



NOISE OVERSIGHT COMMITTEE

JANUARY 24, 2018

Audio recordings are made of this meeting

ITEM 1

REVIEW AND APPROVAL OF NOVEMBER 15, 2017 MEETING MINUTES



NOISE OVERSIGHT COMMITTEE
JANUARY 24, 2018



ITEM 2

REVIEW OF MONTHLY OPERATIONS REPORTS: NOVEMBER AND DECEMBER 2017



NOISE OVERSIGHT COMMITTEE
JANUARY 24, 2018



MSP OPERATIONS

NOVEMBER 2017

32,268

Operations

1,789

Nighttime Operations
(10:30 PM – 6:00 AM)

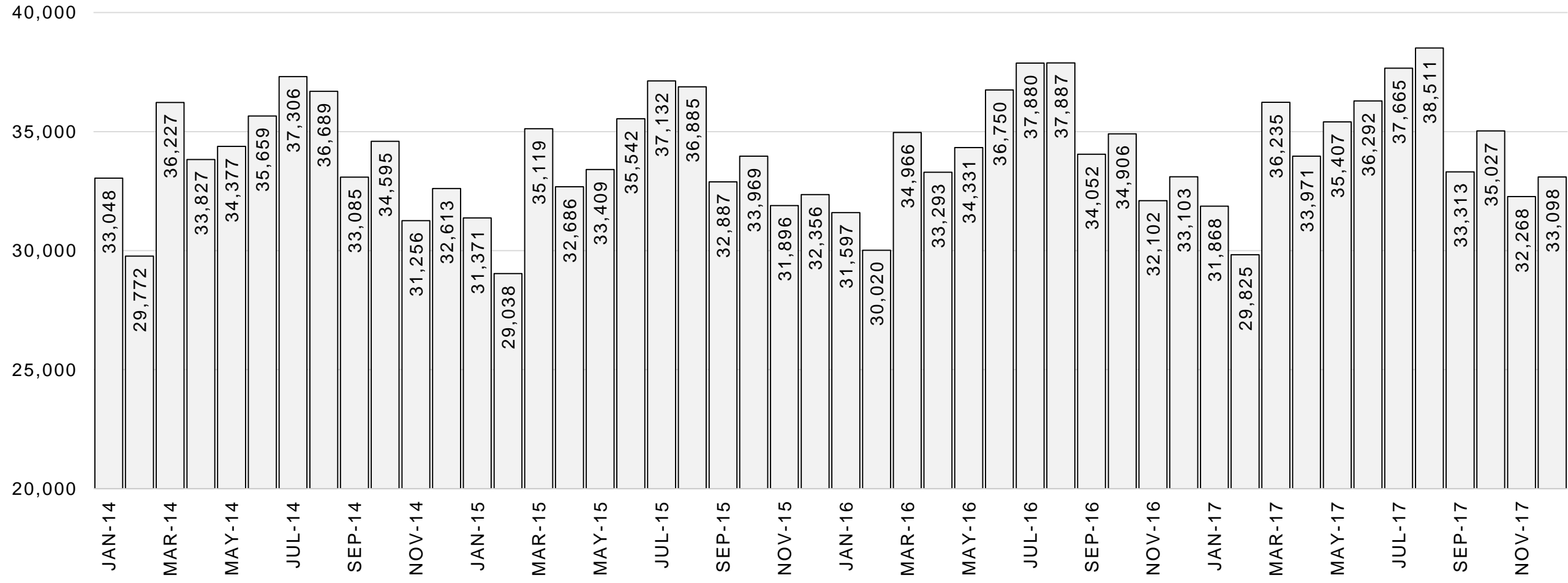
DECEMBER 2017

33,098

Operations

2,119

Nighttime Operations
(10:30 PM – 6:00 AM)



MSP OPERATIONS

NOVEMBER 2017

32,268

Operations

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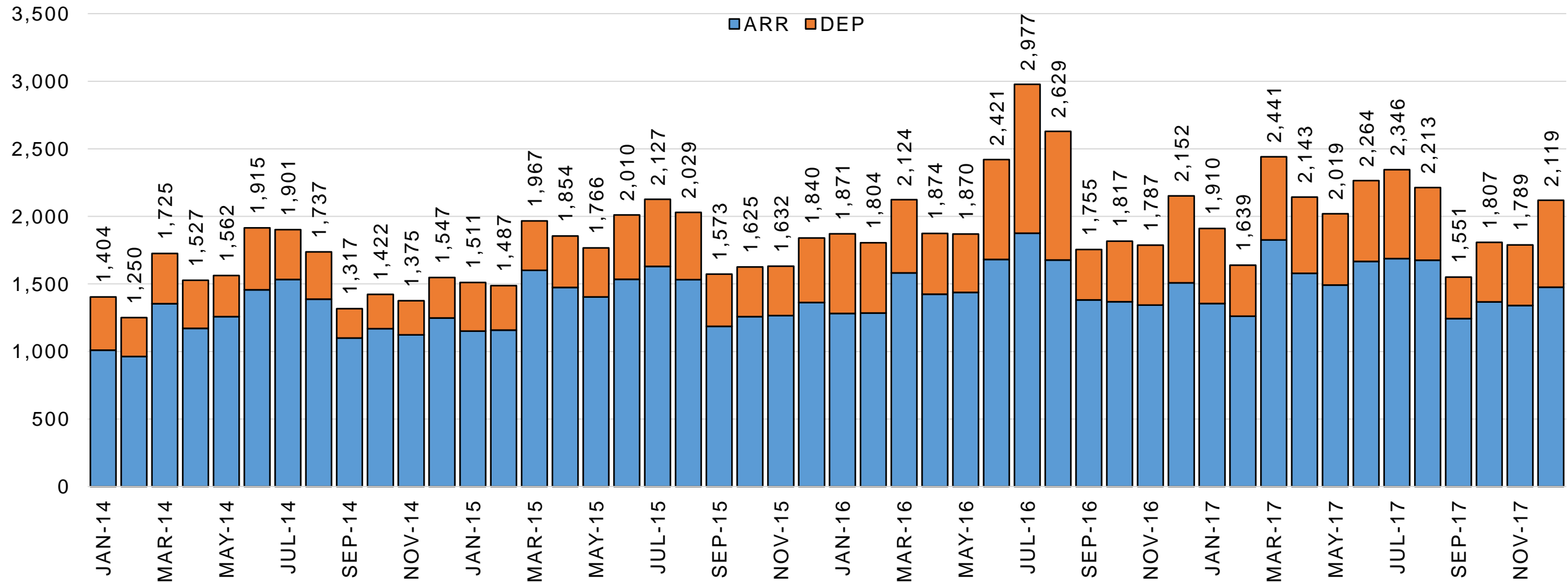
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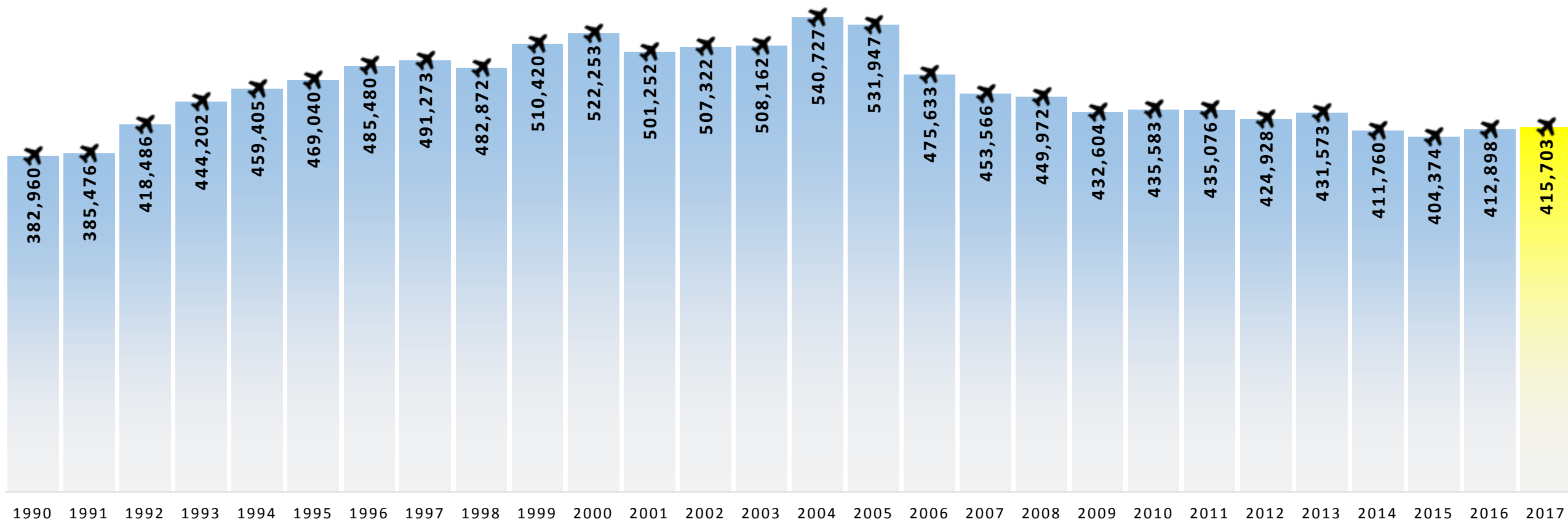
Nighttime Operations
(10:30 PM – 6:00 AM)



MSP OPERATIONS

2012 Operations	2013 Operations	2014 Operations	2015 Operations	2016 Operations	2017 Operations
421,153	430,308	408,454	402,290	410,887	413,480
2012 Night Ops	2013 Night Ops	2014 Night Ops	2015 Night Ops	2016 Night Ops	2017 Night Ops
15,902	16,877	18,682	21,421	25,081	24,241

SOURCE: MACNOMS



SOURCE: FAA OPSNET

2017 RUNWAY USE

206,667
DEPARTURES RECORDED

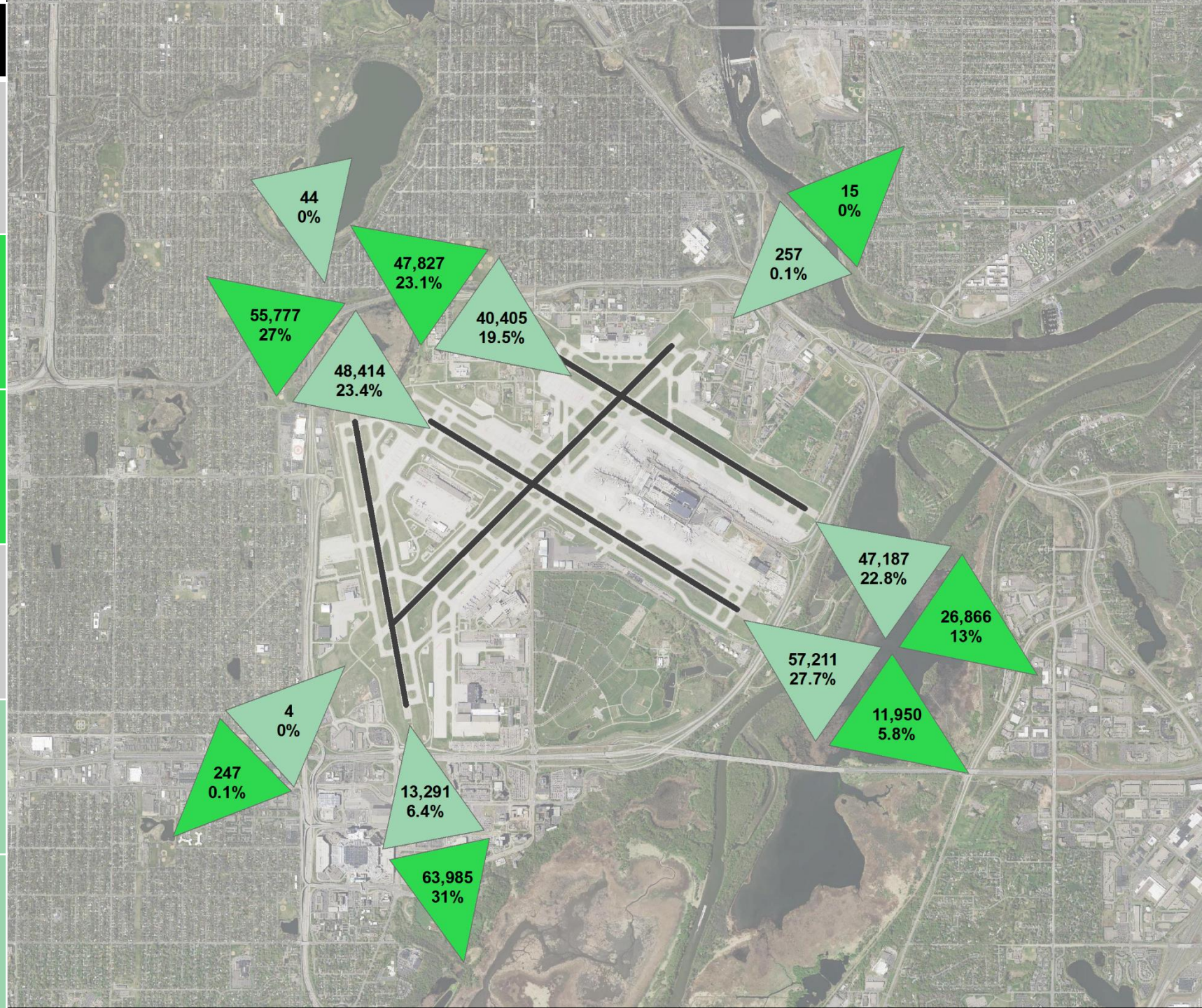
50.1%
RUNWAYS 30L OR 30R

49.7%
RUNWAYS 12L, 12R OR 17

206,813
ARRIVALS RECORDED

56.9%
RUNWAYS 30L, 30R OR 35

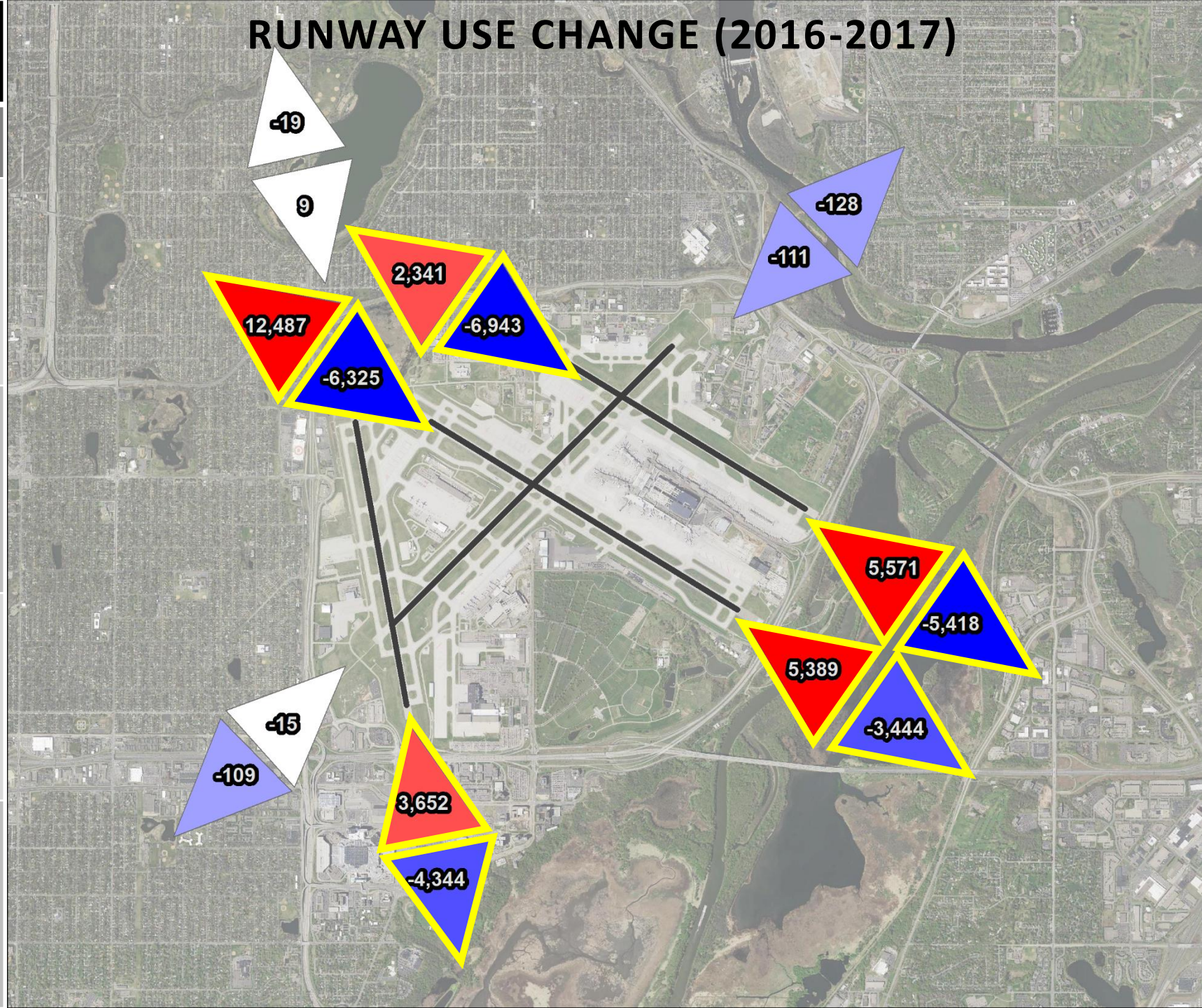
42.9%
RUNWAYS 12L OR 12R



2017 FLOW BY HOURS

YEAR	NORTH	SOUTH	MIXED
2014	44.82%	38.42%	6.82%
2015	36.17%	47.00%	8.37%
2016	33.53%	48.46%	10.22%
2017	40.33%	40.64%	10.78%

RUNWAY USE CHANGE (2016-2017)

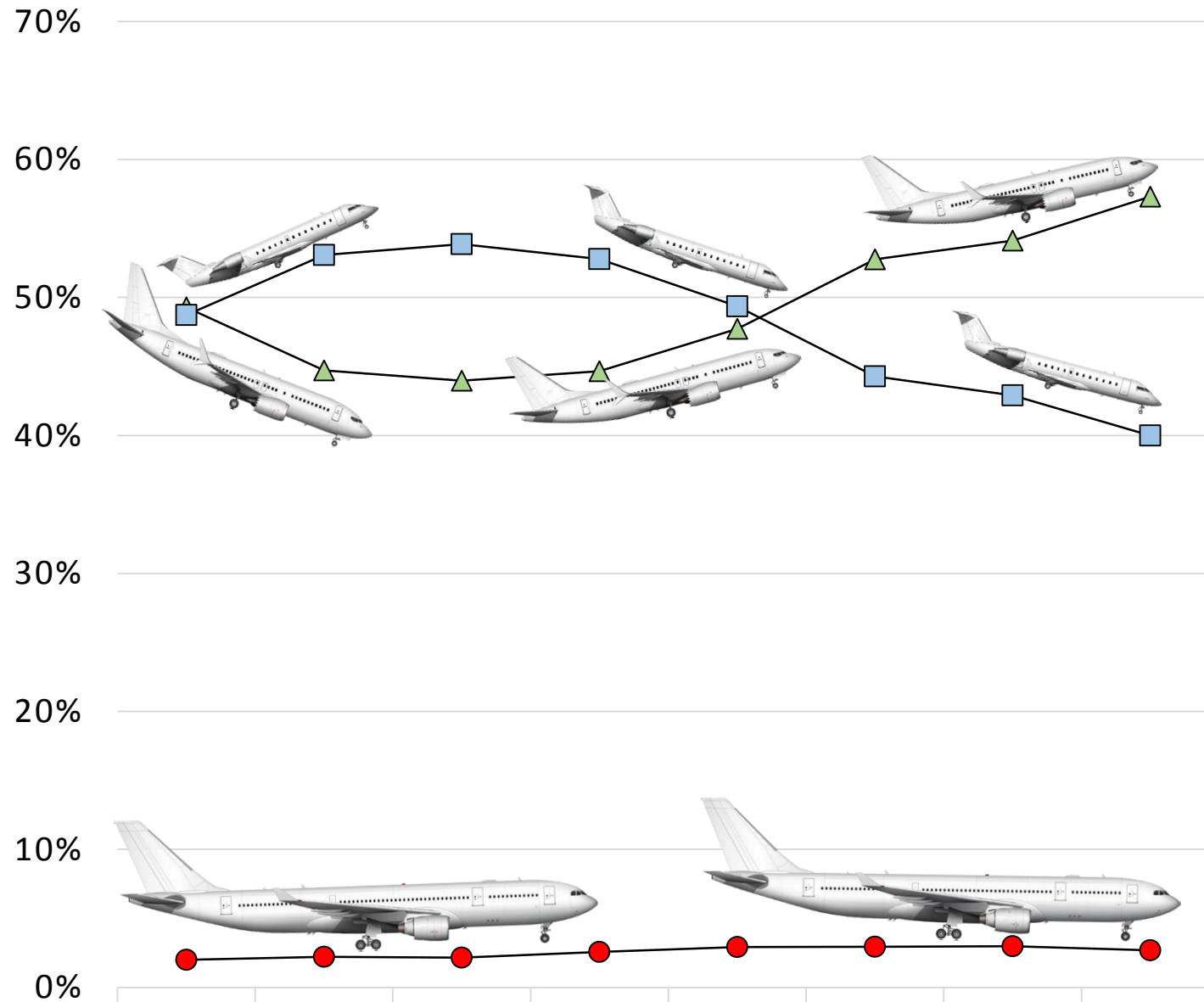


2017 CARRIER JET USE

151,968
OPERATIONS

217,757
OPERATIONS

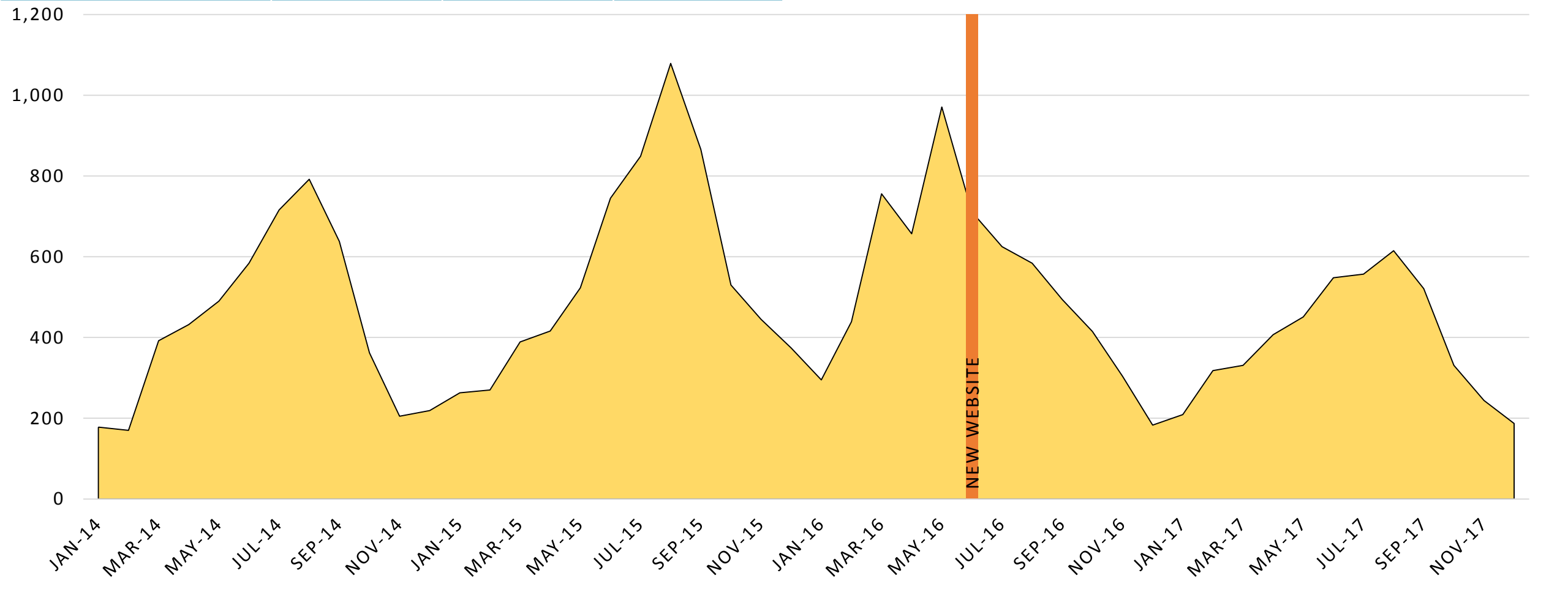
10,250
OPERATIONS



	2010	2011	2012	2013	2014	2015	2016	2017
▲-NARROWBODY	49.3%	44.7%	44.0%	44.7%	47.7%	52.8%	54.1%	57.3%
■-RJ	48.7%	53.1%	53.9%	52.8%	49.4%	44.3%	42.9%	40.0%
●-WIDEBODY	2.0%	2.2%	2.2%	2.6%	2.9%	2.9%	3.0%	2.7%

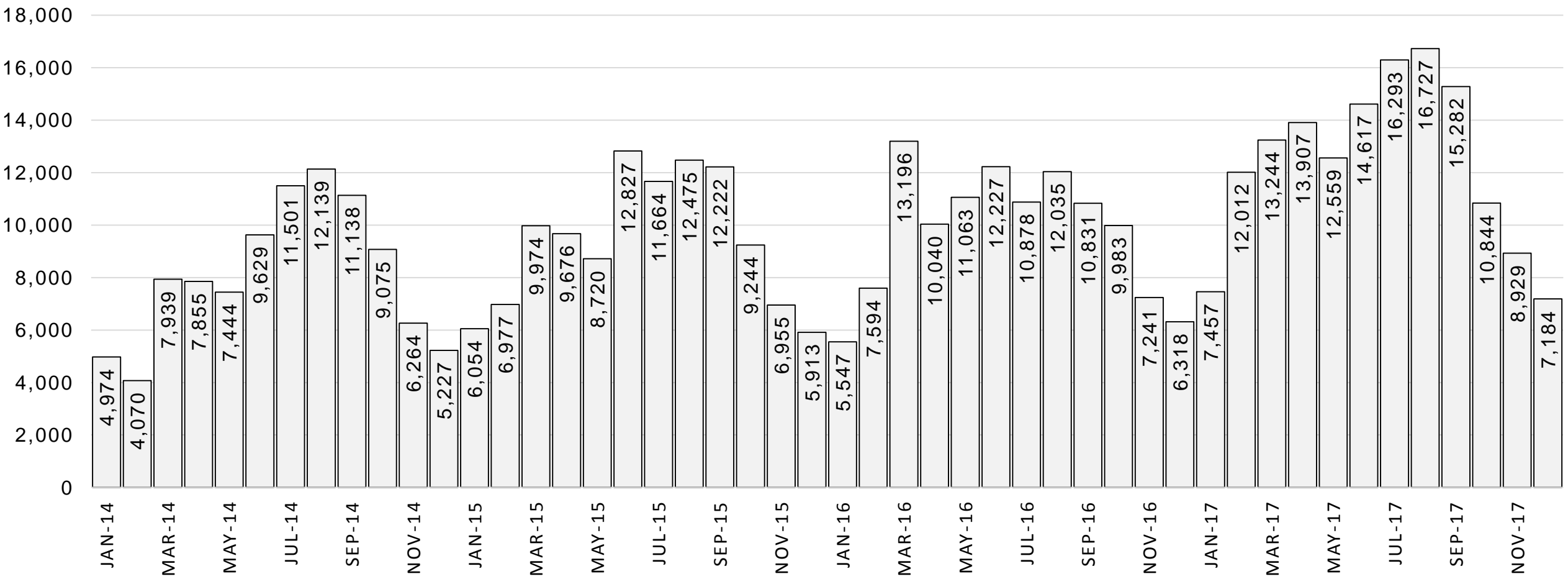
MSP COMPLAINTS

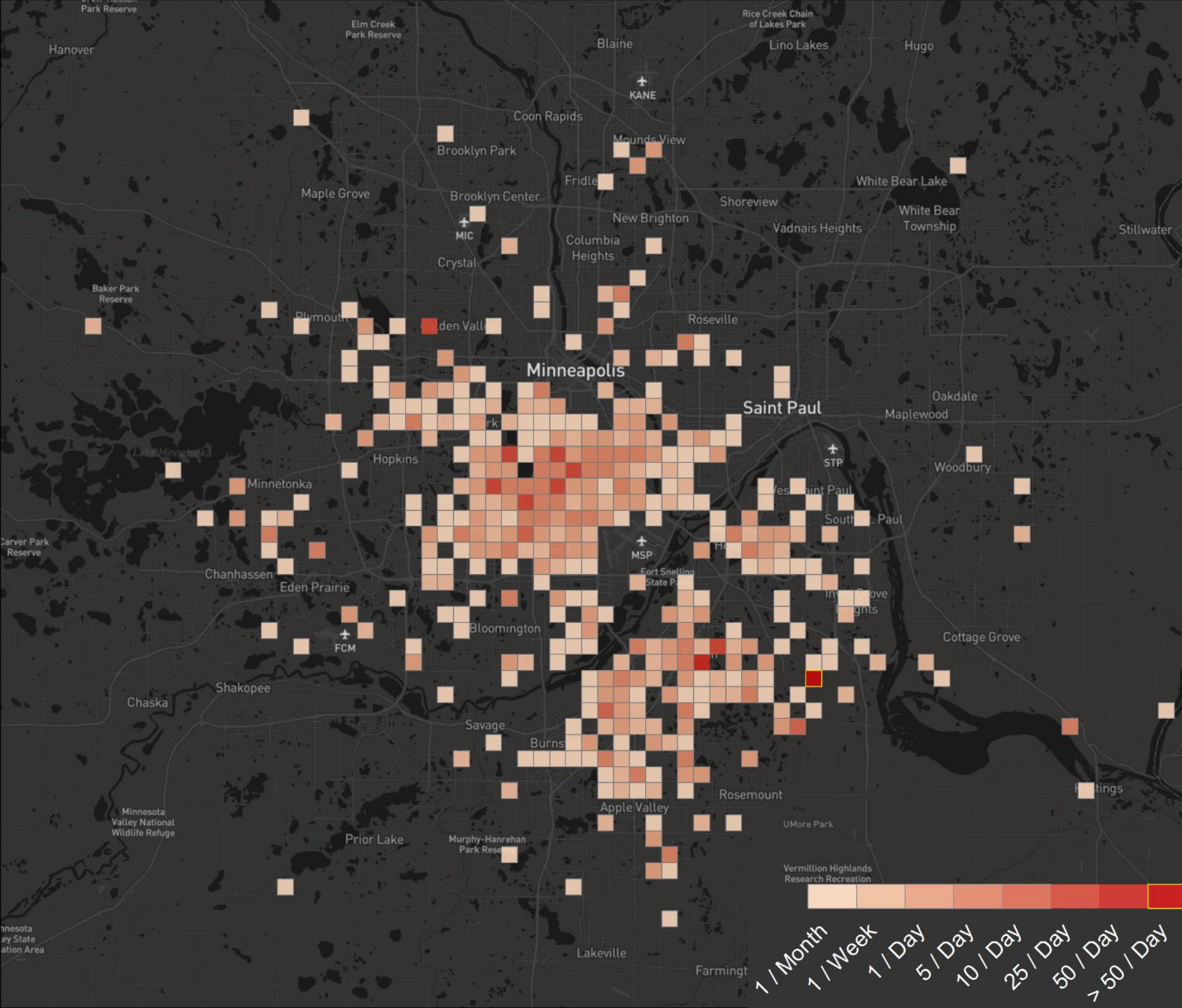
NOVEMBER 2017				DECEMBER 2017			
COMPLAINTS	LOCATIONS			COMPLAINTS	LOCATIONS		
8,929	244			7,184	187		
Operations per Complaint	New Locations	Average	Median	Operations per Complaint	New Locations	Average	Median
3.6	15	37	3	4.6	11	38	4



MSP COMPLAINTS

NOVEMBER 2017				DECEMBER 2017			
COMPLAINTS	LOCATIONS			COMPLAINTS	LOCATIONS		
8,929	244			7,184	187		
Operations per Complaint	New Locations	Average	Median	Operations per Complaint	New Locations	Average	Median
3.6	15	37	3	4.6	11	38	4





2017 COMPLAINTS

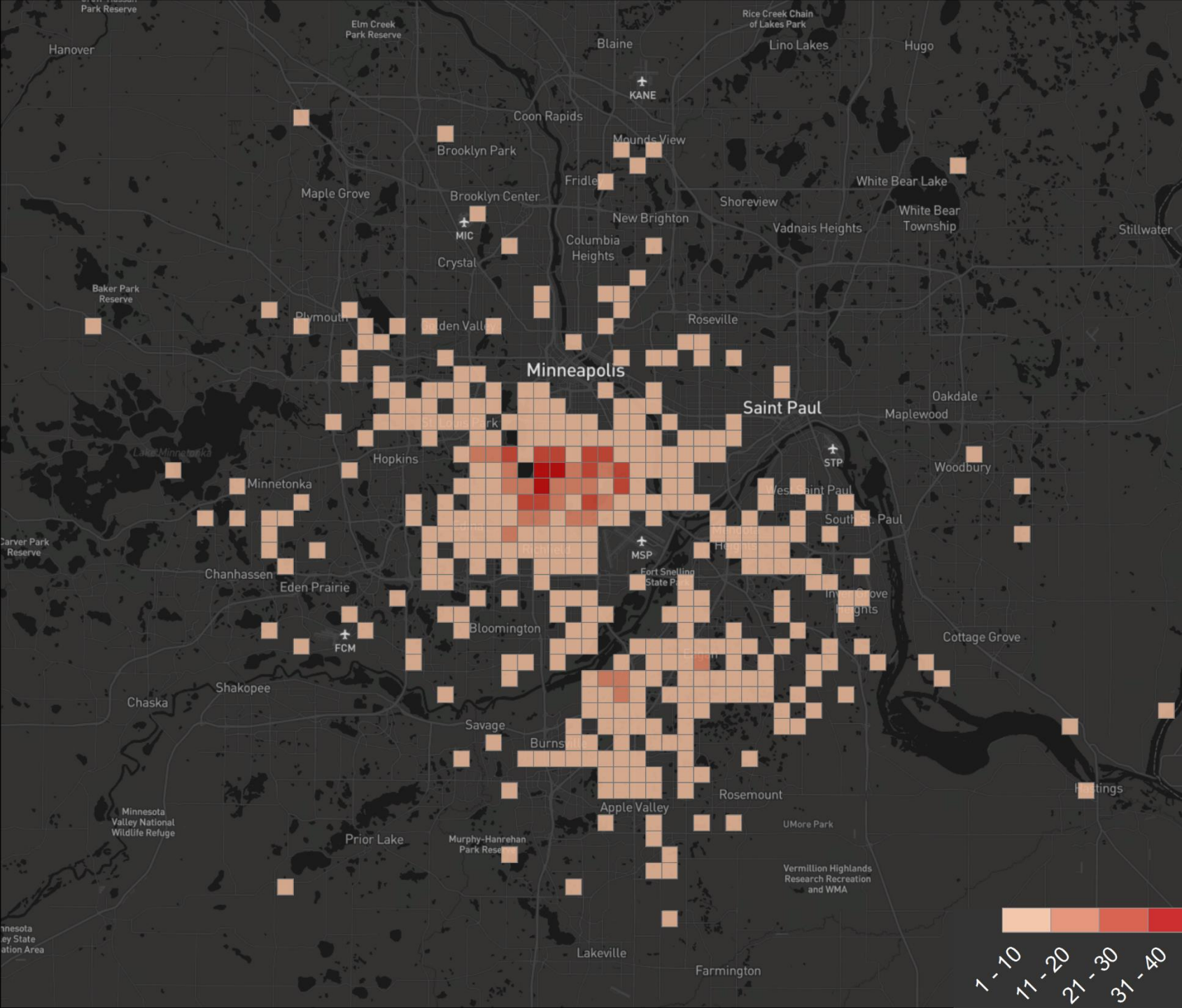
149,055
MSP COMPLAINTS RECEIVED

1
AREAS WITH MORE THAN 50
COMPLAINTS PER DAY

1
AREAS BETWEEN 25 AND 50
COMPLAINTS PER DAY

8
AREAS WITH BETWEEN 10 AND 25
COMPLAINTS PER DAY

179
AREAS WITH 1 OR LESS COMPLAINT
PER MONTH



2017 LOCATIONS

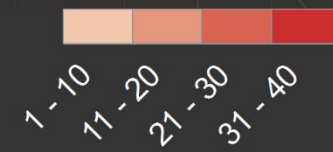
1,621
LOCATIONS FILED A COMPLAINT

3
AREAS WITH MORE THAN 30
LOCATIONS

11
AREAS WITH BETWEEN 21 AND 30
LOCATIONS

21
AREAS WITH BETWEEN 11 AND 20
LOCATIONS

368
AREAS 10 OR LESS LOCATIONS





2017 TOP 10 BY COUNT

78,106
(52%)
MSP COMPLAINTS RECEIVED

2017 TOP 25 BY COUNT

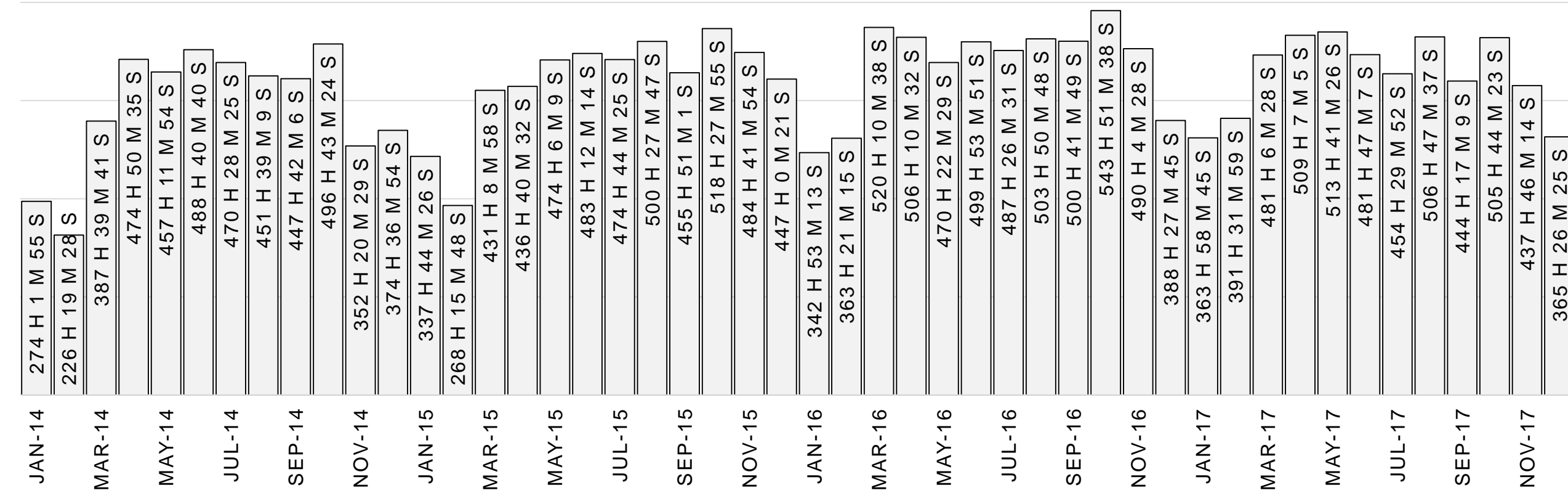
101,761
(68%)
MSP COMPLAINTS RECEIVED

2017 LOCATIONS

1,146
(71%)
FILED 10 OR LESS COMPLAINTS

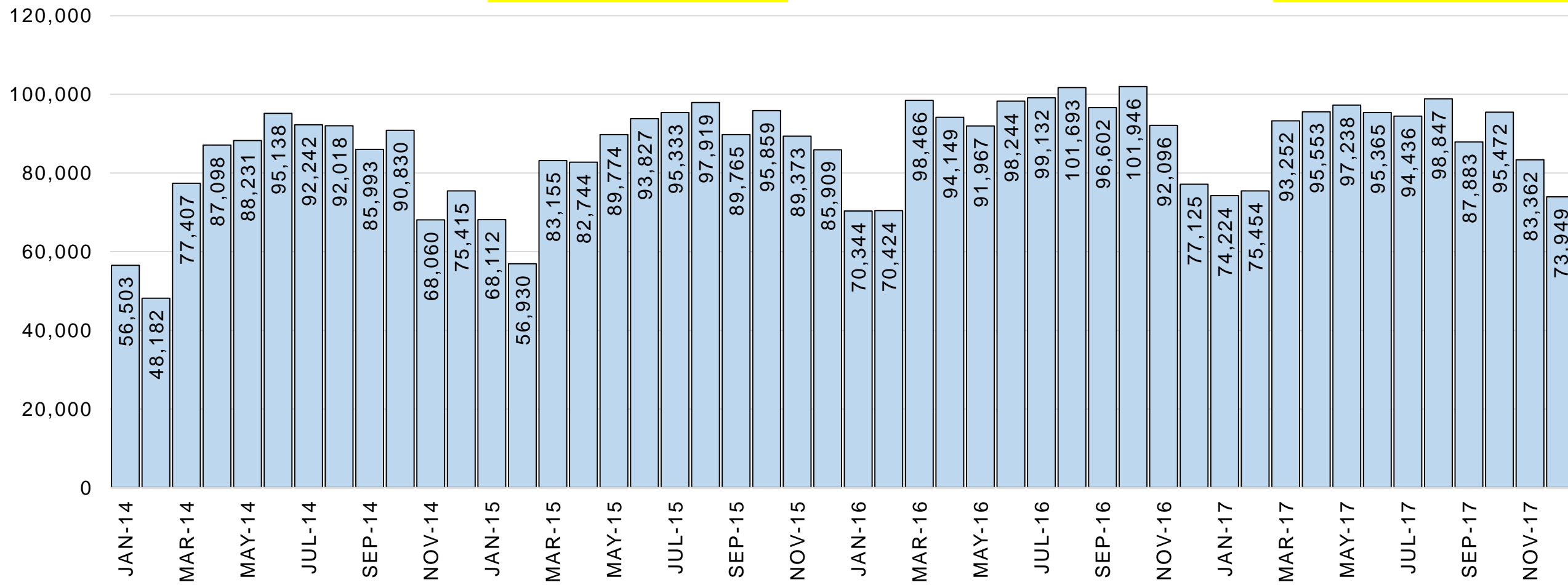
SOUND MONITORING

NOVEMBER 2017			DECEMBER 2017		
Time Above	49 _s TA ⁶⁵ per operation	437 _h 46 _m TA ⁶⁵	Time Above	40 _s TA ⁶⁵ per operation	365 _h 26 _m TA ⁶⁵
Count Above	2.58 N ⁶⁵ per operation	83,362 N ⁶⁵	Count Above	2.23 N ⁶⁵ per operation	73,949 N ⁶⁵



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ANNUAL RMT DATA

COUNT ABOVE
(N⁶⁵)

TIME ABOVE
(TA⁶⁵)

2014
957,117
EVENTS

2014
4,902
HOURS

2015
1,028,700
EVENTS

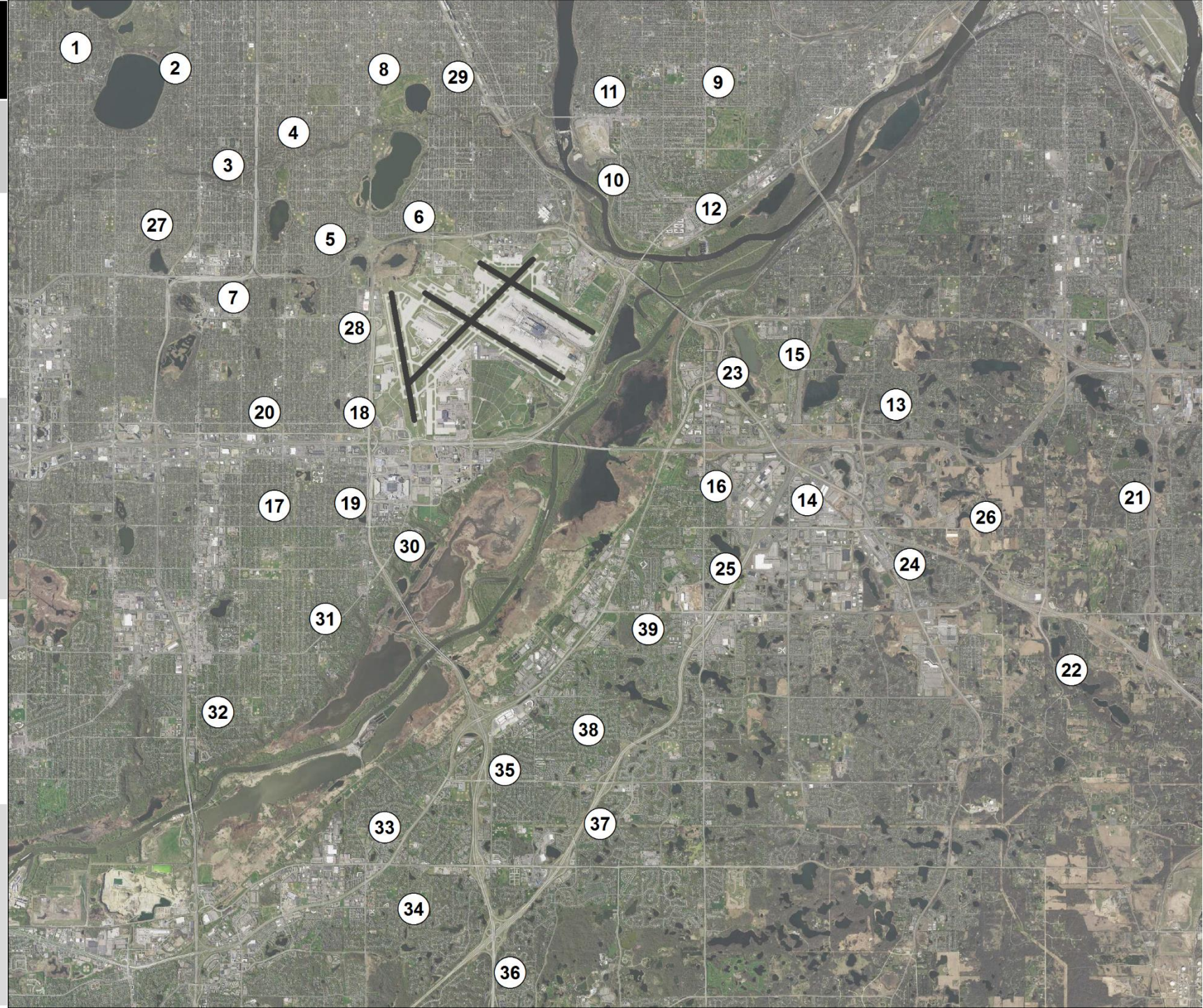
2015
5,312
HOURS

2016
1,092,188
EVENTS

2015
5,617
HOURS

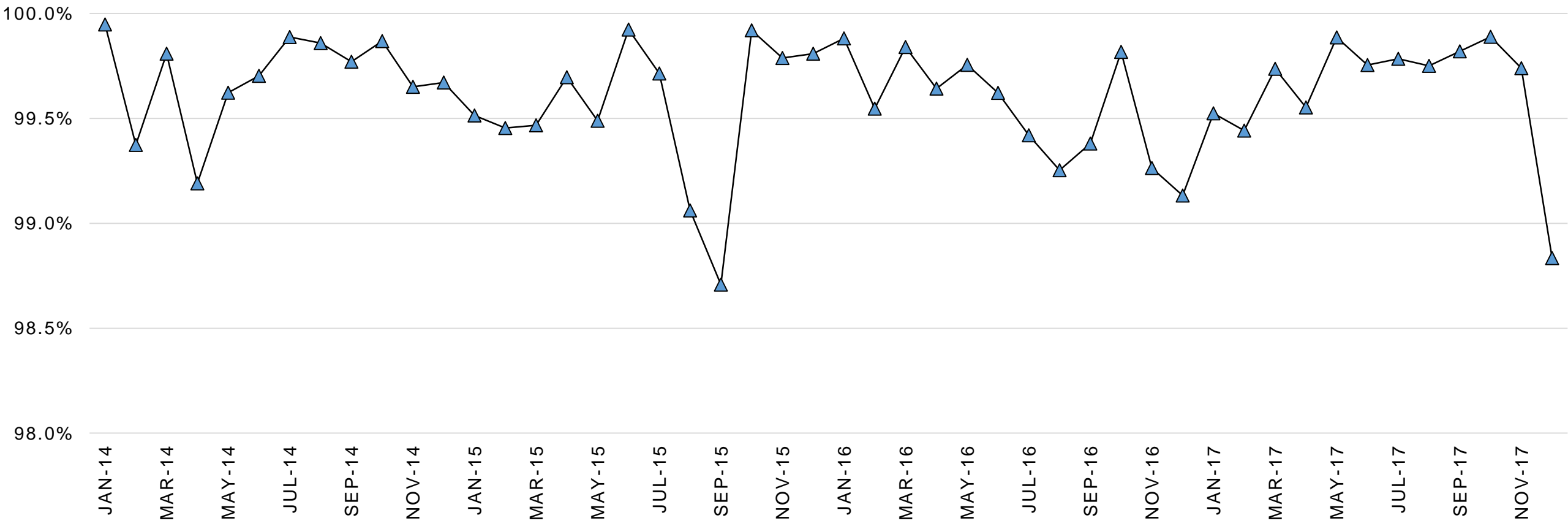
2017
1,065,035
EVENTS

2017
5,456
HOURS



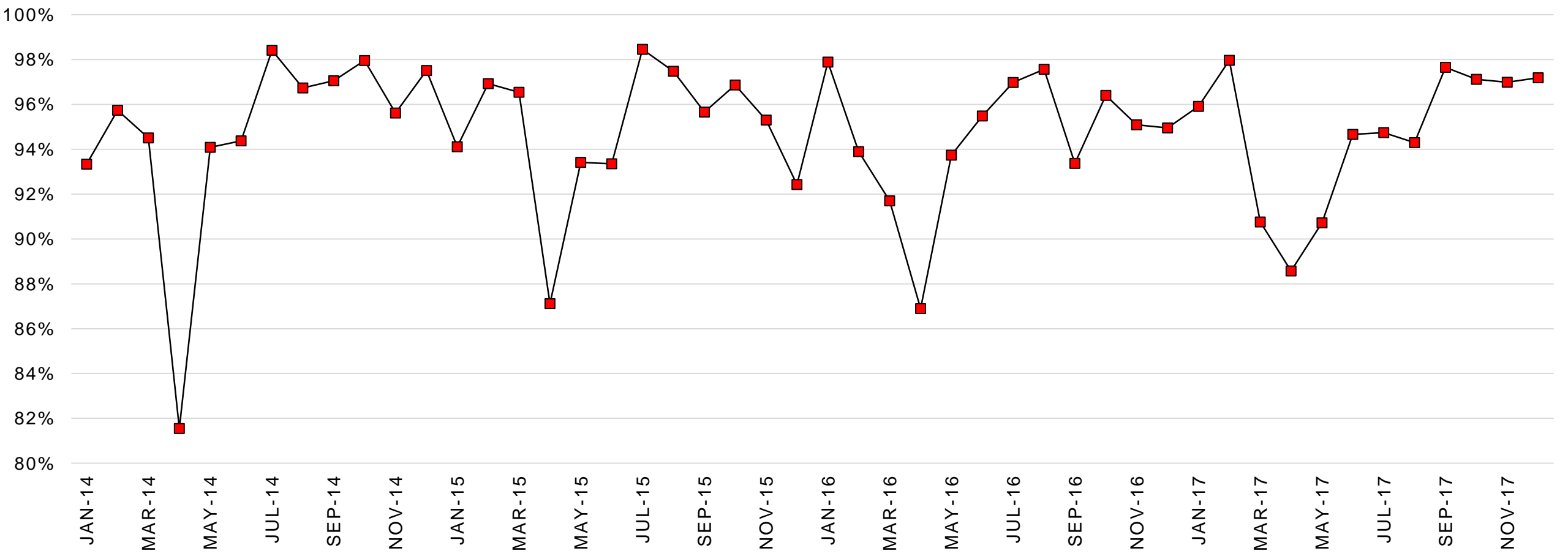
NOISE ABATEMENT

NOVEMBER 2017				DECEMBER 2017			
Runway 17	99.7%	Cross Day	25.2%	Runway 17	98.8%	Cross Day	31.2%
Corridor	97.0%	Cross Night	45.0%	Corridor	97.2%	Cross Night	33.8%
RUS	54.1%	Arrive – 57%	Depart – 51%	RUS	55.1%	Arrive – 72%	Depart – 39%



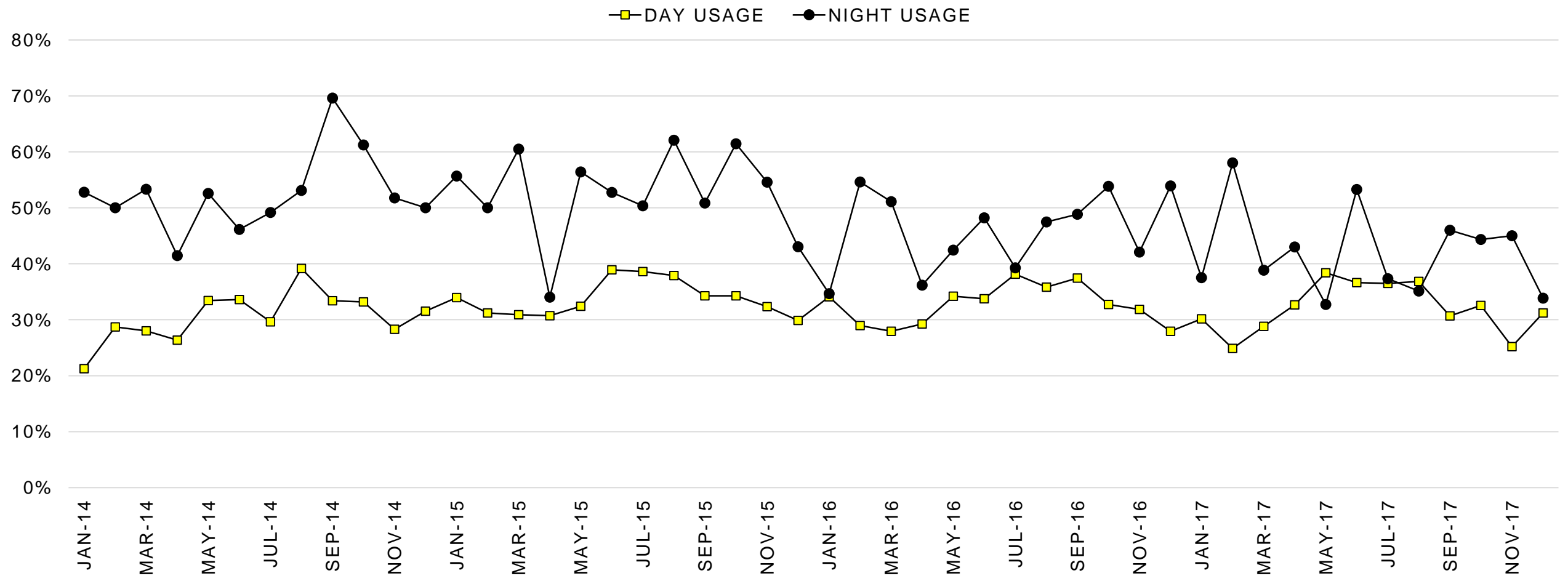
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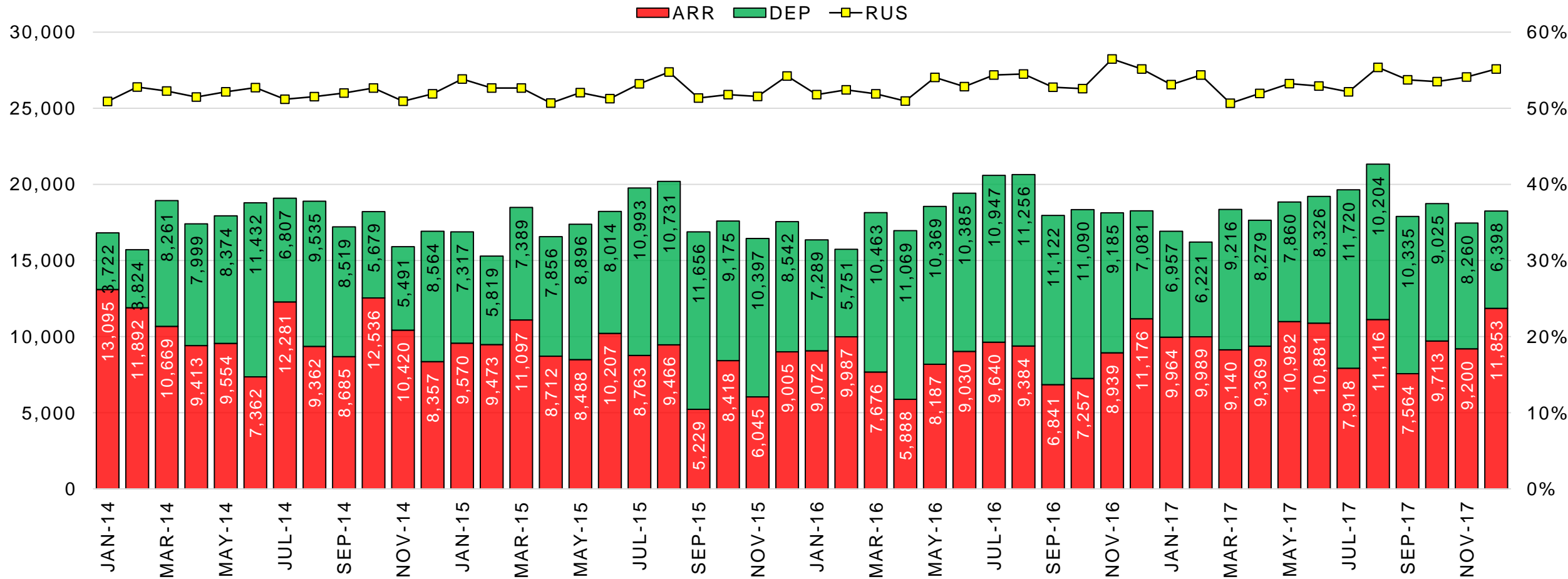


NOISE ABATEMENT

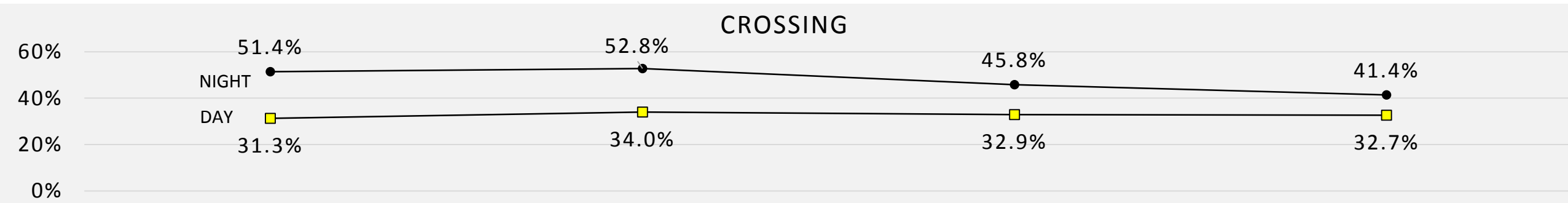
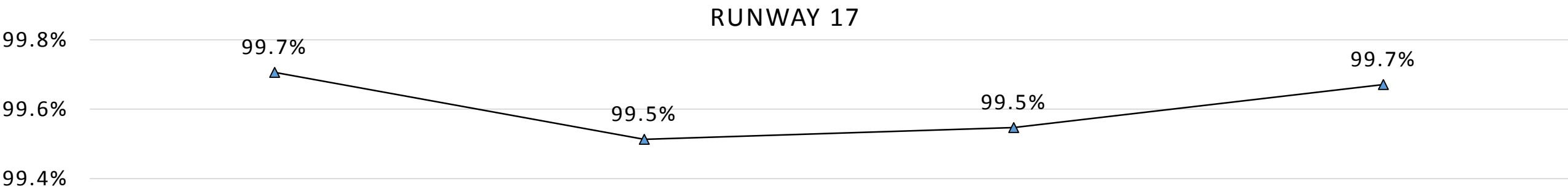
NOVEMBER 2017

DECEMBER 2017

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NOISE ABATEMENT



ITEM 3

UPDATE ON PHOENIX SKY HARBOR INTERNATIONAL AIRPORT PBN RULING

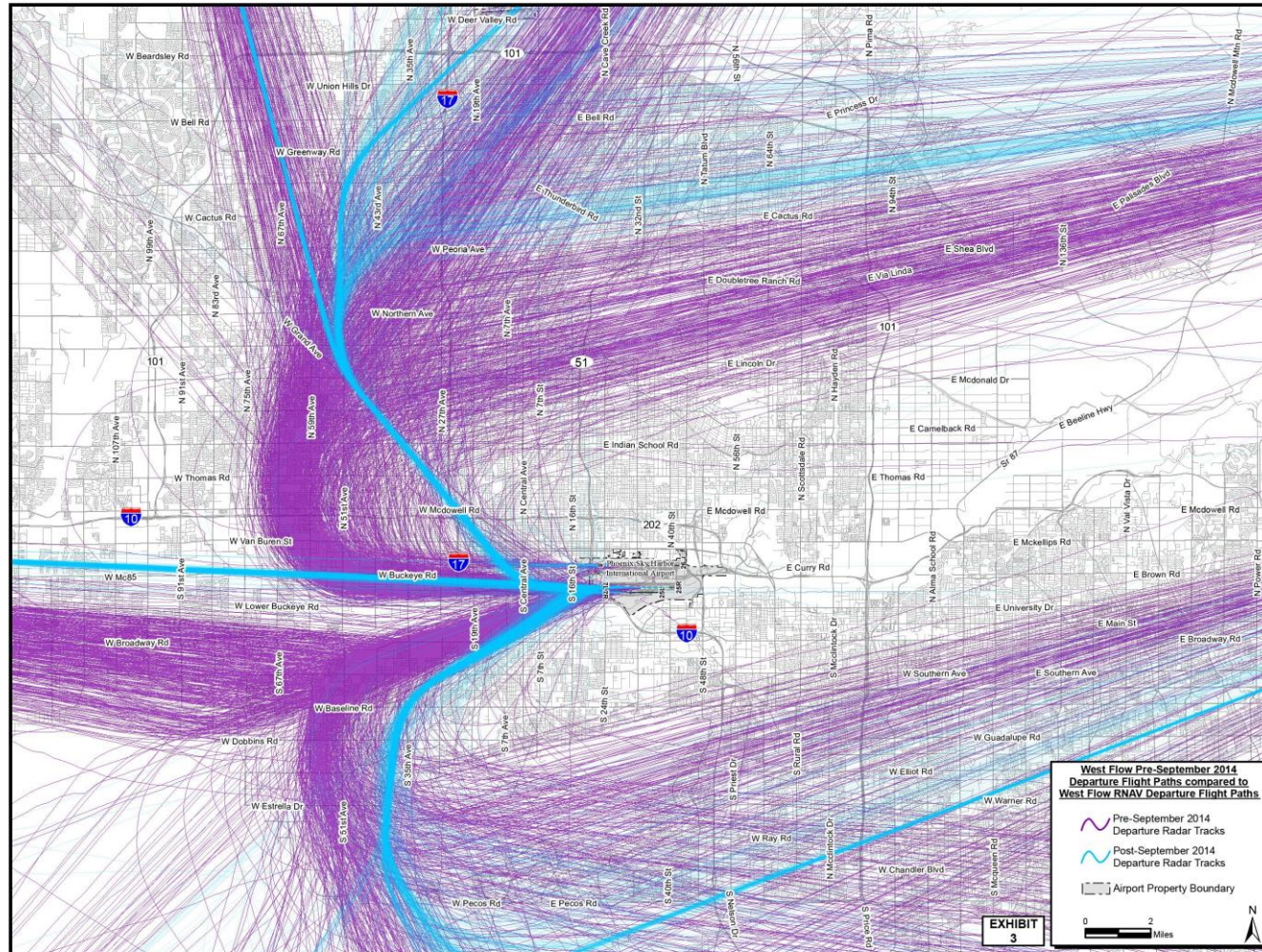


NOISE OVERSIGHT COMMITTEE
JANUARY 24, 2018



Item 3: Update on Phoenix Sky Harbor International Airport PBN Ruling

Before & After September 18, 2014 Flight Departures to the West



Background

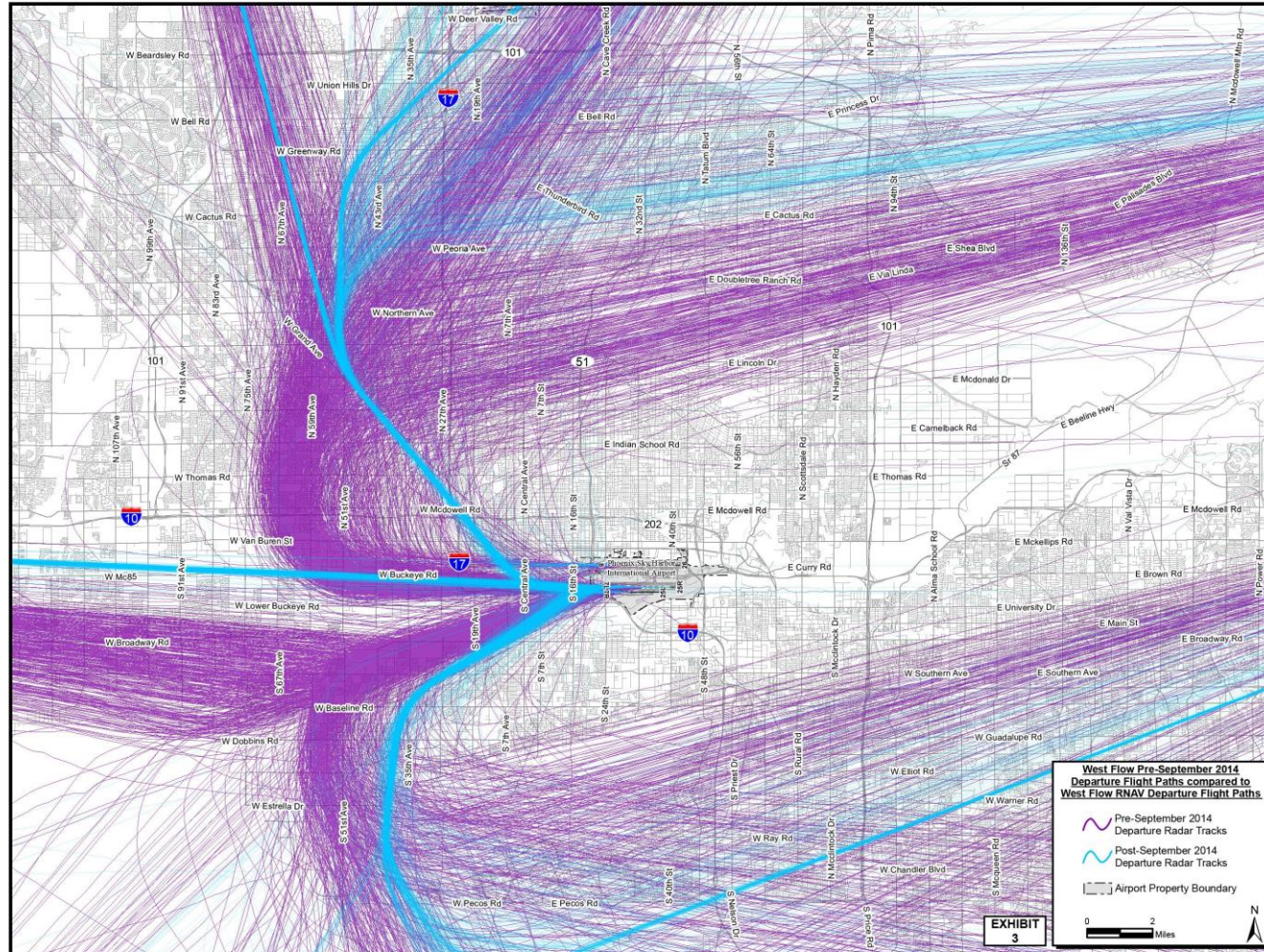
In August 2017, the DC Circuit U.S. Court of Appeals ruled that the FAA vacate satellite-based (Performance Based Navigation – PBN) procedures at PHX for failing to follow environmental laws and involve stakeholders.

In response to the court ruling, on November 30, 2017, the parties to the litigation jointly petitioned the court to accept a two-step plan they co-developed.



Item 3: Update on Phoenix Sky Harbor International Airport PBN Ruling

Before & After September 18, 2014 Flight Departures to the West



Seeks Clarification

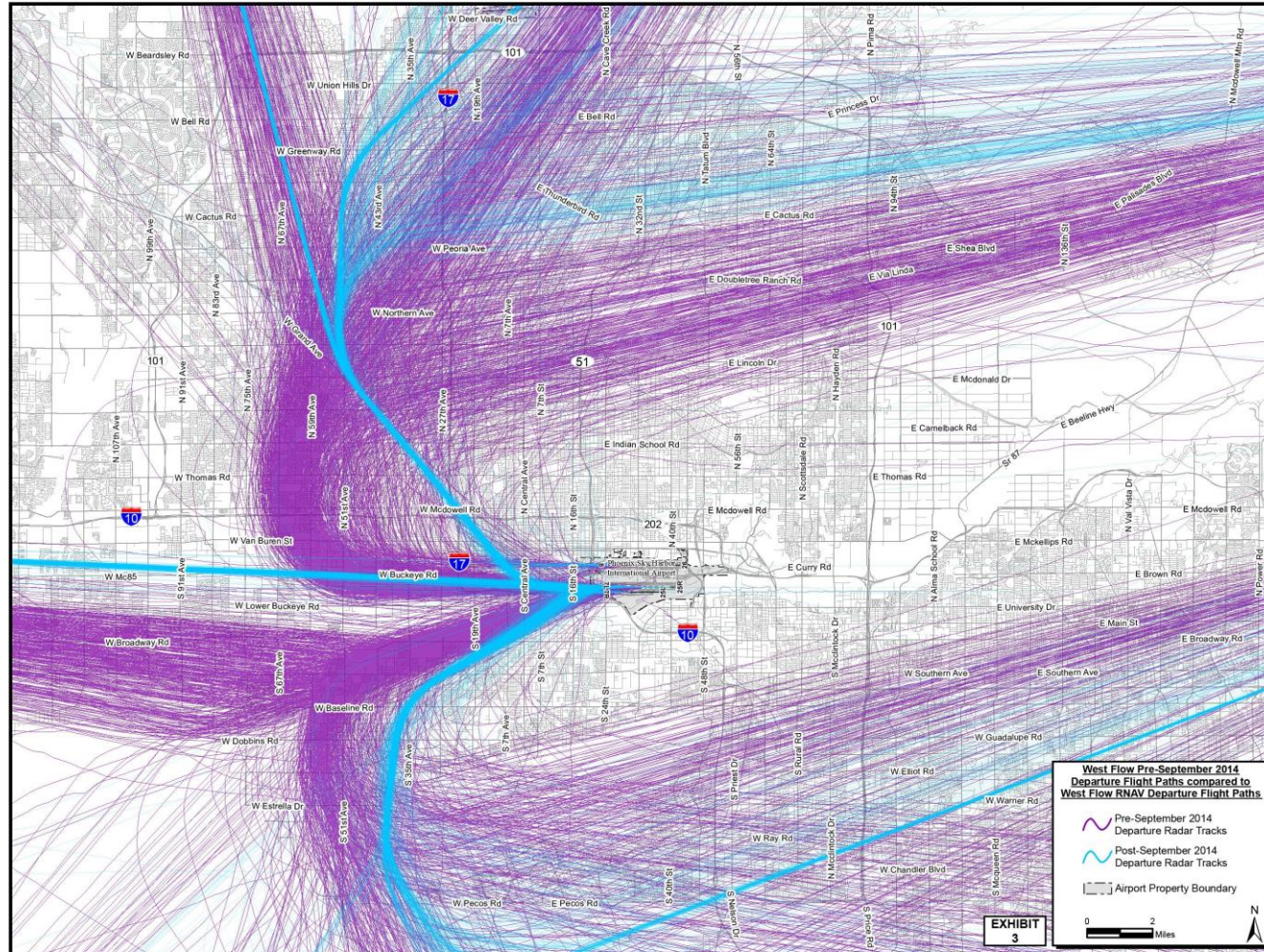
The petition asks the Court to clarify the scope of its order:

- Limit it to the 9 westbound RNAV departure procedures at PHX which were the focus of the litigation
 - All other PBN departure and arrival procedures would remain operational
- *Remand* but not *vacate* the procedures
 - Alter only the beginning of the departure routes, so planes would return to the RNAV procedure after the first leg of the departure (referred to as *vector to RNAV procedure*)



Item 3: Update on Phoenix Sky Harbor International Airport PBN Ruling

Before & After September 18, 2014 Flight Departures to the West



Step 1 (short-term fix) the FAA would create new, temporary instructions for departures to the west that would route aircraft near the airport in a manner to approximate the routes prior to the implementation of RNAV departures.

Step 2 (long-term fix) the FAA would develop new westbound RNAV departure procedures and consider routes that approximate the routes prior to the initial RNAV implementation near the airport. The FAA also would consider feedback on procedures throughout the Phoenix area.

The FAA will conduct community outreach, safety and environmental reviews during the two steps above.



Item 3: Update on Phoenix Sky Harbor International Airport PBN Ruling

Recent FAA actions reinforces the points raised by the NOC and MAC to the FAA in 2014 in the NOC's RNAV Resolution: a successful implementation of such RNAV flight procedures requires community outreach.

NOC RNAV Resolution

- Establishes “Extraordinary Circumstances” at MSP
- Provides strong message with all stakeholders aligned around a set of local expectations
- A foundational element for industry position on airport and community role
- Speaks to role/extent of community engagement and nature of analyses



ITEM 4 RESPONSE TO MSP FAIRSKIES REQUESTS



MINNEAPOLIS - SAINT PAUL INTERNATIONAL AIRPORT



**NOISE OVERSIGHT COMMITTEE
JANUARY 24, 2018**



September 20, 2017 NOC Meeting representatives from MSP FairSkies addressed the Committee requesting that NOC/MAC:

1. Enhance the NOC with greater stakeholder (citizen) representation
2. Establish a goal to reduce noise
3. Produce a 55 dB and N65 NEM/Contour



Item 4: Background – FairSkies Request: Enhance NOC with Greater Stakeholder (Citizen) Representation

NOISE OVERSIGHT COMMITTEE ORIGIN

MASAC and NOC:

- MASAC disbanded in October 2001
- Blue Ribbon Panel was formed with members from Minneapolis, Eagan, Mendota Heights, Northwest Airlines, MBAA, and UPS.
- Dr. John Brandl, Dean of University of Minnesota Hubert H. Humphrey Institute of Public Affairs was retained to review the MASAC issues and provide feedback to Panel
- In June 2002 the Blue Ribbon Panel published its report detailing the NOC framework and bylaws
- First NOC meeting was June 23, 2003



Item 4: Background – FairSkies Request: Enhance NOC with Greater Stakeholder (Citizen) Representation

NOC MISSION

Provide a balanced forum for the discussion and evaluation of noise impacts around Minneapolis-St. Paul International Airport through the following functions:

- Identify, study and analyze airport noise issues and solutions
- Provide policy recommendations or options to the MAC Planning, Development and Environment Committee and Full Commission regarding airport noise issues
- Monitor compliance with established noise policy at MSP
- Ensure the collection of information and dissemination to the public.

The above functions will be conducted in a manner that considers public and airport user concerns, taking into consideration public input/information from the following channels of communication:

- MAC Noise Program Office
- MAC Noise Program Office Website
- MSP Noise News newsletter
- MAC noise complaint and information hotline
- Governmental body official policy development processes
- MAC public hearings
- MAC informational meetings
- Individual NOC members
- MAC Planning, Development and Environment Committee
- Metropolitan Airports Commission meetings



Item 4: Background – FairSkies Request: Enhance NOC with Greater Stakeholder (Citizen) Representation

EXECUTING THE NOC MISSION

Identify, study and analyze airport noise issues and solutions

- 320, 340, and 360 departure headings
- Westside Cargo Engine Start Procedure
- Runway 12L and 12R Arrival Study

Provide policy recommendations or options to the MAC Planning, Development and Environment Committee and full Commission regarding airport noise issues

- MSP LTCP and environmental review input
- 64-60 DNL noise mitigation program
- Second amendment to the Consent Decree
- RNAV SID resolution
- CRO environmental review resolution

Monitor compliance with established noise policy at MSP

- SIP annual report
- Annual Noise Contour Report
- Monthly reports
- OPD Analysis Application

Ensure the collection of information and dissemination to the public.

- MACNOMS
- Website and interactive reports
- Communication Enhancement Plan:
 - Noise basics videos and factsheets
 - Listening sessions



Item 4: Background – FairSkies Request: Enhance NOC with Greater Stakeholder (Citizen) Representation

CITIZEN INPUT GUIDING NOC ACTION

- 12L and 12R Arrival Study
- Expert Presentation on Aircraft Arrival Landing Gear Extension Procedures
- Investigate Noise Reduction Benefits from Vortex Generators on Airbus Aircraft
- Analyze Trends in Wind and the Relationship to Aircraft Noise Complaints
- Eagan-Mendota Heights Corridor Turboprop Analysis
- Investigate Noise-Reducing Landscaping Options
- Quantify Noise Reduction Benefits of Vortex Generators on Airbus Aircraft Arrivals at MSP
- Evaluate Distant Noise Abatement Departure Profile (NADP) Use at MSP
- Develop a New, or Append to an Existing Monthly Report, Evaluation of the Eagan-Mendota Heights Corridor Turboprop Activity
- Evaluate Steeper Glide Slopes for Aircraft Arrivals



Item 4: NOC Action – FairSkies Request: Enhance NOC with Greater Stakeholder (Citizen) Representation

Does the Committee feel that changes are needed to provide greater stakeholder (citizen) representation on the NOC?



Item 4: Background – FairSkies Request: Noise Reduction Goal

CONTEXT: WHO REGULATES AIRCRAFT NOISE



CONTEXT: 1990 Airport Noise and Capacity Act

U.S. Congress Found That:

- Aviation noise management is critical to the continued increase in airport capacity.
- Community noise concerns led to uncoordinated and inconsistent restrictions on aviation that could impede the national air transportation system.
- Local interests in aviation noise management shall be considered in determining the national interest.
- A noise policy must be carried out at a national level.
- Revenues controlled by the U.S. government can help solve noise problems and carry with them a responsibility to the national airport system.

Results of 1990 ANCA:

- All aircraft over 75,000 pounds to be Stage 3 by year 2000
- Availability of federal funds and PFCs tied to provisions on acceptability of access restrictions.
- National program for the review of airport noise and access restrictions - 14 CFR Part 161



CONTEXT: FAR PART 161

Notice of Approval of Noise and Access Restrictions:

- Broad view of what constitutes a restriction

Major Components:

- Cost v. benefit analysis
- Extensive documentation and public notice
- FAA approval of restriction – six major conditions



CONTEXT: FAR PART 161 Analysis

14 CFR § 161.305:

- Must provide “.....an analysis that supports, by substantial evidence, that the six statutory conditions for approval have been met for each restriction and any alternatives submitted.”
- Cost v. benefit is a major component – use of FAR Part 150 Land Use Compatibility Criteria
- Provides specific information/analyses requirements to demonstrate that various conditions are being met to establish statutory compliance



CONTEXT: FAR PART 161 ANALYSIS (CONT.)

14 CFR § 161.305 – Six Conditions:

Condition 1: The restriction is reasonable, non-arbitrary, and nondiscriminatory.

Condition 2: The restriction does not create an undue burden on interstate or foreign commerce.

Condition 3: The proposed restriction maintains safe and efficient use of the navigable airspace.

Condition 4: The proposed restriction does not conflict with any existing Federal statute or regulation.

Condition 5: The applicant has provided adequate opportunity for public comment on the proposed restriction.

Condition 6: The proposed restriction does not create an undue burden on the national aviation system.

Failure to Comply 14 CFR § 161.501(b):

“Under no conditions shall any airport operator receive revenues or collect a passenger facility charge under section 1113(e) of the Federal Aviation Act of 1958 if the FAA determines that the airport is imposing any noise or access restriction not in compliance with the Airport Noise and Capacity Act of 1990 or this part.”



CHARACTERISTICS OF WELL-SET GOALS – S.M.A.R.T. PRINCIPLE



Does the Committee wish to set a specific noise reduction goal, and if so, what should the goal be?



Does the Committee recommend publication of 55 dB DNL and N65 noise contours and NEMs?

During the meeting The Committee decided to delay the presentation of this report until its March 2018 meeting



ITEM 5 ANNUAL FLEET MIX AND NIGHTTIME OPERATIONS REPORT



**NOISE OVERSIGHT COMMITTEE
JANUARY 24, 2018**



Item 5: Annual Fleet Mix and Nighttime Operations Report

The 2018 NOC Work Plan includes an assessment of current fleet mix and nighttime operational trends.

At the November 2017 NOC meeting, MAC staff committed to incorporating suggestions from NOC members and develop a year-end Fleet Mix and Nighttime Operations Report.

The report includes updated 2017 data as well as the following additions:

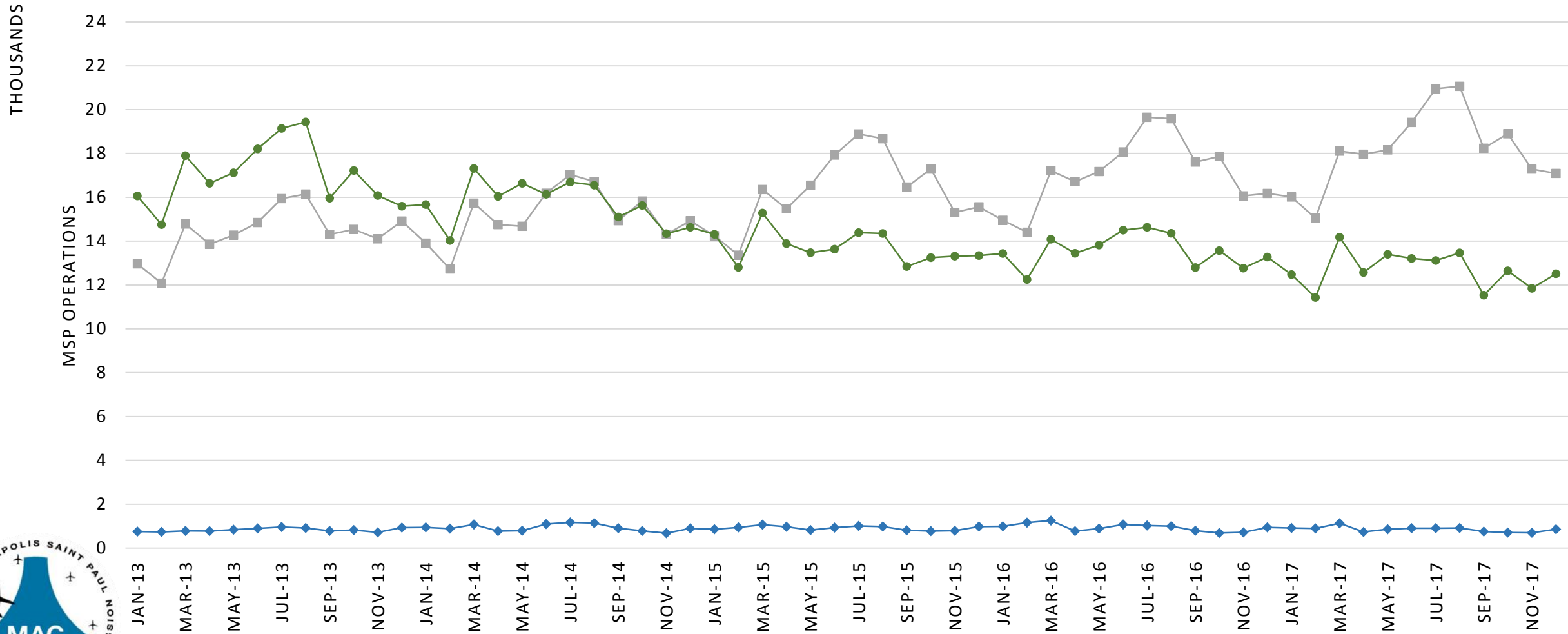
- 2017 Carrier Jet Usage and Certificated Noise Levels chart
- Average Altitude for Aircraft Arrivals and Departures
- Percent Contribution to Nighttime Total included in the tables
- Noise Level Certification range included in the table
- Nighttime Operations by Origin and Destination tables
- Nighttime Operations by Hour
- 2017 Scheduled versus Actual Operations



Item 5: Annual Fleet Mix and Nighttime Operations Report

MONTHLY CARRIER JET COUNTS BY TYPE

■ NARROWBODY ◆ WIDEBODY ● RJ



HUSHKIT BY YEAR: 2013 - 71, 2014 - 37, 2015 - 26, 2016 - 48, 2017 - 26

Item 5: Annual Fleet Mix and Nighttime Operations Report

A330



B763



MD11



WIDEBODY	TYPE	2013	2014	2015	2016	2017
	A124	0.00%	0.00%	0.00%	0.00%	0.00%
	A225	0.00%	0.00%	0.00%	0.00%	0.00%
	A300	0.03%	0.07%	0.07%	0.03%	0.03%
	A310	0.01%	0.01%	0.02%	0.00%	0.00%
	A330	0.75%	0.69%	0.73%	0.68%	0.80%
	A340	0.00%	0.05%	0.07%	0.06%	0.07%
	A350	0.00%	0.00%	0.00%	0.00%	0.01%
	A380	0.00%	0.00%	0.00%	0.00%	0.00%
	B742	0.00%	0.00%	0.00%	0.00%	0.00%
	B744	0.01%	0.08%	0.03%	0.01%	0.01%
	B748	0.00%	0.00%	0.00%	0.00%	0.00%
	B762	0.12%	0.14%	0.14%	0.14%	0.15%
	B763	0.55%	0.83%	0.74%	0.90%	0.49%
	B764	0.19%	0.21%	0.22%	0.24%	0.01%
	B767	0.00%	0.00%	0.00%	0.00%	0.00%
	B777	0.18%	0.10%	0.17%	0.18%	0.38%
	B7878	0.00%	0.00%	0.00%	0.00%	0.01%
	DC10	0.20%	0.19%	0.24%	0.13%	0.27%
MD11	0.51%	0.54%	0.51%	0.61%	0.46%	
TOTAL	2.56%	2.92%	2.94%	2.98%	2.70%	



Item 5: Annual Fleet Mix and Nighttime Operations Report

A319 / A320



B738



MD90



NARROWBODY	TYPE	2013	2014	2015	2016	2017
	A318	0.01%	0.00%	0.00%	0.00%	0.00%
	A319	5.98%	7.54%	7.91%	7.23%	6.77%
	A320	8.35%	9.61%	9.02%	9.89%	7.10%
	A320-NEO	0.00%	0.00%	0.00%	0.03%	0.24%
	A321	0.47%	0.72%	0.84%	0.46%	0.53%
	B717	0.83%	0.59%	1.48%	2.36%	5.24%
	B72Q	0.01%	0.00%	0.00%	0.00%	0.00%
	B733	1.12%	0.75%	0.85%	0.67%	0.35%
	B734	0.04%	0.04%	0.03%	0.03%	0.03%
	B735	0.01%	0.00%	0.00%	0.00%	0.00%
	B7377	4.43%	5.01%	4.83%	4.83%	5.03%
	B738	4.53%	5.62%	6.78%	7.82%	9.76%
	B739	0.13%	0.77%	2.81%	3.78%	5.03%
	B73Q	0.00%	0.00%	0.00%	0.01%	0.00%
	B737-MAX	0.00%	0.00%	0.00%	0.00%	0.01%
	B757	6.89%	6.47%	6.39%	5.80%	5.89%
DC8Q	0.00%	0.00%	0.00%	0.00%	0.00%	
DC9Q	0.01%	0.00%	0.00%	0.00%	0.00%	
MD80	4.03%	3.72%	3.52%	3.59%	2.47%	
MD90	7.84%	6.78%	8.25%	7.61%	8.83%	
TOTAL	44.66%	47.62%	52.73%	54.11%	57.29%	



Item 5: Annual Fleet Mix and Nighttime Operations Report

REGIONAL JET	TYPE	2013	2014	2015	2016	2017
	BA46	0.00%	0.00%	0.00%	0.00%	0.00%
	CRJ	16.10%	0.00%	0.00%	0.00%	0.00%
	CRJ1	0.01%	0.10%	0.00%	0.13%	0.06%
	CRJ2	9.33%	21.40%	17.26%	17.14%	16.17%
	CRJ7	4.11%	4.23%	3.39%	2.75%	4.82%
	CRJ9	7.60%	10.96%	14.70%	13.71%	11.29%
	E135	1.30%	0.06%	0.09%	0.08%	0.07%
	E145	0.67%	1.85%	1.24%	0.22%	0.07%
	E170	13.22%	10.60%	7.37%	8.67%	7.04%
	E175	0.00%	0.00%	0.00%	0.00%	0.00%
	E190	0.40%	0.23%	0.25%	0.20%	0.47%
	F28	0.00%	0.00%	0.00%	0.00%	0.00%
	J328	0.03%	0.03%	0.02%	0.01%	0.01%
TOTAL	52.77%	49.46%	44.33%	42.91%	40.01%	

CRJ2



CRJ9

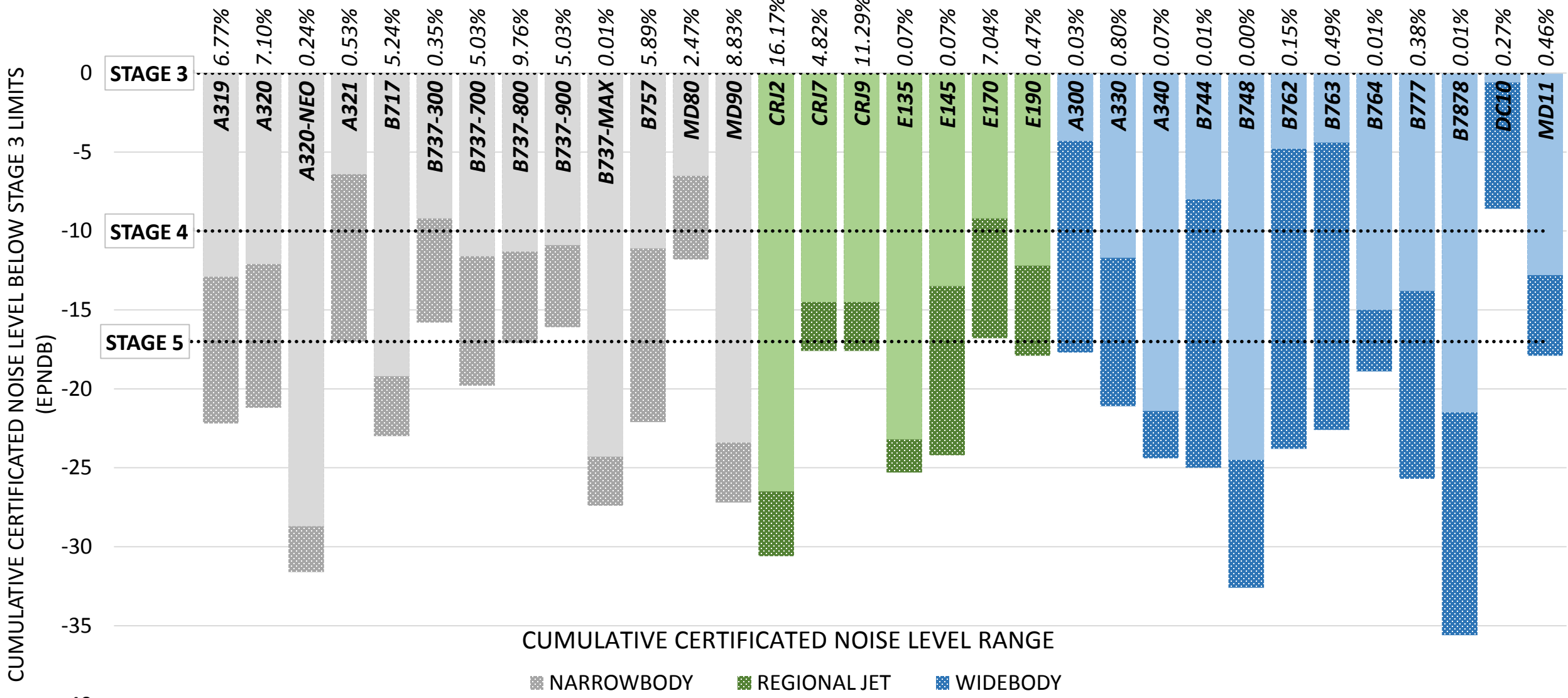


E170



Item 5: Annual Fleet Mix and Nighttime Operations Report

2017 MSP CARRIER JET USAGE WITH CUMULATIVE CERTIFICATED NOISE LEVELS

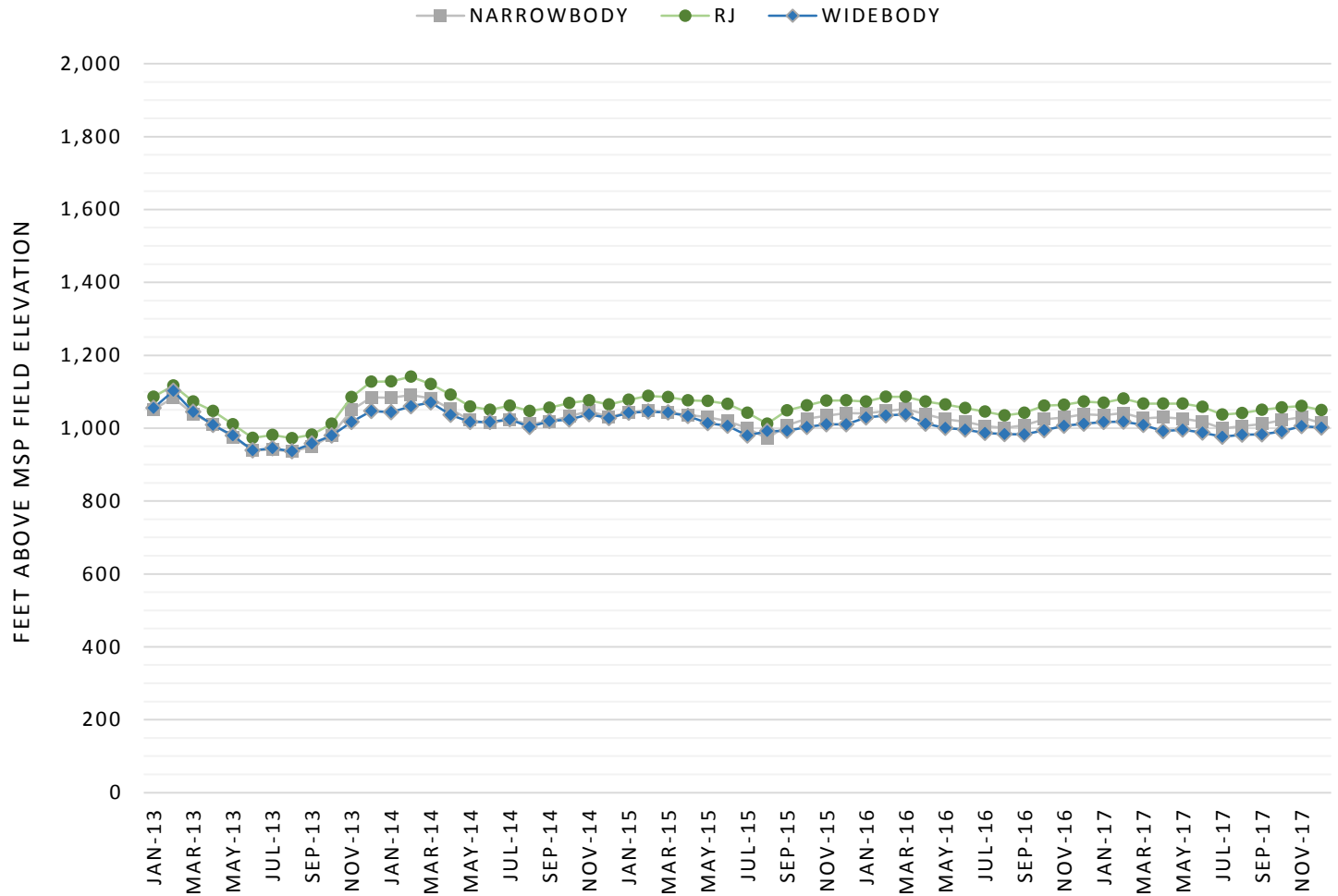


SOURCE: USAGE DATA: MACNOMS; NOISE CERTIFICATION DATA: EUROPEAN AVIATION SAFETY AGENCY

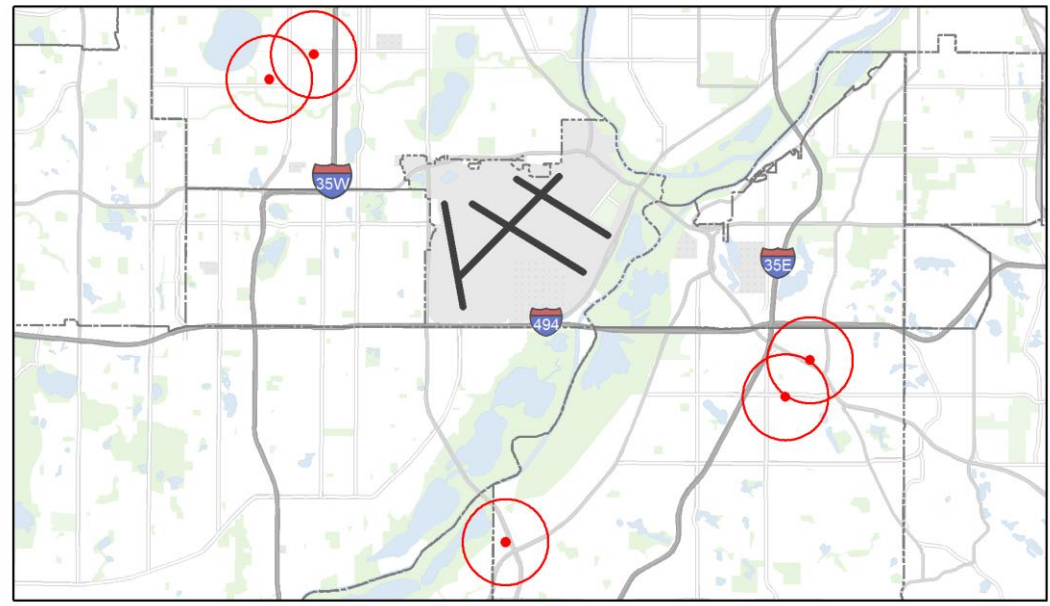
CUMULATIVE CERTIFICATED NOISE LEVELS REPRESENTED AS A RANGE TO ACCOUNT FOR MULTIPLE CERTIFICATION VARIABLES (WEIGHT, MODEL, ENGINE TYPE, AIRFRAME CONFIGURATION, ETC)

Item 5: Annual MSP Fleet Mix and Nighttime Operations Report

AVERAGE ALTITUDE FOR AIRCRAFT ARRIVING TO MSP

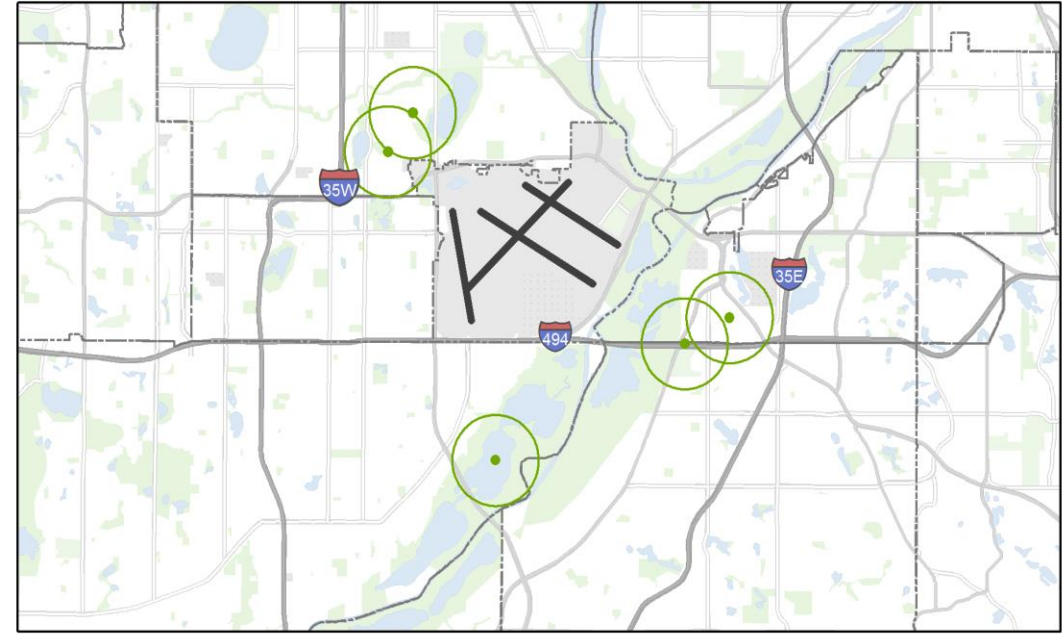
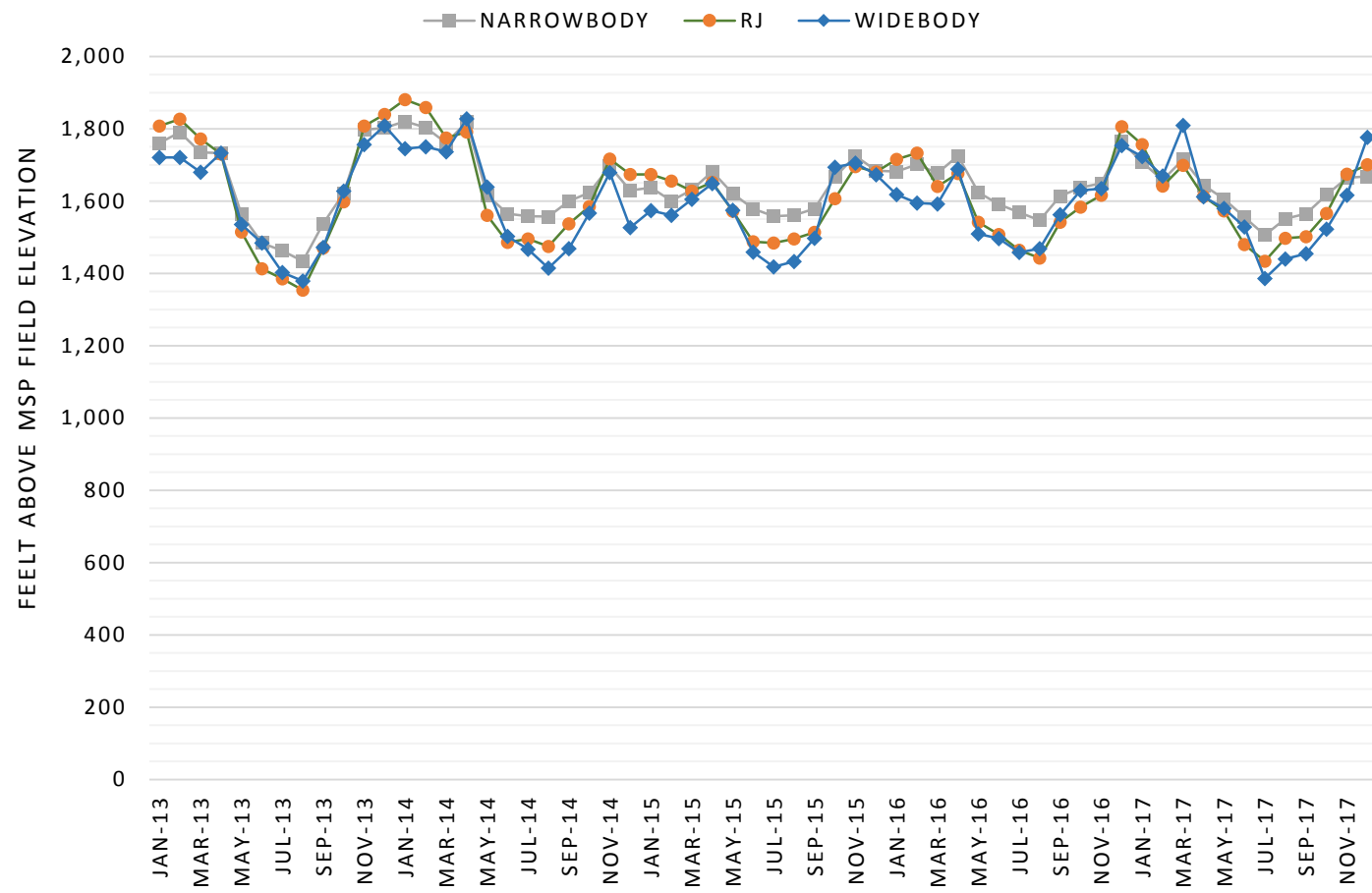


MEASUREMENT POINT IS 3 NAUTICAL MILES FROM THE THRESHOLD OF THE ARRIVAL RUNWAY.
 FLIGHT TRACK DATA SOURCE CHANGED NOVEMBER 2013.



Item 5: Annual MSP Fleet Mix and Nighttime Operations Report

AVERAGE ALTITUDE FOR AIRCRAFT DEPARTING FROM MSP

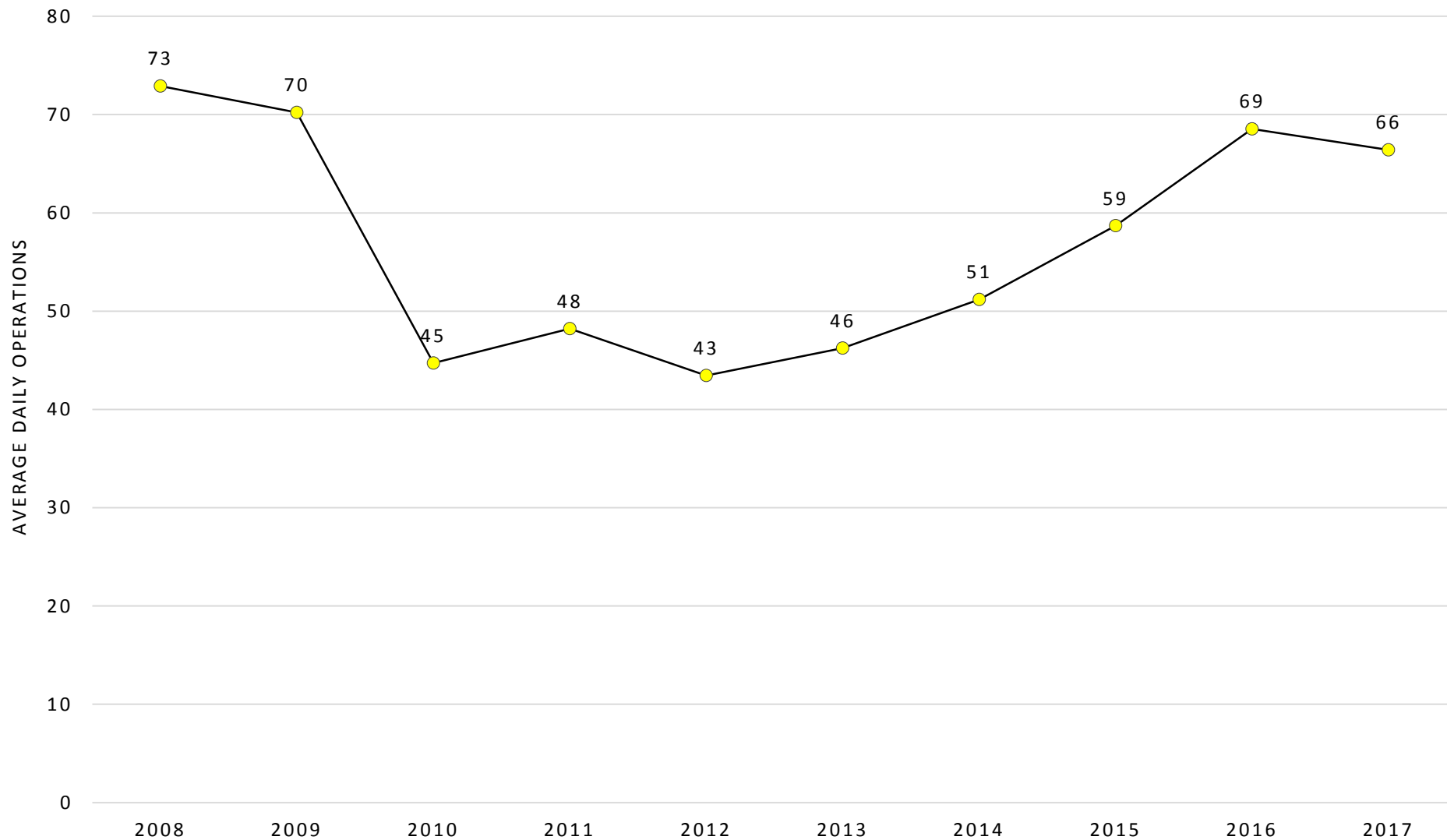


MEASUREMENT POINT IS 3 NAUTICAL MILES FROM THE START OF TAKEOFF ROLL.
 FLIGHT TRACK DATA SOURCE CHANGED NOVEMBER 2013.



Item 5: Annual MSP Fleet Mix and Nighttime Operations Report

AVERAGE DAILY NIGHTTIME OPERATIONS
10:30 PM - 6:00 AM



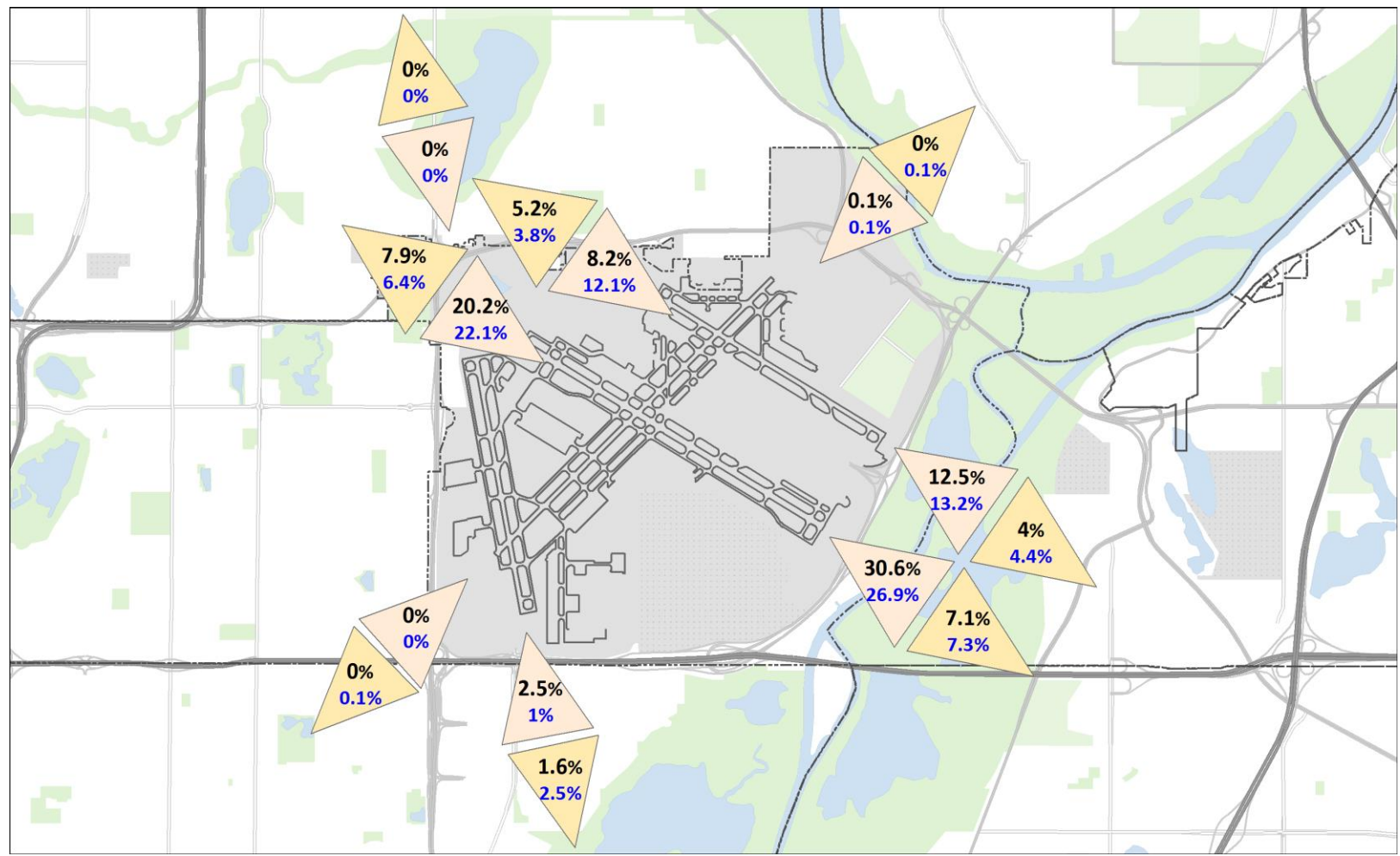
Item 4: Annual MSP Fleet Mix and Nighttime Operations Report

NIGHTTIME OPERATIONS BY RUNWAY

(10:30 PM – 6:00 AM)

BLACK: 2017

BLUE: 2014 - 2016 AVERAGE



Item 4: Annual MSP Fleet Mix and Nighttime Operations Report

NIGHTTIME OPERATIONS BY AIRLINE TOP 15 BY COUNT

(10:30 PM – 6:00 AM)

2017	AIRLINE	ID	COUNT	PERCENT OF AIRLINE OPERATIONS' OCCURRING AT NIGHT	PERCENT OF CONTRIBUTION TO NIGHT TIME TOTAL
	DELTA	DAL	5,896	4.10%	26.08%
	SUN COUNTRY	SCX	3,735	17.80%	16.52%
	AMERICAN	AAL	2,417	14.10%	10.69%
	SOUTHWEST	SWA	2,234	12.70%	9.88%
	SKYWEST AIRLINES	SKW	1,887	2.40%	8.35%
	UNITED	UAL	1,248	14.40%	5.52%
	SPIRIT	NKS	1,239	13.50%	5.48%
	UPS	UPS	874	31.90%	3.87%
	REPUBLIC AIRLINES	RPA	721	8.40%	3.19%
	FEDEX	FDX	635	23.90%	2.81%
	ENDEAVOR AIR	EDV	491	1.30%	2.17%
	FRONTIER AIRLINES	FFT	420	18.40%	1.86%
	MESA AIRLINES	ASH	323	9.10%	1.43%
	ALASKA	ASA	298	19.20%	1.32%
COMPASS	CPZ	188	1.90%	0.83%	

*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

Item 4: Annual MSP Fleet Mix and Nighttime Operations Report

NIGHTTIME OPERATIONS BY AIRCRAFT TOP 15 BY COUNT

(10:30 PM – 6:00 AM)

AIRCRAFT CODE	DESCRIPTION	COUNT	NOISE LEVEL CERTIFICATION (EPNdB BELOW STAGE 3)
B738	BOEING 737-800	6,071	11.3 - 17.1
B757	BOEING 757-200	2,552	11.1 - 22.1
B7377	BOEING 737-700	2,549	11.6 - 19.8
A320	AIRBUS INDUSTRIES A320	1,836	12.1 - 21.2
E170	EMBRAER 170	1,825	9.2 - 16.8
B739	BOEING 737-900	1,813	10.9 - 16.1
A319	AIRBUS INDUSTRIES A319	1,166	12.9 - 22.2
CRJ9	CANADAIR REGIONAL JET CRJ-900	958	14.5 - 17.6
MD90	MCDONNELL DOUGLAS MD90	774	23.4 - 27.2
CRJ2	CANADAIR REGIONAL JET CRJ-200	601	26.5 - 30.6
B717	BOEING 717	535	19.2 - 23.0
A321	AIRBUS INDUSTRIES A321	518	6.4 - 17.0
CRJ7	CANADAIR REGIONAL JET CRJ-700	418	14.5 - 17.6
MD11	MCDONNELL DOUGLAS MD11	384	12.8 - 17.9
A330	AIRBUS INDUSTRIES A330	271	11.7 - 21.1

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)

Item 4: Annual MSP Fleet Mix and Nighttime Operations Report

NIGHTTIME OPERATIONS BY ORIGIN AND DESTINATION TOP 15 BY COUNT

(10:30 PM – 6:00 AM)

MSP ARRIVALS	AIRPORT CODE	ORIGIN AIRPORT	COUNT
	LAX	LOS ANGELES	1,343
	LAS	LAS VEGAS	1,338
	SFO	SAN FRANCISCO	1,101
	PHX	PHOENIX	1,029
	DEN	DENVER	928
	ATL	ATLANTA	881
	ORD	CHICAGO (O'HARE)	783
	SEA	SEATTLE	779
	DCA	WASHINGTON D.C. (REAGAN NATIONAL)	594
	SDF	LOUISVILLE	486
	MEM	MEMPHIS	460
	DFW	DALLAS/ FORT WORTH	381
	PANC	TED STAVENS ANCHORAGE INTERNATIONAL	354
	MDW	CHICAGO (MIDWAY)	348
CLT	CHARLOTTE	347	

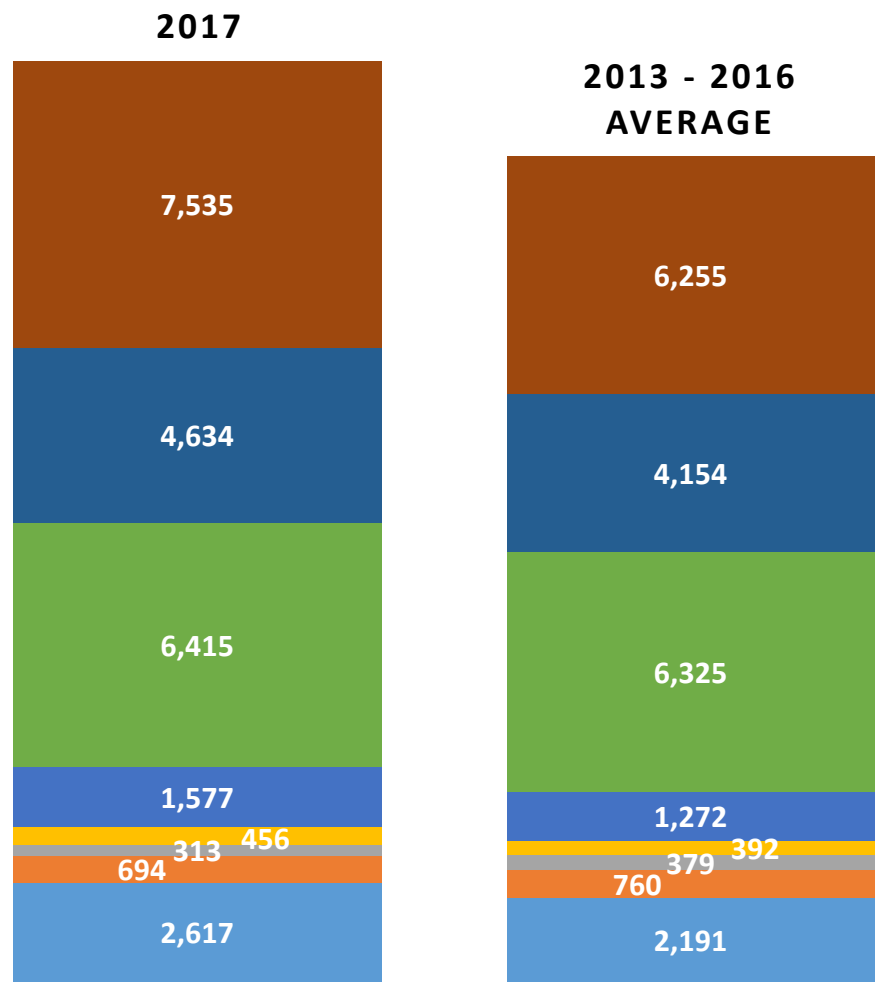
MSP DEPARTURES	AIRPORT CODE	DESTINATION AIRPORT	COUNT
	ORD	CHICAGO (O'HARE)	534
	ATL	ATLANTA	473
	CLT	CHARLOTTE	361
	IAH	HOUSTON	322
	DEN	DENVER	305
	PHX	PHOENIX	232
	TVF	THEIF RIVER FALLS REGIONAL	189
	FLL	FT. LAUDERDALE	167
	LAS	LAS VEGAS	152
	STL	ST LOUIS	126
	GFK	GRAND FORKS	121
	MSN	MADISON	116
	DLH	DULUTH	104
	MOT	MINOT	104
GEG	SPOKANE	102	

Item 4: Annual MSP Fleet Mix and Nighttime Operations Report

NIGHTTIME OPERATIONS BY HOUR

(10:30 PM – 6:00 AM)

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



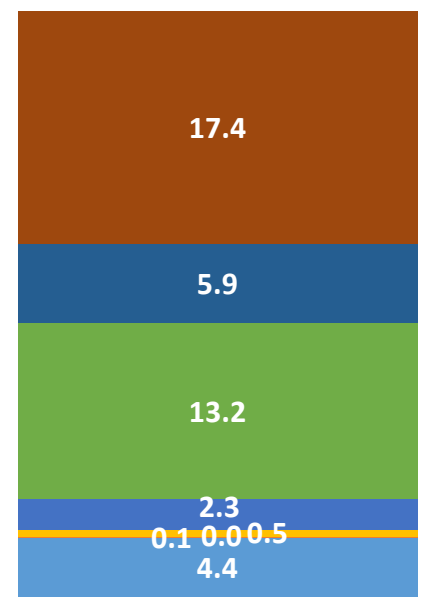
Item 4: Annual MSP Fleet Mix and Nighttime Operations Report

2017 NIGHTTIME SCHEDULED VERSUS ACTUAL OPERATIONS

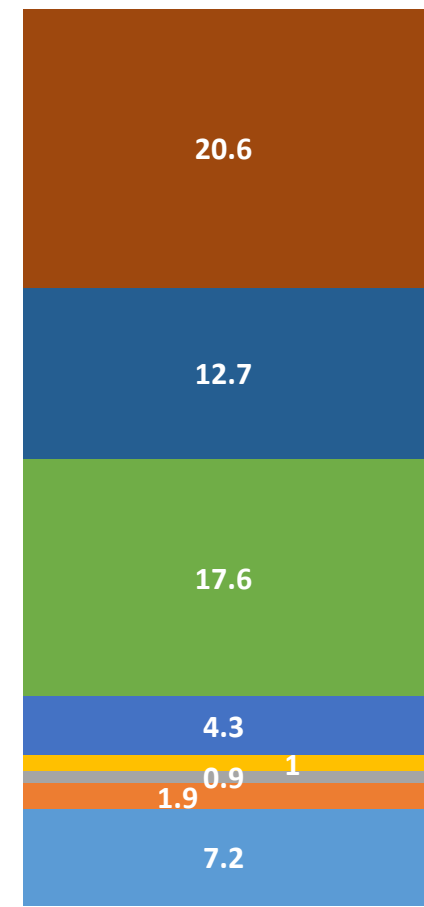
(10:30 PM – 6:00 AM)

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

AVERAGE DAILY SCHEDULED NIGHT OPERATIONS



AVERAGE DAILY ACTUAL NIGHT OPERATIONS



SOURCE: MACNOMS FLIGHT TRACKING DATA FOR ACTUAL COUNT OFFICIAL AIRLINE GUIDE (OAG), UPS AND FEDEX REPORTING FOR SCHEDULED COUNT OAG DOES NOT REPORT ALL MSP AIRLINE AND CARGO SCHEDULES.

ITEM 6

VORTEX GENERATOR NOISE MONITORING STUDY

During the meeting The Committee
decided to delay the presentation of
this report until its March 2018
meeting



NOISE OVERSIGHT COMMITTEE
JANUARY 24, 2018



ITEM 7 SUPER BOWL COMMUNICATION PLAN UPDATE



**NOISE OVERSIGHT COMMITTEE
JANUARY 24, 2018**



ITEM 8 PUBLIC COMMENT PERIOD



**NOISE OVERSIGHT COMMITTEE
JANUARY 24, 2018**



ITEM 9 ANNOUNCEMENTS

Winter Listening Session

Tuesday, January 30, 2018 @ 7:00 PM

Mount Olivet Lutheran Church

5025 Knox Ave South

Minneapolis, MN 55419

Next NOC Meeting

Wednesday, March 21, 2018 @ 1:30 PM

MAC General Offices



**NOISE OVERSIGHT COMMITTEE
JANUARY 24, 2018**

