

D.C. METROPLEX BWI COMMUNITY ROUNDTABLE  
c/o Maryland Department of Transportation Aviation Administration  
P.O. Box 8766  
Baltimore/Washington Thurgood Marshall Airport, Maryland  
21240-0766

February 9, 2021

**SUBJECT: 2020 Baltimore/Washington Thurgood Marshall Airport  
("BWI Marshall") Airport Noise Zone (ANZ) Study Comment**

**NOTE: THE ANZ DNL CONTOURS ARE A REPRESENTATIVE OVERLAY OF  
AVIATION NOISE ONLY. A COMPARISON OF AMBIENT NOISE LEVELS TO A DNL  
OF AVIATION NOISE IS MISLEADING AND INACCURATE.**

The DNL (Day-Night Average Sound Level) noise metric is used to determine cumulative noise exposure over a 24-hour period. It is, by design, a grossly simplified metric intended to describe and quantify the effects of environmental noise in a simple, uniform way. A mathematical averaging of sound, like a mathematical averaging of any stimulus, does not capture the lived experience of the stimulus but serves to obscure it. In the case of DNL and noise, for example, hours of continuous, industrial-level noise can be averaged and determined equal to the noise of a quiet library or gentle rainfall (40 dB) or the hum of a refrigerator (50 dB).

## INTRODUCTION & OVERVIEW

The Maryland Department of Transportation Aviation Administration (MDOT MAA or MAA) has produced an updated ANZ that appears to be in accordance with Maryland law and regulation; however, the updated ANZ does not provide a complete and comprehensive picture of noise impacts on the communities surrounding BWI Marshall. The ANZ fails to protect residents from aviation noise pollution due to limitations in both the Maryland noise abatement law and in the process the MAA follows to update the ANZ.

The D.C. Metroplex BWI Community Roundtable ("BWI Roundtable") recommends that the state legislature require changes to this ANZ update.

The BWI Roundtable recommends that the state legislature update the Maryland Noise Abatement law. It was first passed in 1974 and has never been updated.

## IDENTIFIED PROBLEMS

- The updated ANZ exclusively addresses an area of severe noise within the immediate vicinity of BWI Marshall. Thousands of post-NextGen noise complaints received by the MAA identify adversely affected communities well outside of the ANZ contours. The collective suffering has resulted in sustained citizen activism, legal action and increasing political advocacy. The ANZ as defined under the current Maryland noise abatement law simply does not address the impacts of noise on these communities.
- The ANZ currently depicts an area of noise pollution exceeding 65 DNL. Under the noise abatement law, noise within this contour is so severe as to be deemed unlivable and Maryland prohibits residential development accordingly. This utterly fails to address areas of noise pollution that do not meet the high 65 DNL threshold yet still experience significant and detrimental levels of noise pollution.
  - The DNL (Day-Night Average Sound Level) noise metric is used to determine cumulative noise exposure over a 24-hour period. It is, by design, a grossly simplified metric intended to describe and quantify the effects of environmental noise in a simple, uniform way. A mathematical averaging of sound, like a mathematical averaging of any stimulus, does not capture the lived experience of the stimulus but serves to obscure it. In the case of DNL and noise, for example, hours of continuous, industrial-level noise can be averaged and determined equal to the noise of a quiet library or gentle rainfall (40 dB) or the hum of a refrigerator (50 dB).
  - The MDOT MAA further averages noise over an entire year to produce the DNL used to define the ANZ contours. This means that some portions of the year will have noise well above the DNL reported for the year as a whole.
- The measurement of a source of noise varies significantly due to environmental factors including temperature, humidity, characteristics of terrain, wind speed and direction. Because the MAA uses modeled noise, not measured noise, to create the ANZ contours, any accounting for environmental factors isn't clear. Communities may seasonally experience considerably higher noise levels than indicated by the ANZ contours.
- The MAA only provides a projected 10-year ANZ contour that assumes completion of a new parallel runway which has not been approved or funded. The projected 10-year ANZ does not provide contours that may exist if the current runway configuration is not modified. The MAA has not provided a depiction of noise impacts that will result from anticipated increases in operations in the absence of anticipated funding/construction.

For the ANZ re-certification process in 2014, the MAA only provided projected ANZ contours that included a runway that has yet to be built.

- BWI operates with two predominant directional flows of traffic based on environmental conditions, referred to as “East flow” and “West flow”. Some communities experience noise from only one traffic flow, not both. But the ANZ is determined using an average of modeled sound across both traffic flows. For this reason, some communities may experience a higher DNL than what is indicated by the ANZ contour, the calculated DNL being reduced by a lack of noise during the traffic flow that does not affect them.

### RECOMMENDED CHANGES TO THE ANZ UPDATE

- Add ANZ contours for 40dB, 45dB, 50dB, 55dB and 60dB DNL. Within the requirements of the current ANZ process, this will help communities located further from the airport understand how noise levels will change for them over the next 10 years. It will also facilitate the BWI Roundtable’s use of noise models to analyze proposed modifications to post-Nextgen flight paths.
- Illustrate how the DNL contours will vary seasonally due to environmental conditions.
- Include independent DNL contours for East flow operations, West flow operations and total combined operations.
- Include projected 5- and 10-year contours based on the existing runway configuration.

### POSSIBLE CHANGES TO THE NOISE ABATEMENT LAW

- Require the MDOT MAA to adopt the recommended changes above for all future ANZ updates.
- Require validation of the noise models used to create the ANZ with direct measurement of actual noise levels, for all contours.
- Require assessment of land use impacts, to include consideration of zoning, population density and health effects at DNL 50dB, 55dB and 60dB, in addition to the 65 and above dB DNL level currently depicted. Include these assessments in future updates to the ANZ, and as part of all future proposals for capital improvement projects at the airport.

- Note the majority of citizens requesting portable noise monitoring studies by the MAA, which indicates a high level of annoyance with airplane noise pollution, are at DNL starting in the 40's.
- According to the MAA, there were 11 complaints from 5 complainants filed in 2020 from complainants that fall within the 2020 ANZ contours. MDOT MAA received over 574,000 total complaints from approximately 600 complainants in 2020. The percentage of complaints received from complainants that live within the 65 DNL contour of the ANZ is 0.00001915%.
- Require MDOT MAA to create an ongoing and comprehensive mapping and public reporting of the actual noise pollution in the region within the DNL contours of 40dB, 45dB, 50dB, 55dB and 60dB, in addition to the 65dB DNL currently used.
- Reestablish the home resale program, and mitigation funding for homeowners and schools. Establish eligibility based on noise impacts based on worst-case seasonal variation and East flow/West flow traffic operations.
- Provide mitigation funding for impacted schools at levels below 65dB DNL based on best current science concerning noise pollution and childhood learning.
- Establish an air traffic demand reduction program to reduce the number of flights at BWI Marshall in the event that increased air traffic resulting from market demand produces increased noise impacts on surrounding communities. While the MDOT MAA does not have the authority to directly regulate the number of flights at BWI Marshall, there could be indirect forms of regulation such as the level of the aircraft fuel tax and the creation of impact fees. New taxes and fees could be used to fund noise pollution mitigation programs.

## CONCLUSION

Since the previous ANZ update in 2014, the adverse impact of aviation noise in the communities surrounding BWI Marshall has increased substantially, resulting in an explosion of complaints and public outrage. While this is largely due to the FAA's implementation of NextGen at BWI Marshall, the situation has made it clear that the time has come for a more rigorous and comprehensive analysis of regional noise impacts due to the airport. The time has come for an update to the Maryland noise abatement law to protect the communities surrounding BWI Marshall from the ever-increasing impact of the airport on the quality of life in the region.

This response from the BWI Roundtable on the ANZ process has been conducted in the absence of technical support or a review of the scientific literature on the topics covered herein. While the BWI Roundtable members, as individuals, are better informed than the average lay person on these topics, members of the BWI Roundtable are nonetheless lay persons when it comes to aviation noise pollution and the land use issues resulting therefrom. The BWI Roundtable encourages legislators to consider the full range of technical and scientific resources before making changes to the ANZ process. As representatives of the community, the BWI Roundtable will be a willing partner in the pursuit of updated legislation that reflects the changed circumstances of aviation noise pollution in the region in the wake of the implementation of NextGen at BWI Marshall.