MSP NOISE OVERSIGHT COMMITTEE
MEETING MINUTES
Wednesday, 18th of July 2018 at 1:30pm

MAC General Office
Lindbergh Conference Room

Call to Order

A regularly-scheduled meeting of the MSP Noise Oversight Committee, having been duly called, was held Wednesday, 18th of July 2018, in the Lindbergh Conference Room at the MAC General Office. Chair Hart called the meeting to order at 1:34pm. The following were in attendance:

Representatives: D. Miller; J. Hart; R. Barette; P. Dmytrenko; L. Olson; J. Malin; T. Link; D. Lowman; C. Jacobson; A. Moos

Staff: D. Nelson; B. Juffer; A. Kolesar; P. Mosites; J. Lewis; D. Anderson; C. Leqve; N. Pesky

Others: M. Nolan – City of Edina; J. Winngar – FAA; L. Moore – City of Bloomington; B. Hoffman – City of Saint Louis Park; D. Langer – FAA; S. Devich – City of Richfield; S. Heegaard – Saint Paul; L. Grotz –Edina; M. Brindle – City of Edina; D. O'Leary – City of Sunfish Lake; P. Cain – Savage; G. Alberg – HNTB; N. Heller – Minneapolis; N. Tron – MAC; J. Gundlach – City of Inver Grove Heights

Chair Hart, Delta, started the meeting by welcoming former Director of Environment, Chad Leqve, to the meeting.

Chad Leqve, VP of Operations, introduced the new Vice President of Strategy and Stakeholder Engagement, Naomi Pesky. **Pesky** is the new senior leader for the Noise Department. **Leqve** stated that the Environmental Affairs unit of the Environment Department has moved and now reports to the Planning and Development Division. At the same time, the Noise Office unit has remained its own entity under the newly created Strategy and Stakeholder Engagement Division. **Pesky** thanked Leqve for the introduction and informed the NOC that she has been at the MAC for 2 months. **Pesky** said she's excited to learn more about the pivotal role the NOC has had within the community and is looking forward to future collaboration.

1. **Review and Approval of the May 16, 2018 Meeting Minutes**
    Chair Hart, Delta, asked if there were comments or objections to the May meeting minutes, seeing none, he asked for a motion. A motion to approve was moved by **Representative Goss, Delta,** and seconded by **Representative Dmytrenko, Richfield.** The minutes were approved unanimously.

2. **Review of Monthly Operations Reports: May and June, 2018**
    Brad Juffer, Assistant Technical Advisor, reported that MACNOMS recorded 34,672 operations in May and 35,994 operations in June. The May count is a 2.1% reduction from 2017 and June shows a reduction, just shy of a 1%. Year to date operations through June 30 are at 199,576; that is 4,000 fewer flights than 2017 or a reduction of 2%.

    There were 2,009 flights between 10:30 PM and 6:00 AM during May and 2,208 for the same time period in June. The May figure is a 10 flight reduction from May 2017 or 0.5% while the June number is 56 operations fewer than June 2017 or 2.5%. There have been 310 more night flights thus far in 2018 compared to the same time period of 2017. This is a 2.4% increase or which equates to under 2 additional flights per night.

    Juffer reported that in May and June, South Flows were employed frequently. As a result South arrivals on 12L and 12R accounted for 54% of the arrival traffic in May and 73% of the arrivals in June. Runways 12L, 12R and 17 handled 63% of the departures in May, increasing to 78% in June with Runway 17 handling 46% of all departures in that month. This change is the direct effect of local weather conditions.

    Juffer reported that in May-June of 2017 the windrose shows 54% of reported winds were between 215° and 025° thus favoring using the parallels in a North direction. 38% of the winds were reported in a direction that would favor using the parallels in a South direction. The remaining 8% of winds for the month were either calm or from a "shoulder" direction. The winds for May and June 2018 were nearly the exact opposite. Winds favored using the parallels to the south 57% of the time in May and June and to the north only 32% of the time. The splits between north/south/mixed flows ended at 20%/63%/11% for May and June combined. Regarding the 11% Mixed Flow, 147 of the 150 hours were Mixed A (arrivals and departures on 30L/R, departures on 17) with 3 hours reported as Mixed B (arrivals on 35 and departures on 12L/R).

    Next, **Juffer** reported on the number of aircraft noise complaints. Complaints were filed from 425 locations in May and 478 locations in June; in 2017 those numbers were 451 and 548. This is a reduction of 26 locations in May and 80 locations in June. Those locations filed 13,336 complaints in May and 13,456 in June. The complaint count in May is 777 more than 2017 while the June had a reduction of 1,200 from 2017. Year to date complaints are down by nearly 16,000 total from 2017.

    Complaint totals for May and June show that 21 locations filed more than 300 complaints or roughly 5 per day. Conversely, 104 locations or 42% filed less than 8 complaints or roughly 1 per week. The top 10 locations filed 50% of all complaints in May and June. Eight of those locations were also in the top 10 March and April. 71% of all locations filed 10 or less complaints in May and June.

    Regarding sound monitoring, **Juffer** reported that time spent by aircraft events over 65 dBA was 434 hours in May and roughly 478 hours in June. This is an 8.33% reduction in the time above metric for the same months in 2017. The 88,436 events for May and 96,909 events in June represent a 3.8% reduction from May and June 2017.

Regarding noise abatement, **Juffer** reported the Runway 17 Departure Procedure compliance was consistent at 99.3% in May and 99.8% in June. The Eagan-Mendota Heights Corridor Procedure had a compliance rate of 96% in both May and June. The use of the Crossing-in-the-Corridor Procedure was used 39% and 40% during the day for May and June, respectively. The nighttime compliance was 39% and 45% for May and June, respectively.

Finally on the runway use. The use of 1st and 2nd priority runways were used 55% of the time in May and 53% of the time in June.

Chair Hart, Delta, commented that there was a significant amount of irregular weather which pushed operations back into the nighttime hours, this directly led to 11 days of irregular operations.

Representative Miller, Eagan, mentioned that due to a rise in Eagan complaints, there will be a special listening session in August. The report Juffer gave illustrates the unique wind patterns and that there needs to be a way to have better balance between departures on Runways 12L and 12R versus Runway 17 departures. **Representative Olson, Minneapolis,** agreed with Miller and said that 12R is underutilized.

3. **NOC Bylaw Modifications to Facilitate Greater Citizen Input**
   Dana Nelson, Technical Advisor, reminded everyone that in January 2019, the NOC established a Bylaw Review Subcommittee in response to a request from MSP FairSkies to "Enhance the NOC with greater stakeholder (citizen) representation". At the May NOC meeting the subcommittee made suggestions to Bylaws Article VIII, *Committee Meetings*. Redline edits were included to the NOC July agenda, action will be taken at this meeting, and resulting action will become effective at the September 2018 NOC meeting.

   Nelson received an email with comments from MSP FairSkies member, Kevin Terrell, and proceeded to read it aloud, in its entirety.

   Nelson stated the committee action request: CONSIDER APPROVAL OF THE MODIFICATIONS TO THE NOC BYLAWS CONSISTENT WITH THE NOC BYLAW COMMITTEE RECOMMENDATIONS, AS SHOWN IN ATTACHMENT 1 OF THE MEETING AGENDA PACKET.

   Representative Olson, Minneapolis, offered to make a motion to approve the action request but based on resident feedback would like to leave the public comment period at the end of the agenda. **Chair Hart, Delta,** stated that entire motion is separate from the one proposed and to table Olson's specific motion.

   Representative Dmytrenko, Richfield, made a motion to approve the bylaw changes as recommended by the Bylaw Review Subcommittee. **Representative Lowman, Bloomington,** seconded the motion. The motion was voted on and passed unanimously.

   Hart returned to Olson's motion regarding the public comment period time in the NOC agenda and suggested that the time be flexible based on comments and the discretion of the co-chairs. **Olson** suggested it was more beneficial to have a definitive answer and **Hart** responded that it would be on the agenda prior to the meeting but that it may vary by meeting. **Representative Miller, Eagan,** added that the bylaw changes were brought before the Eagan

Airports Relations Committee and they preferred the public comment period to be at the beginning of the meeting. **Lowman** stated that the subcommittee also recommended having at least one NOC meeting a year at a later date so as to meet the availability of a wider range of residents. **Lowman** also stated that he'd prefer to have the co-chairs use their discretion to decide when the public comment period is on the agenda versus making a motion to put it in the bylaws. **Olson** stated that she would just like a decision to be made on the public comment period's location in the agenda moving forward instead of it possibly changing meeting by meeting. There was question on if this needed to be made a formal motion and **Nelson** stated that the action doesn't require a motion. She also added, for reference, that city council meetings tend to have the public comment period at the start of the meeting as do the MAC Commission meetings. In response, **Lowman** suggested a comment section at the start and end of each meeting. **Representative Goss, Delta,** restated that the subcommittee discussed adding the specific time of the public comment period to the start of the meeting. However, the committee elected to remove that language from the bylaws so it would be up to the discretion of the co-chairs and not restrict their ability to take action. **Representative Link, Inver Grove Heights,** said he prefers the public comment period to be at the start of the meeting and if there are other comments submitted, they can be addressed later in the agenda at the co-chairs' discretion. **Miller** said that per the subcommittee recommendation, the public comment period shall be placed after the operations report section of the agenda, **Hart** agreed. **Lowman** suggested that in a year there be a review of the public comment period placement and ensure it is engaging the community effectively.

4. **Review Residential Noise Mitigation Program Implementation Status**
   Pat Mosites, MAC Airport Development Project Manager, reviewed with the group that according to the 2007 Consent Decree, the MAC will provide two packages depending on exposure area. Eligible homes within the 63dB DNL contour receive the *Full 5dB Reduction Package*, designed to reduce interior noise levels by an average of 5dB. Eligible homes within the 60dB DNL contour receive the *Partial Noise Reduction Package*, which comes with two options:
   -central air conditioning and an allowance for mitigation products and services
   -an allowance for noise mitigation products and services

   With both packages, previously received reimbursement phase program funds will be deducted from the mitigation allowances.

   Regarding the 2017 mitigation program, the 2013/2014/2015 actual noise contours qualified 138 single-family homes for the *Partial Noise Reduction Package*. Two multi-family structures with a total of 88 units were eligible to participate in the *Multi-Family Mitigation Program*. Only one multi-family unit participated and is now complete. All home locations are located in the City of Minneapolis. In collaboration with the City of Minneapolis, letters confirming a home's eligibility were sent in June 2016. Homeowner orientation meetings, design visits, and construction began in mid-2017

   Regarding the 2018 mitigation program, the 2014/2015/2016 actual noise contours qualified 165 single-family homes for the *Partial Noise Reduction Package* and 118 single family homes for the *Full 5dB Reduction Package*. No multi-family structures were eligible to participate in the *Multi-Family Mitigation Program*. All home locations are located in the City of Minneapolis. Six homeowner orientation meetings were held throughout 2017, design visits began in August 2017, and construction started in 2018.

Regarding the 2019 mitigation program, the 2015/2016/2017 actual noise contours qualified 249 single-family homes for the *Partial Noise Reduction Package* and 181 single family homes for the *Full 5dB Reduction Package*. No multi-family structures were eligible to participate in the *Multi-Family Mitigation Program*. All home locations are located in the City of Minneapolis. Ten homeowner orientation meetings will occur on a monthly basis and began in March 2018. Design visits began in June 2018, and construction will start in January 2019.

5. **MSP Noise Management Benchmarking Study Review**
   Mary Ellen Eagan, HMMH, presented to the group and started by reviewing the methodology for the study:

   > -Identifying noise program components and activities to benchmark
   > -Develop a data gathering strategy
   > -Data collection
   > -Data analysis
   > -Draft a report
   > -Final report

   Survey categories include: Program Management and Innovative Use of Technology Measures, Stakeholder Engagement Measures, Operational Measures, Mitigation and Land Use Measures, and Policy and Research Measures. The survey was sent to 72 airports throughout the US and Canada and there are 54 complete responses, 48 US airports and 6 Canadian airports. There were responses from all FAA regions except Alaska.

   Eagan went on to discuss when noise offices were established at the responding airports as well as how they're staffed. She discussed the airports with permanently installed noise monitors and noted that of all the responding airports, MSP has the highest number of monitors. **Eagan** also discussed data surrounding noise complaint totals, responses, and even response rate. In correlation to Stakeholder Engagement Measures, results show that 54% of respondents have a standing noise advisory committee and 80% responded that their committee does not have established goals. Most respondents have public meetings as needed beyond their formal committee and many have quarterly meetings. 65% of responding airports provide noise contour reporting at DNL 65dB and up but MSP is one of six airport respondents that report at DNL 60 dB and up. **Eagan** stated that 56% of responding airports have a suggested or voluntary noise abatement procedure and 20% report they have required noise abatement procedures. 47% report tracking and reporting compliance with noise abatement procedures, this includes MSP.

   Eagan said that when reporting on the sound insulation programs, MSP was the only airport to report providing sound insulation to residential homes outside of the 65 DNL contour. MSP also reported the highest cost of sound insulation at $482.9 Million. 72% of airport respondents report having an FAA accepted Noise Exposure Map and an FAA approved Noise Compatibility Program, this includes MSP. 80% of respondents participate in research programs and studies concerning aircraft noise, this also includes MSP.

   Chair Hart, Delta, thanked Mary Ellen Eagan for her report and asked what the process is moving forward. **Eagan** responded that the draft report was sent to all NOC members and if there are comments or questions, to have them submitted to Dana Nelson before the end of August so the report may be finalized by the September NOC meeting. **Representative Dmytrenko, Richfield,** asked of the number of airports that were of similar size to MSP, how

many have a similar population density and location surrounding the airport. **Eagan** responded that while it wasn't a questions specifically asked, it's something her team could look in to. **Representative Link, Inver Grove Heights,** echoed Dmytrenko's curiosity and added the comparison of land use. Nelson responded that while there isn't any data gathering research to answer his question, anecdotally, MSP is one of the few airports with residential neighborhoods so close. This is mainly due to the age of the airport and newer airports are afforded with a newer thought process around land use surrounding the airport.

Representative Olson, Minneapolis, commented that while MSP is one of six airports reporting at DNL 65dB, were there any airports that reported lower than that. **Eagan** said there were eight airports that reported lower but due to privacy commitments surrounding the research, she can't disclose which airports those are. She stated that the lowest they would report is at 55 dB and that it's likely they are airports smaller than MSP. **Olson** asked about the two airports with steeper glide slopes and **Eagan** responded that they are barely steeper and not enough to make a meaningful difference in noise. **Olson** asked about airports with landing fees and curfew use, and **Eagan** said they were grandfathered in but in many cases those items aren't even relevant because they were in relation to certain aircraft that are obsolete now. **Olson** then asked if MSP had an active Part 150 and **Nelson** responded that there isn't an approved Part 150 program but the consent decree program is approved by the FAA and the existing noise abatement procedures at MSP were approved through a previous Part 150 Study. **Olson** asked if there was benefit to starting a Part 150 Program and **Eagan** responded that she would probably discourage it. It's a process that includes dialogue, review, and engage stakeholders and all three items are already being done at MSP. **Olson** asked if the 55dB reporting in the New York/New Jersey area was a recent development and **Eagan** responded that it was. **Olson** asked for an example of a required noise abatement procedure (NAP). **Eagan** referenced John Wayne Airport and they require operators to use a reduced thrust on takeoff otherwise they'll exceed their noise monitor thresholds. **Nelson** added that MSP's Noise Abatement Procedures are orders in the ATC tower but there are some circumstances that may not allow them to be followed. However, there are requirements such as the Field Rule requiring aircraft run up regulations at MSP. **Representative Lowman, Bloomington,** referenced the cost of MSP's sound insulation at $482M and he asked what the next investment amount was that was closest. **Eagan** responded the next closest amount was $300M but wasn't sure which airport that is. **Lowman** said he'd be curious to know what the investment was of the next airport after eliminating data from airports that don't compare in relative size. **Hart** asked if it was possible to know what other relative sized airports have set as their noise goals and **Eagan** said that information is often public and will look into compiling the goal information.

6. **Update in Converging Runway Operations at MSP**
   Kurt Mara, FAA, stated that MSP continues to be one of the top 15 airports in North America for operations. In conjunction to this fact, MSP is the busiest airport in the country that lands and departs the same runway (30L/R, 12L/R). This operation is challenging for ATC because they have to monitor both arrivals and departures. Other airports, such as Atlanta, Detroit, and Dallas, have a dedicated arrival runway to monitor and a dedicated departure runway to monitor. Adding the offset runway (35) adds another element to the parallel runway configuration. **Mara** displayed a simulation of an arrival and departure example and explained that this particular scenario is not realistic because it doesn't take in to account the weather, wind, aircraft type, pilots, or other changing factors. The controllers aim for this operation and are often successful but with all the other changing parts, it's impossible to meet every time. The main goal of this entire operation is to decrease departure delays and it's situated so ATC can ensure adequate pace of traffic.

Mara went on to discuss Virtual Runway Intersection Point and said that the FAA is still in the process of developing it. Dallas and Charlotte airport use this tool and also have a CRO procedure. The goal of this new process is to ensure tracking and safety of departures in the CRO procedure. Being that this tool is still in the development stages, it will be another year before it's available for use.

Mara discussed a work-group that has been put together to study CRO and gather data with the goal to understand best practices. It will also allow controllers working different shifts to see data that they wouldn't otherwise communicate about on a regular basis. After gathering the data from locations, CRO times, and controller process, the goal is to create a standard operating procedure to increase safety and efficiency.

Representative Olson, Minneapolis, thanked Mara for the communication from the FAA regarding tools and process. **Olson** asked for clarification between Converging Runway Decision Aid (CRDA) and VRIP and **Mara** stated that CRDA is more for approach controllers and VRIP is more for the tower controllers. **Olson** asked why CRO is used specifically at 10am, 4pm, and 7pm, and **Mara** responded that those are times with a higher number of arrivals. **Representative Miller, Eagan,** mentioned that the goal has been to return to aircraft balance, pre-CRO circa 2015 and asked Mara how close they are to that goal. **Mara** responded by saying they're as close as they can be, the typical daily rate is 70 planes per hour and when traffic increases, they will get up to 84 planes but that rate is usually only for 20-30 minutes at high peak.

7. **New FlightTracker Demo and Presentation on Improving Noise Office Data Through Machine Learning**
   Brad Juffer, Assistant Technical Advisor, introduced the new FlightTracker on the Noise Website by detailing the implementation schedule. The tool was a soft launched on June 20th with the Website announcement was on June 27th. Over 1,200 users are already utilizing the new system, are spending on average over 5 minutes, and they're using a variety of tech platforms to access the data. **Juffer** then introduced Jennifer Lewis, MAC Noise Program Specialist, as her direct customer interaction and experience helped shape the application as well.

   Jennifer Lewis, Noise Program Specialist, introduced herself and said her job includes helping customers understand the data that the noise office provides to the public. **Lewis** walked the NOC through a number of pages on the website and showed that the FlightTracker is accessible from each page. The default tracker page shows the most current flight data and it also displays the date and time of the data you're observing. **Lewis** continued to provide the NOC with a brief tutorial and highlighted areas customers seem to use the most.

   (At this time, both Representative Miller and Representative Olson had to leave the meeting due to time).

   Next **Derek Anderson, Acoustics and Technical Systems Coordinator** for the MAC**,** discussed the background of the sound data acquisition system. **Anderson** defined "Event" capture criteria as any Sound Pressure Level (SPL) that exceeds 65 A-weighted decibels (dBA) for a minimum period of 8 seconds with a 2 second continuation period. The main challenges with this system is that the source of the sound is unknown, events can be long, there can be concurrent events, and possible emulation. **Anderson** illustrated the goal for correlating noise

events with aircraft by determining time and space correlation. The main challenges with this process is that it's very time intensive as it's done manually and there are false positives. To punctuate the challenges, **Anderson** showed the Committee visual representations of various noise events and explained that while the visual data is strikingly similar, they are actual coming from very different sources (snow plow, an aircraft, and thunder). **Anderson** explained that by using machine learning, a closer examination of the code from the images is possible. This eliminates the need for manual review and for an automated process of classification of recorded sound events. **Anderson** introduced Nick Heller, a PhD student at the University of MN.

Nick Heller, UMN PhD student, explained that machine learning is a new approach to automation. In years past all the code rules would be written in advance but now the system is shown pictures of the data and it determines the important features and classifications. To illustrate this, **Heller** showed two images of sound data from an aircraft and from a community event. The Nosie Office is utilizing this feature now because having the visual representation of sound is a new capability for them, additionally, in the last six years machine learning has gone through rapid advancements. In an attempt to further explain this process, **Heller** discussed ImageNet as a standard benchmark in computer vision. In 2011 the error percentage rate was over 25% but by 2015, that number dropped to just under 5%. **Heller** continued by saying that the discernable process is a hierarchal structure and starts by looking at features in a 10x10 patch of pixels in the image. This patch singles out discernable traits such as edges and coloring; the network then aggregates these features and after enough layers, it can create reliable classifications.

Heller discussed the testing procedure and measuring performance from the standpoint of detection. The two data points for detection analysis are precision (how many community events labeled as community were not actually community) and recall (how many events were labeled community events and were correct).

Representative Lowman, Bloomington, asked if it would eventually be possible for the machine to utilize historical data on noise and maybe even wind flow to then forecast potential data points. **Juffer** responded that the office is discussing utilizing more predictive data and specifically to try and determine potential forecast of aircraft operations based on weather, time of day, and time of year data. **Lowman** asked if there was a way to do that with regards to predicting noise impacts at a specific location. **Juffer** said they could but only from the locations of the 39 monitors. **Heller** added that you need to determine specifically the inputs and outlets, is that aircraft noise, community events, time of day, etc. Weather has a huge impact on aircraft operations and noise and all those data points are reliant on the weather forecast and changes.

8. **Review of the Summer Listening Session**
   Brad Juffer, Assistant Technical Advisor, Summer Listening Session was at Richfield City Hall and 33 residents attended. Attendees were from Bloomington, Eagan, Edina, Minneapolis, and Richfield. The meeting was also attended by MAC staff, FAA staff, NOC members, and Edina City staff. MAC staff provided a FlightTracker demo and held an open floor conversation surrounding Runway 17 departure procedures, CRO, Noise Abatement Departure Profiles, and noise reduction from the new generation aircraft.

9. **Public Comment Period**
   Chair Miller, Hart, stated there were no public comments.

10. Announcements
Representative Link, Inver Grove Heights, announced his retirement from the City of Inver Grove Heights and resignation from the NOC. He announced that Brian Hoffman, St. Louis Park, will be the At-Large Representative replacement and Janice Gundlach will be the new Inver Grove Heights Representative.

The next listening session will be a special session in Eagan on Monday, August 27th at the Eagan Community Center.

11. Adjourn
A motion to adjourn was requested by **Chair Hart, Delta,** moved by **Representative Olson, Minneapolis,** and seconded by **Co-Chair Miller, Eagan.**

The meeting adjourned at 3:31 p.m.

The next meeting of the NOC is scheduled for Wednesday, 19th September, 2018
Respectfully Submitted,
Amie Kolesar, Recording Secretary