



KAPLAN KIRSCH ROCKWELL

June 26, 2018

Via Federal Express

Mr. Daniel K. Elwell
Acting Administrator
Federal Aviation Administration
Office of Airport Safety and Standards
800 Independence Avenue SW
Washington DC 20591

Re: State of Maryland Petition Regarding Baltimore/Washington International Thurgood
Marshall Airport Airspace

Dear Mr. Elwell:

On behalf of the State of Maryland, I am providing this petition to the Federal Aviation Administration to take immediate steps to improve the disclosure of environmental impacts and community effects associated with recent airspace changes in the vicinity of the Baltimore/Washington International Thurgood Marshall Airport.

Please contact me at (303)825-7000 or any of the signatories to the petition if you have any questions.

Sincerely

John E. Putnam
JEP/sw
Enclosure

cc: Charles M. Trippe, Esq.

BEFORE THE FEDERAL AVIATION ADMINISTRATION

STATE OF MARYLAND'S ADMINISTRATIVE PETITION FOR
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT AND REVISIONS TO
AREA NAVIGATION ROUTES AND PROCEDURES SERVING THE
BALTIMORE/WASHINGTON INTERNATIONAL THURGOOD MARSHALL
AIRPORT

June 26, 2018

Introduction

The State of Maryland (“State”)¹ hereby formally requests that the Federal Aviation Administration (“FAA”) undertake the following steps in light of the large unanticipated community concerns regarding the new Area Navigation (“RNAV”) air traffic routes and instrument procedures as implemented at the Baltimore/Washington International Thurgood Marshall Airport (“BWI”) pursuant to FAA’s Washington D.C. Optimization of the Airspace and Procedures in the Metroplex (“D.C. Metroplex”):

1. Prepare a supplement to the D.C. Metroplex Environmental Assessment (“EA”) in light of unanticipated and undisclosed impacts associated with FAA’s recent airspace changes;
2. Undertake the review of categorical exclusions for Runway 33L and Runway 10 arrivals, as required by the National Defense Authorization Act; and
3. Continue, accelerate, and expand efforts to adjust RNAV routes at BWI to improve compatibility with neighborhoods, including arrival routes to Runways 33L and 10.

These steps are necessary because the noise impacts of the FAA’s route changes have caused greater community noise concerns than FAA predicted. These greater concerns are in large part due to the inadequate disclosure of the proposed airspace changes in the original D.C. Metroplex EA and contemporaneous categorical exclusions that never involved the surrounding community. These process failures are part of a nationwide problem with community engagement and communication on Metroplex and similar airspace efforts (including in Phoenix, Northern California, Boston and Southern California), which FAA has been working to address through improvements in community outreach, environmental documentation, and communications. The State of Maryland insists that its residents also receive the benefits of enhanced environmental process and community engagement.

The State recognizes and appreciates the engagement of the FAA in the D.C. Metroplex BWI Community Roundtable process. However, this effort has been under way for more than a year and it has not yet led to any concrete action to date to reduce the noise impacts caused by the new RNAV procedures. The State requests that the FAA work with all deliberate speed and transparency to disclose the noise effects of its actions and make adjustments in the airspace to reduce impacts to areas surrounding BWI, including arrivals to Runways 33L and Runway 10.

¹ The Maryland Department of Transportation is a principal department of the Maryland state government. *See* Md. Code Ann., Transportation §2-101. The Maryland Aviation Administration is a unit of the Maryland Department of Transportation. *See* Md. Code Ann., Transportation §2-107. Pursuant to the Annotated Code of Maryland, Transportation §5-412(a), the Maryland Aviation Administration operates and administers all airports owned by the State of Maryland, which includes Baltimore/Washington International Thurgood Marshall Airport.

Background

FAA is taking steps to transform the national airspace from a ground-based system to a GPS-based system of air traffic management. This new system, referred to as NextGen, involves the implementation of performance based navigation procedures, such as RNAV. As part of this effort, FAA began an environmental review of proposed changes to optimize the airspace in the Washington D.C. Metropolitan Area. This analysis addressed the flow of traffic in and out of several regional airports encompassing airspace from Virginia to Pennsylvania, including BWI.

However, the Draft EA presented to agencies and the public did not show the actual proposed routes with sufficient specificity that could allow residents, agencies, and other stakeholders to determine exactly what changes were proposed and how they would affect particular homes, schools, parks, churches, *etc.* The EA produced maps of the entire mid-Atlantic region with generalized corridors for flight tracks that were miles wide, rather than the concentrated RNAV tracks that have occurred and FAA intended. *See e.g.,* Draft EA, Chapter 3, *Alternatives*. Nor were noise levels identified or mapped.

On a separate track, FAA published RNAV (RMP) arrival procedure changes for Runways 10 and 33L with categorical exclusions in early 2013. FAA did so despite specific direction from Maryland that:

We have reviewed the information the FAA provided us on the proposed RNAV (RNP) Instrument Approach Procedures for Runways 10 and 33 at Baltimore/Washington Thurgood Marshall Airport (BWI). Based on our review, we do not believe the proposed procedures would result in significant change in noise exposure as defined by FAA Order 1050.1E ... i.e., a 1.5 dB increase within the 65 decibel (9dB) Day-Night Average Sound level (DNL) contour for any noise-sensitive area, because the procedure changes appear to occur outside that contour (for the most up-to-date current condition and forecast analyses). *However, we are concerned that the procedures will lead to significant concentration of arrival flight tracks over residential or other noise-sensitive areas outside the 65 dB DNL contour, which might result in citizen response and public controversy on environmental grounds, which is one of the circumstances with "impact potential" identified in the categorical exclusion checklist that you requested we review.*

See Letter and Attachments from Wayne Schuster, MAA, to Gerald Lynch, Atlanta Flight Procedures Office, FAA, October 11, 2012 (emphasis added). Nonetheless, the FAA published the procedures on January 10, 2013, without undertaking an Environmental Assessment. The community was neither informed nor consulted by FAA regarding these substantial changes to the airspace. The new arrival procedures moved and concentrated portions of the arrival stream from

the south into BWI, including to Runway 33L. They caused much of the community response and controversy identified by MAA, which continue to this day.

In December 2013, FAA published a Finding of No Significant Impact and Record of Decision (“FONSI/ROD”) for the D.C. Metroplex. Following its guidance, FAA limited its analysis of impacts to changes in arrival procedures between 3,000 and 7,000 feet above ground level (“AGL”) and departure procedures between 3,000 and 10,000 feet AGL for large civil jet aircraft weighing over 75,000 pounds. EA at 4-1. The EA did not discuss specific changes below 3,000 ft. AGL at BWI.

Further, the Draft EA did not clearly show the location of the changed flight procedures, concentration of flights on RNAV routes, or their location *vis-à-vis* affected homes, neighborhoods, and resources. *See* Draft EA at Chapters 3 (Alternatives) and 5 (Environmental Consequences). The multi-state scale of the maps and figures, along with a lack of geographic landmarks on the base maps made it impossible for the public or agencies to discern exactly what was being proposed and where it would concentrate flights. There was no way a resident would know whether their home would be underneath the new concentrated procedures. This was a fundamental failure of the EA process that FAA has sought to remedy in subsequent EAs and other airspace processes. Maryland residents deserved and still deserve better.

FAA implemented the new arrival procedures in November 2014 and the new departure procedures in March 2015. Beginning in 2015, Maryland residents living near BWI began reporting louder noise levels from aircraft at their property and increased concentrations of aircraft. The State first addressed these issues at a BWI Neighbors Committee Meeting on July 14, 2015. On October 22, 2015, the Maryland Aviation Administration (“MAA”) wrote to FAA Administrator Huerta about the increased citizen complaints, specifically noting that citizens were primarily concerned about impacts below 3,000 feet AGL. In response to such concerns, FAA met with State officials and subsequently adjusted procedures in February 2016, including implementing the TERPZ SIX procedure, which raised departure profiles. In addition, FAA responded in a March 9, 2016, letter to MAA hypothesizing that some of the unanticipated noise may have been the result of the temporary closure of Runway 28, which was completed in December 2015. MAA responded on April 25, 2016, noting the continued concerns of the citizens regarding below 3,000 feet AGL.

In March 2017, at the recommendation of FAA, MAA convened the first meeting of the D.C. Metroplex BWI Community Roundtable Working Group for the purposes of: (1) monitoring the implementation of air traffic procedures established by FAA in the D.C. Metroplex; (2) identifying possible alternative routings and procedures; (3) evaluating noise effects of possible route changes; and; (4) making recommendations to the FAA for further consideration. Roundtable Meeting Minutes, March 21, 2017, Meeting. While the Roundtable has continually asked FAA to revert to

the pre-D.C. Metroplex airspace procedures, FAA has stated that it will not do so and will only consider minor modifications. *E.g.*, Roundtable Meeting Minutes, April 18, 2017, Meeting, at 4.

And, while FAA has presented “notional changes” that may shift routes such as TERPZ SIX and perhaps restore a degree of dispersion, it has not made any such changes and there is no current timeline for it to do so. Further, it has recently stated that it may be able to make adjustments to arrival procedures, including the ones to Runway 33L, despite earlier indications that it could not. The community has never had a clear designation of the precise flight paths used for noise modeling or the results of the noise analyses specific to particular neighborhoods, homes, churches, parks, *etc.*

I. FAA Must Reevaluate Its Prior Analyses if Significant New Information Exists.

As discussed in subsequent sections, there is new information about the impacts of the RNAV routes that requires FAA to reconsider its prior evaluations of the impacts of the D.C. Metroplex and related categorical exclusions for BWI airspace changes. Federal National Environmental Policy Act (“NEPA”) regulations and FAA’s own Order 1050.1F² require that FAA develop a supplemental EA or Environmental Impact Statement when there is significant new information relevant to environmental impacts from its action.

The responsible FAA official must prepare a supplemental EA, draft EIS, or final EIS if either of the following occurs: (1) there are substantial changes to the proposed action that are relevant to environmental concerns, or (2) there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts (see 40 C.F.R. §1502.9(c)(1), CEQ Regulations). Significant information is information that paints a dramatically different picture of impacts compared to the description of impacts in the EA or EIS. The FAA also may prepare supplements when the purposes of NEPA will be furthered by doing so (see 40 CFR § 1502.9(c)(2), CEQ Regulations).

FAA Order 1050.1F, *Environmental Impacts, Policies and Procedures* (2015) at ¶ 9-3.

As the analysis of Section 4(f) resources is required in each NEPA analysis (*see* FAA, *1050.1F Desk Reference* at Chapter 5), if there is new information about Section 4(f) resource impacts, that will trigger this obligation to reevaluate impacts. The regulations implementing Section 106 of the National Historic Preservation Act (“NHPA”) also require that agencies reinstate Section 106 consultation when new information becomes available showing that conclusions in the original

² FAA Order 1050.1E was the version of FAA’s environmental order in effect at the time of the D.C. Metroplex EA and Runway 33L arrival procedures. The Order was most recently updated in July 2015; the new version is Order 1050.1F.

consultation document regarding the effects on historic properties were incorrect, and the regulations also require FAA to “make reasonable efforts to avoid, minimize or mitigate adverse effects to such properties.” *See* 36 C.F.R. § 800.13(b).

II. The Degree of Community Effects from the FAA’s RNAV Route Changes Was Greater than FAA Disclosed.

FAA’s EA for the D.C. Metroplex and the earlier categorical exclusions for Runway 33L and Runway 10 procedures concluded that there would be no significant community impact or reaction to the RNAV procedures, despite the State’s prediction in late 2012 that a shift and concentration of routes would cause significant community reaction and controversy. In so doing, FAA relied for its EA on its traditional Yearly Day-Night Average Sound Level (“DNL”) metrics and applied its criteria of significance: a reportable increase of 1.5 decibel (“dB”) or more within the DNL 65 decibel and greater contours. *E.g.*, D.C. Metroplex EA at 5-3. FAA also acknowledged that some large changes of noise below that threshold “could be disturbing to people and become a source of public concern.” D.C. Metroplex EA at 5-5.

The State, too, uses a DNL 65 threshold for noise impacts in its Airport Noise Zone Regulations and historically has found that this threshold has been a reasonable predictor of noise impacts and community effects with traditional flight procedures and for traditional airport projects. Code of Maryland Regulations, Chapter 11.03.03.

However, while the DNL metric and 65-decibel threshold have been good tools for addressing noise impacts from traditional airport projects, they have not been a good predictor of community response and impacts associated with new RNAV procedures that both move and concentrate flight tracks in very narrow bands over communities.³ FAA’s recent RNAV procedure changes have greatly concentrated flight procedures over new areas near BWI, for example:

- The TERPZ SIX departure procedure used for Runway 28 and 15R departures to the west added an entirely new leg north of the pre-Metroplex departure corridor, placing a concentrated stream of aircraft over communities that had not had more than scattered flights previously. *See* Figure 1, below, showing a “heat map” of departure frequencies with the pre-Metroplex and post-Metroplex departures. TERPZ SIX also concentrated departures in the south portion of the previously dispersed flight corridor. *Id.* This concentration of flights was not disclosed and could not be discerned in the Metroplex EA. Compare Draft EA at Exhibits 3-11, 3-13, 3-20, 3-22 (showing considerable overlap

³ For example, the State is currently working with FAA on an Environmental Assessment for certain improvements through 2020 at BWI (such as maintenance, deicing and other facilities) that will not move flight tracks or concentrate operations. This proposed action does not have the sudden concentration of noise over new locations as RNAV implementation.

between Proposed and No Action corridors that are miles wide and mask the actual flight concentration) and Figure 1 (actual concentrated corridors).

- The RAVNN arrival and Runways 10 and 33L RNAV (RNP) arrival procedures created a new stream on concentrated arrivals to Runways 33L and 10, connecting to the SPLAT waypoint that is ½-1 mile east of the arrivals that originally connected and still connect to the GRAFE waypoint. See Figure 2, below. Once again, the new stream of arrivals concentrates flights over sensitive communities and resources that previously saw only low densities of arrivals. These effects are compounded by the relatively low altitudes on arrival to Runway 33L. However, these procedures were never disclosed to the public, because they were the subject of categorical exclusions never subject to notice or comment. Further, even the Metroplex EA showed these procedures as miles-wide corridors rather than the tight concentration within hundreds of feet. See Figure 2, Draft EA at Figure 3-12.

Figure 1: Pre- and Post-Metroplex Departure Densities at BWI

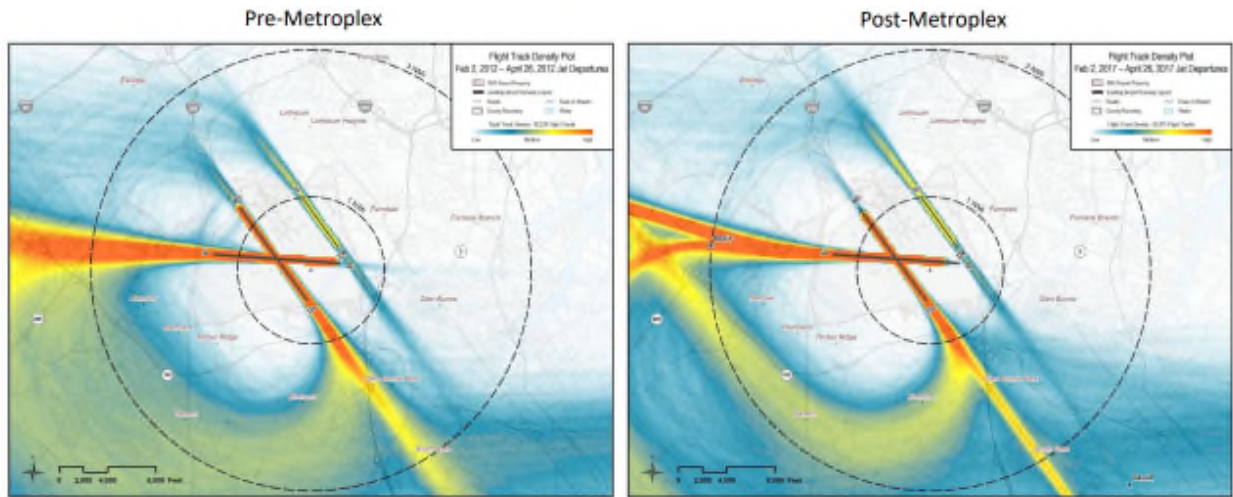
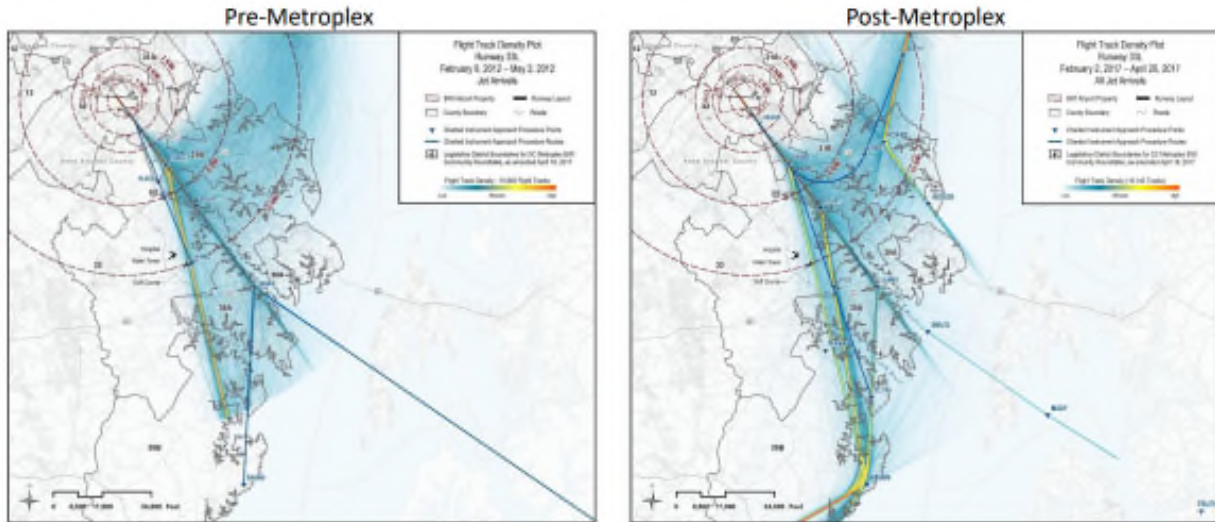
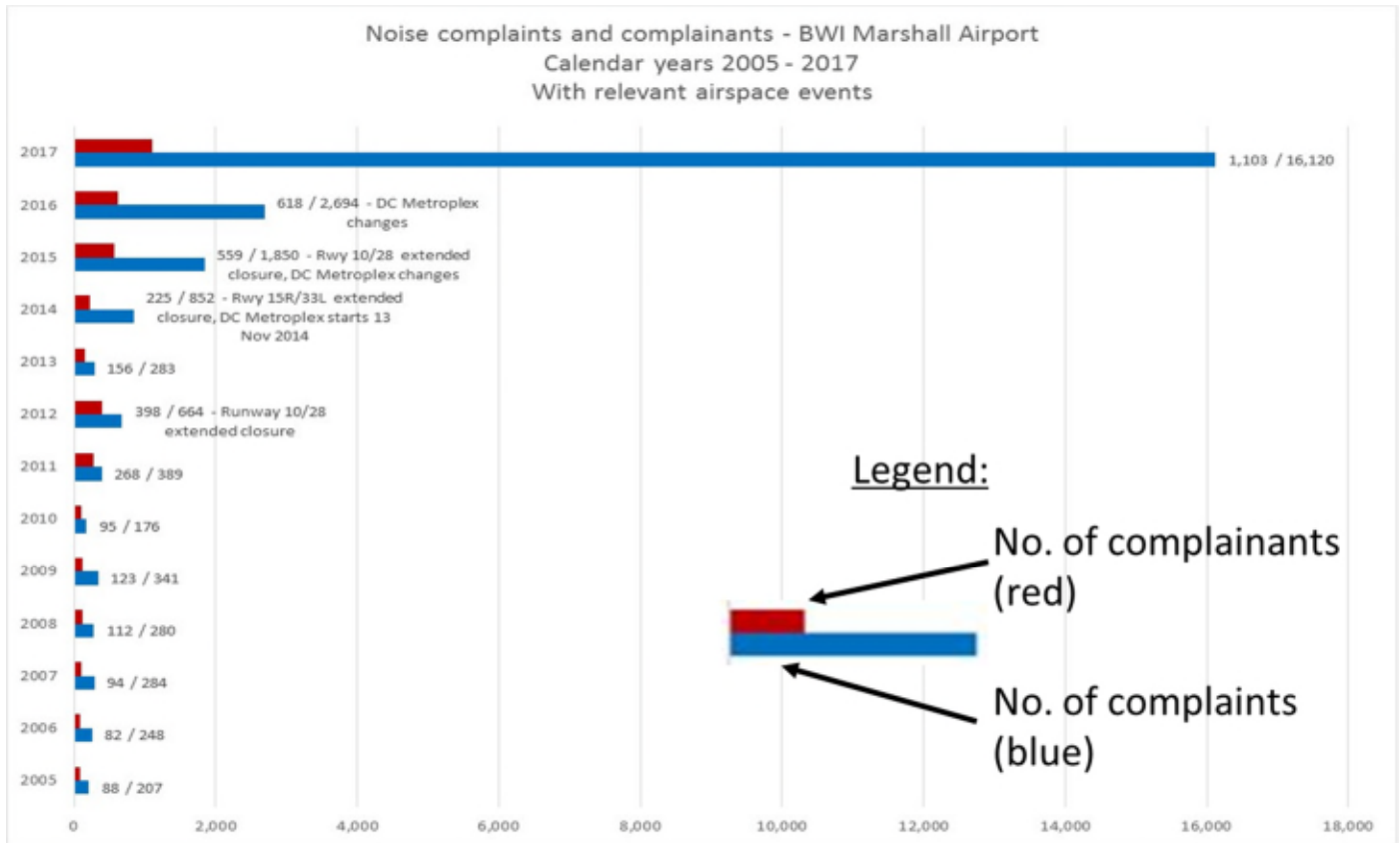


Figure 2: Pre- and Post-Metroplex Arrival Densities at BWI



As a result of FAA’s RNAV changes, BWI now has noise complaints in numbers that are much greater than the previous levels of noise complaints that the State received prior to the implementation of Metroplex process. Figure 3, below, shows a history of noise complaints at BWI since 2005. In 2017, with the Metroplex in place, **there were 4100 percent more complaints than in 2011 and 8000 percent more complaints than in 2005**. Similar trends apply in the number of households lodging complaints. See Figure 3, below. This compares to the modest increase in the number of operations at BWI and a fleet that has generally become quieter on an aircraft-by-aircraft basis. The only major changes in 2017 that could possibly account for the explosion of complaints are FAA’s airspace changes.

Figure 3: Noise Complaints at BWI, 2005-2017

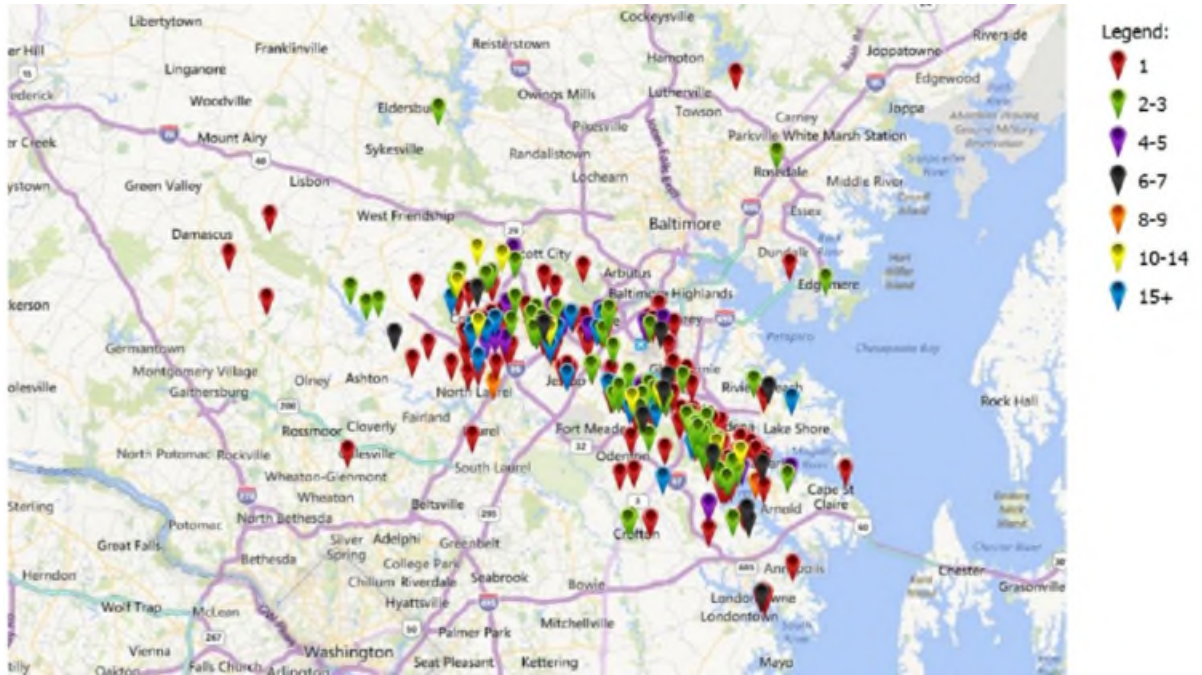


Source: MAA, *DC Metroplex BWI Community Roundtable Complaint History and Runway Use* (presentation to BWI Roundtable) (June 20, 2017)

A large proportion of the new complaints come from the areas of change caused by FAA’s RNAV routes. Figures 4a through 4c below, show quarterly geographic distributions of complaints for the first three quarters of 2017.

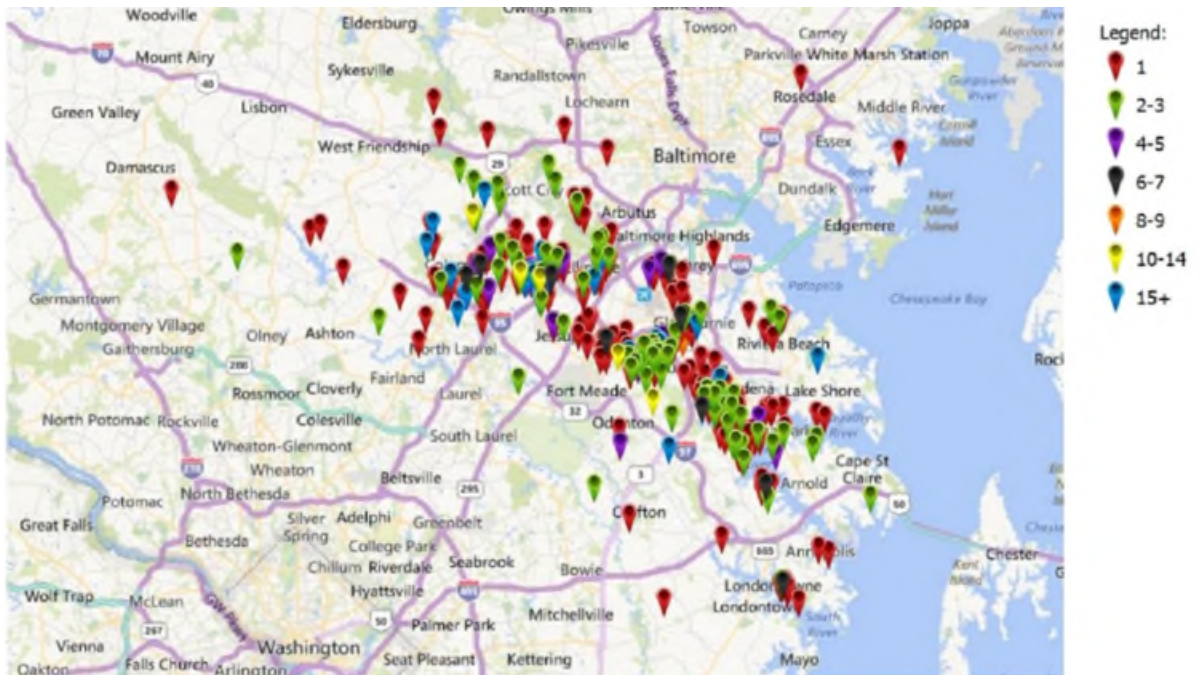
Community-by-community breakdowns in BWI’s quarterly reports show the same pattern: nearly all of the communities with large complaint numbers are under the TERPZ RNAV SID or the Runway 33L arrivals. See Exhibits 1-3, BWI Quarterly Reports at page 10.

Figure 4a: Map of Noise Complaint Locations, Third Quarter 2017 (July 1, 2017 – September 30, 2017)



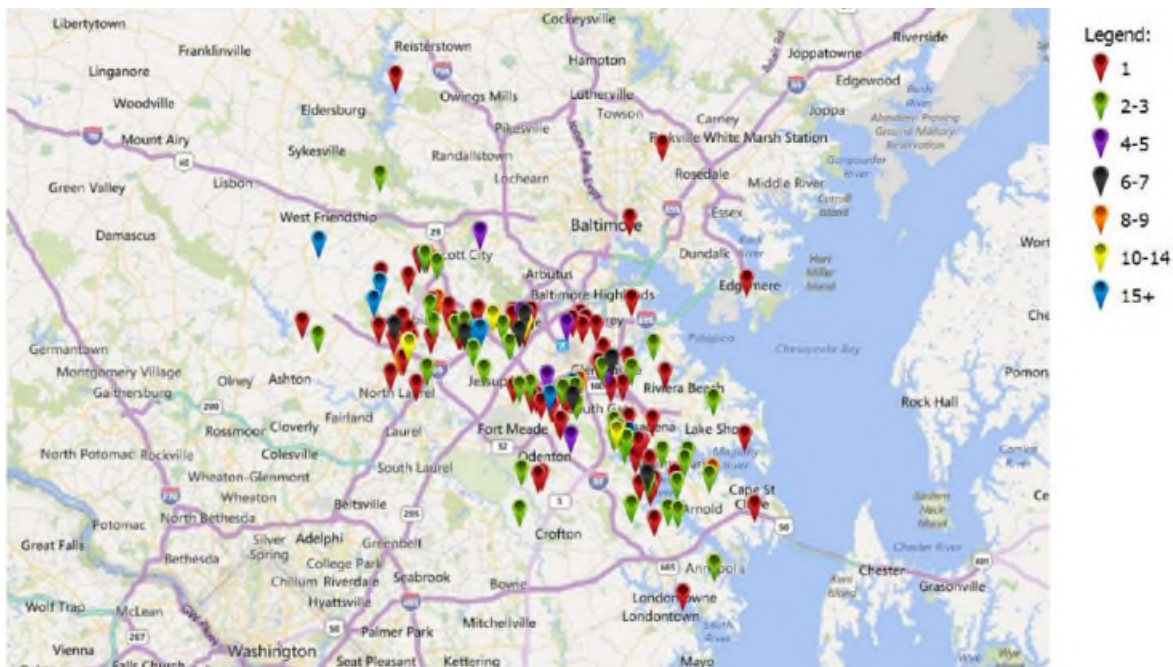
Source: MAA (2017)

Figure 4b: Map of Noise Complaint Locations, Second Quarter 2017 (April 1, 2017 – June 30, 2017)



Source: MAA (2017)

Figure 4c: Map of Noise Complaint Locations, First Quarter 2017 (January 1, 2017 – March 31, 2017)



Source: MAA (2017)

However, the EA did not contain any analysis of noise impacts to these areas that could be meaningfully accessed by the public. The EA depicted only very general corridors of the Proposed Action flight tracks, but the actual modeled flight tracks are not shown or available as part of the EA. Nor do they depict or report flight track density or concentrations as would normally be done in airport-related NEPA noise analyses.⁴ See Draft EA at Chapters 3 and 5; Figures 5a and 5c, below (blown-up examples from Draft EA for north flow departures from BWI). Neither the text nor the graphics provided information that highlighted the areas of significant change and concentration in overflights. The No Action and Proposed Action maps were separate and showed the airspace at too large a scale to discern local changes. See Aircraft Noise Technical Report at Exhibits 4 - 13. A resident in Anne Arundel or Howard County could not determine where their home is relative to any specific changes. This caused the EA to err at the most fundamental level: failing to clearly convey the proposed changes and their effects to the public.⁵

⁴ Generalized flight tracks were included in the ATAC noise technical report.

http://www.metroplexenvironmental.com/docs/ATAC_Noise_Technical_Report.pdf However, even this document showed tracks for the entire Mid-Atlantic at a scale that the entire environs of BWI were covered with tracks in the No Action and Proposed Action alternatives. *Id.* at Exhibits 1, 6, 9 and 13. This obscured the real changes at a neighborhood or community level.

⁵ The lack of clear identification of the changes and impacts, combined with FAA's overt conclusions that no significant impacts would occur, led the State SHPO to not object to the Section 106 assessment and the State Department of Transportation to not object to the findings of the EA. Subsequent experience and information has demonstrated that the actual effects of the FAA's actions were greater than assumed.

The Council on Environmental Quality regulations governing NEPA implementation make clear that agencies must ensure that “environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality.” 40 C.F.R. § 1500.1(a). FAA must also “[e]ncourage and facilitate public involvement in decisions which affect the quality of the human environment.” *Id.* § 1500.2(d). Environmental impact statements shall be written in plain language and may use appropriate graphics so that decisionmakers and the public can readily understand them.” *Id.* § 1502.8. See also, FAA Order 1050.1E at ¶¶ 209d, 210, 404a-404c, 405b, 405d.



Figure 5a: Draft EA Detail of Proposed Action for North Flow Departures



Figure 5b: Draft EA Detail of No Action Alternative for North Flow Departures

Because community impacts were greater than anticipated with the concentration of flight tracks and it never clearly disclosed the changes to tracks and concentration of flight procedures, FAA must prepare a supplemental EA to address the effects of the concentrated and shifted flight patterns. 40 C.F.R. § 1508.27; FAA Order 1050.1F at 4-3. FAA must undertake supplemental analysis to evaluate the impacts of these changes, in particular, the changes to the TERPZ SIX and Runway 33L arrival procedures.

III. FAA Must Comply with the Requirements of the National Defense Authorization Act of 2017

In December 2016, Congress included specific direction in the National Defense Authorization Act of 2017 (“NDAA”) for FAA to review categorical exclusion decisions

(4) REVIEW OF CERTAIN CATEGORICAL EXCLUSIONS.—

(A) IN GENERAL.—The Administrator shall review any decision of the Administrator made on or after February 14, 2012, and before the date of the enactment of this paragraph to grant a categorical exclusion under this subsection with respect to a procedure to be implemented at an OEP airport that was a material change from procedures previously in effect at the airport to determine if the implementation of the procedure had a significant effect on the human environment in the community in which the airport is located.

(B) CONTENT OF REVIEW.—If, in conducting a review under subparagraph (A) with respect to a procedure implemented at an OEP airport, the Administrator, in consultation with the operator of the airport, determines that implementing the procedure had a significant effect on the human environment in the community in which the airport is located, the Administrator shall—

- (i) consult with the operator of the airport to identify measures to mitigate the effect of the procedure on the human environment; and
- (ii) in conducting such consultations, consider the use of alternative flight paths that do not substantially degrade the efficiencies achieved by the implementation of the procedure being reviewed.

NDAA § 341(b). FAA relied on categorical exclusions *at least* for the Runway 10 and 33L RNP procedures in 2013 and moving the WONCE waypoint on the TERPZ procedure in 2016; all fit within the language of this NDAA provision.

However, the State is aware of no review conducted by the FAA and has not been consulted by it. FAA must discharge this mandatory duty imposed by Congress immediately and must consult with the State regarding the effects of the procedures subject to categorical exclusion. For the reasons discussed above, FAA must address the effects associated with the community response caused by the flight procedure shift and concentration. Further, FAA should do so with public input and transparency, perhaps as part of its process of completing the review of possible adjustments to

the current procedures. If FAA has conducted such reviews, it should make them public and subject to public review and scrutiny.

IV. The State of Maryland Seeks Immediate Change to the Airspace and Flight Procedures.

In light of the greater impacts to communities associated with FAA's recent NextGen flight procedure changes, the State requests that the FAA supplement its EA as soon as possible to better consider and communicate the impacts of its actions, as well as possible adjustments being considered to the RNAV routes. This should include meaningful public participation opportunities and improved transparency regarding the effects of the airspace decisions in the vicinity of BWI. This should include better graphics – similar to recent efforts elsewhere in the country such as Southern California and Phoenix – and user-friendly materials to understand air traffic control, the actual changes in the airspace and the noise effects they create. While this is being done, the State requests that progress accelerate on the adjustment of NextGen procedures to address noise impacts and concerns. This should include measures to reroute procedures to minimize impacts over residential, historic, park and other sensitive uses, maximize altitudes on arrival and departure routes where possible (including on the arrivals to Runway 33L), and return dispersion of flights to more equitably share noise burdens.

Respectfully submitted this 26th day of June, 2018,

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Attorney General of Maryland

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