



**NOISE OVERSIGHT COMMITTEE
JANUARY 18, 2017**

Audio recordings are made of this meeting





**NOISE OVERSIGHT COMMITTEE
JANUARY 18, 2017**

**Item 1: Review and Approval of November 16, 2016
Meeting Minutes**





NOISE OVERSIGHT COMMITTEE
JANUARY 18, 2017

Item 2: NOC Community Co-Chair Nomination and Election





**NOISE OVERSIGHT COMMITTEE
JANUARY 18, 2017**

**Item 3: Review of Monthly Operations Reports:
November and December, 2016**



Item 3: Review of Operations Report Summary: November and December 2016



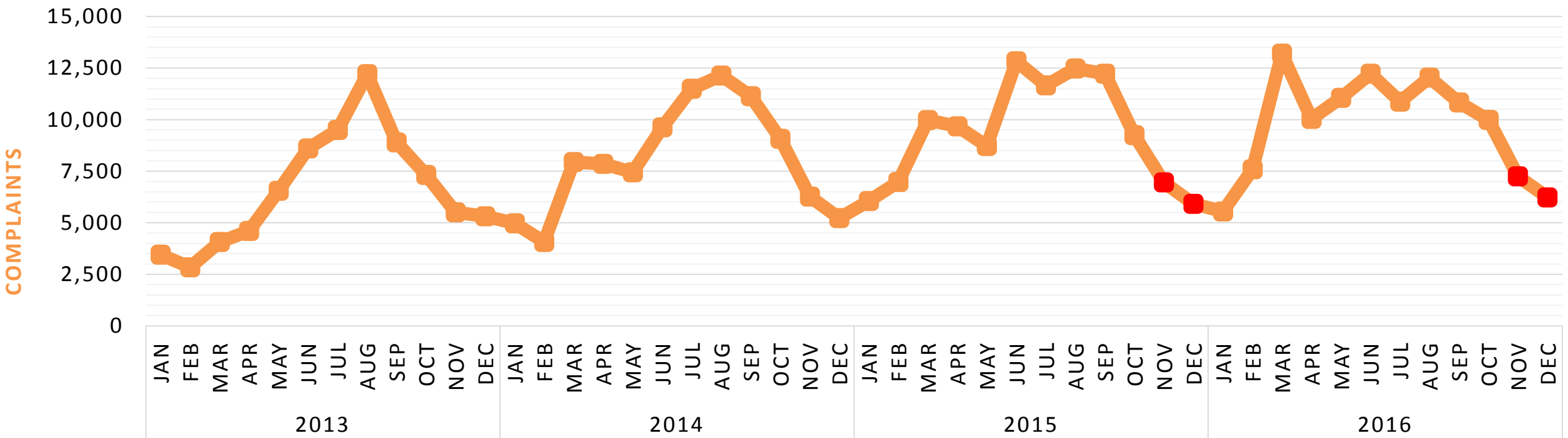
NOVEMBER	DECEMBER
6,846	5,939

MSP COMPLAINTS

	2015	2016
November	6,955	7,244
December	5,913	6,318



NOVEMBER	DECEMBER
398	379



Item 3: Review of Operations Report Summary: November and December 2016

MSP COMPLAINT LOCATIONS



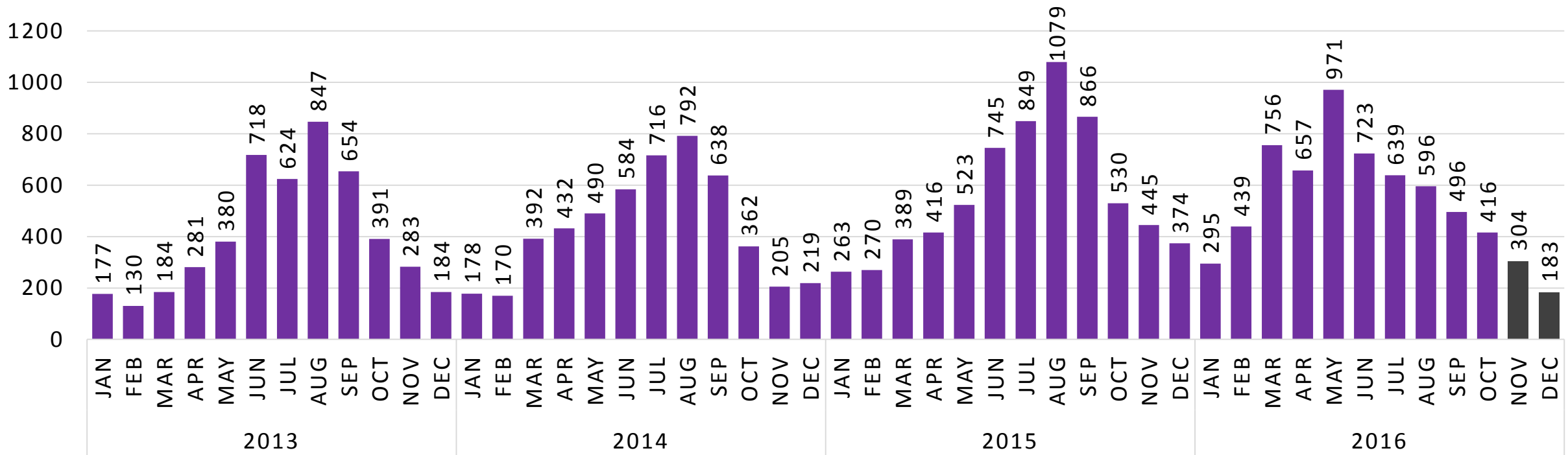
NOVEMBER	DECEMBER
304	183

AVERAGE COMPLAINT PER LOCATION



NOVEMBER	DECEMBER
24	34

COMPLAINT LOCATIONS



Item 3: Review of Operations Report Summary: November and December 2016

MSP ANNUAL COMPLAINTS

2015	2016
112,699	116,958

MSP ANNUAL COMPLAINT LOCATIONS

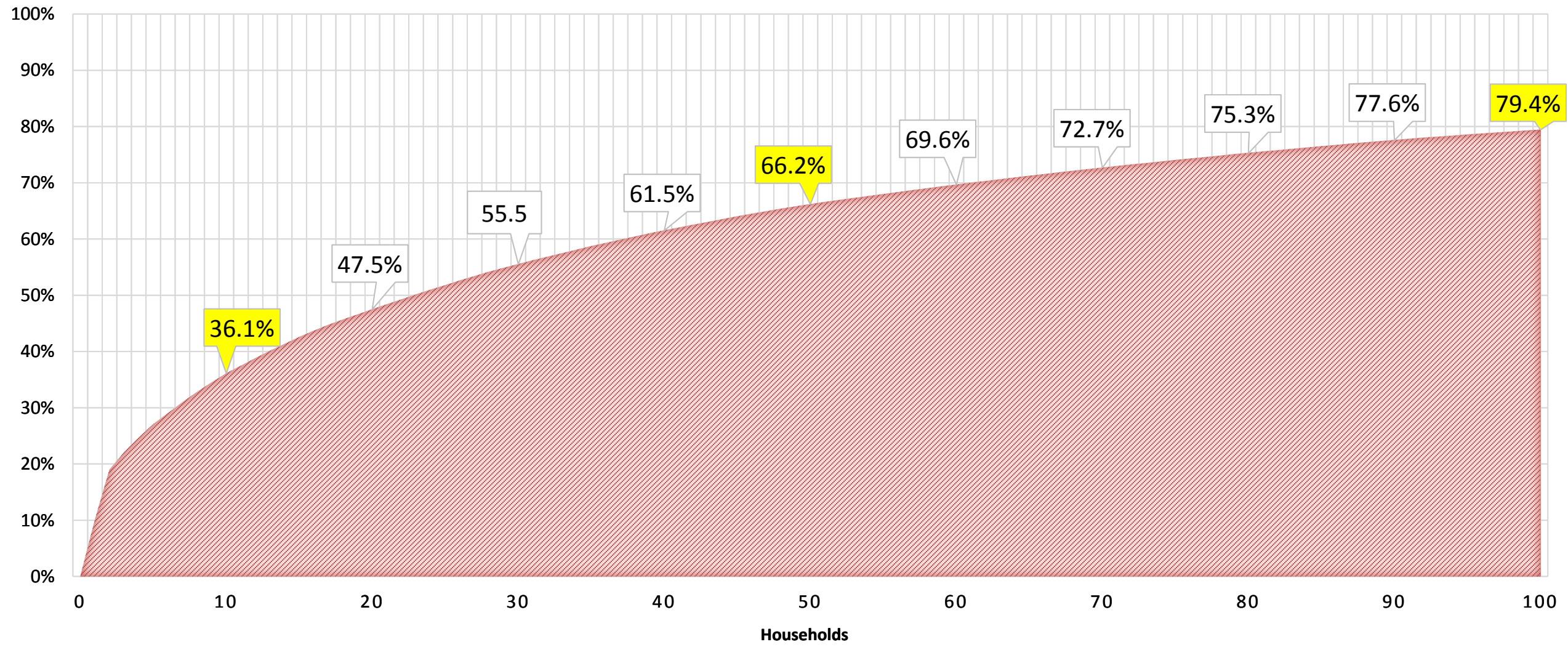
2015	2016
2,805	2,711



Item 3: Review of Operations Report Summary: November and December 2016

MSP COMPLAINTS
116,958

TOP 100 COMPLAINT LOCATION CONTRIBUTIONS TO TOTAL



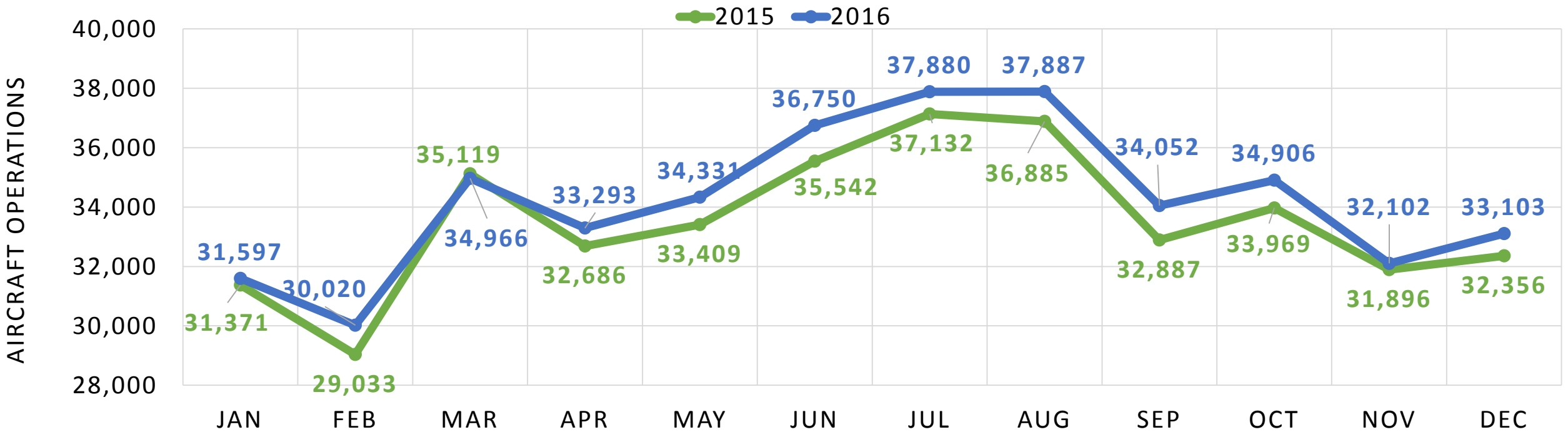
Item 3: Review of Operations Report Summary: November and December 2016



TOTAL MSP AIRCRAFT OPERATIONS


	2015	2016
November	31,896	32,102
December	32,356	33,103

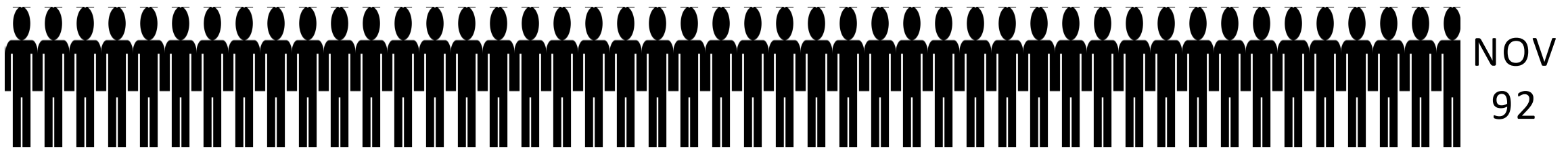
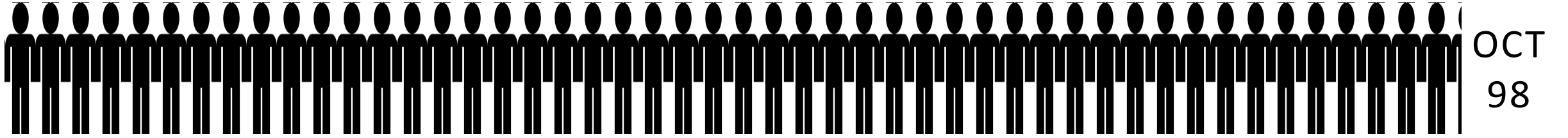
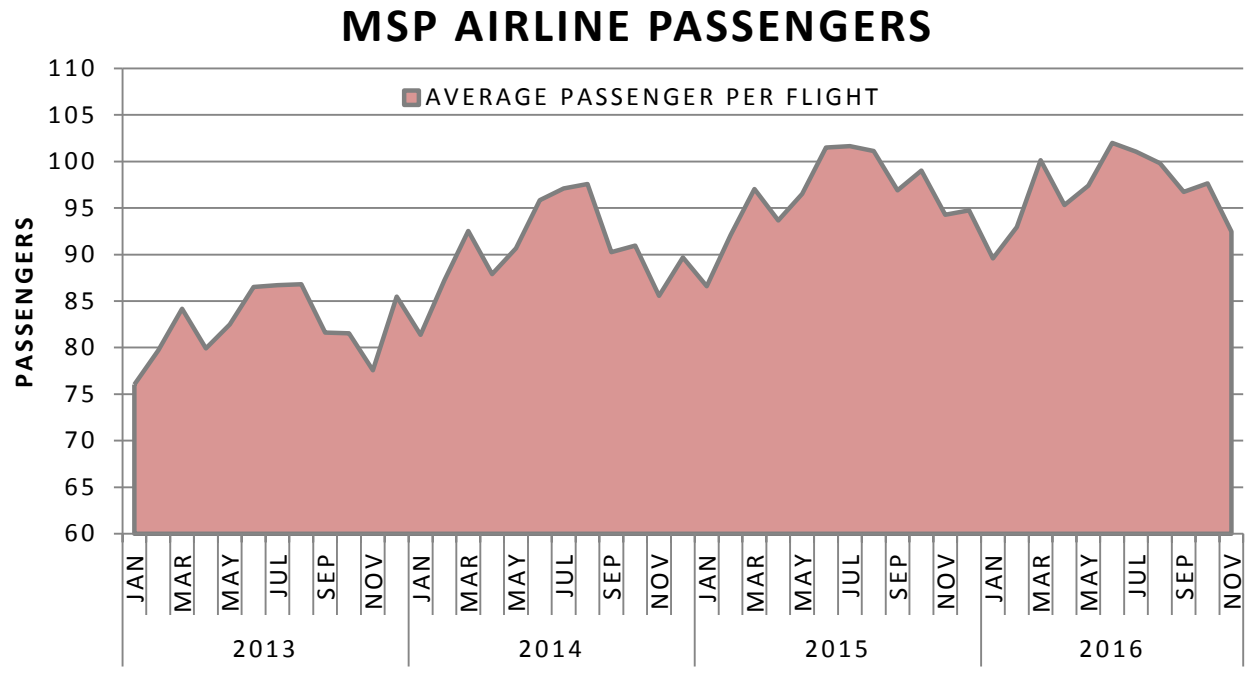
2015	2016
402,285	410,887



Item 3: Review of Operations Report Summary: October and November 2016

MSP PASSENGERS

	OCTOBER	NOVEMBER
	3,099,547	2,780,548



Source: Metropolitan Airports Commission's Finance Department Monthly Passenger and Operations Reports

Item 3: Review of Operations Report Summary: November and December 2016

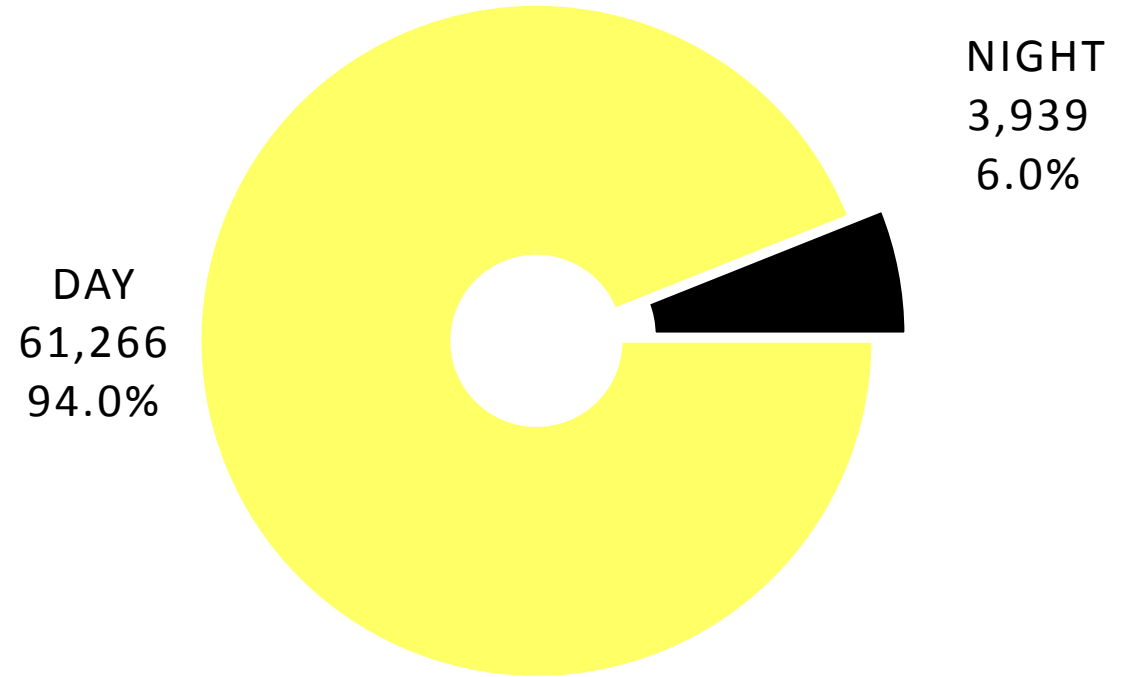
FLEET MIX COMPOSITION NOVEMBER & DECEMBER 2016



MANUFACTURED
STAGE 3/4
57%

REGIONAL JET
43%

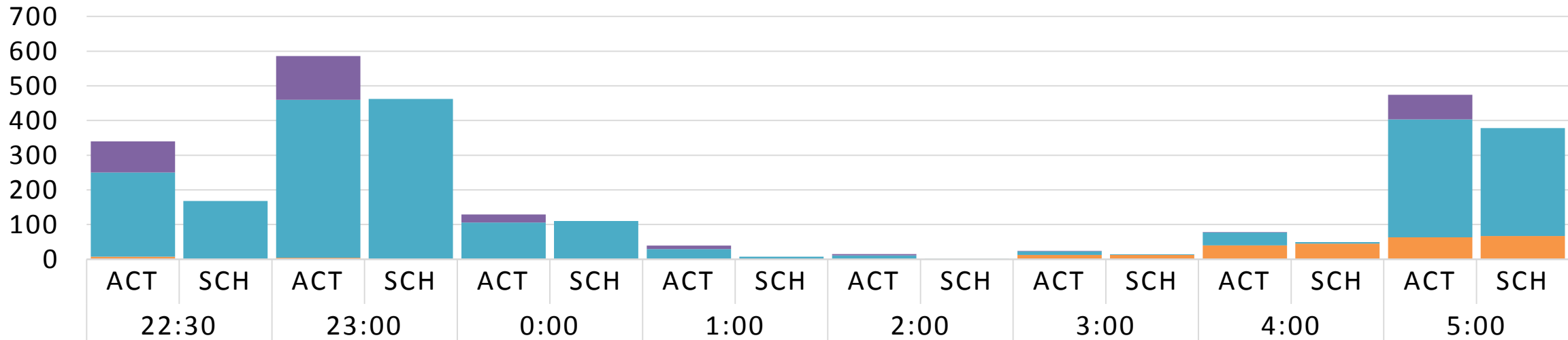
DAYTIME COMPOSITION NOVEMBER & DECEMBER 2016



Item 3: Review of Operations Report Summary: November and December 2016

NOVEMBER NIGHT TIME

Scheduled	Actual
1,190	1,685

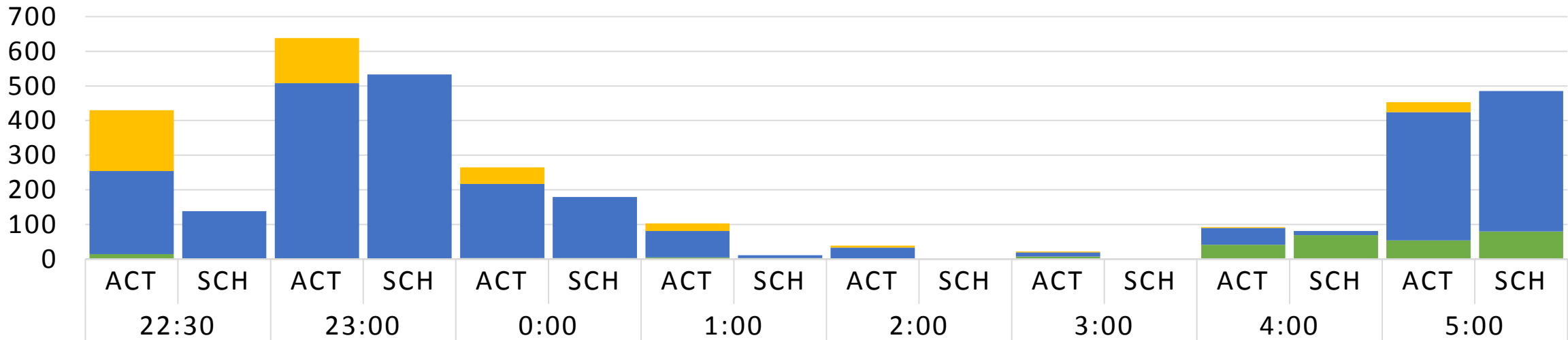


	22:30		23:00		0:00		1:00		2:00		3:00		4:00		5:00	
	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH
OTHER	90		126		23		10		4		1		1		71	
AIR CARRIER	243	168	456	462	105	110	29	7	10	2	11	2	37	4	340	311
CARGO	7		4		1				1		12	12	40	45	63	67

Item 3: Review of Operations Report Summary: November and December 2016

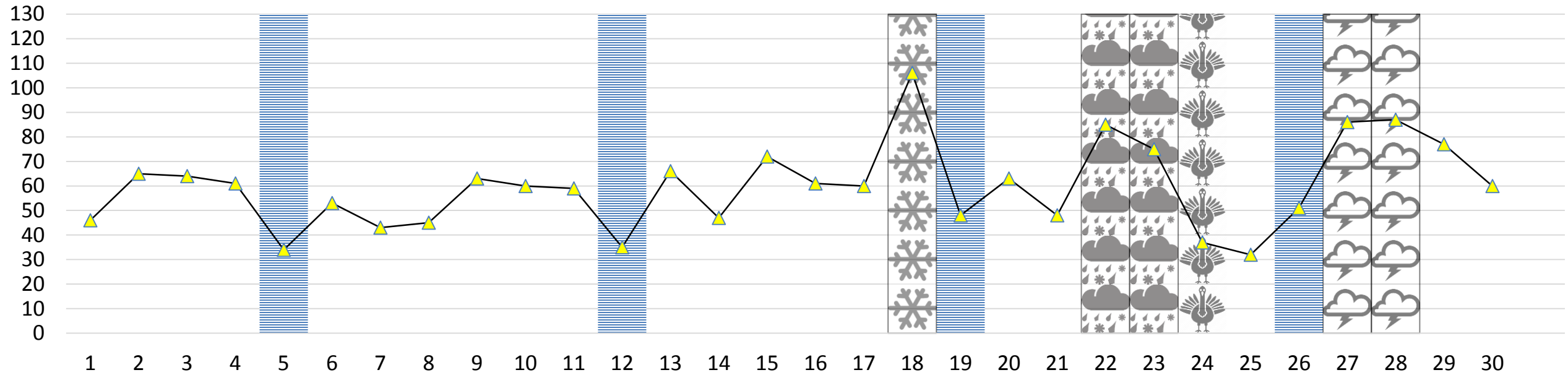
DECEMBER NIGHT TIME

Scheduled	Actual
1,428	2,042

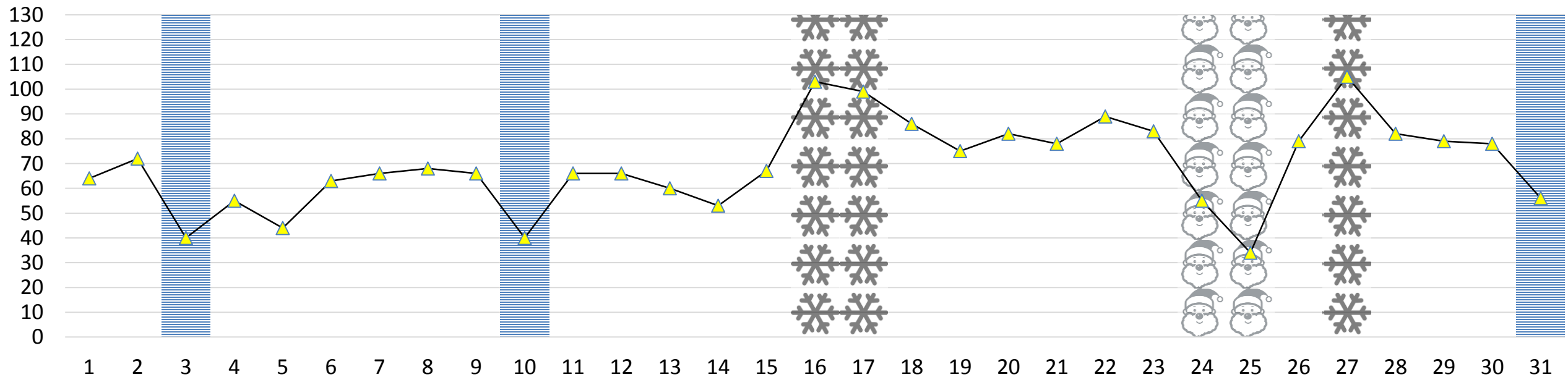


	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH	ACT	SCH		
	22:30		23:00		0:00		1:00		2:00		3:00		4:00		5:00	
OTHER	176		130		48		22		6		3		2		29	
AIR CARRIER	240	138	506	533	214	176	76	8	32		12		49	12	370	405
CARGO	14		2		3	3	5	3	1		7	1	41	69	54	80

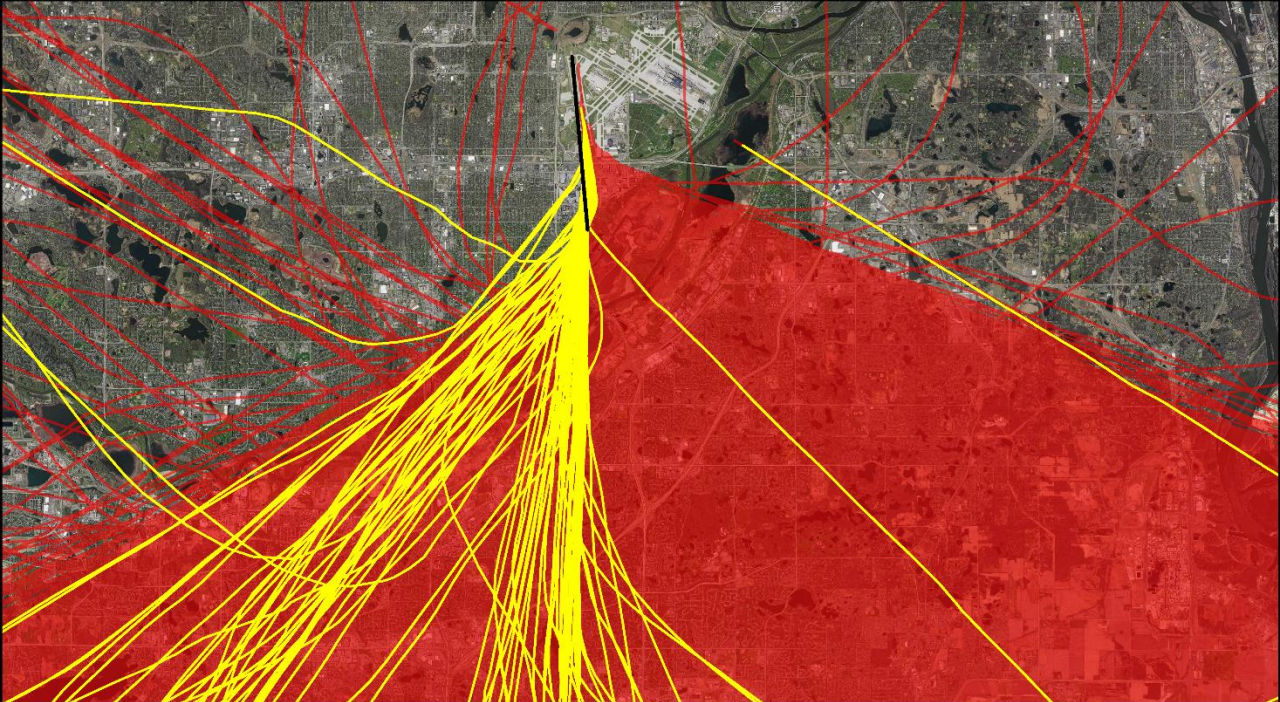
NOVEMBER NIGHTTIME OPERATIONS



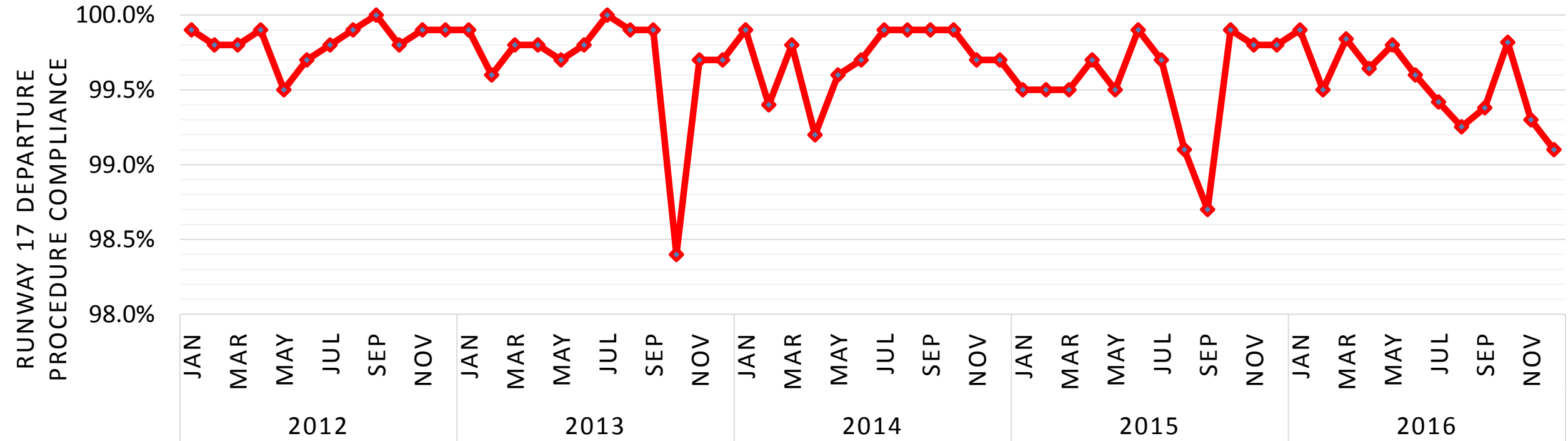
DECEMBER NIGHTTIME OPERATIONS



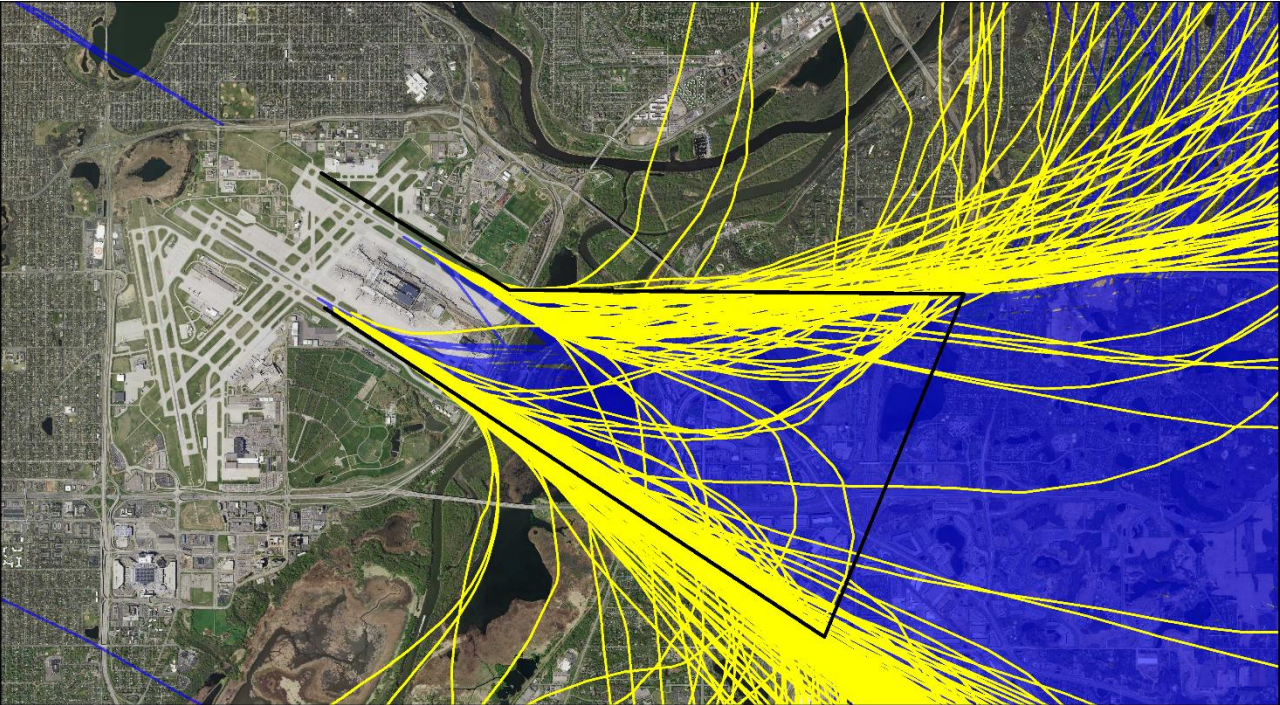
Noise Abatement Procedures – Runway 17 Departure



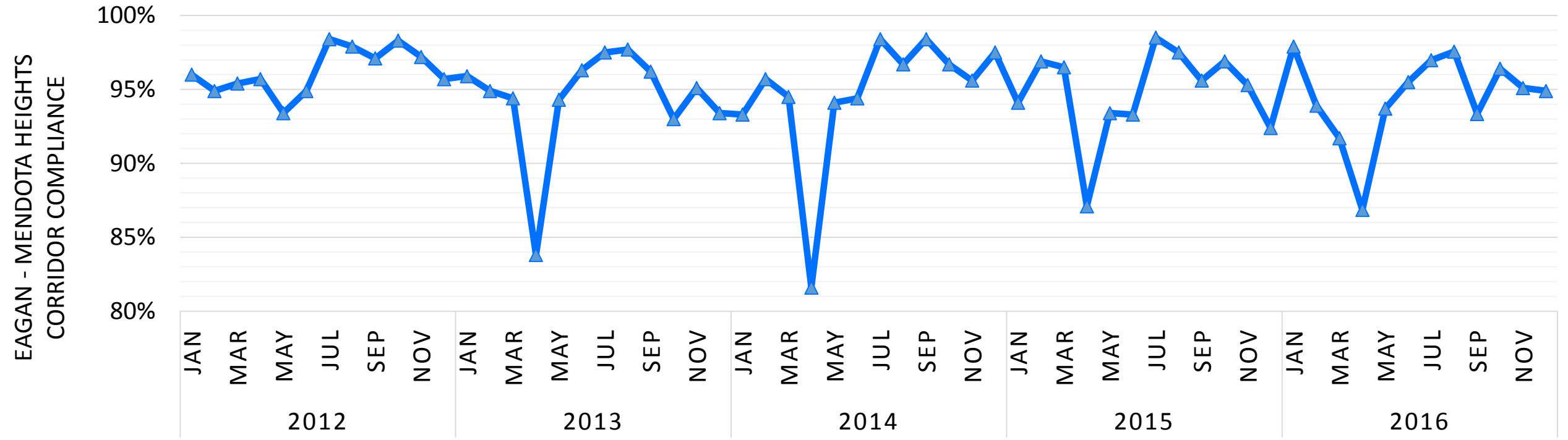
RUNWAY 17	NOVEMBER	DECEMBER
CARRIER JET DEPARTURES (PROCEDURE COMPLIANCE)	5,566 (99.3%)	4,150 (99.1%)



Noise Abatement Procedures – Eagan-Mendota Heights Departure Corridor

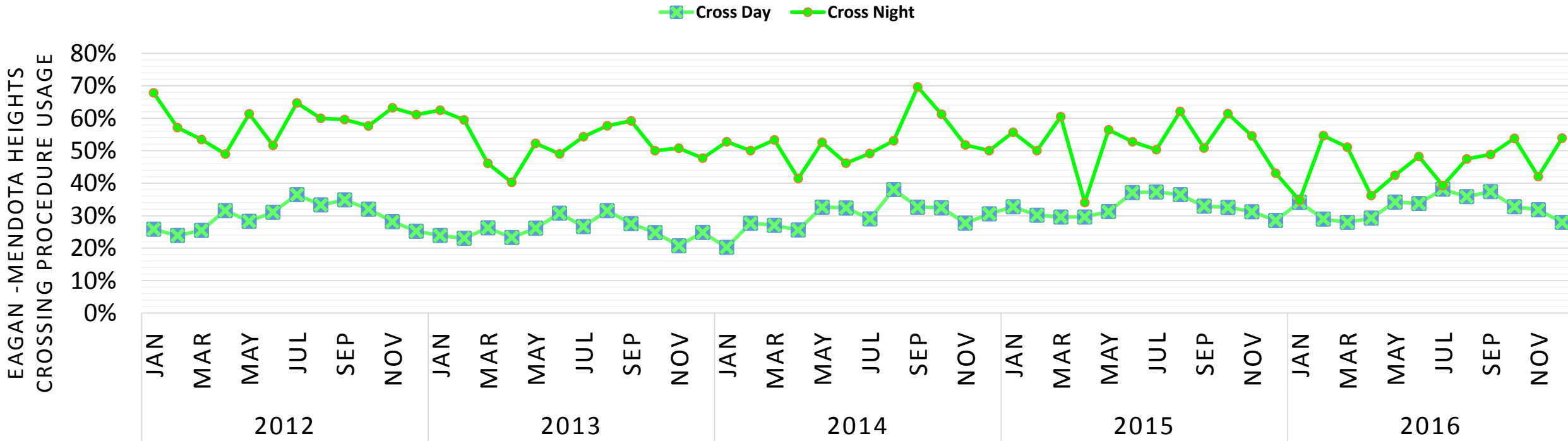
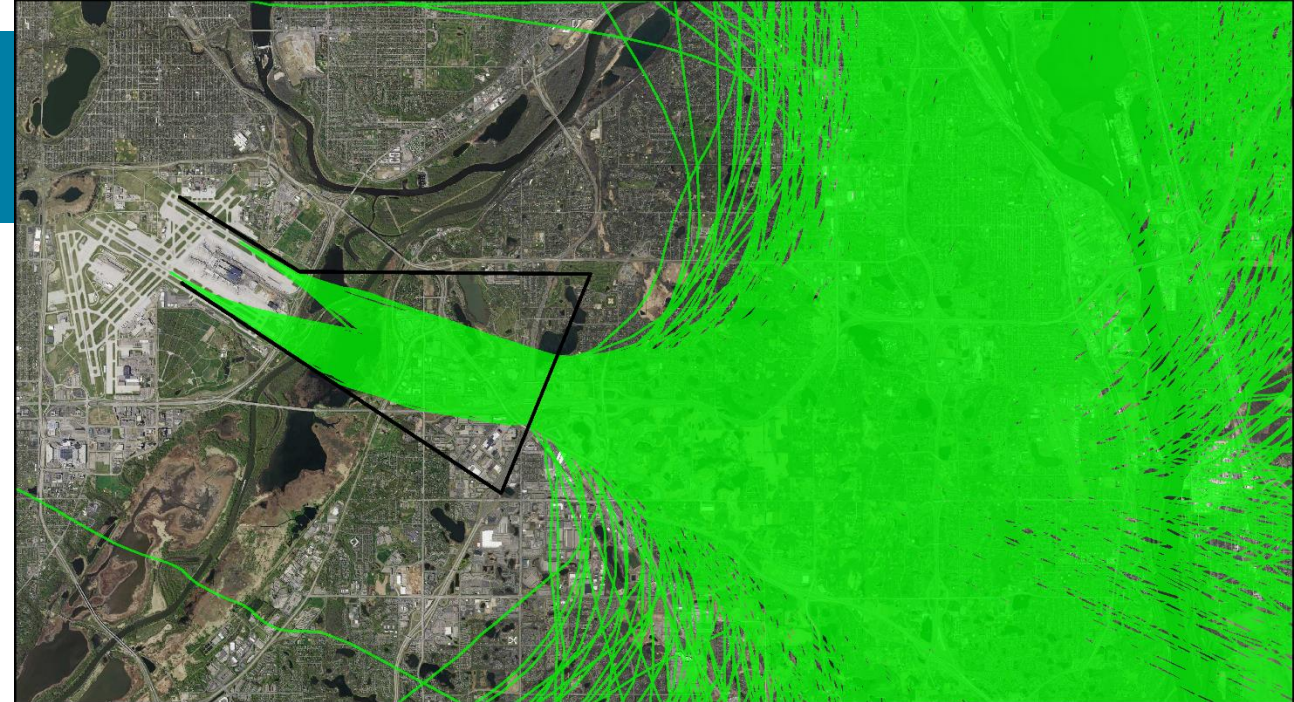


RUNWAYS 12L AND 12R	NOVEMBER	DECEMBER
CARRIER JET DEPARTURES (PROCEDURE COMPLIANCE)	2,956 (95.1%)	2,475 (94.9%)



Noise Abatement Procedures – Crossing-in-the-Corridor

CROSSING USAGE	NOVEMBER	DECEMBER
NIGHT TIME (23:00 – 06:00)	164 (42%)	115 (54%)
DAY TIME (06:00 – 23:00)	2,792 (32%)	2,360 (28%)

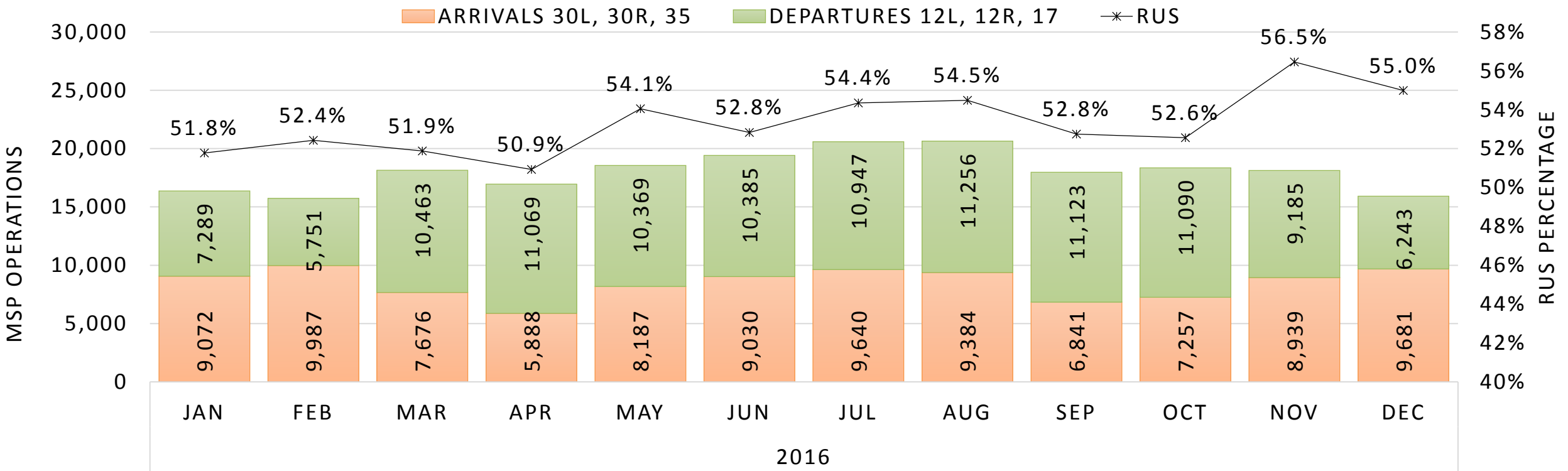


Noise Abatement Procedures – Runway Use System (RUS)

November	Count	Percent
Arrivals on 30L, 30R, and 35	8,939	27.85%
Departures on 12L, 12R, and 17	9,185	28.61%
Use of RUS High-Priority Runways	18,124	56.46%

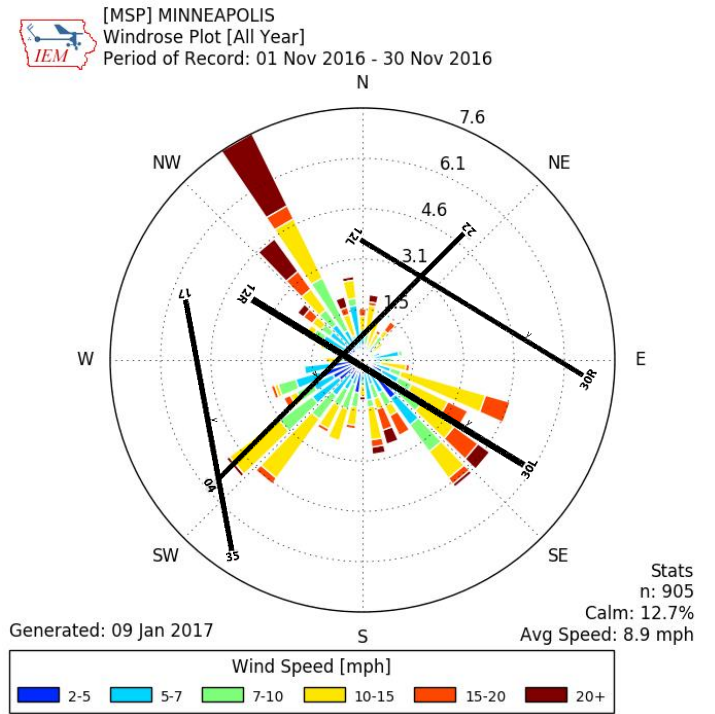
December	Count	Percent
Arrivals on 30L, 30R, and 35	9,681	33.43%
Departures on 12L, 12R, and 17	6,243	21.56%
Use of RUS High-Priority Runways	15,924	54.99%

USE OF MSP RUS HIGH-PRIORITY RUNWAYS

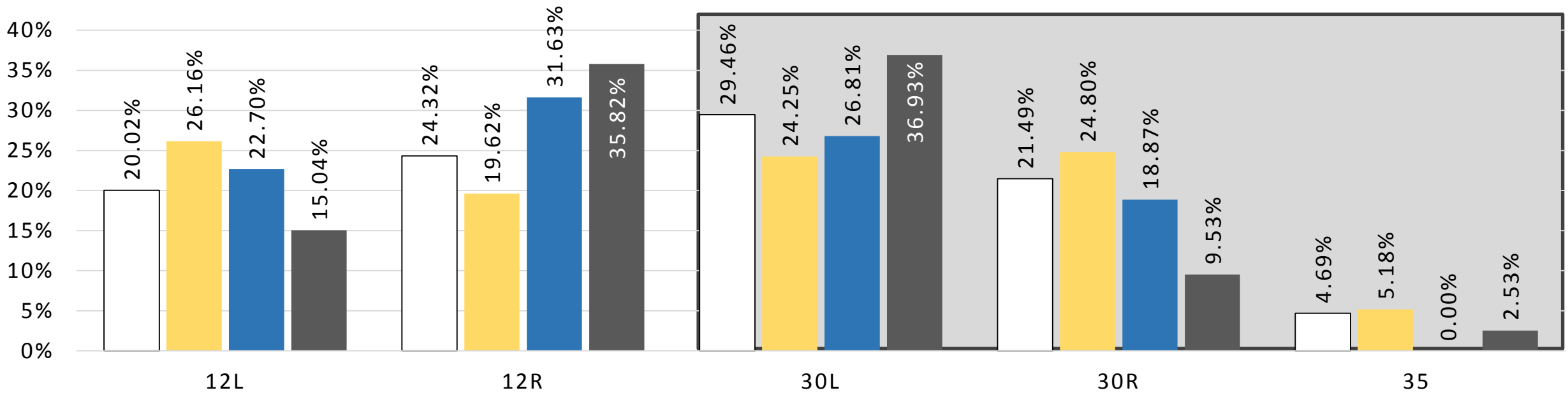


Noise Abatement Procedures – Runway Use System (RUS)

NOVEMBER ARRIVALS

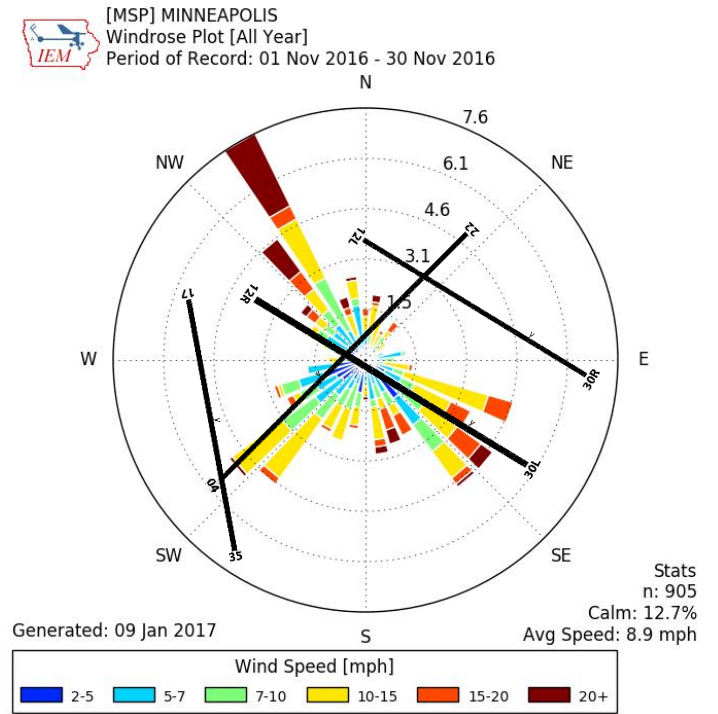


TOTAL
 MORNING TRANSITION
 EVENING TRANSITION
 NIGHT COUNT

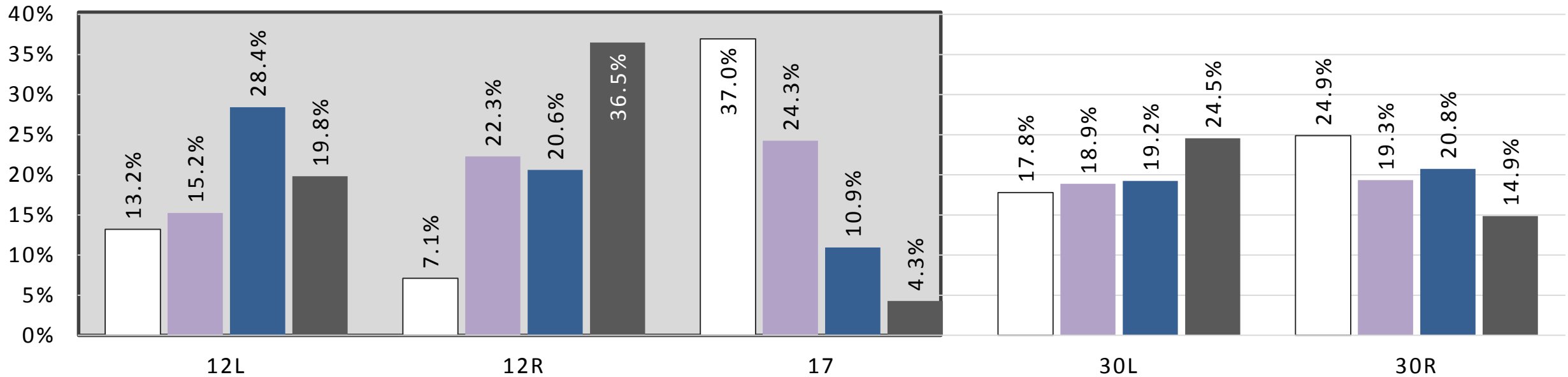


Noise Abatement Procedures – Runway Use System (RUS)

NOVEMBER DEPARTURES

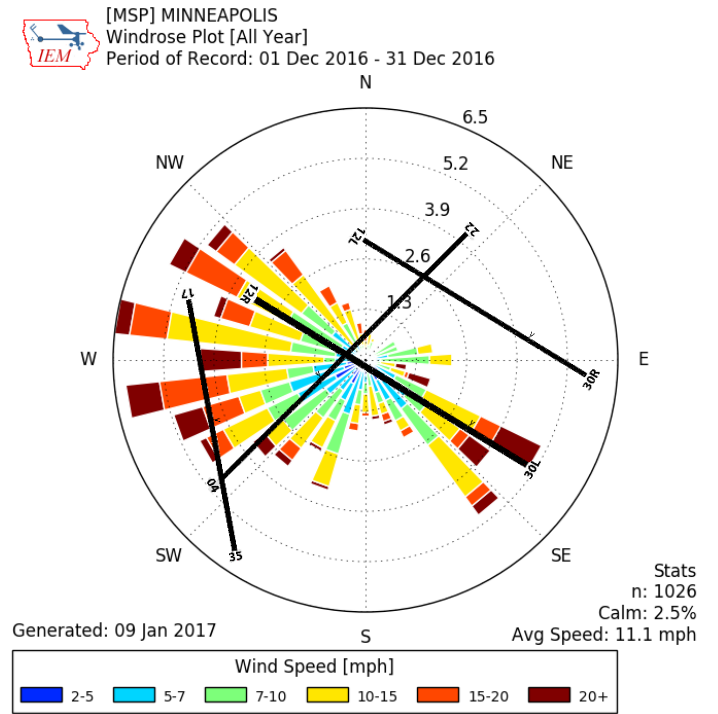


□ TOTAL ■ MORNING TRANSITION ■ EVENING TRANSITION ■ NIGHT COUNT

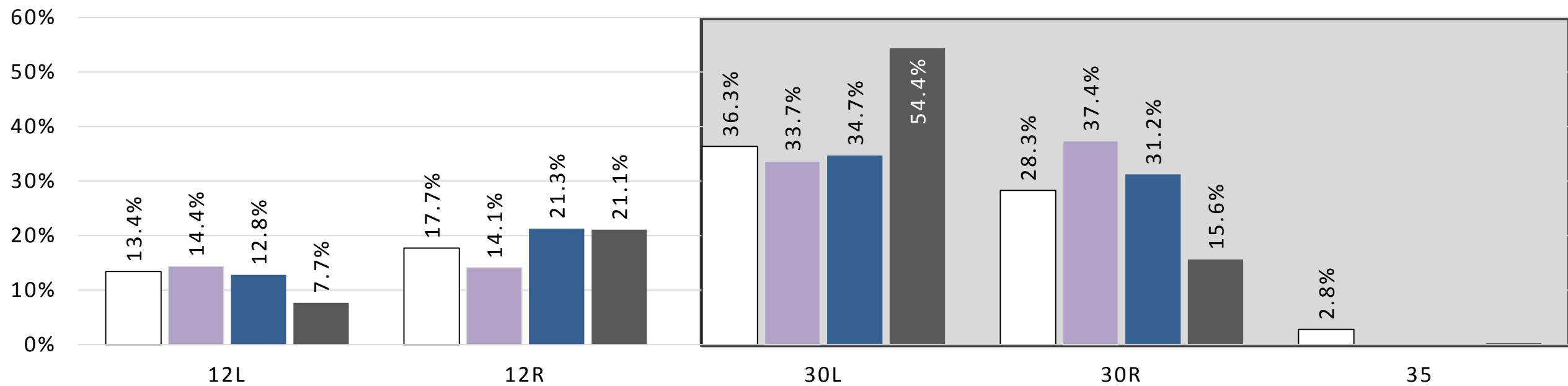


Noise Abatement Procedures – Runway Use System (RUS)

DECEMBER ARRIVALS

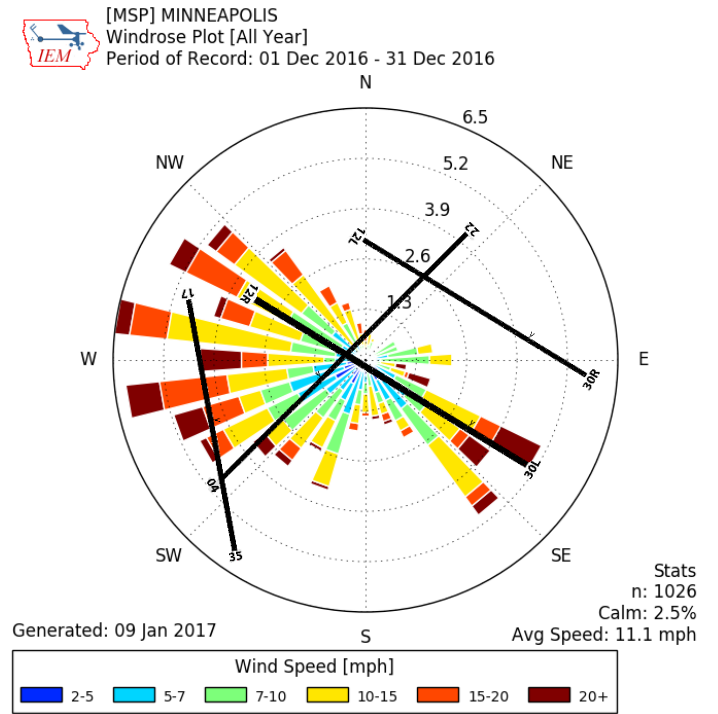


□ TOTAL ■ MORNING TRANSITION ■ EVENING TRANSITION ■ NIGHT COUNT

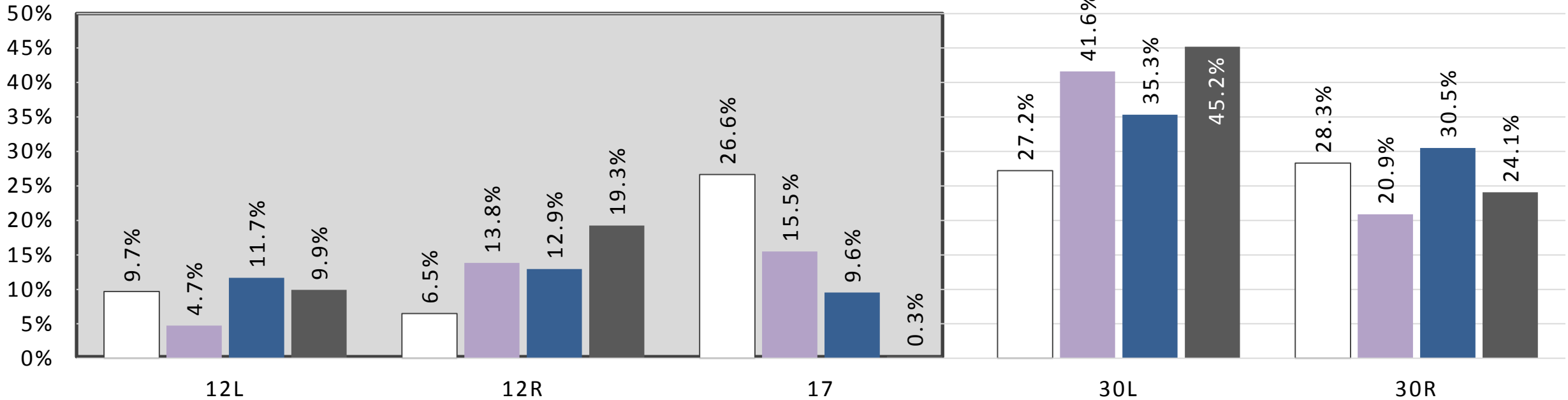


Noise Abatement Procedures – Runway Use System (RUS)

DECEMBER DEPARTURES



□ TOTAL ■ MORNING TRANSITION ■ EVENING TRANSITION ■ NIGHT COUNT

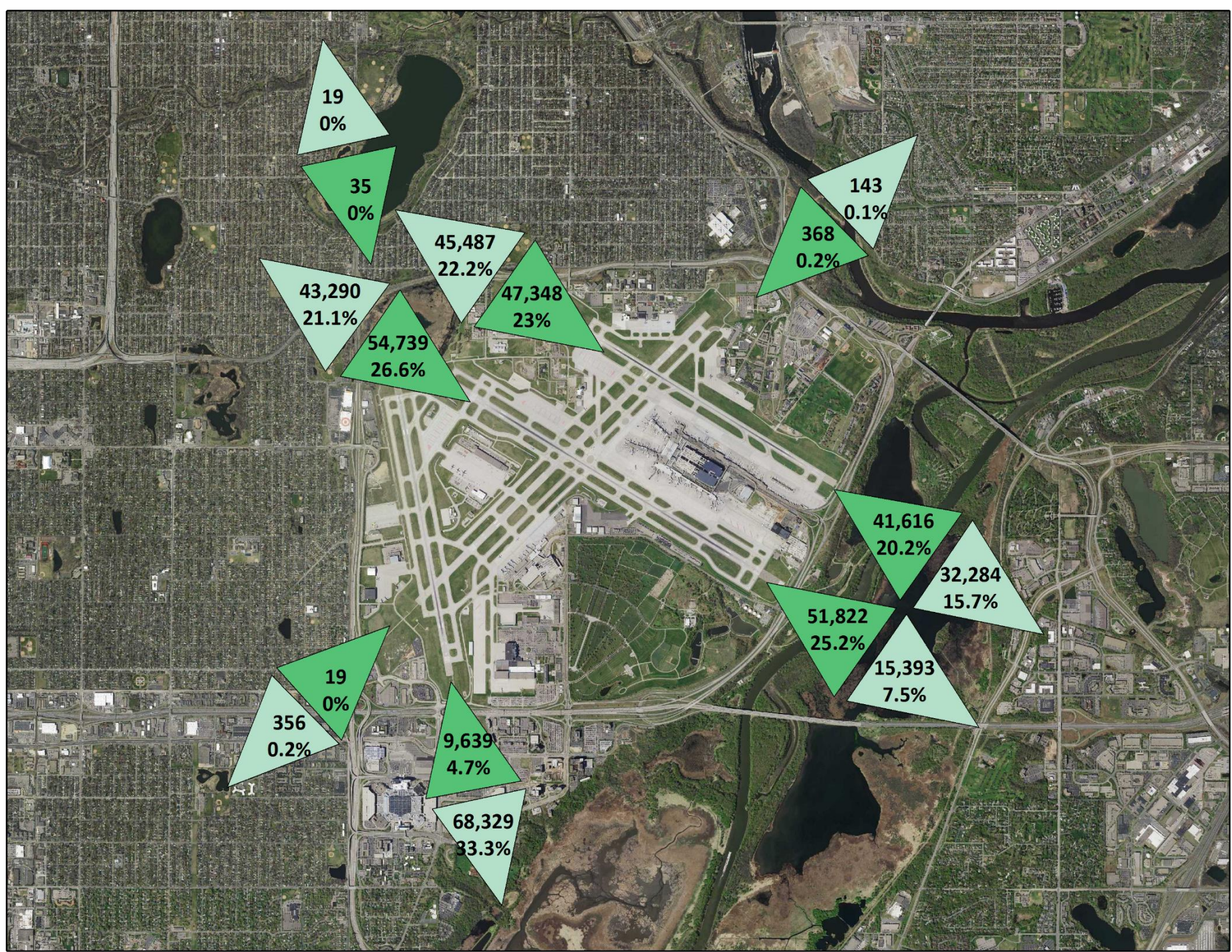


**Item 3: Review of Operations
Report Summary:
November and
December 2016**

**2016 MSP AIRCRAFT
OPERATIONS**



Arrivals	Departures
205,586	205,301



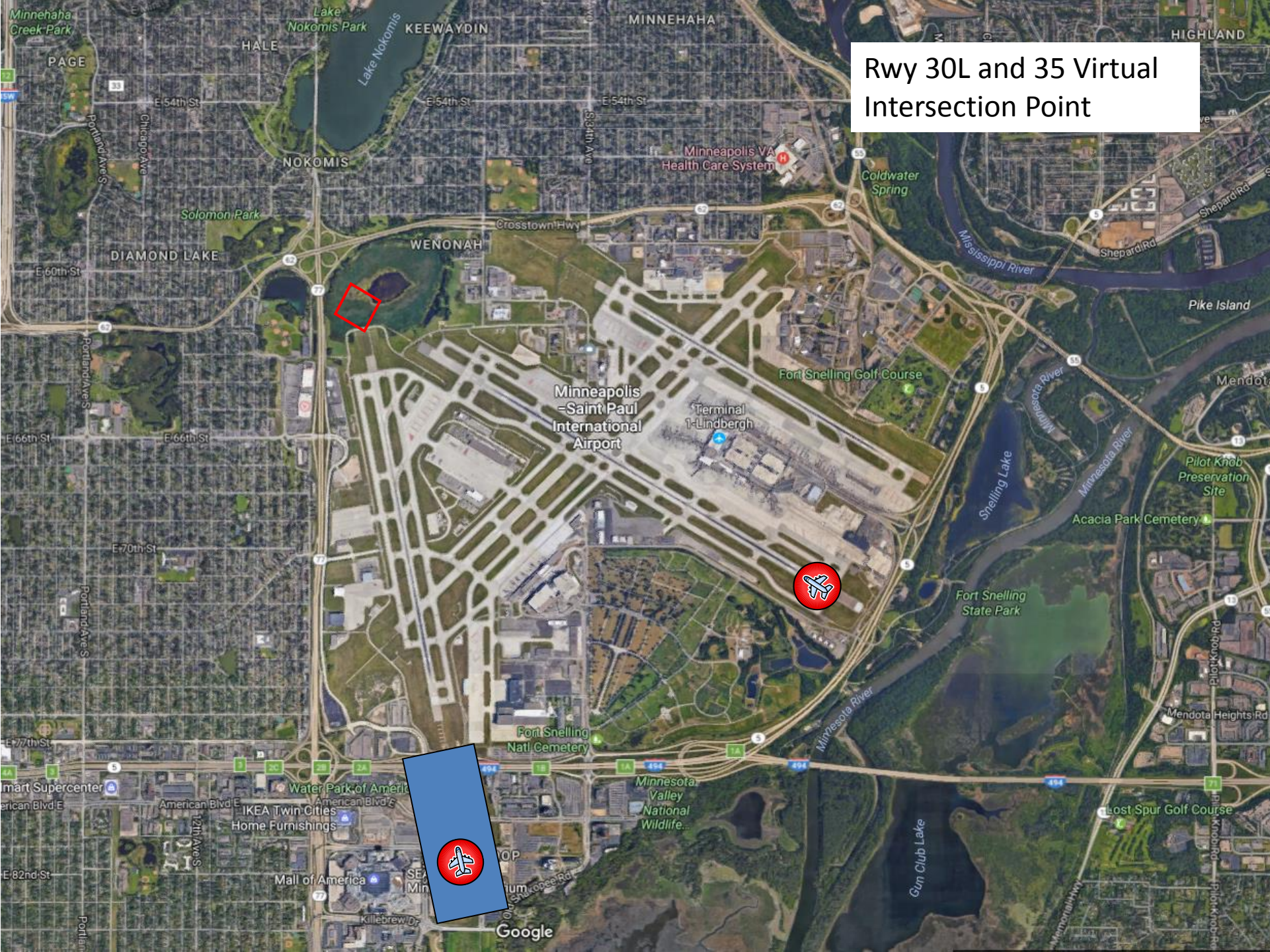


**NOISE OVERSIGHT COMMITTEE
JANUARY 18, 2017**

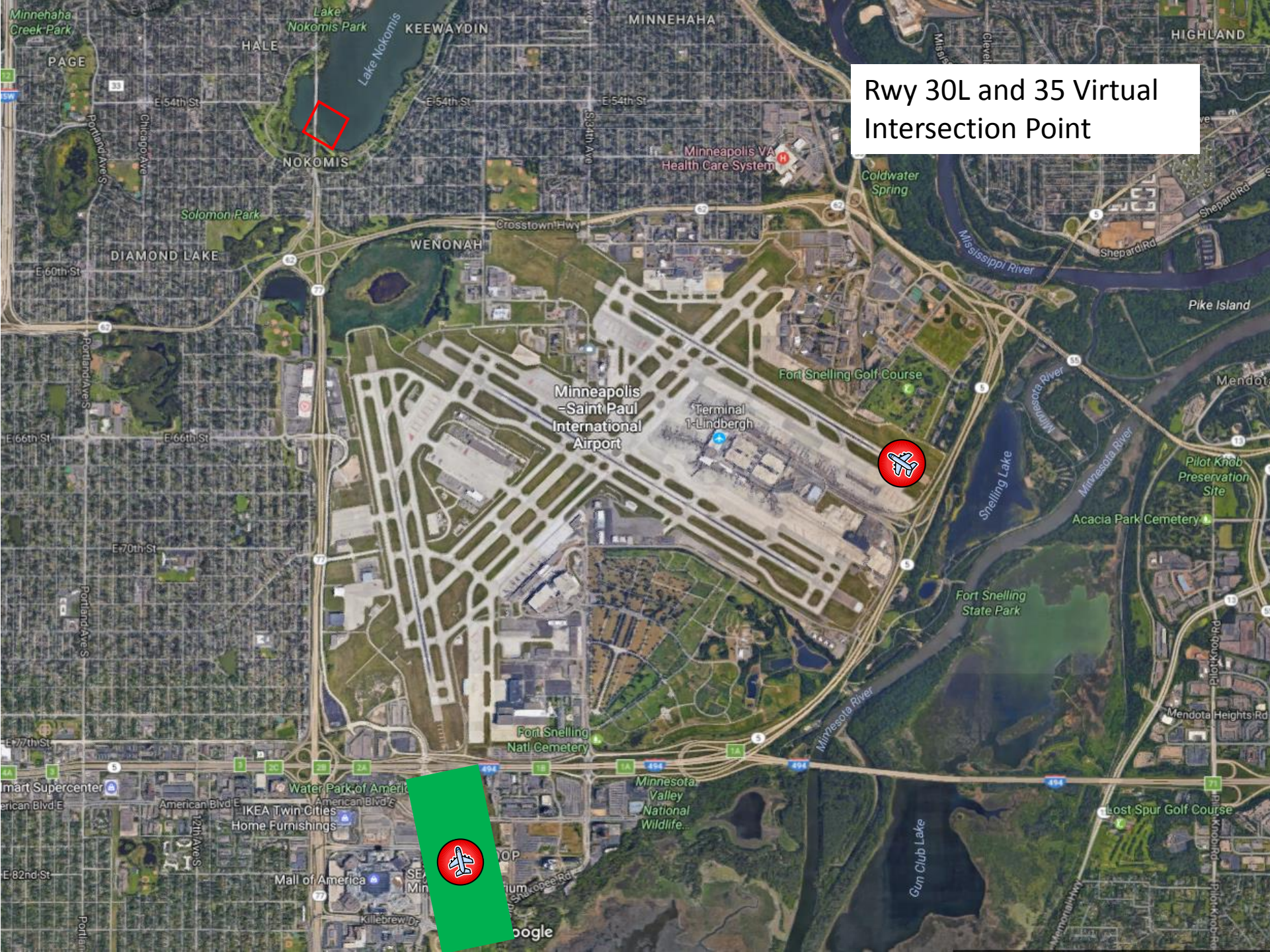
**Item 4: Update on Converging Runway Operations –
Kurt Mara, FAA Traffic Management Officer**



Rwy 30L and 35 Virtual Intersection Point



Rwy 30L and 35 Virtual Intersection Point



Both Rwy 30L and 30R
with 35 Virtual
Intersection Point





NOISE OVERSIGHT COMMITTEE
JANUARY 18, 2017

**Item 5: Noise Program Communication Enhancement
Plan Update**



Item 5: Noise Program Communication Enhancement Plan Update

- Recommendations garnered from **stakeholder interviews** are leading to modifications to quarterly Public Input Meetings beginning in 2017, beginning with a name change - **“Listening Sessions”**.
- Listening Sessions will be as follows:
 - Winter Listening Session – January 25, 2017 at 7:00 pm at the MAC General Offices
 - Spring Listening Session – April 26, 2017 at 7:00 pm location TBD
 - Summer Listening Session – July 26, 2017 at 7:00 pm location TBD
 - Fall Listening Session – October 25, 2017 at 7:00 pm at the MAC General Offices
- Meeting agendas and presentations will be posted on macnoise.com in advance of each meeting.
- A meeting announcement will be sent through the macnoise.com latest news subscription service.
- The meeting will begin with hearing from each of the individuals in attendance.
 - ✓ What is your name?
 - ✓ Where do you live and for how long?
 - ✓ What would you like to get from this meeting?
- MAC staff will go through a short presentation and open the floor to a two-way dialogue. When possible, responses will be provided at the meeting with a commitment to follow up to questions needing further research.
- Staff will no longer post written questions and responses on the website.

“Through consultation with external convening and communication experts to obtain stakeholder feedback, we will facilitate dialogue that builds a shared understanding of the circumstances and is committed to creative collaboration and effective communication.”





NOISE OVERSIGHT COMMITTEE
JANUARY 18, 2017

Item 6: Evaluate Steeper Glide Slopes for Aircraft Arrivals

The 2017 NOC Work Plan includes an investigation into steeper glide slopes at MSP.

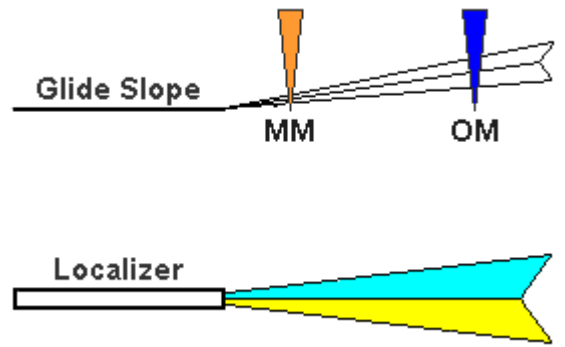


Item 6: Evaluate Steeper Glide Slopes for Aircraft Arrivals

- The Instrument Landing System (ILS) is comprised of a glide slope (vertical guidance) and a localizer (lateral guidance).
- International Civil Aviation Organization (ICAO) set the international glide slope standard at 3 °
 - Some airports use a higher glide slope for terrain and/or obstacle clearance.

Two international airports evaluated and/or implemented steeper glide slopes for noise reduction purposes:

- **Frankfurt Airport** uses a 3.2° glide slope on its newest runway, opened in 2011.
- **London Heathrow** conducted a 6-month trial of a 3.2 ° glide slope.



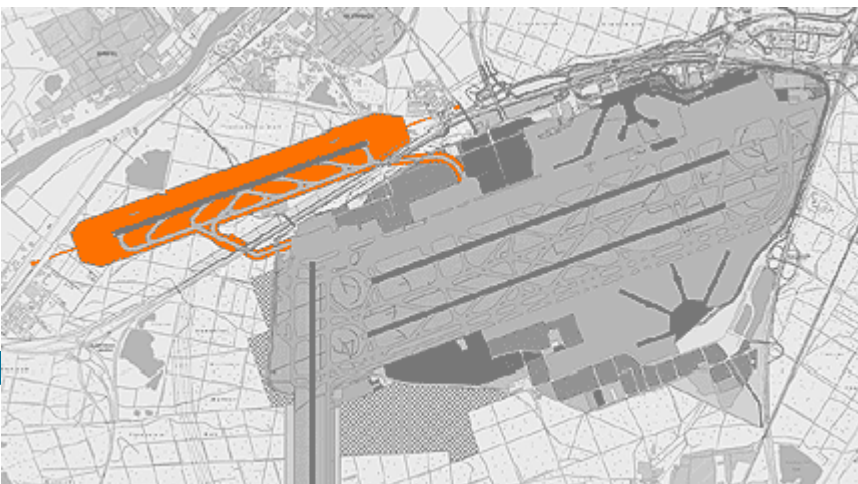
Item 6: Evaluate Steeper Glide Slopes for Aircraft Arrivals

Frankfurt Airport

Began in 2011 with simulator tests for 3.0°, 3.2° and 3.5° glide slopes for its newest runway.

Results showed a 3.2 ° glide slope allowed aircraft to be up to 246 feet higher when they intercepted the ILS.

Glide slopes at or above 3.5° required procedural changes in gear and flap deployment, reducing or negating noise benefit gained from the higher glide path.



In October 2012, Frankfurt began operationally testing the 3.2° glide slope by installing two independent ILS systems for each end of the runway (4 ILS's) at the cost of \$3.3 million.

The 3.2° glide slope angle is only used for high-visibility conditions (Category I approaches). It is still necessary to maintain the ability for 3.0° glide slopes for low visibility approaches.

A two-year test was conducted and noise data was collected by 7 noise monitors, recording noise reductions between 0.56 and 1.5 dBA, unlikely to be perceptible on the ground.

In December 2014, the 3.2° glide slope became standard for the new runway at Frankfurt Airport.



Item 6: Evaluate Steeper Glide Slopes for Aircraft Arrivals

London Heathrow Airport

Completed a 6-month trial of a 3.2° glide slope angle in August 2016.

The airport amended their existing RNAV approaches, changing the angle to 3.2° all the way to the runway.

This allowed aircraft to continue flying a 3.0° approach during low visibility conditions.



During the trial 2,469 arrivals out of 112,229 flew the 3.2° glide slope (2.2%).

The height improvements during the trial were lower than mathematically expected due to temperature effects on the RNAV approaches

Air Traffic controllers and pilots responded that the 3.2 ° RNAV approach did not make a difference in the ability to manage the aircraft speed, increase the number of go-arounds, nor did it increase work load.

Noise data was collected and reduction ranged from -1.4 dBA to +0.1 dBA, depending on the location of the noise monitor, with an average of -0.5 dBA reduction.

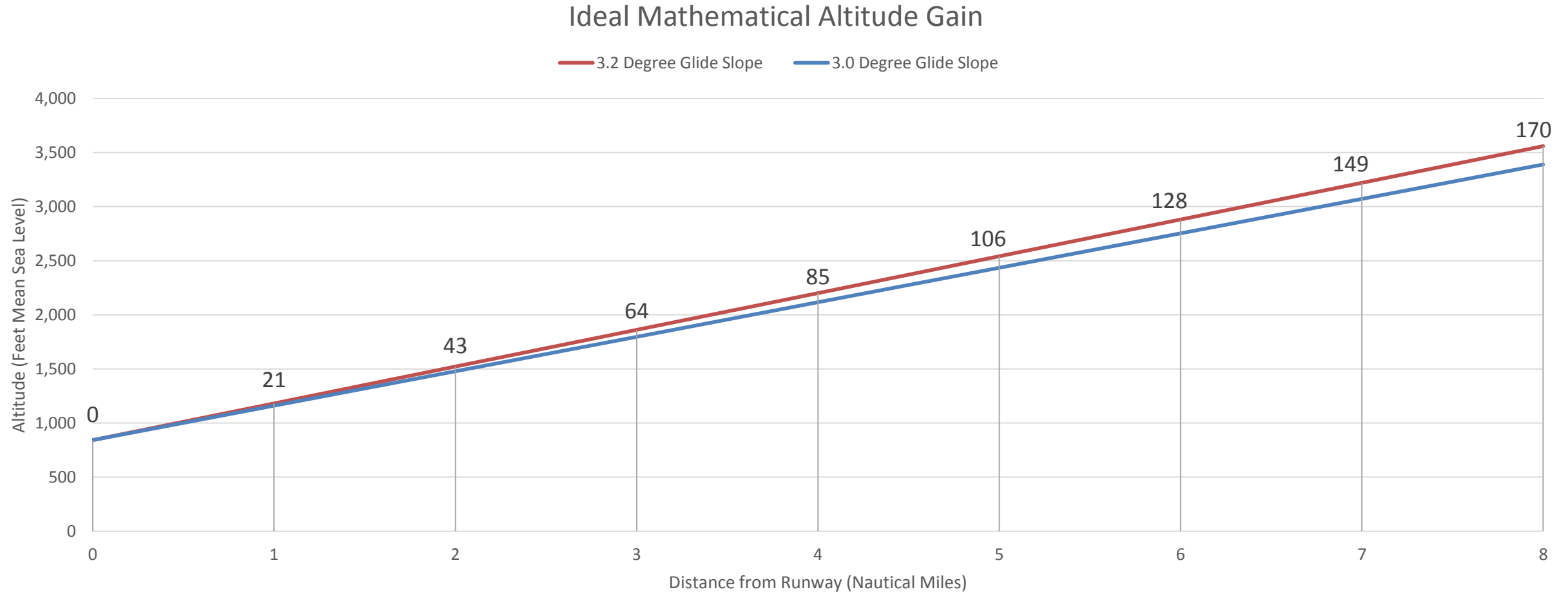
Heathrow's long-term plan is to incorporate a 3.2° glide slope in their proposal for redesigning the Heathrow airspace.



Item 6: Evaluate Steeper Glide Slopes for Aircraft Arrivals

The chart below shows what the ideal mathematical trajectory would be for MSP between a 3.2° and a 3.0° glide slope.

At 6 miles from the runway end (approximately over St. Louis Park on the 12s; Inver Grove Heights on the 30s and Apple Valley on 35), aircraft would be approximately 128 feet higher in altitude.





NOISE OVERSIGHT COMMITTEE
JANUARY 18, 2017

Item 7: Second Amendment to the Consent Decree
Update





**NOISE OVERSIGHT COMMITTEE
JANUARY 18, 2017**

Item 8: Public Comment





**NOISE OVERSIGHT COMMITTEE
JANUARY 18, 2017**

Item 9: Announcements

Next NOC meeting
March 15, 2017 @ 1:30 PM
MAC General Offices
6040 28th Avenue South
Minneapolis, MN 55450

