

DC METROPLEX BWI COMMUNITY ROUNDTABLE WORKING GROUP PUBLIC MEETING

Fourteenth meeting of the DC Metroplex BWI Community Roundtable Working Group

Tuesday, May 15, 2018, 7:00 PM – 10:00 PM
 MAA Offices, Assembly Rooms A/B
 991 Corporate Boulevard
 Linthicum, MD 21090

MEETING MINUTES

REGULAR PARTICIPANTS

Roundtable Member	District / Organization	Attended	Roundtable Member	District /Organization	Attended
Lance Brasher, Chair *	District 33		Ramond Robinson	Alternate for Pat Daly Jr., Office of Anne Arundel County Executive Steven Schuh	✓
Christopher Yates, Vice Chair*	District 9	✓	Linda Curry	Alternate for Erica Wilemon, District 33	✓
Jesse Chancellor*	District 9	✓	Pat Daly Jr. *	Office of Anne Arundel County Executive Steven Schuh	
Howard Johnson*	District 12	✓	David Lee*	Office of Howard County Executive Allan Kittleman	
Drew Roth*	District 12	✓	Grace Fielhauer	Alternate for David Lee, Office of Howard County Executive Allan Kittleman	
Gail Sigel	Alternate for Drew Roth, District 12	✓	Bryan Sheppard*	Office of Baltimore County Executive Kevin Kamenetz	✓
Paul Verchinski*	District 13	✓	Gary Smith*	County Councilman Jon Weinstein	✓
Rusty Toler*	District 13	✓	Kimberly Prium	Alternate for Gary Smith, County Councilman Jon Weinstein	
Mary Reese*	District 30	✓	Ellen Moss*	County Councilman John Grasso	✓
Evan Reese	Alternate for Mary Reese, District 30	✓	Brent Girard	Office of Senator Van Hollen	✓
Tim Rath*	District 31	✓	Paul Shank, Chief Engineer	MDOT MAA	
Paul Harrell*	District 32	✓	Robin Bowie, Director Office of Environmental Services	MDOT MAA	✓
Richard Campbell	Alternate for Paul Harrell, District 32		Karen Harrell, Noise Program	MDOT MAA	✓

DC Metroplex BWI Community Roundtable Working Group
 Meeting Minutes for May 15, 2018

Roundtable Member	District / Organization	Attended	Roundtable Member	District / Organization	Attended
Dan Klosterman*	District 32		Louisa Goldstein, Counsel	MDOT MAA	✓
Marcus Parker Sr.	Alternate for Dan Klosterman, District 32		Greg Voos	NBAA	
David Scheffenacker Jr.*	District 32	✓	Kyle Evans	General Aviation Rep, CP Management LLC	
Erica Wilemon*	District 33		David Richardson	Southwest Airlines	

*Voting Members

ADDITIONAL PARTICIPANTS

Maryland Department of Transportation (MDOT) Maryland Aviation Administration (MAA)

Darline Terrell-Tyson, Environmental Manger
Jonathan Dean, Communications Manager
Trey Hanna, Assistant for Legislative and Special Projects
Roberta Walker, Administrative Assistant

Contractor Support

Kurt Hellauer, HMMH
Adam Scholten, HMMH
Royce Bassarab, HNTB

MEETING MATERIALS

Participants received the following materials in advance:

- Meeting Agenda for May 15, 2018
- Draft Meeting Minutes from April 24, 2018
- April 4, 2018 Letter from Governor Hogan to FAA Administrator Elwell

Handouts at meeting:

- Meeting Agenda for April 24, 2018
- Draft Meeting Minutes from April 24, 2018
- April 4, 2018 Letter from Governor Hogan to FAA Administrator Elwell
- Draft Communications Committee Charter

Presentations at meeting:

- FAA Presentation Titled "FAA 7100.41 Design Team Outcomes and Conceptual Procedures"
- FAA Proposed Procedure Presentation Boards from April 24, 2018 Roundtable Meeting
- MAA Presentation Titled "MAA Approach For Analyzing FAA Proposed Procedure Designs Presented at April 24, 2018 Roundtable Meeting"
- Draft Communications Committee Charter

1. INTRODUCTIONS (7:05)

Mr. Chris Yates (Vice Chair) welcomed attendees and began the meeting.

Member roll call

Mr. Yates welcomed attendees and asked members of the Roundtable to introduce themselves. He requested members include the legislative district they represented to allow members of the audience to identify with their district's Representative. Roundtable members introduced themselves to meeting attendees.

Review and approve agenda for tonight's meeting

Mr. Yates moved on to discuss the agenda for the meeting. He inquired if Roundtable members desired to discuss the agenda or make revisions. Mr. Paul Verchinski noted he would like to amend the agenda to include a discussion of a letter from the Roundtable to the MAA on the Environmental Assessment (EA) for Airport Improvements for BWI Marshall. He noted the letter was sent to the Roundtable and that there did not appear to be any comments, but he wanted to put the letter before the Roundtable for approval. Mr. Jesse Chancellor motioned to amend the agenda as requested by Mr. Verchinski. Mr. Smith seconded the motion. All in favor.

Mr. Chancellor noted he also wanted to amend the agenda and moved to include discussion and approval of the Communications Committee Charter. He noted a draft of the charter had been circulated to the Roundtable prior to the meeting and would like the Roundtable to approve the charter as part of tonight's meeting. Mr. Smith seconded the motion. All in favor. Tonight's meeting agenda with amendments is approved.

Review and approve April 24, 2018 meeting minutes

Mr. Yates discussed the April 24, 2018 meeting minutes and noted that although the minutes were circulated in advance of the May meeting, there was little time for Roundtable members to review the them. He inquired if other Roundtable members prefer approval of the minutes be postponed until the June meeting. Multiple Roundtable members responded the minutes should be postponed. Approval of the minutes from the April 24, 2018 meeting are postponed until the June Roundtable meeting.

2. HMMH REVIEW OF FAA SLIDES FROM THE APRIL 24, 2018 MEETING AND DISCUSSION

Mr. Yates moved to the review of the FAA's presentation from the April 24, 2018 Roundtable meeting and introduced Mr. Adam Scholten from HMMH. Mr. Scholten introduced himself and explained that there was interest from Roundtable Chair Mr. Lance Brasher to review the slides and storyboards presented by the FAA during the April 24 Roundtable meeting to facilitate further discussion on the FAA's proposed procedure designs. Mr. Scholten continued that although he attended the FAA's Performance Based Navigation (PBN) Working Group meetings with and on behalf of the MDOT MAA, he could not speak for the FAA as to the complete reasoning why certain aspects of each procedure were designed as presented at the April 24 meeting. Mr. Scholten concluded introducing the presentation by highlighting that if there were questions from the Roundtable he was unable to answer regarding the FAA's proposed procedure designs, HMMH and the MAA would like to capture those questions and provide them to the FAA along with prior questions from the Roundtable resulting from the April 24 meeting.

Mr. Scholten provided a brief overview of the FAA's introductory slides from the April 24 presentation and noted that these slides highlighted the reasoning from the FAA as to why the PBN Working Group was formed and various items that came out of the Working Group's activities. He continued and noted that although these slides are helpful, the remainder of the review of the FAA's presentation would focus on the designs of the FAA's proposed procedures. Mr. Scholten explained that the biggest takeaway from the FAA's background materials were that the activities of the Working Group are largely completed with the exception of small procedural changes that may be required as industry conducts flight simulations of the new procedures. He also noted that the background slides highlighted the FAA

was looking for a recommendation from the Roundtable on how they would like to proceed and if the procedures as proposed by the FAA should be implemented. Mr. Scholten concluded reviewing the FAA background materials by reviewing the letters sent from the Roundtable to the FAA and explaining that the 7100.41A PBN process was a collaborative effort that included Working Group members from the MDOT MAA, FAA, and industry.

Mr. Scholten moved on to discuss the FAA's proposed procedure designs starting with a review of the FAA's proposed Standard Instrument Departure (SID) procedures. Mr. Scholten reviewed the Runway usage for departures at BWI Marshall, and noted that Runway 28 was the most utilized Runway followed by Runway 15R. Mr. Scholten presented the FAA's proposed amendments for the existing TERPZ departure procedure and new proposed LINSE procedure. He explained how each procedure was depicted, and noted the FAA's graphics could be confusing as they showed the routes aircraft could fly from all the different Runways at BWI Marshall. Mr. Scholten highlighted that the intent of the amended TERPZ and new LINSE procedures was to try and distribute operations between both procedures in an effort to obtain improved dispersion of departure aircraft and move aircraft flight paths back to historical locations prior to the implementation of the DC Metroplex in 2012.

Mr. Drew Roth noted that the FAA slides for the TERPZ and LINSE procedures contained a large amount of information to which he would like clarification. He inquired what the lines with arrows represented as it related to the FAA's proposed procedure designs. Mr. Scholten responded the arrows were the result of the FAA's software program known as Terminal Area Route Generation Evaluation & Traffic Simulation (TARGETS) used to design procedures. He explained that depending on how the procedure is coded to be read by an aircraft's Flight Management System (FMS), TARGETS will depict a procedure segment in different ways. He explained that in the case of the LINSE and TERPZ procedures for some runways at BWI Marshall, the arrows represent aircraft flying runway heading until reaching a specified altitude before turning to the next point in the procedure. Mr. Scholten noted each arrow is not necessarily an accurate representation of where aircraft will turn, but rather represents a projection of the heading each aircraft will fly off the Runway before reaching the altitude where aircraft will turn towards the next point in the procedure. Mr. Roth inquired if the projections from TARGETS were a worst case scenario of where an aircraft may turn. Mr. Scholten responded that he did not believe the projections from TARGETS necessarily represented a worst case scenario and that based on experience he would anticipate aircraft would turn much sooner than what was depicted in TARGETS.

Mr. Roth noted that based on the FAA slides he understood that aircraft departing from Runway 33R would fly along the line from the Runway end represented by the arrow, and then turn off that line at some point between the Runway end and end of the arrow toward the navigational point WONCE. Mr. Evan Reese and Mr. Scholten responded that this understanding was correct, and that aircraft could theoretically turn toward WONCE anywhere within a triangular area between the end of Runway 33R, the arrow extending from the end of the Runway, and the navigational point WONCE. Mr. Roth indicated this was helpful and inquired if aircraft were capable of turning at the sharp angles as represented by some of the route lines in the FAA slides such as for the proposed procedure for TERPZ departure from Runway 15R. Mr. Scholten responded that aircraft were not capable of turning at the sharp angles as depicted in some of the FAA graphics, and explained that for Runway 15R aircraft will depart the runway and then navigate to a Fly-Over navigational point before making a right turn to the northwest toward the navigational point BOBYJ. Mr. Roth inquired if aircraft would fly over the navigational point BOBYJ. Mr. Scholten responded that BOBYJ was a Fly-By navigational point, which allow for aircraft to turn prior to the point towards the next segment of the aircraft's route without having a requirement for aircraft to fly over the point. Mr. Reese interjected and noted that aircraft can

fly within 1.5 Nautical Miles (NMI) on either side of a navigational point based on current FAA procedure criteria.

Ms. Linda Curry inquired if the FAA storyboards presenting the proposed Runway 15R TERPZ and LINSE departure procedures could be reviewed. Mr. Scholten displayed the FAA storyboard from the April 24 meeting depicting the proposed Runway 15R TERPZ and LINSE procedures. Mr. Roth suggested that it would be helpful to the public if additional slides were added to the presentation that described the symbology used in the graphics and storyboards prepared by the FAA and explained in greater depth how aircraft would fly the procedures. Mr. Scholten responded and noted that one of the requests from the Roundtable to the FAA from the April 24 meeting was for the FAA to provide an expanded narrative of the April 24 FAA presentation and storyboards. Mr. Roth requested Mr. Scholten elaborate on the Roundtable's request further and explain what was meant by an expanded narrative. Mr. Verchinski concurred and noted he too was confused by the FAA's presentation and storyboards and that for each of the existing and proposed procedures a detailed description of how aircraft would fly the procedures would help clarify the Roundtable's understanding of what the FAA is proposing to implement.

Mr. Roth inquired if a "star" symbol in the FAA slides and storyboards had a consistent meaning between procedures. Mr. Reese responded that it depended on where the "star" symbol was on a procedure and whether the "star" was part of a high or low altitude route. He explained further that he thought it was a great idea to have an expanded narrative of the procedures as the FAA makes understanding the procedures extremely difficult and that you could spend thousands of dollars on an instrument rating as a pilot and still be confused on how aircraft will fly the procedures. Mr. Scholten concurred with Mr. Reese's assessment that a glossary would be helpful, and noted that the FAA was not using the same standard symbology that would be used to depict procedures if they were implemented and published for use by aircraft.

Mr. Scholten continued to discuss the storyboards of the proposed Runway 15L and 15R TERPZ and LINSE departure procedures. He explained how aircraft would depart Runway 15L and 15R and navigate to a navigational point 0.7 NMI from the end of each runway prior to turning to the northwest toward the next point in the procedure. Mr. Scholten noted the storyboard showed the anticipated corridor where the FAA expected aircraft to turn within to the northwest based on a simulation from the TARGETS. Mr. Roth inquired if the corridors presented by the FAA indicated an envelope within which aircraft could turn. Mr. Scholten responded in the affirmative and noted the corridor on the storyboard is where the FAA anticipated aircraft would fly when the new procedures are implemented.

Mr. Kurt Hellauer from HMMH further discussed the storyboard of the proposed Runway 15L and 15R TERPZ and LINSE departure procedures. He explained that the first navigational point on the procedure for both runways at 0.7 NMI was a fly-over navigational point, and would require aircraft to fly over the point prior to making a turn to the northwest toward further downstream points. Mr. Hellauer noted that the corridors depicted in the FAA storyboards represent how the FAA anticipates aircraft will turn based on aircraft speed and altitude which will result in some dispersion in flight paths as aircraft turn before becoming more concentrated as aircraft approach the next fix in the procedure. Mr. Hellauer concluded by noting that the remaining fixes on the TERPZ and LINSE procedures after the initial turn at 1 DME are Fly-By navigational points, and would allow aircraft to turn prior to reaching each point.

Mr. Scholten discussed that the TERPZ and LINSE procedures flew largely the same path close to the airport, before the TERPZ and LINSE diverged as aircraft navigated away from the airport. Mr. Roth inquired if these were the procedures the FAA mentioned in the April 24 presentation that would have aircraft split with 75% of aircraft on one procedure, and 25% on the other for Runway 15R, 15L, and 28 departures. Mr. Scholten concurred, and noted that the FAA's proposed LINSE procedure is splitting the traffic with destinations to the northwest that are currently flying the TERPZ into a separate procedure

and then moving those operations further south to better align with historical flight paths closer to the airport. Mr. Roth inquired if the split of aircraft operations is actually determined by the number of flights with routing to the northwest. Mr. Scholten responded in the affirmative.

Mr. Reese commented that he did not believe the splitting of operations between the LINSE and TERPZ procedures was going to provide a large benefit to the Roundtable as departure aircraft are largely flying over the same areas close to the airport today. Mr. Roth concurred noting that this has been the main concern of the Elmhurst community.

Mr. Scholten commented that the FAA's proposed LINSE and TERPZ procedures with reference to the current TERPZ procedure for Runways 15L and 15R represented three main changes. He explained the first change was the splitting of traffic between the LINSE and TERPZ procedures. The second change was that aircraft would no longer fly to the navigational points SARLY and WONCE as they exist today and would instead fly south of these locations which would shift aircraft flight paths away from communities such as Columbia and place them closer to 2012 historical flight paths. Mr. Scholten concluded by explaining that the third change was that on initial departure, aircraft would turn slightly further south to the northwest than where aircraft are turning today and should shift flight paths back to historical locations that existed prior to the implementation of the DC Metroplex in 2012.

Mr. Reese noted he had a serious concern with the FAA's proposed procedures. He noted he supported having the aircraft turn later on initial departure as doing so would allow aircraft to climb to a higher altitude before turning, but that he did not support splitting the procedures. Mr. Reese explained that the FAA often develops splits in procedures to increase airport efficiency and accommodate increased traffic volume. He further noted that by splitting the procedures, the FAA can sometimes meet required air traffic control separation requirements which allow for airport capacity to be increased as aircraft can be spaced at closer intervals. Mr. Reese inquired if increased efficiency was the reason why the FAA was splitting the procedures. Mr. Scholten responded that this was not his impression of the reasoning why the FAA split the procedures based on his attendance at the PBN Working Group Meetings and that splitting the procedures was not done with the primary intent of increasing capacity. He also noted that based on his knowledge of air traffic control procedures, Runway 15R and 15L departures will still need to maintain the same intervals of in-trail spacing as is being done today even though the proposed FAA TERPZ and LINSE procedures will split up aircraft flightpaths as aircraft navigate away from the airport.

Mr. Reese noted he appreciated having the ability to talk to Mr. Scholten and the MDOT MAA without the presence of the FAA. He explained that it was his impression that at the Working Group meetings Mr. Scholten attended with Mr. Paul Shank of the MDOT MAA, the FAA was modifying the departure procedures at BWI Marshall in order to address the needs of the FAA and not the concerns identified by the Roundtable. Mr. Reese asked Mr. Scholten if he had the same impression as Mr. Reese from his attendance at the Working Group meetings. Mr. Scholten responded in the negative and noted that he believed the FAA did want to address the Roundtable's concerns based on multiple discussions that occurred during the Working Group meetings about trying to design procedures to meet the needs of the community. He explained further that the FAA would often design a procedure and then seek input from Mr. Shank and Mr. Scholten on the Roundtable's perspective if the proposed procedure design would be beneficial.

Ms. Mary Reese inquired as to what constituted input from the MDOT MAA on the proposed procedure designs. Mr. Scholten noted he could not speak for the MODT MAA or Mr. Shank's attendance at the Working Group meetings, but explained that Mr. Shank was adamant the FAA return flight paths back to historical locations and concentrations prior to the implementation of the DC Metroplex. He also noted Mr. Shank campaigned for restoring vectoring, and that if vectoring was not something that could be restored by the FAA what other options could the FAA pursue that could bring relief to Roundtable

members. Mr. Scholten explained that the FAA's proposed procedures were the result of reviews of available flight track data at the time of the Working Group meetings. He noted that the MDOT MAA and HMMH would be completing extensive modeling of the FAA's proposed procedure designs now that the procedures are mature enough to quantify what benefits they could bring to the Roundtable. Mr. Scholten concluded he could not speak for the FAA as to why returning to vectoring was not an option but emphasized Mr. Shank advocated heavily for a return to vectoring and dispersion on the Roundtable's behalf.

Mr. Scholten presented FAA storyboards depicting 2012 and 2017 radar flight track data overlaid on the FAA's proposed procedure designs for Runway 15R and 15L TERPZ and LINSE departures. Mr. Roth noted it was his understanding that the FAA's proposed procedure changes close to the airport were intended to provide relief to the Elmhurst community and facilitate aircraft flight paths returning closer to 2012 historical locations. Mr. Scholten concurred and explained that by the FAA implementing a Fly-Over navigational point at 0.7 NMI it will force most aircraft to turn further south of current flight paths. Mr. Scholten also noted the Fly-Over navigational point will allow for increased compliance with the BWI Marshall Noise Abatement Plan (NAP) that states aircraft should not turn when departing Runways 15L or 15R until 1 DME and corresponds to 0.7 NMI from the end of the Runway. Mr. Scholten explained further that the dispersion seen in the radar flight track data for the initial departure turn should be maintained due to differences in aircraft performance after aircraft cross over the Fly-Over navigational point at 0.7 NMI for both runways. Mr. Roth concurred that there would be dispersion as long as the largest airline at BWI Marshall did not fly the same aircraft type and noted that 90% of the aircraft operating at BWI Marshall were the Boeing 737. Mr. Scholten responded that the dispersion of flight tracks in the turn was also dependent on wind and weather conditions and that the dispersion depicted in the radar data in the FAA storyboards should remain intact as the proposed procedures are implemented.

Mr. Scholten continued with the presentation of the FAA storyboards and explained how Runway 15R and 15L departures on the proposed LINSE and TERPZ departure procedures would navigate along the remainder of each route. He explained that as aircraft navigated away from the airport, the proposed FAA procedures would place aircraft closer to historical flight paths prior to the implementation of the DC Metroplex in 2012. Mr. Reese interjected and noted that the Roundtable needed to consider that even though the proposed procedures may return aircraft flight paths to historical patterns, they will not restore dispersion and that flight paths will remain highly concentrated.

Mr. Howard Johnson inquired if the FAA moving the T-Routes further north would have an impact on aircraft altitudes to the west of the airport. Mr. Reese responded that moving the T-Routes were a distractor and that they would not have much of an impact on the communities surrounding BWI Marshall. Mr. Scholten responded that he could not speak for the FAA, but that he did not get the same impression as Mr. Reese. He noted that moving the T-Routes were intended to accommodate the proposed TERPZ and LINSE departures for Runways 33L and 33R and accommodate the ability for departure aircraft to execute Climb-Via procedures. Mr. Scholten explained that previously departure aircraft on some runways at BWI Marshall would be asked to maintain a lower altitude in order to maintain separation from aircraft operating on the Victor Airways that could result in aircraft leveling off. Mr. Reese responded that BWI Marshall has the only Class Bravo airspace where there are Victor Airways and T-Routes that traverse over the airport at altitudes less than 18,000 feet above Mean Sea Level (MSL), and that the T-Route changes were FAA housekeeping items. Mr. Scholten responded that he could not speak for the FAA but that he knew the T-Routes highlighted in the FAA's April 24 presentation and storyboards were implemented and adjusted with the partial intent of allowing for Climb-Via procedures.

Mr. Ramond Robinson inquired how far out the FAA's proposed procedure changes would reach. Mr. Scholten described how Runway 15R and 15L departure aircraft would navigate on the proposed TERPZ and LINSE procedures and highlighted that aircraft would remain concentrated on the proposed procedures but be located further south of where these aircraft were flying today. Mr. Scholten also explained that aircraft would be split between both proposed procedures, with approximately 25% of departures on the proposed LINSE and approximately 75% on the proposed TERPZ. Mr. Verchinski inquired what the altitude would be in the vicinity of the navigational point BOBYJ. Mr. Scholten responded he believe it was above 4,000 feet MSL but would need to verify.

Mr. Robinson noted that from his perspective the concentration of tracks are not going to change based on his review of the FAA's storyboards and radar flight track data from 2012 and 2017. Mr. Scholten agreed, and noted that the FAA's proposed procedures are based on PBN which are the same type of technology the FAA's current procedures at BWI Marshall are based and are not based on vectoring as was the case prior to the implementation of the DC Metroplex. He explained that the concentration on the proposed FAA procedures would be similar to what is depicted in the storyboards for 2017 radar data, but would be sifted closer to the locations of historical flight paths in 2012. Ms. Reese responded that to achieve reversion the FAA was only addressing the aircraft flight paths by shifting them back to historical patterns and was failing to address aircraft concentrations.

Mr. Verchinski commented that it appears the FAA proposed procedures are at the extreme northern edge of 2012 historical flight paths. He inquired as to why the FAA did not move the proposed procedures further south to better align with 2012 historical flight paths as it was his understanding this airspace was owned by BWI Marshall. Mr. Scholten responded he could not recall all the details, but did remember that there were criteria issues that were prohibitive for moving the proposed procedures further south in order for aircraft to meet altitude restrictions at downstream navigational points to avoid arrival and departure procedures into other airports in the Washington D.C. metro area. Mr. Robinson inquired as to why the FAA was able to have aircraft fly further south in 2012 on departure and why couldn't the FAA do that today. Mr. Scholten responded that in 2012 the FAA was mainly vectoring aircraft and that less aircraft were flying published procedures. He explained that when on a vector, it was a greater burden of responsibility on the controller for the vectored aircraft to maintain separation from other aircraft and airspace.

Mr. Robinson noted he was trying to understand from an operational perspective why in 2012 aircraft departure flight paths further to the south of BWI Marshall were achievable but were no longer achievable in 2017. He explained it sounded like the FAA was trying to fix departure flight paths to mimic how aircraft flew prior to the implementation of the DC Metroplex, but that the FAA could not exactly match those flight paths due to new restrictions on safety and procedure design criteria. Mr. Scholten responded that he understood Mr. Robinson's comments, but that he was not in a position to answer this question as he can not speak on behalf of the FAA. Mr. Hellauer also responded that he believed the criteria for vectoring an aircraft versus an aircraft navigating on a procedure were different and that the criteria for issuing an aircraft a procedure may be more stringent than for issuing a vector. Mr. Scholten concurred and noted that when a controller vectors an aircraft the controller is assuming responsibility for separating the aircraft from other aircraft, obstructions, and airspace where when an aircraft is on a procedure the procedure accomplishes separation from some of these items. He explained further than when an aircraft is vectored there is greater flexibility for where the aircraft can fly as the controller is using their judgement to determine if aircraft will remain safely separated versus on a procedure where the separation criteria available is much more limited.

Ms. Curry inquired if there was a set point between BWI Marshall and other Washington D.C. airspace where aircraft have to meet a specific altitude to remain separated from other aircraft. Mr. Scholten

responded that he was aware that there are altitude restrictions in the vicinity of the navigational points TERPZ and MORTY which are specifically designed to prevent aircraft from penetrating airspace associated with arrivals and departures to Regan National Airport (DCA), Washington Dulles International Airport (IAD), and Andrews Air Force Base (ADW).

Mr. Roth inquired if the proposed departure procedures for Runway 15R and 15L when BWI Marshall is operating in East Flow will force arrivals to Runway 10 to fly lower at greater distances than is the case with the current departure procedures. Mr. Scholten responded he did not believe Runway 10 arrivals would be lower with the proposed Runway 15L and 15R departure procedures as he expected aircraft would be at altitudes of at least 4,000 feet MSL once they cross over the Runway 10 approach course similar to what aircraft are doing today. Mr. Chancellor interjected and noted Runway 10 arrival aircraft today are flying large distances at altitudes as low 1,500 feet over large portions of Howard County. Mr. Hellauer responded and noted that for arrival aircraft executing an instrument approach aircraft generally need to intercept the final approach course outside of a point known as an approach gate. He explained the approach gate is normally approximately 7 NMI from the arrival runway threshold along the extended runway centerline and that most aircraft will navigate at this point at altitudes of 2,000 to 3,000 feet MSL to intercept the glidepath for the runway from below.

Mr. Roth noted he recalled reading about optimized descent profiles as part of NextGen, but that he has not seen these profiles given aircraft are flying at low altitudes for long distances on arrival. Mr. Reese commented that optimized profile descents have not been fully implemented and didn't think the National Airspace System (NAS) would have the capability to accommodate these procedures until the mid-2020 timeframe. Mr. Reese explained that this was something that should be asked to the FAA and that it was his understanding that Congress has been asking the FAA why NextGen is far behind schedule and over budget. Mr. Roth responded he was trying to determine by changing the departure procedures for Runways 15L and 15R if arrivals to Runway 10 would be forced to fly at lower altitudes to maintain separation from the departures. Mr. Reese responded he did not believe Runway 10 arrival aircraft would fly lower if the proposed departure procedures are implemented as there are multiple methods controllers can use to achieve separation between arrivals and departures. Mr. Hellauer expanded on Mr. Reese's response and noted that in his opinion the changes to the proposed departure procedures for Runways 15L and 15R would not change the Runway 10 arrival patterns as aircraft are currently flying them today. He noted that the main driver of Runway 10 arrival aircraft flying at lower altitudes to the west of the airport was the requirement for aircraft to join an Instrument Landing System (ILS) approach from below the glideslope rather than from above.

Mr. Paul Harrell inquired if aircraft overflights have changed over time at BWI Marshall and that he did not understand how the overflights related to Climb-Via procedures. Mr. Scholten responded that the proposed changes to T-Routes at BWI Marshall was in response to a need to move overflight aircraft away from the airport so departure aircraft from some runways would be able to climb continuously without causing conflicts with overflight aircraft. He explained that in some cases departure aircraft would level off due to the need to separate the departure aircraft from overflight aircraft operating close to the airport. Mr. Scholten concluded by noting that by moving overflight traffic away from the airport by way of the proposed T-Routes, the overflights could be procedurally deconflicted from departure aircraft from some runways and allow those departures to climb continuously using climb-via procedures.

Mr. Scholten moved on to present the FAA proposed LINSE and TERPZ departure procedures for Runway 28. He noted Runway 28 was the most heavily used BWI Marshall departure Runway and explained that aircraft on the TERPZ and LINSE procedures will navigate on the extended Runway 28 centerline until reaching the navigational point JLENN. Mr. Scholten explained that after reaching JLENN aircraft with

routing to the northwest will fly the LINSE procedure, while aircraft with routing to the west and south will fly the TERPZ procedure. Mr. Scholten concluded by explaining that the navigational point JLENN is located along the Runway 28 centerline at 3 DME and was placed at that location to maintain compatibility with the BWI Marshall NAP.

Mr. Roth expanded on the discussion of the location of JLENN, and explained the location of JLENN relative to local community landmarks such as the community of Dorsey and Route 1. Mr. Scholten noted that it was difficult to distinguish the road and highway numbers in the FAA storyboards due to the large scale required to capture the extent of the procedures, but that it is possible to zoom in to the storyboards within the individual files posted on the Roundtable website.

Mr. Scholten continued to discuss the FAA proposed Runway 28 LINSE and TERPZ departure procedures and presented the routing of the new procedures overlaid with radar flight track data from 2012 and 2017. He explained that the proposed Runway 28 LINSE and TERPZ departures will shift aircraft flight paths south of aircraft flight paths in 2017 and better align with historical paths in 2012 prior to the implementation of the DC Metroplex. Mr. Scholten also explained that while aircraft flight paths will shift on the proposed Runway 28 TERPZ and LINSE procedures, the flight paths on the proposed procedures will not be dispersed and will remain concentrated similar to flight tracks in the radar data for 2017.

Ms. Curry inquired how the proposed Runway 28 LINSE and TERPZ departure procedures would impact southbound Runway 28 departures. Mr. Scholten explained that based on 2017 radar data that the FAA would expect approximately 26% of departures on Runway 28 to utilize the LINSE departure path to the south, and the remaining 74% to utilize the TERPZ departure to the north. Ms. Curry inquired what communities were underlying the proposed Runway 28 LINSE and TERPZ departure procedures. Mr. Roth responded and described the location of the proposed procedures with relation to Columbia, the Gateway Industrial Park, and Lake Elkhorn. Ms. Curry indicated that the procedures being discussed did not include Runway 28 departures to the south that overfly Jessup and other communities south of the airport. Mr. Scholten responded and noted that Ms. Curry was inquiring about the CONLE departure procedure that would be discussed in detail later in the meeting. Mr. Scholten concluded presenting the proposed Runway 28 LINSE and TERPZ procedures by discussing FAA storyboards with the proposed routings of each overlaid with 2012 and 2017 radar flight track data to the west of BWI Marshall.

Mr. Scholten moved on to present FAA proposed changes to the CONLE and FIXET procedures that serve BWI Marshall departures to the south. Mr. Roth inquired if the navigational point BOSLY depicted on the procedure was a Fly-By or Fly-Over point. Mr. Scholten responded and noted that BOSLY was a Fly-Over navigational point and that aircraft would fly over BOSLY when departing Runway 28 on the CONLE and FIXET departure procedures before turning toward the south toward the navigational point RAISN and that the locations of BOSLY or RAISN were not changing in the FAA proposed procedures. Mr. Roth, Ms. Curry, and Mr. Hellauer interjected and discussed the location of the fix BOSLY with relation to local landmarks such as Interstate 295, the Parkway Center Office Park, and Oxford Square community.

Mr. Scholten continued to discuss that for Runway 10 departures, the CONLE and FIXET procedures were being modified to create a published routing off the runway compared to vectoring as the procedure is published today. Mr. Scholten explained that there were few operations off Runway 10, and that a new Fly-Over navigational point JWALL was created to mimic how controllers would vector aircraft off Runway 10 on to the CONLE and FIXET procedures consistent with current aircraft flight paths.

Mr. Scholten noted that outside of Runway 10, the CONLE and FIXET departure procedures were modified to establish an altitude restriction at the navigational point RAISN and relocate the

navigational point STABL. He explained that the CONLE and FIXET departure was modified to have aircraft cross the navigational point RAISN at or below 7,000 feet MSL and that previously RAISN did not have an altitude restriction. Mr. Scholten highlighted that even though aircraft would now be required to be at or below 7,000 feet MSL at RAISN, an initial review of current radar data by HMMH indicated aircraft today are operating around 7,000 feet MSL and would not expect this restriction to cause aircraft to operate at lower altitudes. Ms. Reese inquired what altitudes aircraft would be at in the vicinity of 6 and 10 NMi DME on the CONLE and FIXET procedures for Runways 10 and 29. Mr. Scholten responded he would anticipate in the vicinity of RAISN aircraft would likely be at altitudes around 7,000 feet MSL based on current radar data and would be around the same altitude with the proposed amendments to the CONLE and FIXET procedures.

Ms. Curry inquired if there were any altitude requirements or restrictions at the navigational point BOSLY. Mr. Scholten responded there was no published altitude restriction at BOSLY and that there was no requirement for aircraft to reach a specific altitude before turning toward the south towards the RAISN navigational point. Mr. Roth noted that although there was no altitude restriction at BOSLY, Runway 28 departures typically crossed Oxford Square at altitudes around 1,200 feet MSL which was in the vicinity of the BOSLY, and Jessup at 2,500 feet MSL.

Mr. Scholten finished reviewing the proposed departure changes for the CONLE and FIXET departure procedures by discussing the relocation of the navigational point STABL. He explained that STABL needed to be relocated 1.5 NMI to the east in order to meet FAA criteria requirements. Mr. Scholten concluded by noting that STABL is a Fly-By navigational point and should result in aircraft remaining over water when turning to the southwest rather than flying over land under the STABL navigational point.

Audience member Mr. Eric Best inquired what arrival procedures were published for Runway 33L and what was the FAA was proposing to change for Runway 33L arrival procedures. Mr. Scholten responded the FAA did not propose changes to Runway 33L arrivals at the April 24 meeting and that the purpose of this presentation was to review what the FAA presented at that meeting. M. Best interjected and noted that while he was respectful of this process and appreciative of the work that has been done to this point, he was frustrated that only a small amount of time has been spent on arrivals and would like to know when arrivals will be further discussed. Mr. Scholten responded that it was his understanding a request was made by the Roundtable to review the materials the FAA presented at the April 24 Roundtable meeting and ensure the Roundtable had an understanding of the proposed procedures the FAA presented. He noted that the FAA did not discuss arrivals to Runway 33L in the April 24 presentation as requested by the Roundtable, and that the Roundtable should continue to ask the FAA why arrivals were not addressed. Ms. Reese expanded on Mr. Scholten's response and noted that ultimately the Roundtable needed to review the FAA's April 24 presentation to ensure the Roundtable understands the material as well as coordinate with elected representatives on what the FAA offered to the Roundtable.

Mr. Scholten moved on to discuss the FAA's proposed T-Routes from the April 24 presentation. He noted that the T-Routes are low altitude procedures serving mainly small General Aviation (GA) propeller driven aircraft transiting through the Baltimore area. He explained that these routes were implemented in order to accommodate some of the departure procedure changes discussed earlier in the FAA's April 24 presentation. Mr. Hellauer interjected, and noted that the T-Routes were also implemented in an effort to replace legacy ground-based routes for aircraft overflights that were based on the Baltimore (BAL) VHF Omni-directional Range Tactical Air Navigation (VORTAC). Mr. Scholten concluded presenting the T-Routes by discussing graphics and storyboards showing the interaction of the proposed T-Routes with the various published arrival and departure procedures at BWI Marshall and

how shifting T-Routes to the north, separation between aircraft on the T-Routes and other procedures was increased.

Mr. Scholten concluded the review of the FAA's April 24 presentation by presenting the proposed changes to BWI Marshall Standard Terminal Arrival Route (STARs). Mr. Scholten noted that most changes to the arrival procedures were to correct FAA criteria issues with aircraft speeds that were identified by industry. Ms. Reese inquired if the arrival changes addressed the Roundtable's concerns or if it was true that airlines do not pay fuel tax in the state of Maryland. Mr. Scholten responded that he did not believe the FAA's arrival changes addressed the Roundtable's concerns and that he could not speak to whether or not airlines pay fuel tax in Maryland. Ms. Reese inquired if the MAA could provide this information. Mr. Verchinski interjected and noted that he spoke with an individual at the April 24 meeting who indicated that Jet fuel is not taxed by the state at BWI Marshall as is the case for other airports. Mr. Scholten noted that he could not answer this question but that this was information that perhaps the MAA could provide at a future Roundtable meeting.

Mr. Scholten continued the review of FAA's April 24 presentation by highlighting that the biggest change to arrivals were in relation to procedures associated with Runway 28. He explained that the FAA is proposing to shift the arrival navigational points ASHOR and GRAMZ for Runway 28 on the ANTHM and TRISH procedures slightly to the north in order to correct sequencing issues identified by air traffic controllers. Ms. Curry interjected and noted the shift of the navigational points ASHOR and GRAMZ relocated both points over a large piece of land. Mr. Reese responded that the change over land was of a small distance and that the shift would likely minimally change aircraft noise levels in the area. Mr. Scholten concluded the review of the FAA's April 24 presentation and requested to move to the next agenda item unless there were further questions.

Mr. Reese noted he wanted to comment to the public that Runway 33L arrivals were not addressed in the FAA's April 24 presentation. He highlighted that this was not due to the fault of HMMH, and that it was the FAA's decision not to present or comment on any proposed solutions to the Roundtable's concerns regarding Runway 33L arrivals and did not indicate they had any plans to do so. Mr. Scholten expanded on Mr. Reese's comments and noted that he is not able to speak for Mr. Shank, but that the MAA is aware of the Roundtable's dissatisfaction with the FAA's failure to address Runway 33L arrivals and has campaigned on behalf of the Roundtable to the FAA to address the Roundtable's concerns. Ms. Reese inquired what constituted the MAA campaigning for the Roundtable. Mr. Hellauer responded that in the Working Group meetings the MAA reminded the procedure designers of the Roundtable's concerns and priorities to revert aircraft flight paths to historical patterns, increase aircraft altitudes where possible, and address Runway 33L arrivals. Ms. Reese inquired further if there was any expectation if the Working Group would examine the Roundtable's concerns regarding Runway 33L. Mr. Scholten indicated there was not but that the Roundtable should continue to campaign to have the FAA examine and provide solutions to address the Roundtable's concerns regarding Runway 33L arrival procedures.

Ms. Reese inquired if there were any notes taken by the MAA, Mr. Shank, or HMMH in the PBN Working Group Meetings. Mr. Scholten responded he could not speak for Mr. Shank or the MAA but he did know the FAA took meeting minutes which the MAA and HMMH relied upon since the FAA was the designated keeper of records related to the meetings and it was up to the FAA to release those records. Ms. Reese inquired further if the MAA or HMMH had copies of those minutes. Mr. Scholten responded that the MAA or Mr. Shank might, but that he cannot speak for what the MAA or Mr. Shank has or has not received and would need to check. Mr. Hellauer noted he wanted to clarify Ms. Reese was seeking any notes Mr. Shank may have personally taken during PBN Working Group Meetings. Ms. Reese responded in the affirmative and inquired if the minutes maintained by the FAA of the PBN Working Group

meetings could also be requested. Mr. Gary Smith responded and noted that the Roundtable had already requested the FAA's version of the minutes and were told to file a Freedom of Information Act (FOIA) request.

Mr. Yates concluded discussion regarding the FAA's April 24 presentation by noting that he had distributed a list of questions to the FAA to the Roundtable that included requesting the minutes from the PBN Working Group meetings and moved to discuss the MAA's approach to analyzing the FAA's proposed procedure designs.

Deliverables:

- FAA to provide narrative and glossary for each storyboard and procedure graphic for the April 24 presentation that explains the symbology used to generate the graphic and describes how aircraft will fly each proposed procedure
- FAA to provide explanation as to why they can't design additional departure procedures to supplement the proposed procedure designs presented at the April 24 meeting to further help disperse aircraft
- MDOT MAA to review status of Jet fuel taxes in Maryland
- MDOT MAA to review if Mr. Paul Shank took professional notes during the PBN Working Group Meetings

3. MAA DISCUSSION OF PROPOSED APPROACH TO ANALYZING THE FAA PROCEDURE DESIGNS PRESENTED AT THE APRIL 24, 2018 MEETING

Mr. Yates moved to the discussion of the MDOT MAA's proposed approach for modeling the procedure designs in the FAA presentation from the April 24, 2018 Roundtable meeting and again introduced Mr. Scholten from HMMH. Mr. Scholten presented a memorandum that was provided to the MDOT MAA summarizing HMMH's proposed approach to supporting the MDOT MAA in addressing the requests from the Roundtable as a result of the April 24 Roundtable meeting. He explained one of the tasks from the April 24 meeting was to collect the questions from the Roundtable posed to the MDOT MAA and FAA and coordinate with the FAA through a comment matrix to receive responses. Mr. Scholten noted work on this task was already underway and that the MDOT MAA is striving to ensure the Roundtable gets responses from the FAA in a consolidated readable format to the maximum extent possible.

Mr. Scholten explained the next task MDOT MAA was working in response to the April 24 meeting was a request regarding drafting language for provision to the FAA discouraging the use of the navigational point SPLAT for Runway 33L arrivals and requesting the FAA reconsider developing a procedure to address Runway 33L arrivals. Mr. Scholten noted this language would include suggestions that the FAA could potentially develop a continuous descent approach or try to increase utilization of the existing flight corridor from the navigational points RAVNN to GRAFE back to historical levels as detailed in prior HMMH analysis. Ms. Curry noted that there have been requests from several Roundtable members to provide a better understanding of HMMH's prior analysis of Runway 33L arrivals and that Mr. Shank had been made aware of this request. She explained there has been a lot of confusion on how to interpret some of the charts and that it was her impression there has only been a 5% decrease in traffic traveling along the RAVNN to GRAFE flight corridor and 15% increase on the flight corridor from RAVNN to SPLAT. Ms. Curry noted she and the Roundtable need to know if they are interpreting this data incorrectly and that they are not seeing large differences between the numbers of aircraft utilizing each flight corridor. Mr. Scholten noted he will follow up with Mr. Shank on Ms. Curry's request and noted that Mr. Shank had requested excerpts from HMMH's prior analysis presented to the Roundtable at the December 5, 2017 meeting detailing the percentages of Runway 33L arrivals operating along various flight corridors from 2012 through 2017. He noted he had provided this information to Mr. Shank already, and that if

desired HMMH could further elaborate on the December 5 presentation through a written response or re-present the analysis at a future Roundtable meeting. Mr. Roth responded that having a key to go with the slides would allow people to better understand the material who were not present during the December 5 Roundtable meeting and not present for Roundtable discussions. Mr. Scholten noted that in the draft language regarding Runway 33L arrivals that HMMH was working on with the MDOT MAA there is a preamble that includes background on what the various arrival percentages were along the various Runway 33L arrival flight corridors and how they have changed over time based on the data from the December 5, 2017 presentation. Ms. Curry noted that whatever language is drafted needs to be clear as there are many concerns regarding arrival aircraft overflying SPLAT and other arrival navigational points and the Roundtable needs to have a better understanding of what is going on before potentially providing recommendations to the FAA.

Ms. Reese inquired what the timeline was for the FAA moving forward. She noted that it appears the FAA is done with the PBN process and it is not clear if the FAA would be open to taking further action to address the Roundtable's concerns. Mr. Scholten responded that he did not believe the FAA's work regarding the Roundtable's concerns was complete and that the FAA emphasized at the April 24 meeting that they were open to accepting suggestions from the Roundtable on the proposed procedure designs. Ms. Reese inquired further that if the Roundtable were to make recommendations to the FAA, would the FAA be willing to re-convene the Working Group or would providing the recommendations be a waste of the Roundtable's efforts. Mr. Scholten responded that he could not speak for the FAA other than that the FAA stated at the April 24 meeting they were open to suggestions from the Roundtable. Mr. Hellauer added that the Roundtable would still presumably like to address the concerns regarding Runway 33L arrivals and that if you had a resolution and background material to support the resolution, there would be a better chance of the FAA entertaining the request than providing general procedural suggestions. Ms. Curry responded that this approach has not been successful for other Roundtables across the country and that in most cases the FAA has refused to accept specific procedural suggestions.

Mr. Reese commented it was his understanding that the PBN Working Group has concluded and that they are only going to reconvene if they need to tweak the procedures and that to address the runway 33L arrivals the FAA would need to convene a new Working Group. Mr. Scholten responded he could not speak to whether or not the FAA would convene a new Working Group. Mr. Roth inquired if the FAA PBN Working Groups worked on an annual cycle. Mr. Scholten responded he could not speak for FAA but that he believed the FAA formed Working Groups on an as needed basis. Mr. Reese noted it was his understanding that the FAA convenes Working Groups on an annual basis but the airports considered by each Working Group vary depending on need to modify procedures. Mr. Roth noted that the issue is that the Roundtable needs to determine how to get the FAA to consider arrivals to BWI Marshall as part of a PBN Working Group Agenda. Mr. Reese concurred and noted the Roundtable needs to do everything they can to try and potentially pull forward another Working Group for addressing BWI Marshall arrivals as was claimed to have been done by the FAA for the Working Group to address departures.

Mr. Reese inquired what actions could be taken by the MDOT MAA or the state of Maryland to force the FAA to convene a Working Group and if something such as the construction of a new obstruction would force the convening of a Working Group. Ms. Robin Bowie of the MAA responded that this should be a question the Roundtable include in the list of requests to the FAA as a result of the April 24 Roundtable meeting.

Mr. Chancellor noted the Roundtable submitted an annual report that stated the Roundtable has accomplished as much as it can and that it is now up to elected officials to lead on pressuring the FAA to take action. He noted it was his impression the NextGen procedural changes at BWI Marshall were

initiated by Congress for good reasoning, but that those changes had unintended consequences. Mr. Chancellor concluded by noting the only way the procedures will get fixed is to find a way to pressure state and local elected officials to petition the FAA to convene a new Working Group to look at arrivals to Runway 33L and the other Runways.

Mr. Roth commented that what the FAA addressed in the PBN Working Group was the most egregious violation of the DC Metroplex EA over areas of Howard County. He noted Howard County had a suit authorized prior to the formation of the Roundtable in response to the implementation of the DC Metroplex and that the EA stated there would be no significant changes to aircraft flight paths below 3,000 feet MSL over Howard County. Mr. Roth explained there were significant changes below 3,000 feet MSL over Howard County which the FAA was not authorized to make and that as a result, the PBN Working Group primarily worked to correct issues with Runway 28 departures which he believed were blatantly not in compliance with the EA.

Mr. Scholten discussed the next task MDOT MAA was working in response to the April 24 meeting was to provide a technical analysis of the FAA's proposed procedure designs and report back to the Roundtable on the result. He explained HMMH and the MDOT MAA planned to review aircraft flight paths prior to the implementation of the DC Metroplex for an 84-day period in 2012 and model flight tracks during that period for noise and flight track density. Mr. Scholten noted flight tracks would then be modeled for noise and flight track density for a similar 84-day period in 2017 that would be representative of current operations at BWI Marshall. He explained once modeling of the 2017 flight tracks were complete, the 84-day sample of 2017 flight tracks would then be modified to simulate how HMMH and MDOT MAA anticipate aircraft will fly the FAA's new proposed procedures. These modified tracks would then be modeled for noise and flight track density consistent with the methodology used to model the historical 84-day 2012 and 2017 flight track data samples. Mr. Scholten highlighted that by utilizing this methodology, the Roundtable could be given an apples-to-apples comparison of the noise impact and concentrations of BWI Marshall operations before and after the implementation of the DC Metroplex as well as after the implementation of the proposed procedures presented by the FAA at the April 24 meeting. Mr. Scholten concluded by noting that HMMH and the MDOT MAA were working to complete the modeling as quickly as possible, but that it was a large amount of effort and would not be available until early July.

Mr. Roth requested that in the noise analysis being conducted by HMMH and the MDOT MAA that more recent population data be utilized than the 2010 US Census since there are many property and population changes that have occurred surrounding BWI Marshall since 2010. Mr. Hellauer commented that data from the American Community Survey (ACS) could potentially be used, but the level of granularity differs between each population product and would need to be reviewed. Mr. Robinson responded and noted he thought it would be helpful if the modeling effort was coordinated with the Baltimore Metropolitan Council as they may have the most recent Census data for the region.

Mr. Scholten concluded the discussion of the tasks the MDOT MAA was working in response to the April 24 meeting by reviewing plans to model proposed PBN approach procedures to Runway 33L. He explained that HMMH and MDOT MAA planned to model a sample of Runway 33L arrival flight track data in 2012 for noise. The 2012 flight track data sample would then be modified to reflect how aircraft would fly on a proposed Required Navigation Performance (RNP) procedure from the navigational points RAVNN to GRAFE with a continuous descent approach. Mr. Scholten noted included in the noise results would be a comparison of Sound Exposure Levels (SELs) that would allow for an apples-to-apples comparison of the noise footprint of single aircraft events of commonly used aircraft types.

Ms. Curry inquired why the focus of the Runway 33L modeling effort was only from the corridor between the navigational points RAVNN and GRAFE. Mr. Scholten responded this was the corridor

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associated with the RNP procedure that had been discussed by the FAA at the November 7, 2018 Roundtable meeting and discussed by Mr. Shank. Ms. Reese expanded on Mr. Scholten's response and noted that the proposed RNP approach between RAVNN and GRAFE would allow another tool for air traffic control to use when clearing aircraft for approach procedures, but that it was not clear how often the proposed procedure would be used.

Mr. Reese inquired why the modeling of the proposed RNP approach for Runway 33L was being discussed at this time. Mr. Scholten responded the RNP approach for Runway 33L was being reviewed now as a potential avenue to pressure the FAA to address the concerns of the Roundtable regarding Runway 33L arrivals and that this analysis would not be started until the modeling for the FAA proposed procedure designs presented at the April 24 meeting was complete. Mr. Hellauer interjected that at the April 24 meeting the FAA stated they could not develop a PBN procedure that would address the Roundtable's concerns, and that by modeling the proposed Runway 33L RNP approach between RAVNN and GRAFE the Roundtable could go back to the FAA and see if something could be developed based on the Roundtable's analysis.

Mr. Reese inquired if HMMH would be utilizing TARGETS software to model the proposed Runway 33L RNP approach procedure. Mr. Scholten responded TARGETS would be used for some of the modeling, but that HMMH has other internal tools that would also be used in the modeling process. Mr. Reese responded and inquired if the HMMH has access to TARGETS, why is modeling being limited to only modeling a single procedure. He explained HMMH and the MODT MAA should be modeling solutions from the ground-up that addresses all the Roundtable's concerns such as increasing aircraft altitudes, increasing dispersion, and the reversion of flight paths to pre-Metroplex conditions. Mr. Reese inquired if HMMH was under contract now with the MDOT MAA and the Roundtable is in the position of providing solutions to the FAA, why can't the MDOT MAA provide ground up solutions to the Roundtable utilizing TARGETS that would address the Roundtable's concerns.

Ms. Reese commented that she is not happy to see proposed procedures geared towards Southwest Airlines. She explained that Mr. Shank has multiple roles within the MDOT MAA that include promoting the growth of the airlines, expanding BWI Marshall, and helping the Roundtable. She noted these priorities conflict and that this procedure would be a benefit to Southwest. Ms. Reese concluded by stating the MDOT MAA is trying to sell this procedure to the Roundtable at a great expense of state funds and that she considers the modeling of this procedure a waste of time. Ms. Bowie responded that the modeling of the proposed procedure came through interactions with Mr. Brasher and that the MDOT MAA would circle back with Mr. Shank and Mr. Brasher regarding the modeling. Mr. Scholten noted that the modeling of the proposed RNP Procedure was something the MDOT MAA and HMMH wanted to discuss with the Roundtable to see if it was something of interest, and that the immediate task was to complete modeling of the FAA's proposed procedures from the April 24 meeting. Mr. Reese responded he understood, but also would like for the MDOT MAA and HMMH to broaden the modeling effort to analyze different aspects of possible solutions that could be presented to FAA and generate workarounds for the Roundtable if the FAA is not satisfying the Roundtable's request.

Mr. Roth inquired if the Roundtable could discuss the schedule for the proposed procedures presented by the FAA. Mr. Scholten responded that MDOT MAA and HMMH had already started modeling the FAA proposed procedures from the April 24 meeting and that they planned to have initial results available for MDOT MAA review in early July and presentation to the Roundtable during the July meeting. Mr. Reese responded he was concerned that the FAA is making the procedure changes contingent on the Roundtable as there is no formal memorandum from the FAA administrator delegating the Roundtable authority to make these kinds of decisions. Mr. Hellauer noted that the delegation of decision making authority is detailed as part of the FAA's community outreach policy. Mr. Reese responded the FAA has

not provided the community outreach policy to the Roundtable and that the FAA website does not state that the FAA deciding to move forward with the implementation of a proposed procedure being contingent on agreement or consensus from a Roundtable. Mr. Reese concluded by stating he is worried by providing consensus or a recommendation to the FAA they will be culpable for any repercussions that result from the implementation of the proposed procedures.

Mr. Verchinski commented that in the deliverables of the FAA proposed procedure modeling from the MDOT MAA and HMMH that it would be helpful if notes could be provided associated with the presentation so people can have an explanation of the material. Mr. Scholten responded the request was noted and that MDOT MAA and HMMH would consider providing notes with the FAA proposed procedure presentation.

Mr. Roth commented the Roundtable can be equally culpable for not acting on elements of the FAA's April 24 proposal consistent with the Roundtable's concerns in the same fashion as if the Roundtable did act on the proposal. He explained that in his opinion, the Runway 28 departure solution presented by the FAA addresses some of the Roundtable's concerns and the FAA does not likely want to make these changes. Mr. Roth noted the Roundtable should not be giving the FAA an excuse to not implement the proposed procedures. Mr. Reese responded that he did not want to provide the FAA with excuses, but that if the Roundtable is to recommend something to the FAA it should be done through elected officials. Mr. Chancellor noted the Roundtable charter states the Roundtable is to recommend to the FAA changes to procedures but is not to approve them as only the Federal Government has approval authority. He explained he thought it was well within the Roundtable charter to recommend procedure changes that are consistent with the Roundtable's goals but continue to campaign for those issues the FAA has yet to address that are of interest to the Roundtable. Mr. Roth concurred and stated the Roundtable should let the FAA know to proceed with implementation for those procedures that are consistent with the Roundtable's positions with an understanding that the FAA still has work to do to address other Roundtable issues. Mr. Chancellor responded that the liability for the Roundtable is a question that should be answered by the MDOT MAA as the Roundtable is an advisory group for Maryland state government.

Mr. Reese proposed that as a path forward, the Roundtable draft recommendations for the FAA and then have those recommendations be reviewed by MDOT MAA general council. Ms. Reese inquired if this proposal would limit the Roundtable's legal exposure. Ms. Louisa Goldstein of the MDOT MAA responded and noted that if the Roundtable was to put their questions in writing, the MDOT MAA general counsel would review them and determine if they could provide legal advice. Ms. Goldstein noted the MDOT MAA does not provide ad-hoc legal advice without receiving something in writing.

Mr. Reese commented that the Roundtable had approached the FAA about having Roundtable members attend the PBN Working Group meetings and was happy that Mr. Shank and Mr. Scholten were able to attend the meetings. He noted that since HMMH is under contract to the MDOT MAA he would like to see Roundtable members become more involved in any efforts taken to develop proposed procedures that could be recommended to the FAA. Mr. Reese concluded by asking if this was something that the MDOT MAA would consider and that Roundtable members would be available as needed on a volunteer basis to assist the MAA as part of this process. Ms. Bowie noted that the MDOT MAA would look into this, but would ask the Roundtable submit this request in writing for further consideration.

Mr. Chancellor noted that Roundtable needed to discuss the timing of the Roundtable's response to the FAA with regards to the proposed procedures presented at the April 24 meeting. He explained that the FAA requested a response from the Roundtable no later than June 25, and that the MDOT MAA and HMMH's analysis would not be complete until July. Mr. Chancellor inquired if the MDOT MAA had coordinated with the FAA that a mid to late July recommendation from the Roundtable would be as

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acceptable to the FAA as a recommendation delivered to the FAA on June 25. Ms. Bowie responded that she had spoken with Mr. Jennifer Solomon of the FAA and that Ms. Solomon acknowledged that delivery of a Roundtable recommendation to the FAA in mid to late July was acceptable. Ms. Reese inquired if the FAA had provided this information to Ms. Bowie in writing. Ms. Bowie indicated she had not received confirmation from Ms. Solomon in writing, but that the Roundtable had requested the deadline for the Recommendation be extended in the list of questions assembled by the Roundtable for the FAA following the April 24 meeting. Ms. Bowie also noted Ms. Solomon indicated verbally that the Roundtable delaying the provision of the recommendation to the FAA would not excessively delay the FAA's implementation plan for the proposed procedures and that the length of the delay would correspond to the amount of additional time necessary for the Roundtable to draft a recommendation.

Mr. Yates concluded discussion of the MDOT MAA's proposed approach for modeling the FAA proposed procedure designs from the April 24, 2018 Roundtable meeting and moved on to discuss the Roundtable letter to the MDOT MAA in support of Howard County's position on the BWI Marshall Airport Improvement EA.

Deliverables:

- FAA to provide explanation as to when they would consider forming a new Working Group to address concerns raised by the Roundtable regarding Runway 33L arrivals
- FAA to provide details on the frequency of Working Groups and if Working Groups operate on an annual cycle or on an as needed basis to address required procedure changes
- FAA to provide details on what would accelerate the formation of a Working Group
- MDOT MAA and HMMH to explore utilizing alternative population data sources for FAA proposed procedure analysis
- MDOT MAA and HMMH to consider developing notes associated with presentation material describing results of FAA proposed procedure analysis
- MDOT MAA to follow up with Roundtable regarding excerpts from December 5, 2017 Roundtable presentation on Runway 33L arrivals regarding approach fix utilization
- Roundtable to provide questions in writing to MDOT MAA general counsel regarding legal liability for providing recommendations to the FAA on proposed procedure designs
- Roundtable to provide request in writing to MDOT MAA regarding coordination on the development of future BWI Marshall proposed procedures

3A. ROUNDTABLE LETTER TO THE MDOT MAA IN SUPPORT OF HOWARD COUNTY

Ms. Curry discussed a copy of a letter provided to the Roundtable from the Roundtable to the MDOT MAA in support of Howard County's position on the BWI Marshall Airport Improvement EA. Ms. Curry inquired if there were any corrections or additions from other Roundtable members on the letter and motioned to approve the letter for transmittal. Mr. Verchinski seconded the motion. All in favor. The letter from the Roundtable to the MODT MAA regarding the BWI Airport Improvements EA is approved for transmittal.

3B. ROUNDTABLE COMMUNICATION COMMITTEE CHARTER

Ms. Curry moved to discuss the Communications Committee charter. She noted that a copy of the charter was provided to the Roundtable in advance of tonight's meeting, and that the version of the charter as distributed had a small error regarding review and approval of Roundtable materials. Mr. Chancellor responded that he did not have any issues with Ms. Curry's corrections and that the purpose of changes to the charter is to ensure the Roundtable has the opportunity to approve all

communications resulting from Roundtable activities. He also explained that the charter has added language that allows for the Roundtable to transmit communication materials with the approval of the Roundtable Chair or Vice Chair in the event communications need to occur between regular Roundtable meetings or in cases where the Roundtable is not meeting regularly. Ms. Curry noted the proposed charter would allow the Communications Committee to be better able to function and accommodate the distribution of press releases to outside organizations if needed between Roundtable meetings.

Ms. Curry discussed the first paragraph of the charter that was added by Mr. Brasher. She explained that she did not feel the paragraph was necessary, as it was not a legal and binding contract. Ms. Reese commented she would like to retain the top paragraph as it stated the actions of the Communications Committee are not binding to the Roundtable and do not set the policies of the Roundtable. Mr. Chancellor concurred and noted it makes clear that policy or the Roundtable charter can only be amended through an adopted amendment and vote. Ms. Curry responded she believed the language of the Communications Committee charter already accomplished this and that the language added by Mr. Brasher was redundant. Mr. Roth interjected and expressed he had the same concern as Ms. Reese that the potential exists for the Communications Committee to set policy. Ms. Reese and Mr. Chancellor responded to Mr. Roth and Ms. Curry that they liked the current charter language as-is with the disclaimer added by Mr. Brasher.

Ms. Curry commented that she felt the disclaimer in the charter singled out the Communications Committee as being a specific element of the Roundtable that is of particular concern for increased oversight. Mr. Chancellor responded that all committees should have an approved charter and each charter should have similar disclaimers. He explained that the only reason the Communications Committee was being singled out was that it was more active than the Legislative and Technical Committees.

Ms. Curry motioned to approve the Communication Committee charter with amendments including the language added by Mr. Brasher. Mr. Chancellor seconded the motion. All in favor. The Communications Committee charter with amendments is approved.

Ms. Curry also motioned to have the Technical and Legislative Committees submit their respective charters to the Roundtable at the next meeting for approval. Mr. Reese responded that this motion be for the charters to be submitted at the July meeting, as the Technical Committee would not be able to meet within the next month. Ms. Curry motioned to have the Technical and Legislative Committees submit their respective charters to the Roundtable at the July meeting for approval. Mr. Reese seconded the motion. All in favor. The Legislative and Technical Committees are to provide their respective charters to the Roundtable for approval at the July meeting.

Deliverables:

- Roundtable Technical and Legislative Committees to provide charters for approval at July Roundtable meeting

4. PUBLIC COMMENT

Ms. Barbra Deckert of Elkridge discussed questions the Roundtable should pose to the FAA and ask themselves as they evaluate the FAA's proposed procedure designs from the April 24 meeting. She first inquired if the Roundtable or Maryland residents could trust the FAA, and if the Roundtable or Maryland residents have been able to trust the FAA over the past nine years of NextGen implementation. Ms. Deckert next inquired as to what would happen if the Roundtable was to accept the FAA's proposal from the April 24 meeting but the proposal did not bring resolution to the noise issues faced by Roundtable

members and would acceptance of such a proposal preclude a lawsuit against the FAA from the state of Maryland or Howard County. Next Ms. Deckert moved on to discuss arrivals, and inquired as to why the FAA failed to address the arrival issue as the current FAA proposal from the April 24 meeting fails to address them and the FAA has not provided an explanation why they were not addressed. Lastly, Ms. Deckert inquired about the timing of the implementation of the FAA's proposed procedures and noted that based on the FAA's current timeline residents will have been suffering from excessive aircraft noise for a minimum of five years. Ms. Deckert concluded by stating the Roundtable should consider other ways to affect change in aircraft flight procedures other than accepting the FAA's proposals.

Mr. Chancellor responded and noted that at a future meeting it may be beneficial to have a representative from the state come and discuss why working with the FAA on developing proposed procedures first is preferable to filing a lawsuit. Ms. Deckert noted that would be beneficial but that she was concerned the FAA presenting at the April 24 meeting constituted a form of community outreach that could be interpreted as a maneuver to address the Governors concerns and potentially avoid a lawsuit from the state of Maryland.

Mr. Eric Best of Crownsville noted he was grateful for all the work done by the Roundtable and that he had gained a large amount of knowledge from attending the Roundtable meetings. He commented he trusts the group to balance the interests of various constituencies, but was concerned that by the Roundtable accepting the proposals put forth by the FAA they could be jeopardizing future solutions as the FAA may claim they have addressed all the Roundtable's concerns when they were only partially addressed.

Mr. Best discussed some of his experiences and relationships with elected officials such as Senator Cardin and the staff of Senator Van Hollen's office. He noted he felt in his interactions with elected officials that they are trying to offload responsibility for aircraft noise issues back on to constituents and asking them to provide solutions. Mr. Best explained he believed there needed to be a national mobilization of constituents in order to bring urgency to elected officials to drive action on airport noise issues and that without it there likely won't be improvement.

Ms. Reese responded to Mr. Best and noted she has experienced the same frustration as him regarding elected officials trying to offload responsibility for aircraft noise issues back on to constituents. She explained that although they have heard constituent's complaints, they see BWI Marshall as an economic engine that provides jobs regardless of what the quality of those jobs might be. Ms. Reese encouraged Roundtable members and constituents to call their elected officials and complain to them directly instead of having complaints filed and filtered through the MDOT MAA.

Mr. Best commented he was not sure what the data indicated, but that the damage from the FAA changing flight paths has arguably been channeled into specific corridors and that it seems when speaking with legislators that more people have benefited from the flight path changes than were hurt by the change. Ms. Reese responded that she could provide points that could help counter the legislators arguments and also noted that there has been a large amount of environmental damage that is being caused by expanding BWI Marshall. She explained that there are also no studies that show how property damages will be impacted by the shifting of aircraft flight paths and that BWI Marshall is one of the primary human trafficking centers in the country. Ms. Reese noted that these issues need to be reiterated in conversations with elected officials and brought to the attention of media outlets such as the Baltimore Sun and Washington Post.

Mr. Best discussed he was not aware of the Legislative Committee but that he had suggestions for developing template letters for residents and Roundtable members that could be signed and submitted to elected officials. Mr. Best concluded by noting that Mr. Brasher had discussed the Roundtable

acquiring the services of a lobbyist to represent community airport noise concerns and that he had conversations with a top lobbyist in Washington D.C. about what it would cost to hire a lobbyist to represent community interest groups across the country regarding airport noise.

Mr. Michael Bahr of Harman's Woods noted he believed the FAA's final decision in the DC Metroplex EA that there was minimal environmental impacts was a lie. He noted the FAA purposely found there were minimal impacts in order to avoid in-depth discussions with surrounding communities as to the real impacts caused by changing aircraft flight paths. Mr. Bahr explained other airports appear to have experienced similar issues as BWI Marshall and that Phoenix was a good example. He discussed that in Phoenix a judge ruled that the FAA acted arbitrarily and capriciously and implemented procedures however they saw fit. Mr. Bahr concluded by inquiring if the state of Maryland would be successful in filing a lawsuit against the FAA as it appears the state missed a 60-day window after the EA was released similar to what happened in Phoenix.

Ms. Curry responded that the case at BWI Marshall was different from what happened in Phoenix because the FAA went directly to the local airport authority regarding flight path changes but did not consult the public. She explained in BWI Marshall's case, the FAA did notify the public that flight paths were changing but placed the notices in places the public would not normally look. Ms. Curry noted she reviewed plans of the DC Metroplex at the Severna Park library in 2016, but only after she was made aware of the plans by Mr. Shank at an MAA presentation to the Greater Severna Park Council in 2016 and the FAA did their due diligence in meeting the minimum standards of the law.

Ms. Roth noted he recalled the public comment period and had reviewed the EA after it was initially released. He described the EA process and explained that often an EA will be issued a Finding of No Significant Impact (FONSI) that authorizes the project as defined in the EA to move forward. Mr. Roth stated that the DC Metroplex was authorized based on what was provided in the EA and the FAA was only authorized to complete the DC Metroplex project based on what was contained in the EA. He highlighted that the DC Metroplex as implemented at BWI Marshall is not what was described in the EA and thus the FAA did not have the authority to move forward with the implementation of the project. Mr. Roth concluded by noting that there was a subtle difference in BWI Marshall's case as the 60-day window for challenging the EA had passed, but the EA as approved did not match up with how the DC Metroplex was implemented. Ms. Curry responded that the option of a lawsuit was still on the table and noted that other communities such as DC were continuing with legal action even though initial attempts at challenging the FAA over the DC Metroplex were unsuccessful.

Mr. Reese commented that the entire environmental process in dealing with the FAA has been very frustrating and that it unfortunately is what the communities surrounding BWI Marshall have to deal with. He noted Mr. Bahr should engage the office of Attorney General Frosh with the understanding that everyone on the Roundtable is feeling the same frustration regarding the legal issues surrounding the DC Metroplex EA and the implementation of NextGen.

Mr. Jimmy Pleasant of Ellicott City noted that he had called the Governor's office regarding the fact that aviation fuel is not taxed in the state of Maryland. He noted that the Airlines love operating out of BWI and that they should be taxed fairly as Maryland residents pay some of the highest gasoline taxes in the country.

Mr. Reese noted that using BWI as a hub does not make sense from a logistical perspective, but that airlines only use BWI as a hub due to the lack of fuel taxes. Mr. Reese explained that if the airlines did have to pay fuel tax at BWI, they likely would use other airports such as Washington Dulles International (IAD) or Regan National (DCA) airport.

Mr. Austin Holley of Millersville commented that he lived at the intersection of the flight corridor between the navigational points RAVNN and GRAFE. He explained he found it very disconcerting that HMMH was conducting modeling associated with this corridor at the request of Mr. Shank and Mr. Brasher with the conception it is going to provide relief to the Roundtable. Mr. Holley presented images showing flight tracks before the implementation of the DC Metroplex and noted it did not represent 75% of runway 33L arrivals as had been implied by Mr. Shank in prior Roundtable meetings. He explained that while he would love to return to the pre-Metroplex utilization of the corridor between RAVNN and GRAFE that is not what would happen if the FAA was to implement a PBN approach procedure along the lines of what had been discussed by Mr. Shank. Mr. Holley concluded by noting he found it frightening that there was alternative research being conducted by the MDOT MAA that the Roundtable does not fully understand or fully support and that the proposed approach between RAVN and GRAFE as advocated by Mr. Shank does not satisfy the Roundtable's requests for reversion or increased dispersion.

Mr. Scholten responded that HMMH nor the MDOT MAA have done any modeling of a proposed approach procedure between RAVNN and GRAFE as discussed by Mr. Shank. He explained that HMMH and the MDOT MAA have laid out a framework to model the procedure, but wanted to present the framework to the Roundtable before proceeding with any additional research or analysis regarding the proposed Runway 33L approach. Ms. Curry responded that she wanted it captured for the record that the Roundtable never asked for the creation of a proposed approach procedure along the flight corridor between RAVNN and GRAFE, and that it may have been requested by Mr. Brasher or Mr. Shank, but that it was not requested by the Roundtable as a whole.

Mr. Chancellor commented that it should be discussed at the next meeting if the Roundtable should even be considering making recommendations to the FAA. He noted that would be the first step before the Roundtable starts considering technical solutions that may or may not address the Roundtable's concerns.

Ms. Reese discussed there is a part of the loss of dispersion for Runway 33L arrivals that will not show up in graphs or other analysis. She noted that the corridor between RAVNN and GRAFE overflies her district, and that the proposed approach procedure would create another highway in the sky next to the corridor from RAVNN to SPLAT that she does not support.

Ms. Pepa Sassin of Hanover commented that she did not feel the communities closest to BWI Marshall such as Hanover or Oxford Square were being included in the Roundtable discussions. Ms. Sassin noted she did not feel based on the graphs and other presentation material that either community was being adequately represented. Mr. Reese responded that he believed the contrary, and that Hanover and Oxford Square have had greater representation than some other communities included in the Roundtable.

5. ELECTION OF SUCCESSOR ROUNDTABLE CHAIR AND VICE CHAIR

Mr. Yates moved on to discuss the election of the next Roundtable Chair and Vice Chair. He noted that Ms. Mary Reese and Mr. Jesse Chancellor have volunteered to be the next Chair and Vice Chair, respectively, and wanted to provide both with the opportunity to make a statement.

Ms. Reese stated she sees a good direction for the Roundtable to pursue moving forward given what the Roundtable has had to deal with from the FAA. She noted that there was much work to do, but that she and Mr. Chancellor have a good idea of the problems the Roundtable is facing with the FAA and are interested in working with the MDOT MAA to see how they may be able to further assist the Roundtable.

Mr. Chancellor stated he is willing to serve as the Vice Chair for Ms. Reese and that she would be a fantastic leader. He noted the Roundtable is entering a new phase, and although they do not know what this phase looks like, he hoped the Roundtable would be able to achieve more moving forward. Mr. Chancellor commented he hoped the Roundtable would have a discussion as a group at the next meeting about what activities the Roundtable would like to pursue and what could be achieved by the Roundtable within the next year. Mr. Chancellor concluded by noting that if the Roundtable would like to be more active, there needs to be suggestions on how the Roundtable can obtain staff or resources as currently the Roundtable only consists of volunteers with no real power or transparent budget.

Mr. Verchinski motioned to elect Ms. Mary Reese and Mr. Jesse Chancellor as the next Roundtable Chair and Vice Chair. Ms. Curry Seconded the motion. All in favor. Ms. Reese is elected the new Roundtable Chair and Mr. Chancellor Vice Chair.

6 ADJOURN

Mr. Yates congratulated Ms. Reese and requested she adjourn the meeting as the new Roundtable Chair. Mr. Chancellor motioned to adjourn the meeting. Ms. Curry Seconded. All in Favor. Ms. Reese declared the meeting adjourned at 10:07 PM