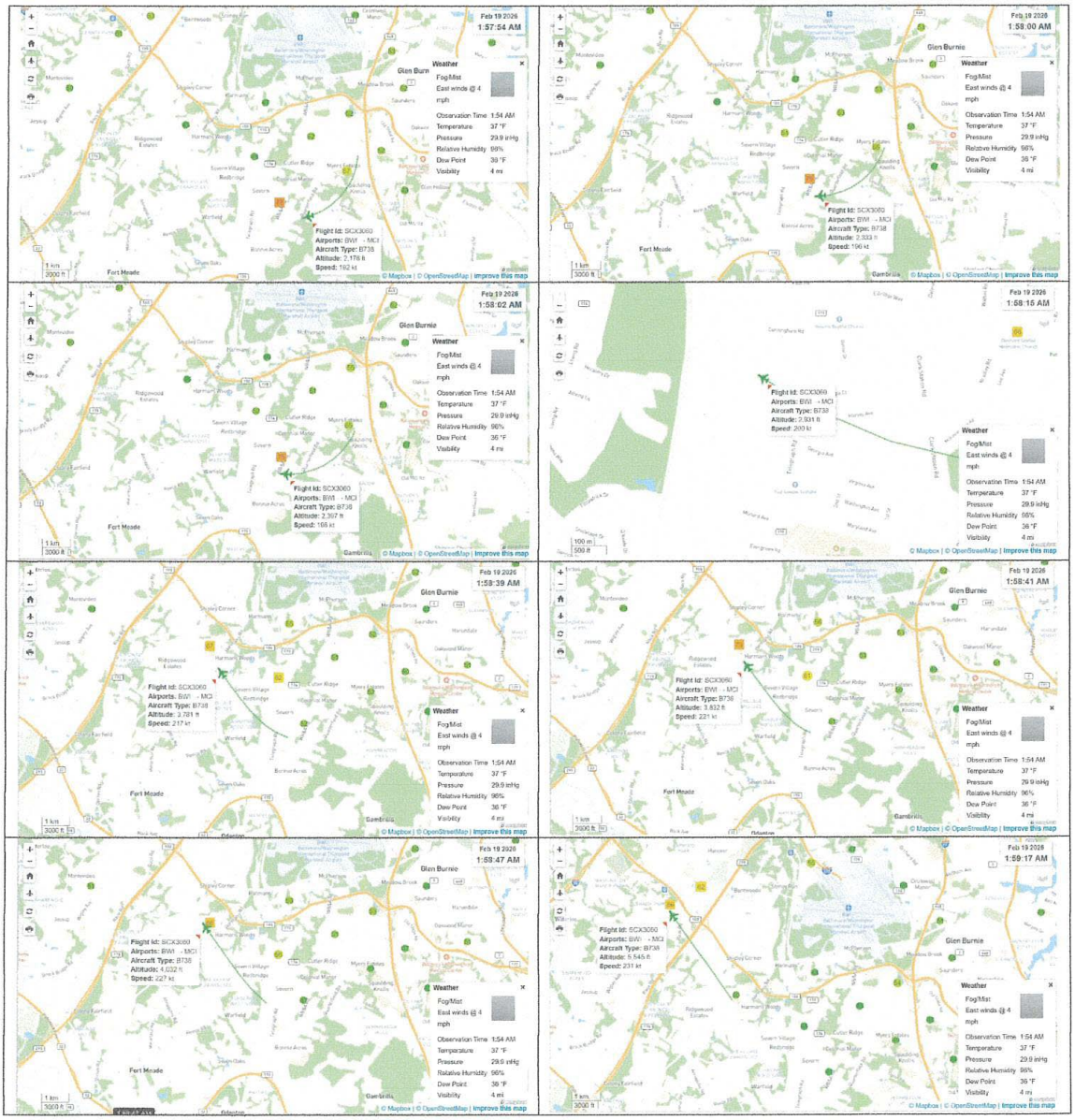


March 4th 2026	10:41 pm	FDX 1630	Night time (10pm-7am)	Delmont Hook

This flight registered 69 dB at the Severn Elementary monitor. A full sequence of screenshots is available for this flight.

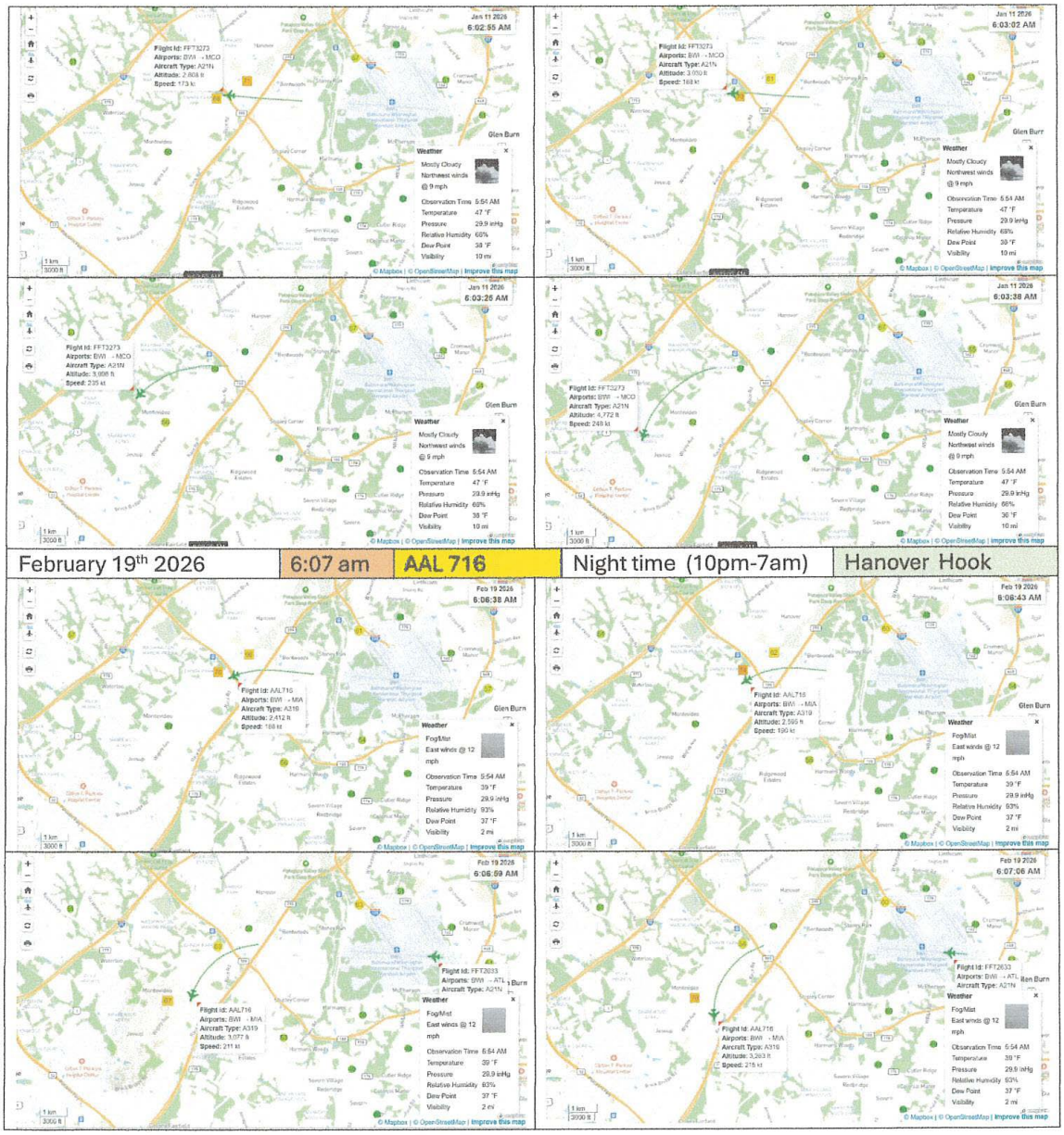
(2)February 19th 2026	1:57 am	SCX 3060	Night time (10pm-7am)	Delmont Hook

Nighttime departures of this type occur repeatedly, with multiple flights often observed during late night and early morning hours. These events are commonly perceived as “wake-up flights” by residents in overflown communities.



(1)January 11th 2026	6:03 am	FFT 3273	Night time (10pm-7am)	Hanover Hook

The following flights pass through the Hanover/Jessup monitors, which in this case are located on the outer side of the flown Hook departure. At between 2,000–4,500 ft, these flights consistently register high noise levels across multiple monitors (e.g., ~74–70–65 dB). This reflects a mirror of the Delmont Hook maneuver, but with multiple monitors capturing the full sequence. Please observe wind direction and aircraft position relative to each monitor, as these factors influence recorded noise levels.



February 19th 2026	6:07 am	AAL 716	Night time (10pm-7am)	Hanover Hook

(2) March 1st 2026	6:06 am	AAL 716	Night time (10pm-7am)	Hanover Hook

Additional Hanover Hook departures follow this sequence and can be consistently observed on WebTrak. The overall pattern of these flight paths and corresponding monitor readings remains largely consistent across flights.



December 16th 2025	6:00 pm	SWA 478	Day time	Hanover Hook

Please note the altitudes at the noise monitors.



Example Documentation of Aircraft Departures Over Residential Areas in the Severn/Hanover Corridor

(Sample Observations via **WebTrak and Photos**)

These observations document departures from **BWI** over the **Hanover/ Severn / Delmont Church corridor** specifically over **Ridgeway/Bonnie Acres and Athena Lane neighborhoods and Harmans/Hanover**.

Sample days are shown, but these patterns occur **nearly every day** depending on runway usage and wind.

Corridor Orientation and Noise Verification

- **Hanover Hook corridor** (south/south-east to south or east): **Harmans/Hanover → Athena Lane / surrounding neighborhoods** then south/south-east and **on occasions over Ridgeway / Bonnie Acres**.
- **Delmont Hook corridor** (west/north-west to west): **Ridgeway / Bonnie Acres → Athena Lane / surrounding neighborhoods → Harmans/Hanover**.
    - Aircraft may be closer to certain neighborhoods at lower altitudes during **banking and climbing**, producing **higher perceived noise**.
    - The **Harmans/Hanover monitor** captures readings **above 65 dB** even after aircraft exit the banking turn but are still climbing. (4500 ft.-6000 ft)
- Observations include multiple days of monitoring, showing the **recurring pattern** of overflights and noise exposure.

  The following observations were made from our backyard on Athena Lane, but WebTrak observations were also made in conjunction to these.

---

1. Delmont Hook Departures — March 9, 2026 (Full 31 Flights)

#	Time	Flight	Aircraft	Route	Altitude	Evidence	Est. dB at Athena Lane
1	3:45 PM	AAL2314	B738	BWI → DFW	3,758 ft	Photo + WebTrak	68 dB
2	3:48 PM	SWA2925	B38M	BWI → BHM	4,373–4,705 ft	Photos + WebTrak	69 dB

#	Time	Flight	Aircraft	Route	Altitude	Evidence	Est. dB at Athena Lane
3	3:55 PM	SWA1888	B38M	BWI → DAL	2,877 ft	Photos + WebTrak	66 dB
4	4:08 PM	SWA1742	B738	BWI → SAN	4,247 ft	Photos + WebTrak	68 dB
5	4:12 PM	FFT2925	A20N	BWI → TPA	4,700 ft	Photo + WebTrak	69 dB
6	4:16 PM	UAL2012	B738	BWI → DEN	3,629 ft	WebTrak only	67 dB
7	4:21 PM	SWA1778	B737	BWI → SRQ	4,450 ft	Photos + WebTrak	68 dB
8	4:22 PM	SWA568	B737	BWI → ROC	2,986–4,078 ft	10 Photos + WebTrak	70 dB
9	4:30 PM	ATN3353	B763	BWI → ILN	7,462 ft	WebTrak only	65 dB
10	4:35 PM	FFT4307	A20N	BWI → ORD	4,777 ft	WebTrak only	68 dB
11	4:36 PM	SWA3345	B38M	BWI → BUF	3,228 ft	5 Photos + WebTrak	68-69 dB
12	4:44 PM	SWA3835	B738	BWI → STL	3,566 ft	WebTrak only	67-68 dB
13	4:48 PM	SWA1649	B738	BWI → MSY	4,163 ft	WebTrak only	66-67 dB
14	4:51 PM	SWA2437	B737	BWI → MCO	4,751 ft	WebTrak only	66-67 dB
15	4:53 PM	SWA2596	B737	BWI → MEM	3,845 ft	WebTrak only	66–67 dB
16	4:58–4:59 PM	DAL2799	B739	BWI → ATL	3,406–3,638 ft	6 Photos + WebTrak	66–68 dB
17	5:05 PM	NKS193	A20N	BWI → MCO	4,993 ft	WebTrak only	65–66 dB
18	5:11 PM	UAL1362	B739	BWI → IAH	3,540 ft	WebTrak only	66–67 dB
19	5:15 PM	UAL590	A319	BWI → ORD	3,264–5,026 ft	WebTrak only	65–68 dB
20	5:23 PM	SWA1714	B738	BWI → RDU	4,700 ft	WebTrak only	65-66 dB
21	5:30 PM	SWA836	B737	BWI → TPA	4,093 ft	WebTrak only	65-66 dB
22	5:31 PM	SWA257	B738	BWI → DTW	3,699 ft	WebTrak only	65=67 dB

Flight	Time	Aircraft	Route	Altitude	Evidence	Est. dB at Athena Lane
SWA906	12:13 PM	B737	BWI → MBJ	3,766 ft	Photo+WebTrak	67-68 dB
SWA2445	12:14 PM	B737 MAX 8	BWI → PBI	3,750 ft	WebTrak only	67-68 dB
NKS197	12:40 PM	A320	BWI → FLL	4,147 ft	WebTrak only	66-68 dB
SWA2550	12:55 PM	B737	BWI → BDL	5,719 ft	WebTrak only	66-69 dB

Observation:

- Both hooks show multiple departures over **Athena / Bonnie Acres / Ridgeway / Stillmeadows**, frequently between **3,000–5,000 ft while banking and climbing.**
- Estimated **>65 dB** is observed over Hanover monitor and nearby neighborhoods, illustrating **sustained noise exposure** even after aircraft exit the banking turn.

Documentation Sources:

- FAA WebTrak historical radar data
- Time-stamped screenshots
- Ground photographs

PAGE 1 - Sample of Aircraft Departures Observed Over the Severn Residential Corridor

Screenshots obtained from **BWI WebTrak** for independent verification.

Flight number and departure time are provided so **each flight can be verified directly in WebTrak**.

Note:
This table represents **only a sample of departures**. Many additional flights occur between the entries shown. Actual departure intervals are frequently **2–3–5 minutes apart** and continue throughout **both daytime and nighttime hours**.

Residents in overflown communities in the Severn Corridor report that **many nighttime departures are loud enough to awaken households,** including our own household.

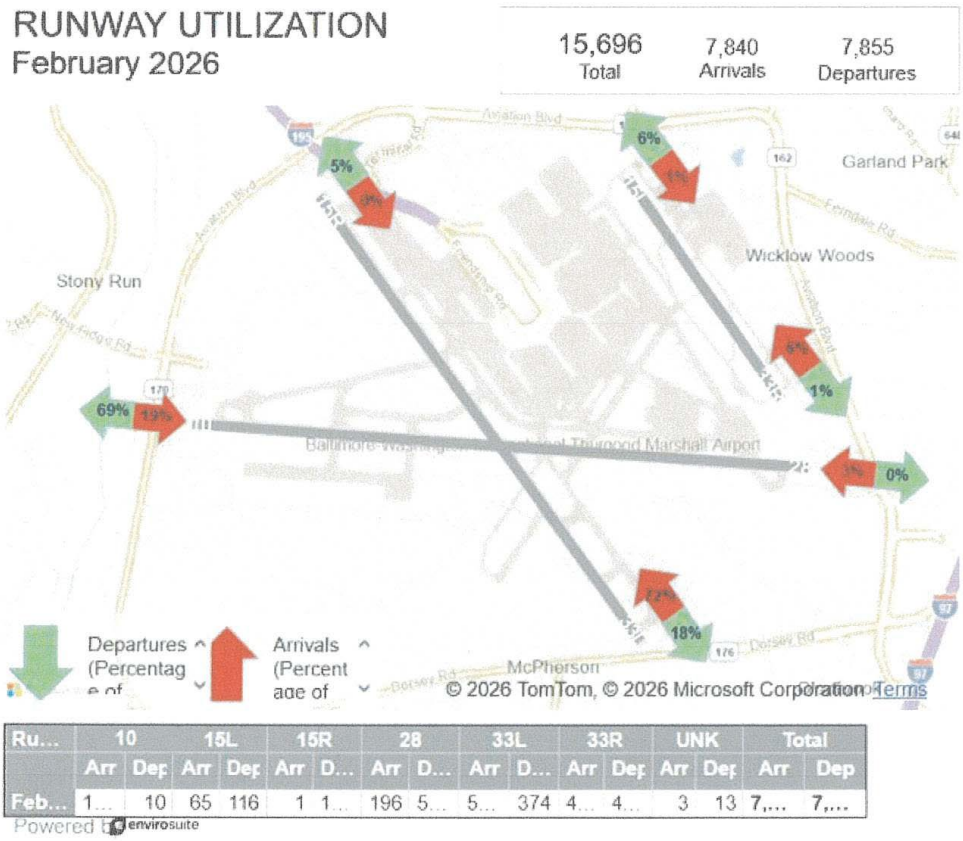
DECEMBER 2025	Time	Flight #	Day hours	Night hours	Delmont Hook	Hanover Hook
16	6:00 AM	SWA 478		X		X
16	6:27 AM	SWA 2235		X		X
16	6:30 AM	SWA 192		X		X
16	6:36 AM	SWA 854		X		X
16	6:38 AM	SWA 580		X		X
16	6:42 AM	SWA 103		X		X
16	6:43 AM	SWA 3525		X		X
18	7:17 AM	SWA 1518	X		X	
18	7:21 AM	SWA 7533	X		X	
18	7:28 AM	DAL 2579	X		X	
18	7:36 AM	SWA 1374	X		X	
18	7:38 AM	DAL 176	X		X	
18	7:45 AM	SWA 3472	X		X	
18	7:57 AM	SWA 1752	X		X	
18	8:03 AM	ENY 3623	X		X	
18	8:07 AM	SWA 663	X		X	
18	8:37 AM	UAL 2412	X		X	
18	8:50 AM	DAL 2562	X		X	
25	6:06 AM	AAL 1403		X		X
25	6:14 AM	DAL 2601		X		X
25	6:17 AM	UAL 1486		X		X
25	6:20 AM	UAL 273		X		X
25	6:21 AM	DAL 2872		X		X
25	6:23 AM	SWA 1810		X		X
25	6:30 AM	DAL 2970		X		X
25	6:50 AM	DAL 1557		X		X
25	6:57 AM	SWA 1296		X		X
JANUARY 2026						
14	10:42 AM	AAL 1599	X			X
14	10:55 AM	SWA 4275	X			X
14	10:57 AM	SWA 1651	X			X
14	2:35 PM	SWA 878	X		X	
14	2:36 PM	SWA 3097	X		X	

PAGE 2 - Sample of Aircraft Departures Observed Over the Severn Residential Corridor

JANUARY 2026 (continued)	Time	Flight #	Day hours	Night hours	Delmont Hook	Hanover Hook
14	3:10 PM	DAL 2526	X		X	
14	3:12 PM	SWA 484	X		X	
14	3:14 PM	SWA 4688	X		X	
14	3:16 PM	AAL 2316	X		X	
14	10:29 PM	FDX 1217		X	X	
14	11:39 PM	SCX 3089		X	X	
14	11:53 PM	ABX 188		X	X	
FEBRUARY 2026						
19	1:57 AM	SCX 3060		X	X	
19	5:47 AM	UPS 1222		X		X
19	6:07 AM	AAL 1716		X		X
19	6:20 AM	DAL 2601		X	X	
19	6:27 AM	DAL 2950		X	X	
19	6:30 AM	DAL 2872		X	X	
19	6:32 AM	AAL 1403		X	X	
19	6:34 AM	SWA 312		X	X	
19	6:35 AM	SWA 931		X	X	
19	6:43 AM	SWA 4417		X	X	
19	6:45 AM	UAL 1898		X	X	
19	6:48 AM	SWA 2428		X	X	
19	6:53 AM	SWA 1926		X	X	
19	6:54 AM	UAL 528		X	X	
19	6:58 AM	SWA 4458		X	X	
19	9:41 PM	SWA 4415	X		X	
19	10:08 PM	SWA 868		X	X	
19	10:16 PM	SWA 989		X	X	
19	10:24 PM	UAL 1546		X	X	
20	12:12 AM	SCX 3060		X	X	
20	12:14 AM	ABX 188		X	X	

PAGE 3 Sample of Aircraft Departures Observed Over the Severn Residential Corridor

MARCH 2025	Time	Flight #	Day hours	Night hours	Delmont Hook	Hanover Hook
1	6:05 AM	AAL 716		X		X
1	6:09 AM	NKS 3011		X		X
1	6:27 AM	NKS 1240		X		X
2	9:17 PM	ATN 3371	X		X	
2	10:46 PM	FDX 1630		X	X	
3	6:25 PM	SWA 4532	X		X	
3	2:01 PM	SWA 955	X		X	
3	2:04 PM	SWA 217	X		X	
3	2:09 PM	SWA 1049	X		X	
3	2:41 PM	SWA 878	X		X	
3	6:24 PM	SWA 1014	X		X	
4	10:27 PM	FDX 1217		X	X	
4	10:30 PM	JBU 2587		X	X	
4	10:41 PM	FDX 1630		X	X	
4	11:35 PM	SCX 3056		X	X	
4	11:52 PM	SCX 3060		X	X	
5	12:18 AM	CSB 188		X	X	
5	6:03 AM	FFT 2945		X	X	
5	6:12 AM	DAL 2601		X	X	
5	6:15 AM	SWA 1887		X	X	
5	6:18 AM	DAL 2872		X	X	
5	6:19 AM	DAL 2950		X	X	
5	6:20 AM	AAL 1403		X	X	
5	6:22 AM	UAL 1898		X	X	
5	6:27 AM	SWA 3191		X	X	
5	6:31 AM	UAL 278		X	X	
5	6:32 AM	SWA 2652		X	X	
5	6:35 AM	FFT 2633		X	X	
5	6:39 AM	SWA 1235		X	X	
5	6:41 AM	UAL 660		X	X	
6	6:14 AM	DAL2601		X	X	
6	6:16 AM	SWA 1487		X	X	
6	6:17 AM	AAL 1403		X	X	
6	6:22 AM	DAL 2872		X	X	
6	6:23 AM	SWA 3191		X	X	
7	5:13 AM	AAL 2224		X	X	
7	5:15 AM	ENY 3389		X	X	
7	12:52 PM	SWA 187	X		X	
7	12:59 PM	SCX 3022	X		X	
8	12:05 AM			X		X
8	12:11 AM			X		X
8	12:13 AM			X		X



Ru...	10		15L		15R		28		33L		33R		UNK		Total	
	Arr	Dep	Arr	Dep	Arr	D...	Arr	D...	Arr	D...	Arr	Dep	Arr	Dep	Arr	Dep
Feb...	1...	10	65	116	1	1...	196	5...	5...	374	4...	4...	3	13	7,...	7,...

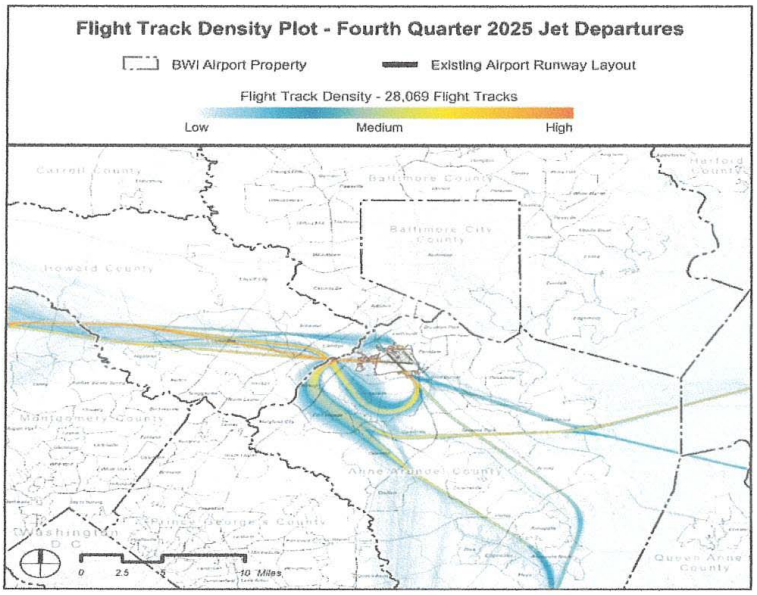
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Runway Utilization – February 2026

Based on the runway utilization graph, approximately **5,420 departures used Runway 28** and **1,414 departures used Runway 15R** during February 2026.

This raises the following question:

What percentage of Runway 28 departures follow the Hanover Hook departure route, and what percentage of Runway 15R departures follow the Delmont Hook departure route over the Hanover/Jessup/Severn corridor?



Quarterly Noise Report Fourth Quarter 2025

Summary of BWI Departure Track Density Map

The official BWI Airport **Flight Track Density Map** shows that aircraft departing from the airport spread out in a **wide fan-shaped pattern south of the airport during the initial climb phase**.

This area includes the **Severn community**.

The map indicates that before aircraft align with their final departure corridors, they pass through this southern area while **climbing and beginning their turns**.

Because of this, **multiple departure procedures overlap in the same region**, including:

- departures that later follow the **Delmont corridor**
- departures that later follow the **Hanover Hook route**
- other southbound departures

As a result, the Severn area experiences **aircraft from several different departure paths while planes are still at relatively low altitude during banking-climb-out**.

This overlap may help explain the **frequency of aircraft activity and noise observed in the communities.**