NOISE OVERSIGHT COMMITTEE

January 18, 2023

Audio recordings are made of this meeting

Agenda

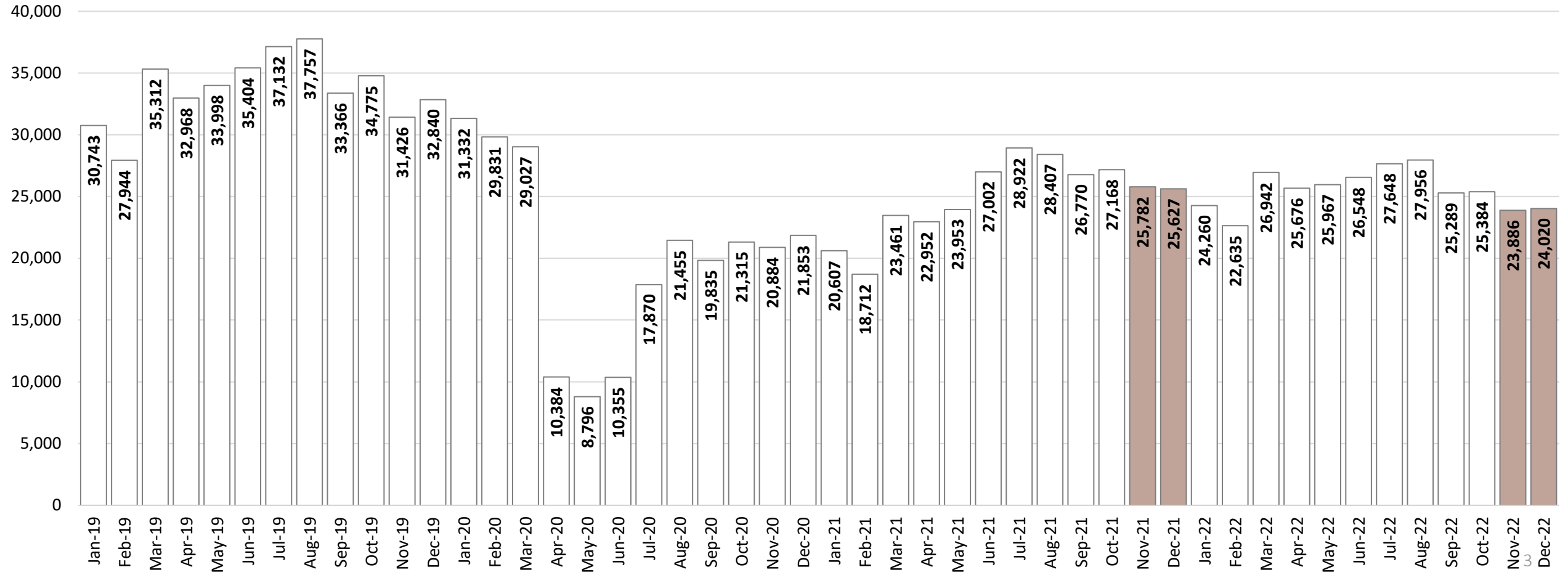
1. **Consent**
   - 1.1 – Approval of November 16, 2022 Meeting Minutes
   - 1.2 – Reports
     - 1.2.1 – Monthly Operations Reports: November and December 2022
2. **Public Comment Period**
3. **Business**
4. **Information**
   - 4.1 – VOR Minimum Operational Network
   - 4.2 – 2022 Fleet Mix and Nighttime Operations Assessment
   - 4.3 – 2022 Complaint Data Assessment
   - 4.4 – MSP Air Service Updates
5. **Announcements**

Adjourn

NOISE OVERSIGHT COMMITTEE
JANUARY 18, 2023

MSP OPERATIONS

November 2022		December 2022	
23,886 Operations	**1,466** Nighttime Operations (10:30 PM – 6:00 AM)	**24,020** Operations	**1,676** Nighttime Operations (10:30 PM – 6:00 AM)



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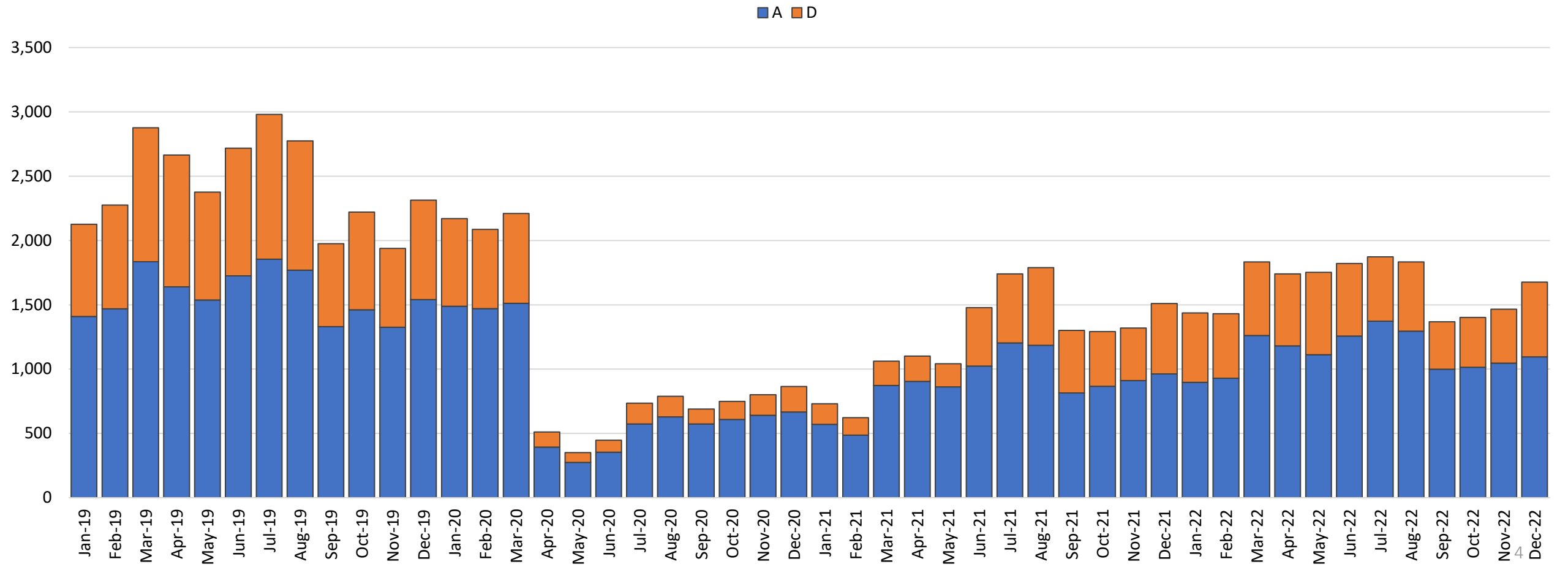


RUNWAY USE

NOV 2022		
NORTH FLOWS	SOUTH FLOWS	MIXED FLOWS
40%	**43%**	**10%**

DEC 2022		
NORTH FLOWS	SOUTH FLOWS	MIXED FLOWS
39%	**49%**	**4%**

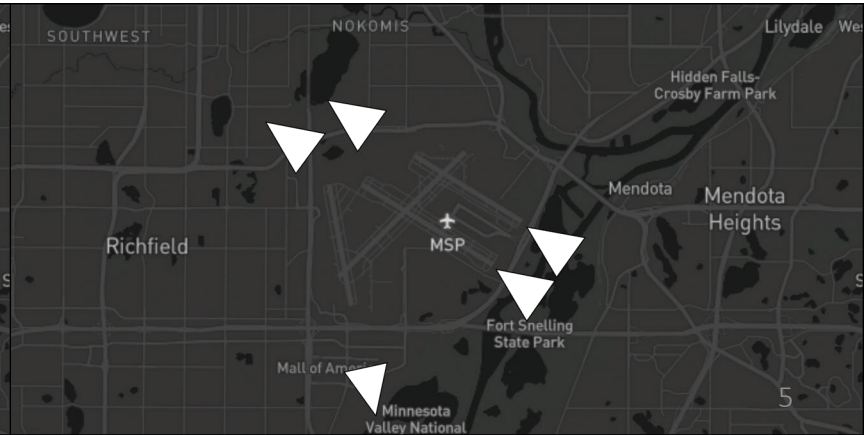
2021 JAN – DEC		
NORTH FLOWS	SOUTH FLOWS	MIXED FLOWS
39%	**47%**	**7%**

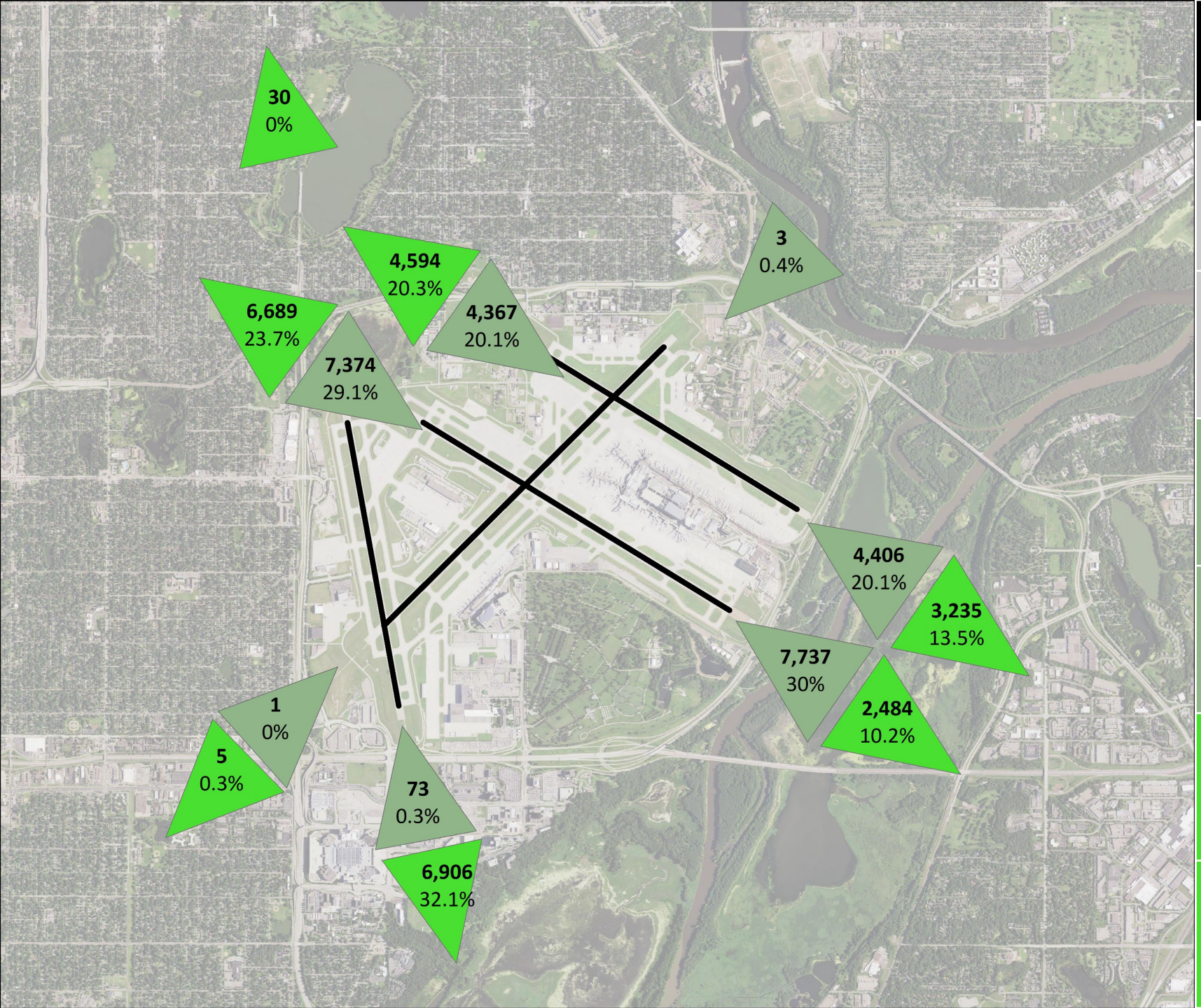
2022 JAN – DEC		
NORTH FLOWS	SOUTH FLOWS	MIXED FLOWS
41%	**44%**	**7%**

North Flow

South Flow

Mixed Flow





NOV – DEC RUNWAY USE

47,906
OPERATIONS IN NOV – DEC

PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY 4
51%	0%	0%	49%

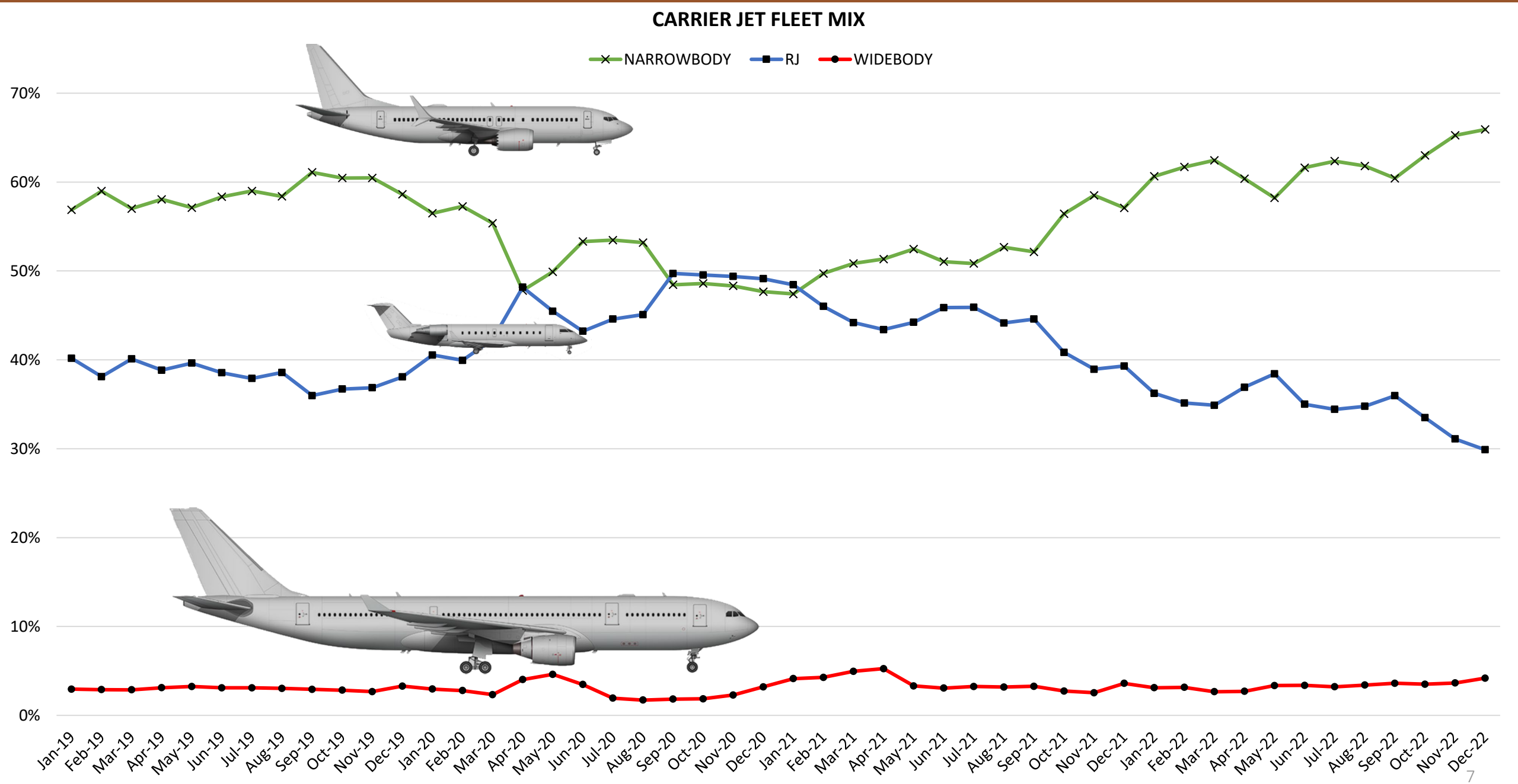
23,961
ARRIVALS

PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY 4
24%	29%	0%	47%

23,945
DEPARTURES

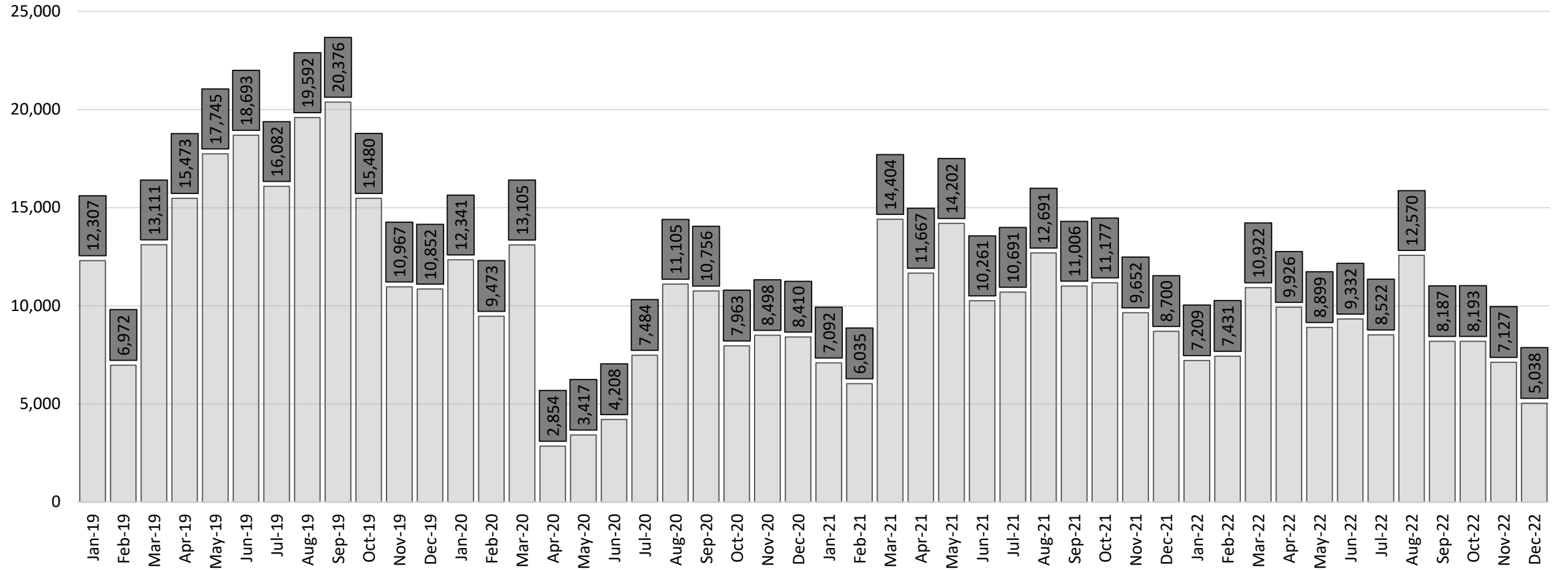
PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY 4
37%	15%	0%	48%

MSP OPERATIONS



MSP COMPLAINTS

November 2022				December 2022			
COMPLAINTS		LOCATIONS		COMPLAINTS		LOCATIONS	
7,127		163		5,038		107	
Ops per Complaint	New Locations	Average	Median	Ops per Complaint	New Locations	Average	Median
3.4	9	44	6	4.8	4	47	6



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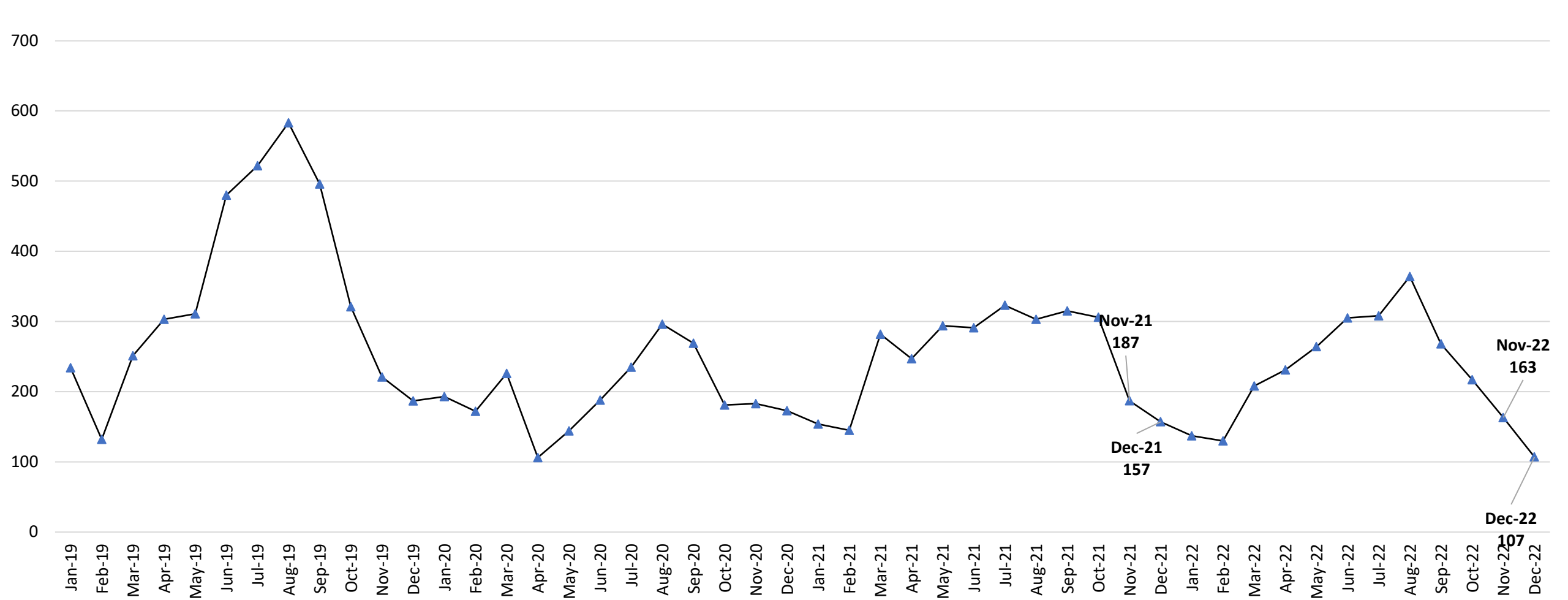
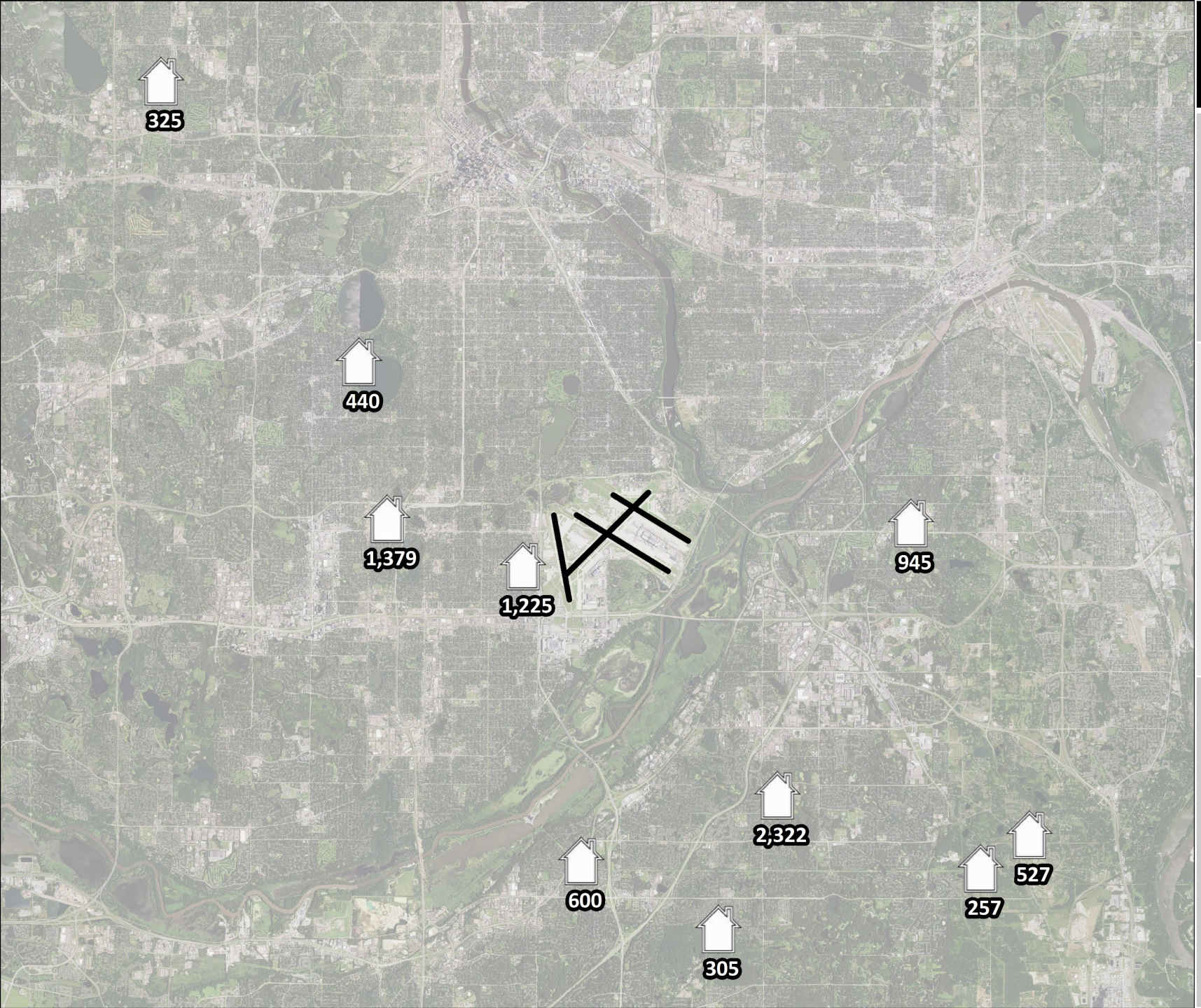




TOP 10 LOCATIONS

FILED

8,325

(68%)

COMPLAINTS DURING NOV & DEC

7 OF 10

LOCATIONS WERE IN THE TOP 10 FOR SEPT – OCT DATA

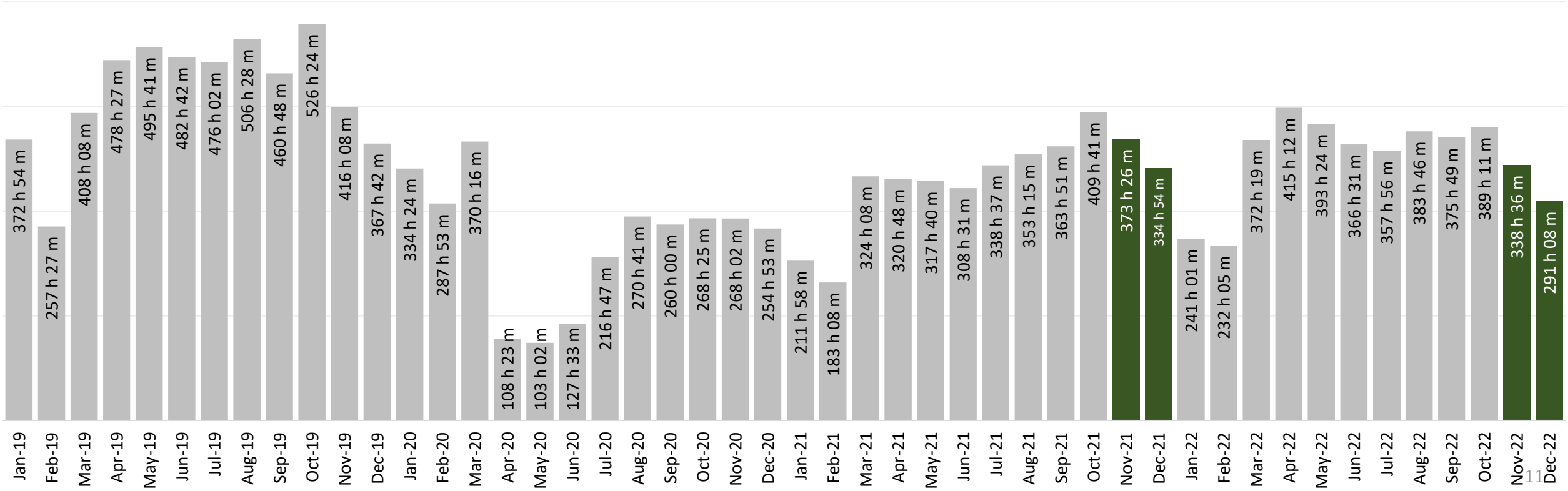
116

(60%)

LOCATIONS FILED 10 OR FEWER COMPLAINTS

SOUND MONITORING

November 2022			December 2022		
Time Above	51 TA^{65} Per Operation	338 h 36 m TA^{65}	Time Above	44 TA^{65} Per Operation	291 h 08 m TA^{65}
Count Above	2.78 N^{65} Per Operation	66,282 N^{65}	Count Above	2.53 N^{65} Per Operation	60,847 N^{65}



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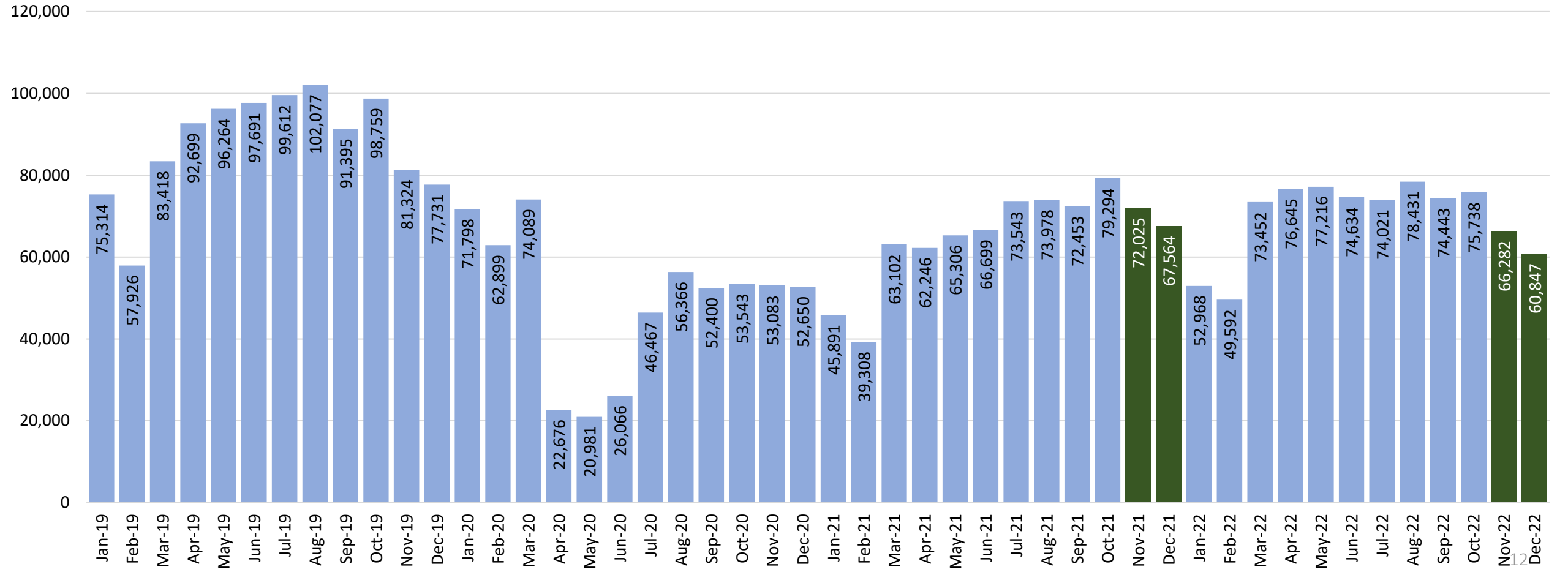


NOISE ABATEMENT

November 2022	
Runway 17	99.7%
EMH Corridor	96.3%
Cross Day	22.9%
Cross Night	40.0%

December 2022	
Runway 17	99.7%
EMH Corridor	92.9%
Cross Day	24.4%
Cross Night	41.0%

RUS	**52.7%**	Arrive - 55%	Depart - 50%

RUS	**51.0%**	Arrive - 47%	Depart - 55%

ITEM 2
PUBLIC COMMENT PERIOD

NOISE OVERSIGHT COMMITTEE
JANUARY 18, 2023

ITEM 2
PUBLIC COMMENT PERIOD

Speaking at a Meeting

- Each speaker will have one opportunity to speak and is allotted three (3) minutes.
- When called upon to speak, speak clearly, 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.

4.1 – VOR MINIMUM OPERATIONAL NETWORK

MSP VOR Discontinuance

FAA VOR MON Program

Presented to: MSP Noise Oversight Committee

By: Nitin Rao, FAA

Date: January 18, 2023

Very High Frequency Omni-Directional Range (VOR)

- The Very High Frequency Omni-Directional Range (VOR) is a ground-based navigation aid/electronic system that provides information for high and low altitude routes and airport instrument flight procedures.
- Maintained as a critical component of the National Airspace System (NAS) since the 1950s.
- VOR is part of a conventional navigation procedure and is used in instrument flight procedures and navigation.
- The FAA is transitioning the National Airspace System (NAS) to Performance Based Navigation (PBN).

MSP VOR

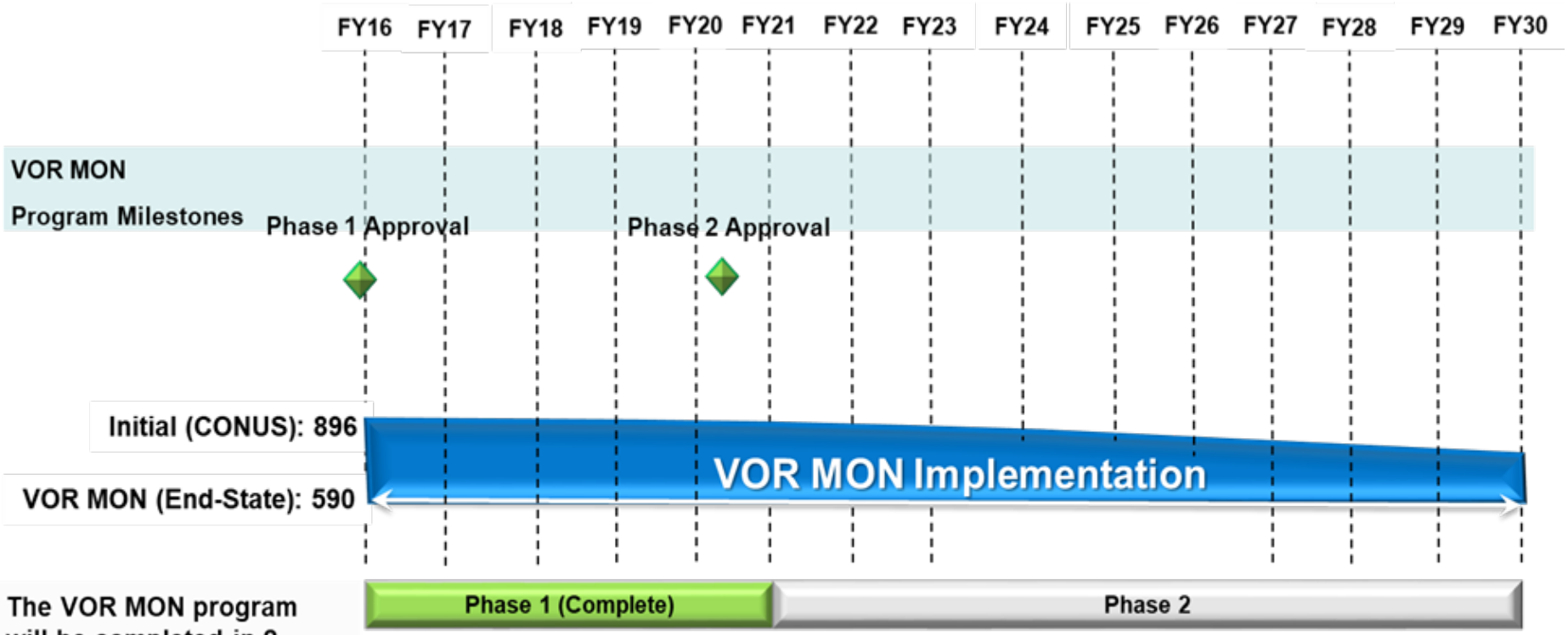
VOR MON Program Background

- **Purpose:** FAA is retaining a limited network of VORs, called the VOR Minimal Operational Network (MON), to provide a basic conventional navigation service for operators to use if Global Navigation Satellite Systems (GNSS) becomes unavailable
  - Support the National Airspace System (NAS) transition from VOR-based routes to a more efficient Performance-Based Navigation (PBN) structure, consistent with NextGen goals.
- FAA developed a national working group to develop a candidate list of VORs for discontinuance using relevant operational, safety, cost, and economic criteria.

VOR MON Program Background (cont.)

- Discontinue approximately 30% (306) of VORs by 2030, 141 have been discontinued to date.
- VOR MON will ensure that at 5,000 feet the aircraft will be able to navigate to an airport with ground based procedures within 100 miles of their location.
- Within the contiguous United States (CONUS), enable pilots to:
  - Revert from PBN to conventional / VOR navigation in the event of a Global Positioning System (GPS) outage;
  - The MON will ensure that an aircraft will be always be within 100 NM of an airport with an instrument approach that is not dependent on GPS.

VOR MON Implementation Timeline

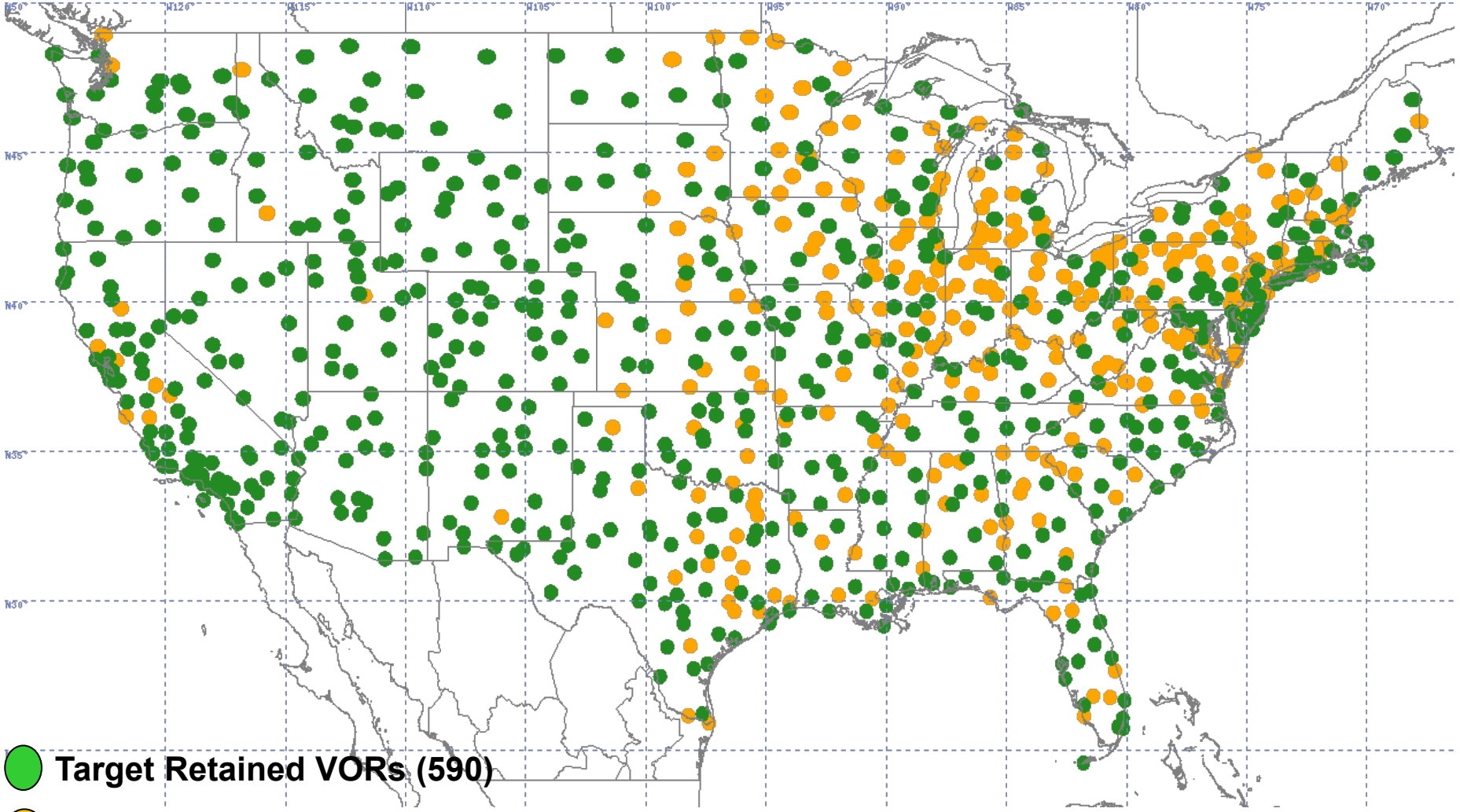


The VOR MON program will be completed in 2 Phases:

Phase 1: FY16 – FY20
Phase 2: FY21 – FY30

- Received Phase 2 Program Approval - *03/18/2020*
- Continue IFP work
- Plan to discontinue approximately 224 VORs

VORs in the Continental US (CONUS)



Target Retained VORs (590)

Target to be Discontinued VORs (306)

*Expected 30% reduction in VORs by 2030

MSP VOR

Why Discontinue the MSP VOR?

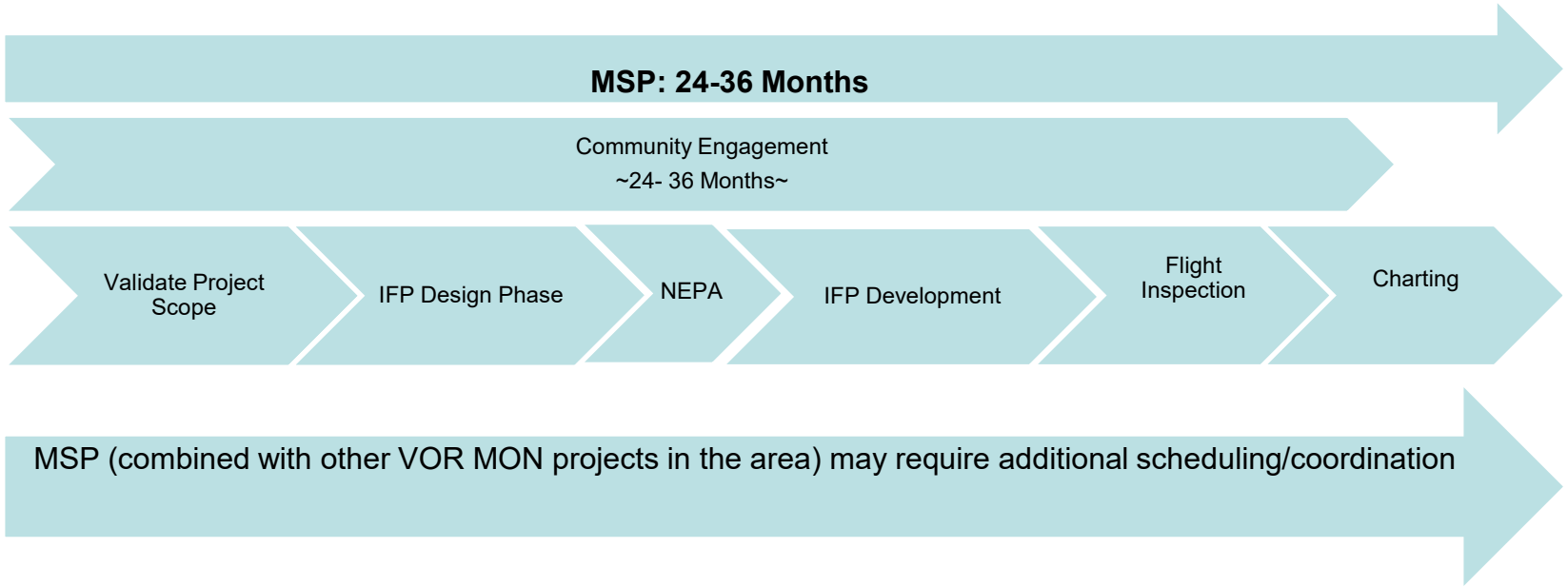
This VOR, and many others, will be decommissioned as part of the FAA's NextGen program where Global Positioning System (GPS) based Area Navigation (RNAV) and Performance Based Navigation (PBN) will replace the legacy ground based system.

- ***It's just good governance***. Decommissioning superfluous VORs will direct efforts for future investments in the National Airspace System (NAS) by:
  - ***Reducing cost while increasing reliability and maintainability of the existing VOR-based airway navigation system***. Current ground lease costs, repair parts, routine and restorative maintenance costs as well as costs associated with manpower necessary to maintain the system are unsustainable.
  - ***Decreasing redundancy***. Given the proliferation of GPS equipment in aircraft and the wide use of this technology during flight procedures, much of the existing ground-based navigation network is redundant and unused during normal operations.
- The VOR Minimum Operational Network (MON) provides a conventional navigation recovery system in the event of a loss of GPS signal. The MSP VOR is not part of the MON.

Projected Timeline for MSP VOR Discontinuation

Identify Collaborative Workgroup and schedule meetings

Project Kickoff: January 24-26, 2023



List of area VORs on the VOR MON Schedule: OTG, MKT, DWN, ODI, MSP, ROX, RST, FCM, GPZ

MSP VOR Anticipated Procedure Impacts

- Procedure changes that will be reviewed during designs:
  - Standard Instrument Departure Procedures (SIDS) may be cancelled or amended
  - Standard Terminal Arrival Routes (STARs) may be cancelled or amended
  - Instrument Approach Procedures may be amended
  - Existing PBN procedures may be amended or cancelled

Preliminary MSP VOR Analysis

- **Early Analysis:**
  - Replicate current departures to the North
  - Develop RNAV vector departures off the ground to the south to allow for more use of noise abatement.
    - Utilize departure procedures over the 12L and 12R over the industrial park
    - Utilize departure procedures for Runway 17 over the riverbed
  - Early in the process, but the FAA believes that we will be able to develop vector based Standard Instrument Departures (SIDS).

Preliminary MSP VOR Analysis (cont.)

- Most procedures will be replicated to the extent possible with PBN and GPS navigation.

- Current departure procedures will be replicated to the extent possible with satellite-based Vector Standard Instrument Departures (SID) vs. ground-based navigation.

- Coordination and synchronization will be required between FAA, MAC, NOC, Airlines, and the Public.

MSP VOR Community Engagement

- **FAA is committed to meaningful public engagement throughout process**
  - Have had initial discussions with MAC officials prior to project kickoff next week
  - Plan to include numerous stakeholders once project officially kicks off in January 2023 to obtain views
    - Includes MAC staff to communicate the NOCs views on the project.
    - Includes airlines, FAA personnel, and other stakeholders.

MSP VOR Community Engagement (cont.)

- Working Group Kick-Off Meeting (January 2023)
- Core work group deliberate and take input on preliminary design from stakeholders (ideally 6 to 9 months)
- Preliminary Designs Presented to the NOC
  - Obtain Feedback from NOC and other aviation stakeholders
  - If feasible, incorporate feedback and revise the designs

MSP VOR: What this All Means

- Attempt to replicate departure procedures to the north, and design departure procedures to the south to continue to increase noise abatement.
- The FAA understands the development of procedures are of high interest to the NOC.
  - Will work closely with the MAC and the NOC as the project progresses to understand concerns and make adjustments.

Questions?

Contact Information:

- Joe Miniace, Regional Administrator for the Great Lakes Region

  (p) 847-294-7294

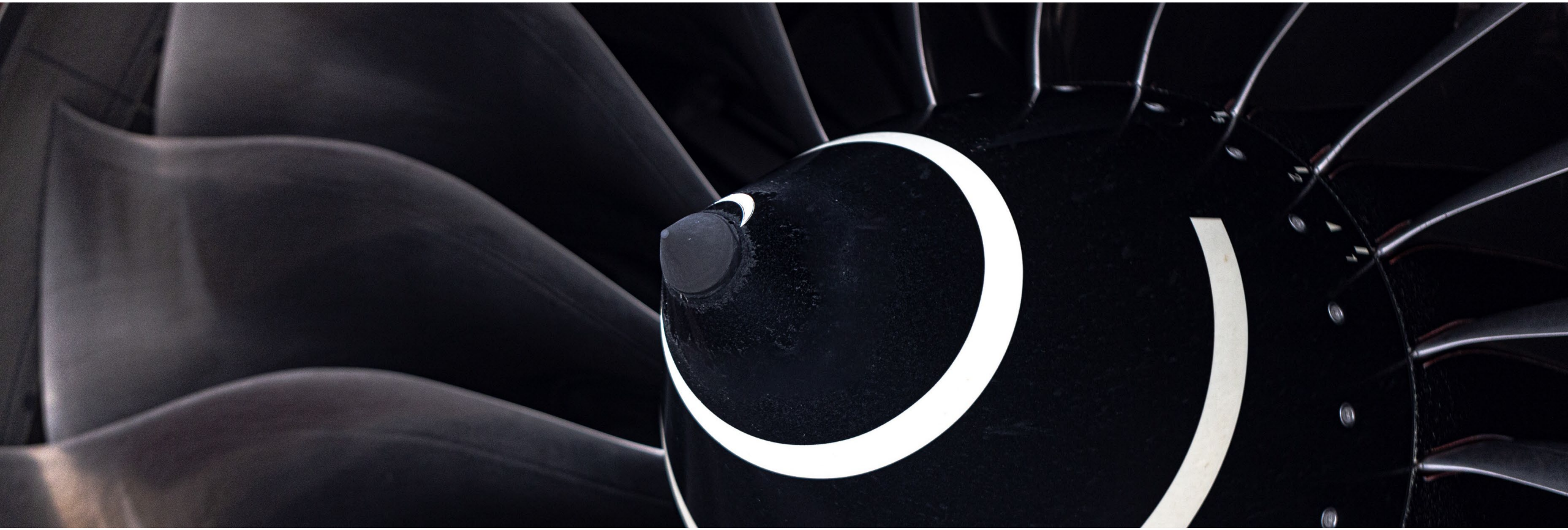
  (e) Joseph.N.Miniace@faa.gov

- Nitin Rao, Community Engagement Officer for the Regional Administrator

  (p) 847-294-7375

  (e) Nitin.Rao@faa.gov

4.2 – 2022 FLEET MIX AND NIGHTTIME OPERATIONS ASSESSMENT



NOISE OVERSIGHT COMMITTEE
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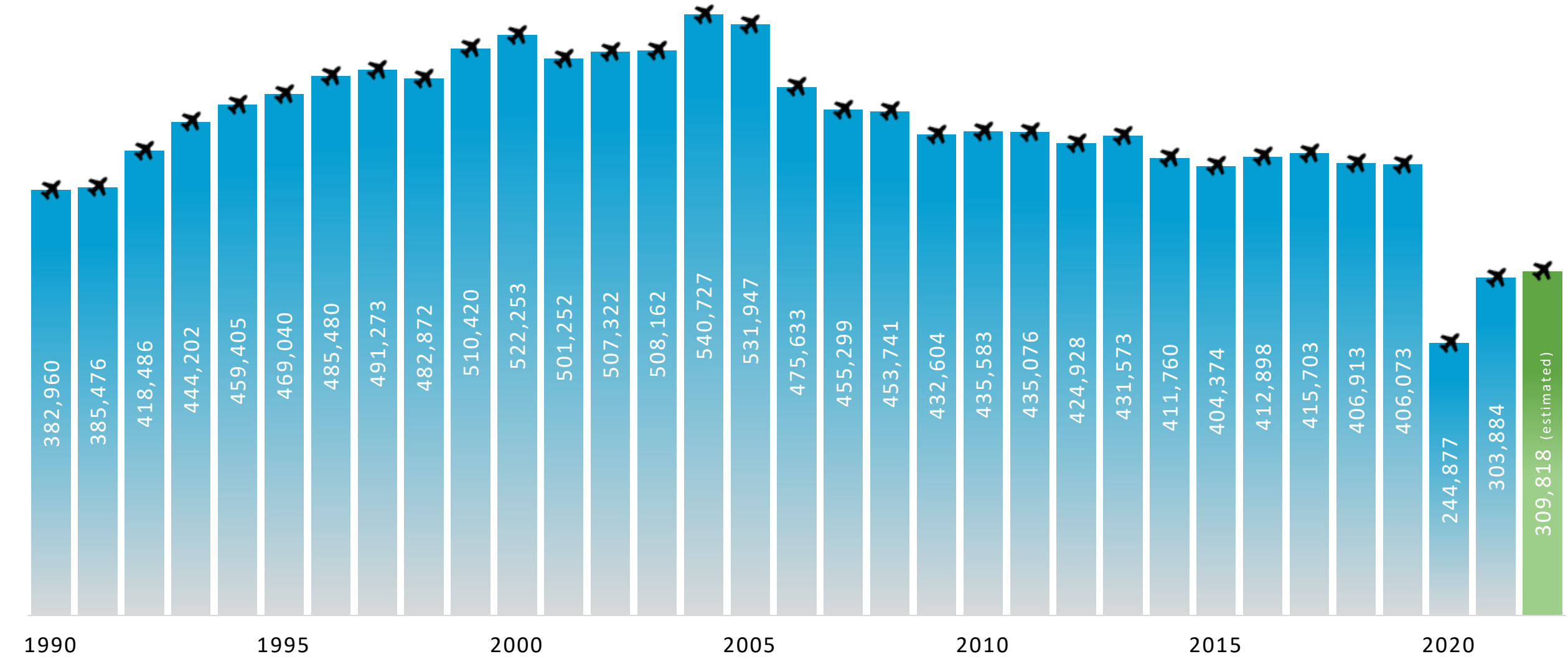
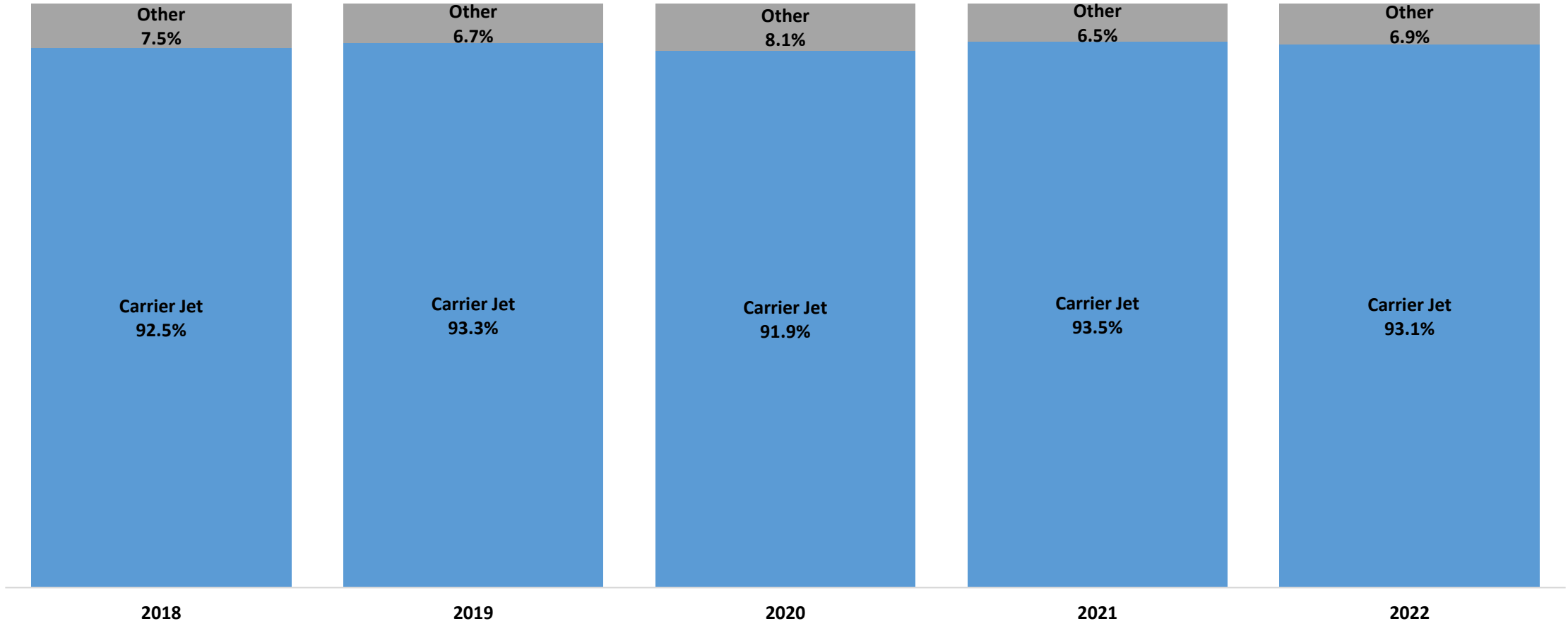
MSP Operations *(FAA Opsnet)*

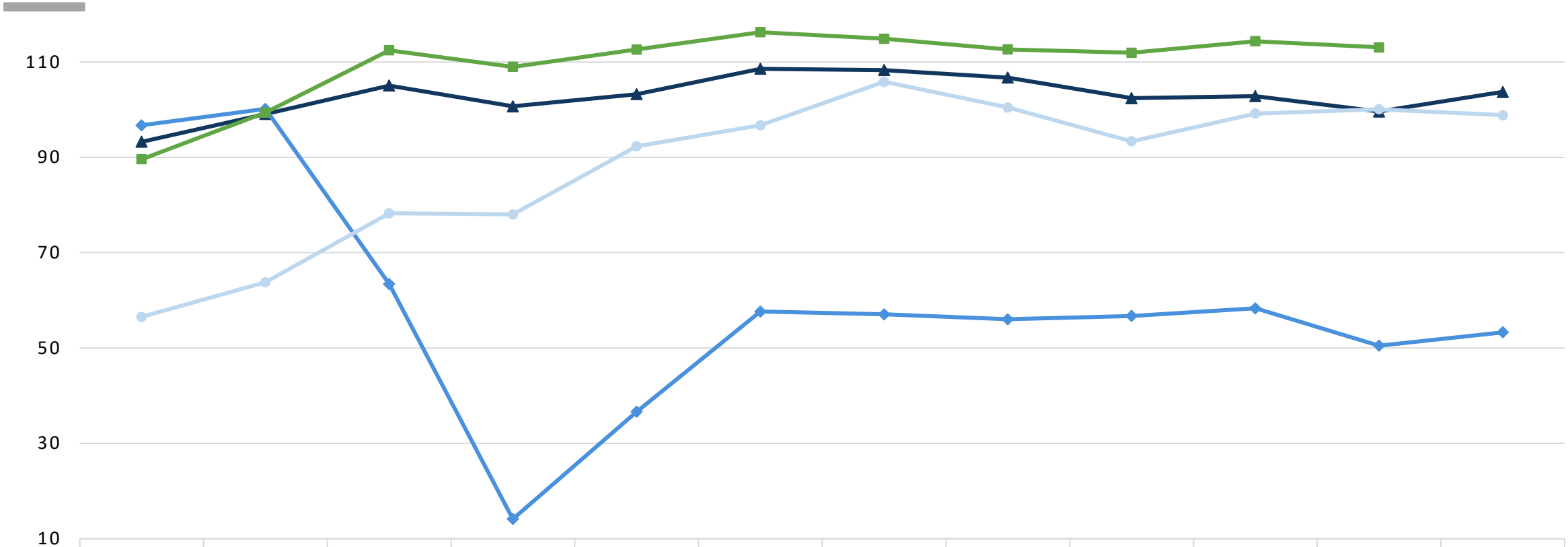


December 2022 Opsnet data unavailable at time of meeting. Total estimate include Jan - Nov Opsnet data and December estimate using MACNOMS data

MSP Operational Fleet Mix

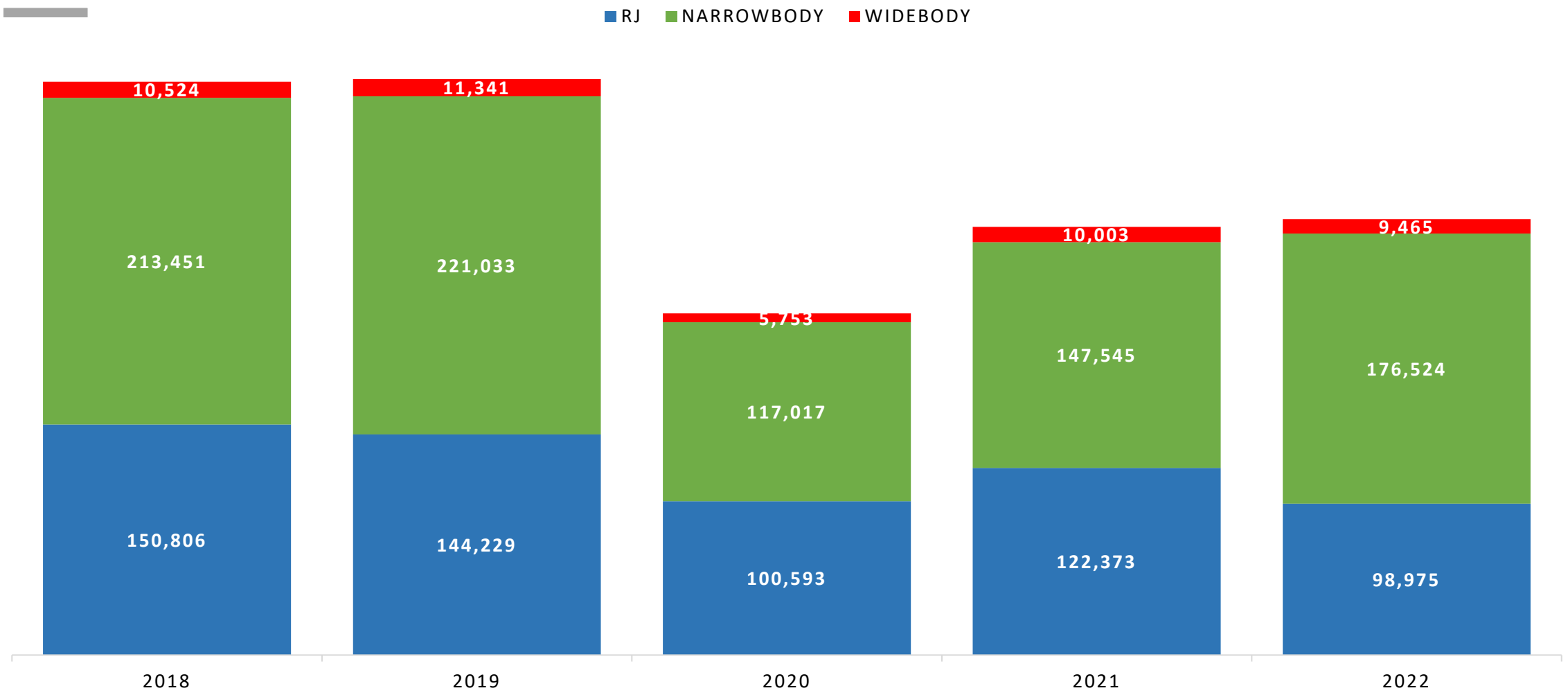


MSP Passengers Per Flight

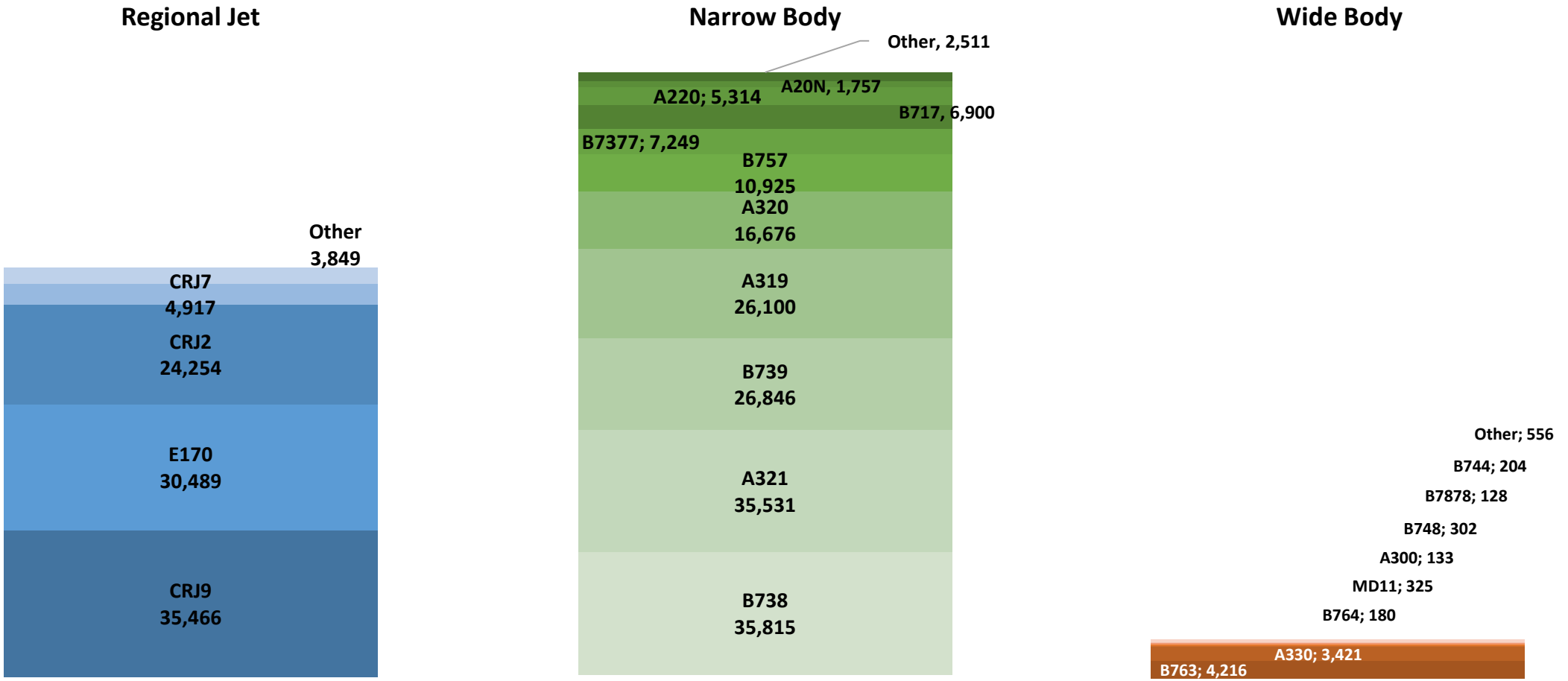


	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019	93.3	99.1	105.1	100.7	103.3	108.6	108.3	106.7	102.4	102.8	99.6	103.7
2020	96.7	100.1	63.4	14.1	36.6	57.7	57.1	56.0	56.7	58.3	50.5	53.3
2021	56.5	63.8	78.2	78.0	92.3	96.7	105.8	100.5	93.4	99.2	100.1	98.9
2022	89.6	99.4	112.5	109.0	112.6	116.3	114.9	112.7	111.9	114.4	113.1	

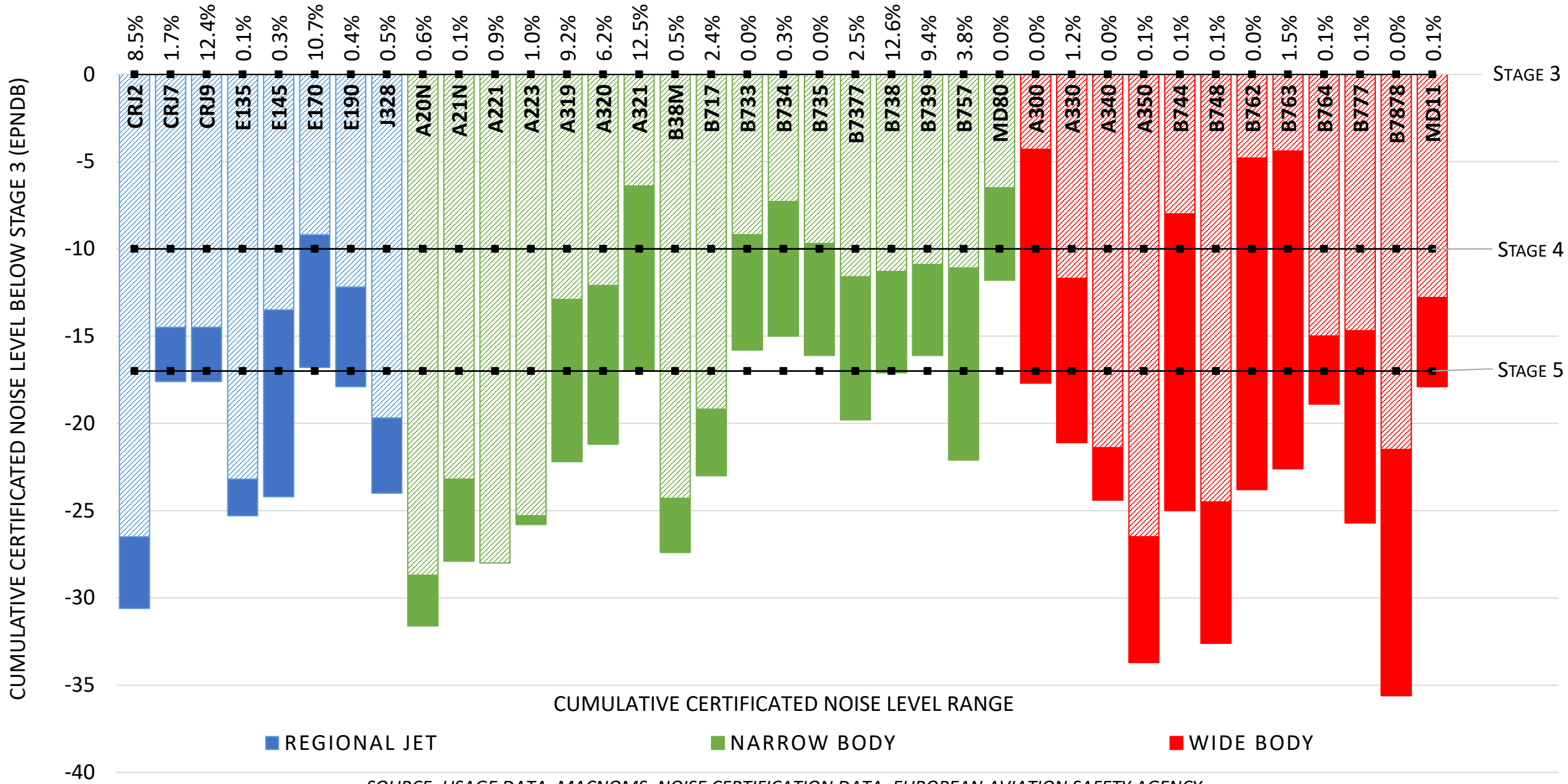
MSP Operations Fleet Mix



MSP Operations Fleet Mix



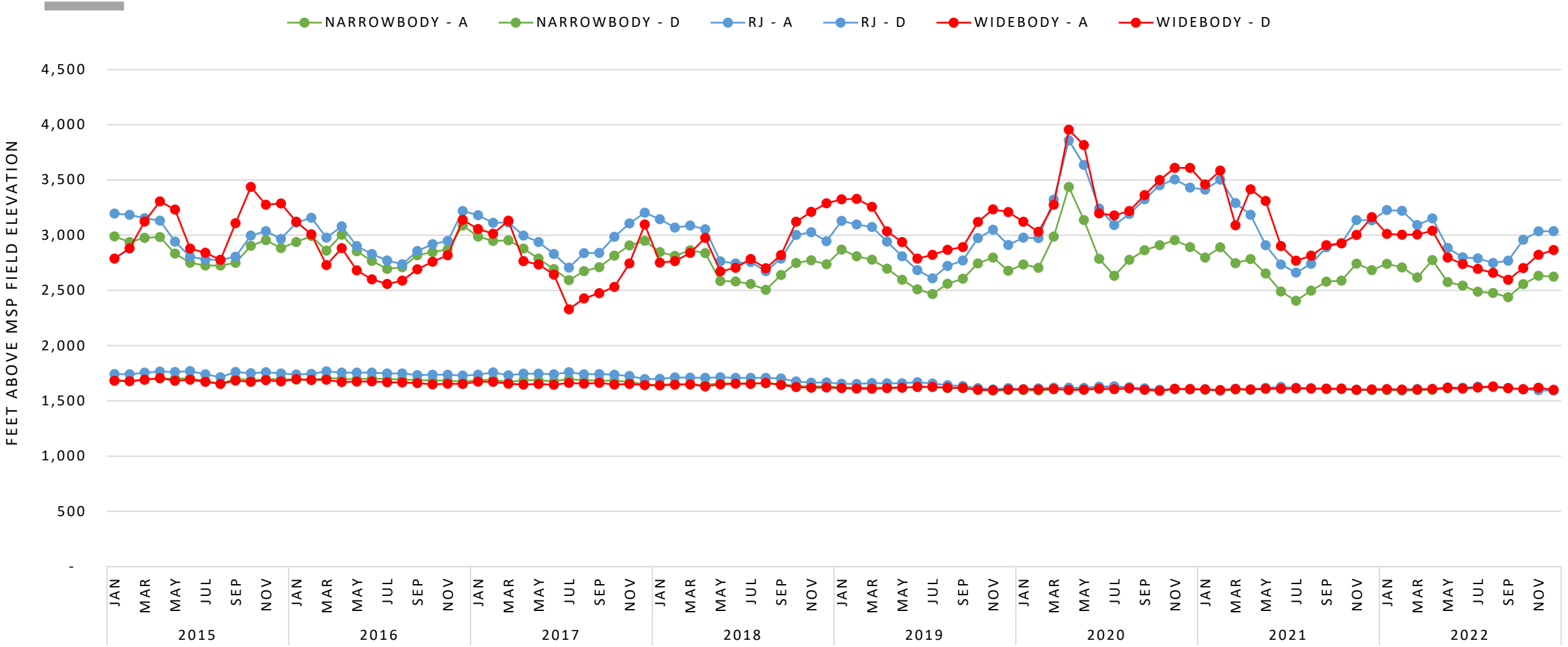
2022 MSP CARRIER JET USAGE WITH CUMULATIVE CERTIFICATED NOISE LEVELS



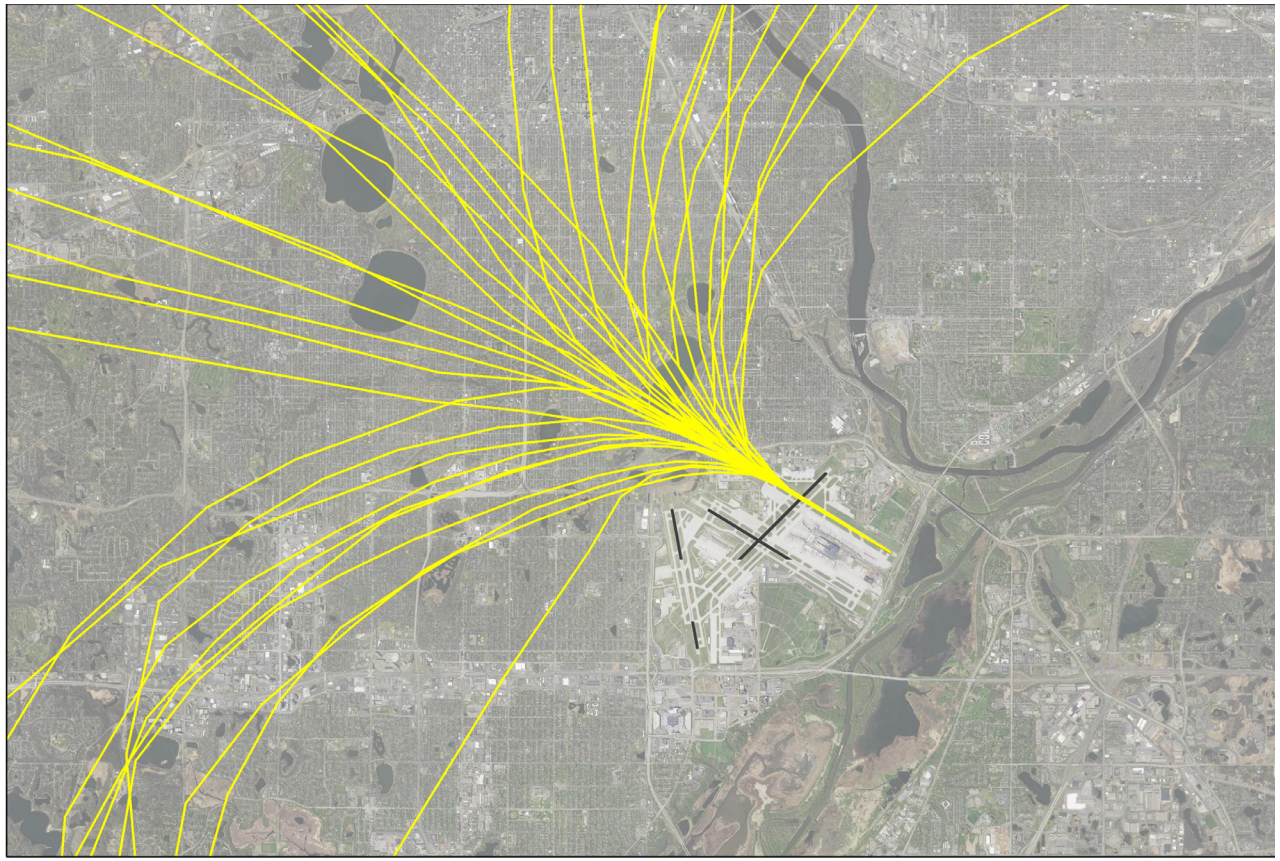
SOURCE: USAGE DATA: MACNOMS; NOISE CERTIFICATION DATA: EUROPEAN AVIATION SAFETY AGENCY

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

Average Altitude

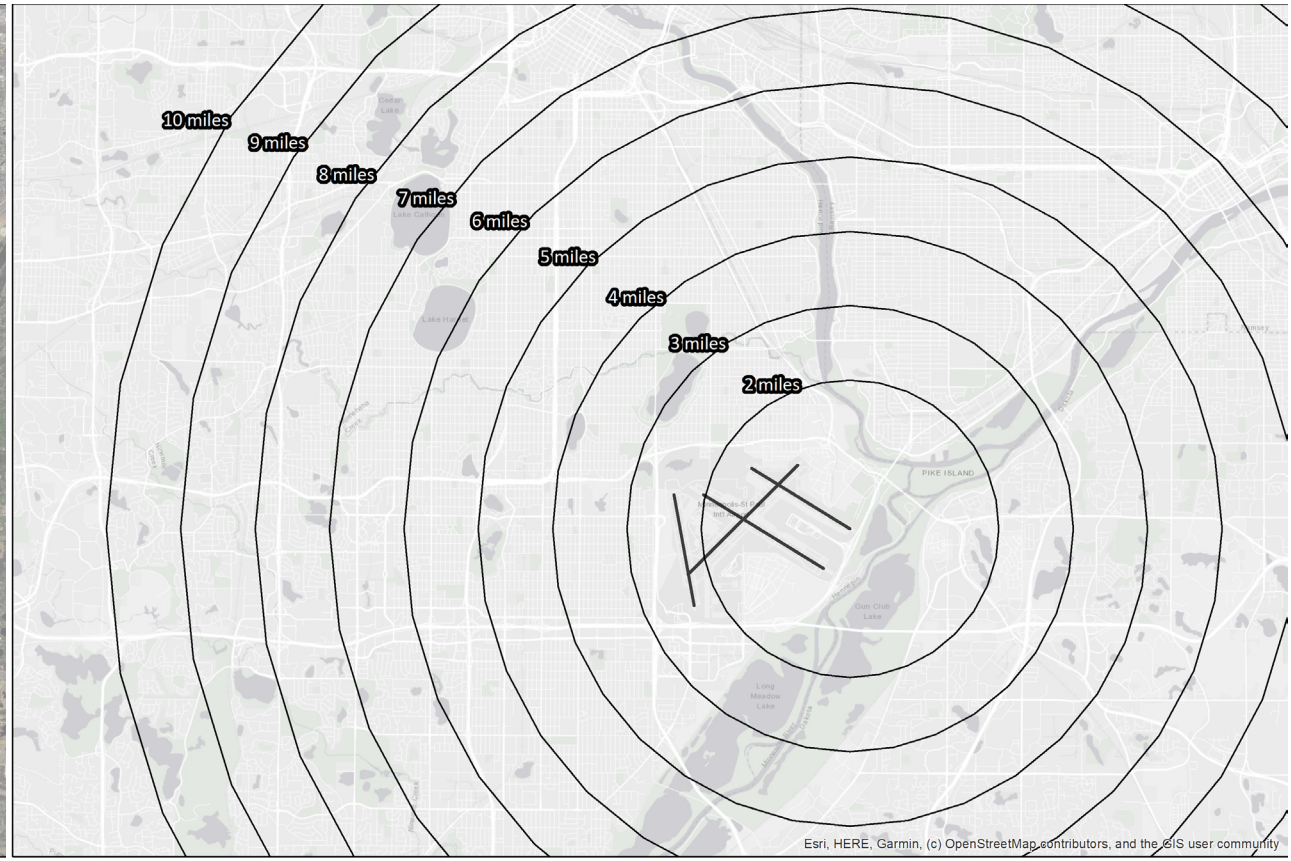


Runway 30R AEDT Model Flight Tracks



Runway 30R Departure Model Tracks

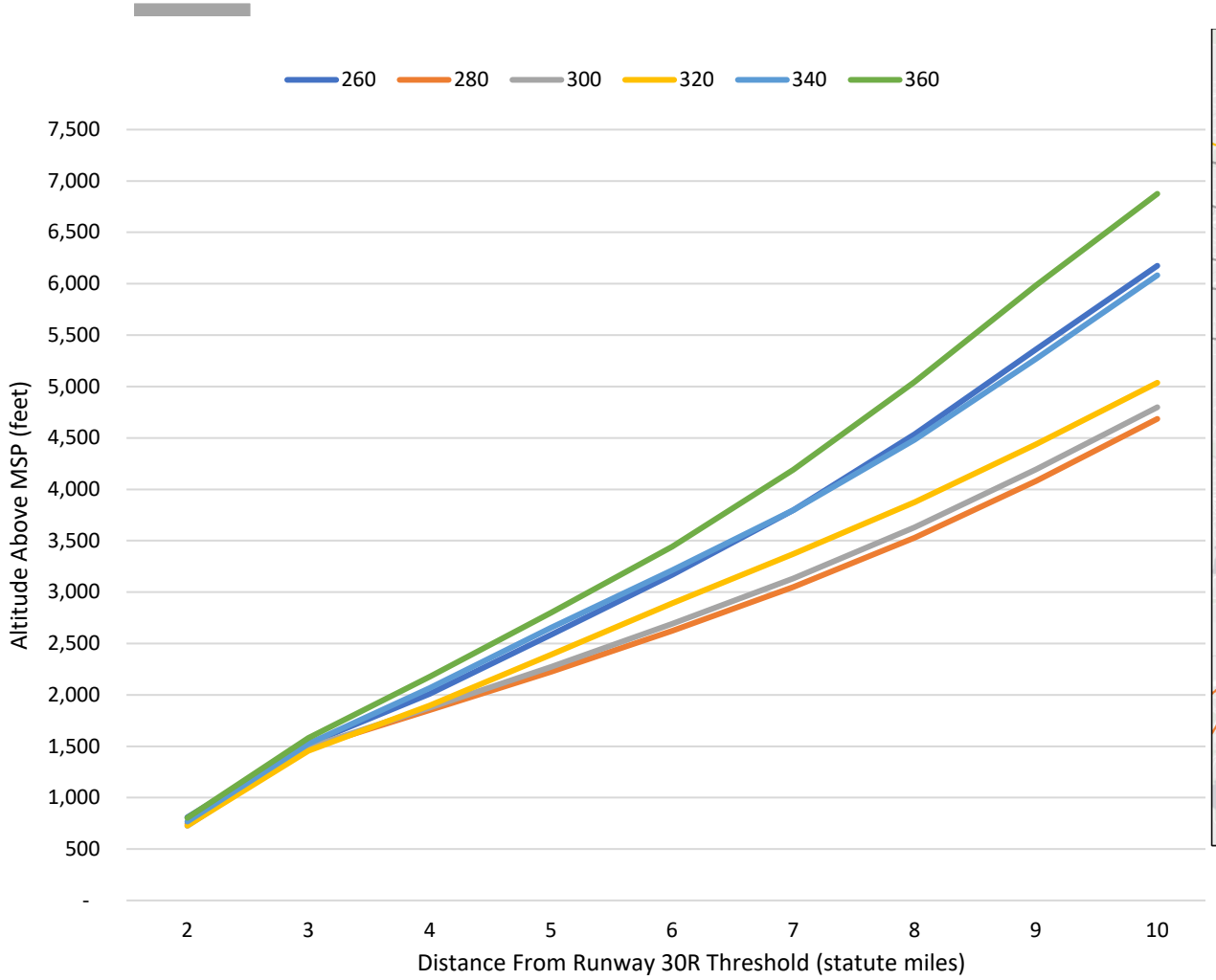
0 0.5 1 2 3 4 Miles

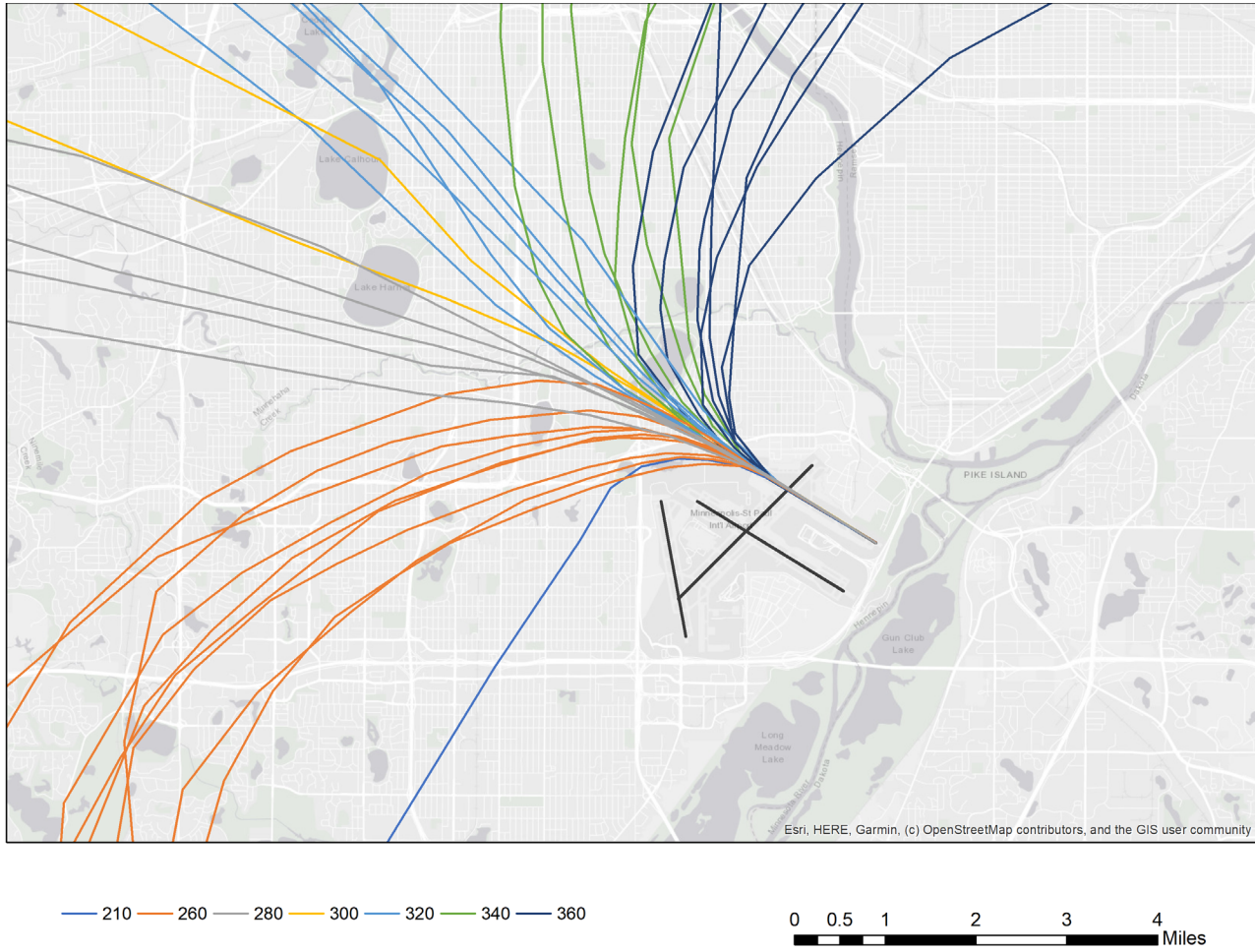


0 0.5 1 2 3 4 Miles

Note: AEDT modeled flight tracks shown, flight paths from actual operations have greater dispersion.

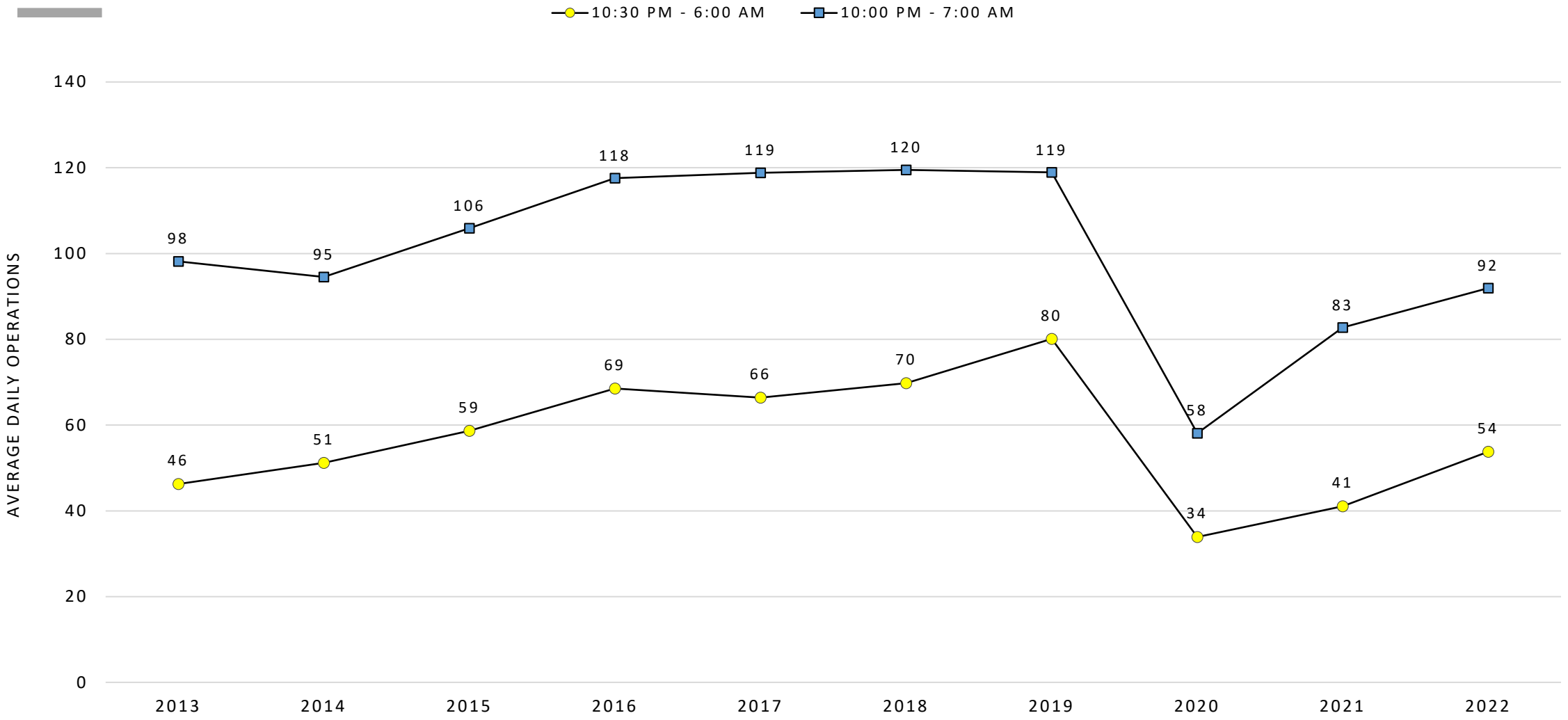
2022 MSP Average 30R Departure Altitude by Heading



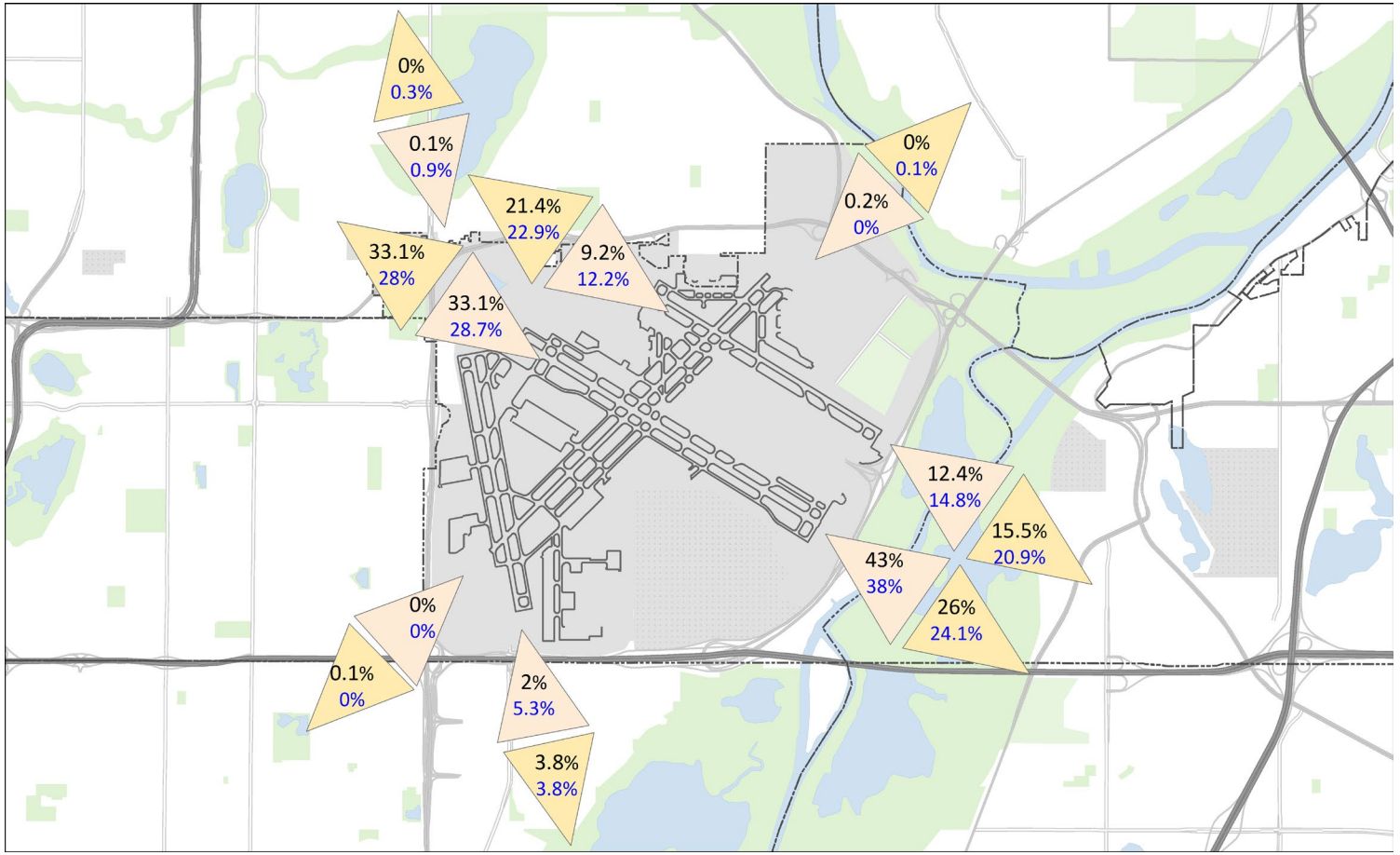


Note: AEDT modeled flight tracks used for analysis and heading assignment, not representative of ATC heading assignments.

Average Daily Nighttime Operations



Nighttime Runway Use

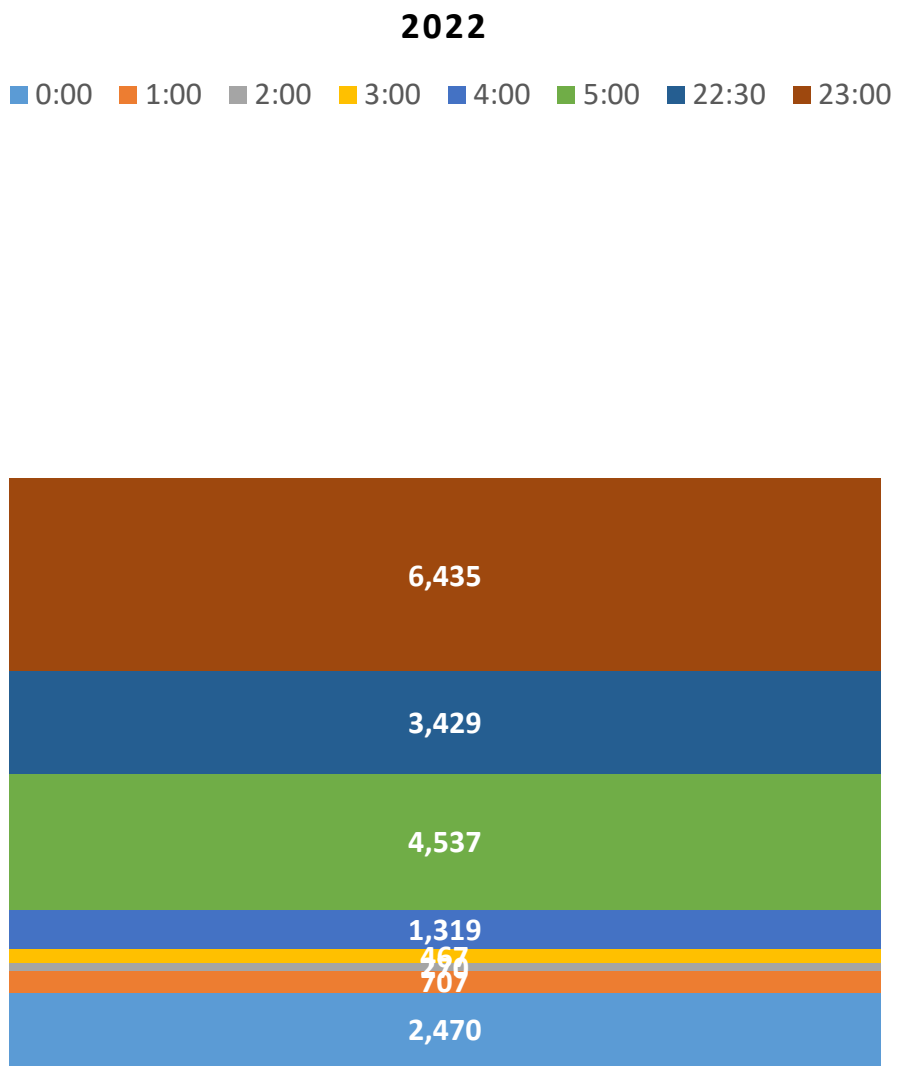


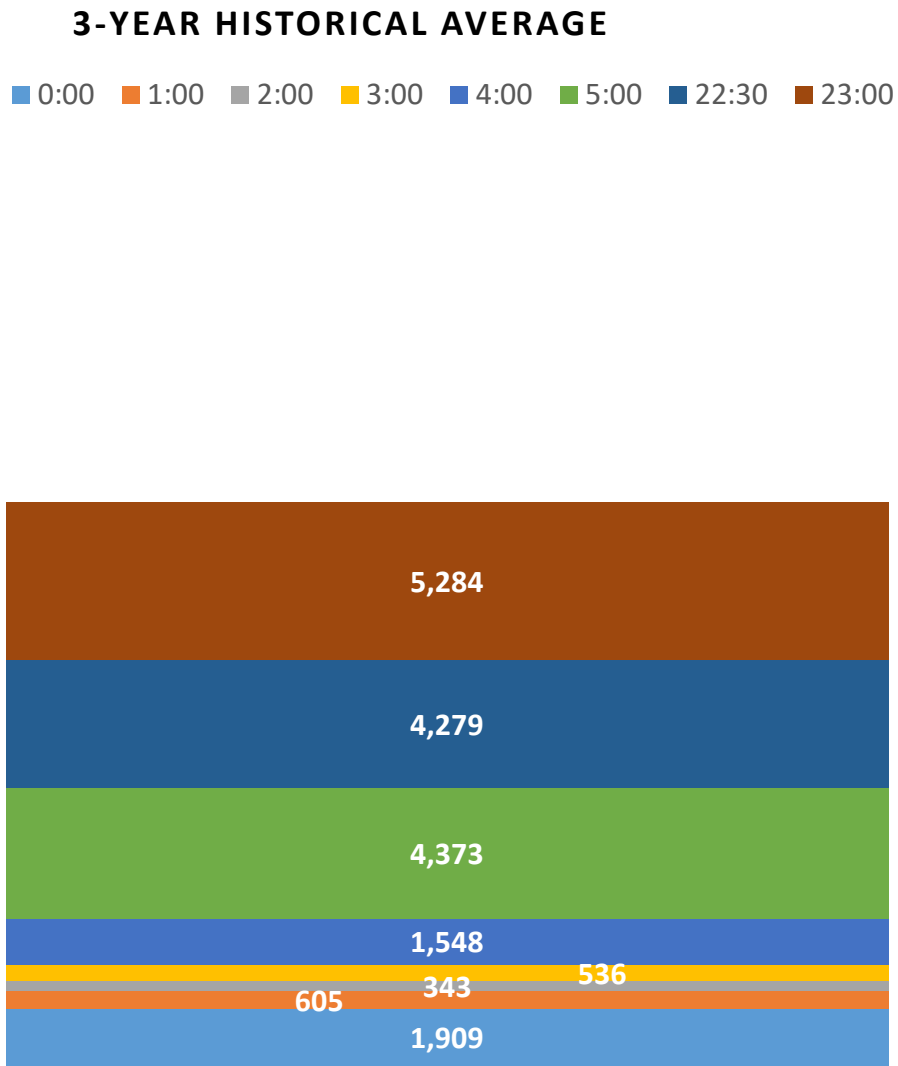
Nighttime Operations by Airline and Aircraft

AIRLINE	ID	COUNT	PERCENT OF AIRLINE OPERATIONS' OCCURRING AT NIGHT	PERCENT OF CONTRIBUTION TO NIGHTTIME TOTAL
DELTA	DAL	5,824	4.9%	31.0%
SUN COUNTRY	SCX	3,591	15.3%	19.1%
SKYWEST AIRLINES	SKW	2,149	3.1%	11.4%
SOUTHWEST	SWA	1,679	15.9%	8.9%
AMERICAN	AAL	1,239	17.6%	6.6%
UPS	UPS	1,119	33.6%	6.0%
UNITED	UAL	781	9.7%	4.2%
FEDEX	FDX	693	22.6%	3.7%
GULF & CARIBBEAN CARGO	TSU	356	96.0%	1.9%
JETBLUE AIRWAYS	JBU	350	18.4%	1.9%
ALASKA	ASA	284	18.0%	1.5%
FRONTIER AIRLINES	FFT	232	19.2%	1.2%
SPIRIT	NKS	230	7.9%	1.2%
ENDEAVOR AIR	EDV	163	0.9%	0.9%
SWIFT AIR (USA)	SWQ	85	16.4%	0.5%

AIRCRAFT CODE	DESCRIPTION	COUNT	NOISE LEVEL CERTIFICATION (EPNdB BELOW STAGE 3)
B738	BOEING 737-800	5,532	11.3 - 17.1
A321	AIRBUS INDUSTRIES A321	2,487	6.4 - 17
B739	BOEING 737-900	1,773	10.9 - 16.1
B757	BOEING 757-200	1,482	11.1 - 22.1
CRJ9	CANADAIR REGIONAL JET CRJ-900	1,259	14.5 - 17.6
A320	AIRBUS INDUSTRIES A320	1,156	12.1 - 21.2
A319	AIRBUS INDUSTRIES A319	872	12.9 - 22.2
B7377	BOEING 737-700	851	11.6 - 19.8
B763	BOEING 767-300	807	4.4 - 22.6
CRJ2	CANADAIR REGIONAL JET CRJ-200	707	26.5 - 30.6
E170	EMBRAER 170	676	9.2 - 16.8
B38M	BOEING 737-8 MAX	259	24.3 - 27.4
E190	EMBRAER 190	233	12.2 - 17.9
CRJ7	CANADAIR REGIONAL JET CRJ-700	209	14.5 - 17.6
A330	AIRBUS INDUSTRIES A330	164	11.7 - 21.1

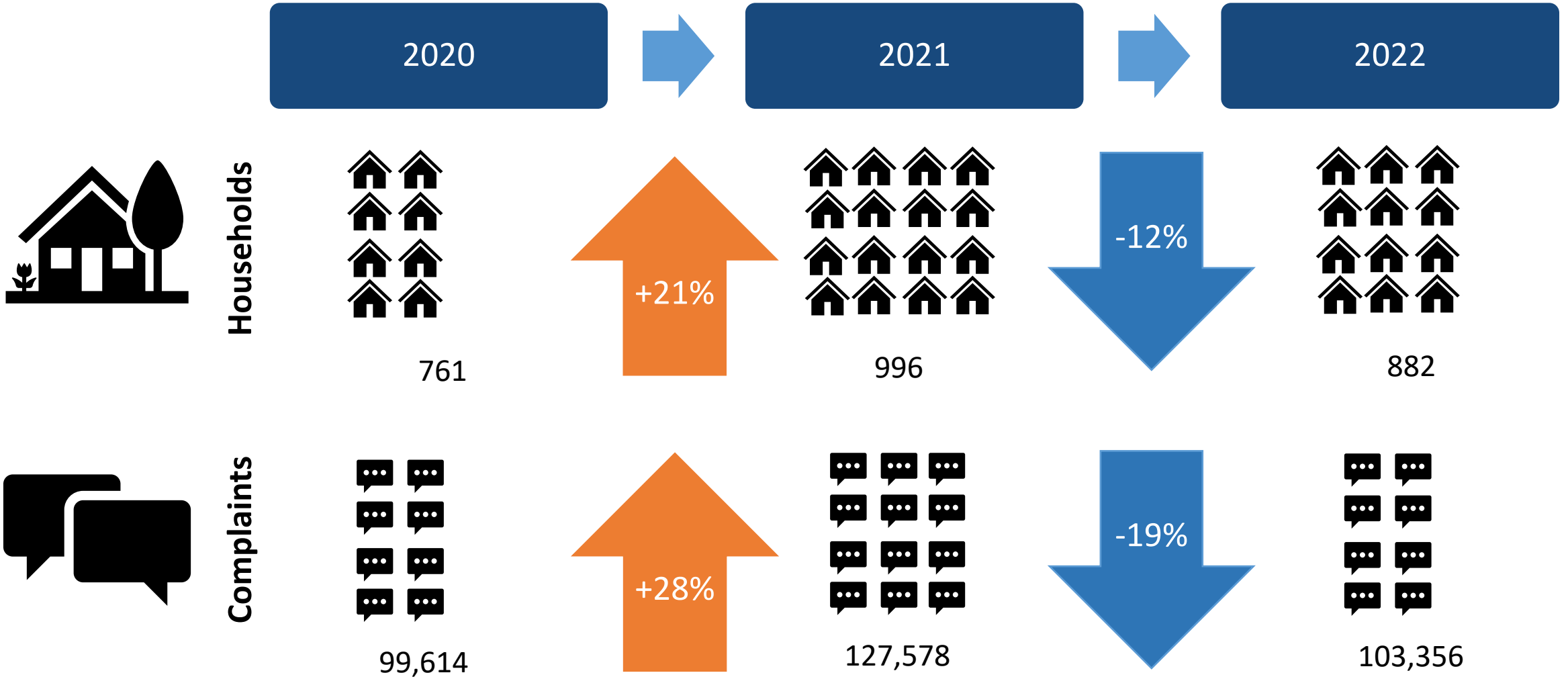
Nighttime Operations by Hour



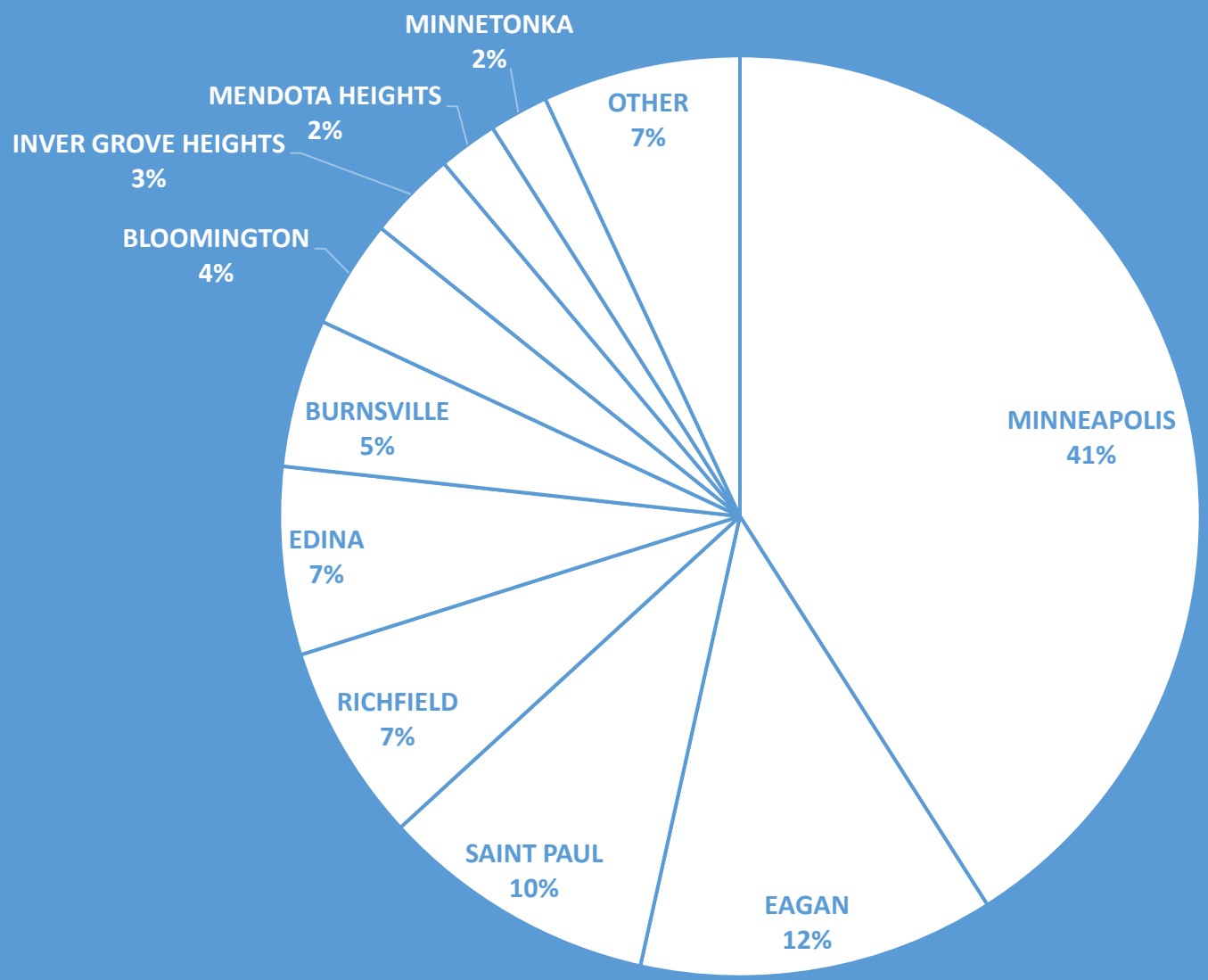


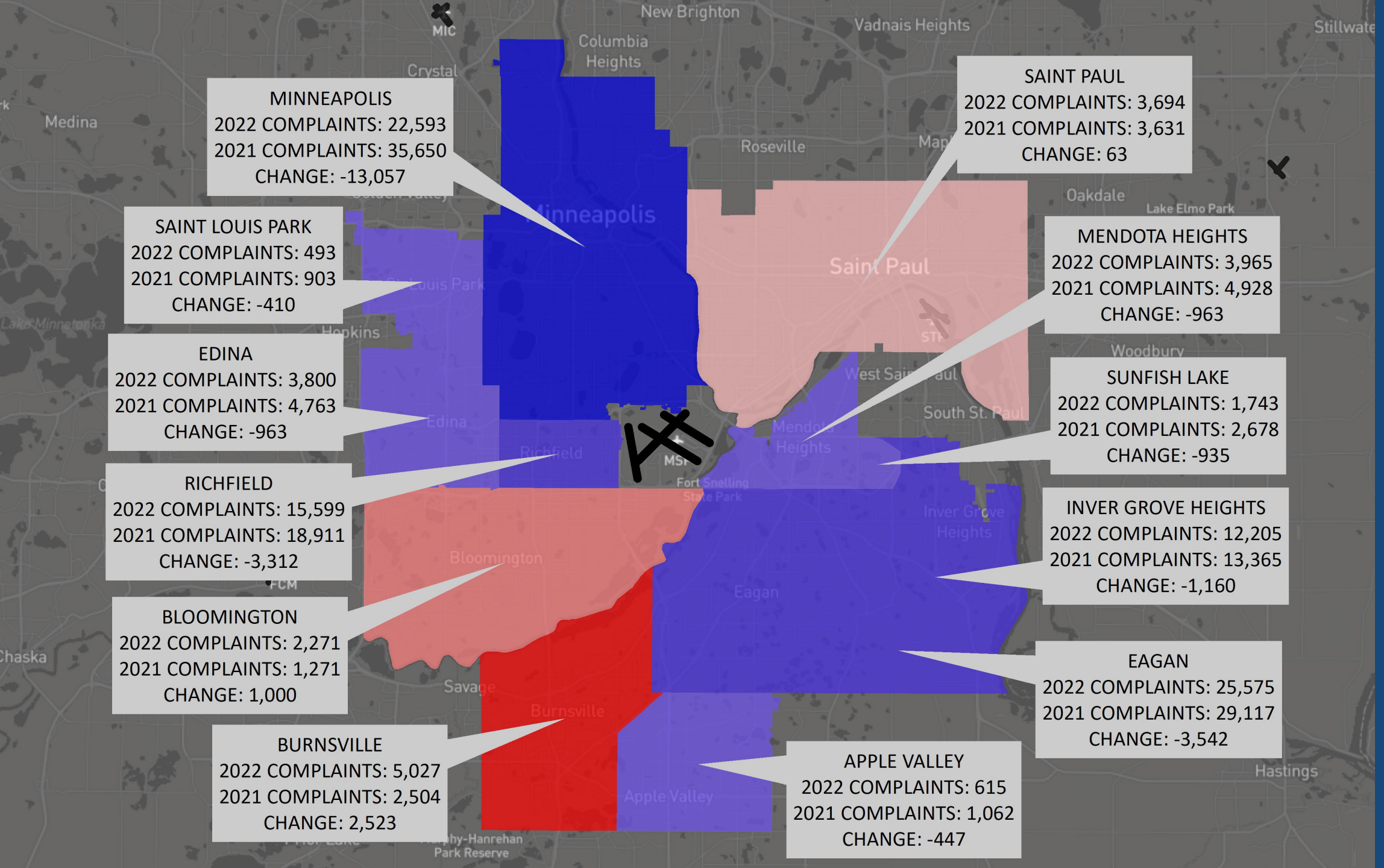
4.3 – 2022 COMPLAINT DATA ASSESSMENT

Total Households and Total Complaints 2020-2022



New Households Filing Complaints 2022 By City

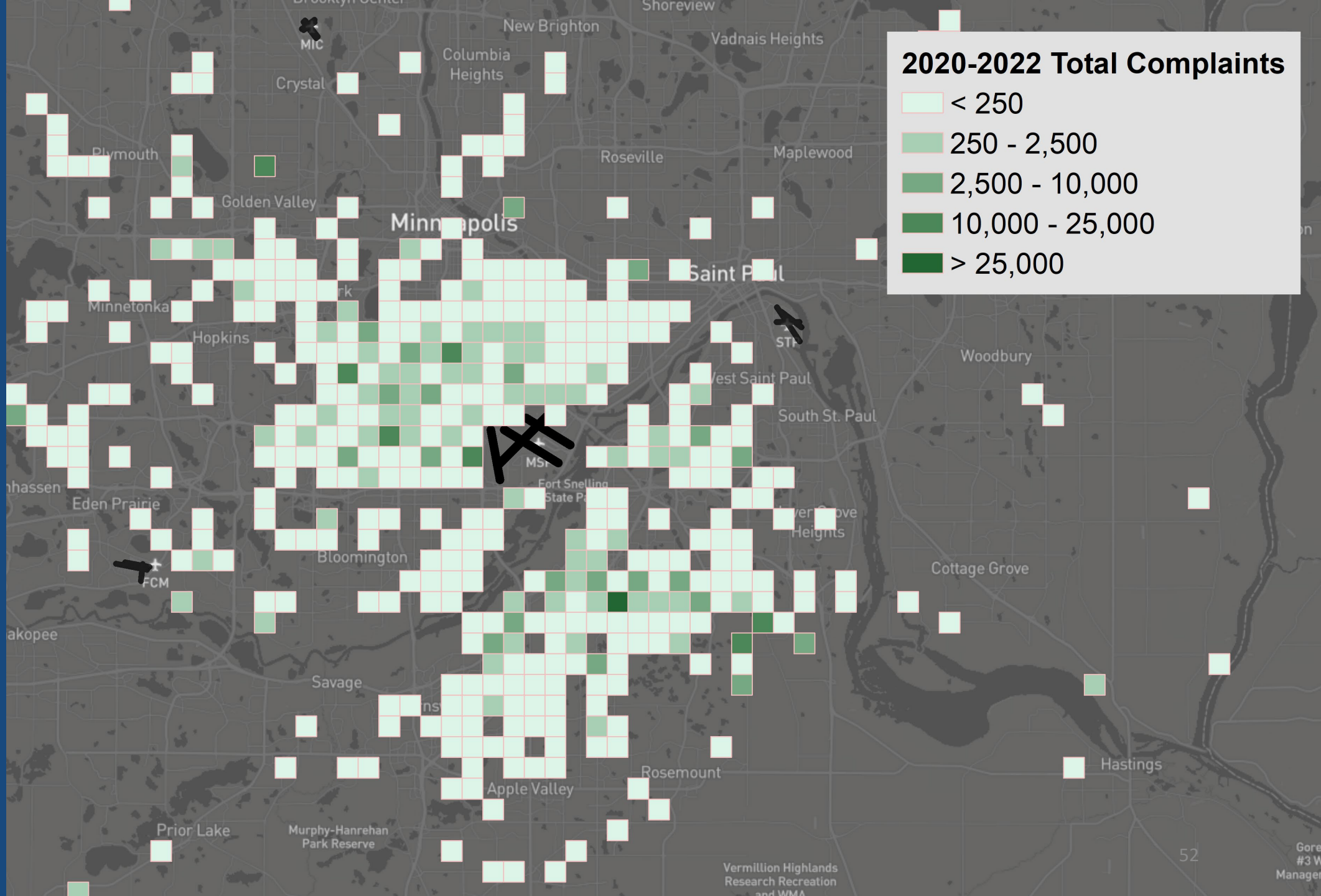




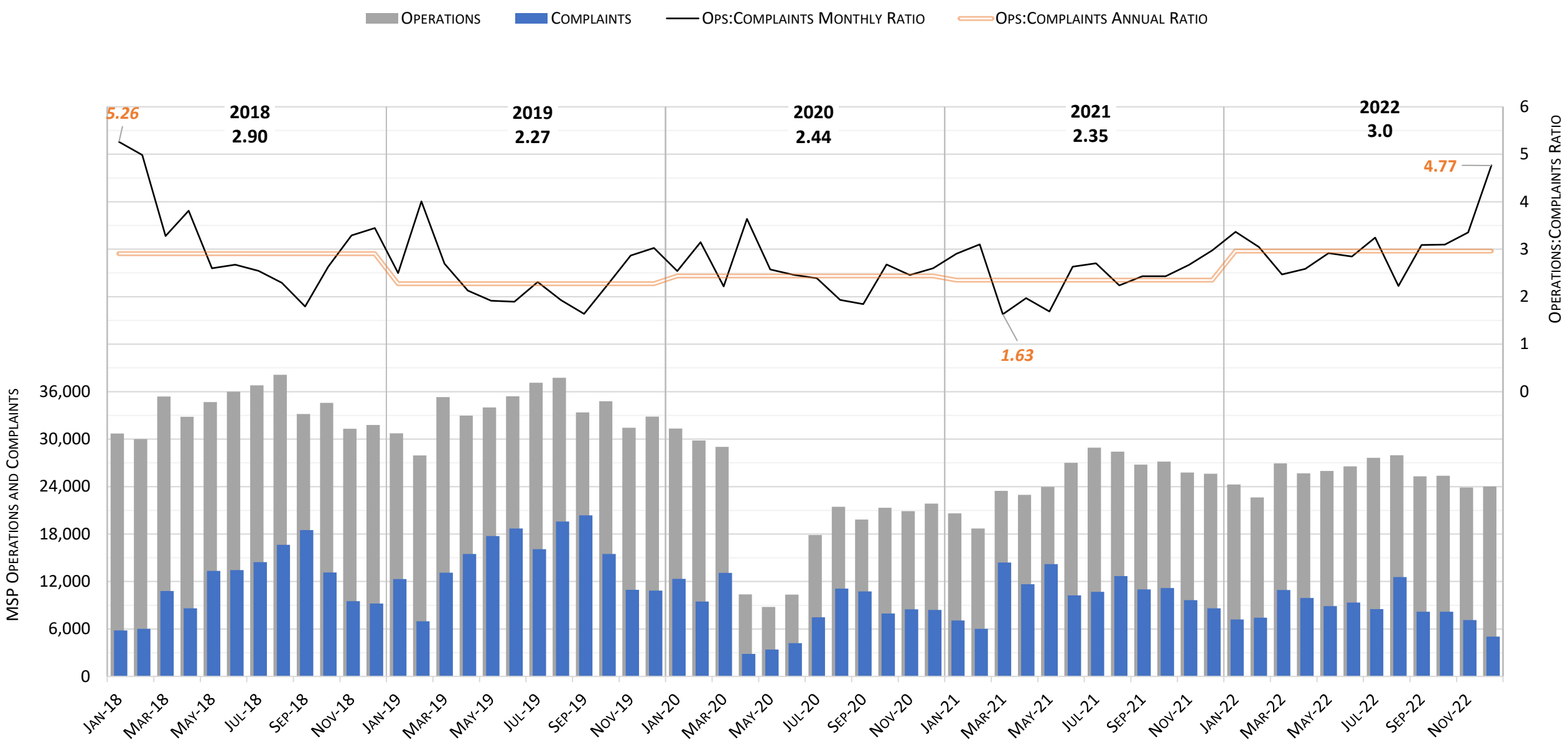
Change in Complaints By City

Total Complaints

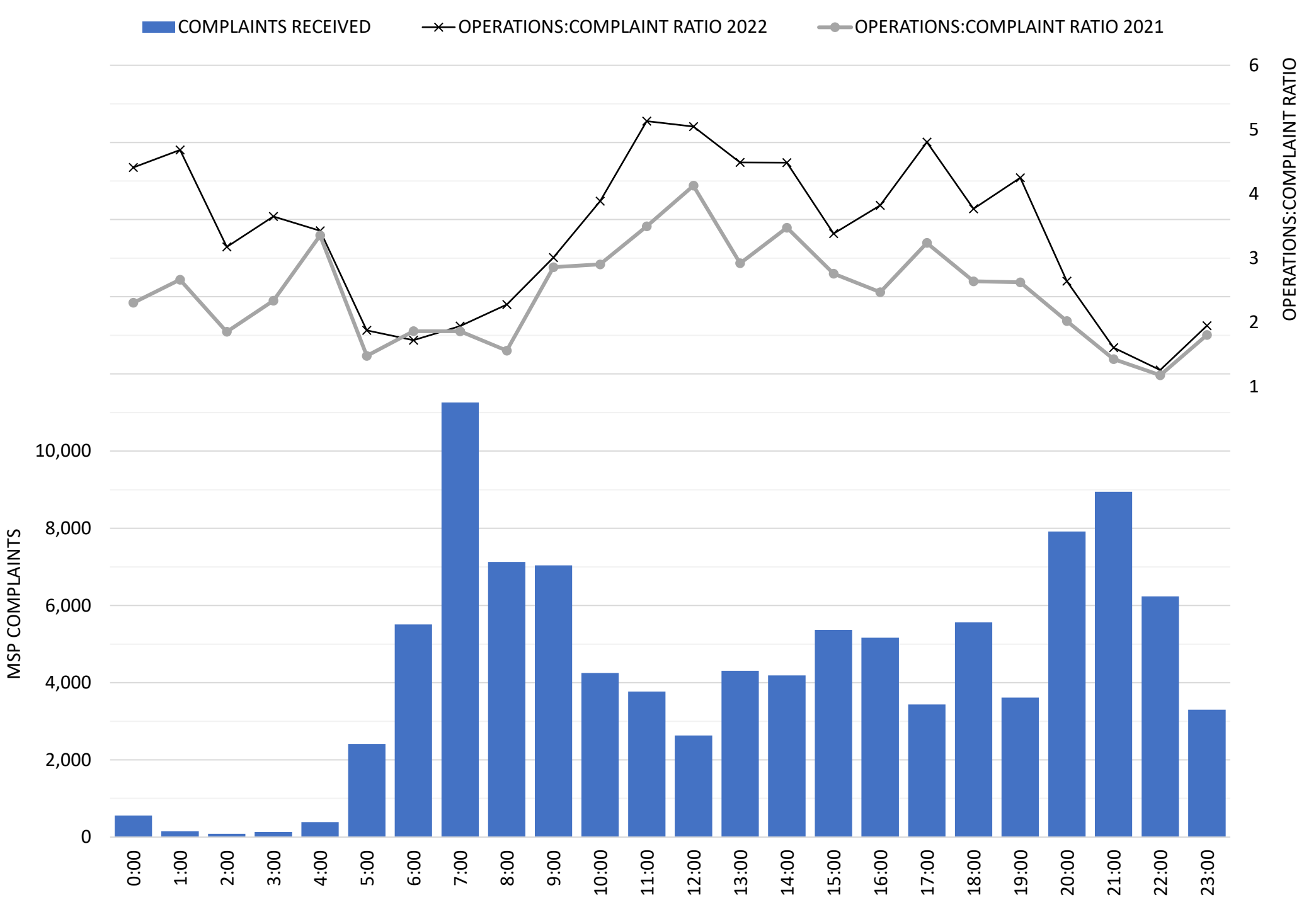
2020-2022



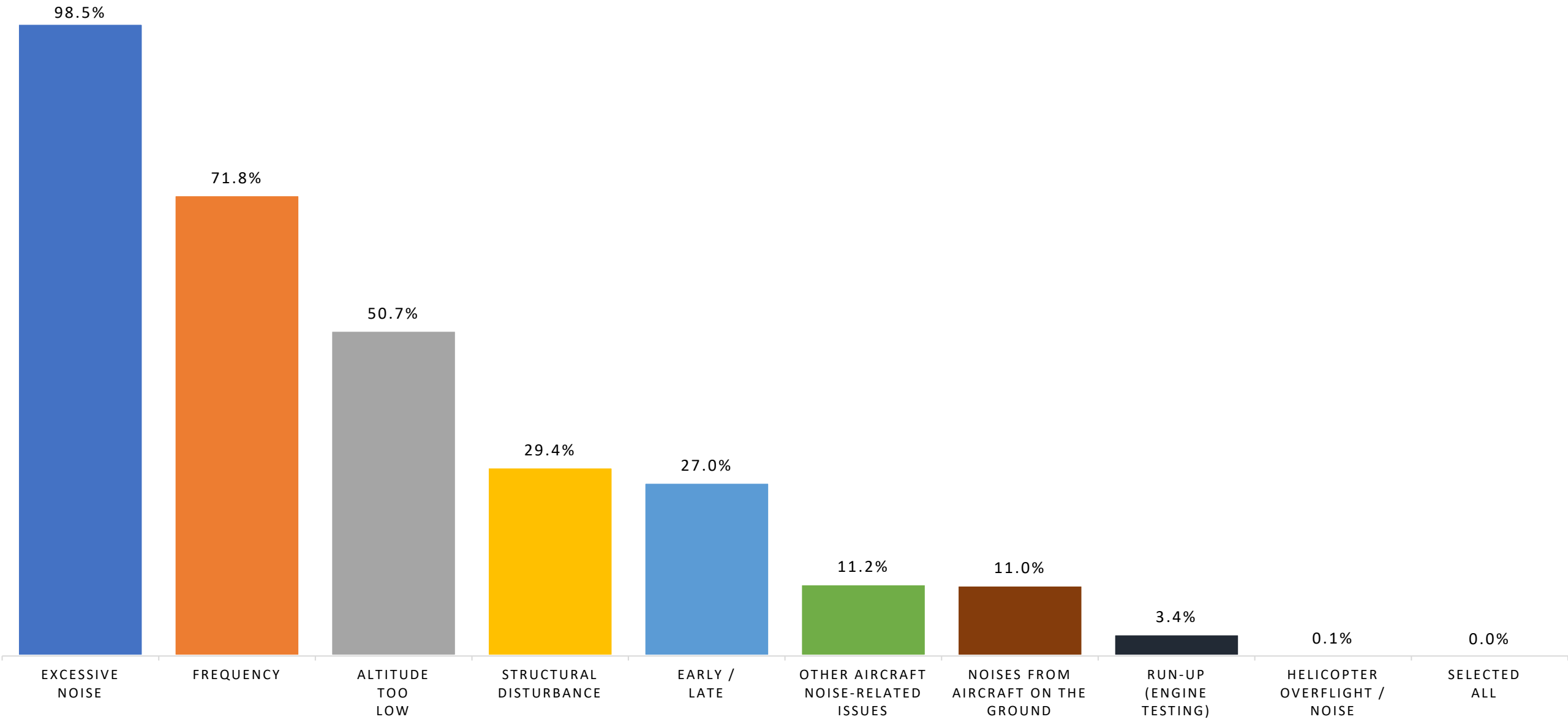
2018-2022 Operations to Complaints Ratio



2021 & 2022 Complaints to Operations Ratio by Hour



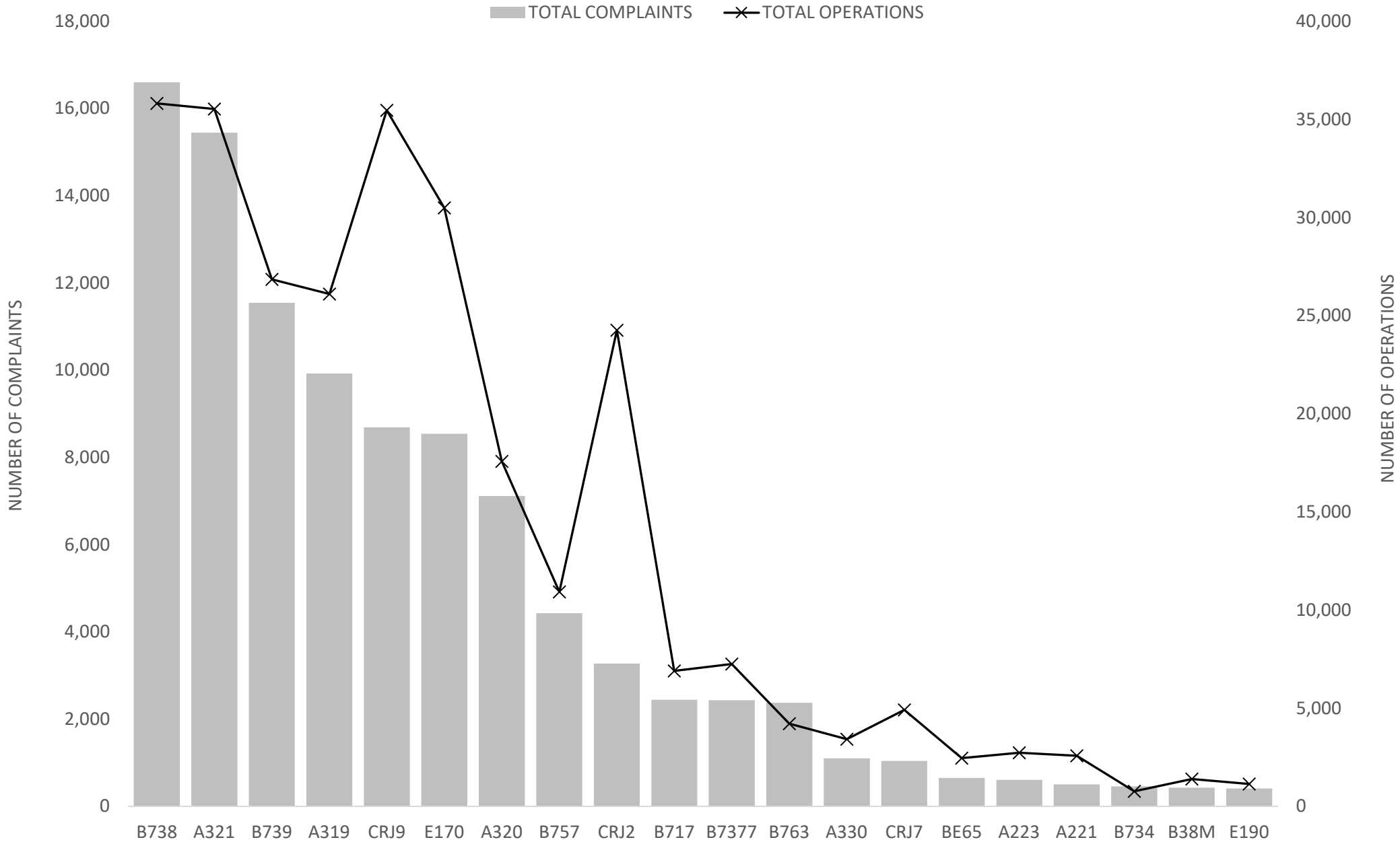
2022 Complaints Filed By Complaint Reason



Operation Type	Total Operations	Total Complaints	Ratio
Commercial Jet	284,965	99,330	2.9
Jet	11,786	1,257	9.4
Turboprop	5,371	882	6.1
Propeller	2,830	696	4.1
Unknown	1,091	45	24.2
Military	138	106	1.3
Helicopter	31	10	3.1

2022 Complaints By Aircraft Category

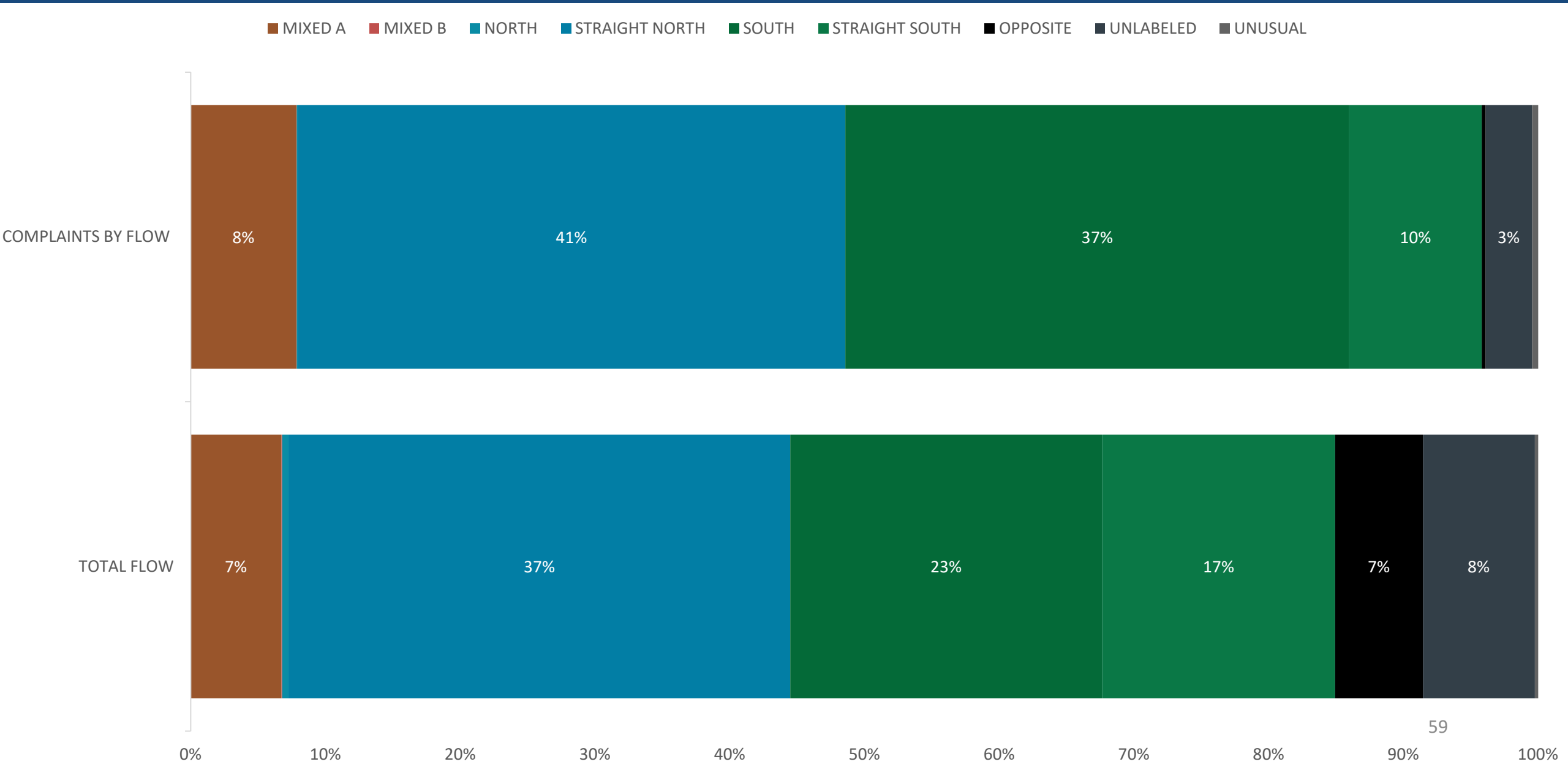
2022 Complaints By Aircraft Type



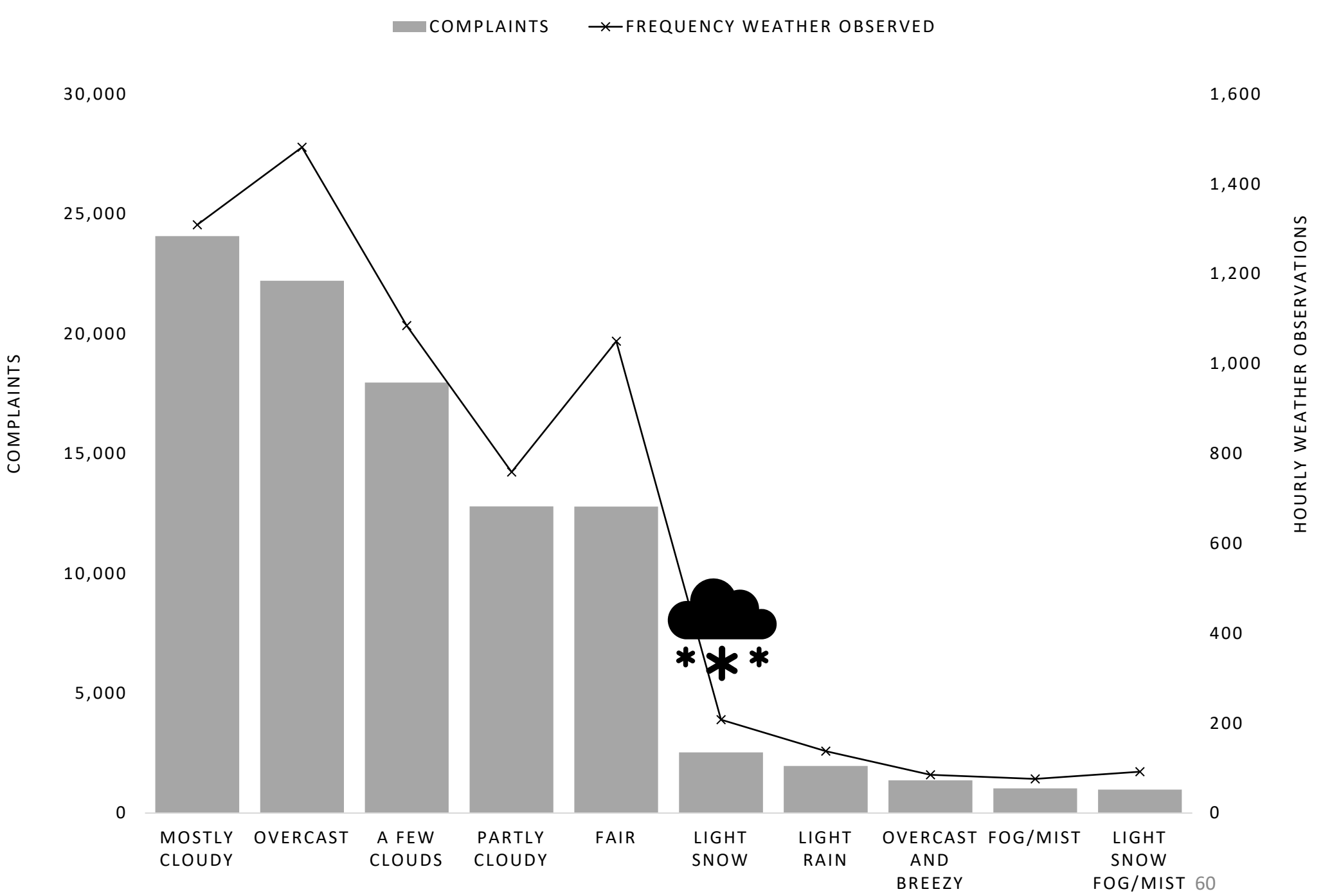
Operation Number	Aircraft Type	Flight ID	Date and Time	Number of Complaints	Number of Households
27918240	F35	NAVY	6/2/2022 12:07	48	47
27688893	B738	SCX745	3/20/2022 8:15	11	8
27931990	B763	FDX1618	6/6/2022 21:57	9	8
27683054	A320	NKS772	3/18/2022 6:51	11	7
28219819	B738	AAL1578	8/1/2022 21:47	15	7
28017434	A321	DAL2326	6/29/2022 21:24	7	7
28446551	B734	ASH185	10/5/2022 22:07	7	7
28229927	MD11	UPS559	8/12/2022 21:43	7	7
28530536	MD11	UPS559	10/31/2022 21:48	8	7
28528440	B738	AAL1325	10/31/2022 6:16	7	7

2022 Top 10 Flights That Generated Complaints

2022 Complaints By Flow



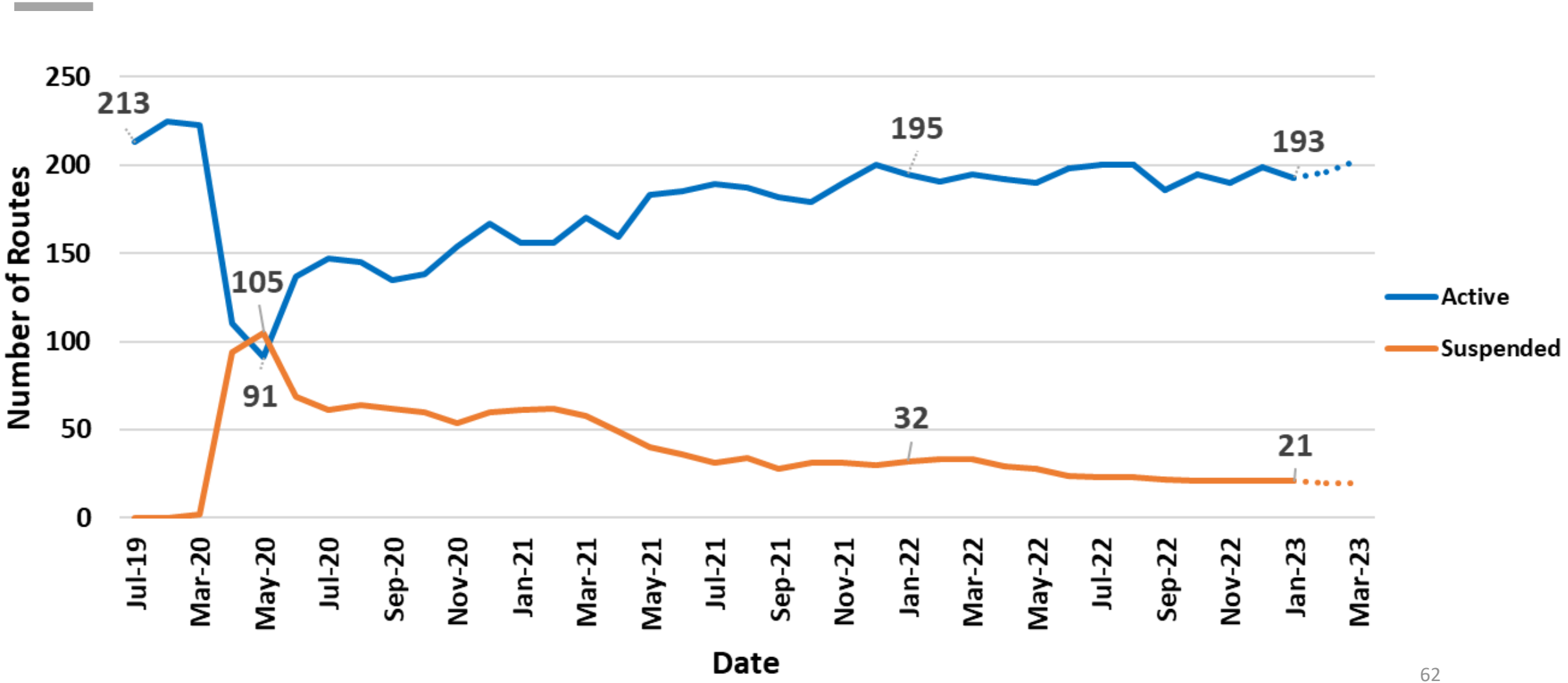
2022 Complaints By Weather



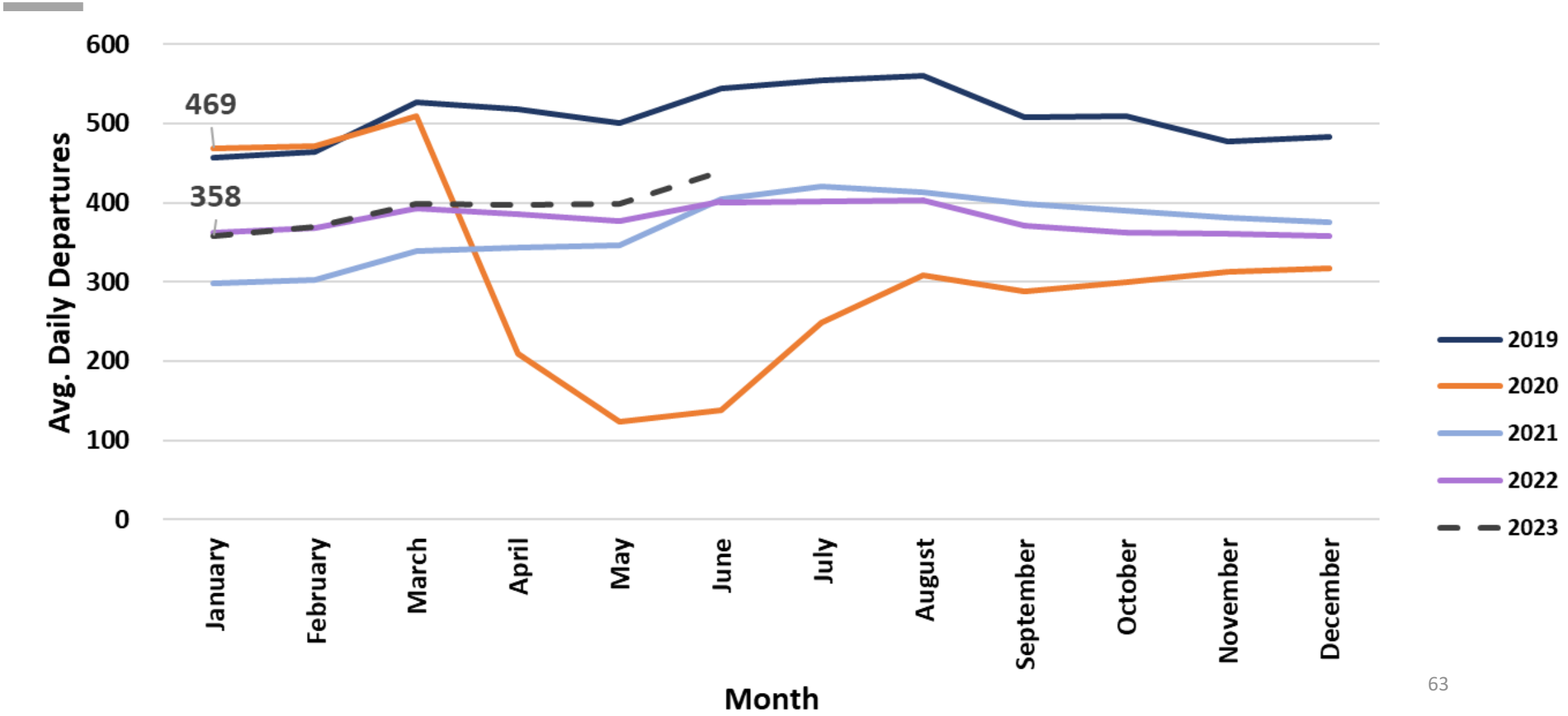
4.4 – MSP AIR SERVICE UPDATES

NOISE OVERSIGHT COMMITTEE
JANUARY 18, 2023

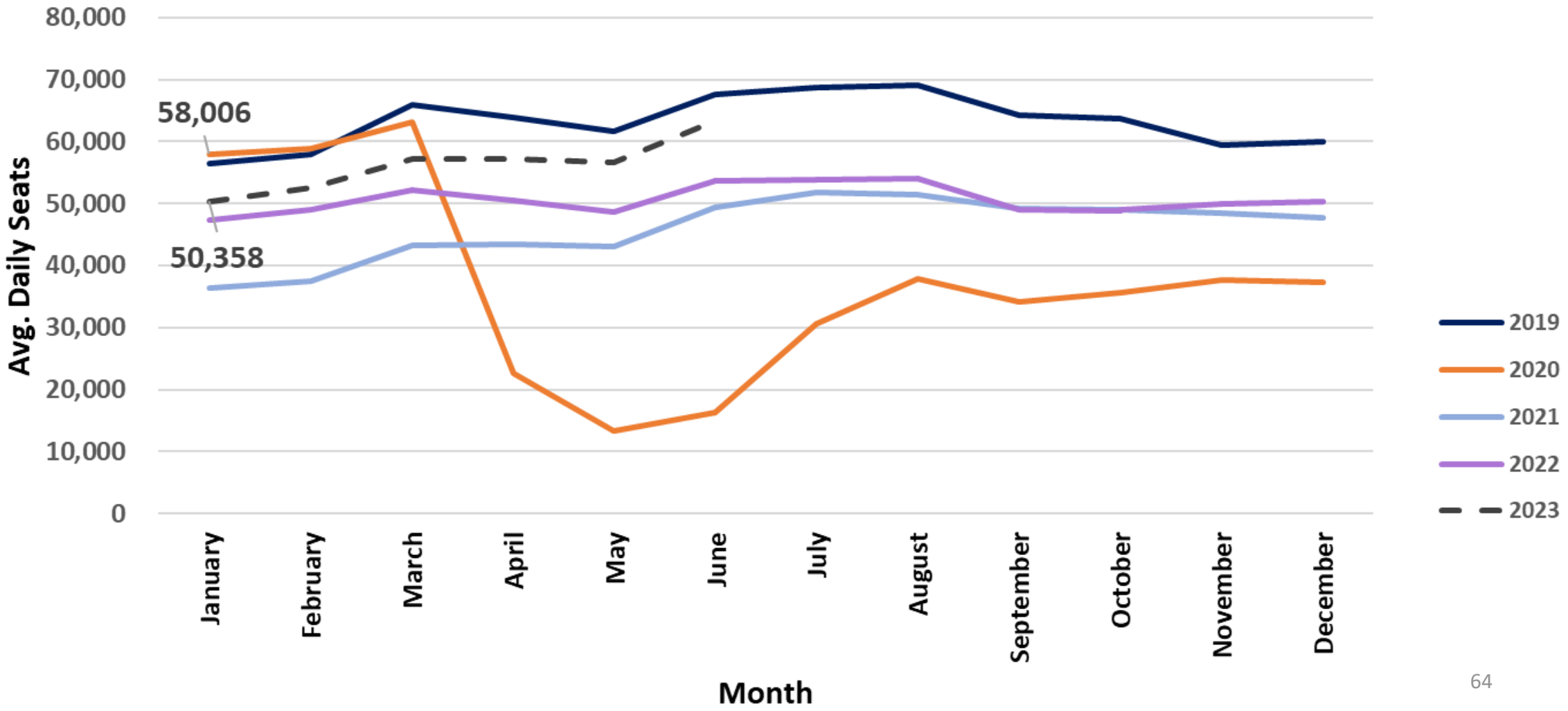
MSP Direct Active / Suspended Routes



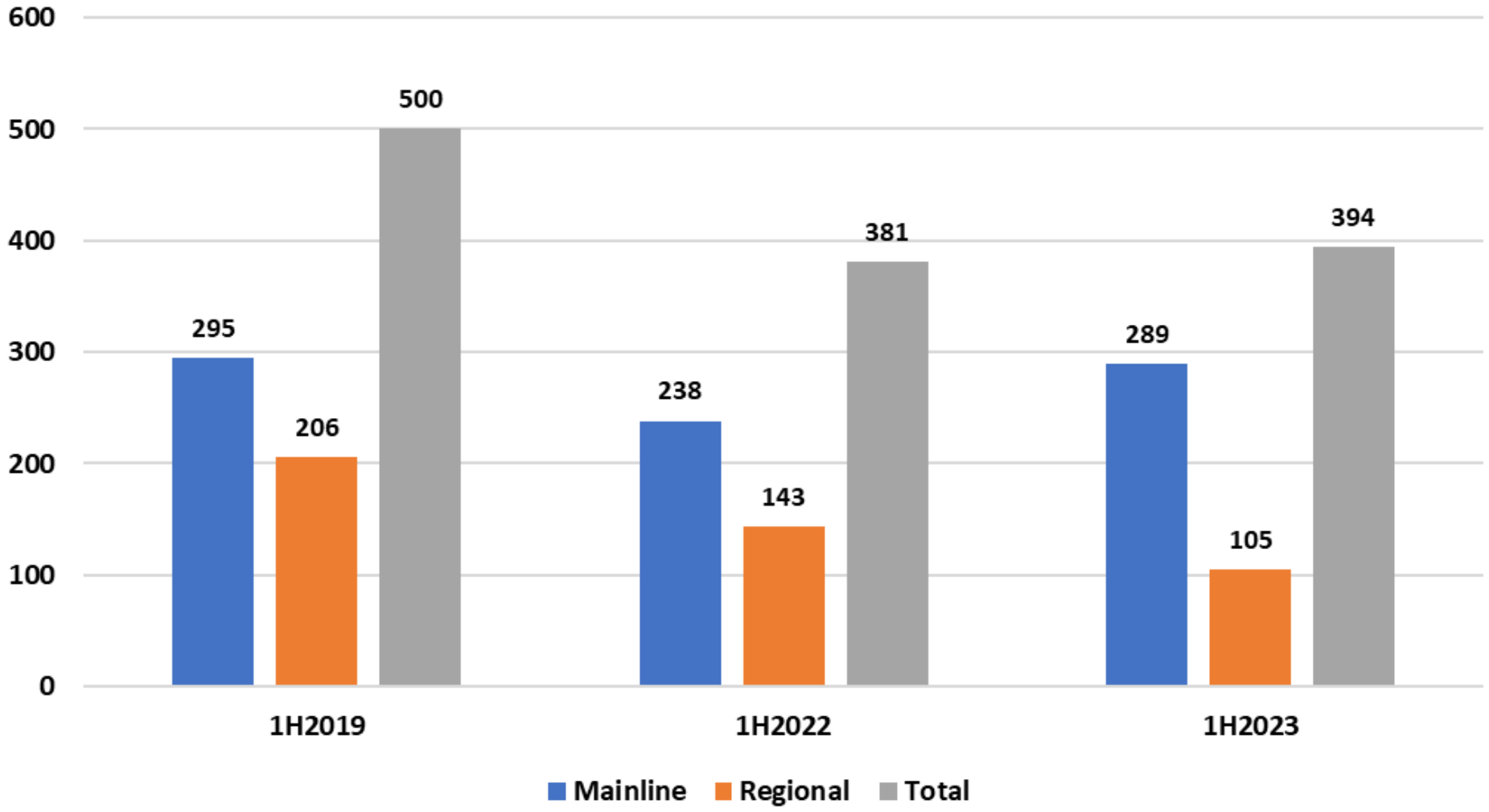
MSP Average Daily Departures Scheduled by Month



MSP Average Daily Departing Scheduled Seats

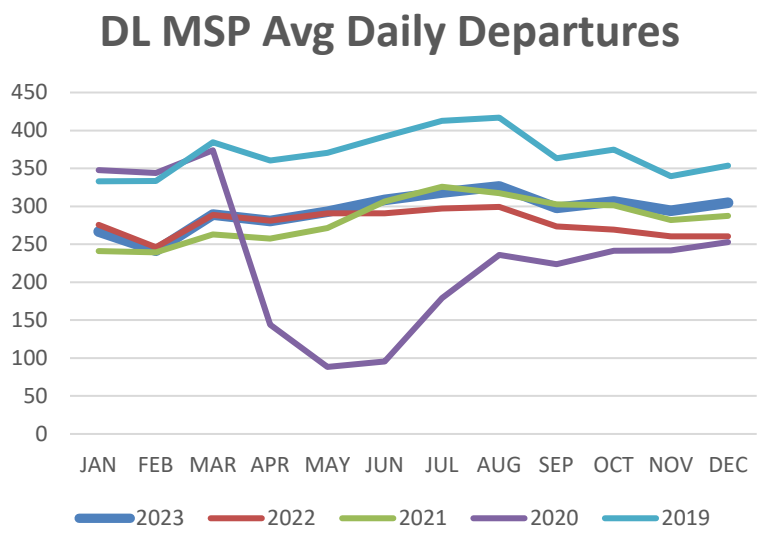


MSP Passenger Airline Average Daily Departures by Aircraft Type



DL MSP Scheduled Operations – 2019-2023

DL MSP Departures at ~80% of pre-covid levels…….



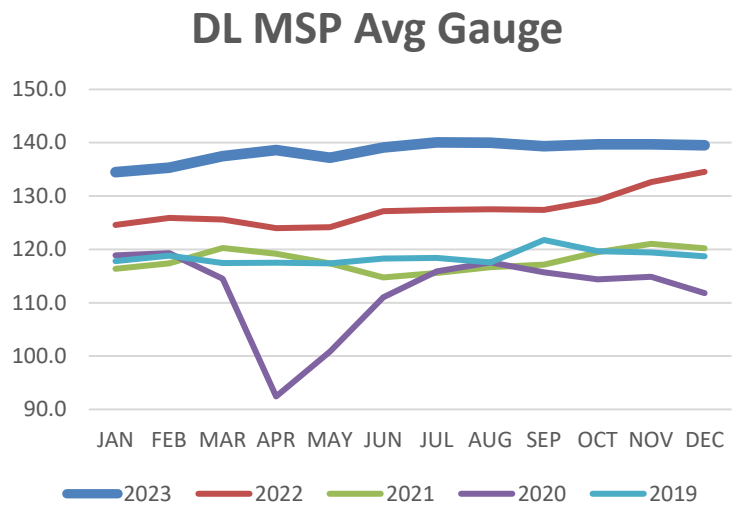
- Data shown is for flights operated thru JAN23 and for flights available for sale FEB23-DEC23
- Actual 2023 operations are subject to change

Summer Schedule Highlights

- **Pacific** – HND restored on 330-900
- **Atlantic** - AMS #3 restored; CDG #2 starts May (from AF)
- **Canada** – increase frequencies to YVR, YYC and YWG
- **Domestic** – new service to CHS, JAX, AVL, BTV, COS, JAC, RNO; increased frequencies to AUS, SFO, SJC, BOS, PIT, SAT, PHL, ORD, DEN, MIA and FLL

DL MSP Scheduled Operations – 2019-2023

…but total seats are recovered to ~95% due to ~17% growth in average gauge

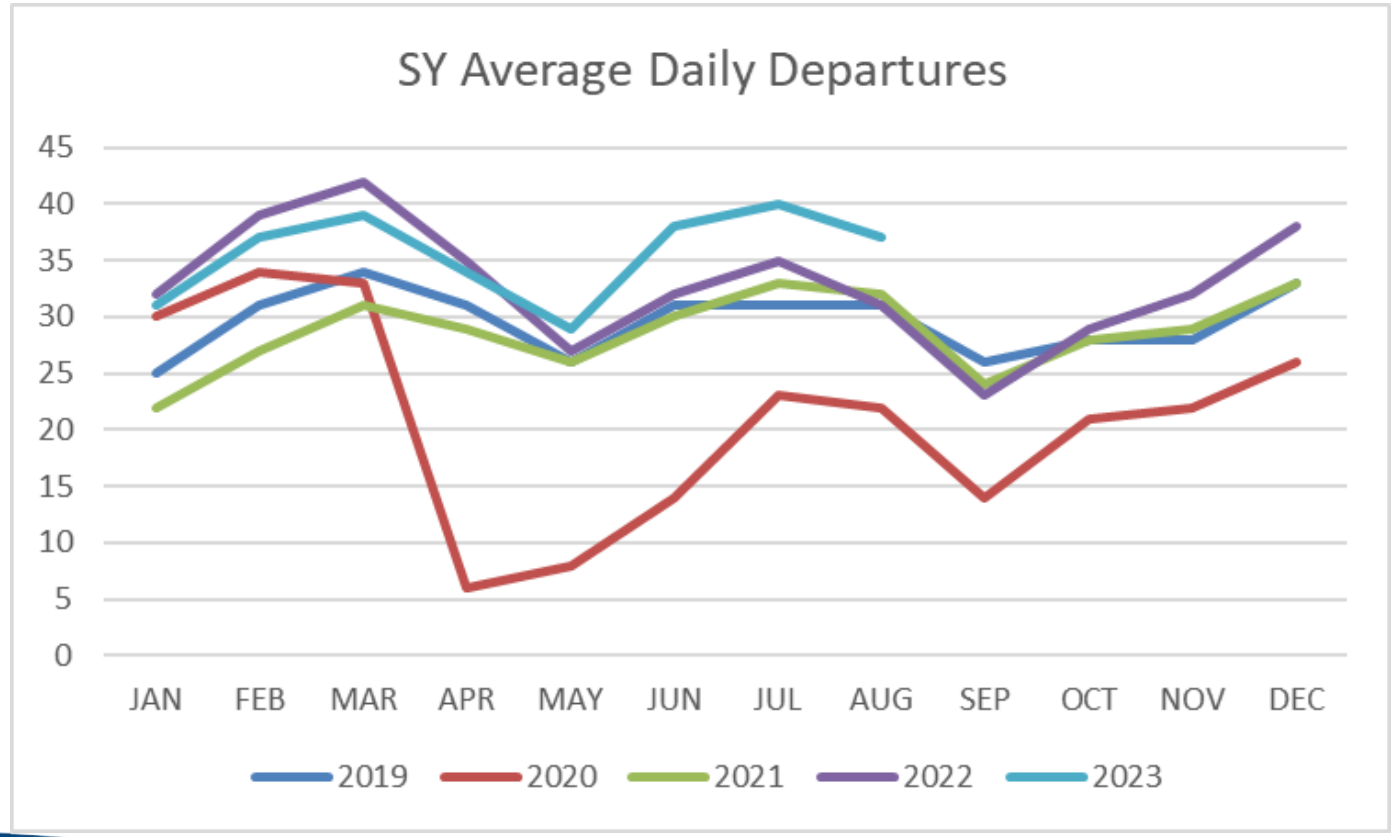


- Data shown is for flights operated thru JAN23 and for flights available for sale FEB23-DEC23
- Actual 2023 operations are subject to change

Fleet Mix Evolution

- 757 departures decrease 43% YOY
- CRJ-200 departures decrease 27% YOY
- 737-800/900 departures increase 72% YOY
- Long-term plan is to remove all CRJ-200 and 757 aircraft
- 321ceo expected to be introduced in 2024

Sun Country Service Update



2023 New destinations from MSP

- ACY
- CLT
- CMH
- COS
- DTW
- ILM
- JFK
- MCI
- MKE
- OMA
- RAP
- RIC
- SDF
- STL
- TVC

ITEM 5
ANNOUNCEMENTS

Winter Listening Session

Wednesday, January 25, 2023 @ 6:00 PM

March NOC Meeting

Wednesday, March 15, 2023 @ 1:30 PM