



Minneapolis-St. Paul International Airport Noise Oversight Committee (NOC)



NOC Committee Members

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|------------------|---|
| Jeff Hart | User Co-Chair, Scheduled Airline Representative (Delta Air Lines) |
| Dianne Miller | Community Co-Chair, City of Eagan Representative (City of Eagan) |
| Ryan Barette | Minnesota Business Aviation Association Representative |
| Paul Borgstrom | Chief Pilot Representative (Delta Air Lines) |
| Mary Brindle | At-Large Community Representative (Edina City Council) |
| Pam Dmytrenko | City of Richfield Representative (City of Richfield) |
| Chris Finlayson | At-Large Airport User Representative (Endeavor Air, Inc.) |
| Christine Koppen | Cargo Carrier Representative (United Parcel Service) |
| Todd Lawrence | Charter/Scheduled Operator Representative (Sun Country Airlines) |
| Patrick Martin | City of Bloomington Representative (Bloomington City Council) |
| Jay Miller | City of Mendota Heights Representative (Mendota Heights City Council) |
| Linea Palmisano | City of Minneapolis Representative (Minneapolis City Council) |

MEETING AGENDA

January 29, 2020 at 1:30 PM

**MAC General Office Building, Lindbergh Conference Room
6040 28th Avenue South, Minneapolis, MN 55450**

(Dianne Miller, City of Eagan, will be the acting Chairperson for the meeting)

***Note:** 1:00 to 1:30 PM – Committee Agenda Review Session

(NOC members, alternates, and at-large contacts only in the Coleman Conference Room)

1. 1:30 Review and Approval of November 20, 2019 Meeting Minutes
2. 1:30 Review of Monthly Operations Reports: November and December 2019
3. 1:40 Public Comment Period
4. 2:00 VOR Minimum Operational Network
5. 2:20 Airline Policies and Procedures
6. 2:30 MSP Fleet Mix and Nighttime Operations Assessment
7. 2:50 Review of Winter Listening Session
8. 3:00 Announcements
9. 3:00 Adjourn

Public Comment Notice: A public comment period of no more than 20 minutes will be added to each agenda. Members of the public wishing to address the NOC during this period are allotted 3 minutes to speak. Please complete and submit a speaker card prior to the start of the meeting or have arrangements made with your NOC representative prior to the meeting date.



MSP NOISE OVERSIGHT COMMITTEE
DRAFT MEETING MINUTES

Wednesday, November 20, 2019 at 6:30 PM
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, November 20, 2019, in the Lindbergh Conference Room at the MAC General Office building. Chair Hart called the meeting to order at 6:35 PM. The following were in attendance:

Representatives: P. Borgstrom; M. Brindle; T. Cossalter; P. Dmytrenko; C. Finlayson; J. Hart; C. Koppen; J. Malin; P. Martin; D. Miller; J. Miller; L. Olson

Staff: J. Lewis; B. Juffer; P. Mosites; D. Nelson; N. Pesky; M. Ross

Others: R. MacPherson – FAA; D. Nuccio – US Department of Housing and Urban Development (HUD); C. Diaz – US Representative Craig’s Office; J. Carlson – Minnesota Senate; D. O’Leary – Mayor Sunfish Lake; C. Field – City of Eagan; H. Rand – City of Inver Grove Heights; M. Doll – City of Burnsville; B. Hoffman – City of St. Louis Park; W. Schmidt – Inver Grove Heights; T. Gladhill – Eagan; A. Gladhill – Eagan; J. Fischbach – Edina; R. Goldser – Eagan; R. Pam – Eagan; J. Orner – Eagan; K. Welage – Eagan; D. Hughes – Eagan; S. Norling – Mendota Heights; G. Norling – Mendota Heights; J. Sax – Eagan; J. Candee – Inver Grove Heights; B. Raker – Eagan; K. McLaughlin – Eagan; H. Leslie – Eagan; T. Drill – Eagan; S. Henry – Eagan; D. Sloan – Mendota Heights; C. Grawe – Apple Valley; C. Carrino – Edina; J. Laurence – St. Louis Park;

1) Review and Approval of September 18, 2019 Meeting Minutes

Chair Hart, Delta, asked for approval of the September 2019 NOC minutes. **Representative Olson**, asked that modifications be made to comments she made:

- Page 4: **Representative Olson** asked that her comments regarding her concern for the process laid out by the FAA were more cumbersome than previous efforts.
- Page 4: **Representative Olson** asked that her comments to show support for the City of Eagan be included in the minutes.
- Page 5: **Representative Olson** asked that minutes be modified to state, “...if the 1.5 decibel increase was the standard being applied to evaluate impacts for the NEPA review...”

A motion was made by **Co-Chair Miller, City of Eagan**, and seconded by **Representative Dmytrenko, City of Richfield**. The motion passed unanimously; the minutes were approved as modified.

2) Review of Monthly Operations Reports: September and October 2019

Michele Ross, Assistant Technical Advisor, reviewed and presented the September and October 2019 operations report for MSP airport.

| September | October |
|--|---|
| <ul style="list-style-type: none">• Total Operations: 33,366• Nighttime Operations: 1,975• North/South/Mixed: 24/55/15• Complaints: 20,376• Complaint locations: 496• Hours of aircraft sound events: 461• R17 procedure: 99.5%• Crossing procedure day: 25%• Crossing procedure night: 66.2%• EMH Corridor: 90.6%• RUS: 54.1% | <ul style="list-style-type: none">• Total Operations: 34,775• Nighttime Operations: 2,221• North/South/Mixed: 40/37/16• Complaints: 15,480• Complaint locations: 321• Hours of aircraft sound events: 526• R17 procedure 99.1%• Crossing procedure day: 20.7%• Crossing procedure night: 44.1%• EMH Corridor: 90.4%• RUS: 54.4% |

Representative Olson, Minneapolis commented that the flow was about the same as last year, and the number of households complaining have reduced year to date. **Olson** also asked for clarification regarding mixed flows.

3) Public Comment Period

Chair Hart, Delta, introduced the public comment period protocol and announced there were seven speakers who submitted comment cards.

Jamie Candee, Inver Grove Heights (IGH), submitted comments that she lived in Eagan for 5 years, then moved to IGH 3 years ago. She is a frequent business traveler and also a concerned resident regarding the arrivals on Runways 30R and 30L (rate, altitude and volume of flights). Requests dedicated representation.

Anne Gladhill, Eagan, submitted comments regarding departures from Runway 17. **Gladhill** asked that the Eagan letter be moved through to the next step in order to stop directing flights over Eagan.

Paul Lostetter, Eagan, submitted comments regarding departures from Runway 17. Expressed concerns that Runway 12R is no longer the priority use runway. Referred to consideration of noise pollution and compatible land use as it relates to the Eagan letter that will be addressed later in the meeting.

Steve Henry, Eagan, recognized appreciation for the efforts of Dianne Miller, the Eagan ARC and the Eagan City Council to reduce the level of noise pollution in Eagan. Noted support for Eagan letter recommendations that direct flights over noise compatible land uses. **Henry** asked the NOC to provide advocacy to adopt the Eagan proposals.

David Hughes, Eagan, submitted comments regarding working from home and being able to hear aircraft activity. **Hughes** noted he would like to have a mobile monitoring at his residence. He indicated that he is woken up every morning on South Flow days by aircraft. **Hughes** asked the NOC to adopt the letter from Eagan.

Ted Gladhill, Eagan, submitted comments in collaboration with **Ron Goldser, Eagan**. **Goldser** moved to Eagan in 1988 before Runway 17 opened. **Gladhill** asked the NOC to adopt the Eagan proposals and advocate to the MAC Commission and FAA to accept the proposal.

4) Eagan City Council Request

Brad Juffer, Technical Advisor, reviewed past actions by the Eagan City Council which resulted in the current letter to the NOC. Juffer explained that in September 2019, the Eagan City Council sent a letter to the NOC requesting the NOC endorse recommendations crafted by the Eagan ARC to modify specific procedures to reduce the number of departures from MSP that fly over residential portions of Eagan. A copy of the letter was included in the meeting packet. **Juffer** discussed the Runway 17 report commissioned by the NOC in 2019. Key findings of that report concluded that the use of Runway 17 for departures had increased after the new CRO mitigations were implemented but that while the runway was being used more often, the way in which it is being used was not significantly different. **Juffer** provided background on the process detailed by FAA Regional Administrator Rebecca MacPherson regarding community requests to modify flight procedures.

The following public representatives spoke:

Cyndee Fields, City of Eagan City Council Representative, noted the importance of safety and that MSP is an economic generator. **Fields** noted that Eagan developed with land use compatibility considerations. **Fields** asked the members to seriously consider the recommendations of the letter from the City of Eagan.

Dan O'Leary, Mayor of Sunfish Lake, asked attendees to consider that we are all neighbors, and should all work together and share the burden. **O'Leary** noted that is in support of the proposals if they are better for Eagan more so than they are worse for other communities.

Heather Rand, Community Involvement Director, City of Inver Grove Heights, submitted a letter as well on behalf of the residents of Inver Grove Heights. **Rand** indicated that Inver Grove Heights is supportive and appreciative of Eagan's letter but noted some items may represent a shift of a problem rather than a true solution.

Charles Grawe, City of Apple Valley expressed appreciation for how the NOC has worked over the years to drive solutions that are best for the whole group. **Grawe** expressed concerns that some of the recommendations in the Eagan letter may reroute noise from one noise sensitive area to another.

Minnesota State Senator Carlson expressed that noise and airplane activity has increased. **Carlson** asked that the Eagan letter be read carefully.

Representative Olson asked for clarification about the handout that city residents provided during the public comment period that noted amended recommendations. **Representative Miller** responded that she had reviewed the Eagan request at an Eagan ARC meeting and that Brad Juffer will speak to that next.

(A presentation with maps was shown in conjunction with these discussion items).

Discussion Regarding Recommendation 1A

Brad Juffer, Technical Advisor provided a background on Recommendation 1A which asks that departures from Runway 17 that have initial routings to COULT or ZMBRO use Runway 12R instead of Runway 17. **Juffer** advised that shifting departures to Runway 12R may decrease efficiency. **Juffer** recommended that the request be amended to include Runway 12L in addition to Runway 12R to allow for more flexibility.

Chair Hart requested an estimate of the impact to Runway 12R if arrivals were added and noted that taxi time for Delta departures on 12R increases when waiting for arrivals to 12R. **Juffer** noted an airfield capacity study is currently underway that will include an analysis of level of delay in different configurations. **Juffer** went on to note that during straight south flow when Runway 17 is unavailable for use due to strong winds, arrival traffic is spaced to allow for departures on Runway 12R which does result in some efficiency loss.

Representative Brindle asked if there was a benefit to adding Runway 12L to this request and if there was an adverse effect to a different community by including Runway 12L to this request. **Juffer** advised Runway 17 departures would be moved as written to 12R and fly over portions of Mendota Heights and northern Egan. If Runway 12L was included in the request there would be more traffic moved to Mendota Heights and potentially Sunfish Lake. Departures from 12R and 12L with COULT or ZMBRO fixes could use the Crossing-in-the-Corridor procedure to keep aircraft over the most compatible land. Use of 12L and 12R are prioritized over Runway 17 however this is not typically done during the day due to efficiency loss. **Brindle** asked if this request is a compromise or if it is a burden. **Juffer** responded that flight tracks would be moving to a different portion of Egan as well as Mendota Heights and Inver Grove Heights but would not be able to determine burden without population data which is an analysis that MAC in coordination with the NOC could undertake for any of the requests that are identified as safe and feasible by the FAA.

Chair Hart noted that aircraft using 12L would be flying over compatible land use. **Juffer** responded that that was correct but that there are some residential land uses that are over flown by departures from Runway 12L. However, use of 12R and 12L has always been prioritized over other runways due to compatible land use.

Representative Dmytrenko noted that during planning for Runway 17, Runways 12R and 12L were still intended to be the priority for departures. **Juffer** noted that Runway 17 was assumed to be used for 37% of departures in the environmental documentation.

Representative Olson requested clarification that when Runway 17 is being used for departures it makes Runway 12R more appealing as an arrival runway. **Juffer** noted that if Runway 12R is not being used for departures then FAA would not need to provide the same spacing between arriving aircraft to allow for departures to also use the runway however, a lot of MSP traffic arrives from the south and would likely be routed to 12R anyway and 12R is also a longer runway that some aircraft would require regardless. **Olson** asked if staff could quantify how the use of Runway 12R for departures impacts community experience in terms of the slowdown of arrival traffic. **Juffer** answered that there is currently no quantifiable data to answer that question but that demand at the airport can impact the arrival path length for final approach and where aircraft turn for final approach.

Co-Chair Miller noted that Egan purposely did not include 12L in the proposal because Egan is willing to take the burden. **Miller** asked members to seriously consider the request because it takes advantage of the commercial industrial corridor the city developed. Looking for ways to give the FAA examples to move the procedure forward.

Chair Hart suggested adding an amendment that states “if not impeded by nor impeding arrival traffic” to 1A to provide flexibility to ATC while still providing efficiency. **Co-Chair Miller** noted that flexibility when capacity and efficiency allows is an important component. No objections to this amendment by the NOC were made.

Discussion Regarding Recommendation 1B

Brad Juffer, Technical Advisor introduced Recommendation 1B which requested that Runway 17 departure headings be varied to limit frequency over a single area. **Juffer** detailed how departure procedures from all runways at MSP are conducted. Departures at MSP have natural dispersion of traffic; however, flights going to the same initial fixes will often be given the same heading to fly after departure. This does cause some defined routings. **Juffer** reminded the committee that the Runway 17 departure report from July found that the distribution of headings assigned to aircraft are largely unchanged. Finally, **Juffer** discussed the work conducted by NOC previously to request FAA use varied headings for departures from Runway 30R over the City of Minneapolis.

Representative Brindle requested confirmation that the 210° heading goes over Burnsville and clarification on what would change with implementation of this recommendation. **Juffer** noted that more information from the FAA on this request was needed.

Representative Cossalter noted that ATC provides a heading based on destination and that the request is proposing a random variation. This request may not be feasible and know that and moving it forward anyway may reduce the NOC’s credibility as an organization. **Juffer** noted that there is that potential but that the FAA should make the final determination on ATC feasibility.

Co-Chair Miller commented that the environmental documentation could have shown variation in departures because the intent was to fan Runway 17 departures. **Juffer** noted that the graphic presented shows density to highlight the majority of traffic but that if density was removed you would see a complete fanning of aircraft departures from 17.

Representative Olson noted that the dispersion from Runway 30R has worked well for Minneapolis and that it should be explored.

The NOC agreed that more information from the FAA was needed and this item should move forward.

Discussion Regarding Recommendation 2A

Brad Juffer, Technical Advisor presented Recommendation 2A which asks for an eastbound turn restriction from Runway 17 be implemented. **Juffer** described the environmental documentation conducted prior to construction of Runway 17/35. That documentation found that an eastbound restriction would not have the same benefit to overfly compatible land as the westbound restriction and departures to the east should initiate their turn as soon as possible due to the fact that there is not one flight path considered better than another when departing to the southeast over existing residentially developed areas. **Juffer** then displayed a graphic showing where flight tracks would be more concentrated over neighborhoods in Eagan if a restriction were in place.

Chair Hart clarified that the proposal would shift noise from northern Eagan to southern Eagan and it concentrates noise. **Co-Chair Miller** added that the data discussed on this recommendation indicates that it would not be beneficial to other residents in Eagan and asked for it to not be considered further. There were no objections.

Discussion Regarding Recommendation 2B

Brad Juffer, Technical Advisor introduced Request 2B which asked that all eastbound flights from Runway 17 fly to a fix at Interstate 35E and Cedar Avenue prior to making their turn. **Juffer** displayed this approximate path and again detailed how departures operate from MSP. Due to this type of operation there would be natural variation to the track if all flights were given a 170° heading and aircraft would overfly residential areas adjacent to Cedar Avenue.

Co-Chair Miller raised capacity issues and commented that of all the calls she receives from residents, this is one of the most asked questions. **Miller** is hopeful that the data will show the residents that the noise would not change overall, but instead just move in some cases and be more concentrated in others. The committee decided not to move this item forward after discussion.

Discussion Regarding Recommendation 2C

Brad Juffer, Technical Advisor provided a background on this recommendation which asks for the 180° heading to be used more often thereby reducing the use of the 120/140/155 headings. **Juffer** indicated that this request is similar in nature to request 1B. **Juffer** further provided statistics about the use of the 180° heading found in the Runway 17 Departure Operations Report. The use of 180° heading was up to just under 10% in 2018 and staff expect it will be higher than that again in 2019. This recommendation asks that the 180° be utilized more often. **Juffer** advised that MAC staff believes that this recommendation warrants further evaluation by the FAA. **Chair Hart** noted this option would be shifting but also dispersing noise. The committee decided to move this item forward for review.

Discussion Regarding Recommendation 2D

Brad Juffer, Technical Advisor presented Recommendation 2D which asks for all departures from Runway 17 to use the 2.5 mile river departure before turning east. **Juffer** noted that the 2.5 mile river departure procedure is simply a 2.5 mile turn point for west bound flights. After a westbound departure flies 2.5 miles on runway heading, a westbound, right hand turn is given by ATC. The aircraft initiates the turn to the west and then is on course to the initial fix. The track of the aircraft will be over the river for a period of time after the turn, but there is not a 2nd leg in the flight intentionally designed to keep it over the river. **Juffer** indicated that the intent of this recommendation was for all Runway 17 departures to fly straight out from the airport for 2.5 miles, turn to the west and overfly the river for an additional period of time. At that point, eastbound flights would turn left, back to the east and continue to their initial fix. **Juffer** then demonstrated that there appears to be multiple impacts of this recommendation including a concentration of every departure from Runway 17 onto one track. That would limit the use of divergent headings to separate traffic and require aircraft to instead be separated by delaying departures. Second, this would concentrate all eastbound departures over the City of Burnsville as aircraft would initiate their eastbound turn and route aircraft directly over that city. Third, it would increase the travel time of aircraft departing Runway 17 to the east and increase fuel burn and associated emissions output.

Representative Brindle and Chair Hart noted that this recommendation would shift noise to other communities. **Representative Olson** requested clarification regarding what the altitude of aircraft would be at the end of the 2.5 miles. **Juffer** clarified that for a typical departure aircraft be at 3,000 to 4,000 feet before reaching incompatible land uses. The committee decided that this item would not move forward.

Discussion Regarding Recommendation 3A

Brad Juffer, Technical Advisor introduced Recommendation 3A which requests to move Runway 12R and 12L westbound departures to Runway 17 to take advantage of the 2.5 mile river departure. **Juffer** detailed that Runway 12R is generally only used during the day for departure when necessary for

operational reasons or if strong northeast winds preclude the FAA from using Runway 17. Juffer then provided an explanation of the Runway Use System (RUS). **Juffer** displayed flight tracks for departures from Runway 12R that are westbound which results in aircraft overflying Eagan and Inver Grove Heights. The recommendation instead requests that these flights be routed to Runway 17 at night to take advantage of the Minnesota River. **Juffer** highlighted that because this recommendation would be utilized at night, it is expected that the impact on capacity would be limited or in some cases may increase the efficiency of the airport. There would, however, be a potential that some neighborhoods would see more nighttime departures. Juffer displayed the result of MAC Staff noise modeling. Juffer indicated that there may be minor impacts to residents in Burnsville, Bloomington and Richfield. Finally **Juffer** recommended modifying this request to read 'Move 12R and 12L westbound departures to Runway 17 provided the aircraft can be directed to follow the Minnesota River for no less than 5 nautical miles.' to ensure compatible land of the Minnesota River be utilized for overflights.

Chair Hart noted this would move activity from mitigated and compatible land uses to other areas with some compatible and some incompatible land uses. **Representative Dmytrenko** noted concern that this recommendation specifically relates to nighttime operations and that it could increase nighttime sideline noise in the City of Richfield. **Juffer** clarified the FAA process would include high level analysis at both the FAA and the MAC before potentially testing any of the recommendations followed by a NEPA level environmental review.

Representative Brindle reviewed the letters received from other at-large communities and read support from the City of Apple Valley if aircraft can be contained within the river valley and support from the City of Burnsville. **Co-Chair Miller** requested that this move forward to the FAA so the NOC can get the data before determining if it is shifting noise because aircraft would be overflying incompatible land uses at higher altitudes than currently. **Juffer** indicated he would not anticipate increases in the Day-Night Average Sound Level (DNL) noise contours over residential land uses with implementation of this recommendation.

Chair Hart requested that the procedure should be modeled before testing. **Representative Martin** requested clarification regarding the amount of time the procedure would be tested in order to be statistically significant and also noted the City of Bloomington's support for gathering more information before making a determination. **Juffer** noted that testing length would be at the discretion of the FAA. The committee agreed to move this item forward for more information/data gathering.

Discussion Regarding Recommendation 3B

Brad Juffer, Technical Advisor provided a background on Recommendation 3B which asks if westbound departures from Runway 12R could turn immediately after departure and follow the river valley to the southwest without impacting residents living in Northern Eagan. This question was asked an alternative to Recommendation 3A. **Juffer** responded that for this procedure to be possible, an aircraft would need to accelerate to takeoff speed, climb, and complete a 90-120° righthand turn within 3 nautical miles. While there are some smaller general aviation aircraft that may be capable of doing this the majority of air carrier operations would not turn sharply enough to avoid the neighborhood in Eagan directly south of the Eagan/Mendota Heights Corridor.

After brief discussion it was determined that this was not realistic from a pilot's standpoint and the item was not recommended to move forward.

Discussion Regarding Recommendation 3C

Brad Juffer, Technical Advisor introduced the final item labeled 3C which requests that departures fly straight out until reaching a certain altitude before initiating a turn. The letter references 5,000 feet.

Juffer displayed a map showing the location where most flights reach 5,000 feet and indicated there would need to be consideration given to where these climbing departures are crossing the incoming arrivals, because that location would be altered.

Representative Brindle stated this recommendation had significant negatives and should not be moved forward. **Chair Hart** agreed noting that it would concentrate noise to residents from both arrival and departures.

Representative Borgstrom noted this recommendation would impact separation of arriving and departing aircraft, trapping departing aircraft at 5,000 feet for quite some time causing airport and fuel efficiency impacts. The committee determined not to move this item forward.

Brad Juffer, Technical Advisor introduced the action before the committee to request that the MAC Planning, Development & Environment Committee forward the proposal for FAA to conduct a high-level evaluation of the feasibility of the City of Eagan's recommendations, as amended by the NOC to include 1A, 1B, 2C, and 3A. Further request MAC forward to the FAA a letter from NOC requesting the FAA findings be provided in writing and presented at a future NOC meeting.

A motion was made by **Co-Chair Miller, City of Eagan**, and seconded by **Representative Martin, City of Bloomington**. The motion passed unanimously.

Co-Chair Miller, City of Eagan, thanked the committee on behalf of the City of Eagan. She also asked that the FAA verbally update the NOC and share the written letter so it could be also shared with the City of Eagan.

5) Review of Fall MSP Listening Session

Michele Ross, Assistant Technical Advisor, reviewed the Fall Listening Session. The Fall Listening Session was held at the MAC General Offices and included nine residents from Eagan, one resident from Edina, six residents from Minneapolis, three residents from St. Louis Park, one resident from Sunfish Lake and one resident from Richfield. Also in attendance were MAC Commissioner Katie Clark Sieben, NOC Co-Chair Jeff Hart, NOC members Loren Olson, John Bergman and Paul Borgstrom as well as MAC staff.

Topics raised during the meeting included:

- Aircraft activity over South Minneapolis, east of Hiawatha Avenue
- Aircraft activity over Eagan
- Ground noise and vibration noted by residents of South Minneapolis, Eagan, and Richfield with concern during nighttime hours
- Development of a land use restriction corridor by the City of Eagan, south of Runway 17, to reduce development of non-compatible uses
- How operational change factors (RNAV arrivals, CRO, etc.) have an impact on noise
- Development of a smartphone app to allow for aircraft complaints when not located at one's home
- Chicago O'Hare Quiet Skies Program
- How departures from Runway 17 could be redistributed to other runways
- Implementation of ground-based noise mitigation measures such as landscaping or walls
- Review of the MSP LTP at future NOC meetings
- The use of the parallel runways for arrivals

6) Summary of Aviation-Related Research Update

Jennifer Lewis, Community Relations Coordinator gave an overview of the research projects that were completed, active, initiated, or anticipated in 2019 or 2020. The information was attached in the meeting materials. **Representative Olson** commented about noise research studies and how to continue to talk about the results.

7) Review and Approval of 2020 NOC Work Plan, 2020 Meeting Dates, 2019 NOC Accomplishments

Brad Juffer, Technical Advisor, explained the draft NOC Work Plan was composed of 3 major parts. They include the Residential Noise Mitigation Program, MSP Noise Program Specific Efforts as well as Continue Review of Public Input. **Juffer** noted the origin of many of the items specifically noting that Item J was added to the work plan after the City of Minnetonka sent a letter to member Brindle requesting noise monitoring in their city since the September meeting.

Representative Olson commented that the City of Minneapolis has been responding to complaints related to ground noise. **Olson** noted that this could be addressed through a workplan item or the City and the MAC could continue to collaborate on responding to questions using available data. **Juffer** noted that following the listening session MAC staff initiated a preliminary review of past work completed by MAC, MASAC and NOC on ground noise and suggested a full MSP ground noise literature review as a possible item for the 2020 workplan to define a scope of work for a possible future MSP ground noise study. **Chair Hart** recalled that this item has been discussed previously and that the 2020 NOC Workplan was full and this could be an item for another year. **Representative Dmytrenko** noted that the City of Richfield has also been receiving questions and complaints from their community members and that the MAC and the city have a positive history of collaborating to implement procedures to address impacts. **Representative Brindle** requested clarification on the timeline of when past work had been done. **Juffer** clarified that most of the work related to ground noise at MSP is in the range of 15 to 20 years old. **Dmytrenko** went on to clarify that past procedural changes had such a positive impact that an assessment of current procedures could result in adjustments that could further reduce impacts. **Juffer** clarified that a possible workplan item would be a review of existing studies that have been completed and procedural adjustments are not anticipated at this time. The NOC determined that no change to the 2020 Workplan is necessary at this time but that committee members will continue to require MAC support in responding to concerns from community members. **Representative Olson** requested clarification regarding ATC staffing impacts to runway use at night. **Juffer** indicated this would be added to the nighttime arrivals balancing study.

Juffer then reviewed the proposed 2020 meeting dates and 2019 NOC accomplishments. **Juffer** also thanked the members for their continued commitment to the Committee.

Co-Chair Miller, City of Eagan, moved and **Representative Dmytrenko, City of Richfield**, seconded to: Approve and recommend to the MAC Planning, Development and Environment Committee the Final 2020 MSP NOC Work Plan; and Approve the list of 2019 Accomplishments and tentative 2020 Meeting Dates.

The motion carried by unanimous vote.

8) Update on the FAA's Survey to RE-Evaluate Noise Measurement Methods

Brad Juffer, Technical Advisor, noted the NOC has been monitoring the FAA Survey to re-evaluate noise measurement methods since 2015. This effort by the FAA included a survey of residents near 20 airports in the US. **Juffer** then detailed certain provisions in the FAA Reauthorization bill signed into law in 2018. This legislation included a number of noise provisions. They required both general as well

as specific actions by the FAA. Section 173 requires FAA to complete research on alternative noise metrics as a possible replacement to DNL within one year. This study is completed but has not been released yet. Section 188 requires FAA to evaluate alternative metrics to the current DNL standard, such as the use of actual noise sampling and other methods, to address community airplane noise concerns.

Section 187 requires that the FAA complete ongoing review of the relationship between aircraft noise exposure and its effects on communities within two years. It specifically requires FAA to revise its Part 150 land use compatibility guidelines (14 CFR 150). **Representative Olson** observed that the NOC had selected to wait for the FAA reports when they were anticipated to be forthcoming, however, the NOC has an opportunity to drive the conversation about alternative metrics in order to capture impacts using information that is already available and it is not necessary to wait for the FAA.

9) ~~Airline Policies and Procedures~~ (delayed until January meeting)

10) Review Residential Noise Mitigation Program Implementation Status

Brad Juffer, Technical Advisor offered that the memo in the agenda packet included all of the pertinent information related to this item.

11) Announcements

Brad Juffer, Technical Advisor, noted the listening session and the NOC meeting will take place in late January of 2020.

12) Adjourn

A motion to adjourn was requested by **Chair Hart, Delta**, moved by **Co-Chair Miller, City of Eagan**, and seconded by **Representative Sloan, City of Mendota Heights**. The meeting adjourned at 9:05 pm.

The next meeting of the NOC is scheduled for **Wednesday, January 29, 2020 at 1:30 PM** (please note this proposed meeting date is delayed allowing for a packet distribution schedule after New Year's Day).

Respectfully Submitted,
Kalae Verdeja, Recording Secretary

November 15, 2019

Metropolitan Airports Commission
MSP Noise Oversight Committee
6040 28th Avenue South
Minneapolis, MN 55450

Dear Members of the Noise Oversight Committee:

The City of Apple Valley appreciates the opportunity to provide input on runway use proposals submitted by the City of Eagan that impact many cities in the southern Metropolitan area. For many years, the Metropolitan Airports Commission (MAC) has followed a policy of opposing proposals that would reduce the capacity of the airport or would shift noise from one community to another community. The City of Apple Valley believes that this policy has served all of the interested cities well and should be followed into the future.

In its letter to the MAC dated September 3, 2019, the City of Eagan presented nine operational requests and inquiries of the Federal Aviation Administration (FAA). MAC staff provided further explanation of each of these requests in the November 20, 2019 Noise Oversight Committee (NOC) meeting packet.

The City of Apple Valley opposes many of the operational requests because they violate the MAC policy by proposing solutions that would essentially shift noise from one community to another community. The City strongly advocates for the MAC to continue to reject proposals that merely shift noise from one noise-sensitive area to another noise-sensitive area. Embracing such policies only pits residents and communities against one another.

The FAA has stated that the process for amending aircraft departure procedures has many steps which involve careful consideration. The existing flight procedures at MSP have been thoroughly vetted and proven effective over the years. Any changes should be incremental and should not disrupt long established air traffic patterns. The City agrees with the need to thoroughly examine any reasonable proposed departure change in terms of environmental impacts, operational feasibility and safety.

Based on that premise, the City would support further analysis of concept 1A directing departures with initial fixes of COULT or ZMBRO to use Runway 12R instead of Runway 17 because it is consistent with the previously adopted MSP Runway Use System (RUS) which prioritizes flight activity over less populated areas.

The City would also support further analysis of concept 3A moving Runway 12R and 12L westbound departures to Runway 17 to take advantage of the 2.5-mile river departure procedure, so long as it can be conclusively determined that aircraft can be strictly contained to the less-noise sensitive river valley for an adequate period of time and do not shift the noise onto other noise-sensitive communities.

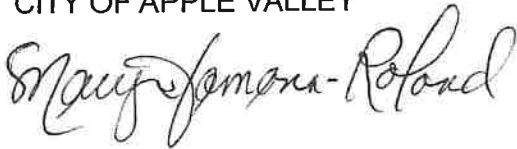
MSP Noise Oversight Committee
November 15, 2019
Page 2

The City of Apple Valley is concerned that all the other operational requests would ultimately violate the policy opposing proposals that shift noise from one community to another.

The City greatly appreciates the professionalism and thorough research and evaluation done by MAC staff on noise issues and we thank you for this opportunity to share the City's input.

Sincerely,

CITY OF APPLE VALLEY



Mary Hamann-Roland
Mayor



John Bergman
City Council Member and NOC
At-Large Member

cc: U.S. Congresswoman Angie Craig
U.S. Senator Amy Klobuchar
U.S. Senator Tina Smith

November 19, 2019

Metropolitan Airports Commission
Noise Oversight Committee
Attn: Bradley Juffer, Community Relations Manager
6040 28th Avenue South
Minneapolis, MN 55450

RE: Response to Airport Noise Mitigation Requests Made by the City of Eagan

Dear Mr. Juffer and Members of the Noise Oversight Committee:

The City of Burnsville supports the efforts of the Metropolitan Airports Commission (MAC) Noise Oversight Committee (NOC) to reduce aircraft noise over residential areas.

As a member of the NOC At-Large Subcommittee, the City of Burnsville generally supports the findings and recommendations of MAC staff related to requests made by the City of Eagan in their Sept. 3, 2019 letter.

For matter of public record, the City of Burnsville would like to note its position on two specific items addressed:

2D – Could all Runway 17 departures use the 2.5-mile river departure procedure before making an easterly turn?

The City of Burnsville agrees with the MAC staff recommendation that this item should not be considered for additional study by the FAA.

Requiring all Runway 17 air traffic to first travel west down the Minnesota River corridor, and then make an easterly turn (over northcentral Burnsville) would only shift air traffic noise from one community to another and would not offer any true noise mitigation.

3A – Move Runway 12R and 12L westbound departures to Runway 17 to take advantage of the 2.5-mile river departure.

MAC staff has indicated that this change in departure procedure (if limited to overnight operations) could potentially provide noise mitigation to Eagan, central Burnsville and other communities.

The City of Burnsville supports the MAC staff recommendation to ask the FAA to further study of this item, but reserves its official position until more information on potential impacts becomes available.

Thank you for your ongoing efforts to help reduce aircraft noise in our communities.

Sincerely,



Elizabeth B. Kautz, Mayor
City of Burnsville

CC: Burnsville City Council Members
Burnsville City Manager
U.S. Congresswoman Angie Craig
U.S. Senator Amy Klobuchar
U.S. Senator Tina Smith



City of Inver Grove Heights

www.invergroveheights.org

November 18, 2019

Metropolitan Airports Commission (MAC)
Attn: Noise Oversight Committee (NOC)
6040 S 28th Avenue
Minneapolis, MN 55450

Dear Members:

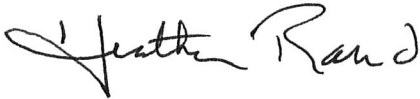
Like many Twin Cities metropolitan communities in the last couple of years, the city of Inver Grove Heights has experienced a significant increase in the number of both arriving and departing MSP flights that travel overhead. As such, a corresponding increase in noise impacts has occurred that has led to a noticeable spike in noise complaints from Inver Grove Heights residents to the Inver Grove Heights city council and the MAC.

This city lacks the professional expertise to analyze the reasons for these upward trending impacts on our community. We also lack the ability to truly identify and implement solutions to this serious quality of life issue for our residents. As a result, we are earnestly relying upon the sound judgement and aviation industry expertise of the NOC, MAC and FAA. It is for this reason that the city of Inver Grove Heights wishes to go on record today with the NOC and MAC to express our growing concern with the increasing noise impacts on our residents and request the exploration of reasonable solutions.

A September 3, 2019 dated letter from the city of Eagan to the MAC and NOC identified a series of operational requests and related inquiries to which they hope may be forwarded to the FAA for consideration. The city of Inver Grove Heights values our neighboring community's initiative in putting forth potential noise reduction solutions. That being said, it appears that many of those requested actions would likely result in simplistic noise shifts from one community to another, rather than truly achieving noise reductions for residential neighborhoods. Specific examples of this for Inver Grove Heights residents would be the letter's operational request labeled Issue #2 and its first bullet point (2A) that requests the FAA implement an eastbound turn restriction off Runway 17 similar to the westbound 2.5-mile river departure procedure, and the second bullet point (2C) that requests better fanning of aircraft.

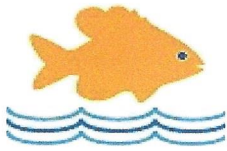
A shift in noise burden from one community to another is not acceptable to our city's residents. The city of Inver Grove Heights requests that the NOC, MAC and FAA limit its focus toward advancing only the genuinely productive solutions for the Twin Cities metropolitan area.

Respectfully,

A handwritten signature in black ink that reads "Heather Rand". The signature is written in a cursive style with a large, sweeping initial "H".

Heather Rand
Director of Community Development
City of Inver Grove Heights

Cc: Inver Grove Heights City Council
Inver Grove Heights Environmental Committee
U.S Senator Amy Klobuchar
U.S. Senator Tina Smith
U.S. Congresswoman Angie Craig
Brad Juffer, MAC Manager of Community Relations



Daniel B. O'Leary
10 Windy Hill Road
Sunfish Lake, Minnesota 55077

November 15, 2019

Noise Oversight Committee
Metropolitan Airports Commission
6040 28th Avenue South
Minneapolis, MN 55450

Dear Members,

On behalf of the Sunfish Lake City Council and City residents, I am writing this letter in response to the recent requests from the City of Eagan for adjustments in MSP airport flight patterns.

It is incumbent on all of us as city officials to recognize that we must judiciously deal with the unavoidable common community issue of airport noise. While we all strive to mitigate airport noise for our residents, it cannot be at the cost of indiscriminately shifting the burden off to our neighbors. While quiet enjoyment of one's home and outdoor environment is something we all seek, airport noise is an inescapable byproduct of our very location adjacent to our important metropolitan airport. I would hope that relief from such noise is not simply awarded to the loudest complainant but rather judicious and thoughtful resolution is considered whereby both burdens and remedies are shared by all communities impacted. I and the citizens of Sunfish Lake have appreciated the proactive work done on behalf of all communities to mitigate noise and seek common resolution to ongoing issues. I implore all involved to work collaboratively and recognize that airport noise needs to be a shared burden. Toward that end, I respectfully request the below noted requests not be given further consideration.

Request 1. a) which asks to consider the feasibility to direct departures from MSP with initial fixes of COULT or ZMBRO to use Runway 12R instead of Runway 17, would create greater noise burden on the residents of Sunfish Lake. As such, we request that this adjustment not be forwarded to the FAA.

Similarly, Request 3. c) asks if the departures on Runway 12R in the corridor could be required to reach a certain altitude (e.g. 5000 feet) before initiating their westbound turn and that would also create greater noise burden on the residents of Sunfish Lake. As such, we request that this adjustment not be forwarded to the FAA.

Sunfish Lake residents thank you for your consideration of our objections and for your continued collaborative partnership.

Very truly yours,


Daniel B. O'Leary
Mayor, Sunfish Lake, MN

MEMORANDUM

TO: MSP Noise Oversight Committee (NOC)

FROM: Michele Ross, Assistant Manager, Community Relations

SUBJECT: **REVIEW OF MSP MONTHLY OPERATIONS REPORTS: NOVEMBER AND DECEMBER 2019**

DATE: January 15, 2020

Each month, the MAC reports information on MSP aircraft operations, aircraft noise complaints, sound levels associated with MSP aircraft operations, and compliance with established noise abatement procedures on its interactive reporting website:

<https://www.macenvironment.org/reports/>.

At the January NOC meeting, MAC staff will provide a summary of this information for November and December 2019. To view these summary reports prior to the meeting, visit the “Archive” section at the link above.

MEMORANDUM

TO: MSP Noise Oversight Committee (NOC)

FROM: Brad Juffer, Manager, Community Relations

SUBJECT: **PUBLIC COMMENT PERIOD**

DATE: January 15, 2020

Members of the public are welcome to attend NOC meetings. During each meeting, a public comment period of no more than 20 minutes is added to each agenda. Individuals choosing to speak during the public comment period may do so by submitting a speaker card prior to the meeting start time or by contacting their NOC representative prior to the meeting date. Speaker cards will be made available at the sign-in table before each meeting. Submit completed speaker cards to the NOC Secretary or to any NOC member before the meeting begins.

Below are some rules of decorum for speaking at NOC meetings.

- Each speaker will have one opportunity to speak and is allotted three (3) minutes. The public comment period is limited to 20 minutes.
- When called upon to speak, speak clearly into the microphone, state your name and address. If you are affiliated with any organization, please state your affiliation.
- Commenters shall address their comments to the NOC and not to the audience.
- Use of profanity, personal attacks, or threats of violence will not be tolerated.
- Interruptions from the audience, such as speaking out of turn, shouting, and other disruptive behavior are not permitted.
- If special assistance is needed to make a public comment, please contact the NOC Secretary at least two days prior to the meeting by calling 612-726-8100, or send an email to nocsecretary@mspmac.org.

MEMORANDUM

TO: MSP Noise Oversight Committee (NOC)

FROM: Brad Juffer, Manager, Community Relations

SUBJECT: **VOR MINIMUM OPERATIONAL NETWORK (MON)**

DATE: January 15, 2020

The Federal Aviation Administration (FAA) continues to upgrade the nation's navigation infrastructure, phasing out older components. One such component is the VOR, or Very High Frequency (VHF) Omnidirectional Range, which is an aircraft navigation system developed in the 1950s. This ground-based system uses line-of-sight radio navigation to determine aircraft position. It also requires pilots to tune in to a radio frequency and identify VOR ground stations using Morse Code.

The FAA seeks to reduce the nationwide inventory of VORs through its VOR Minimum Operational Network (MON) program. In total, there are over 900 VORs across the United States. The FAA VOR MON program aims to decommission a third, reducing the total to about 600. Flight procedures currently using VORs will be updated to use satellite-based technology. The following video by the FAA provides more information about the agency's VOR MON program:

<https://www.youtube.com/watch?v=2WOjg-RvRME>

The MSP VOR is located on the north side of the airport near Highway 62 and 28th Avenue South. It is scheduled to be decommissioned on September 8, 2022. New satellite-based flight procedures will be established that will seek to replicate existing operations. The FAA's preliminary analysis indicates that there should be little, if any, noticeable change to communities near MSP. The FAA will provide regular updates and will coordinate with the MAC, airport users, the MSP Noise Oversight Committee and the public.

More information from the FAA is available here:

https://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/techops/navservices/transition_programs/vormon/

Mr. John Clough, FAA Senior Advisor to the Great Lakes Regional Administrator will present information on this topic at the January 29, 2020 NOC meeting.

MEMORANDUM

TO: MSP Noise Oversight Committee (NOC)

FROM: Brad Juffer, Manager, Community Relations

SUBJECT: AIRLINE POLICIES AND PROCEDURES

DATE: January 15, 2020

Several variables impact the flight of an aircraft. Environmental factors, such as wind, weather and temperature, will influence the performance of an aircraft. Operator decisions, for example aircraft type, load, destination and routing, will vary the flight track and climb rate of a departure. Procedural factors, including air traffic instruction and airline standard operating procedures, have the potential to alter where and how aircraft fly.

The MAC has received comments at recent community meetings that aircraft have been lower on departure in recent months and years. It has been suggested that this is the result of airline decisions to change standard procedures in climb rates.

Additionally, it has been suggested that pilots can request any flight path they wish when departing from MSP. While contextually accurate, this condition rarely occurs at busy commercial-service international airports.

To allow for insight into these two topics, MAC staff made a request to Delta Chief Pilot and NOC Member, Paul Borgstrom, Sun Country Chief Pilot and NOC Member, Jonathan Malin and Endeavor Chief Pilot and NOC Member, Chris Finlayson to attend the January NOC meeting and offer their companies' standard operating procedures and personal expertise on these topics.

MEMORANDUM

TO: MSP Noise Oversight Committee (NOC)

FROM: Brad Juffer, Manager, Community Relations

SUBJECT: **MSP FLEET MIX AND NIGHTTIME OPERATIONS ASSESSMENT**

DATE: January 15, 2020

The 2020 NOC Work Plan includes an assessment of current fleet mix and nighttime operational trends.

The report provides year-end 2019 data in comparison with historical trends. The report includes the following sections:

- MSP Fleet Mix
 - Historical Carrier Jet Trends
 - Trends in Aircraft Passenger Load Factors
 - MSP Carrier Jet Usage with Cumulative Certificated Noise Levels
 - Average Altitude Trends
- Nighttime Operations
 - Average Daily Nighttime Operations
 - Nighttime Operations by Runway, Airline, Aircraft Type, Origin/Destination
 - Trends in Nighttime Operations by Hour
 - Scheduled versus Actual Nighttime Operations by Hour

Staff will present information from this report at the January 29, 2020 NOC meeting.



**2019 ANNUAL MSP FLEET MIX AND
NIGHTTIME OPERATIONS REPORT**
JANUARY 2020

COMMUNITY RELATIONS OFFICE

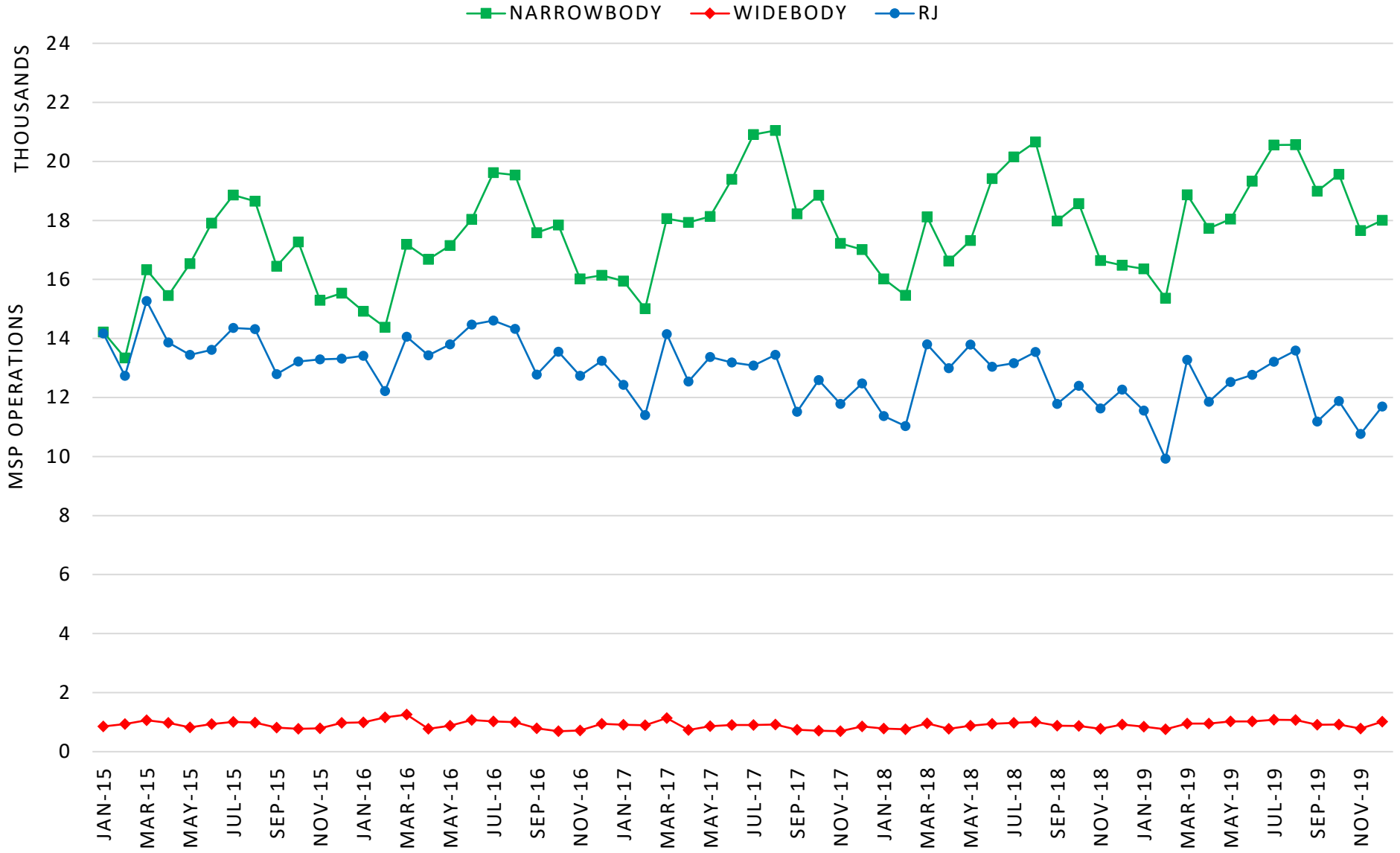
METROPOLITAN AIRPORTS COMMISSION
6040 28TH AVENUE SOUTH, MINNEAPOLIS, MN 55450
WWW.MACNOISE.COM

2019 ANNUAL MSP FLEET MIX AND NIGHTTIME OPERATIONS REPORT

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MSP FLEET MIX REPORT

MONTHLY CARRIER JET COUNTS BY TYPE



HUSHKIT BY YEAR: 2015 - 26, 2016 - 48, 2017 - 26, 2018 - 32, 2019 - 18

MSP FLEET MIX REPORT
WIDEBODY JET ACTIVITY



| WIDEBODY | TYPE | 2015 | 2016 | 2017 | 2018 | 2019 |
|----------|--------------|--------------|--------------|--------------|--------------|--------------|
| | A124 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| | A300 | 0.07% | 0.03% | 0.03% | 0.15% | 0.21% |
| | A310 | 0.02% | 0.00% | 0.00% | 0.00% | 0.00% |
| | A330 | 0.73% | 0.68% | 0.80% | 0.72% | 0.61% |
| | A340 | 0.07% | 0.06% | 0.07% | 0.04% | 0.00% |
| | A350 | 0.00% | 0.00% | 0.00% | 0.00% | 0.03% |
| | A380 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| | B742 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| | B744 | 0.03% | 0.01% | 0.01% | 0.02% | 0.04% |
| | B748 | 0.00% | 0.00% | 0.00% | 0.00% | 0.02% |
| | B762 | 0.14% | 0.14% | 0.15% | 0.04% | 0.01% |
| | B763 | 0.74% | 0.90% | 0.50% | 0.79% | 1.13% |
| | B764 | 0.22% | 0.24% | 0.01% | 0.01% | 0.08% |
| | B767 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| | B777 | 0.17% | 0.18% | 0.38% | 0.40% | 0.54% |
| | B7878 | 0.00% | 0.00% | 0.01% | 0.04% | 0.07% |
| | DC10 | 0.24% | 0.13% | 0.27% | 0.24% | 0.01% |
| | MD11 | 0.51% | 0.61% | 0.46% | 0.34% | 0.25% |
| | TOTAL | 2.95% | 2.98% | 2.70% | 2.81% | 3.01% |

MSP FLEET MIX REPORT
NARROWBODY JET ACTIVITY



| NARROWBODY | TYPE | 2015 | 2016 | 2017 | 2018 | 2019 |
|--------------|---------------|---------------|---------------|---------------|---------------|--------|
| | A220 | 0.00% | 0.00% | 0.00% | 0.00% | 0.32% |
| | A319 | 7.89% | 7.20% | 6.74% | 6.38% | 6.67% |
| | A320 | 9.04% | 9.90% | 7.10% | 6.56% | 7.44% |
| | A320neo | 0.00% | 0.03% | 0.24% | 0.37% | 0.64% |
| | A321 | 0.84% | 0.46% | 0.53% | 2.16% | 6.60% |
| | B717 | 1.49% | 2.36% | 5.25% | 5.86% | 7.82% |
| | B72Q | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| | B733 | 0.86% | 0.67% | 0.35% | 0.01% | 0.01% |
| | B734 | 0.03% | 0.03% | 0.03% | 0.05% | 0.04% |
| | B735 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| | B7377 | 4.84% | 4.84% | 5.04% | 4.65% | 3.81% |
| | B738 | 6.78% | 7.82% | 9.77% | 10.12% | 11.34% |
| | B739 | 2.81% | 3.78% | 5.04% | 7.47% | 8.14% |
| | B38M | 0.00% | 0.00% | 0.00% | 0.08% | 0.02% |
| | B73Q | 0.00% | 0.01% | 0.00% | 0.00% | 0.00% |
| | B757 | 6.40% | 5.81% | 5.90% | 6.08% | 5.15% |
| | DC8Q | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| | DC9Q | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| | MD80 | 3.52% | 3.59% | 2.47% | 0.29% | 0.02% |
| MD90 | 8.27% | 7.62% | 8.84% | 6.85% | 0.65% | |
| TOTAL | 52.77% | 54.11% | 57.31% | 56.95% | 58.69% | |

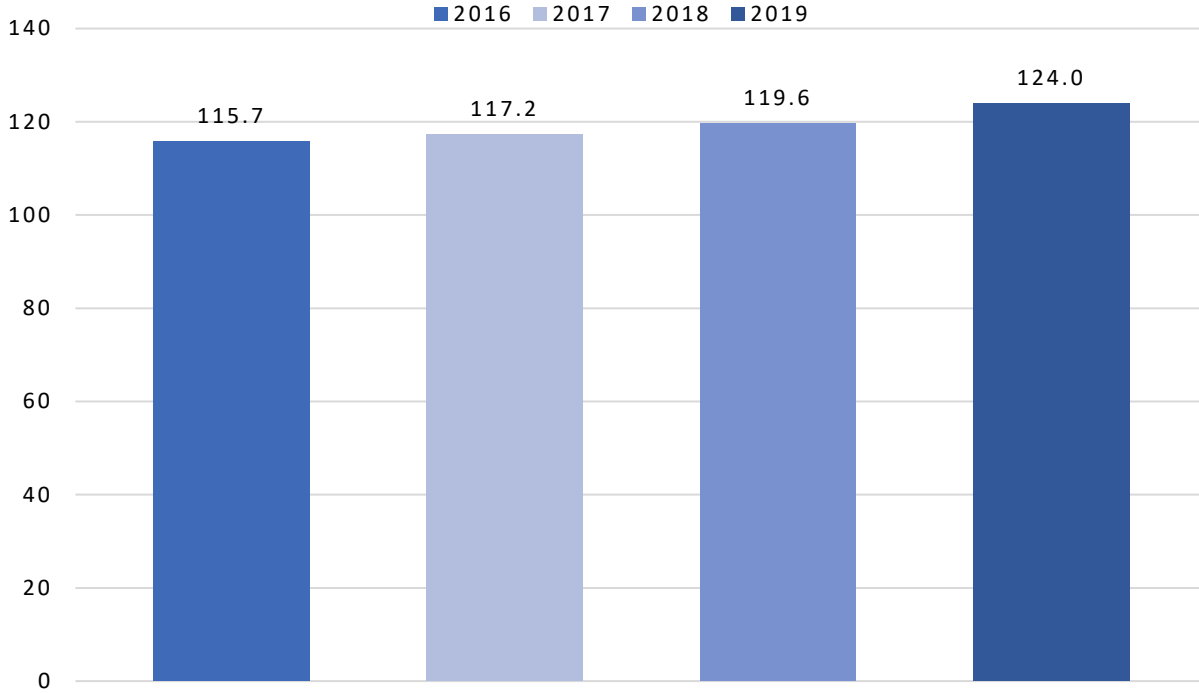
MSP FLEET MIX REPORT
REGIONAL JET ACTIVITY



| REGIONAL JET | TYPE | 2015 | 2016 | 2017 | 2018 | 2019 |
|--------------|---------------|---------------|---------------|---------------|---------------|--------|
| | BA46 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| | CRJ | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| | CRJ1 | 0.00% | 0.13% | 0.06% | 0.00% | 0.00% |
| | CRJ2 | 17.24% | 17.16% | 16.18% | 14.35% | 12.89% |
| | CRJ7 | 3.40% | 2.75% | 4.83% | 7.03% | 3.85% |
| | CRJ9 | 14.73% | 13.72% | 11.31% | 13.00% | 13.77% |
| | E135 | 0.02% | 0.04% | 0.03% | 0.03% | 0.03% |
| | E145 | 1.24% | 0.21% | 0.06% | 0.03% | 0.04% |
| | E170 | 7.39% | 8.68% | 7.05% | 5.52% | 7.35% |
| | E175 | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| | E190 | 0.25% | 0.20% | 0.47% | 0.27% | 0.36% |
| | J328 | 0.02% | 0.01% | 0.01% | 0.01% | 0.00% |
| TOTAL | 44.29% | 42.90% | 39.99% | 40.24% | 38.30% | |

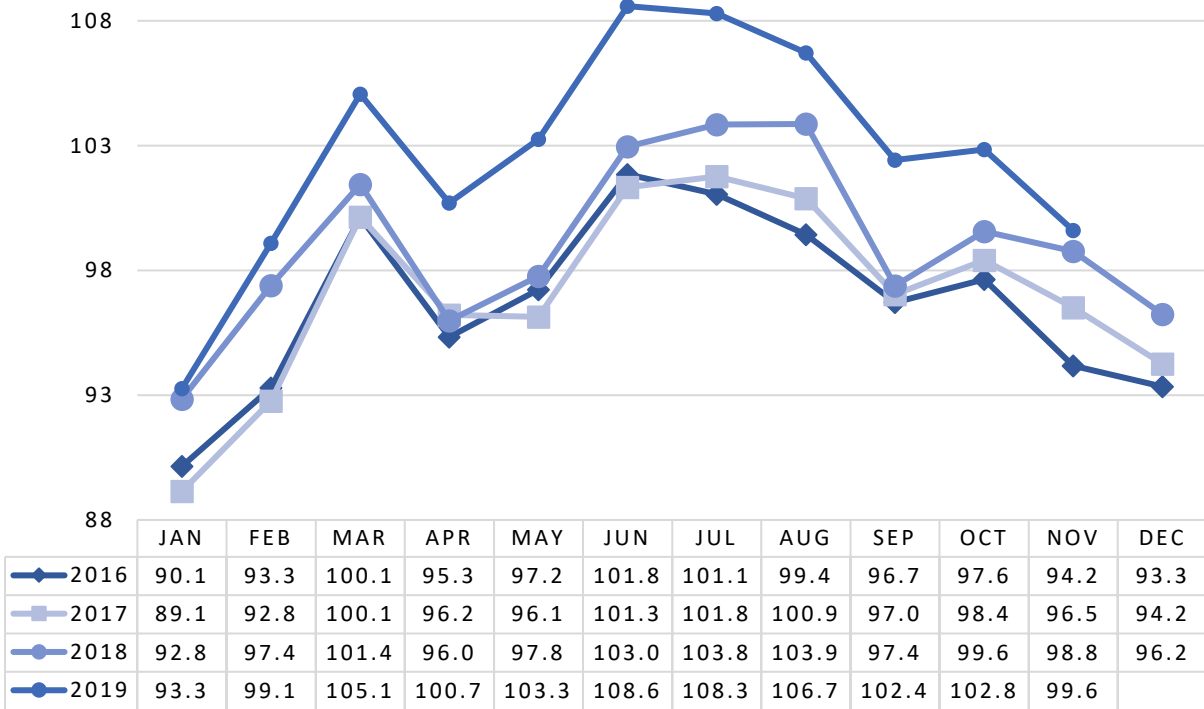
MSP FLEET MIX REPORT

AVERAGE SCHEDULED SEATS PER FLIGHT



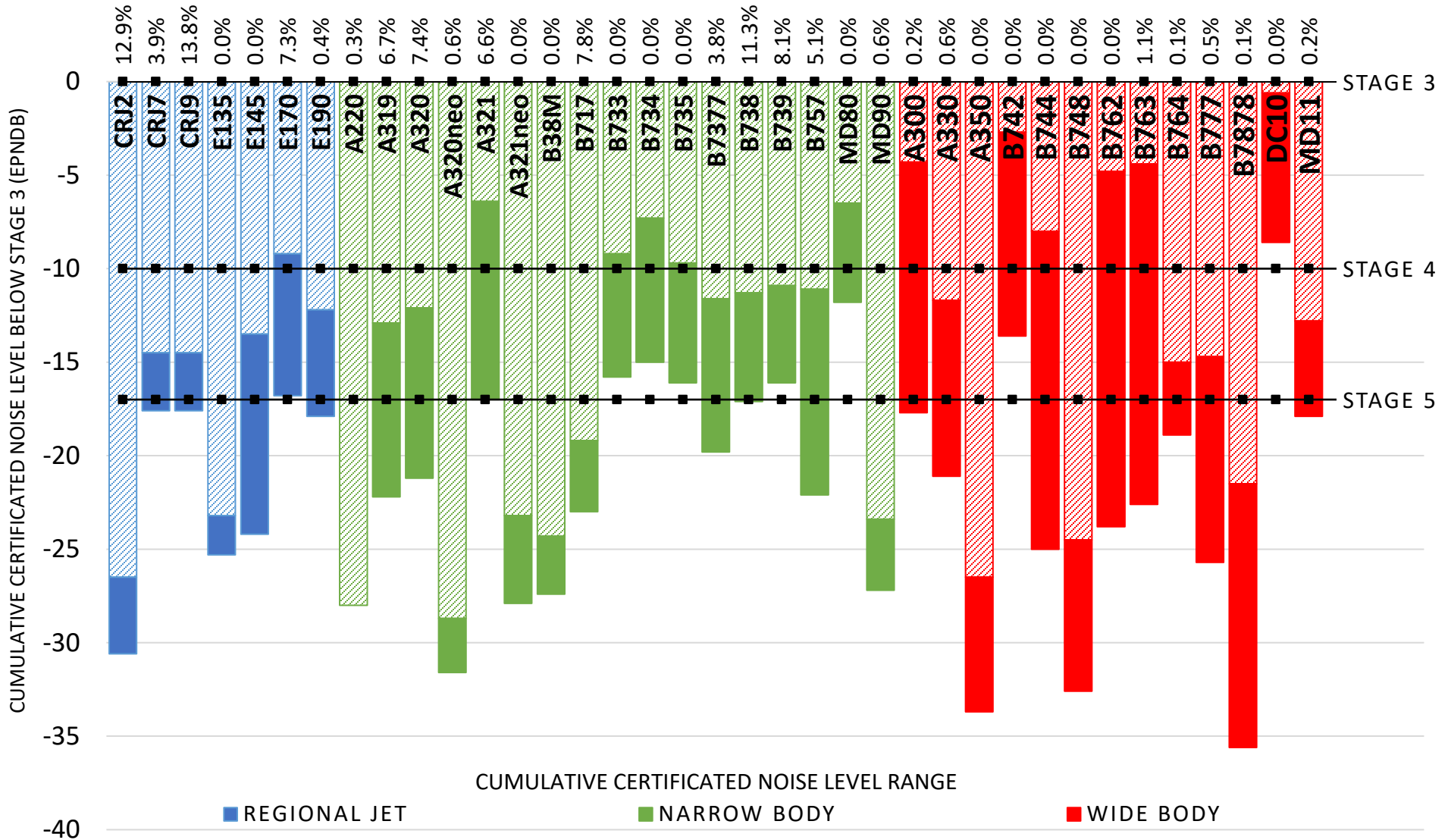
SOURCE: OAG

AVERAGE PASSENGERS PER FLIGHT



SOURCE: MSP MONTHLY OPERATIONS REPORTS

2019 MSP CARRIER JET USAGE WITH CUMULATIVE CERTIFICATED NOISE LEVELS

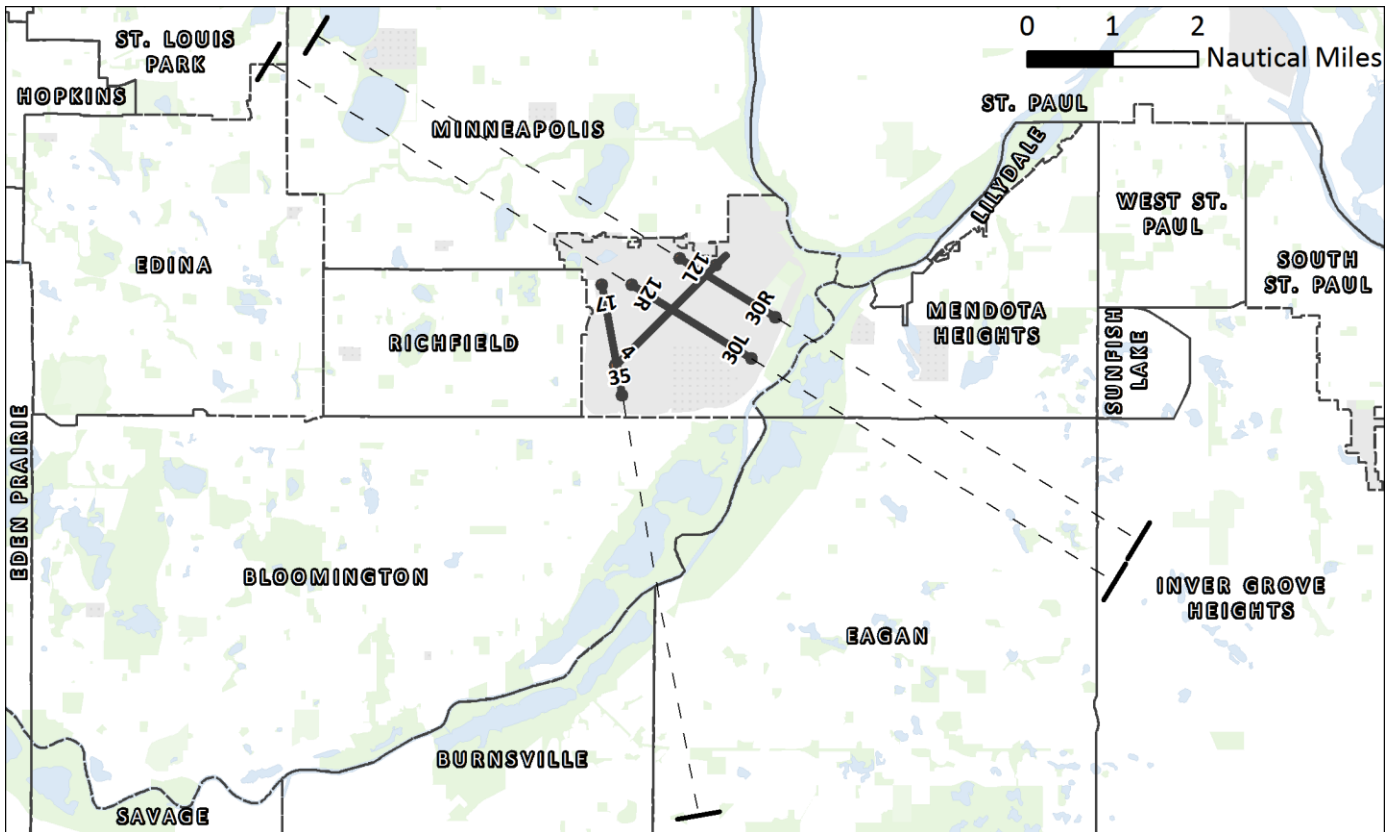
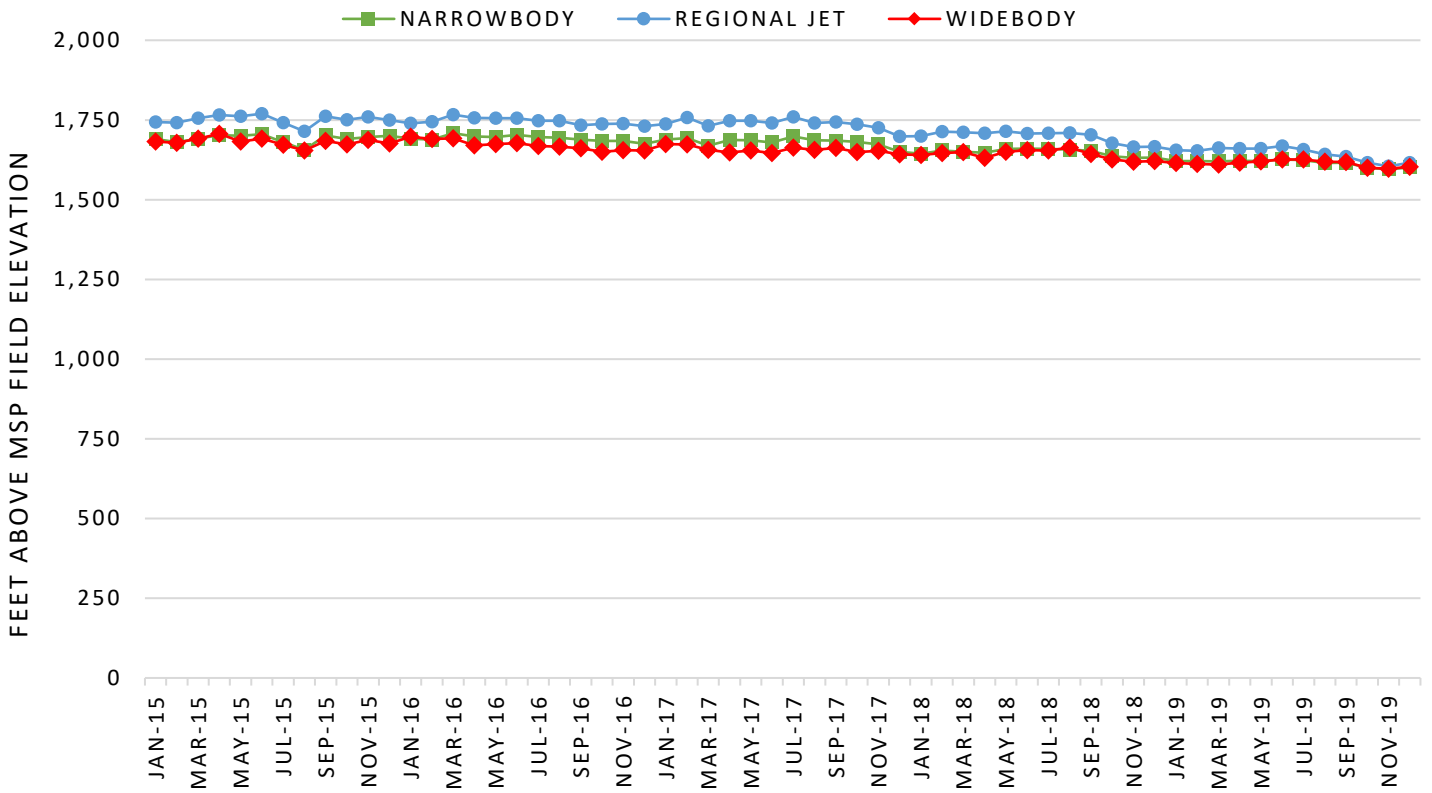


SOURCE: USAGE DATA: MACNOMS; NOISE CERTIFICATION DATA: EUROPEAN AVIATION SAFETY AGENCY

CUMULATIVE CERTIFICATED NOISE LEVELS REPRESENTED AS A RANGE TO ACCOUNT FOR MULTIPLE CERTIFICATION VARIABLES (WEIGHT, MODEL, ENGINE TYPE, AIRFRAME CONFIGURATION, ETC)

MSP FLEET MIX REPORT

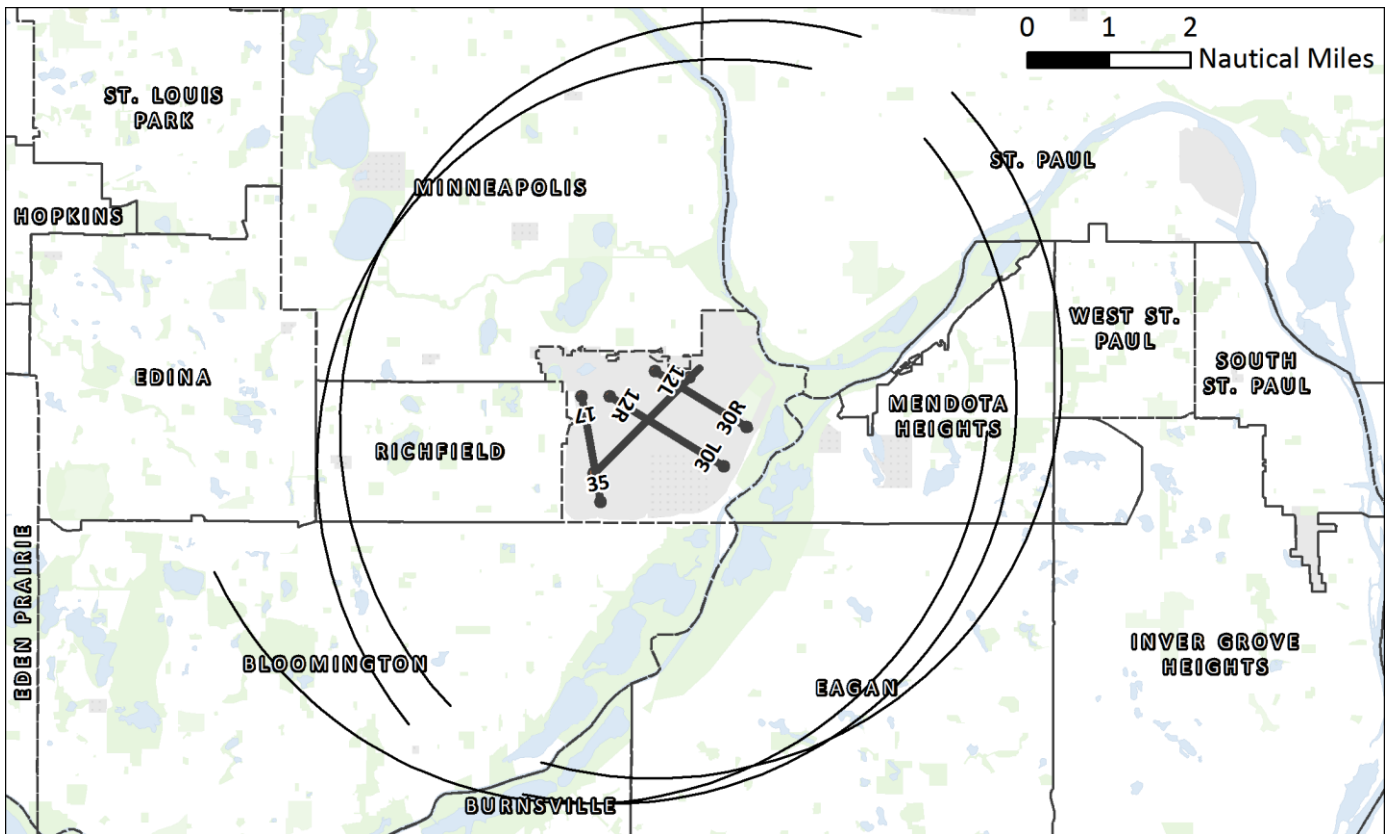
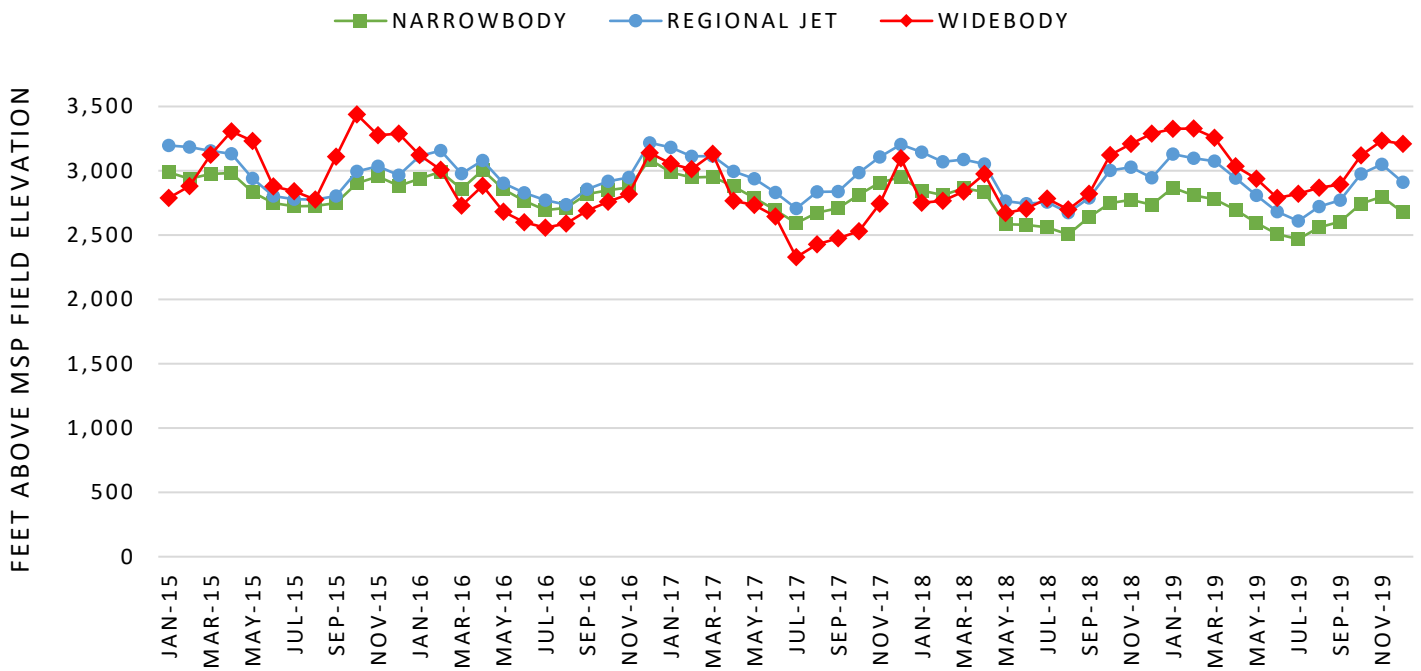
AVERAGE ALTITUDE FOR AIRCRAFT ARRIVING TO MSP



MEASUREMENT GATE IS FIVE NAUTICAL MILES FROM THE THRESHOLD OF THE ARRIVAL RUNWAY

MSP FLEET MIX REPORT

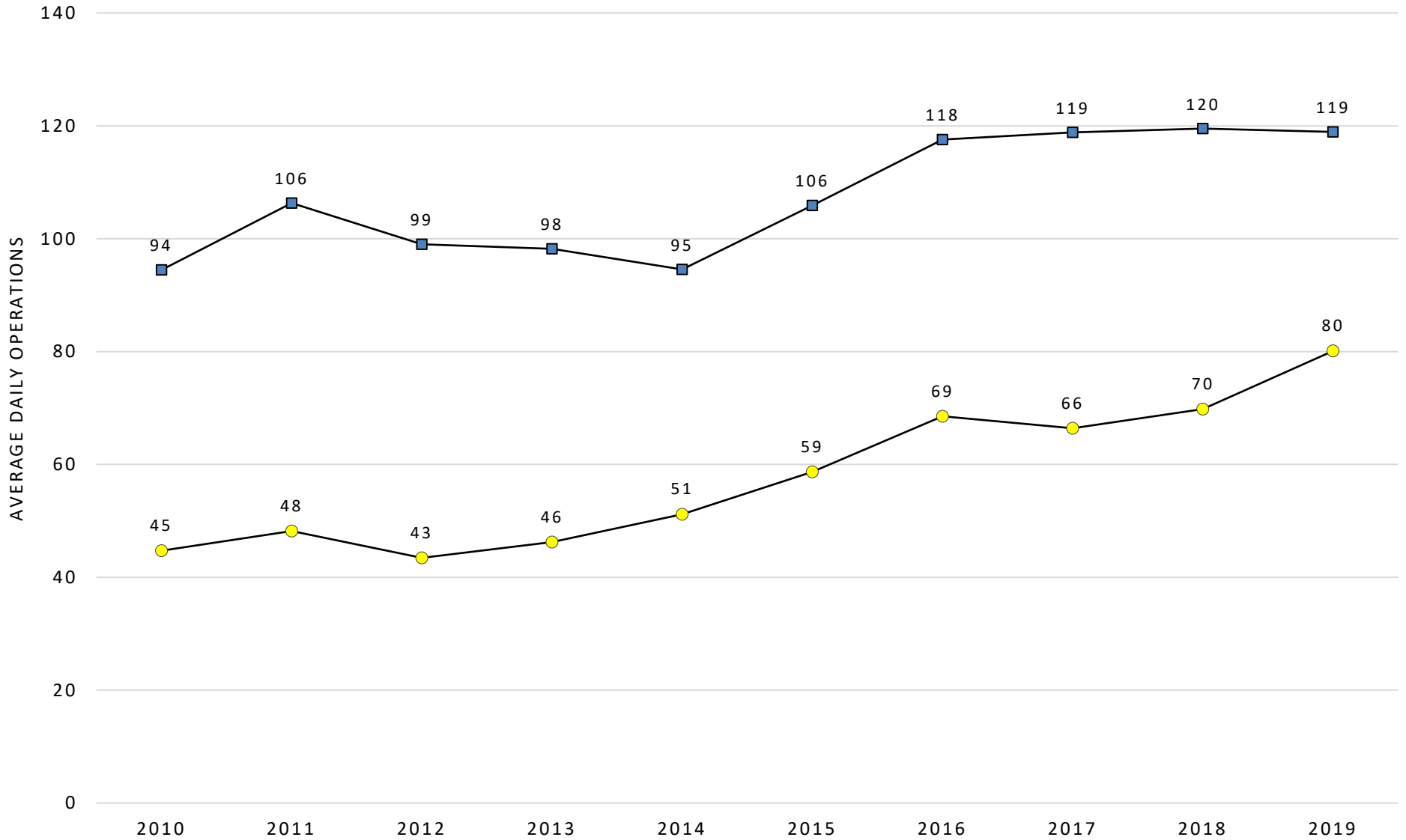
AVERAGE ALTITUDE FOR AIRCRAFT DEPARTING FROM MSP



MSP NIGHTTIME OPERATIONS REPORT

AVERAGE DAILY NIGHTTIME OPERATIONS

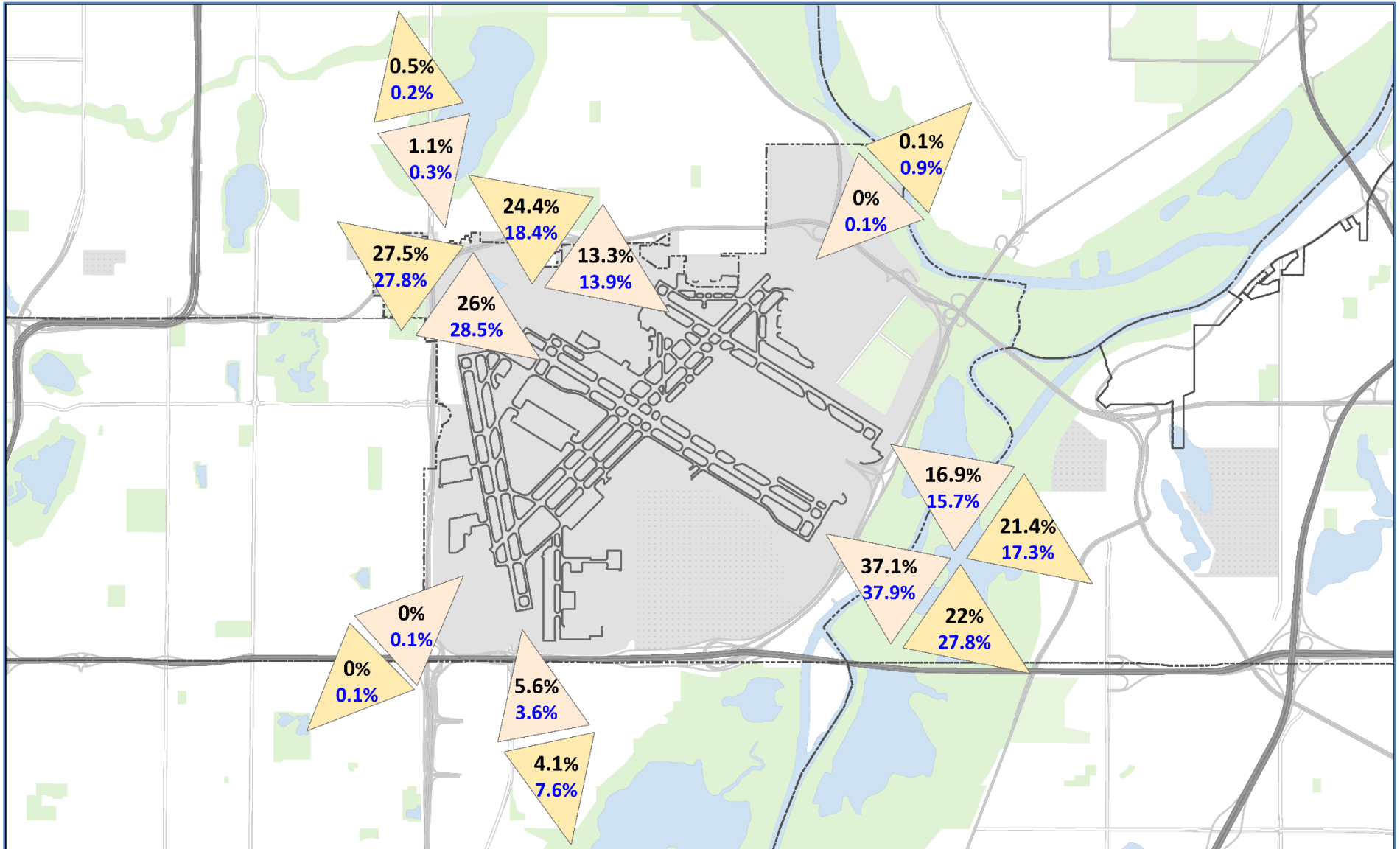
● 10:30 PM - 6:00 AM ■ 10:00 PM - 7:00 AM



MSP NIGHTTIME OPERATIONS REPORT
NIGHTTIME OPERATIONS BY RUNWAY
(10:30 PM – 6:00 AM)

| RWY | ARR / DEP | OVERFLIGHT AREA | 2019 | | | 2016 - 2018 AVERAGE | | |
|-----------------------------------|-----------|-------------------------------|-----------------|-------------------------|-------|---------------------|-------------------------|-------|
| | | | TOTAL NIGHT OPS | AVERAGE DAILY NIGHT OPS | % | TOTAL NIGHT OPS | AVERAGE DAILY NIGHT OPS | % |
| 04 | ARR | SO. RICHFIELD/BLOOMINGTON | 2 | 0.0 | 0.0% | 26 | 0.1 | 0.1% |
| 12L | ARR | SO. MINNEAPOLIS/NO. RICHFIELD | 2,520 | 6.9 | 13.3% | 2,499 | 6.8 | 13.9% |
| 12R | ARR | SO. MINNEAPOLIS/NO. RICHFIELD | 4,904 | 13.4 | 26.0% | 5,135 | 14.1 | 28.5% |
| 17 | ARR | SO. MINNEAPOLIS | 201 | 0.6 | 1.1% | 47 | 0.1 | 0.3% |
| 22 | ARR | ST. PAUL/HIGHLAND PARK | 1 | 0.0 | 0.0% | 18 | 0.0 | 0.1% |
| 30L | ARR | EAGAN/MENDOTA HEIGHTS | 7,018 | 19.2 | 37.1% | 6,833 | 18.7 | 37.9% |
| 30R | ARR | EAGAN/MENDOTA HEIGHTS | 3,194 | 8.8 | 16.9% | 2,833 | 7.8 | 15.7% |
| 35 | ARR | BLOOMINGTON/EAGAN | 1,054 | 2.9 | 5.6% | 645 | 1.8 | 3.6% |
| TOTAL NIGHTTIME ARRIVALS | | | 18,894 | 51.8 | | 18,036 | 49.4 | |
| 04 | DEP | ST. PAUL/HIGHLAND PARK | 8 | 0.0 | 0.1% | 62 | 0.2 | 0.9% |
| 12L | DEP | EAGAN/MENDOTA HEIGHTS | 2,219 | 6.1 | 21.4% | 1,191 | 3.3 | 17.3% |
| 12R | DEP | EAGAN/MENDOTA HEIGHTS | 2,273 | 6.2 | 22.0% | 1,921 | 5.3 | 27.8% |
| 17 | DEP | BLOOMINGTON/EAGAN | 424 | 1.2 | 4.1% | 523 | 1.4 | 7.6% |
| 22 | DEP | SO. RICHFIELD/BLOOMINGTON | 1 | 0.0 | 0.0% | 5 | 0.0 | 0.1% |
| 30L | DEP | SO. MINNEAPOLIS/NO. RICHFIELD | 2,841 | 7.8 | 27.5% | 1,916 | 5.2 | 27.8% |
| 30R | DEP | SO. MINNEAPOLIS/NO. RICHFIELD | 2,527 | 6.9 | 24.4% | 1,266 | 3.5 | 18.4% |
| 35 | DEP | SO. MINNEAPOLIS | 53 | 0.1 | 0.5% | 14 | 0.0 | 0.2% |
| TOTAL NIGHTTIME DEPARTURES | | | 10,346 | 28.3 | | 6,898 | 18.9 | |
| TOTAL NIGHTTIME OPERATIONS | | | 29,240 | 80.1 | | 24,934 | 68.3 | |

MSP NIGHTTIME OPERATIONS REPORT
NIGHTTIME OPERATIONS BY RUNWAY MAP
 (10:30 PM – 6:00 AM)



MSP NIGHTTIME OPERATIONS REPORT
NIGHTTIME OPERATIONS BY AIRLINE
 (TOP 15 BY COUNT)

| 2019 | AIRLINE | ID | COUNT | PERCENT OF AIRLINE OPERATIONS' OCCURRING AT NIGHT | PERCENT OF CONTRIBUTION TO NIGHTTIME TOTAL |
|------------------------|-------------------|-----|--------|---|--|
| | DELTA | DAL | 8,370 | 5.60% | 30.16% |
| | SKYWEST AIRLINES | SKW | 4,541 | 4.70% | 16.37% |
| | SUN COUNTRY | SCX | 3,781 | 17.80% | 13.63% |
| | SOUTHWEST | SWA | 1,958 | 12.50% | 7.06% |
| | AMERICAN | AAL | 1,640 | 11.80% | 5.91% |
| | UPS | UPS | 1,254 | 37.20% | 4.52% |
| | SPIRIT | NKS | 1,093 | 14.20% | 3.94% |
| | REPUBLIC AIRLINES | RPA | 899 | 8.50% | 3.24% |
| | UNITED | UAL | 859 | 12.20% | 3.10% |
| | FEDEX | FDX | 855 | 27.30% | 3.08% |
| | ATLAS AIR (USA) | GTI | 590 | 77.00% | 2.13% |
| | JETBLUE AIRWAYS | JBU | 533 | 26.50% | 1.92% |
| | FRONTIER AIRLINES | FFT | 511 | 16.10% | 1.84% |
| | ENDEAVOR AIR | EDV | 487 | 1.80% | 1.76% |
| GULF & CARIBBEAN CARGO | TSU | 377 | 98.20% | 1.36% | |

| 2018 | AIRLINE | ID | COUNT | PERCENT OF AIRLINE OPERATIONS OCCURRING AT NIGHT | PERCENT OF CONTRIBUTION TO NIGHTTIME TOTAL |
|------------------------|-------------------|-----|--------|--|--|
| | DELTA | DAL | 6,933 | 4.80% | 29.20% |
| | SUN COUNTRY | SCX | 3,679 | 19.00% | 15.49% |
| | SKYWEST AIRLINES | SKW | 2,523 | 2.50% | 10.63% |
| | SOUTHWEST | SWA | 2,188 | 13.50% | 9.21% |
| | AMERICAN | AAL | 1,796 | 12.70% | 7.56% |
| | SPIRIT | NKS | 1,256 | 15.00% | 5.29% |
| | UNITED | UAL | 1,080 | 14.90% | 4.55% |
| | REPUBLIC AIRLINES | RPA | 1,028 | 10.20% | 4.33% |
| | UPS | UPS | 984 | 32.20% | 4.14% |
| | FEDEX | FDX | 726 | 23.60% | 3.06% |
| | ATLAS AIR (USA) | GTI | 356 | 63.70% | 1.50% |
| | ALASKA | ASA | 324 | 22.60% | 1.36% |
| | ENDEAVOR AIR | EDV | 308 | 1.20% | 1.30% |
| | JETBLUE AIRWAYS | JBU | 287 | 20.60% | 1.21% |
| GULF & CARIBBEAN CARGO | TSU | 276 | 94.20% | 1.16% | |

*AIRLINE OPERATIONS OCCURRING AT NIGHT REPRESENTS THE PERCENTAGE OF RESPECTIVE AIRLINE SCHEDULE THAT OCCURS AT NIGHT

*CONTRIBUTION TO TOTAL IS RESPECTIVE AIRLINE CONTRIBUTIONS TO OVERALL MSP NIGHT OPERATIONS

MSP NIGHTTIME OPERATIONS REPORT
2019 NIGHTTIME OPERATIONS BY AIRCRAFT
 (TOP 15 BY COUNT)

| AIRCRAFT CODE | DESCRIPTION | COUNT | NOISE LEVEL CERTIFICATION (EPNdB BELOW STAGE 3) |
|------------------|-------------------------------|-------|---|
| B738 | BOEING 737-800 | 5,780 | 11.3 - 17.1 |
| A320 | AIRBUS INDUSTRIES A320 | 2,840 | 12.1 - 21.2 |
| B757 | BOEING 757-200 | 2,648 | 11.1 - 22.1 |
| CRJ2 | CANADAIR REGIONAL JET CRJ-200 | 2,444 | 26.5 - 30.6 |
| B739 | BOEING 737-900 | 2,269 | 10.9 - 16.1 |
| A321 | AIRBUS INDUSTRIES A321 | 2,232 | 6.4 - 17 |
| B7377 | BOEING 737-700 | 1,814 | 11.6 - 19.8 |
| E170 | EMBRAER 170 | 1,743 | 9.2 - 16.8 |
| CRJ9 | CANADAIR REGIONAL JET CRJ-900 | 1,673 | 14.5 - 17.6 |
| A319 | AIRBUS INDUSTRIES A319 | 1,313 | 12.9 - 22.2 |
| B763 | BOEING 767-300 | 1,040 | 4.4 - 22.6 |
| B717 | BOEING 717 | 896 | 19.2 - 23 |
| CRJ7 | CANADAIR REGIONAL JET CRJ-700 | 776 | 14.5 - 17.6 |
| A300 | AIRBUS INDUSTRIES A300 | 318 | 4.3 - 17.7 |
| MD11 | MCDONNELL DOUGLAS MD11 | 235 | 12.8 - 17.9 |

NOISE CERTIFICATION DATA SOURCE: EUROPEAN AVIATION SAFETY AGENCY

CUMULATIVE CERTIFICATED NOISE LEVELS REPRESENTED AS A RANGE BELOW STAGE 3 NOISE LEVELS TO ACCOUNT FOR MULTIPLE CERTIFICATION VARIABLES (WEIGHT, MODEL, ENGINE TYPE, AIRFRAME CONFIGURATION, ETC)

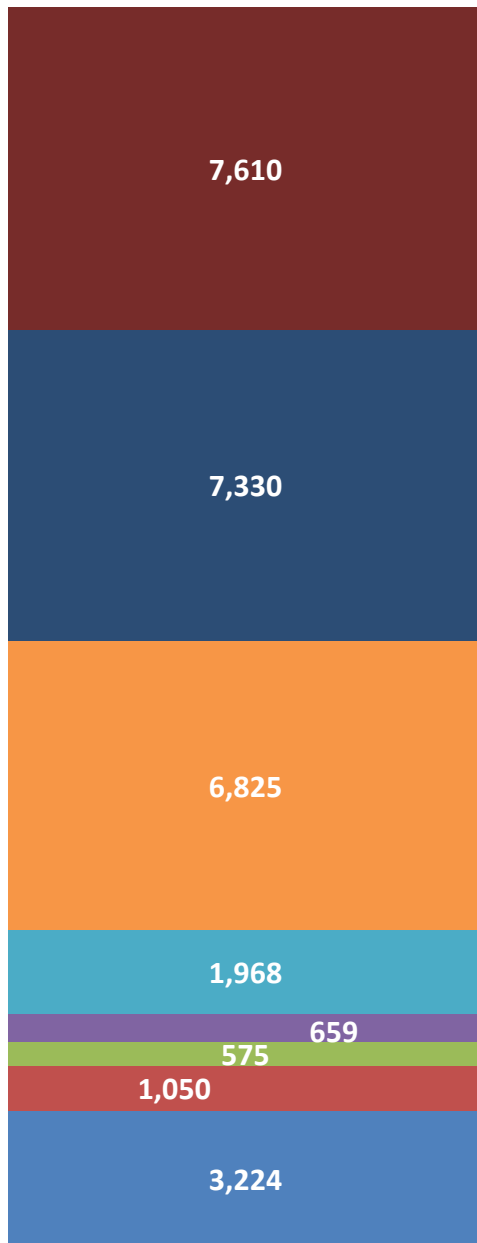
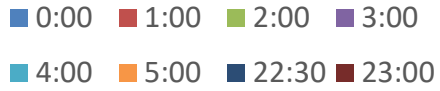
MSP NIGHTTIME OPERATIONS REPORT
2019 NIGHTTIME OPERATIONS BY ORIGIN AND DESTINATION
 (TOP 15 BY COUNT)

| AIRPORT CODE | ORIGIN AIRPORT | COUNT |
|---------------------|-----------------------|--------------|
| LAS | LAS VEGAS | 1,226 |
| DEN | DENVER | 1,119 |
| SEA | SEATTLE | 1,047 |
| LAX | LOS ANGELES | 979 |
| PHX | PHOENIX | 914 |
| ORD | CHICAGO O'HARE | 837 |
| SFO | SAN FRANCISCO | 779 |
| ATL | ATLANTA | 729 |
| DFW | DALLAS FORT WORTH | 592 |
| MEM | MEMPHIS | 413 |
| SDF | LOUISVILLE | 409 |
| MDW | CHICAGO MIDWAY | 398 |
| EWR | NEW YORK NEWARK | 389 |
| PHL | PHILADELPHIA | 371 |
| PANC | ANCHORAGE | 358 |

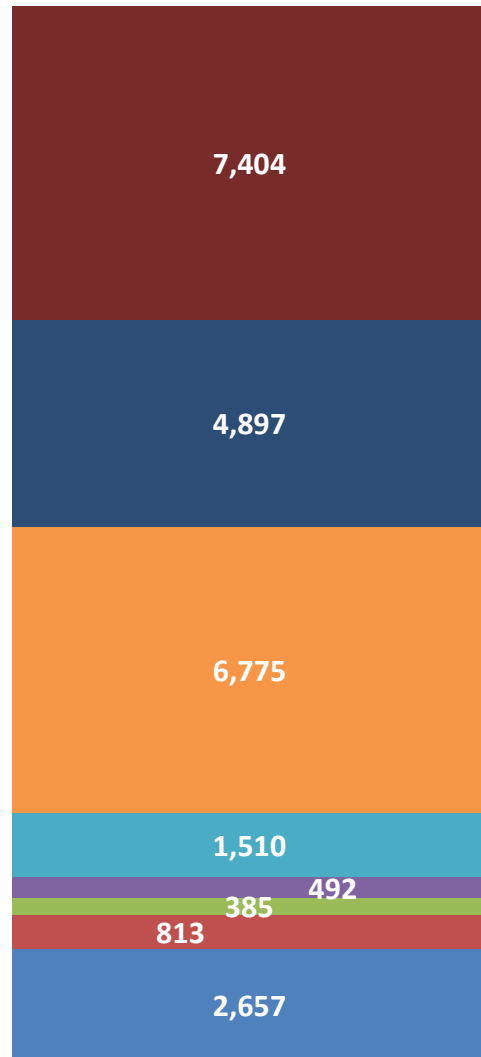
| AIRPORT CODE | DESTINATION AIRPORT | COUNT |
|---------------------|----------------------------|--------------|
| ATL | ATLANTA | 375 |
| DEN | DENVER | 342 |
| BJI | BEMIDGI REGIONAL | 323 |
| RHI | RHINELANDER | 318 |
| ABR | ABERDEEN | 314 |
| FAR | FARGO | 314 |
| YWG | WINNIPEG | 311 |
| FSD | SIOUX FALLS | 309 |
| BIS | BISMARCK | 293 |
| GFK | GRAND FORKS | 291 |
| RST | ROCHESTER MN | 281 |
| DSM | DES MOINES | 279 |
| ORD | CHICAGO O'HARE | 278 |
| BRD | BRAINERD LAKES REGIONAL | 277 |
| MOT | MINOT | 273 |

NIGHTTIME OPERATIONS BY HOUR

2019



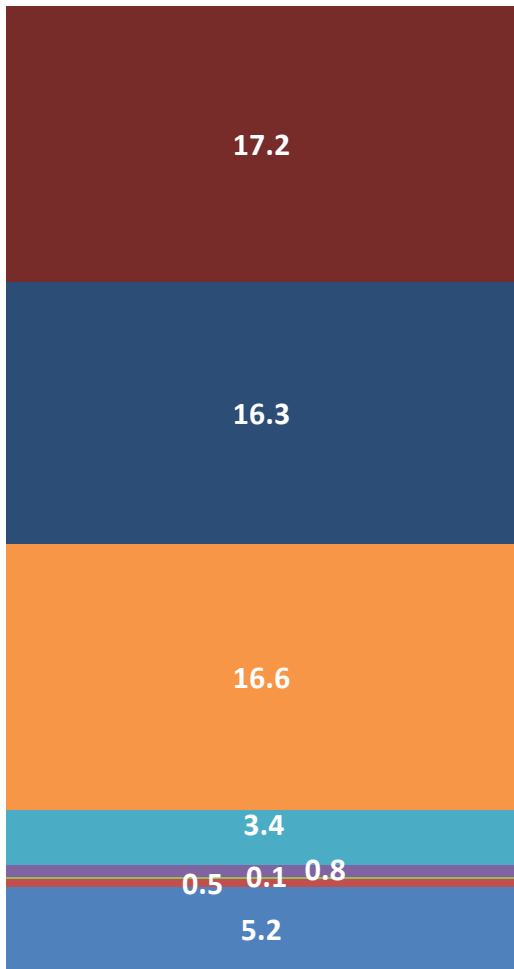
3-YEAR HISTORICAL AVERAGE



MSP NIGHTTIME OPERATIONS REPORT
SCHEDULED VERSUS ACTUAL OPERATIONS
 (AVERAGE BY HOUR)

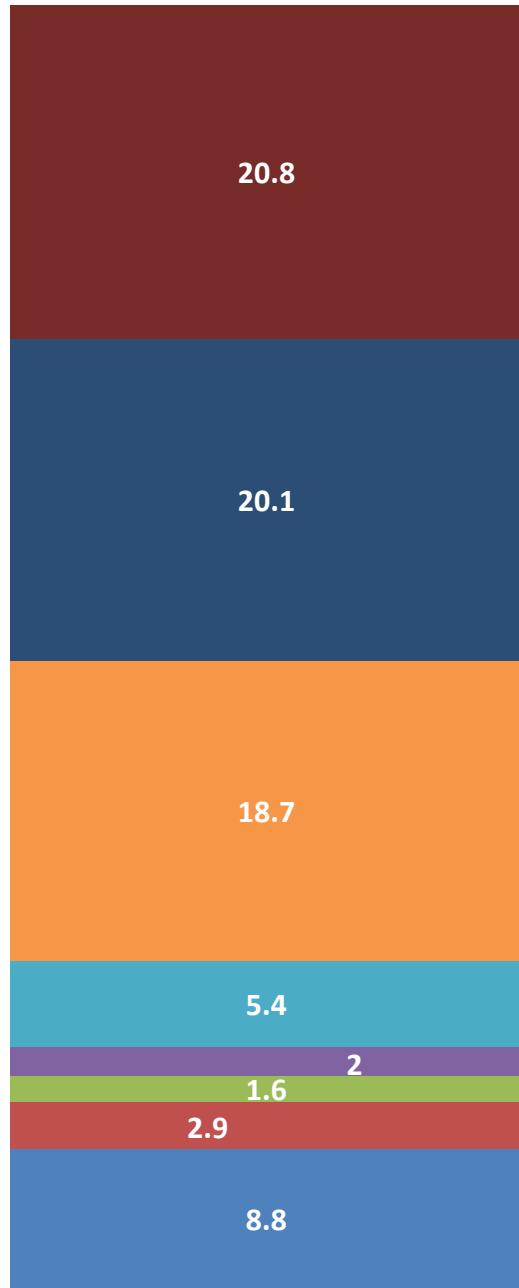
DAILY SCHEDULED NIGHT OPERATIONS

0:00 1:00 2:00 3:00
 4:00 5:00 22:30 23:00



DAILY ACTUAL NIGHT OPERATIONS

0:00 1:00 2:00 3:00
 4:00 5:00 22:30 23:00



GENERAL AVIATION AND CHARTER AIRCRAFT OPERATORS DO NOT REPORT SCHEDULED OPERATIONS

MEMORANDUM

TO: MSP Noise Oversight Committee (NOC)

FROM: Michele Ross, Assistant Manager, Community Relations

SUBJECT: **REVIEW OF WINTER LISTENING SESSION**

DATE: January 15, 2020

One of the elements of the framework for the MSP Noise Oversight Committee (NOC) includes convening a quarterly meeting with the public. This report reviews the recently held Fall Listening Session.

The primary goal of Listening Session meetings is to ensure residents' concerns are heard and considered as part of the ongoing effort by the MAC and the NOC to address noise and other topics related to MSP.

On January 22, 2020 at 7:00 P.M., the MAC will hold the Winter Listening Session at the MAC General Offices.

At the January 29, 2020 NOC meeting, MAC staff will provide the Committee an update on this topic.