

EAGAN LISTENING SESSION

Eagan Community Center

August 27, 2018



MEETING AGENDA

6:30 Welcome

6:35 Introductions

What is your name?

Where do you live?

6:45 Responses to Eagan ARC Questions

7:20 Audience Q&A

8:00 Adjourn



MSP RUNWAYS & THE CITY OF EAGAN



MSP RUNWAYS & THE CITY OF EAGAN

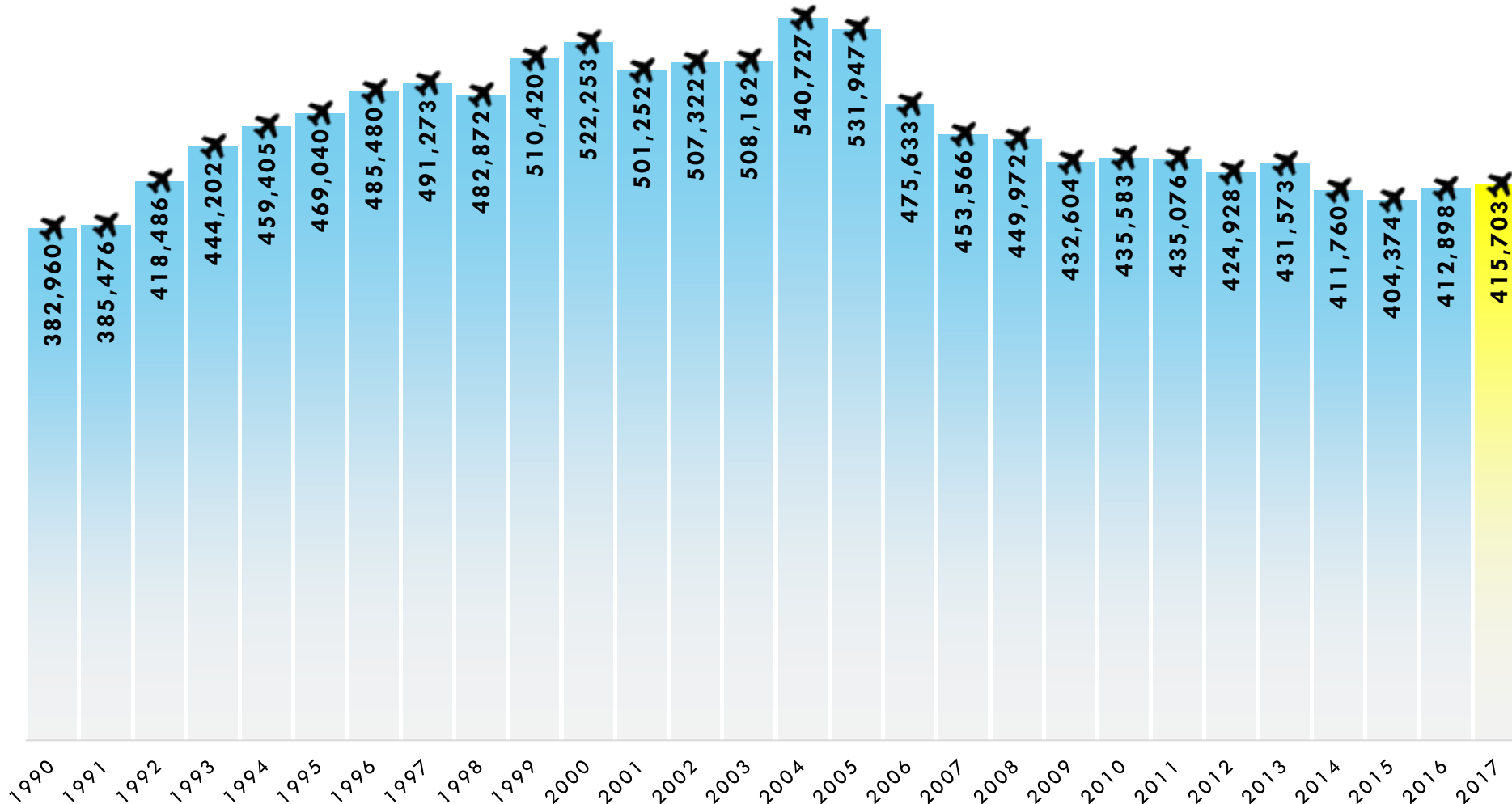


THE EAGAN ARC ASKED

Will you provide charts showing the annual number of operations on each runway since 17/35 opened?



ANNUAL OPERATIONS 1990-2017

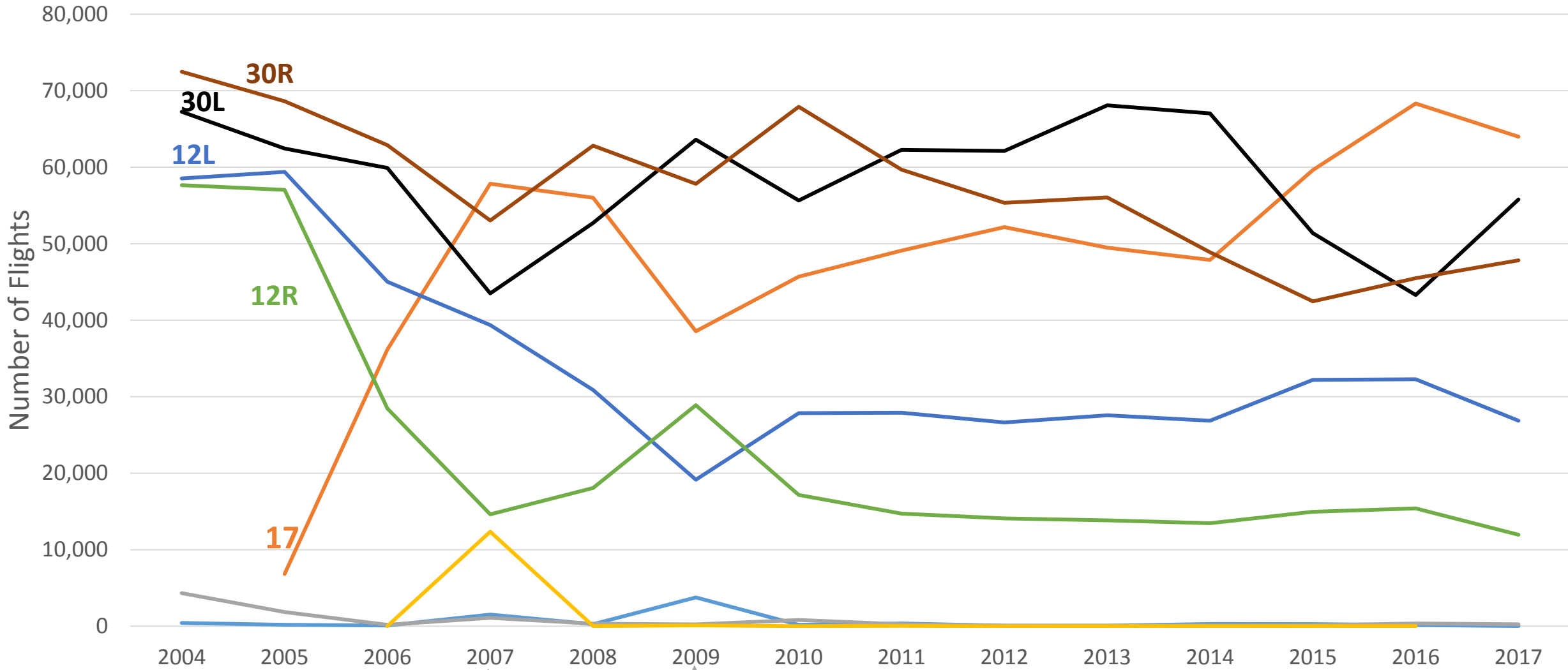


SOURCE: FAA OPSNET

- MSP operations peaked in 2004 when more than **540,000** aircraft arrived or departed the airport
- MSP traffic level today is similar to **early 1990's levels**
- YTD 2018 operations are **~2%** below 2017

Departure Operations

— 4 — 17 — 22 — 35 — 12L — 12R — 30L — 30R



Oct 2005: Rwy
17/35 Opens

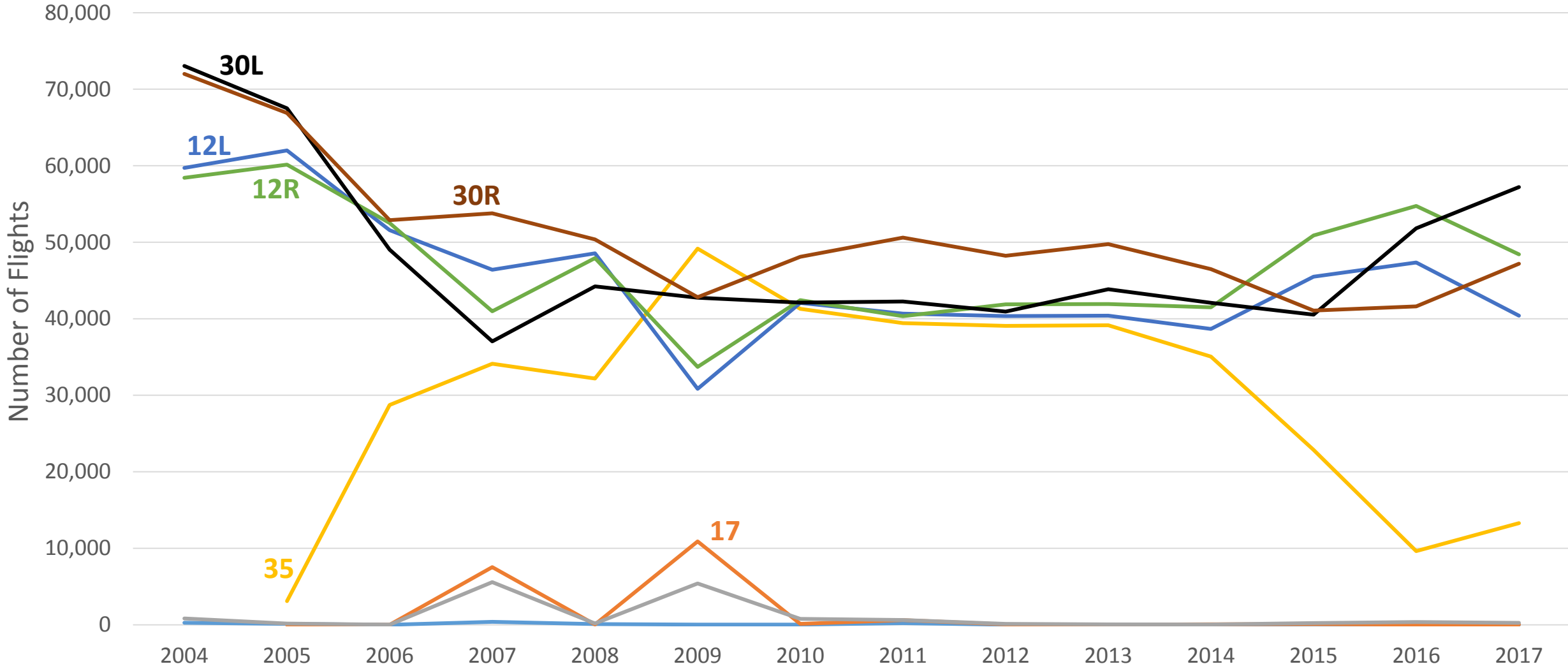
Aug-Oct 2007:
Rwy 12R/30L
Closed

Aug-Oct 2009:
Rwy 12L/30R
Closed

Converging Runway
Operations
Mitigation

Arrival Operations

— 4 — 17 — 22 — 35 — 12L — 12R — 30L — 30R



Oct 2005: Rwy 17/35 Opens

Aug-Oct 2007: Rwy 12R/30L Closed

Aug-Oct 2009: Rwy 12L/30R Closed

Converging Runway Operations Mitigation

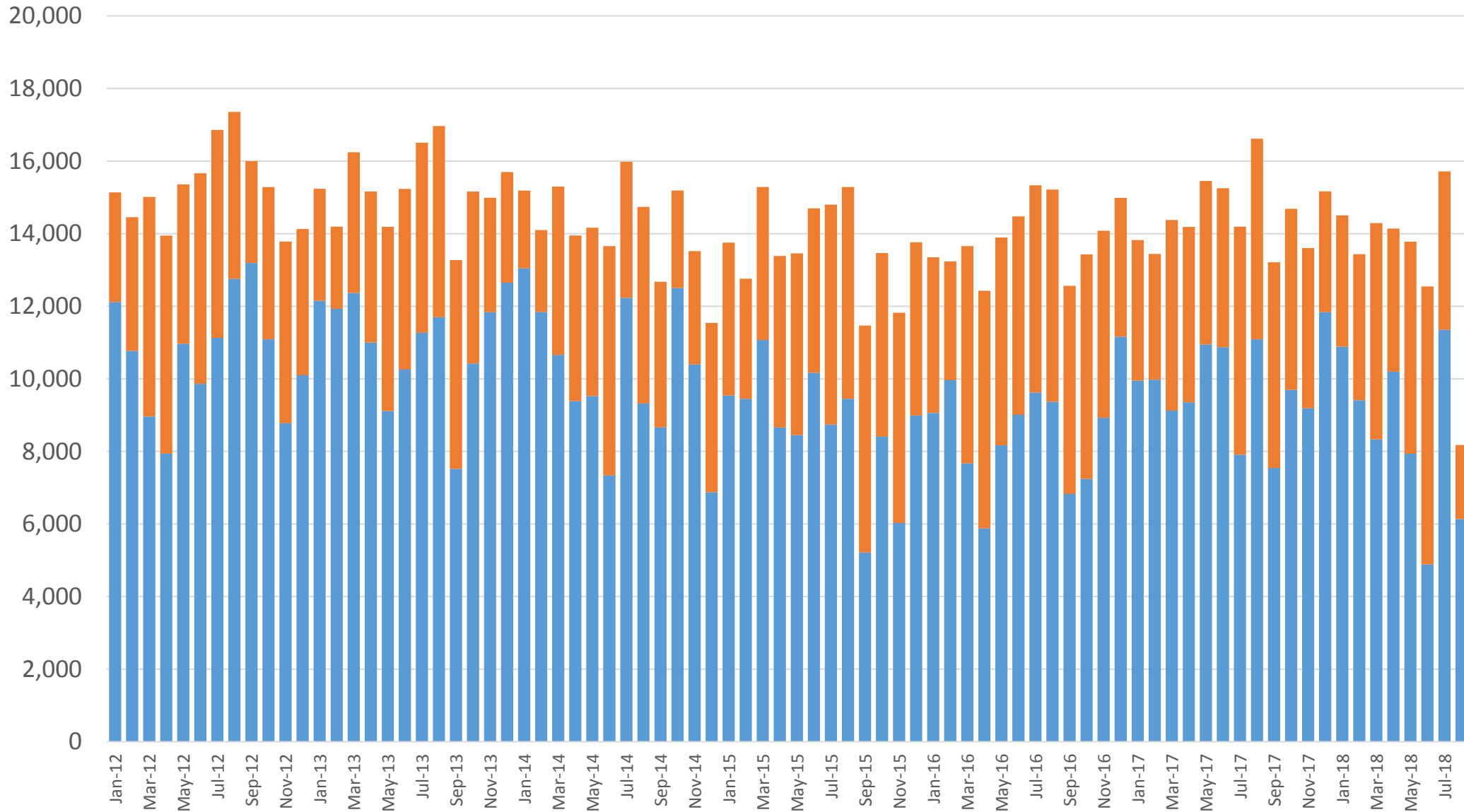
THE EAGAN ARC ASKED:

Will you speak to the increase this summer in aircraft operations over Eagan? What can be done to change this trend?



NUMBER OF ARRIVALS AND DEPARTURES OVER EAGAN

Arrivals Departures



Typical Eagan Traffic

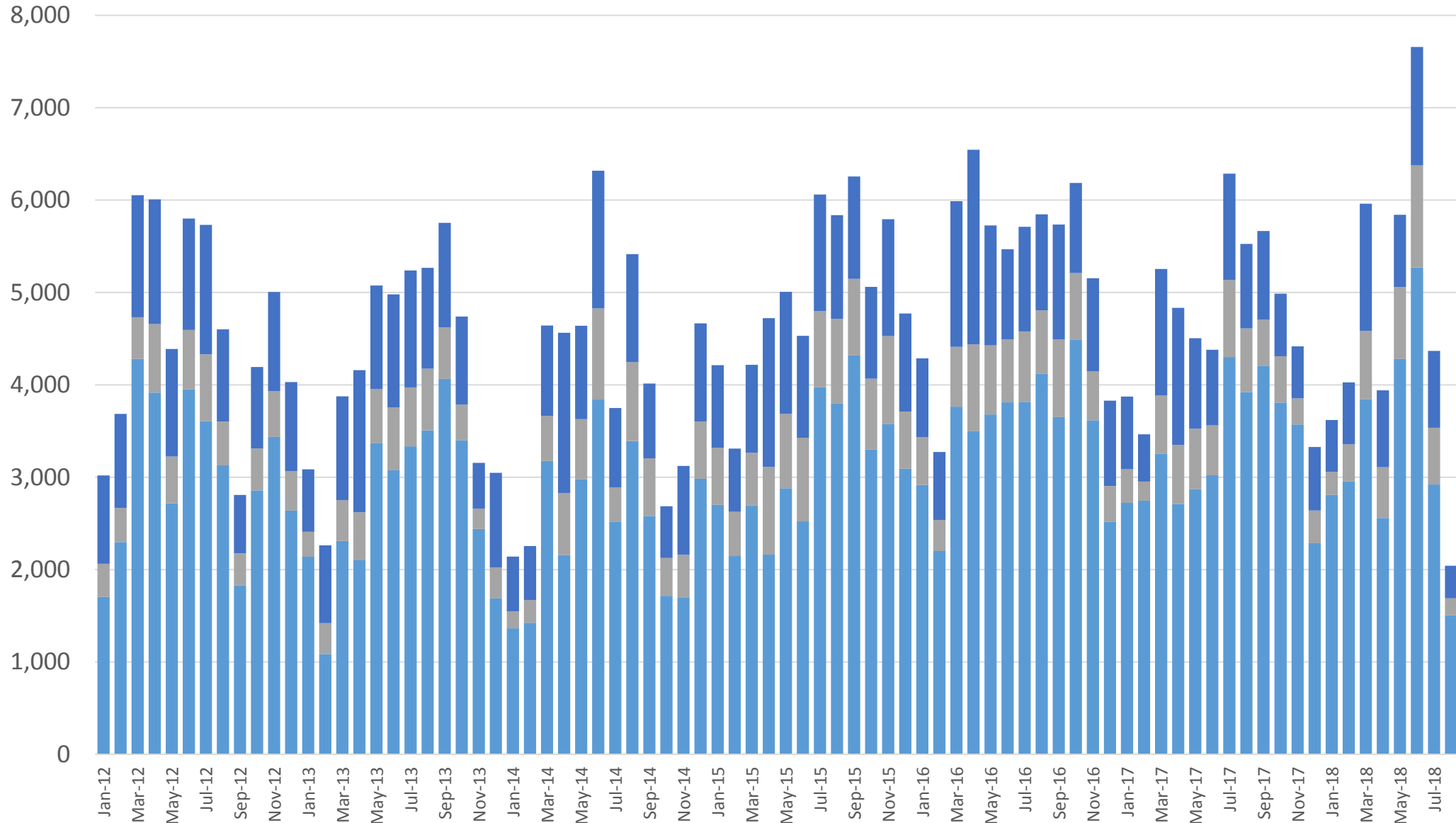
Arrive	65%
Depart	35%



*August 1-15, 2018

NUMBER OF DEPARTURES OVER EAGAN

17 12L 12R



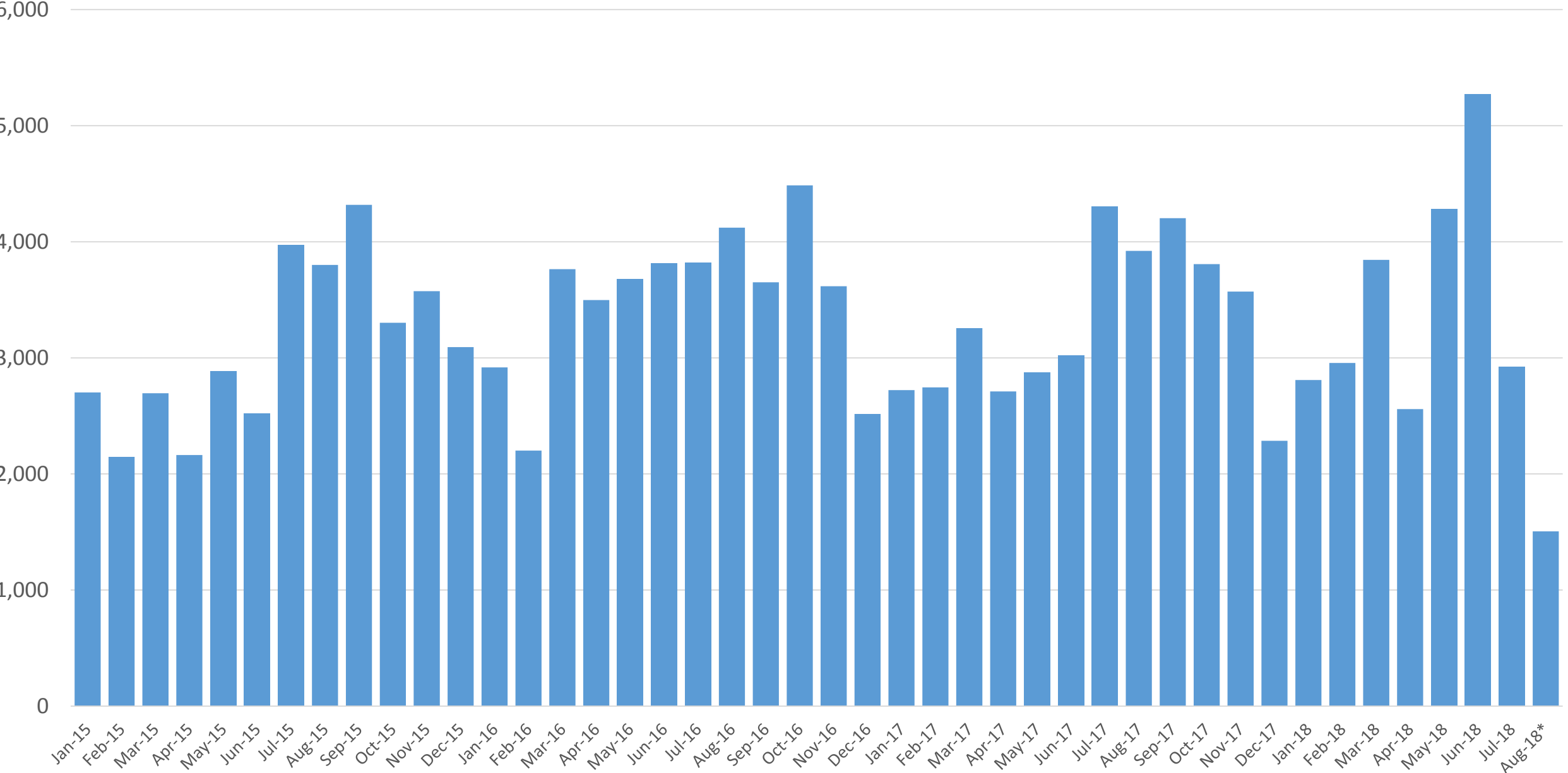
Typical Eagan Departure Runways

12R	21%
12L	13%
17	67%



*August 1-15, 2018

NUMBER OF RUNWAY 17 DEPARTURES OVER EAGAN



*August 1-15, 2018

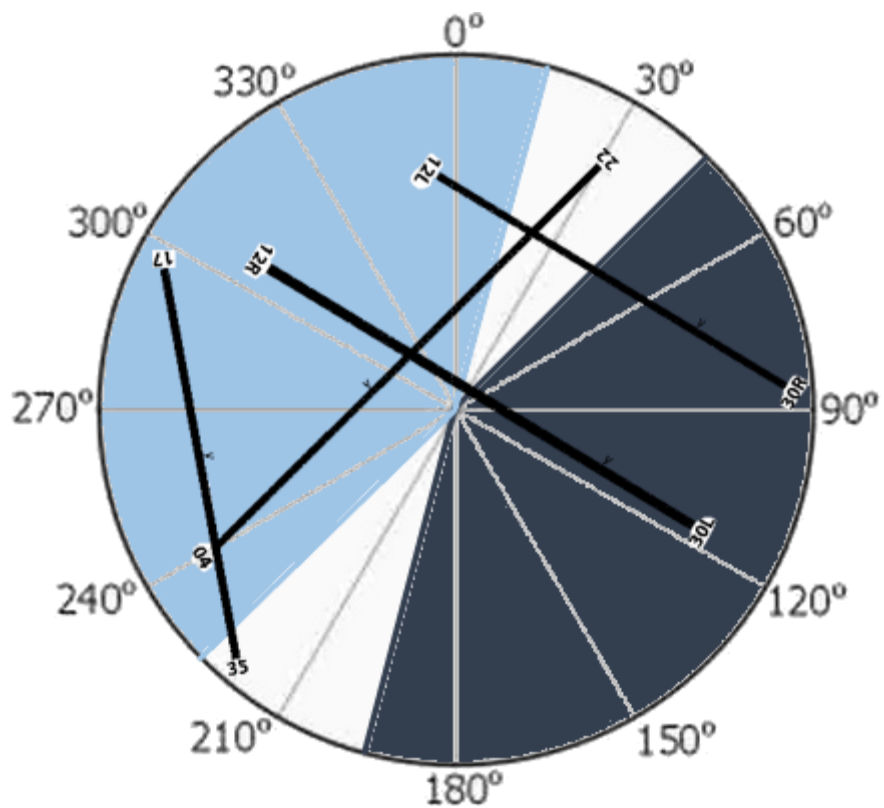
Recall the Factors

Runway use and airport configuration decisions take into account

- Wind direction and wind speed (on the surface and aloft);
- Aircraft weight;
- The number of inbound and scheduled outbound aircraft;
- Noise abatement; and
- Where aircraft are going to and coming from (destination and origin airports)



COMPASS ROSE & MSP RUNWAY LAYOUT

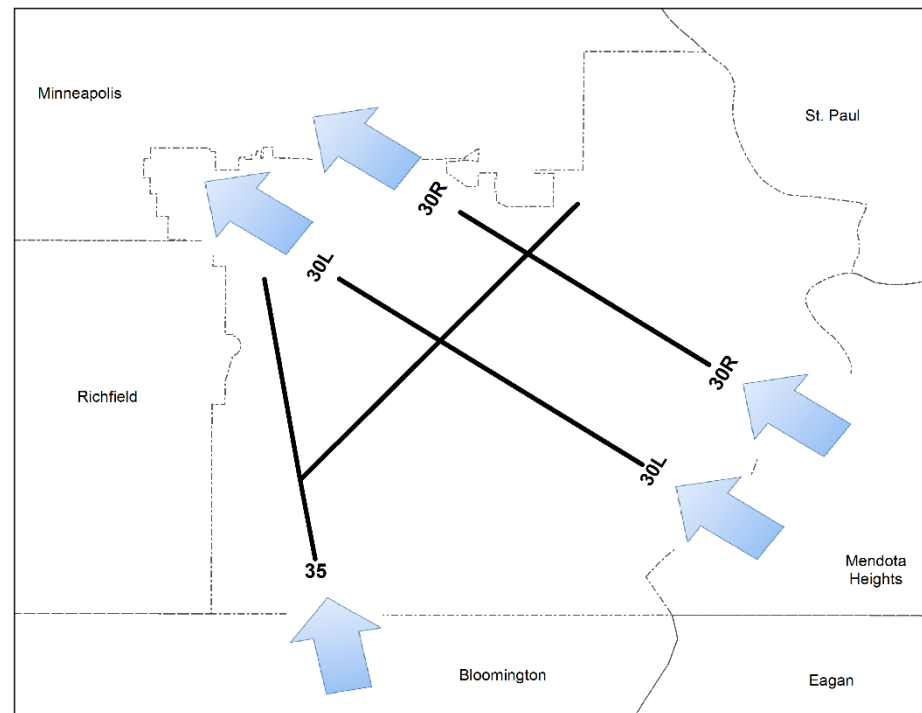


Favors North Flow

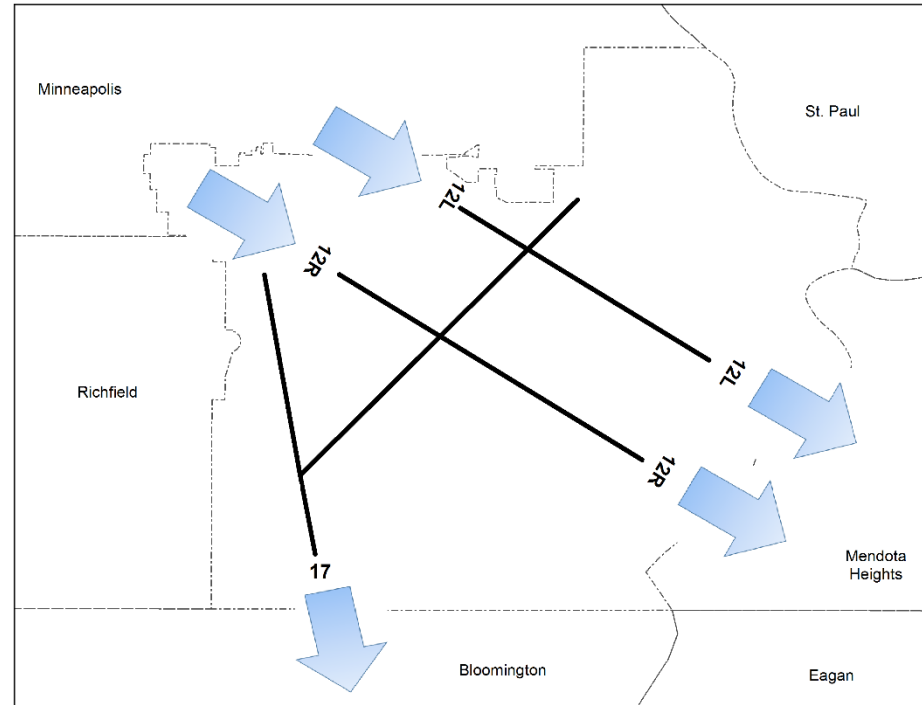
Favors South Flow

Crosswinds

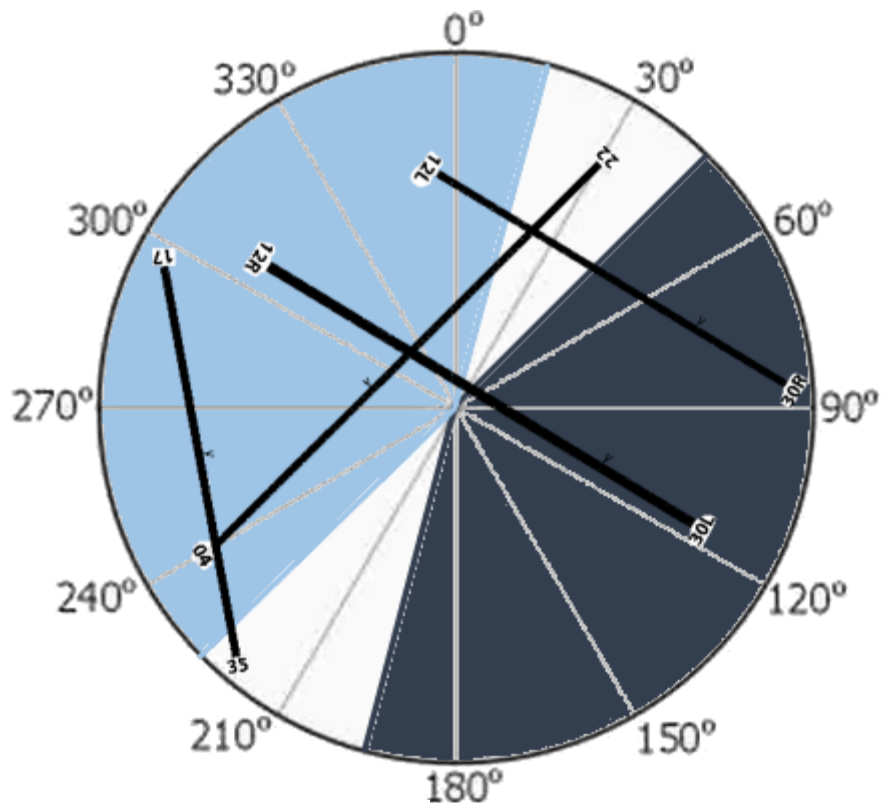
North Flow



South Flow



COMPASS ROSE & MSP RUNWAY LAYOUT



■ Favors North Flow

■ Favors South Flow

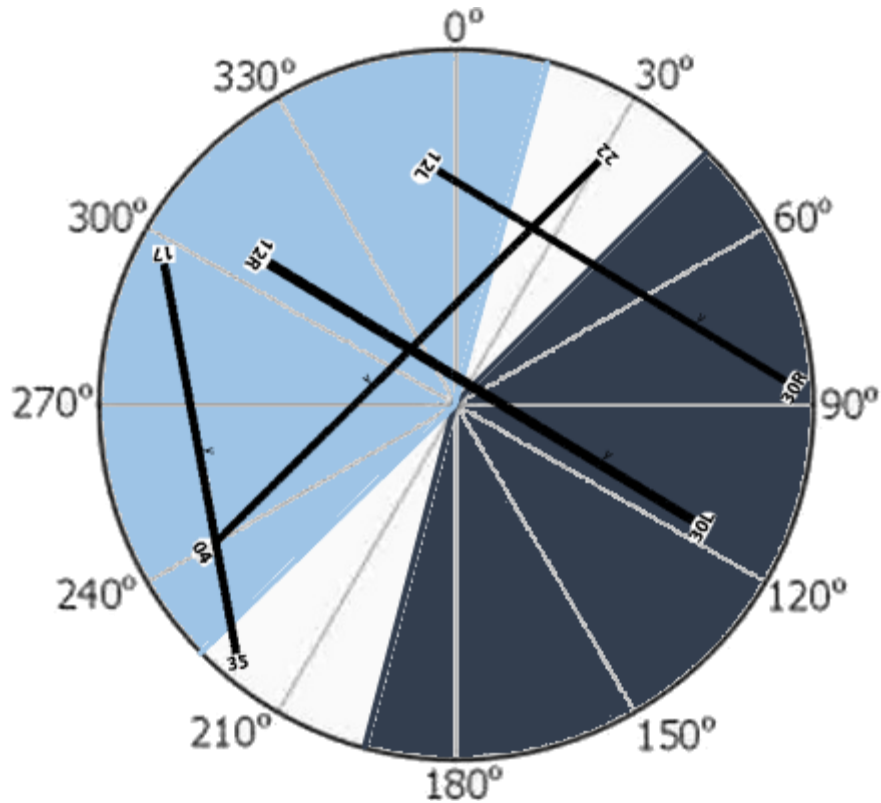
■ Crosswinds

MAY-JUNE 2017	MAY-JUNE 2018
REPORTED WINDS FAVORING NORTH FLOW	REPORTED WINDS FAVORING NORTH FLOW
53.7%	31.8%
REPORTED WINDS FAVORING SOUTH FLOW	REPORTED WINDS FAVORING SOUTH FLOW
38.1%	56.7%

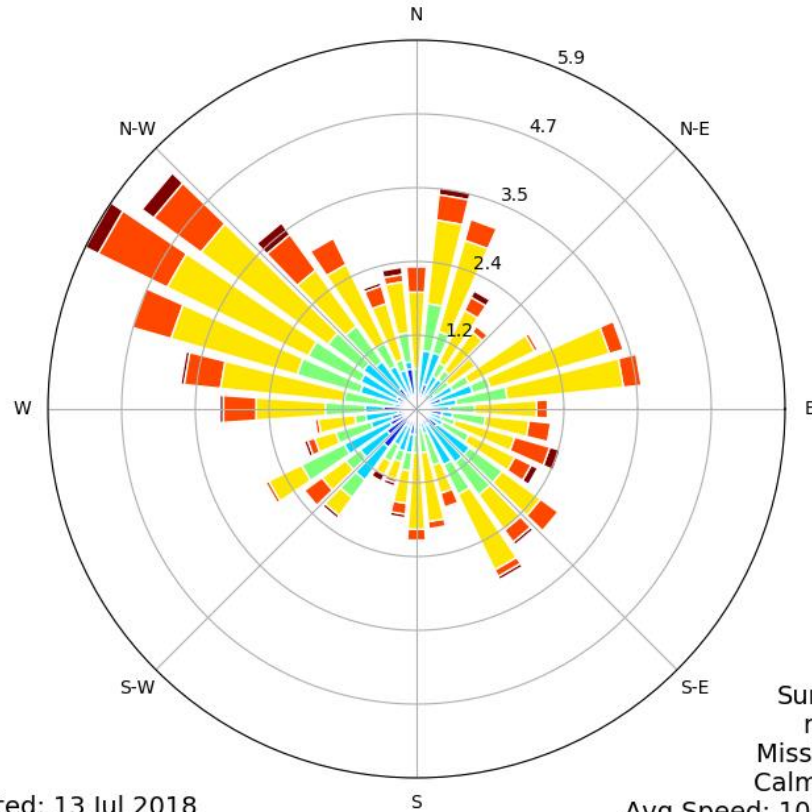
COMPASS ROSE & MSP RUNWAY LAYOUT



[MSP] MINNEAPOLIS
Windrose Plot [All Year]
Period of Record: 01 May 2017 - 01 Jul 2017



- Favors North Flow
- Favors South Flow
- Crosswinds



Generated: 13 Jul 2018



MAY-JUNE 2017

**REPORTED
WINDS
FAVORING
NORTH FLOW**

53.7%

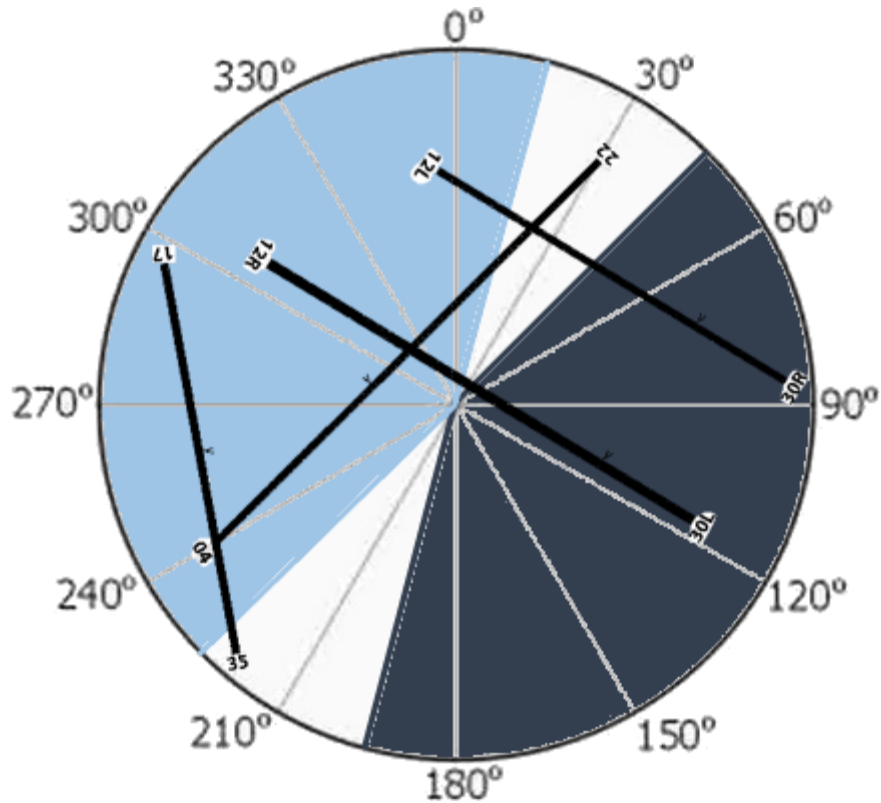
**REPORTED
WINDS
FAVORING
SOUTH FLOW**

38.1%

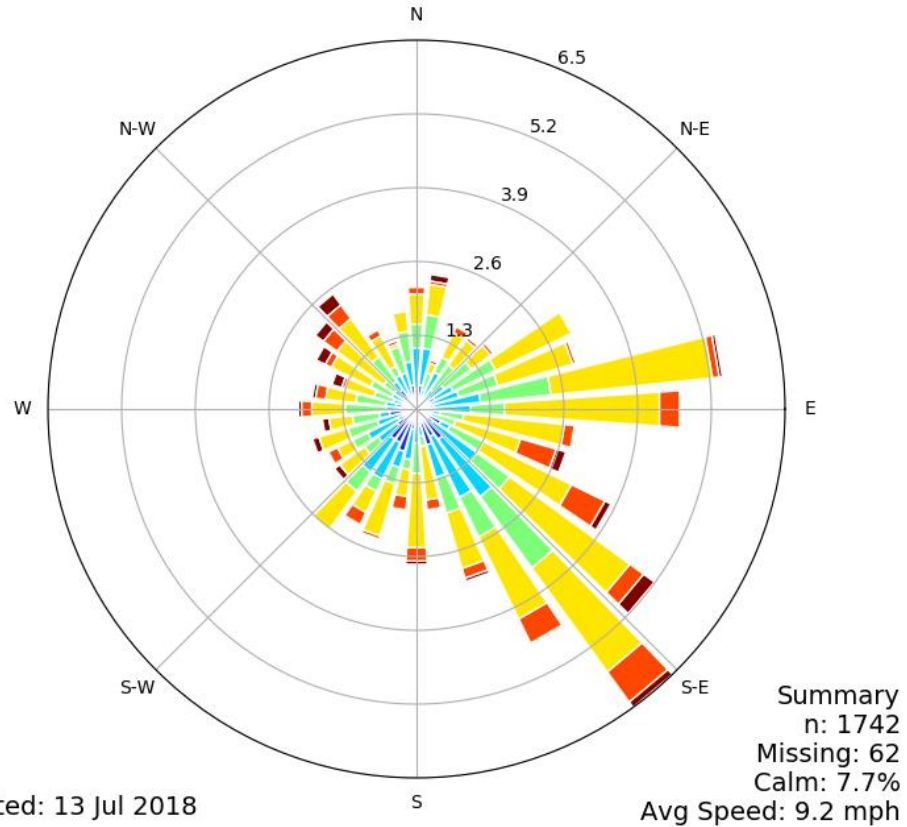
COMPASS ROSE & MSP RUNWAY LAYOUT



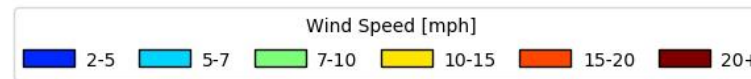
[MSP] MINNEAPOLIS
Windrose Plot [All Year]
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- Favors North Flow
- Favors South Flow
- Crosswinds



Generated: 13 Jul 2018



**MAY-JUNE
2018**

**REPORTED
WINDS
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31.8%

**REPORTED
WINDS
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56.7%

THE EAGAN ARC ASKED

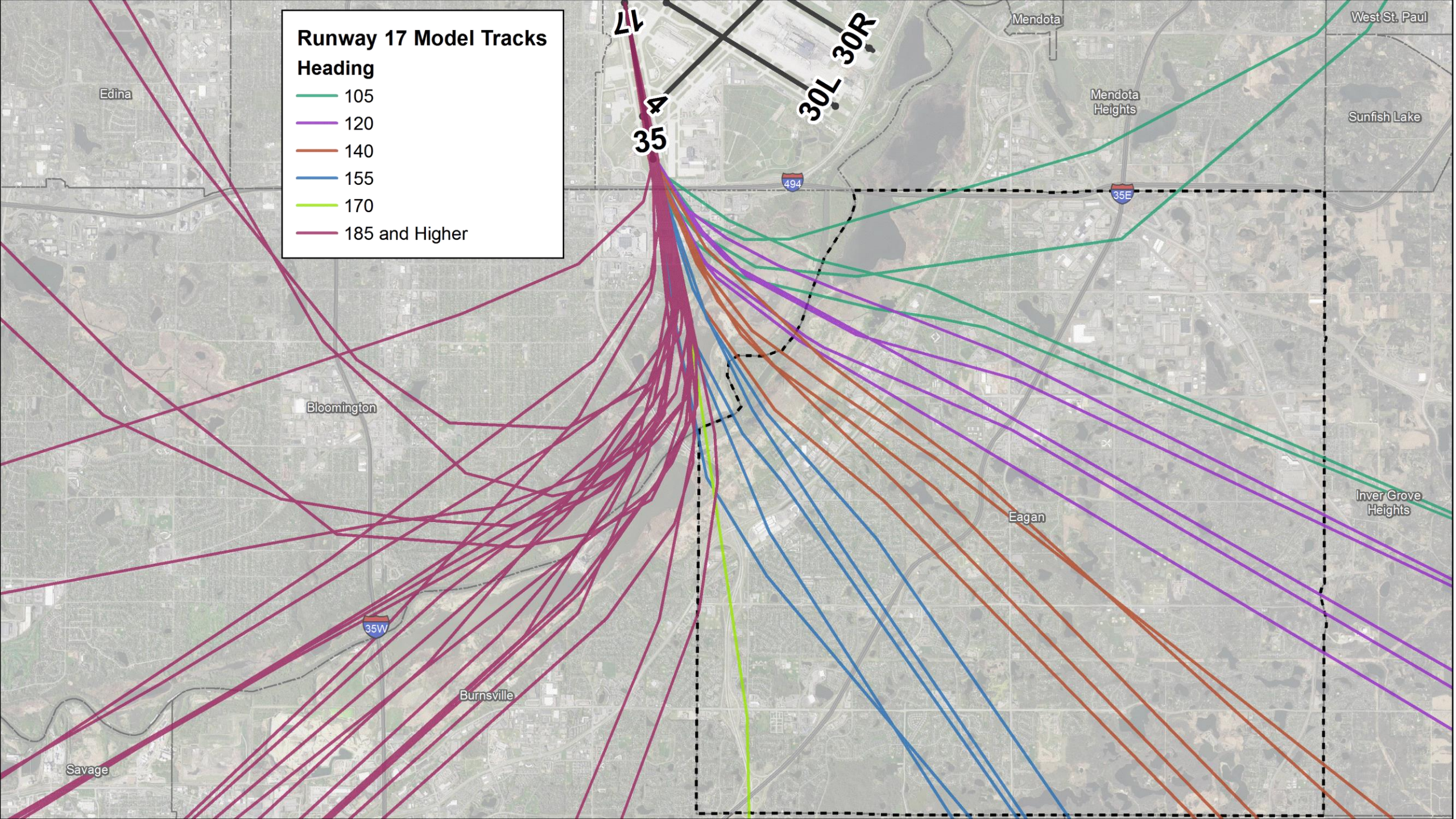
Using charts and maps show the flight track usage over Eagan (from 120-130 heading, 120-140, etc.) from today compared to 2005, 2010, 2015. The end goal is to show if and how operations have increased over Eagan since 2005, and specifically, which area of the city have been most impacted.



Runway 17 Model Tracks

Heading

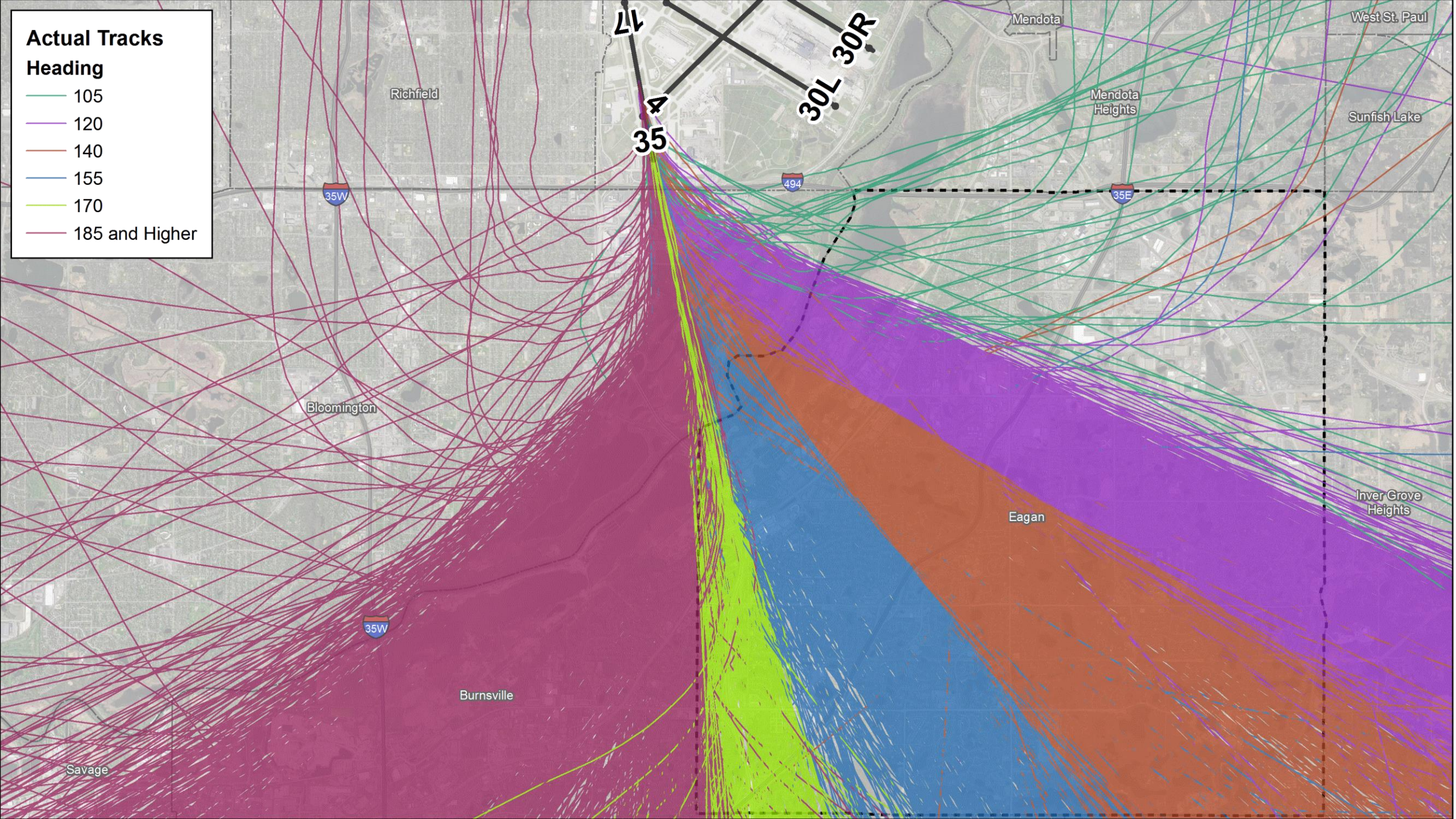
- 105
- 120
- 140
- 155
- 170
- 185 and Higher

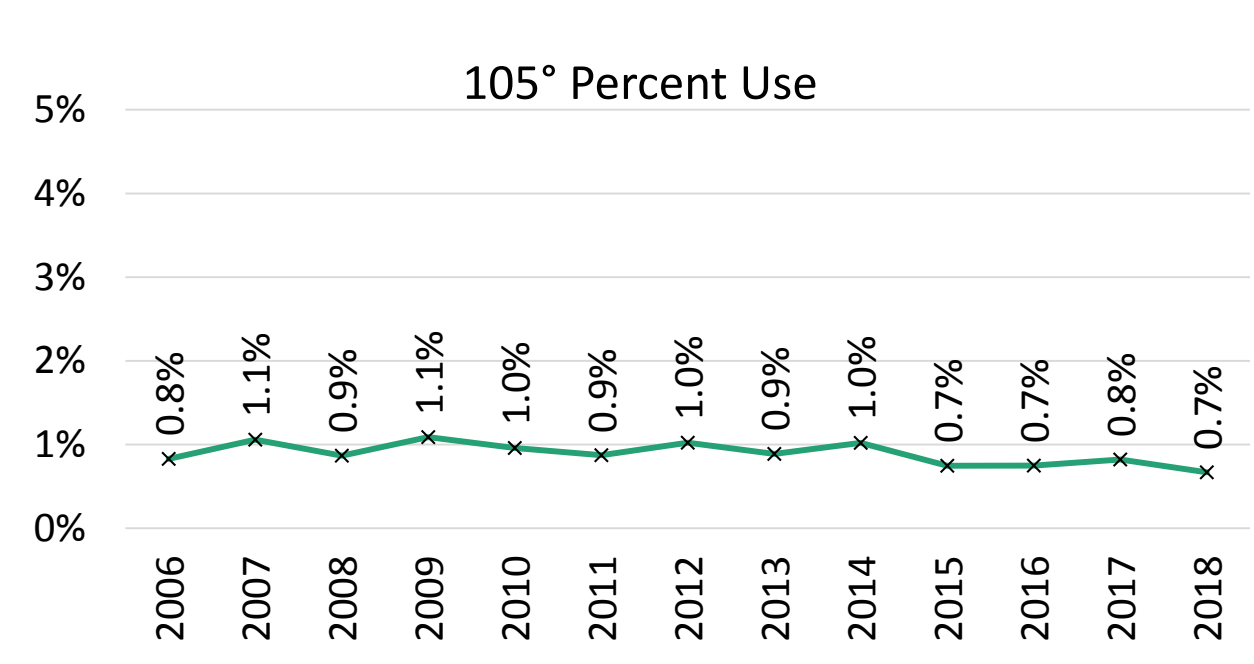
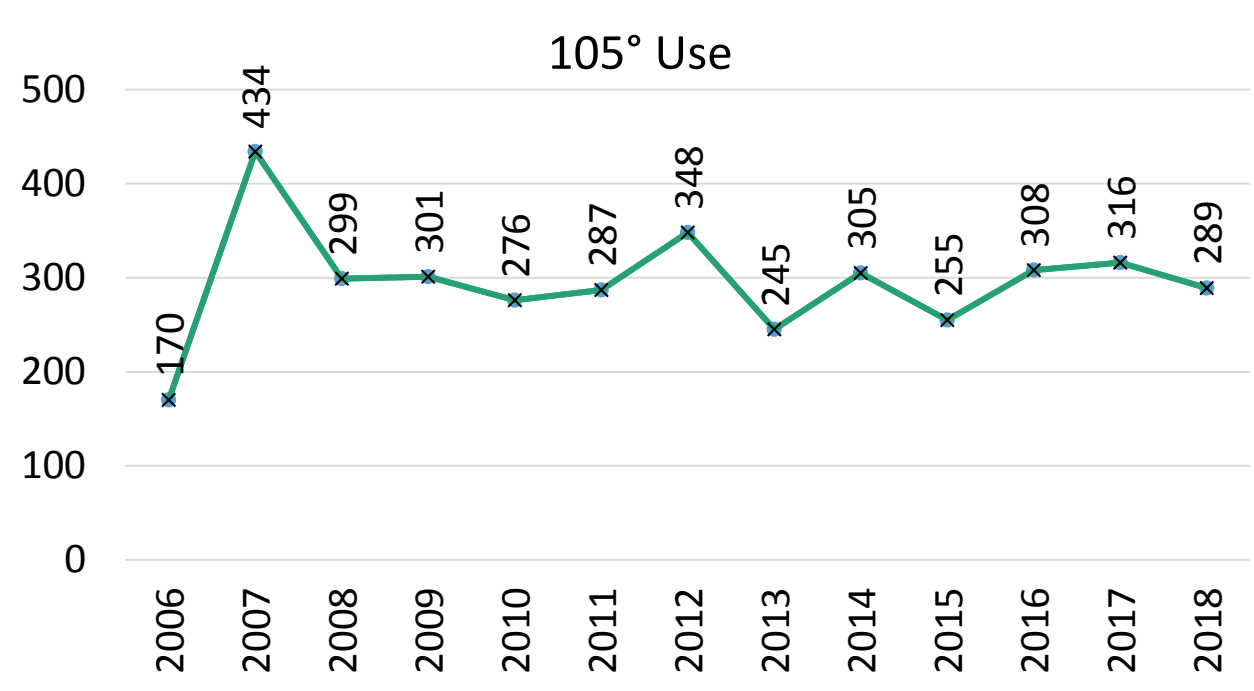
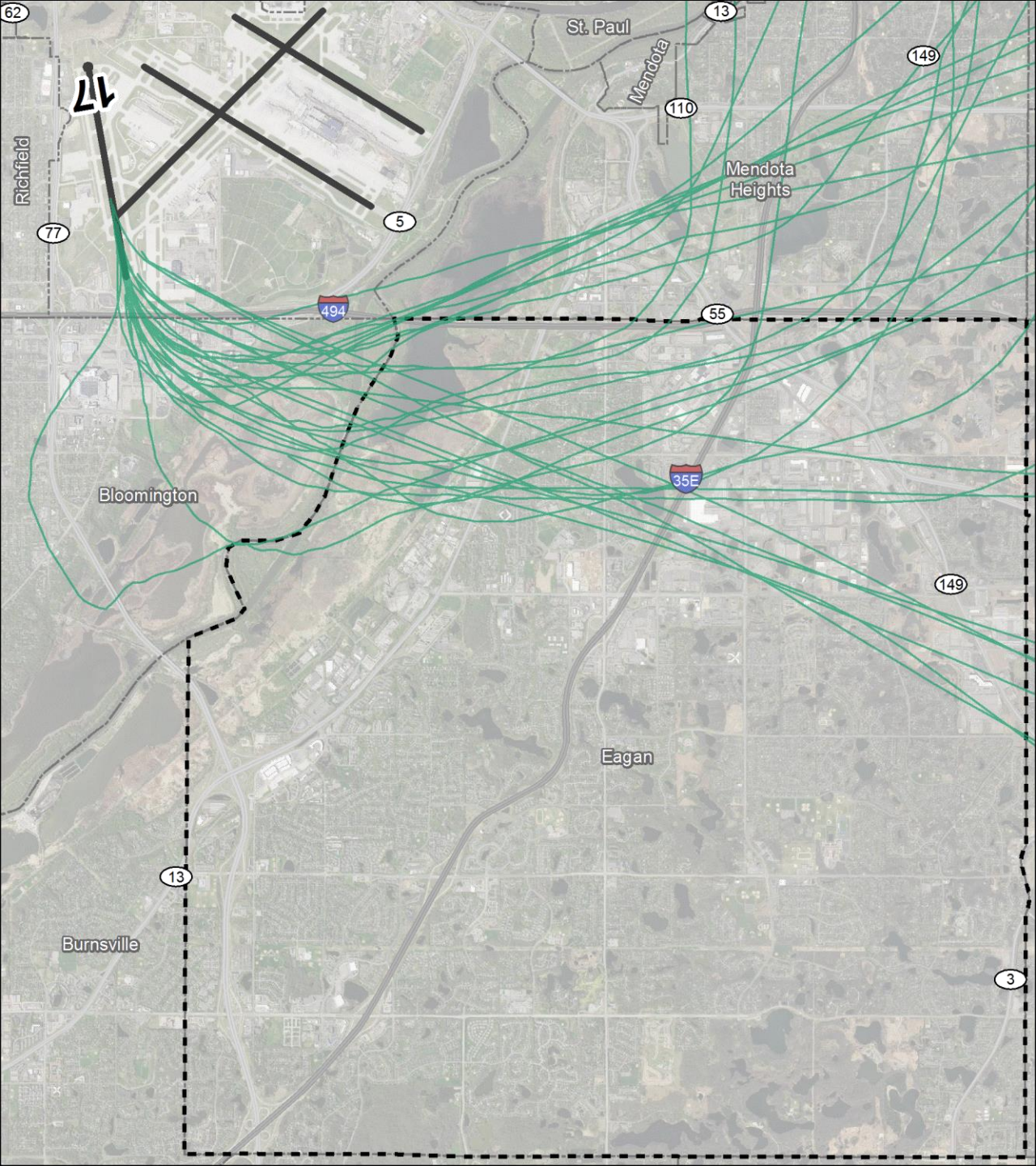


Actual Tracks

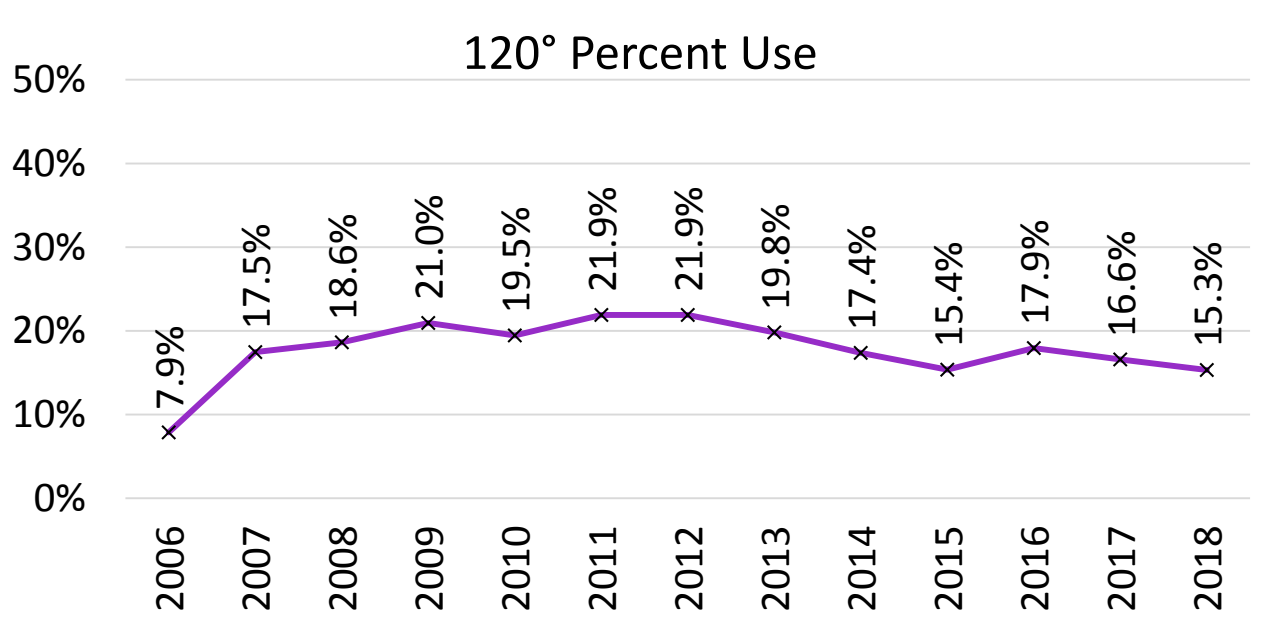
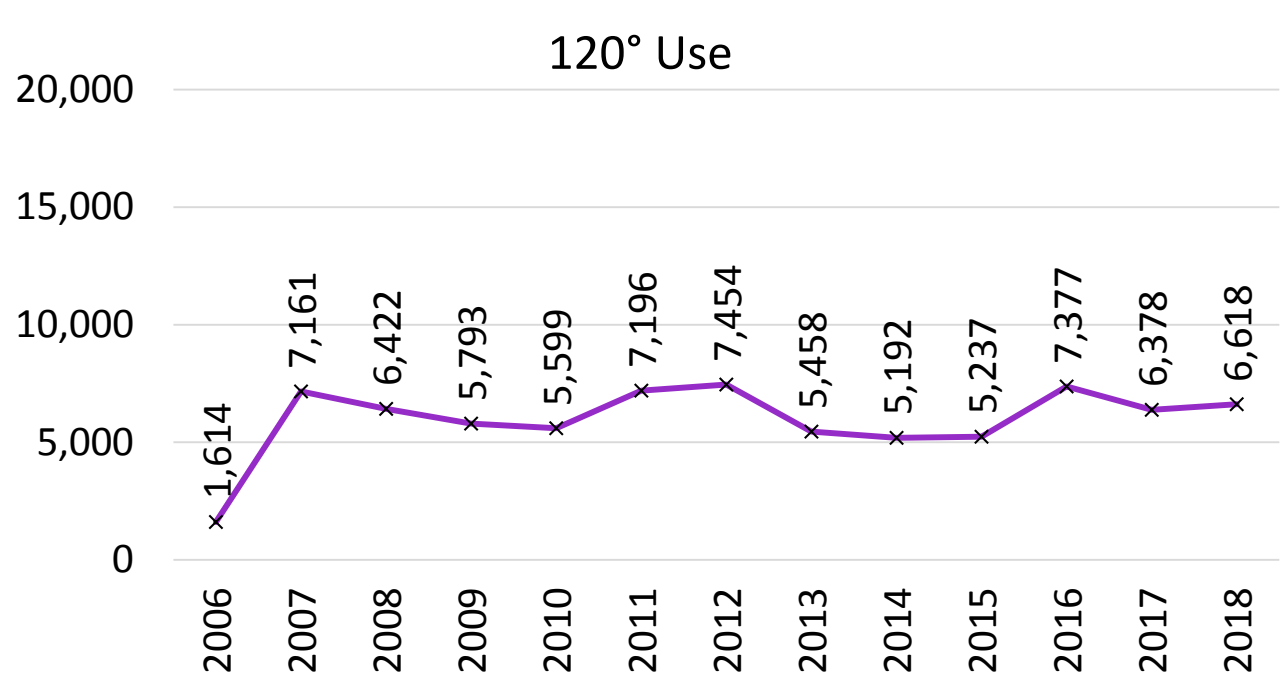
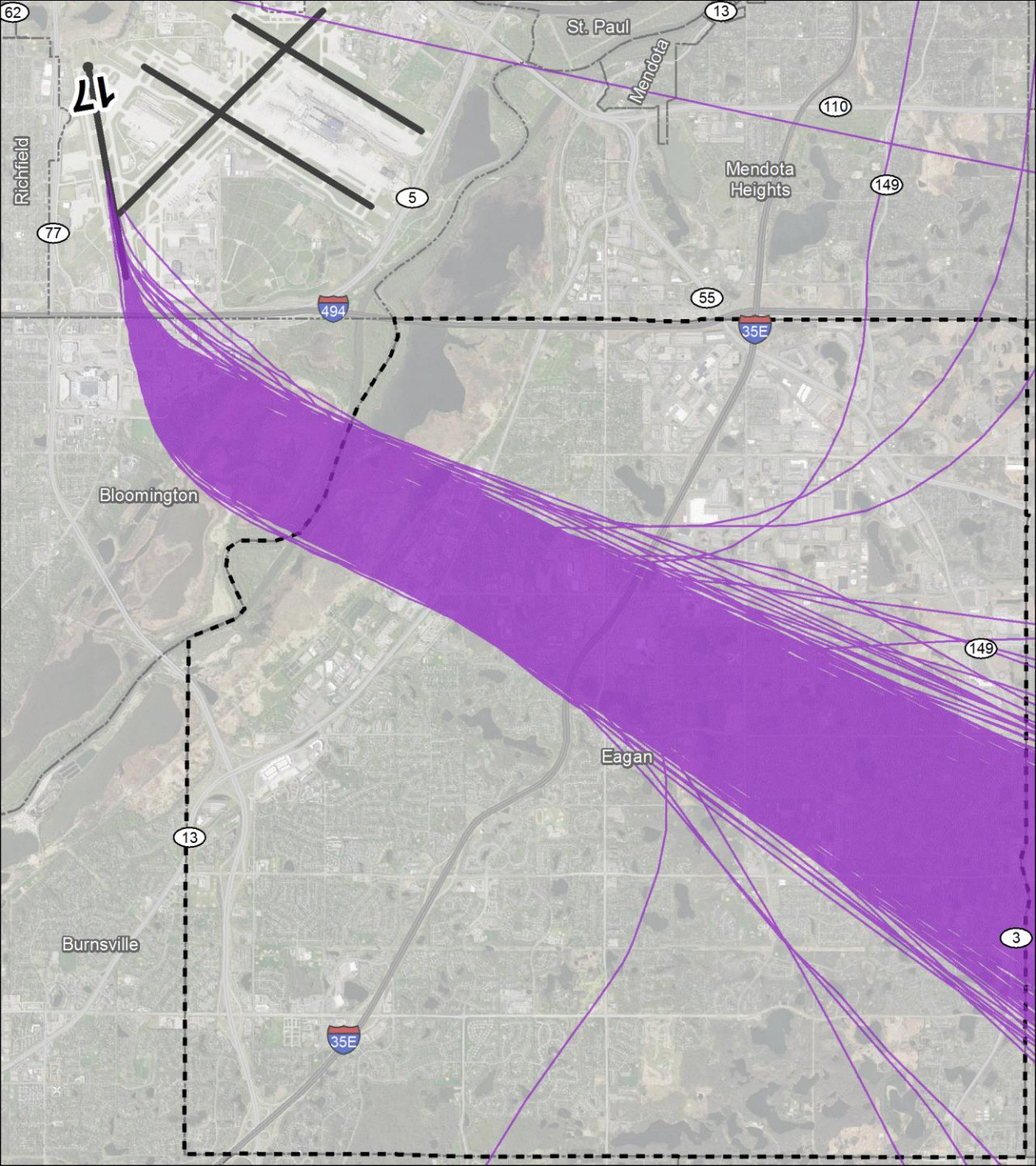
Heading

- 105
- 120
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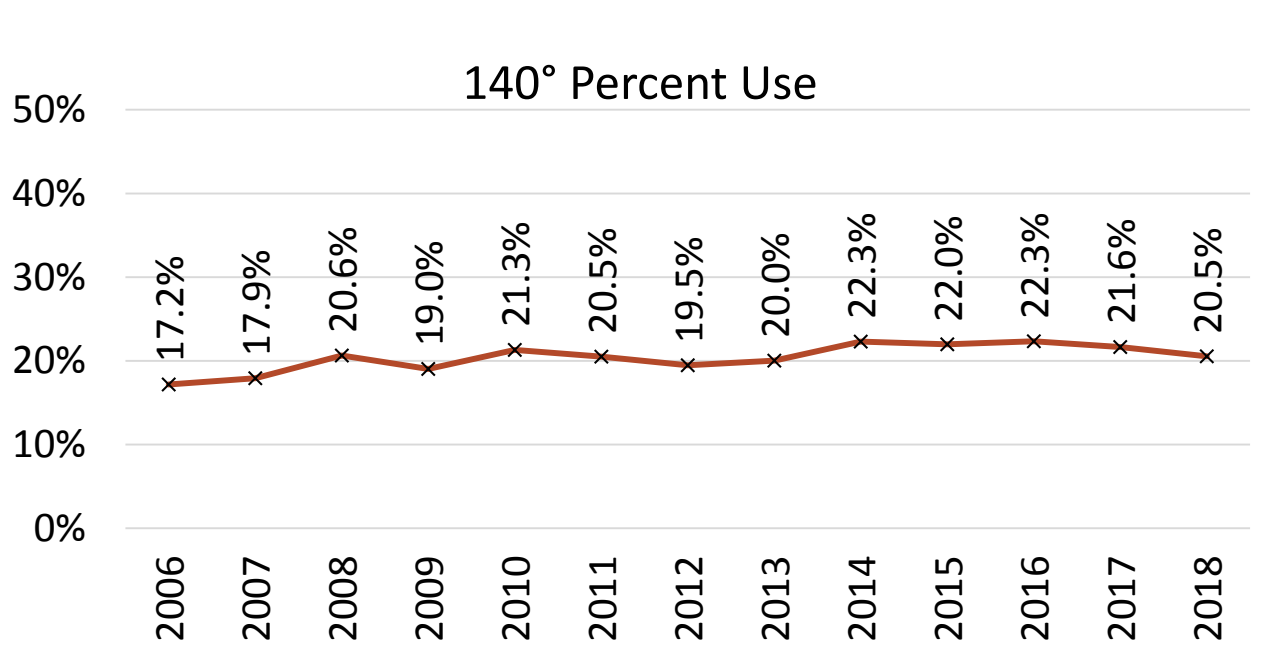
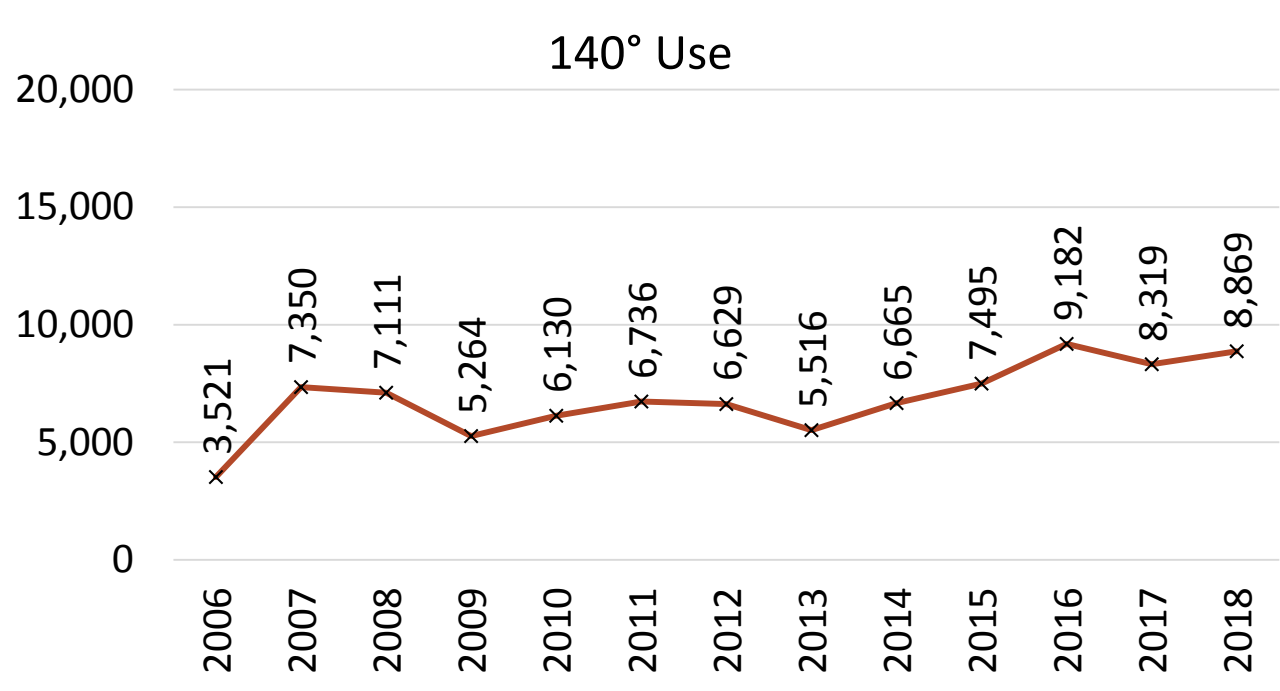
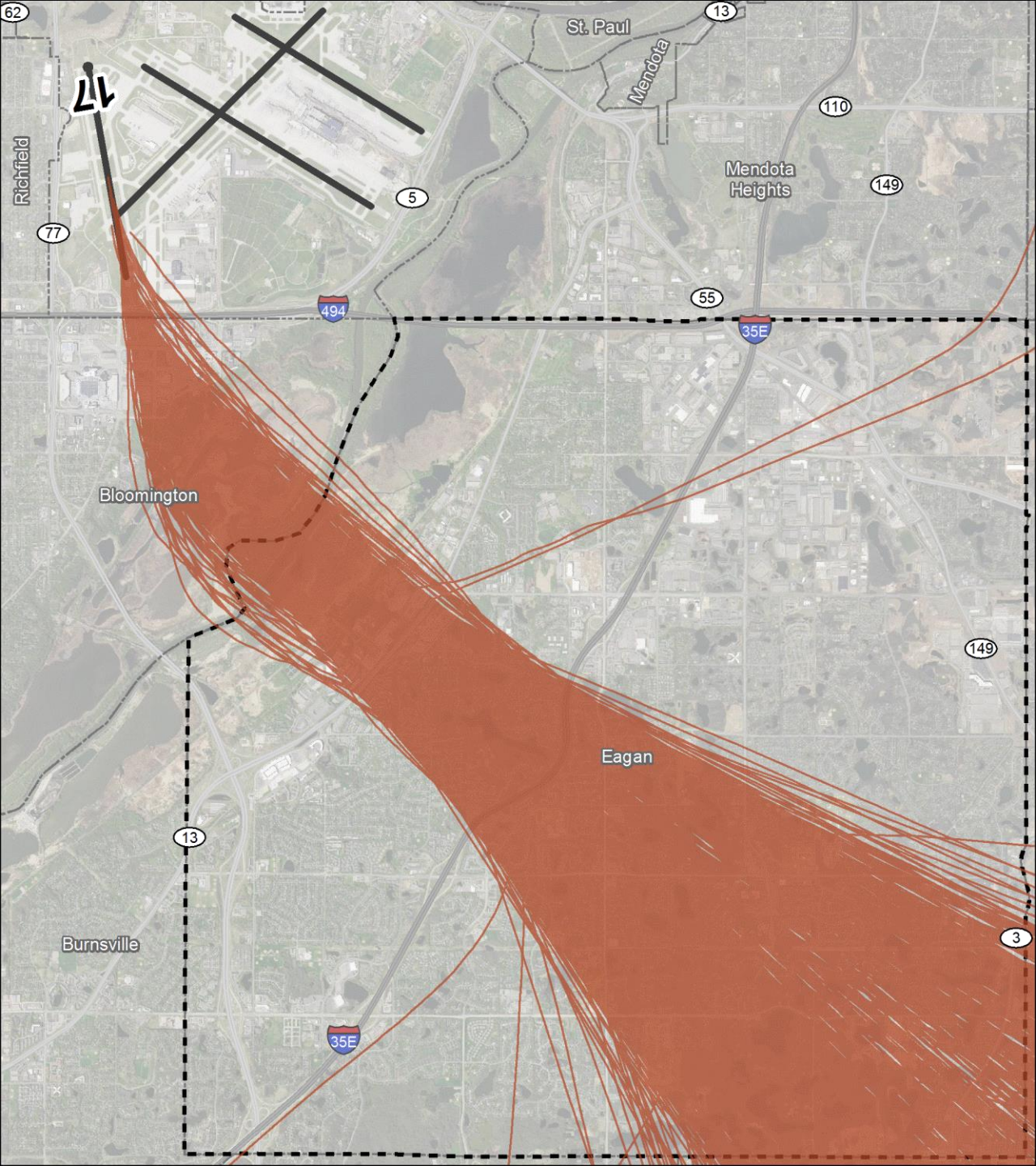




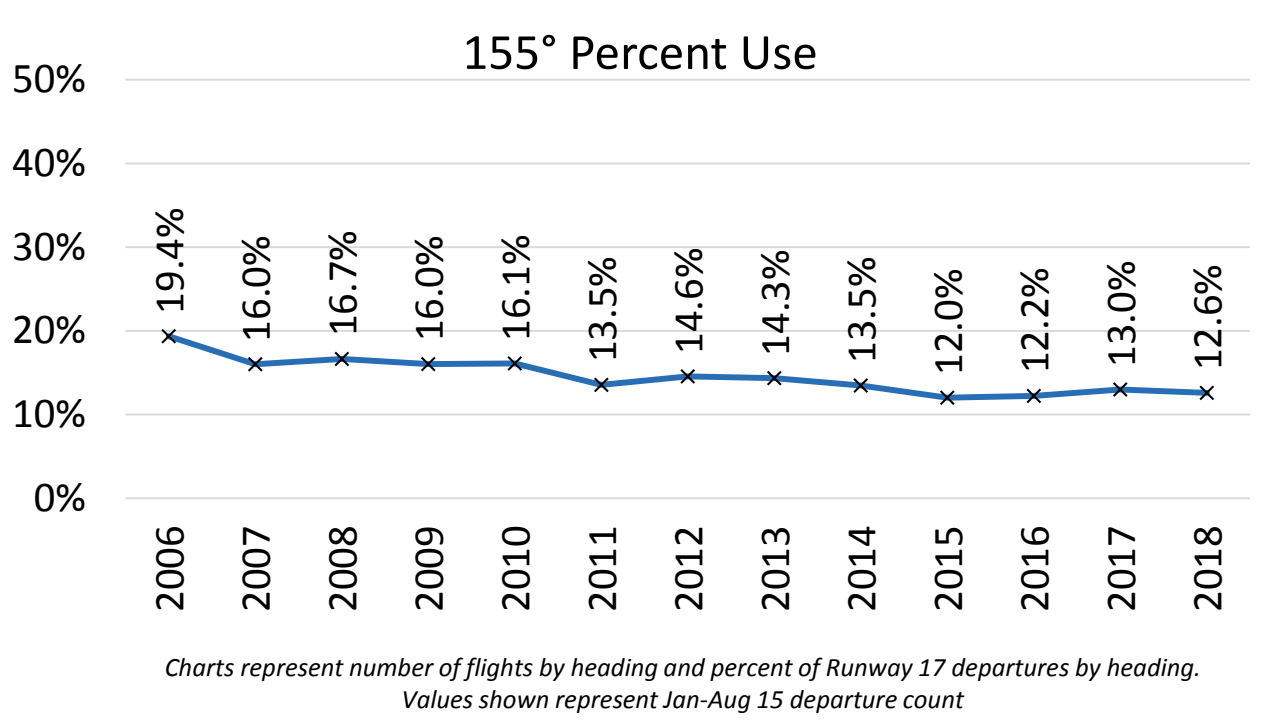
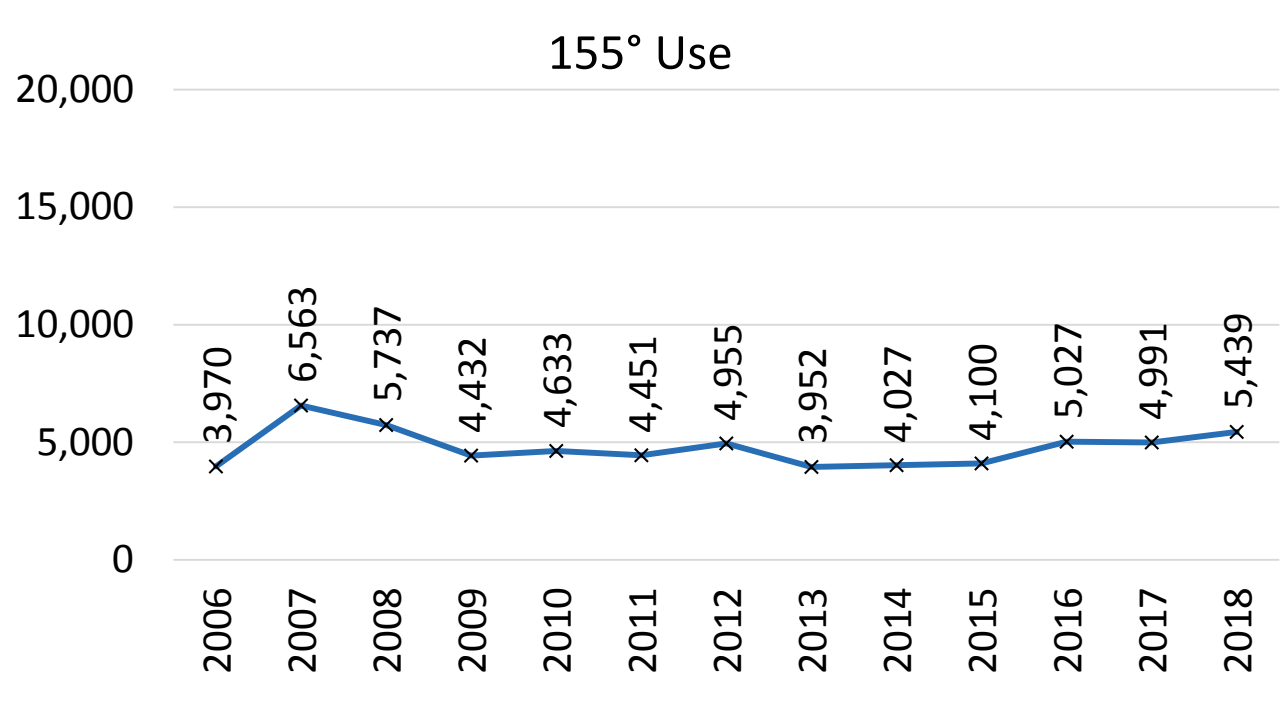
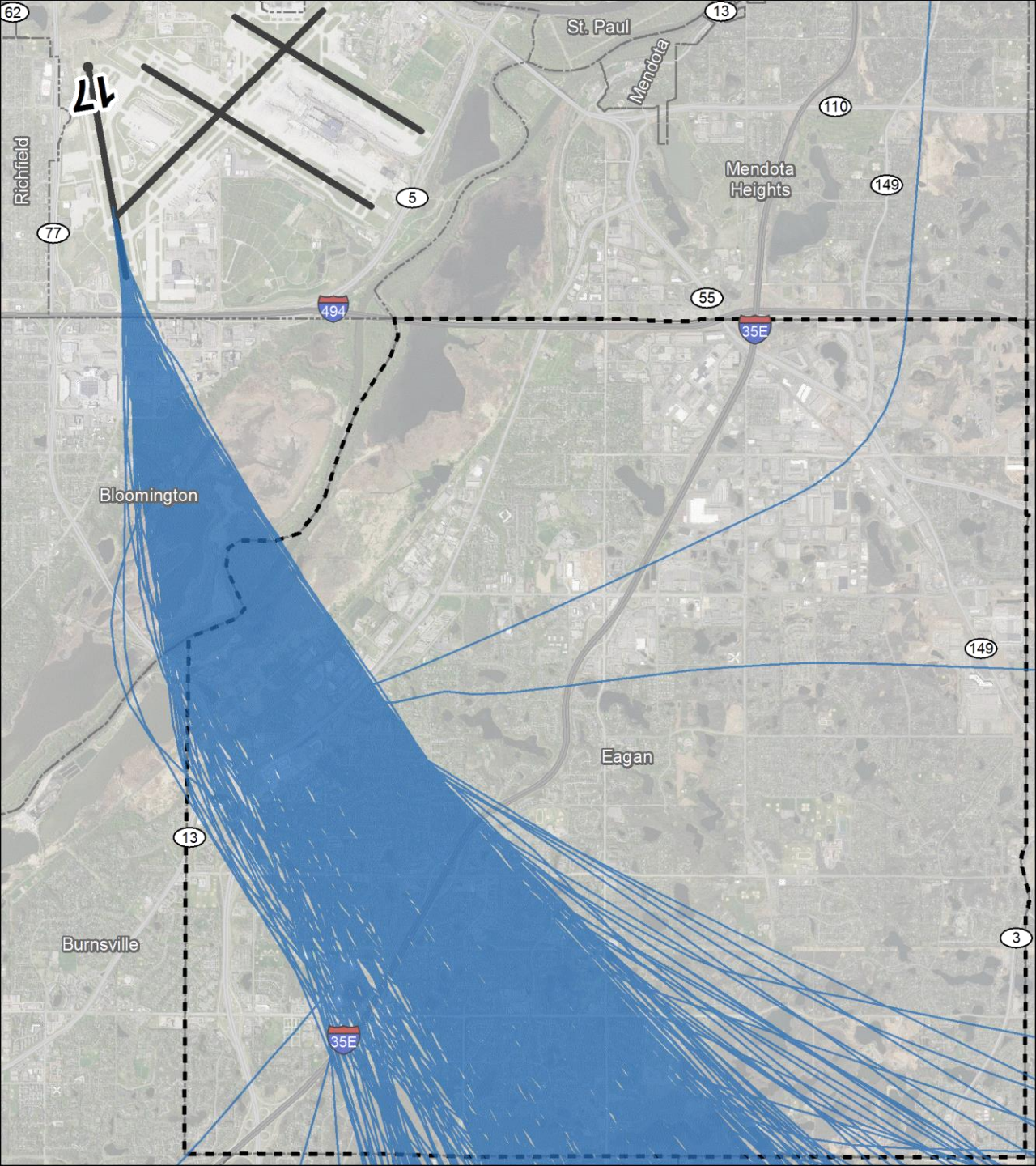
Charts represent number of flights by heading and percent of Runway 17 departures by heading. Values shown represent Jan-Aug 15 departure count



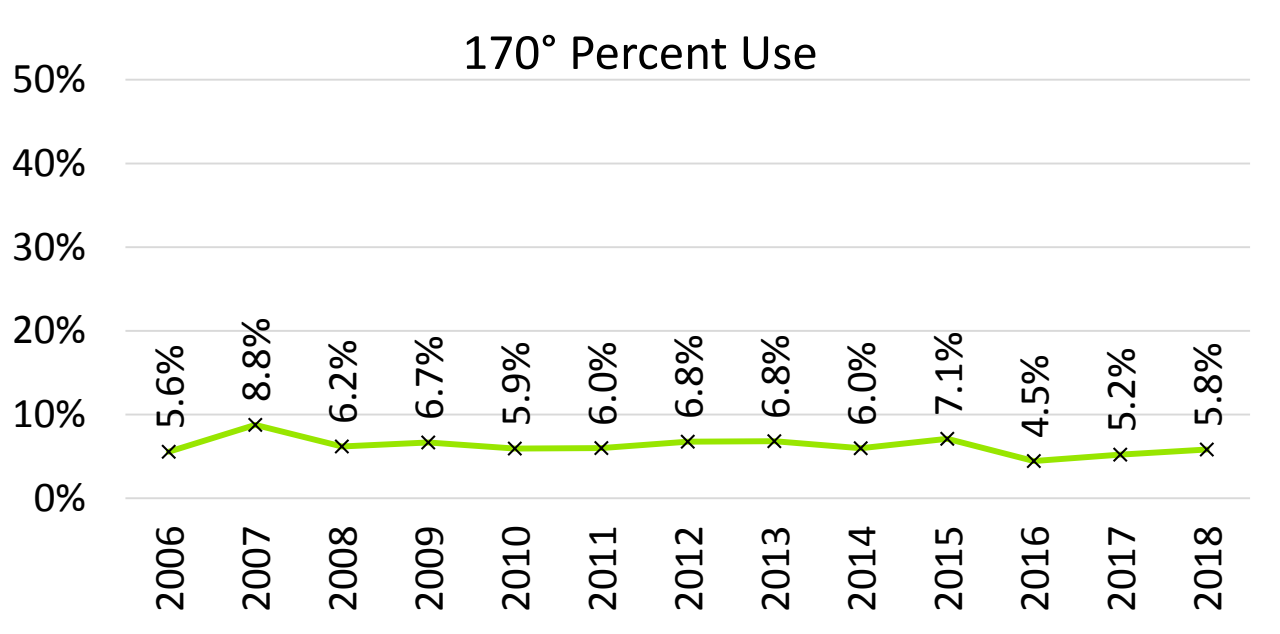
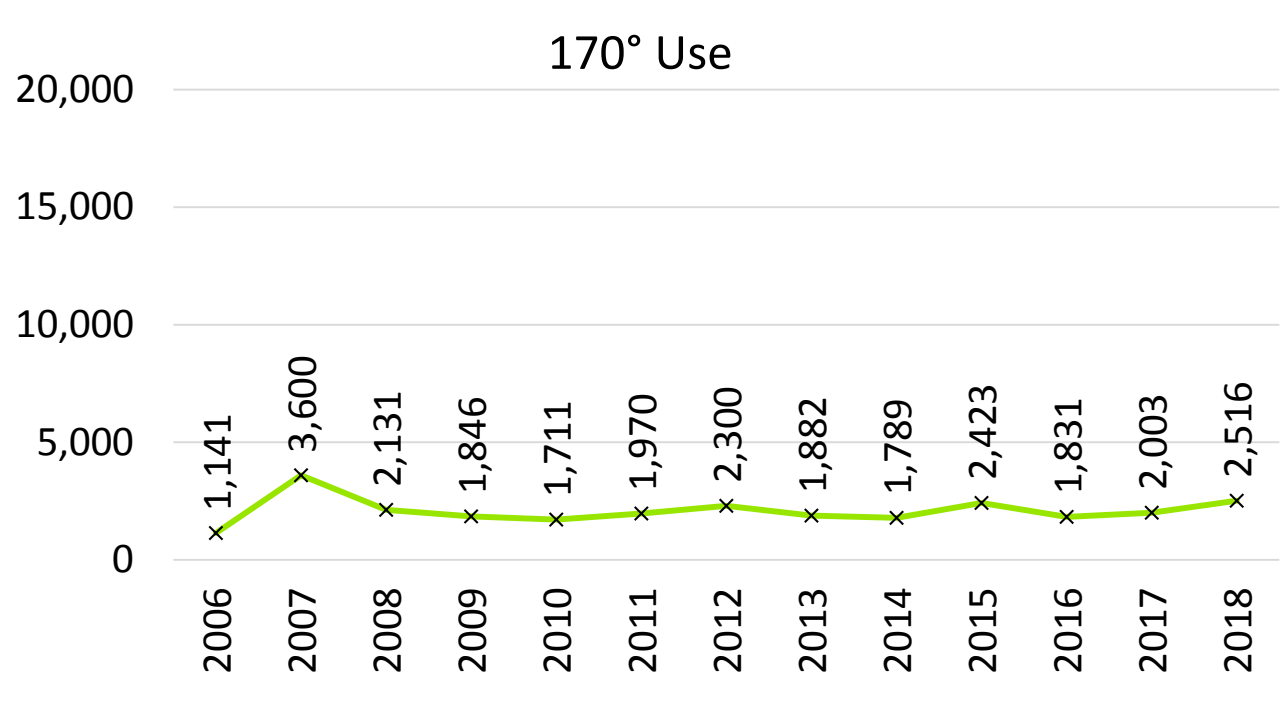
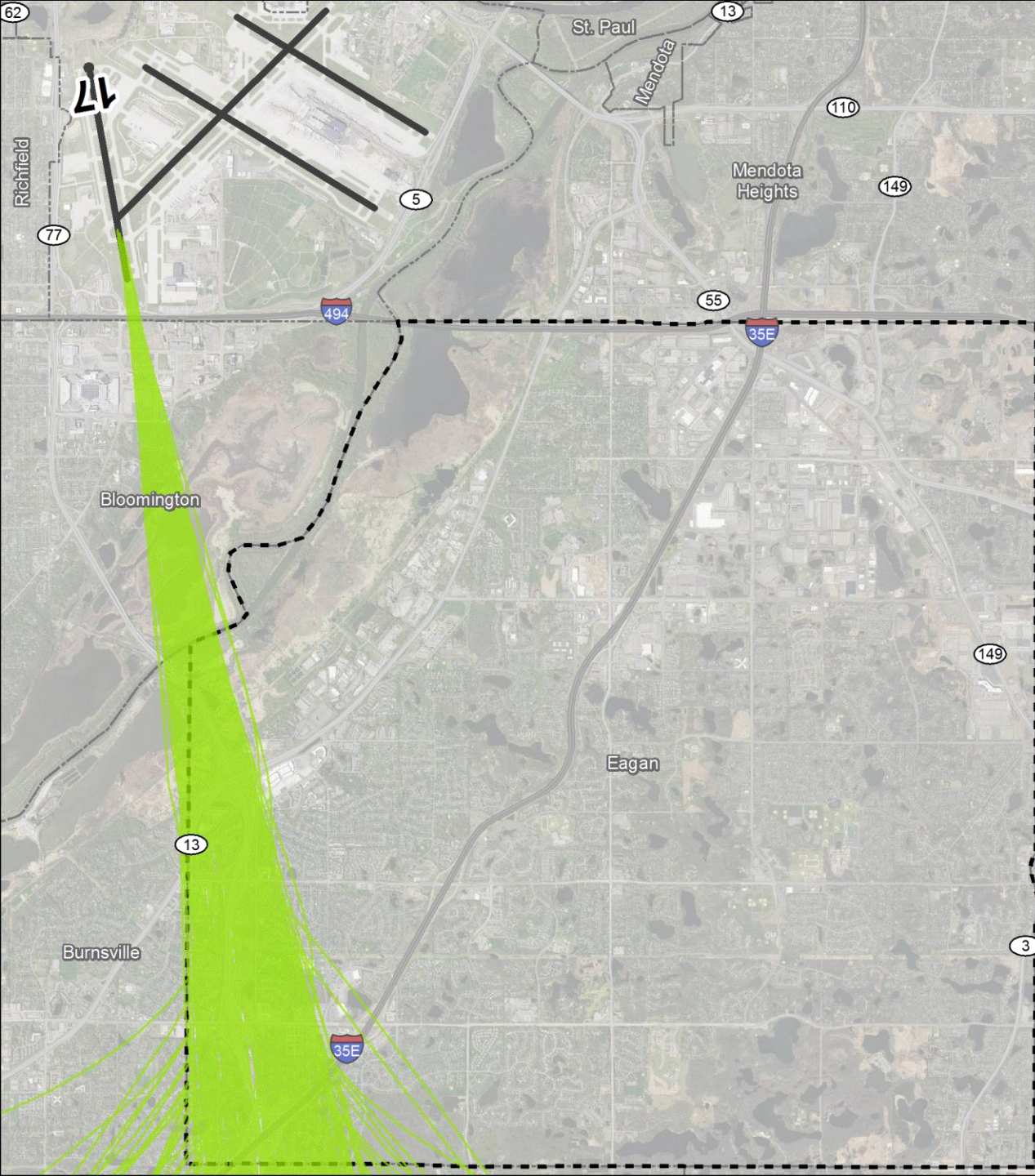
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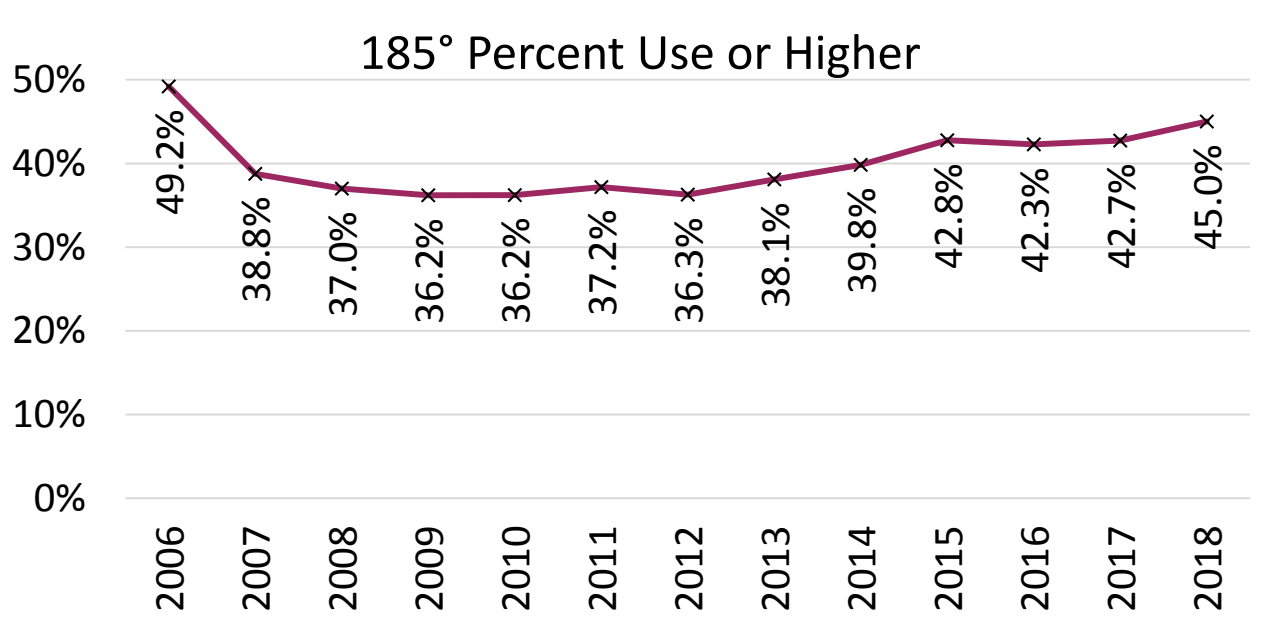
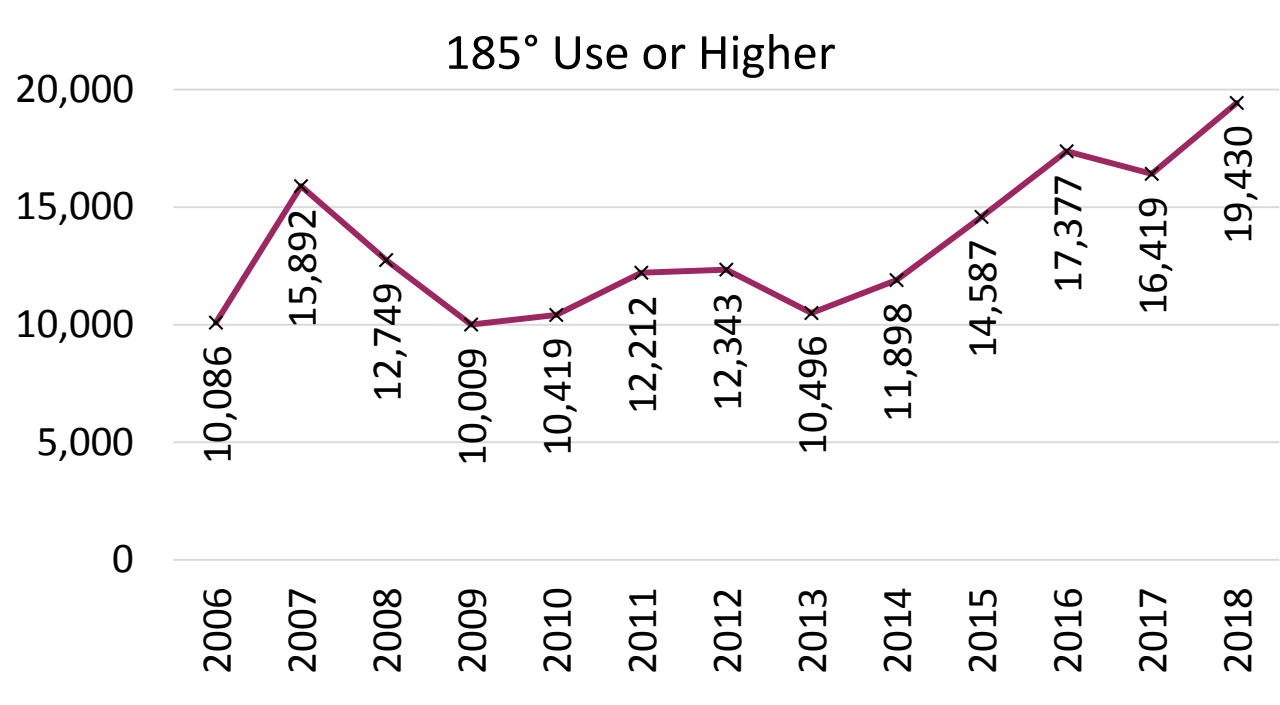
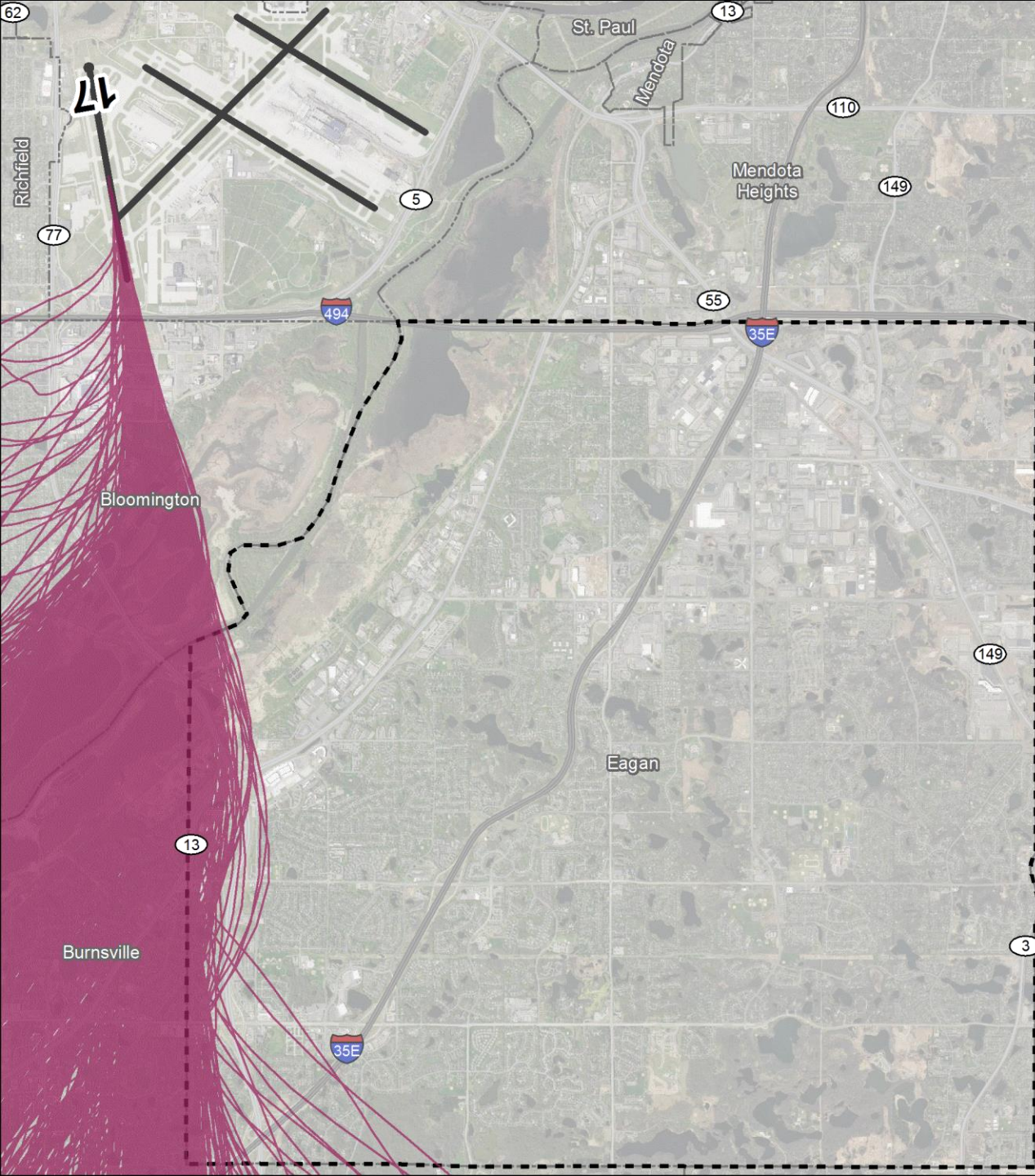
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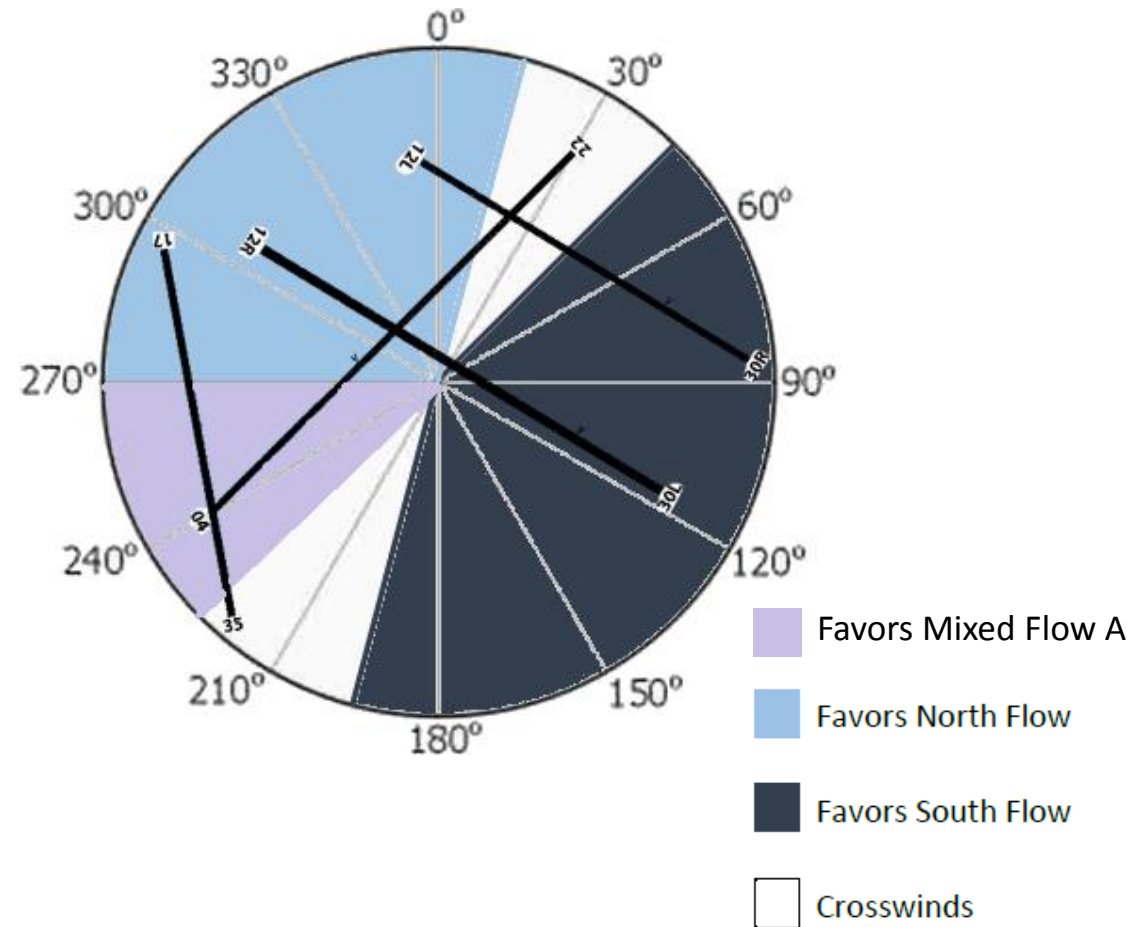
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WHAT IS MIXED FLOW?

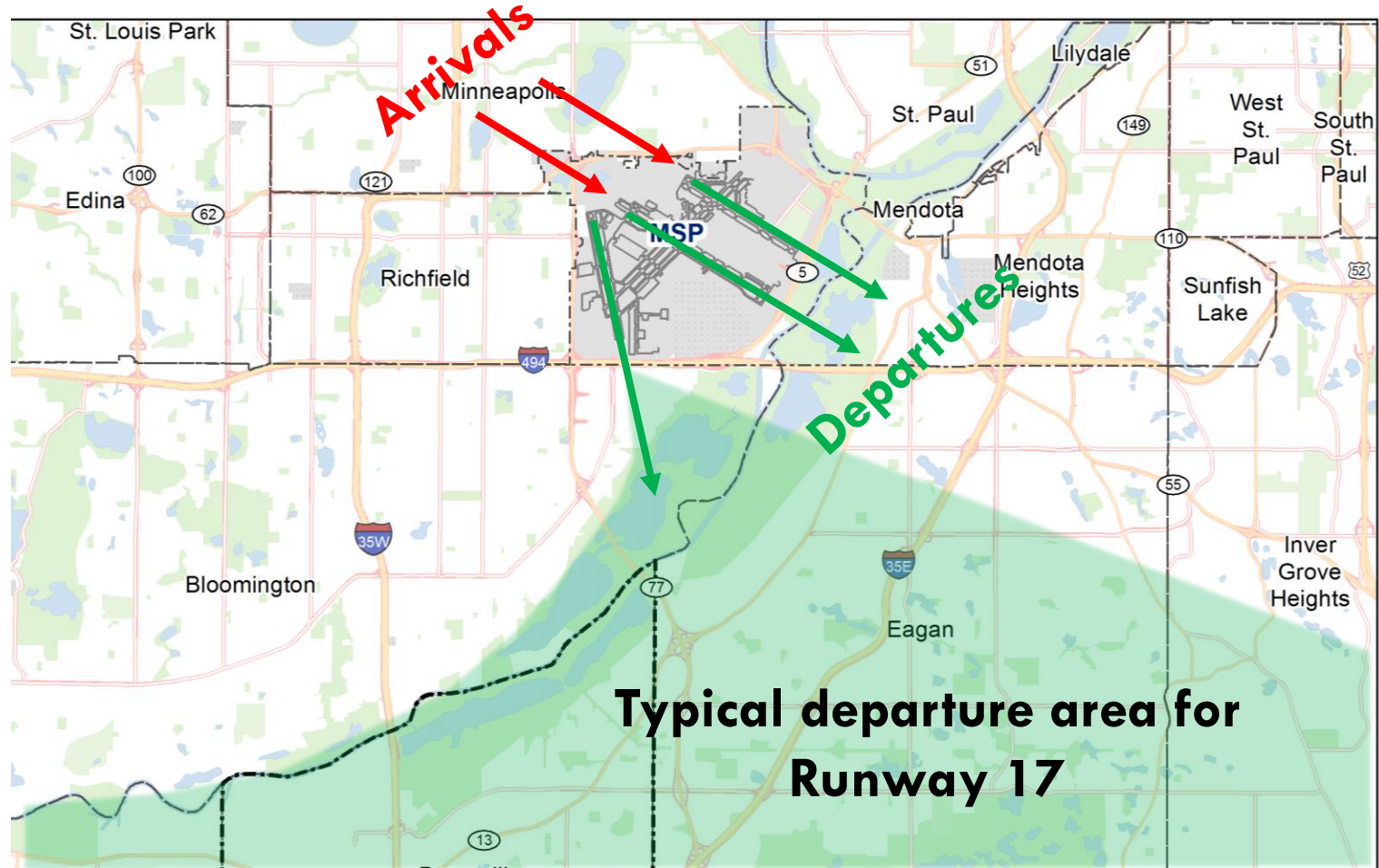


“Mixed Flow A” (pictured)

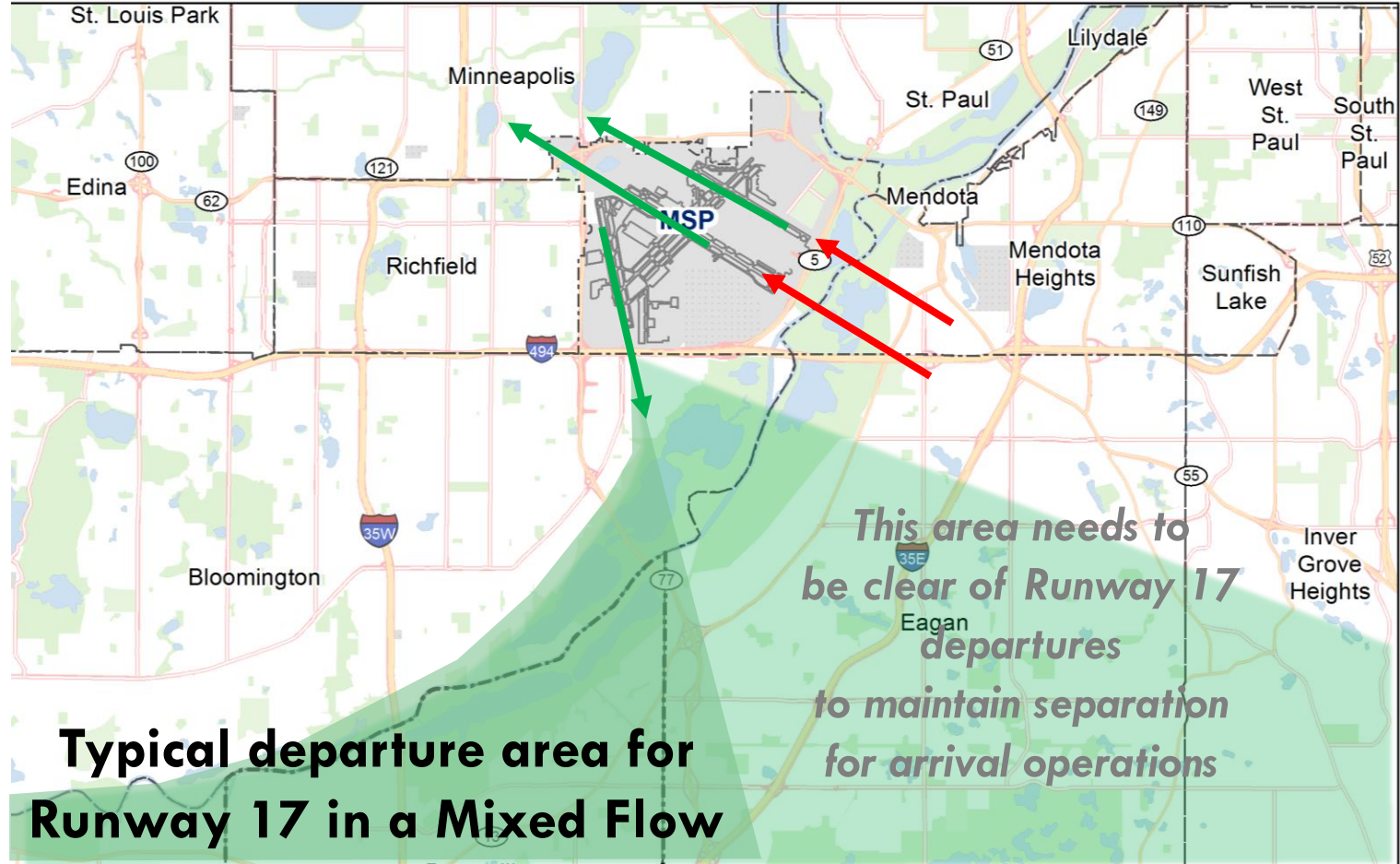
Arrivals and departures on 30L and 30R with simultaneous departures on 17



SOUTH FLOW



MIXED FLOW A





Future Primary Runway Use Configurations

Figure 4-4



- ARRIVE AND DEPART RUNWAYS 12L AND 12R
- DEPART RUNWAY 17



- ARRIVE AND DEPART RUNWAYS 12L AND 12R
- ARRIVE RUNWAY 35



- ARRIVE AND DEPART RUNWAYS 30L AND 30R
- DEPART RUNWAY 17



- ARRIVE AND DEPART RUNWAYS 30L AND 30R
- ARRIVE RUNWAY 35

NOTE: TOTALS DO NOT EQUAL 100% DUE TO ROUNDING
 SOURCE: DUAL TRACK FEIS



THE EAGAN ARC ASKED

Please speak to the 2.5 mile turn point for westbound departures. Why is there not a similar turn procedure for eastbound turns over Eagan? Why isn't there a rule requiring planes to go a certain distance off the runway before turning east?



RUNWAY 17 DEP PROCEDURE

Metropolitan Airports Commission



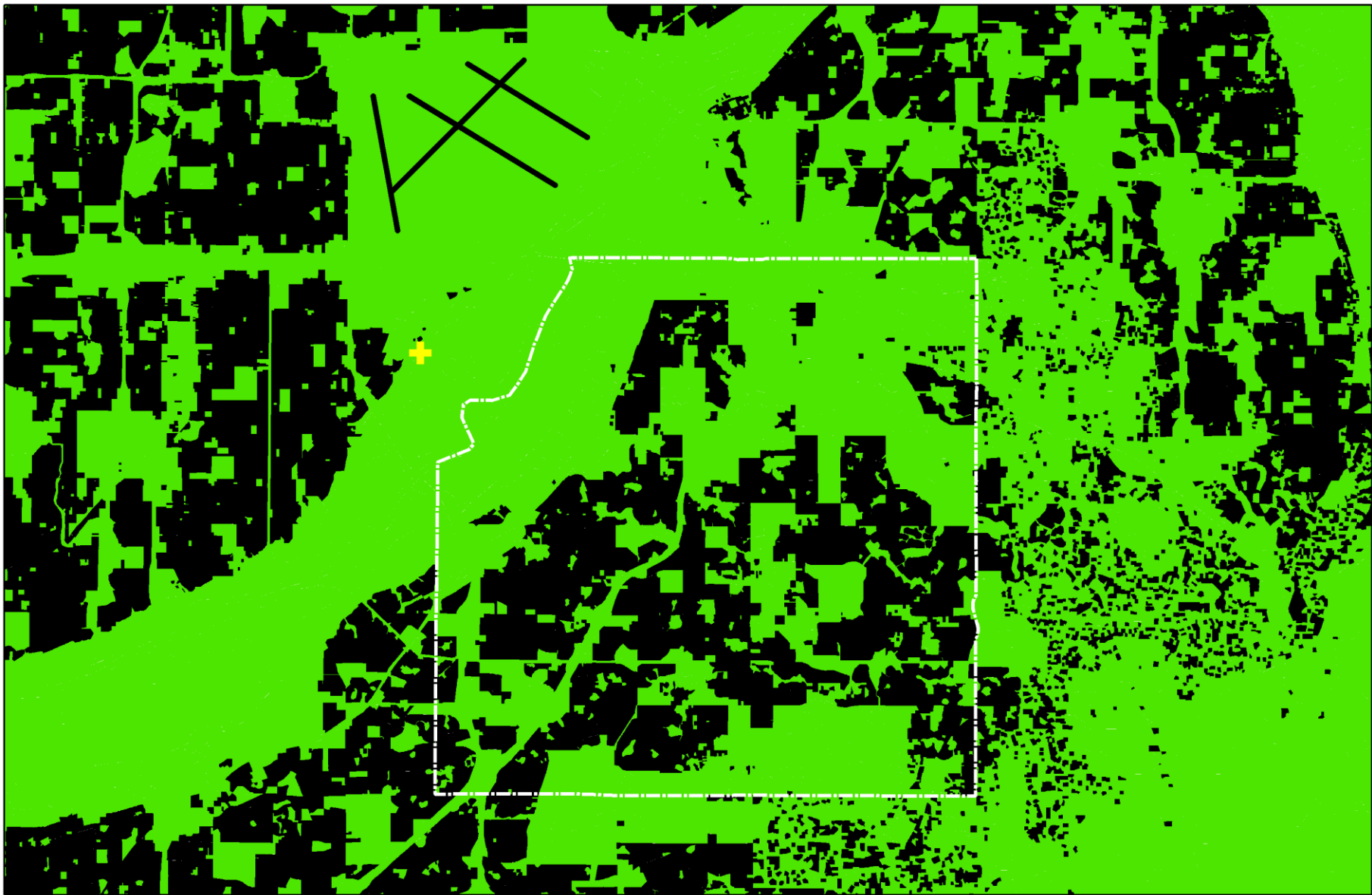
The Runway 17 Departure Procedure dates back to the 1996 Dual Track Study when MAC determined it would evaluate Runway 17 departure procedures to reduce noise impacts in close proximity to the south of MSP

In 2003 an environmental assessment was completed for the implementation of a noise abatement departure procedure

This report is available at
[http://www.macnoise.com/pdf/FINAL EA FONSI
ROD AUGUST 2003.pdf](http://www.macnoise.com/pdf/FINAL_EA_FONSI_ROD_AUGUST_2003.pdf)

Final Environmental Assessment and Finding of No Significant Impact (FONSI) / Record of Decision (ROD)



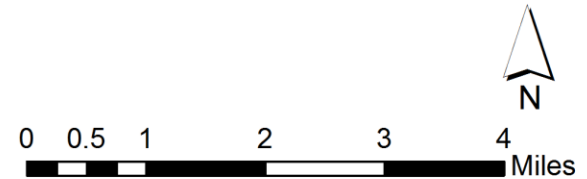


✚ Runway 17 - 2.5 mile turn point for westbound jet departures

Land Use

■ Residential

■ Non-Residential



THE EAGAN ARC ASKED

Do any communities around the airport have any agreements with the MAC or FAA that speak to aircraft operations? If yes, what agreements are those?



AGREEMENTS

- MAC has an agreement with the surrounding cities that it will not construct a third parallel runway
- The City of Minneapolis has an agreement with the FAA that Runway 17/35 will only be used to the north during abnormal circumstances (i.e. safety reasons, weather conditions or runway closures)
- MAC and Minneapolis, Richfield, and Eagan entered into a Consent Decree that provided a lawsuit settlement plan for residential sound insulation beyond the federally-recognized noise level and preventative land use measures for new construction in areas near the airport

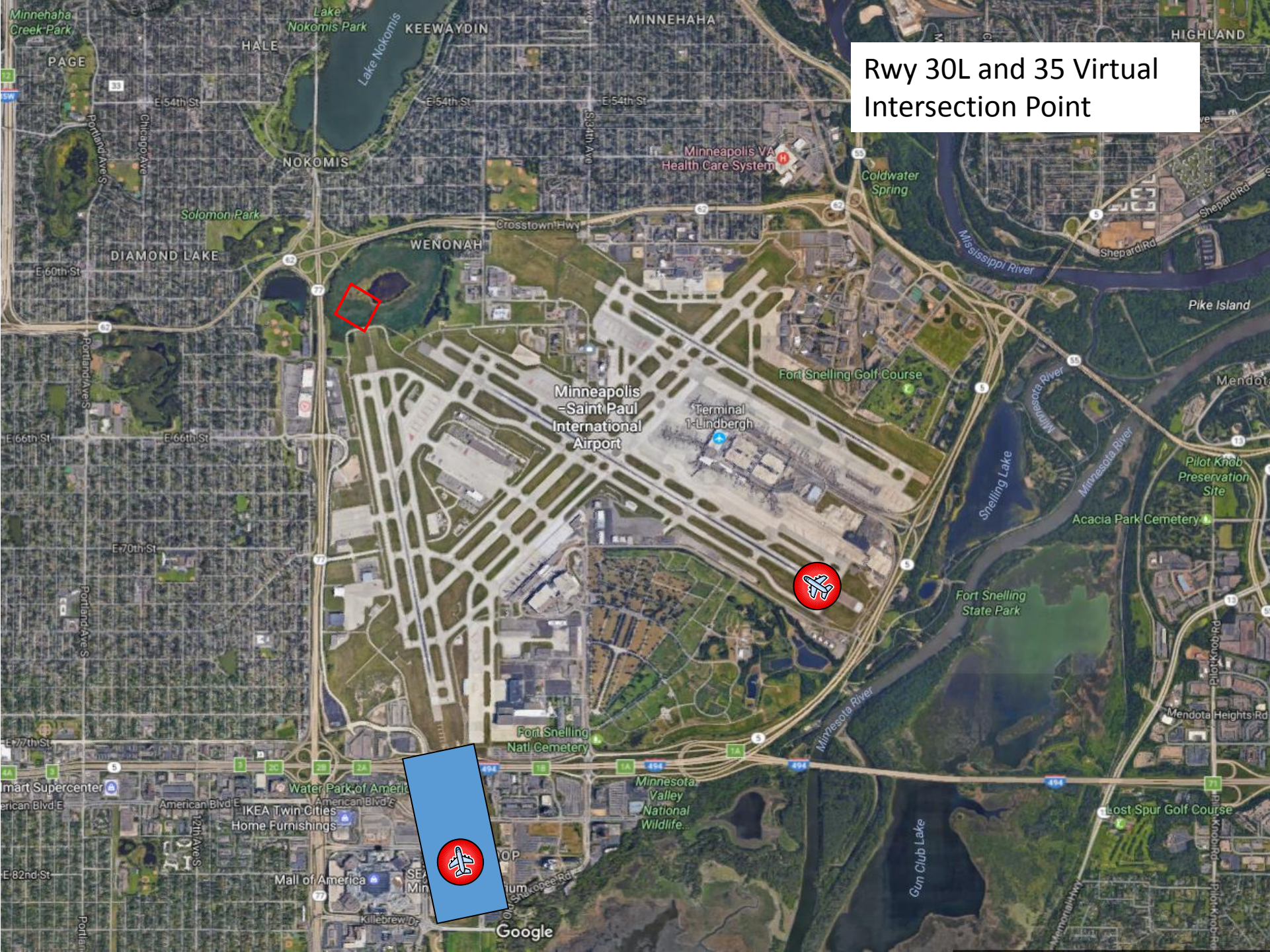


THE EAGAN ARC ASKED

What impact has Converging Runway Operations had on departures and arrivals on Runway 17/35?



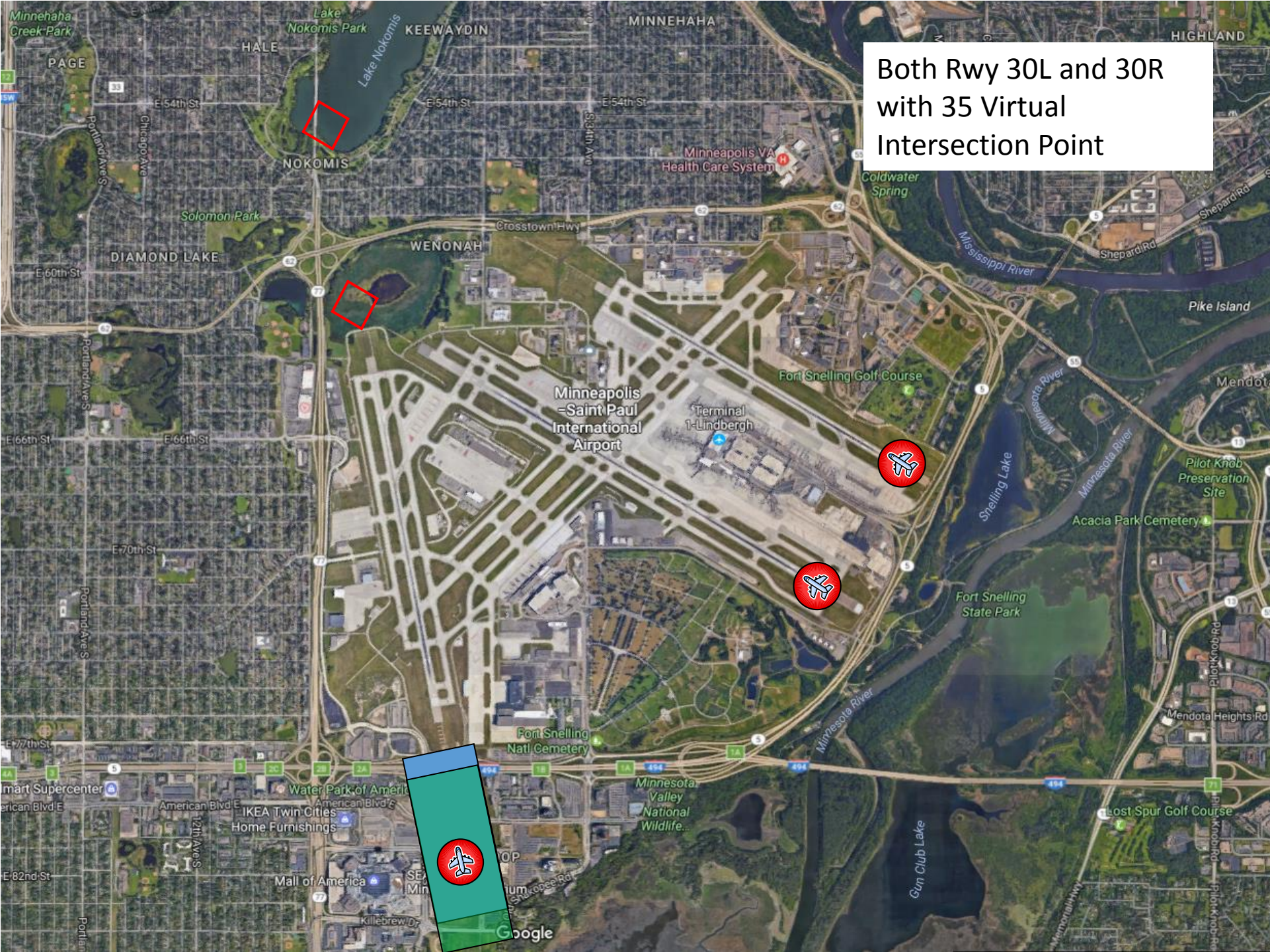
Rwy 30L and 35 Virtual Intersection Point



Rwy 30L and 35 Virtual Intersection Point



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



THE EAGAN ARC ASKED

Will you speak to changes in fleet composition amongst the carriers?

What aircraft are being phased out and what will replace those aircraft?

Are the older planes being sold to regional carriers?



DELTA AIR LINES FLEET PLAN AS OF SUMMER 2018

(Changes in Fleet Composition)



Boeing 747-400



- GONE.....

Airbus A-350



- AIRBUS A – 350
- Long Range Flights (747/777 type) Approx 320 seats
- 25 on order. 11 flying now. 4 to be delivered 2018 – 2019. 10 pushed back beyond 2019
- Not planning to fly from MSP on a consistent basis in near future

Boeing 777



- B-777 -200ER/LR
- Total of 18 in service
- Currently flies MSP – HND (Tokyo) and MSP – CDG (Paris)
- Planned to start MSP – ICN (Incheon) 2019
- Likely to decrease as DL takes additional A-330s

Airbus A-330



- Airbus A-330 -200/-300/-900 neo
- 32 in Service. 25 on Order for Delivery 2019-2022
- Majority of European Service from MSP (AMS, CDG, LHR, plus HNL and Flex)
- MSP Pilot Base opens OCT 2018

Boeing 767



- B-767 -300/-300ER/-400
- Currently 82 in Service
- Flies some MSP – Europe (AMS/CDG/LHR, plus some HNL, CUN, Domestic)
- Will remain in fleet through mid – 2020s
- Crew base in MSP

Boeing 757



- B – 757 -200/-300
- Currently 104 in Service
- Flies mostly Domestic (including Alaska)
- Crew Base in MSP

MD-88



- McDonnell Douglas MD-88
- Less than 75 in Service (note: MD-88 slated to retire DEC 2019)
- Note engine difference between MD-88 and MD-90s in background
- Crew Base in MSP to close April 2019
- No current scheduled service in MSP. Occasional substitution flights between now and fleet closure

MD-90



- McDonnell Douglas MD – 90
- Currently 65 in Service. Planned to be retired 2021
- Stage 3 quiet
- Crew Base in MSP closing April 2019 (significantly diminished operation)

Boeing 717



B-717

Currently 91 in Service

Looks like MD-88/90, but much quieter

Significant amount of traffic in MSP now, but will reduce over time

Boeing 737



- B- 737 -700/-800 Currently 87 in Service
- B-737 -900 Currently 75 in Service
- 55 -900's on Order to be Delivered through-2019
- Flies primarily Domestic. Crew Base in MSP
- Replaces MD-88/90s

Airbus A-320



- Airbus A-319/320
- Currently 125 in Service. Flies mainly Domestic
- Crew Base in MSP
- Replaces MD-88/90

Airbus A-321



- Airbus A-321
- Currently 30 flying
- 112 on firm order for delivery through-2021. Both Conventional and New Engine Option
- Crew Base in MSP. Replaces MD -88/90

Airbus A-220 (Bombardier CS-100/300)



- - 100 = 110 Seats. - 300 = 132 Seats. A-350/B-787 Ergonomics
- 75 Aircraft on firm order. 50 options
- First Delivery Fall 2018. In Service Spring 2019
- Long Range. Extremely Quiet (Stage 5)
- Will not initially fly much to/from MSP

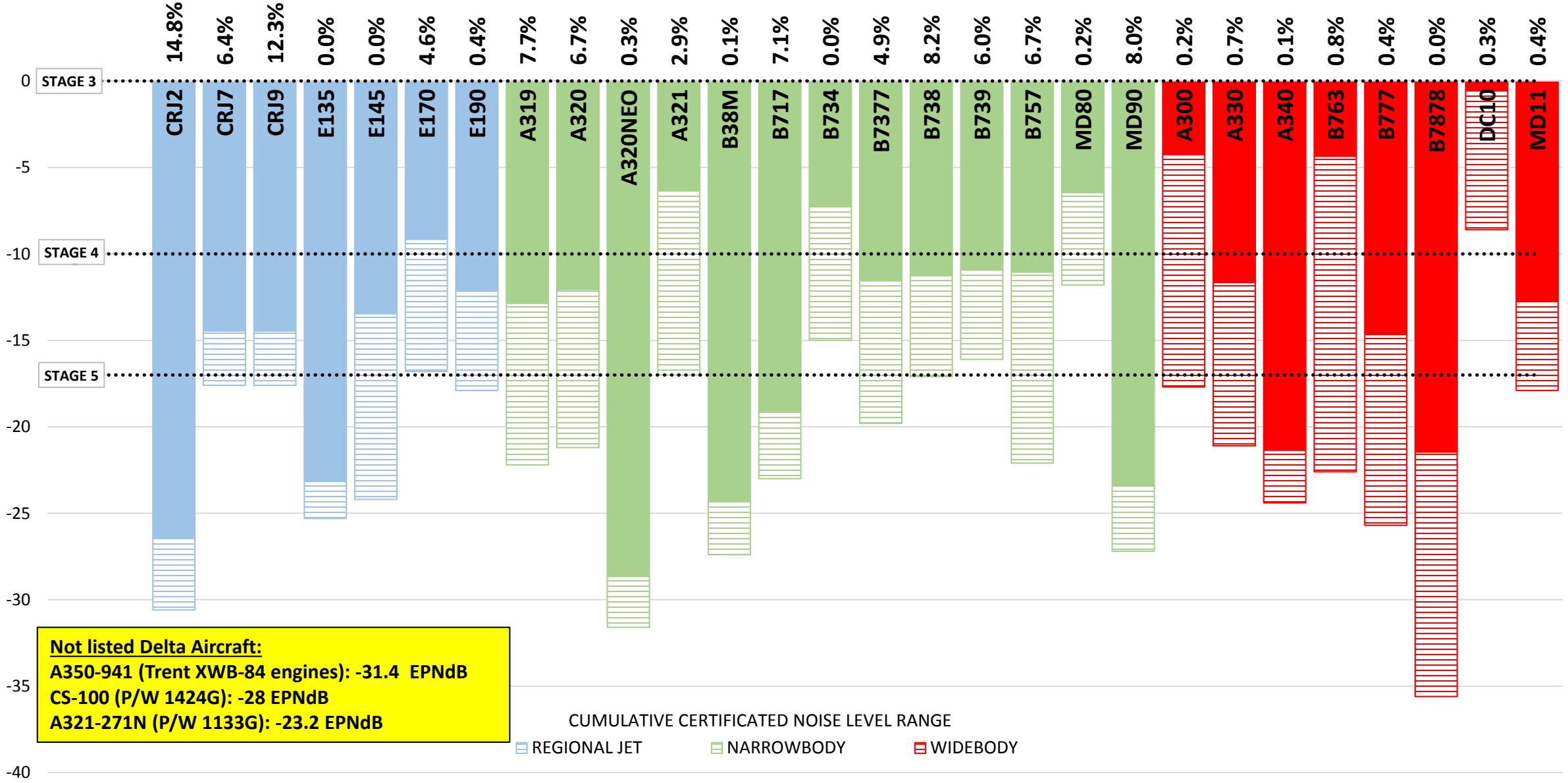
TECHNOLOGY IS YOUR FRIEND



MSP CARRIER JET USAGE WITH CUMULATIVE CERTIFICATED NOISE LEVELS

JUL 1 - AUG 15

CUMULATIVE CERTIFICATED NOISE LEVEL BELOW STAGE 3 LIMITS (EPNdB)



Not listed Delta Aircraft:
 A350-941 (Trent XWB-84 engines): -31.4 EPNdB
 CS-100 (P/W 1424G): -28 EPNdB
 A321-271N (P/W 1133G): -23.2 EPNdB

CUMULATIVE CERTIFICATED NOISE LEVEL RANGE

REGIONAL JET NARROWBODY WIDEBODY

DELTA AIR LINES

WE STRIVE TO BE INNOVATIVE, THOUGHTFUL, RELIABLE

- THROUGHOUT THE U.S. WE ARE UPGAUGING A/C, REDUCING RJs
- WE STRIVE TO BE GOOD NEIGHBORS BECAUSE WE ARE NEIGHBORS (13,000+ in MN)
- WE ARE REDUCING OUR CARBON AND NOISE FOOTPRINT
- NEW AIRCRAFT DELIVERIES AND ORDERS
 - (61 in 2018. 71 in 2019)
 - Quieter, More Fuel Efficient, Less Carbon Output
 - Additional Narrow-body Orders Possible:
(A-320neo/B-737MAX/CS-500)

DO YOU REALLY WANT TO TRAVEL TO LA ON THIS:



GENERAL RECAP

Will you speak to changes in fleet composition amongst the carriers?

What aircraft are being phased out and what will replace those aircraft?

Are the older planes being sold to regional carriers?

QUIETER AIRPLANES



A320 NEO

Spirit Operating 5 aircraft
122 more on Order

Frontier Operating 30 aircraft



A321 NEO

Delta 100 on Order



B737 Max

Southwest Operating 16
264 more on Order

American Operating 12
88 more on Order

United 159 on Order



A220

Delta 75 on Order

Jet Blue 60 on Order