

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 (MDOT MAA). BWI Marshall is located nine miles south of downtown Baltimore, MD, thirty-two miles northeast of Washington, DC in Linthicum, MD 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 MDOT MAA to control incompatible land development in areas where noise levels are Day-Night Average Sound Level (DNL, Ldn)¹ 65 dBA or more. MDOT MAA is required to develop and certify an Airport Noise Zone (ANZ) that controls incompatible land development around BWI Marshall. If an impacted land use area exists within a noise zone, MDOT MAA is required to develop a noise abatement plan (NAP) to reduce the size of or eliminate the impacted land use area.

Noise modeling analysis required to complete the ANZ update results in a better understanding of current and future noise conditions at the airport for both MDOT MAA and BWI Marshall stakeholders, including communities surrounding the airport. This ANZ update accounts for changes in total annual aircraft operations, aircraft types, aircraft flight paths, changes in airfield layout, runway utilization, and the day/night distribution of operations which may result in changes in overall aircraft noise levels. Updating the ANZ involves modeling airport noise and developing noise contours for both existing and future conditions at BWI Marshall necessary for local land use planning. The ANZ provides a means for MDOT MAA to identify, control, and prevent incompatible land development around the airport. The study also includes a review of the BWI Marshall NAP. The NAP prescribes measures to monitor and reduce or eliminate impacted land use areas to the extent feasible, while maintaining efficient airport operations.

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: voluntarily forming and convening a Stakeholder Advisory Committee (SAC); and 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 pm to 7 am 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 2020 BWI Marshall ANZ update process and methodology. The SAC is 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
- BWI Marshall tenants including aircraft operators & 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 MDOT MAA solely for purposes of the BWI Marshall ANZ update.

As required by Maryland law, a public workshop and hearing will be held concerning the 2020 BWI Marshall ANZ. The public workshop and hearing affords all interested persons with an opportunity to comment on proposed revisions to the BWI Marshall ANZ and NAP.

Airport Noise Zone

The ANZ is an area specified by noise level contours in terms of the Day-Night Average Sound Level, abbreviated DNL or Ldn. The ANZ study process considered existing conditions (2020) and two forecast years (2025 and 2030). The forecasts for this ANZ Update were finalized prior to the 2020 COVID-19 pandemic; as such, the MDOT MAA has determined that these forecasts are reasonable for land use planning given the unknown length and potential impacts of the ongoing pandemic. For planning purposes, these forecasts were developed using FAA accepted forecasting methods and the most current available data at the time.

This 2020 BWI Marshall ANZ document includes the DNL noise contours for the following three conditions:

- Base year 2020 conditions with the current airfield layout;
- Five-year 2025 forecast conditions, including changes to the airfield as identified in the sponsor's preferred action alternative as stated in the Updated Draft Environmental Assessment and Draft Section 4(f) Determination Airport Layout Plan (ALP) Phase I Improvements at BWI Marshall Airport (Draft EA)²;

² Updated Draft Environmental Assessment and Draft Section 4(f) Determination, ALP Phase I Improvements at BWI Marshall Airport, February 6, 2020

- Ten-year 2030 forecast conditions, that include the Phase II and III improvements to the airfield as depicted in the BWI Marshall ALP.

The ANZ, as shown in Figure ES-1, is a composite of the three contours described above. The 2020 ANZ represents the largest extent of the DNL contours for each of the three study years (2020, 2025 and 2030) and is defined to provide the largest area of the existing or future noise exposure contours. The noise contours are presented in five-decibel increments, 65 dB to 75 dB. In conjunction with development of the 2020 ANZ DNL contour, estimated population and households within the contour boundary was analyzed. The 65 dB DNL contour for the 2020 ANZ is 5,543 acres in size (approximately 2,929 acres (53%) on MDOT MAA property and 2,613 acres (47%) off airport property) and contains an estimated 3,971 people based on the 2010 US Census, and 1,563 estimated households.

The 2020 ANZ covers an overall larger area than the previous 2014 ANZ (4,513 acres), encompassing a total of 5,543 acres exposed to noise levels greater than 65 dB DNL. This represents an increase of 23% compared to the size of the 2014 ANZ. The 2020 ANZ also contains an approximate 10% increase in estimated population based on the 2010 US Census, and 5% increase in the number of estimated households exposed to noise levels greater than 65 dB DNL relative to the previous 2014 ANZ.

The increase in ANZ size is due to a number of operational details including a shift in the day/night distribution of operations toward nighttime hours, changes in the aircraft fleet mix, differences in number of operations, increases in aircraft maintenance runups, changes in flight tracks modeled associated with the construction of a new parallel Runway 10R/28L, and updates made by the FAA in the required noise model and aircraft noise database. The 2020 ANZ is also different in size and shape when compared to the 2014 ANZ due to differences in the anticipated utilization of the runways associated with the future layout of the airport as detailed in the current BWI Marshall ALP.

Noise Abatement Plan

The NAP³ fulfills State requirements under the provisions of Sections 5-805, 5-806 and 5-819 of the Transportation Article, Annotated Code of Maryland. These sections require airport operators to develop a noise abatement plan, in conjunction with an airport noise zone, to reduce or eliminate the impacted land use area. In general, those are residential areas, schools, hospitals, rest homes, homes for the aged, nursing homes, libraries, and churches within the ANZ subject to 65 dB DNL or greater.

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 MDOT MAA staff have developed over several decades through extensive cooperative efforts with citizens and users. The NAP was updated with the cooperation of SAC Members, the FAA ATCT, and industry stakeholders. The goal of the NAP is to minimize noise disturbance to neighboring communities while maintaining safe and efficient airport operations.

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>

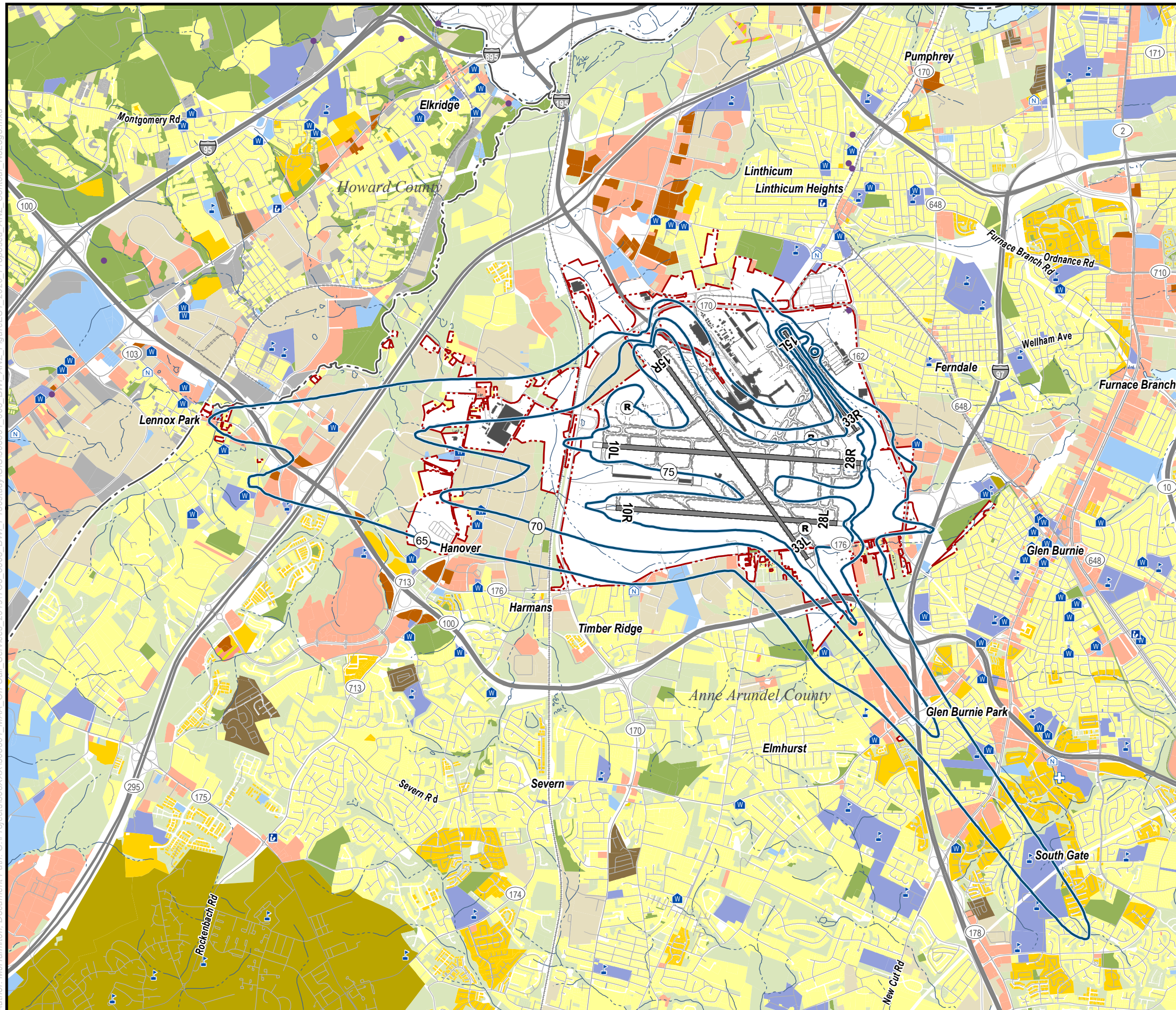
The NAP was most recently updated in November 2007 in conjunction with an FAA approved update to the noise compatibility program (NCP) under Title 14 Code of Federal Regulations Part 150 (14 CFR Part 150, or Part 150). MDOT MAA prepared an NCP update in 2007, which included a public review process. The MDOT MAA submitted the NCP update to FAA in August 2007 and FAA provided a Record of Approval (ROA) for the NCP on February 26, 2008. The 2007 NCP changes, as they affected the NAP, were discussed in the 2007 ANZ. Part 150 requires U.S. airports to develop a NCP to secure federal funding for noise mitigation programs and to gain federal approval to implement certain noise abatement procedures. To maintain the ability to access these funds, the NAP and NCP share similar elements. The NAP was reviewed and updated as part of the 2020 BWI Marshall ANZ update process in order to accurately reflect current operating conditions at BWI Marshall.

































The NAP is comprised of two parts: (1) aircraft operating procedures, and (2) the efforts MDOT MAA is taking to mitigate noise in the areas surrounding BWI Marshall. While operational measures receive the most public attention, the program is well rounded, and includes complementary compatible land use measures and other measures that focus on program implementation, communication, monitoring, and updating. The NAP was reviewed and updated as part of the 2020 BWI Marshall ANZ update process in order to accurately reflect current operating conditions at BWI Marshall. Notable changes to the NAP identified in this update include removing references to Runway 4/22 (which was decommissioned in 2014), clarifying units of distance, removing references to completed programs such as the Resale Assurance program, school soundproofing and acquisition of a mobile home park.

Author: MJHamilton; Document Path: G:\Projects\308XX\308801_MAA_On-Call_Services_2019\T08_8808_BWI_P150study\GIS\308801_008_BWI_ANZ_FigureES1_2020_Proposed_ANZ_Contour_NoLogo.mxd

Airport Noise Zone Update

Figure ES-1
BWI Marshall ANZ Update 2020 ANZ Contours



-  2020 Airport Noise Zone DNL Contours
-  MDOT MAA Property Boundary
-  Runup Locations
-  Helicopter Operation Area
-  Runway
-  Airport Buildings
-  Airport Pavement Edge
-  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: 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

