

DC METROPLEX BWI COMMUNITY ROUNDTABLE WORKING GROUP PUBLIC MEETING

Thirteenth meeting of the DC Metroplex BWI Community Roundtable Working Group

Tuesday, April 24, 2018, 6:00 PM – 9:00 PM

Lindale Middle School, Cafeteria

415 Andover Road

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 April 24, 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
Simon Taylor, Deputy Director
Kevin Clarke, Director of Planning
Jonathan Dean, Communications Manager
Roberta Walker, Administrative Assistant

Federal Aviation Administration (FAA)

Jennifer Solomon, Eastern Regional Administrator
Marie Kennington-Gardiner, Director-New York Area Program Integration Office
Matt Cathcart, PBN Management Co-Lead
Bill Wise, NATCA PBN Co-Lead
Ken Brissenden, Eastern Service Center Operations Support Group - South Team Manager
Leslie Swann, Senior Advisor
Ryan Almasy, Eastern Service Center - Operations Support Group Manager
Bryan Lehman, Potomac TRACON Airspace and Procedures
Matt Fisher, Potomac TRACON - NATCA
Nick Johnson, Potomac TRACON - NATCA
Jesse Moyer, Potomac TRACON - NATCA
Scott Proudfoot, BWI Air Traffic manager
Mamie Ambrose, ADW - NATCA
Sean Doyle, Office of Environment and Energy
Aaron Braswell, Environmental Protection Specialist
Beth White, Senior Advisor NextGen Communications and Branding
Leanne Hart, Community Involvement Specialist
Tammy Jones, Spokesperson – Media Relations
Paul Takemoto, Office of Communications
Marcia Adams, Manager – Public Affairs
Kate Howard, Deputy Assistant Administrator - Office of Government & Industry Affairs
Brian Langdon, Assistant Administrator - Office of Government & Industry Affairs
Vicki Turner, Design and Implementation Program Manager
Robert Owens, Terminal Assistant District Manager – Capital District

Contractor Support

Kurt Hellauer, HMMH
Adam Scholten, HMMH
Kim Hughes, HNTB
Royce Bassarab, HNTB
Bill Lebegern, HNTB

MEETING MATERIALS

Participants received the following materials in advance:

- Meeting Agenda for April 24, 2018
- Draft Meeting Minutes from February 20, 2018

Handouts at meeting:

- Meeting Agenda for April 24, 2018
- Draft Meeting Minutes from February 20, 2018
- DC Metroplex BWI Community Roundtable 2017 Annual Report
- Letter from DC Metroplex BWI Community Roundtable to FAA dated September 8, 2017
- Environmental Terms and Definitions
- Baltimore Specific Information
- BWI Marshall Airport Diagram
- Overview of Environmental Study Process and Next Steps

Presentations at meeting:

- Runway 15R and 28 Departure Flight Tracks pre and post-Metroplex Implementation
- Runway 33L Arrival Flight Tracks pre and post-Metroplex Implementation
- FAA Presentation Titled "FAA 7100.41 Design Team Outcomes and Conceptual Procedures"
- FAA Proposed Procedure Presentation Boards

1. INTRODUCTIONS (6:20)

Mr. Lance Brasher (Chair) welcomed attendees and began the meeting.

Member roll call

Mr. Brasher welcomed attendees to Lindale Middle School 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.

Roundtable background

Mr. Brasher provided an overview of the Roundtable and discussed the history of how the Roundtable was formed. He explained the Roundtable was formed in March 2017 in response to flight path changes implemented as part of NextGen and the DC Optimization of Airspace and Procedures in the Metroplex (DC Metroplex). Mr. Brasher noted there was a large amount of public demand from within the Baltimore and Washington D.C. Metro areas for action to be taken to rectify flight path changes. This lead to the FAA to request the formation of the DC Metroplex BWI Community Roundtable (Roundtable) to include members representing the various legislative districts and counties surrounding BWI Marshall.

Mr. Brasher noted that at the first meeting of the Roundtable in March 2017, the Roundtable requested the FAA return flight paths back to historical patterns that existed prior to the implementation of the DC

Metroplex. Mr. Brasher presented graphics depicting pre and post-Metroplex flight paths for BWI Marshall Runway 15R and 28 departures, as well as Runway 33L arrivals. He explained how the pre-Metroplex tracks were largely dispersed compared to the highly concentrated paths that occurred after the implementation of the DC Metroplex. Mr. Brasher noted that based on this concentration of flight paths associated with the implementation of the DC Metroplex, the Roundtable adopted a unanimous resolution for the FAA to revert flight paths back to the dispersed patterns that existed prior to DC Metroplex implementation and wrote a letter to Ms. Elizabeth Lynn Ray of the FAA detailing the Roundtable's request. In response to the Roundtable's letter Ms. Ray indicated the FAA could not revert to prior versions of flight procedures at BWI Marshall as they no longer existed, but the FAA may be able to provide some interim measures that could provide relief. Mr. Brasher noted the FAA followed up with the Roundtable by having preliminary meetings in May and June of 2017, but that it was evident the FAA was not familiar with the issues of concentrated flights and aircraft flying at low altitudes as was being detailed by Roundtable members.

Mr. Brasher continued and explained that at a July meeting of the Roundtable, Mr. Robert Owens of the FAA explained that part of the issues with aircraft flight path concentrations were the result of aircraft reductions in the number of aircraft vectored by air traffic controllers. At that meeting, Mr. Owens elaborated further that air traffic controllers directing aircraft to navigational points combined with new technology was contributing to the reduction in the amount of dispersion of aircraft flight paths. Mr. Brasher noted that in response to the July meeting the Roundtable wrote a second letter to the FAA requesting increased use of vectoring and was optimistic this would help address the Roundtable's concerns.

Following the July Roundtable meeting in early August, Mr. Brasher noted the FAA formed a Performance Based Navigation (PBN) Working Group that was partially charged with working to mitigate the Roundtable's concerns. In response to the formation of the working group, Mr. Brasher explained the Roundtable was concerned that the PBN Working Group did not understand the Roundtable's requests, and drafted a letter to the FAA in September 2017. In the letter, the Roundtable identified three primary areas where the FAA should make improvements as it relates to flight path changes implemented as part of the DC OAPM. Specifically, the Roundtable's letter noted that aircraft flight paths had shifted for departures and arrivals, became more concentrated, and were flying at lower altitudes than prior of the implementation of the DC OAPM and that these issues should be corrected. Mr. Brasher indicated that to-date the Roundtable has not received a favorable response from the FAA and that the FAA presented initial proposed procedure designs to the Roundtable in November of 2017.

Review and approve agenda for tonight's meeting

Mr. Brasher 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 moved to approve the agenda. Mr. Mr. Jesse Chancellor seconded the motion. All were in favor. Tonight's meeting agenda is approved.

Review and approve February 20, 2018 meeting minutes

Mr. Brasher discussed the February 20, 2018 meeting minutes and noted that although the minutes were circulated in advance of the March meeting, that meeting was cancelled due to adverse weather. He noted that MDOT MAA had informed him they had some clarifications that would like to be made to the minutes. Mr. Adam Scholten of HMMH reviewed clarifications to the minutes regarding the circulation of the December minutes at the January Roundtable meeting, clarification to the identification of Mr. Chancellor, the National Environmental Policy Act (NEPA), and the spelling of the community of Harmans Woods. Mr. Verchinski moved to approve the February meeting minutes with

HMMH's corrections. Mr. Evan Reese seconded the motion. All were in favor. The February 20, 2018 meeting minutes are approved.

Discussion of Schedule

Mr. Brasher discussed the schedule for the remainder of the meeting. He noted that the FAA will be presenting, and asked that all questions be held until the end. Mr. Brasher also noted that following the presentation, the FAA would be answering questions from the public at various storyboard stations. Mr. Brasher encouraged attendees to submit questions posed to the FAA and associated responses to a website and e-mail address provided by Ms. Linda Curry. He emphasized that by submitting questions and responses to the website, the Roundtable would be able to better track questions posed to the FAA and responses.

Mr. Chancellor noted that before moving to the FAA presentation, he wanted to ensure attendees were aware that the Roundtable maintains a separate e-mail list from that maintained by the MDOT MAA that provides updates on Roundtable specific activities. He noted at the conclusion of the meeting, members of the Roundtable Communications Committee would be identified and available to subscribe interested attendees to the Roundtable e-mail list.

2. FAA PRESENTATION ON PROGRESS OF CAPITAL PROJECT PERFORMANCE BASED NAVIGATION (PBN) WORKING GROUP

Mr. Brasher moved to the FAA presentation and introduced Mr. Leslie Swann of the FAA. Mr. Swann noted he was a Senior Advisor for Airspace Services at the FAA and that the FAA would be presenting proposed procedure designs that were designed to help mitigate the concerns over aircraft flight paths identified by the Roundtable. He also noted that throughout the presentation, he would be calling upon a variety of FAA Subject Matter Experts (SMEs) in attendance as well as Ms. Jennifer Solomon, the FAA Eastern Regional Administrator to help discuss proposed procedure designs and next steps.

Mr. Swann presented the agenda for the presentation. He noted it was important to identify that the information within the presentation does not constitute a final decision of the FAA nor does it reopen the Finding of No Significant Impact (FONSI) Record of Decision (ROD) for the DC OAPM. Mr. Swann also noted that the presentation depicts a number of proposed procedure designs that were intended to address some of the concerns of the Roundtable as well as address safety concerns identified by the FAA. He indicated that at the conclusion of the presentation, the FAA would request a recommendation from the Roundtable regarding the presented proposed procedure designs and provide an opportunity for the Roundtable to ask questions.

Mr. Swann reviewed the history of BWI Marshall. He noted the airport was opened on June 24, 1950 and is currently the busiest airport by passenger enplanements in the Baltimore-Washington Metropolitan Area. He noted due to increased passenger enplanements across the country, Congress directed the FAA to modernize the National Airspace System (NAS) as part of the FAA Modernization and Reform Act of 2012. In conjunction with the act, Mr. Swann explained the FAA implemented Metroplex's across the country that included the DC Metroplex. As part of the DC Metroplex, an Environmental Assessment (EA) was completed and made available to the public on June 20, 2013. This was followed by a 30-day open public comment period and subsequent FONSI/ROD on December 30, 2013.

Mr. Swann discussed that following the implementation of the DC Metroplex, the FAA asked the communities surrounding BWI Marshall to form a Roundtable that would serve as a forum to discuss concerns regarding flight path changes associated with the DC Metroplex and provide a mechanism for communities to make recommendations for changes to the FAA through coordination with the MDOT

MAA. He continued by reviewing the letters from the Roundtable to the FAA regarding requests to change aircraft flight paths including restoring flight paths to historical patterns, increasing dispersion, and increasing aircraft altitudes. Mr. Swann explained in response to these letters, the FAA formed a Performance Based Navigation (PBN) Working Group consisting of industry, air traffic control facilities, and the MDOT MAA with the goal of collaboratively reviewing the Roundtable's requests and working to mitigate BWI Marshall arrival and departure flight path changes. He noted that the remainder of tonight's presentation were the results of the PBN Working Group's efforts and that he hoped it would address some of the Roundtable's concerns.

Mr. Swann continued and explained that the remainder of the presentation was divided into two parts. The first part discussing conceptual procedure changes intended to address the concerns of the Roundtable, and the second addressing procedure changes necessary to meet FAA safety and criteria requirements. He explained further and noted that some procedure changes were required outside of those requested by the Roundtable based on a criteria code that stated a procedure needs to comply with specific parameters in order to maintain safety and efficiency. Mr. Swann compared procedure criteria to building a home, and noted that when you build a home you must meet the local criteria established in building codes in order to ensure the structure is safe. He explained procedures are designed in the same way, and must meet a similar code to ensure safety based on the varying different aircraft that will utilize the procedures.

Mr. Swann moved on to discuss that in the past vectoring was a primary means of air traffic control, and that this has recently changed with the advancement of satellite based PBN technology. He noted that PBN is being used more frequently since it delivers a more repeatable flight path that increases safety and efficiency throughout the NAS. Mr. Swann concluded that due to the mandate from Congress to implement PBN procedures and the increased safety that results from increased use, the FAA does not plan to return to vectoring aircraft as a primary means of air traffic control for arrival or departure aircraft.

Mr. Swann introduced Mr. Matthew Cathcart and William Wise from the FAA who would be presenting the FAA's proposed procedure changes at BWI Marshall. Mr. Cathcart introduced himself and Mr. Wise and explained their roles as leads for the PBN Working Group changing procedures at BWI Marshall. He noted the PBN Working Group had to operate under a variety of constraints including traffic from other airports, safety, and restricted airspace throughout the Baltimore-Washington Metropolitan area. Mr. Cathcart also explained the benefits the Working Group was hoping to achieve by modifying BWI Marshall procedures and highlighted improvements in automated aircraft climbs and descents as well as reduced aircraft fuel burn and separation conflicts.

Mr. Cathcart moved on to present the proposed procedure changes for departure procedures at BWI Marshall known as Standard Instrument Departures (SIDs) and presented runway usage for BWI Marshall departures. He highlighted that Runway 28 was the primary departure runway with 63.4 percent of annual departure operations, and runway 10 was the least used runway with 0.5 percent of departure operations. Mr. Cathcart explained the request from the Roundtable was for the FAA to return to pre-Metroplex aircraft flight paths, and to meet that request the FAA modified all proposed departure procedures to comply with the BWI Marshall voluntary noise abatement procedures. He also noted a new procedure was created, known as the LINSE, which mimicked pre-Metroplex flight tracks.

Mr. Wise introduced himself and started presenting each of the proposed procedure changes. He noted to mimic dispersion, one of the existing departure procedures at BWI Marshall, known as the TERPZ, was amended and split into two procedures. He noted the amended TERPZ was expected to be utilized by approximately 74 percent of Jet departures to the south and west, and the new LINSE procedure would serve Jet departures to the northwest and the remaining 26 percent of traffic that previously would

have flown the TERPZ procedure. Mr. Wise explained the amended TERPZ and new LINSE were designed using pre-Metroplex flight paths and comply with BWI Marshall voluntary noise abatement procedures.

Mr. Wise presented the amended TERPZ procedure for Runway 15R and 15L. He explained Runways 15R and 15L are utilized approximately 29 percent of the time, and that a new waypoint WARYN was created 0.7 nautical miles from the end of runway 15R to conform with voluntary noise abatement procedures. He also noted the waypoint SARLY was removed from the procedure, and that instead aircraft would navigate to a new waypoint BOBYJ which would shift flight paths approximately 1.3 nautical miles to the south of where they are today. Mr. Wise also noted that the waypoint WONCE was moved 3.68 nautical miles to the west and temporarily renamed NEW WONCE until the procedure is published. Mr. Wise concluded by discussing how the WAYRN waypoint is a fly-over waypoint, which will require aircraft to fly over the WAYRN waypoint prior to commencing a turn toward another waypoint instead of a fly-by waypoint that allows aircraft to initiate a turn toward another waypoint prior to the WAYRN waypoint being reached.

Mr. Wise moved on to present the new LINSE departure for Runway 15R and 15L serving departures to the northwest. He explained the LINSE departure for Runway 15R and 15L was similar to the amended TERPZ procedure, except aircraft will navigate to the waypoint AADDY south of the waypoint NEW WONCE in order to mimic the dispersion of pre-Metroplex flight paths.

Mr. Wise continued and presented the amended TERPZ procedure for Runway 28. He noted the amended TERPZ would serve approximately 74 percent of current Runway 28 departures, with the new LINSE procedure serving the remaining 26 percent of Runway 28 departures. Mr. Wise explained a new waypoint JLENN was created 3 nautical miles from the end of Runway 28 to comply with the BWI Marshall voluntary noise abatement procedure and that the waypoint WONCE was moved 3.68 nautical miles to the west and temporarily renamed NEW WONCE until the procedure is published as was done for runway 15R and 15L.

Mr. Wise next presented the new LINSE departure for Runway 28 serving departures to the northwest. He explained the LINSE departure for Runway 28 was similar to the amended TERPZ procedure, except aircraft will navigate to the waypoint AADDY south of the waypoint NEW WONCE in order to mimic the dispersion of pre-Metroplex flight paths as had been done for Runway 15R and 15L LINSE departures.

Mr. Wise concluded presentation of the proposed departure procedure changes by reviewing the amended CONLE and FIXET departures. He explained that the CONLE departure procedure is for Jet aircraft departing to the south, and that the FIXET is used only for southbound Jet departure aircraft during periods of adverse weather. Mr. Wise explained that the CONLE and FIXET departures for Runways 15R and 15L remained unchanged, and that for Runway 10 the waypoint JWALL was created at one nautical mile from the end of Runway 10 to comply with the BWI Marshall voluntary noise abatement procedure. He noted that for Runway 28 departures, a restriction was added at the waypoint RAISN for aircraft to cross at or below 7,000 feet above Mean Sea Level (MSL) to allow for aircraft continuous climbs and that the waypoint STABL was moved 1.5 nautical miles to the east to meet FAA safety criteria.

Mr. Wise moved to present the proposed design for Terminal Transition Routes known more commonly as T-Routes. He explained T-Routes are satellite based low altitude routes that will replace the legacy Victor Airways that rely on ground based navigational aids. Mr. Wise explained that currently aircraft fly on Victor Airways over the Baltimore VHF Omnidirectional Range/Tactical Air Navigation (VORTAC) that limit the ability for departures to maintain continuous climbs off BWI Marshall. He also explained that the creation of T-Routes is necessary in order to provide more efficient routings for aircraft below

17,000 ft. MSL, avoid the Washington D.C Flight Restricted Zone (FRZ), and deconflict overflights from BWI Marshall arrivals and departures.

Mr. Wise presented T-356. He noted T-356 would allow BWI Marshall Tower to issue climb-via clearances, which allow aircraft to fly a repeatable and efficient predetermined climb pattern. He provided an example that currently Runway 33L and 33R BWI Marshall departures are restricted to maintaining 4,000 ft. MSL on initial departure in order to maintain separation from the Victor Airways until making contact with the departure controller. Mr. Wise presented that by creating T-356 with a restriction that aircraft on T-356 cannot fly below 6,000 ft. MSL, that now departures off Runway 33L and 33R will climb continuously through an efficient profile by being able to utilize climb-via clearances. Mr. Wise concluded presentation of the T-Routes by emphasizing that the goal of the T-Route designs were to allow departure aircraft to climb as high as possible as quickly as possible and provide deconflictions from BWI Marshall departure and arrival procedures.

Mr. Wise moved on to present changes to BWI Marshall arrival procedures known as Standard Terminal Arrival Routes (STARs). He noted the primary Runway for arrivals at BWI is Runway 33L, with the second busiest Runway being Runway 10. He noted all the STARs at BWI Marshall utilize descend-via clearances to allow for optimized aircraft descents and avoid aircraft leveling off. Mr. Wise discussed changes to the ANTHM arrival procedure that serves arriving Jet aircraft from the west, and noted a navigational point needed to be renamed from "HOIST" to "HOYST" do to the same name being used for another navigational point in Canada. He noted the ANTHM also was changed to include a restriction for aircraft to maintain 210 knots at the navigational point FINNZ for runway 28 arrivals, and that the navigational points ASHOR and GRAMZ were moved 0.9 Nautical Miles to the north to help create more spacing for aircraft on the downwind for Runway 28. Mr. Cathcart interjected, and described how a downwind is used by air traffic controllers to sequence aircraft as they become aligned with the runway and that by moving the ASHOR and GRAMZ navigational points aircraft will be in a better position to be sequenced by air traffic controllers. Mr. Wise agreed, and discussed changes to the TIRSH arrival procedure. He explained the changes to the TRISH were the same as previously described for the ANTHM.

Mr. Wise continued and presented changes to the MIIDY arrival procedure. He noted the MIIDY is an arrival procedure that serves arriving Jet aircraft from the southeast, and noted the MIIDY was changed to include a restriction for aircraft arriving to Runway 28 to cross the navigational point TROPS at 11,000 ft. MSL and 250 knots. Mr. Wise explained aircraft are already told to do this today, and that adding this restriction to TROPS was to help codify the procedure. He concluded by noting that the MIIDY was also changed to remove speed restrictions of 250 knots at the BILIT and TRUTH navigational points, remove the navigational fix HURTZ, and move the point TROYZ one nautical mile to the south of the current track to allow better sequencing of aircraft by air traffic control for Runway 28.

Mr. Wise concluded the presentation of the proposed BWI Marshall procedure changes and introduced Ms. Jennifer Solomon, Eastern Regional Administrator of the FAA to discuss next steps. Ms. Solomon introduced herself and explained that after this meeting, the FAA is requesting a recommendation from the Roundtable by June 25, 2018 based on the proposed procedures included in this presentation. She noted tonight's meeting was intended to help the Roundtable understand what options are available for working to address the Roundtable's concerns and provide information for the Roundtable to consider when forming a recommendation to the FAA. Ms. Solomon continued that once a recommendation is received from the Roundtable regarding the proposed procedures, the procedures could then be put through the environmental review and public comment process as well as safety checks to verify the procedures comply with the FAA's mission. Ms. Solomon emphasized that as meeting attendees reviewed the storyboards they should ask any questions that they have as the FAA wants the Roundtable to understand how the procedures may be changed. She noted that if the Roundtable

recommends to the FAA the procedures be changed, it is a long process to implement the procedures that could continue through early 2020. Ms. Solomon concluded by explaining that if there are further changes to the procedures that are required to meet safety or other considerations the FAA will communicate with the Roundtable what those changes are and come back for a subsequent briefing if necessary.

Deliverables:

- Roundtable to provide recommendation to the FAA on implementation of presented proposed procedure changes

3. FAA PRESENTATION QUESTION AND ANSWER

Mr. Brasher thanked the FAA, Ms. Solomon, Mr. Wise, and Mr. Cathcart for the presentation. He noted to start the question and answer session; there was a resolution from one of the Roundtable board members. Mr. Verchinski noted that Ms. Solomon and Mr. Swann were seeking specific recommendations, but the Roundtable does not have a budget for technical experts. He explained the MDOT MAA provides technical expertise, and that this is a situation the FAA has created by asking the Roundtable to solve the FAA's problems. Mr. Verchinski motioned that since the FAA has requested that the RT make a recommendation regarding their PBN changes presented tonight, and that the Roundtable's technical support is the MAA, that the Roundtable instructs the MAA to do a robust, thorough and professionally complete technical analysis of the FAA's proposed PBN changes and make a recommendation to the Roundtable based on the Roundtable's March 2017 resolution. Mr. Chancellor seconded the motion. Mr. Richard Campbell interjected, and noted that whatever analysis is conducted by the MDOT MAA should present the results in a fashion similar to those used for the current BWI Marshall Airport Noise Zone (ANZ) map. He noted an ANZ like format would provide the Roundtable with a better understanding of how the FAA's proposed procedure changes may affect aircraft noise at communities surrounding BWI Marshall than maps of aircraft flight tracks. Mr. Drew Roth requested a vote on Mr. Verchinski's motion be tabled until the completion of the question and answer session, as there are many things the Roundtable still does not know about the FAA's proposed procedures.

Mr. Brasher noted that the EA for the DC Metroplex was released in June 2013 followed by a ROD shortly thereafter with a statute of limitations. Mr. Brasher inquired if the FAA knew what the expiration date of the statute of limitations after the ROD was. Mr. Swann responded he did not have the date. Mr. Brasher inquired further and asked if the FAA will waive the statute of limitations on claims with respect to the ROD for the DC Metroplex EA. Mr. Swann and Ms. Solomon responded no. Mr. Brasher then inquired if the FAA knew if the shift from air traffic controllers vectoring aircraft on arrival to clearing them direct to navigational points was something that was part of the DC OAPM and covered in the DC OAPM EA. Ms. Solomon responded that the purpose of the meeting this evening is to discuss the path forward for the FAA proposed procedure designs. She noted that the FAA would be happy to respond to questions on what was in the EA outside of this meeting, but that this meeting was focused on providing experts to answer questions from the Roundtable regarding proposed procedure changes to aid in helping the Roundtable form a recommendation on the proposed procedures.

Mr. Brasher moved on to inquire to the FAA under what environmental grounds was the decision made to have controllers clear aircraft to navigational points instead of vectoring. Ms. Solomon noted she did not know this information off hand, and that the FAA would be happy to respond to questions regarding the 2013 ROD, but that the purpose of this meeting was to discuss the FAA proposed procedure changes. Mr. Brasher noted that presumably if the decision to have controllers stop vectoring was not covered by the EA it was covered by some other environmental documentation. He inquired if the FAA had gone back to look at any actions taken by the FAA regarding Categorical Exclusions (CATEXs) as was

required by the National Defense Authorization Act (NDAA) of 2012. Mr. Brasher noted his review of the DC Metroplex EA made no mention of moving away from vectoring and he assumed the FAA relied on a CATEX for the environmental evaluation of these actions. Ms. Solomon responded and noted that if it was a requirement for the FAA to review the procedures that she assumes the FAA complied with that requirement but noted she could not speak to it specifically. Ms. Solomon again emphasized the FAA would be happy to respond to questions regarding the NDAA, but that the purpose of this meeting was to discuss the FAA proposed procedure changes

Ms. Mary Reese inquired what the FAA had done to address the concerns of the Roundtable about Runway 33L arrivals. Mr. Wise responded that some preliminary changes to Runway 33L arrivals were discussed with the Roundtable in November of 2017, but that no PBN procedure was developed. Ms. Erica Wilemon noted there was a slide in the November 2017 presentation to the Roundtable from the FAA that included a proposed procedure from the RAVNN to GRAFE navigational points for Runway 33L that avoided the navigational point SPLAT. Ms. Wilemon inquired if FAA remembered the presentation. Mr. Wise responded there was no PBN procedure at this time that was going to change how controllers direct or pilots fly their aircraft.

Mr. Evan Reese interjected and noted that the concern over Runway 33L arrivals was discussed at the August Technical Exchange meeting between the MDOT MAA and the FAA and that it appears the FAA has not addressed these concerns. Mr. Wise responded and noted he believed the FAA discussed with the Roundtable that there were percentages of aircraft flying from the navigational points GRAFE and SPLAT various percentages of the time and that a large portion of the time aircraft are executing visual approaches. He noted from a PBN standpoint, there was not a procedure the FAA could develop that would have benefited visual approaches or other Runway 33L approaches at GRAFE or SPLAT. Ms. Reese responded that it was not that the FAA could not change the procedures; it's that the FAA didn't, and inquired if the FAA could have modified existing procedures to create higher altitudes. Mr. Wise explained that visual approaches allow the pilot to fly the aircraft as they see fit to navigate to the runway both laterally and vertically and that a PBN procedure would not have changed aircraft altitudes with relation to visual approaches. Ms. Reese inquired why the FAA did not submit higher altitudes at some of the navigational points such as SPLAT. Mr. Wise responded that the altitude at SPLAT is based on a calculated descent gradient that aircraft meet based on current flight standards, but the Roundtable was free to provide recommendations to the FAA for future consideration.

Mr. Chancellor noted the Roundtable from the outset of this process has struggled to get information that the average person can understand. He explained he appreciates the FAA's technical expertise, but it doesn't help the Roundtable understand how the FAA is addressing the Roundtable's issues. Mr. Chancellor noted it appears the PBN Working Group worked on the Roundtable's issues as well as addressed some FAA procedural issues and inquired what percentage of the time the Working Group spent on issues raised by the Roundtable, and what percentage was spent on addressing other issues. Mr. Wise responded and noted all time was spent at addressing the Roundtable's issues and that every bit of the Working group's efforts was with the goal of trying to address the Roundtable's concerns.

Mr. Chancellor continued and noted his district is burdened by departures from Runway 28, and highlighted the fact the FAA moved the navigational point WONCE during the implementation of the DC Metroplex to a place aircraft where few aircraft flew before. He explained it appeared the FAA heard his district and made changes to the TERPZ departure and WONCE, but inquired what is going to be the specific change in people's lives based on what has been presented and wants a clear message from the FAA on what that change will be. Ms. Solomon responded that the FAA is here to try to provide an answer to those questions and that whether the FAA provides a single answer to all attendees or the answer is given to attendees individually at the storyboard stations the message will be the same. Mr.

Brasher noted that the question and answer session is the Roundtable's time and would appreciate the FAA answering the questions posed by the Roundtable. He noted he appreciated that the FAA wanted to review the storyboards, but this time is allocated to question and answer and the Roundtable expects the FAA to answer the questions posed. Mr. Chancellor noted that if Ms. Solomon was not able to answer his question one of the storyboard subject matter experts should come forward and answer.

Mr. Cathcart noted that all the storyboard experts were part of the PBN Working Group and have intimate knowledge of the procedures. He moved on to discuss Runway 28 departures and noted the proposed procedures are compliant with the BWI Marshall voluntary noise abatement procedures. Mr. Cathcart explained the proposed procedures are designed to mimic pre-Metroplex departures and they are an attempt to put aircraft as close as possible to historic flight tracks.

Mr. Roth inquired how wide a corridor aircraft would be flying on the new procedures and if the aircraft would be concentrated in a narrow corridor or spread out. Mr. Cathcart explained that none of the procedures have been flown yet and that the procedure presentations at this meeting are an estimate of how aircraft will fly the procedures based on flight simulations. He noted he couldn't say exactly where aircraft will be on the new procedures as they need to be flown, and that since some of the waypoints will be fly-by that result in aircraft turning at slightly different locations. Mr. Roth responded and inquired if fly-by waypoints would result in more dispersed tracks. Mr. Cathcart responded this was a possibility based on aircraft capabilities and where aircraft will anticipate starting turns.

Mr. Roth inquired about changes to departure aircraft climbs for Runway 28, and if aircraft will climb over a greater or lesser horizontal distance with the proposed procedure changes compared to how aircraft climb today. Mr. Wise explained that with climb-via clearances, aircraft would fly an optimized climb profile and that aircraft climb rates should be comparable to how they were flying before. Mr. Roth inquired further and asked if aircraft would be climbing at their highest climb rate or if aircraft could fly at a low climb rate and remain at low altitudes for a longer distance. Mr. Wise responded that climb rates are dependent on each specific aircraft type, aircraft operator, and aircraft weight and that these often vary on a flight-by-flight basis based on weather conditions. Mr. Wise noted he could not provide a specific climb rate, but noted aircraft must meet altitude restrictions where published.

Mr. Swann noted that the FAA understands the Roundtable wants aircraft to fly as high as possible, but that procedures also have to be designed to be useable by most aircraft. Mr. Roth responded and inquired if the climb rate from the airport on the proposed procedures were as high as possible given the aircraft fleet mix and typical aircraft loads at BWI Marshall. Mr. Swann responded that the proposed procedures were designed to accommodate use by as many aircraft as possible and that climb rate will vary based on many factors. Mr. Brasher inquired if the variability in aircraft climb rates were the result of pilot discretion and if the pilot has to climb at a specific minimum rate. Mr. Swann responded that this was a good question, and that the pilot has some impact on the variability of aircraft climb rates as well as variations in the performance of the aircraft.

Mr. Evan Reese noted that aircraft can be restricted from using specific runways based on aircraft weight and performance categories. He explained the same should be the case for restricting aircraft departure operations that cannot meet a certain climb gradient. Mr. Reese continued and stated the FAA's metaphor for comparing building codes to aircraft flight procedures is flawed, as the FAA controls the specifications to how they build procedures as well as the procedures themselves. Mr. Reese inquired if the FAA knew how far behind the schedule was for NextGen implementation. Mr. Swann responded he did not have the answer to that question. Mr. Reese next inquired if Ms. Solomon had any experience as a pilot, air traffic controller, or managing the PBN process. Ms. Solomon responded in the negative but that she has been in the FAA for a long time. Mr. Reese inquired further and asked if the FAA had a timeline for implementing the proposed procedures or a formal memo detailing that the FAA

will not move forward with the implementation of the proposed procedures until the FAA receives a recommendation from the Roundtable. Mr. Swann responded there was no formal memo, and that the timeline for the implementation of the procedures is dependent on when the Roundtable provides their recommendation. Mr. Reese indicated that did not make sense, and that he also did not understand why the FAA could make modifications to T-Routes but not make changes to arrival procedures such as the RAVNN STAR. Mr. Cathcart noted changes to approaches and further changes to arrivals were outside the PBN process and there was nothing further the FAA could do to mitigate the Roundtable's concerns.

Ms. Ellen Moss inquired about changes to Runway 28 departures turning to the south. Mr. Wise responded that Runway 28 departures to the south on the CONLE procedure were changed to allow aircraft to use climb-via procedures and best rate of climb based on aircraft performance. Mr. Roth inquired how the FAA expresses an aircraft flying at its best rate of climb and what restrictions are in place to ensure aircraft climb at their best rate. Mr. Wise responded there is a standard rate of climb for aircraft and that aircraft will set climb rates based on changing weather conditions, aircraft weight, aircraft type, as well as other factors. He also noted the airlines want aircraft to climb as quickly as possible as Jet aircraft operate more efficiently at high altitudes. Mr. Wise explained that the minimum aircraft climb rate was 250 feet per-nautical mile, and that most aircraft climb at 500 feet per-nautical mile. He also noted that the proposed departure procedure for Runway 15R has a climb gradient of 780 feet per-nautical mile. Mr. Wise explained that high climb gradients applied for long distances can overstress an aircraft, and that the airlines and aircraft manufacturers are the most knowledgeable parties to determine what climb rates are appropriate for various aircraft operating conditions. Mr. Brasher inquired if there was a requirement for aircraft to climb at their best rate of climb, and noted many communities are experiencing aircraft flying at lower altitudes that are the result of pilots climbing aircraft at a lower rate than they are capable of flying. Mr. Wise responded and discussed Runway 28 departures, and noted that in most cases pilots will climb aircraft at the best climb rate possible due to subsequent altitude restrictions on departure routes which aircraft must meet or inform air traffic control.

Mr. Verchinski discussed Runway 28 departures and noted that based on the FAA's presentation 74 percent of 28 departures would fly the proposed TERPZ procedure and 26 percent would fly the proposed LINSE procedure. He highlighted that even though aircraft would now be split between both procedures, it still represented two superhighways of aircraft in the sky. Mr. Verchinski referenced an MIT study regarding algorithms for dispersing aircraft and questioned why the FAA could not use an algorithm to provide dispersion in areas of historical flight paths. Mr. Wise responded and noted that aircraft flight systems can only go to a finite set of waypoints, and that at the current time aircraft flight systems are not capable of navigating to an unlimited set of departure waypoints.

Mr. Gary Smith inquired when the decision was made to not reconsider expanded use of vectoring for arrivals and departures to help disperse aircraft. Mr. Wise responded and noted air traffic control can vector aircraft at any time as needed for safety and efficiency. He presented slides depicting the airspace constraints surrounding BWI Marshall and discussed the complexity of the airspace in the DC Metropolitan area. Mr. Wise highlighted that departures and arrivals out of Dulles International Airport (IAD) and Regan National (DCA) significantly constrained the airspace.

Mr. Chancellor noted that the air traffic control system prior to modernization was hard on controllers due to the constant interaction that was required with pilots. He noted Congress then instructed the FAA to modernize the system to help to eliminate these issues. Mr. Chancellor continued and noted that the FAA chose to modernize the air traffic control system with the Global Positioning System (GPS), and that by doing so forgot to consider what impact that would have on communities underneath changing

flight paths. He noted the Roundtable wants to know what impact will the FAA modifying procedures around BWI Marshall have on the lives of affected communities. Mr. Chancellor highlighted that the FAA is considered the premiere worldwide Air Navigation Service Provider (ANSP), and that whatever procedural decisions the FAA makes on behalf of stakeholders the communities underlying those changes will be impacted by them on a daily basis. Mr. Swann clarified that stakeholders is a broad term and explained that stakeholders include the airlines, airport operators, and even the National Environmental Policy Act (NEPA).

Ms. Linda Curry noted that conversations by meeting attendees at the FAA storyboard stations was being disruptive and requested the FAA to stop conversations at the workstations. Mr. Swann requested attendees to keep the volume of discussions at the FAA workstations be kept to a minimum.

Ms. Mary Kennington-Gardner noted she was the prior FAA Eastern Region Regional Administrator and noted she worked extensively with Ms. Lynn Ray prior to her retirement. She explained that the FAA planned to conduct noise and other environmental modeling for the proposed procedure changes, but that the modeling would take place after consensus was received from the Roundtable on what proposed procedure changes should be implemented.

Mr. Pat Daly inquired about the status of responses to comments taken by the FAA at an October 2016 meeting at the Lindale Middle School or if the FAA ever responded to these comments. Ms. Solomon noted she was not sure if the comments received a response from the FAA, but would be happy to investigate. Mr. Robert Owens noted the comments were tabulated and shared with the MDOT MAA. Mr. Paul Shank responded the MDOT MAA would look into the status of the comments and provide an answer to the Roundtable.

**Note: The MDOT MAA received and cataloged comments taken by the FAA in relation to the FAA's October 27, 2016 BWI Outreach meeting at Lindale Middle School. The comment matrix is available at:*

http://www.maacommunityrelations.com/_media/client/anznoiseupdate/2017/BWI%20Public%20Outreach%20Comments%2020170630%20PDF.pdf

Mr. Brasher inquired if the Roundtable would need to go through a FOIA process in order for the Roundtable to access FAA responses to the Roundtable's questions. Ms. Solomon responded the FAA would be happy to respond to questions inside and outside of this meeting. Mr. Swann responded and explained that he and Ms. Solomon would answer questions that came in from the Roundtable but that other requests for information may require a FOIA request.

Ms. Linda Curry requested the Roundtable return back to the motion posed by Mr. Verchinski for the MDOT MAA to conduct a technical analysis of the FAA's proposed procedure changes. Mr. Brasher obliged and inquired with Mr. Roth if he was ready to further advance the motion. Mr. Roth acknowledged he was ready to advance the motion, but noted he had some comments. He noted that the FAA's proposed procedure changes were far from addressing all the Roundtable's concerns, but did believe what the FAA presented was good for some communities, especially with relation to runway 28 departures. Mr. Reese agreed, and noted that there was some potential for improvement with the FAA proposed designs. However, Mr. Reese also noted he was fearful the FAA would move ahead with implementing the procedures regardless of what was recommended by the Roundtable to show the FAA addressed the Roundtable's concerns.

Mr. Campbell reiterated he believed it was important for the MDOT MAA's analysis to be presented in a format that the public can understand. He noted a map similar to the Airport Noise Zone should be provided in 10 dB increments for the proposed procedures and that a basis should be provided for comparison.

Mr. Shank noted the MDOT MAA wanted to respond to the Roundtable's motion. He explained that for the MDOT MAA to study and model the proposed procedures, the MDOT MAA would prefer that the procedures were flown and approved by the airlines before expending state funds as the procedures are still likely to be changed. Mr. Verchinski responded and noted that there was no way the Roundtable could make a recommendation to the FAA on the proposed procedures unless there was technical support provided by the MDOT MAA.

Mr. Brasher continued the motion for the MDOT MAA to technically evaluate the FAA's proposed procedures as presented at tonight's meeting. Mr. Chancellor seconded the motion. All were in favor. The motion for the MDOT MAA to provide a technical analysis on the FAA proposed procedures was approved.

Deliverables:

- MDOT MAA to determine if comments were provided to MDOT MAA from FAA Outreach meeting at Lindale Middle School in October 2017
 - Comments were provided to the MDOT MAA from the October 27, 2016 outreach meeting and are available at:
<http://www.maacommunityrelations.com/media/client/anznoiseupdate/2017/BWI%20Public%20Outreach%20Comments%2020170630%20PDF.pdf>
- MDOT MAA to support the Roundtable in evaluating the presented FAA proposed procedure designs by conducting a technical flight path and noise analysis. As part of that analysis, MDOT MAA is to provide a recommendation to the Roundtable if the proposed procedure changes would be beneficial to surrounding communities for consideration by the Roundtable

4. COMMITTEE REPORTS

Mr. Brasher asked each of the Roundtable committees if they had any items they would like to report to the Roundtable.

Communications Committee

Ms. Curry noted the Communications Committee was compiling an e-mail address list based on the attendance from tonight's meeting for updates on the Roundtable's activities. She also noted the Communications Committee was providing an e-mail address to attendees that would be available for the compilation of questions for transmittal to the FAA. Ms. Curry highlighted that the Roundtable has compiled a list of accomplishments since its formation and corresponding FAA responses. Ms. Curry concluded by noting that Congress was planning to pass the FAA Reauthorization Act within the next week and for constituents to get in touch with their senators and congressional representatives.

Legislative Committee

Mr. Smith noted the Legislative Committee was closely watching the upcoming passage of the FAA Reauthorization Act and was working to organize a meeting with Senator Cardin to go over the act and ensure that BWI Marshall was included in legislative language for noise.

Technical Committee

Mr. Reese noted the Technical Committee had a lot of work to do based on the proposed procedure changes presented by the FAA at tonight's meeting and that they would be coordinating with MDOT MAA on the analysis of the proposed procedure designs. Mr. Reese inquired if the MDOT MAA or FAA would be providing the presentations and storyboards to the Roundtable from tonight's meeting. Ms.

Solomon noted the FAA would provide these materials to the MDOT MAA for posting on the MDOT MAA's website.

5. ADJOURN

Mr. Brasher thanked everyone for attending. He reminded attendees to speak to their congressional representative and senators, as legislation is required to address noise issues. Mr. Brasher adjourned the meeting at 8:26 pm.

6. STORY BOARD SESSIONS WITH FAA REPRESENTATIVES FOR INTERESTED ATTENDEES

Meeting attendees interacted with various FAA SME's at storyboard stations of the FAA's proposed procedure changes until approximately 9:30 pm.