

# MEETING Q3, 2022

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AIRPORT COMMUNITY CONSULTATIVE COMMITTEE (ACCC)

Sept. 22 | 2022

**YYC** CALGARY  
AIRPORT  
AUTHORITY | L'ADMINISTRATION  
AÉROPORTUAIRE  
DE CALGARY

In the spirit of respect, reciprocity and truth, we honour our ancestors and those who took care of this land long before we were here by acknowledging the Treaty 7 territory of the Blackfoot confederacy.

This includes the Siksika, Kainai, Piikani peoples — as well as the Îyâxe Nakoda, and Tsuut'ina nations. This territory is also home to the Métis Nation of Alberta, Region 3.

We embrace the role of helping to protect the space and foster the growth and development of the peoples – both the Indigenous and non-Indigenous - who live, work, and play on these lands.



# **AGENDA**

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- 1. WELCOME**
- 2. OPERATIONS UPDATE**
- 3. JET TURN TRIAL UPDATE**
- 4. INFRASTRUCTURE UPDATE**
- 5. ACOUSTIC MONITORING**
- 6. ROUND TABLE**



# OPERATIONS UPDATE



## CALGARY INTERNATIONAL AIRPORT LOCAL E&D PASSENGER STATISTICS<sup>1</sup>

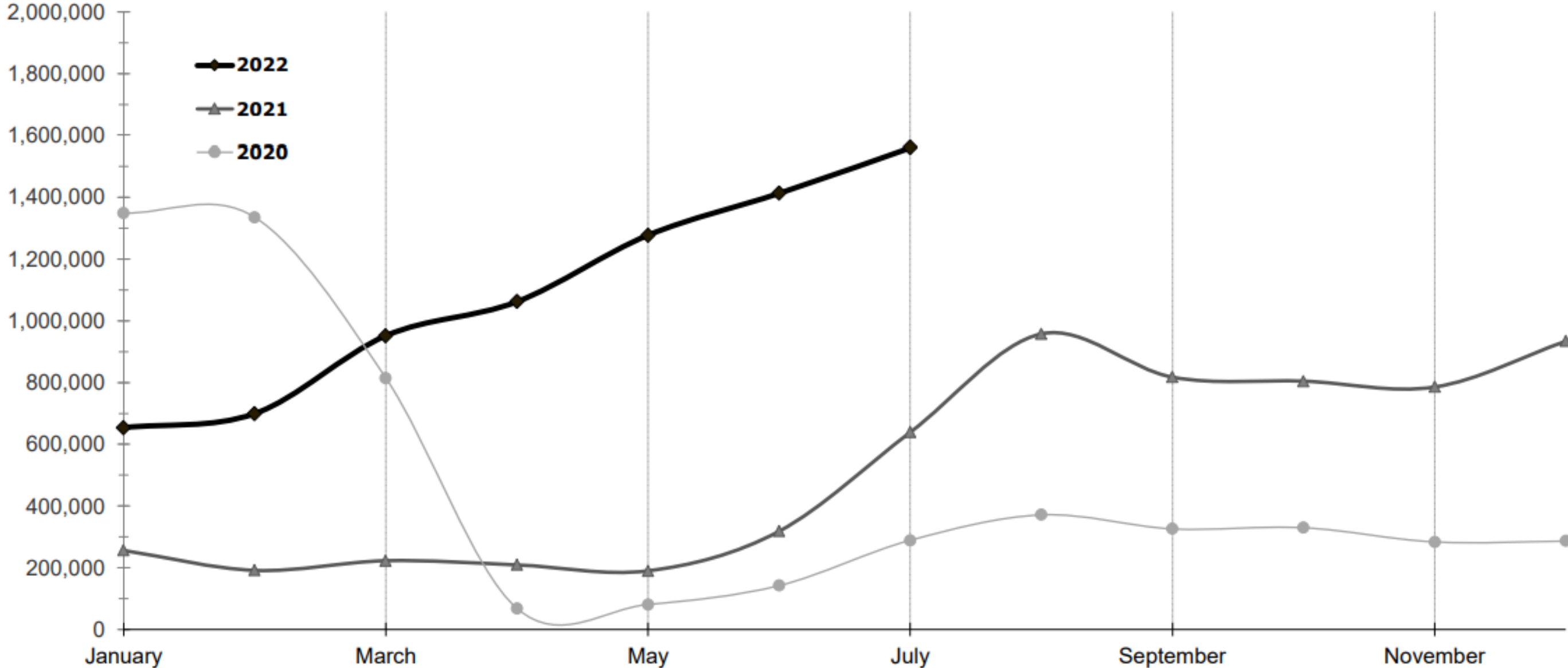
	% Δ 2018	% Δ 2019	2020	% Δ	2021	% Δ	2022	% Δ
January	5.3%	6.8%	1,348,504	-2.9%	256,212	-81.0%	<b>653,700</b>	<b>155.1%</b>
February	5.8%	6.4%	1,334,686	-0.5%	191,910	-85.6%	<b>698,846</b>	<b>264.2%</b>
March	6.5%	5.3%	814,236	-45.1%	222,621	-72.7%	<b>951,136</b>	<b>327.2%</b>
	5.9%	6.2%	3,497,426	-17.0%	670,743	-80.8%	<b>2,303,682</b>	<b>243.5%</b>
April	4.5%	4.5%	68,075	-95.2%	209,716	208.1%	<b>1,061,544</b>	<b>406.2%</b>
May	7.3%	4.8%	81,038	-94.4%	190,016	134.5%	<b>1,276,655</b>	<b>571.9%</b>
June	9.4%	4.8%	142,346	-91.0%	318,592	123.8%	<b>1,412,400</b>	<b>343.3%</b>
	7.1%	4.7%	291,459	-93.5%	718,324	146.5%	<b>3,750,599</b>	<b>422.1%</b>
July	9.2%	3.6%	288,742	-83.8%	639,003	121.3%	<b>1,559,765</b>	<b>144.1%</b>
August	8.3%	0.8%	371,644	-79.3%	957,357	157.6%	-	-
September	7.2%	3.2%	326,251	-78.7%	817,139	150.5%	-	-
	8.3%	2.5%	986,637	-80.7%	2,413,499	144.6%	<b>1,559,765</b>	<b>144.1%</b>
October	5.9%	1.5%	329,829	-77.3%	804,404	143.9%	-	-
November	3.8%	0.6%	283,247	-78.1%	785,504	177.3%	-	-
December	4.1%	1.3%	286,885	-80.1%	933,932	225.5%	-	-
	4.6%	1.2%	899,961	-78.5%	2,523,840	180.4%	-	-
<b>Total (YTD)</b>	<b>6.56%</b>	<b>3.54%</b>	<b>5,675,483</b>	<b>-68.40%</b>	<b>6,326,406</b>	<b>11.47%</b>	<b>7,614,046</b>	<b>275.43%</b>
					<i>12 Months Ended Jul '22 »</i>		<i>11,912,382</i>	<i>228.53%</i>

<sup>1</sup> E&D (enplaned & deplaned) statistics include non-revenue passengers. Figures are subject to change and may contain estimates (2.18% of the July 2022 results have been estimated).

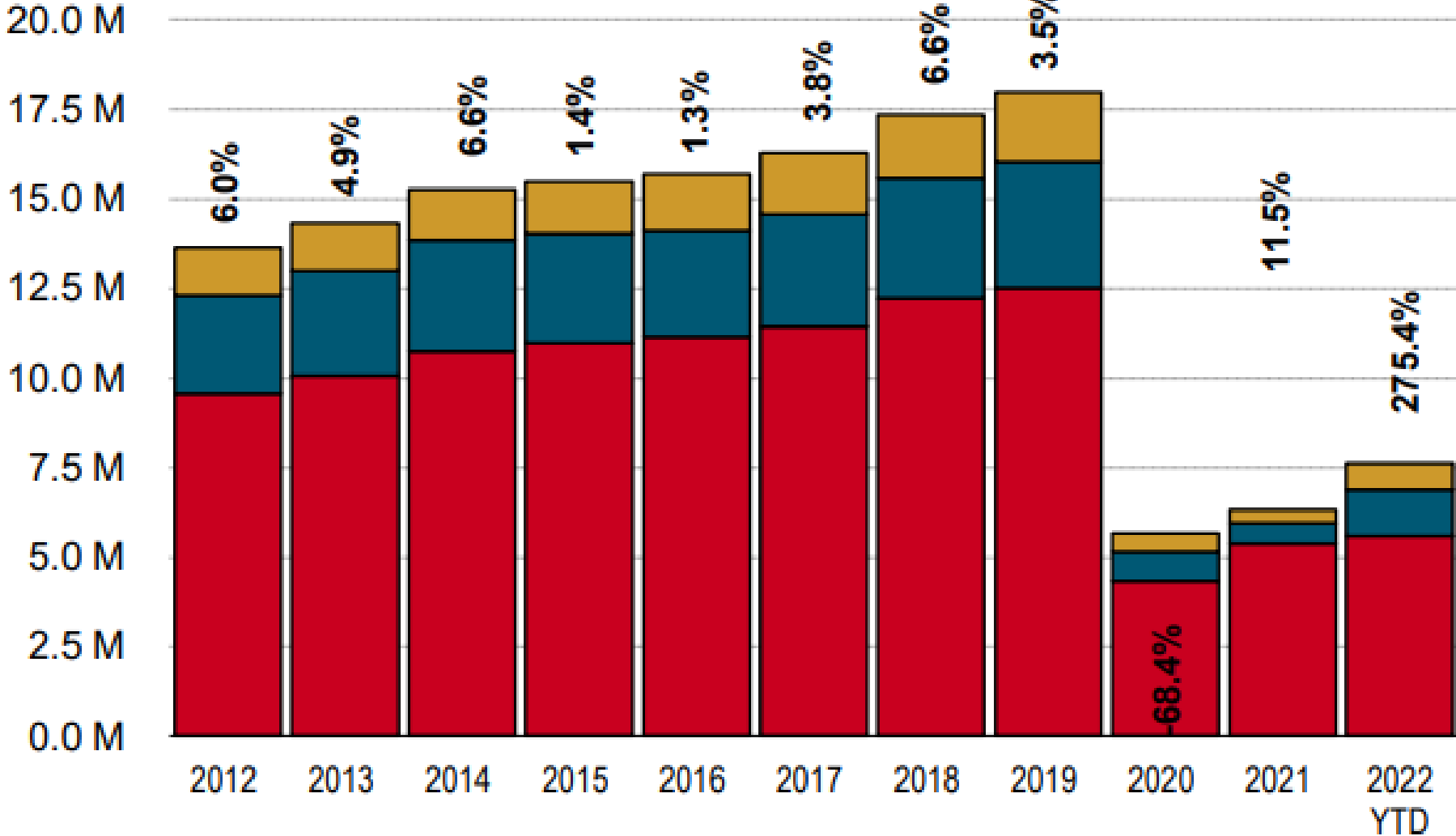
# OPERATIONS UPDATE



**LOCAL E&D PASSENGERS BY MONTH**



**HISTORICAL E&D PASSENGERS 2012 - 2022**



# OPERATIONS UPDATE

- Volunteer programs return
- Accessibility enhancements
- Airport Trail Completion



2022-09-22

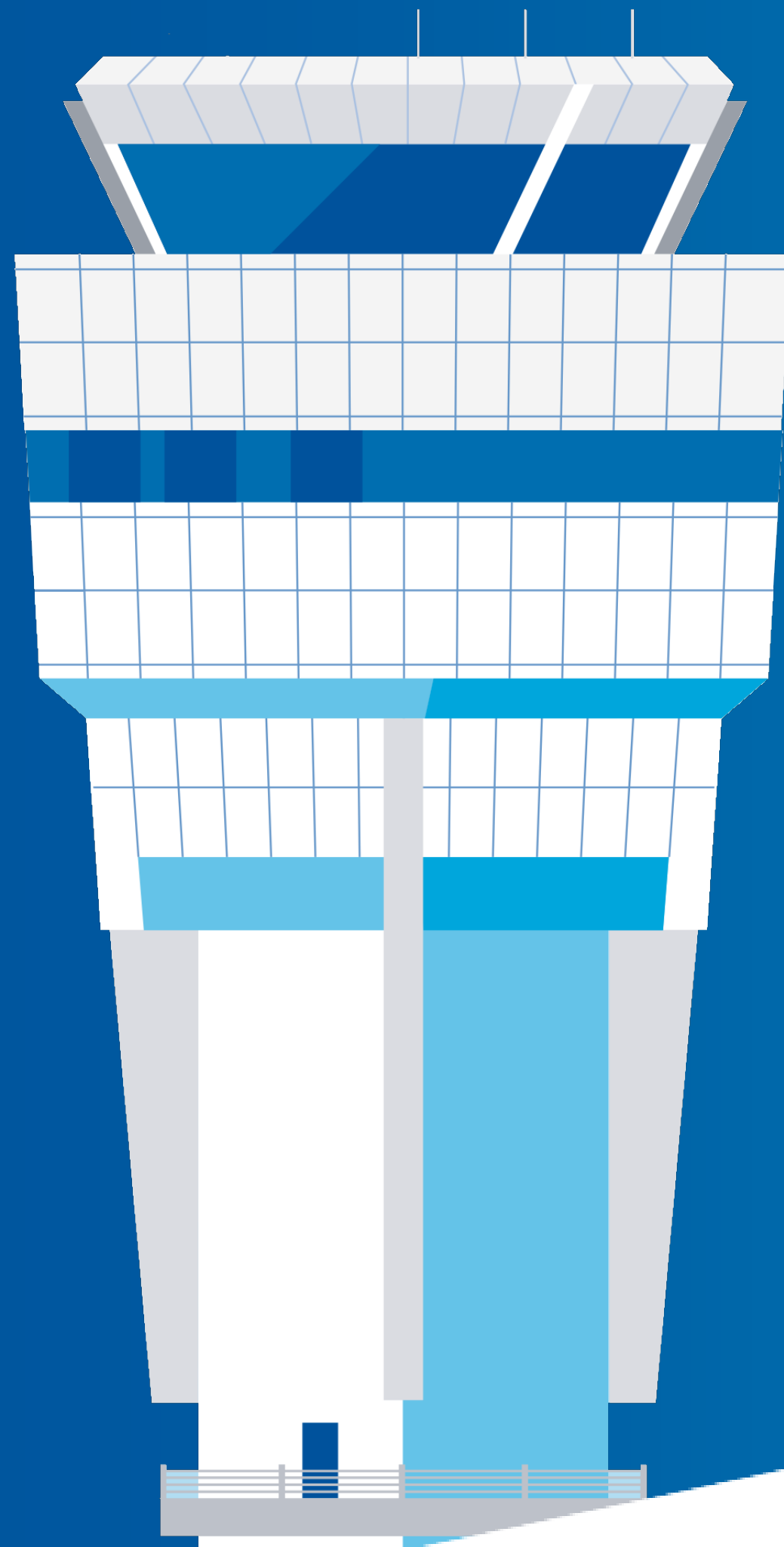
# ALTERNATE DEPARTURE HEADING TRIAL

## Consultation Results and Decision

Christopher Csatlos – Manager, Stakeholder and Community Relations

Tony Rushton – Manager, Calgary Tower

Brent Lopushinsky – Unit Operations Specialist, Calgary Tower



# AGENDA

- ▶ Alternate Departure Heading Trial Refresher
- ▶ Consultation and Decision
- ▶ Q&A



# Refresher

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# REFRESHER ON ALTERNATE DEPARTURE HEADINGS

## Background

- › In collaboration with Calgary Airport Authority, NAV CANADA is currently conducting a departure procedure trial that improves runway throughput, responds to airport infrastructure changes, and delivers noise mitigation to communities south of the airport.
- › The trial permits jets departing runway 17L or 17R to turn toward the other runway on initial departure.
  - This is similar to the procedure already in place for aircraft departing to the north using runway 35L or 35R.
  - Intended as a one-year trial but extended due traffic levels during the pandemic.

# REFRESHER ON ALTERNATE DEPARTURE HEADINGS

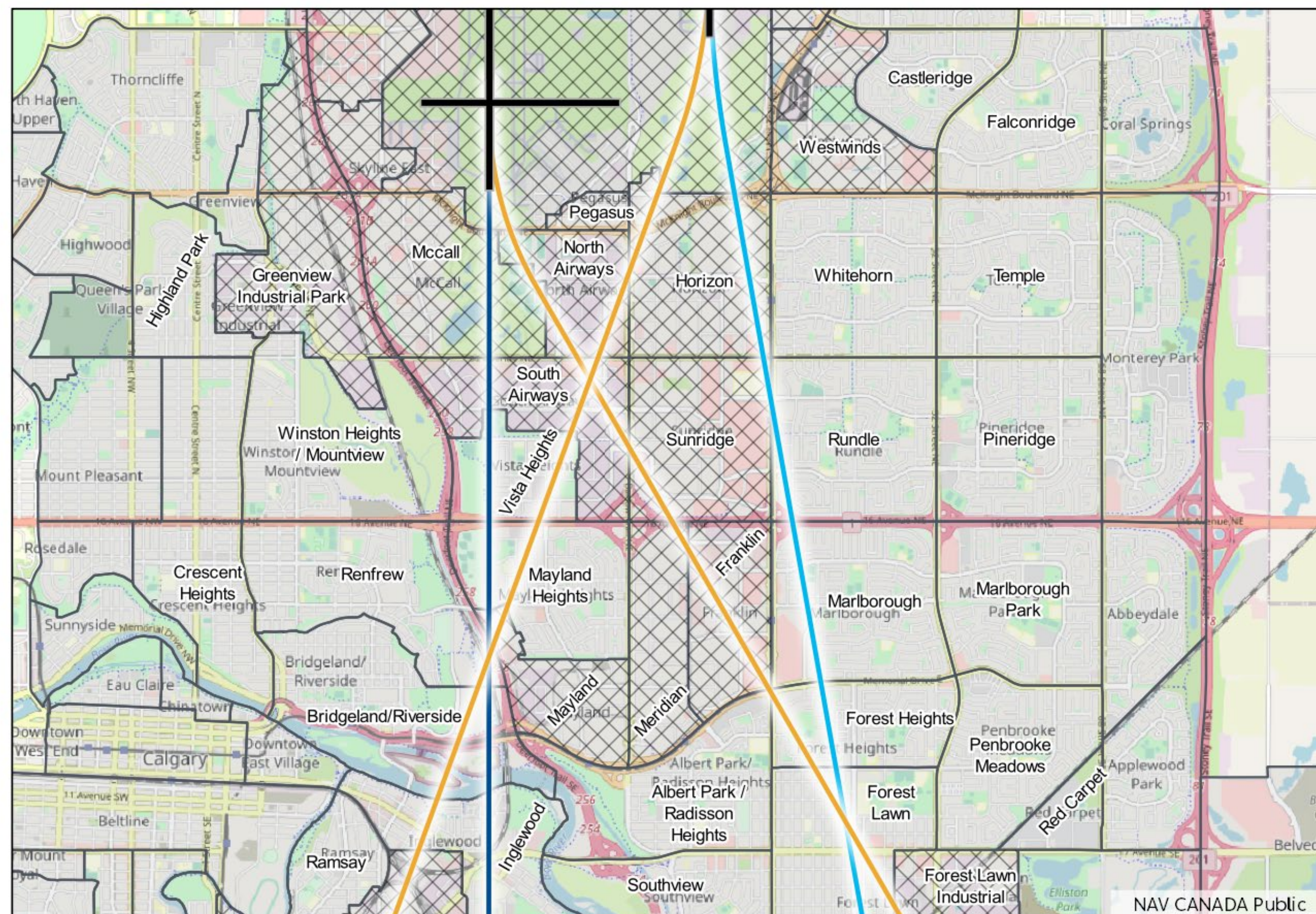
## Benefits

- › Increased balancing of noise for communities south of the airport.
- › 17R departures more likely to overfly non-residential land at lowest altitudes.
- › 17L departures more likely to be higher when they reach residentially populated areas.
- › Reduced track mileage and greenhouse gas emissions as a result of reduced taxiing and more direct routing in the air.
- › Reduced taxi times and reduced complexity in moving aircraft on the ground (including associated fuel burn).

# REFRESHER

## Anticipated Flight Tracks

- › Light and dark blue lines show standard headings from each runway
- › Yellow lines show alternate headings from each runway
- › Hatched areas are designated, “Industrial” by the City of Calgary



# Consultation and Decision

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# CONSULTATION PHASES



# CONSULTATION HIGHLIGHTS

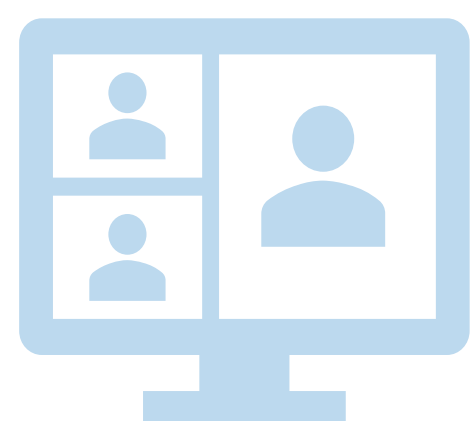
## Briefings to Elected Officials



Outreach to offices of elected officials with offer of briefings.

# PUBLIC INFORMATION SESSIONS

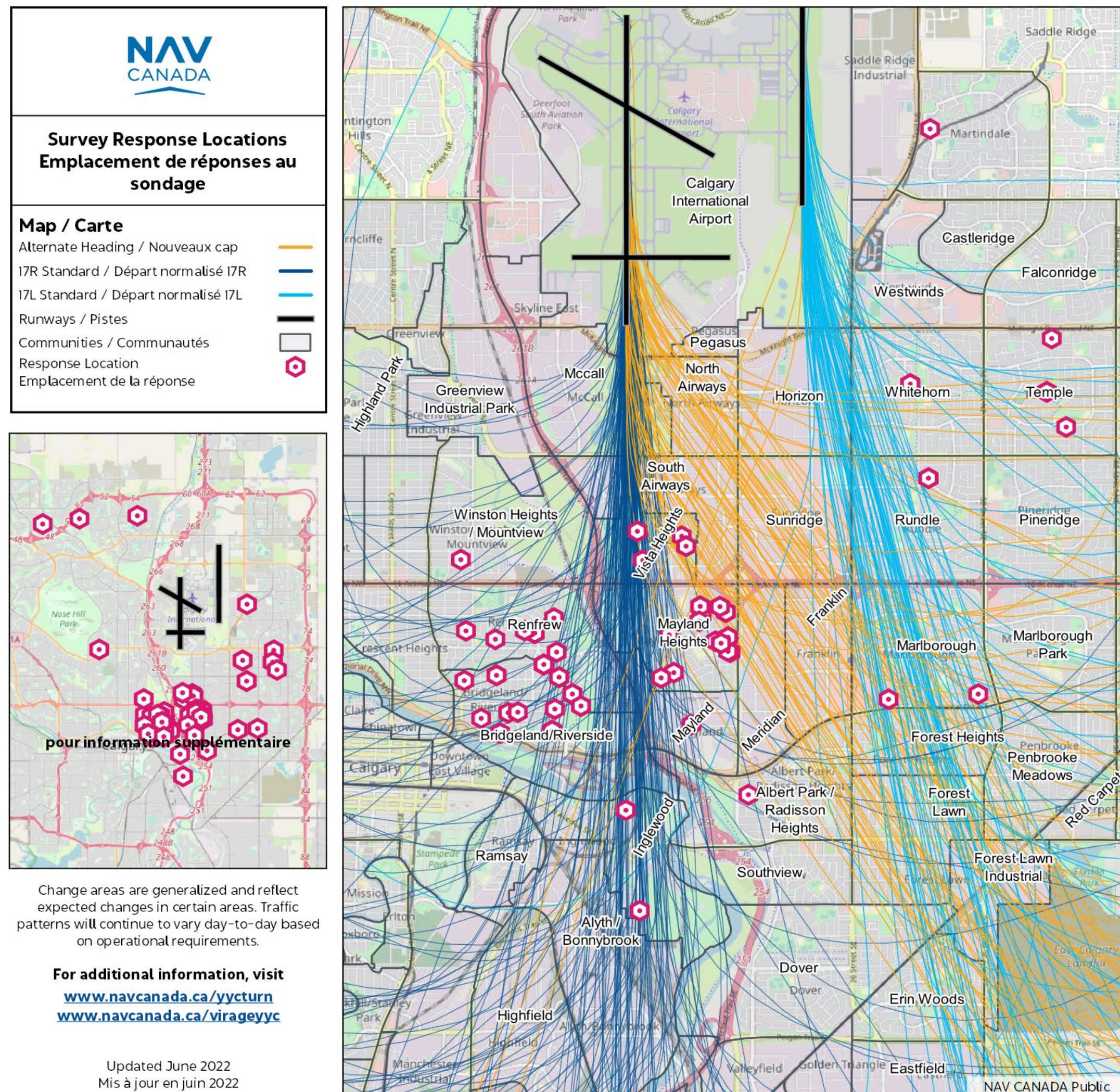
## Public Information Sessions



- 2 sessions
- 102 session registrations by 95 unique people
- 61 recorded attendees



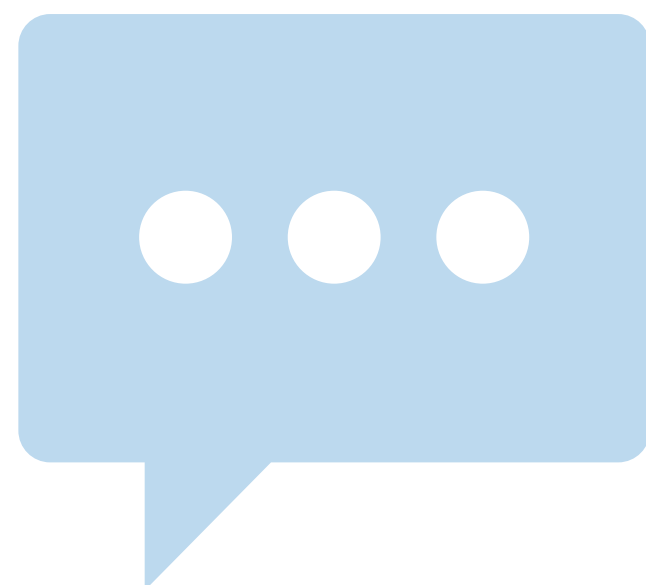
# CONSULTATION FEEDBACK SURVEY



Top Three Response Locations	Number of Responses	% of Respondents
Mayland / Mayland Heights	27	32.5%
Renfrew	16	19.3%
Bridgeland / Riverside	14	16.9%

# CONSULTATION FEEDBACK SURVEY

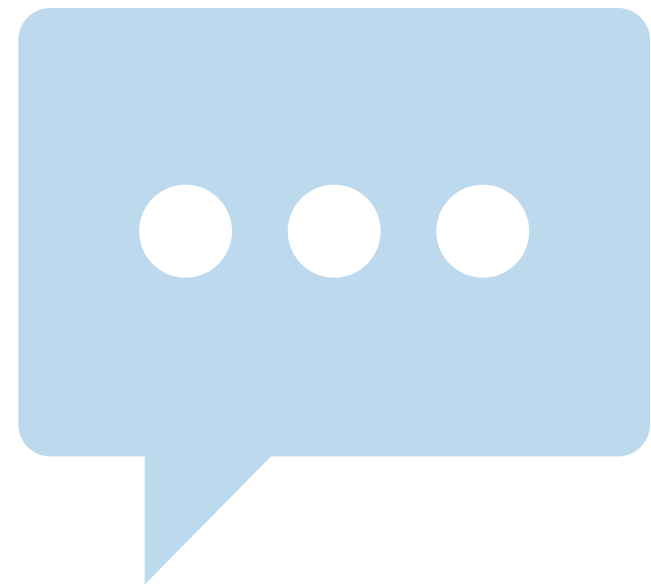
## Findings



- Most who observed a change in aircraft overflight are located in Mayland, Mayland Heights, and Vista Heights
- Over 30% of those who indicated they observed a significant change in aircraft overflight since the trial began stated it was more noticeable or disruptive during the overnight period.

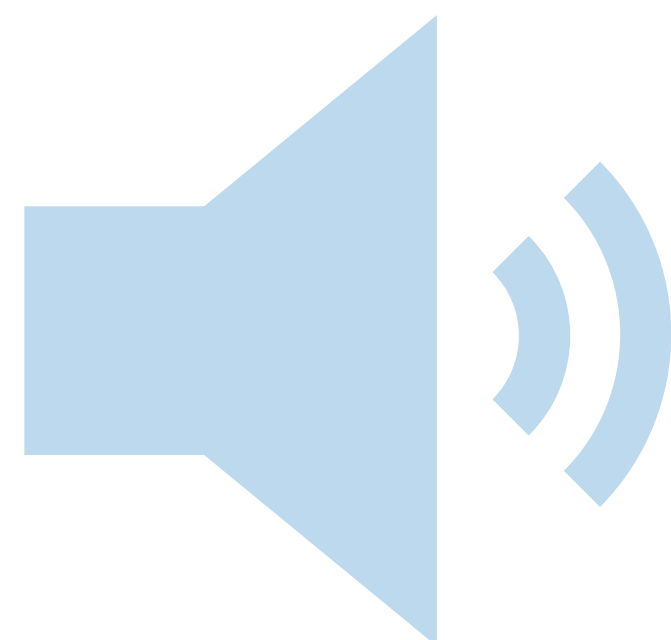
# CONSULTATION FEEDBACK SURVEY

## Mitigations Proposed by Residents



- Reduce the number of aircraft departing from the airport.
- Avoid overflying communities and fly over more non-residential lands
- Increase the altitude of aircraft
- Limit alternate departure headings hours of use

# ACOUSTIC ANALYSIS



## Overall community noise impact of the trial were expected to be positive

- Sound exposures decreased (statistically significant difference in all mean flight event SEL values)
- Observed 2–3 dB(A) decrease in SEL may not be noticeable by some.
- Greater distribution of noise events was achieved.
- Average altitude of aircraft was higher at all stations.

## CONSULTATION DECISION

- › Following consultation, all input received was assessed and considered.
  - Many commented on the more noticeable nature of the trial during overnight periods.
  - Use of Alternate Departure Headings will be discontinued between the hours of midnight and 6 a.m. local time (0000–0600) daily.
- › Based on the results of the acoustic analysis, benefits of reduced track mileage and associated reduction in GHG emissions, permanent use of Alternate Departure Headings for departures from runways 17L and 17R should proceed during other hours of the day.

## POST-CONSULTATION AND IMPLEMENTATION

- › Consultation Report to be released within a few weeks (after translation).
  - Will be available on the NAV CANADA website.
- › An assessment of the change will be conducted by NAV CANADA and the Calgary Airport Authority reviewing the first 180 days of implementation.
  - This review of the implementation period will be shared with the ACCC and published on NAV CANADA's website.

# THANK YOU

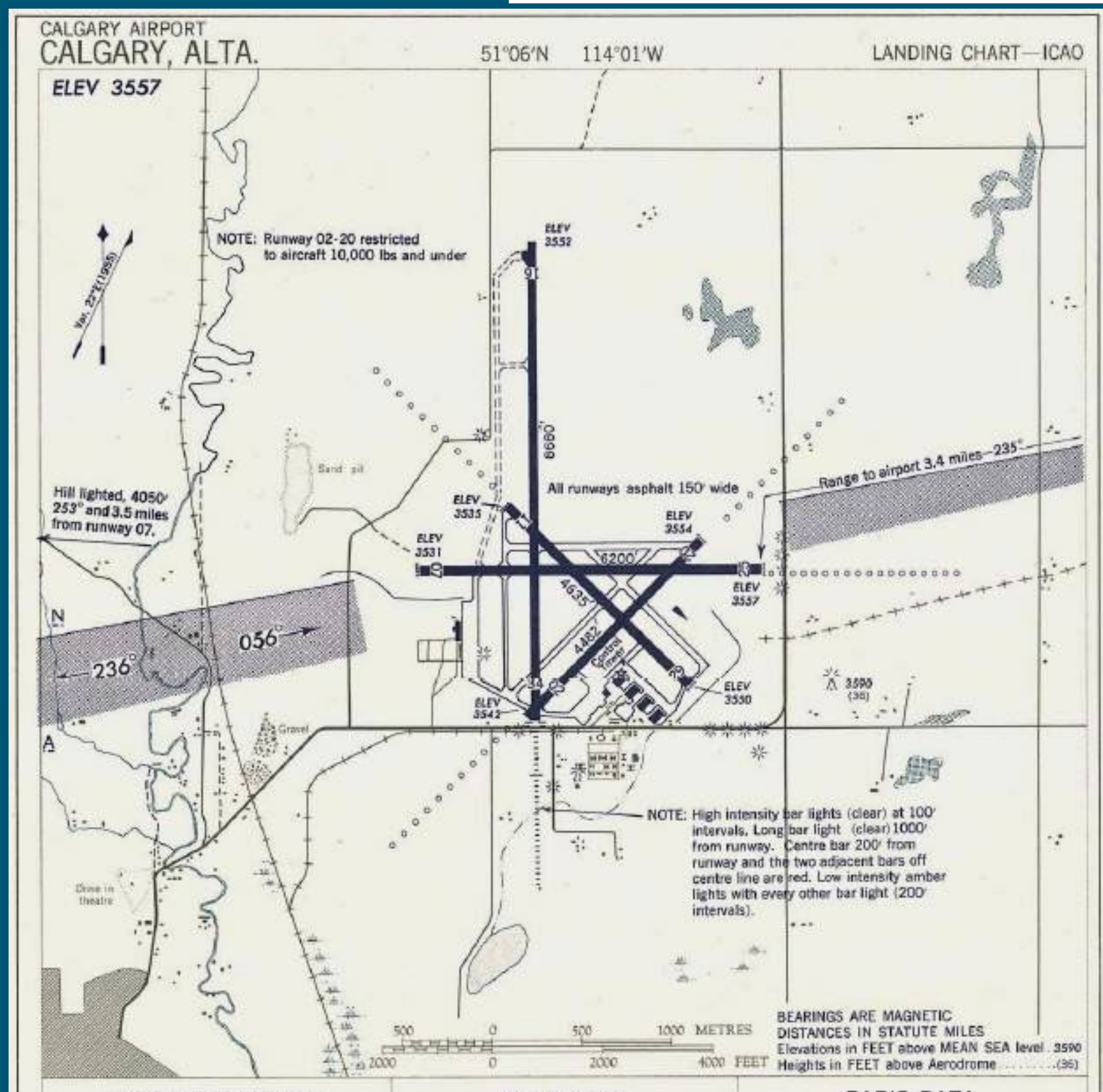
NAV  
CANADA



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[navcanada.ca](http://navcanada.ca)



# WEST RUNWAY REHABILITATION PROJECT

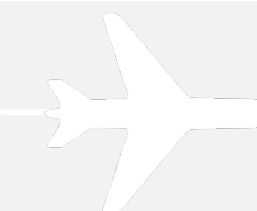


1956



## OVERVIEW

- Runway 17R-35L was constructed in phases between 1939 and 1963.
- Since it's original construction there have been a number of surface restorations to prolong the life of the asset.
- In recent years YYC Infrastructure has completed structural assessments and testing to confirm that the subsurface structure is at risk of failure.
- A full depth rehabilitation of the runway is required to ensure safe, secure and efficient airport operations. Additionally, Runway End Safety Areas (RESA) will be installed to ensure compliance with Transport Canada Regulations.





# WHY ARE WE DOING THIS WORK?

## OPERATE SAFELY

The rehabilitation is essential for ensuring a safe, secure and efficient airport environment – ensuring YYC can safely operate while meeting the demands of passenger and cargo traffic over the next 40 years.

## GROW CALGARY'S ECONOMY

Ensure we have the capacity to continue to attract various commercial partners through YYC, as one of Canada's biggest travel and cargo hubs. This enables foreign direct investment, trade, tourism and critical goods movement. This work is also anticipated to create approximately 300 jobs.

## ENHANCE SUSTAINABLE PRACTICES

Demonstrate environmentally friendly and sustainable practices that ultimately minimize the impact on this land, any wildlife and the environment. The project will use crushed concrete from the old pavement removal and recycle milled asphalt to be reused for this and future projects.



**Key risks** if project is not completed:

- Structural or Electrical failure
- Costly Emergency Repairs
- Runway Capacity Constraints



# WHAT DOES REHABILITATION OF THE RUNWAY MEAN?

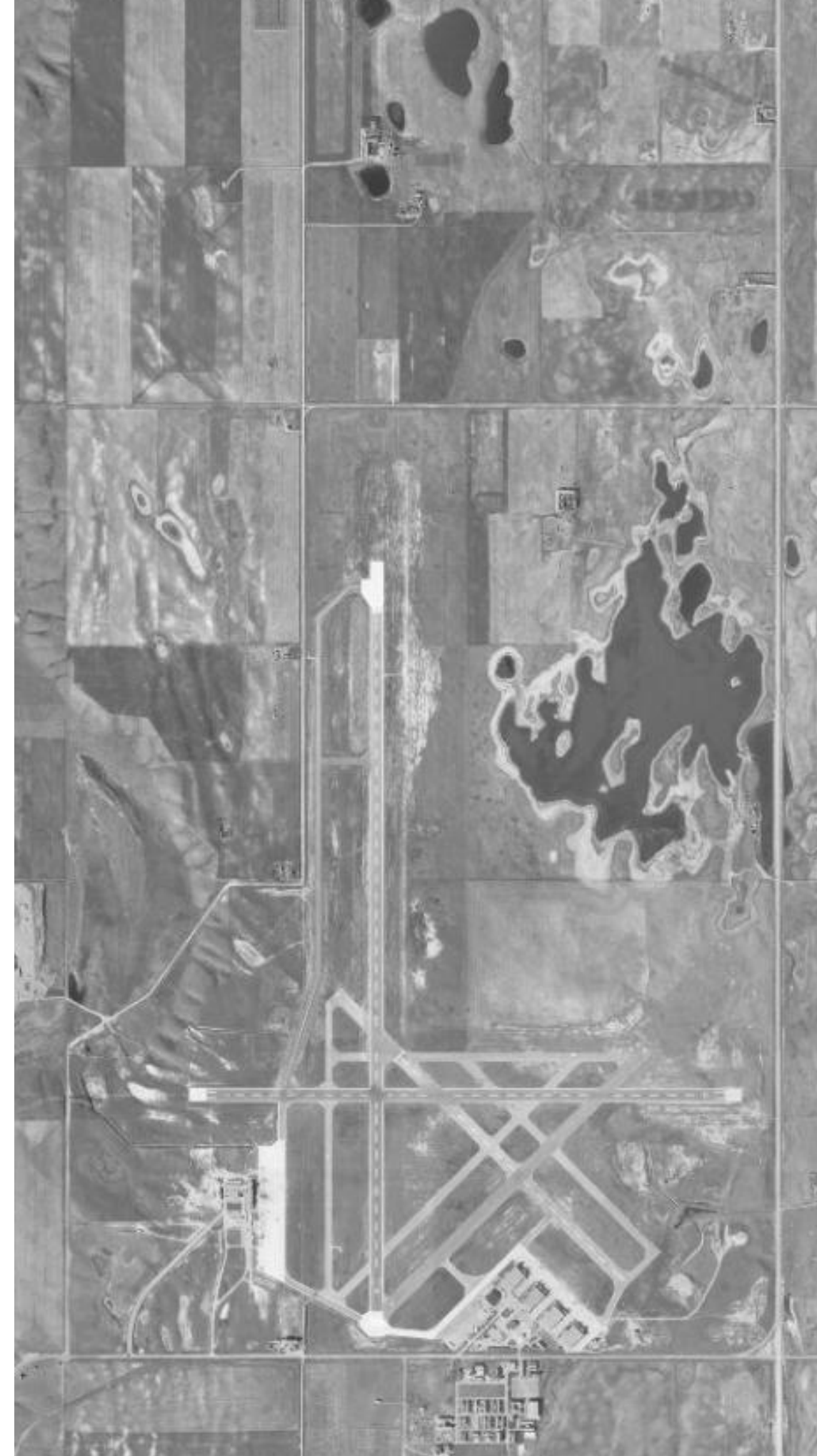
- The original runway was designed for 1950's era aircraft, which were much lighter than modern aircraft. As a result, numerous runway projects have been completed in the past 80+ years to both maintain structural capacity and to prolong the life of the asset.
- Recent studies have confirmed the runway will be reaching the end of its life, and that **full-depth removal and replacement of the structural and electrical materials** is required.



# HISTORICAL COMPARISON [City of Calgary Database]



**1948**



**1957**



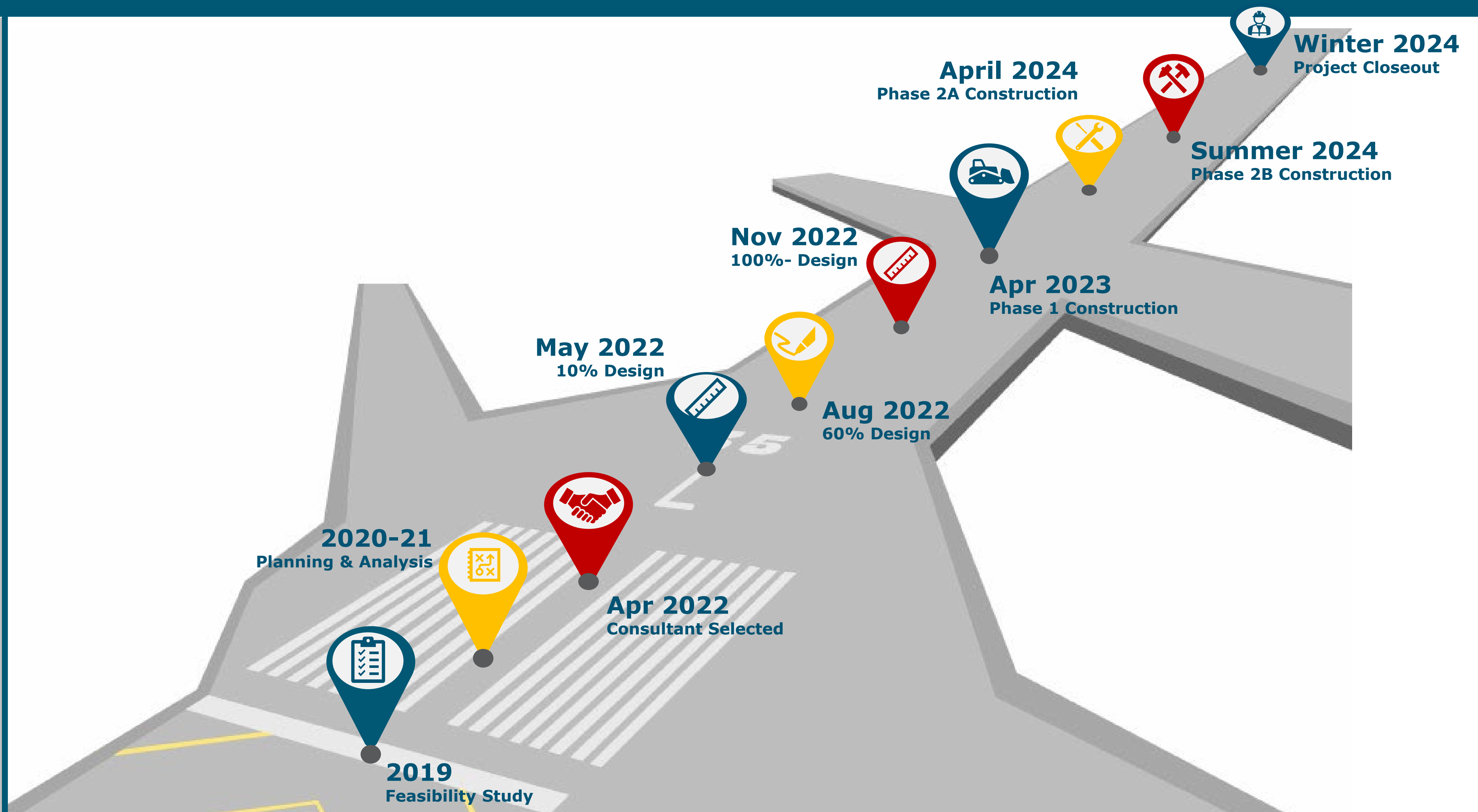
**1979**



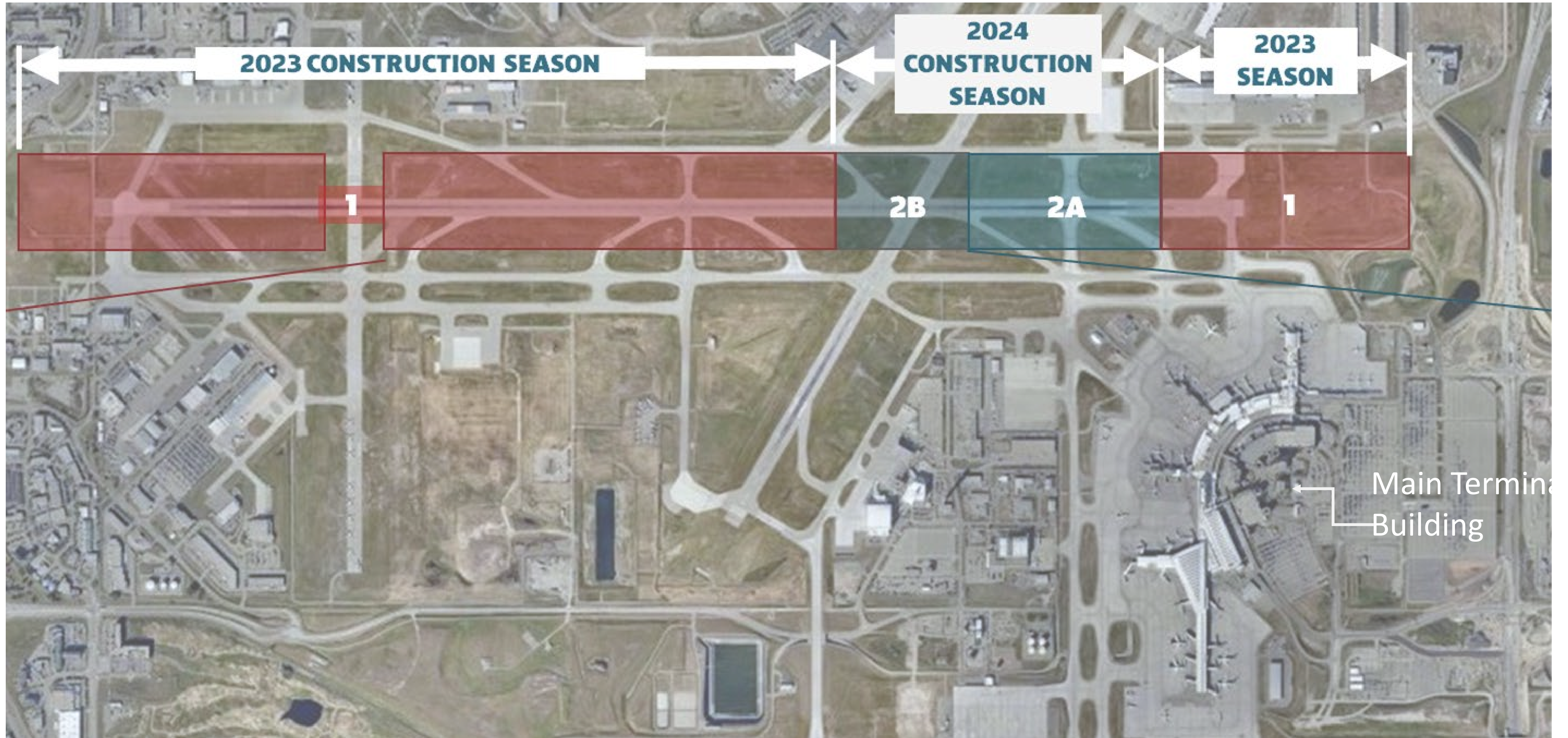
**2020**



# HOW LONG WILL THIS REHABILITATION TAKE?

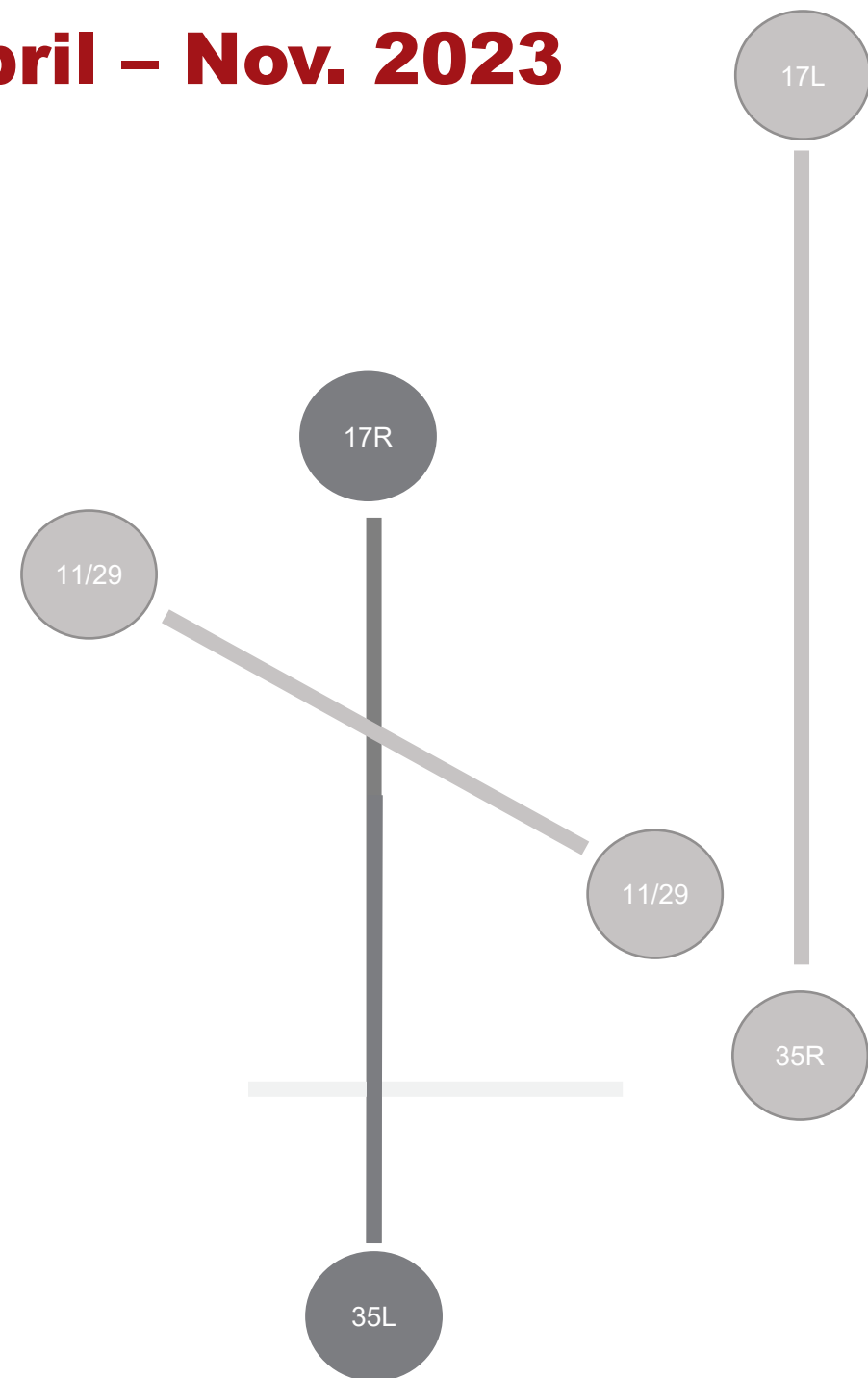


# WHEN WILL CONSTRUCTION BEGIN?



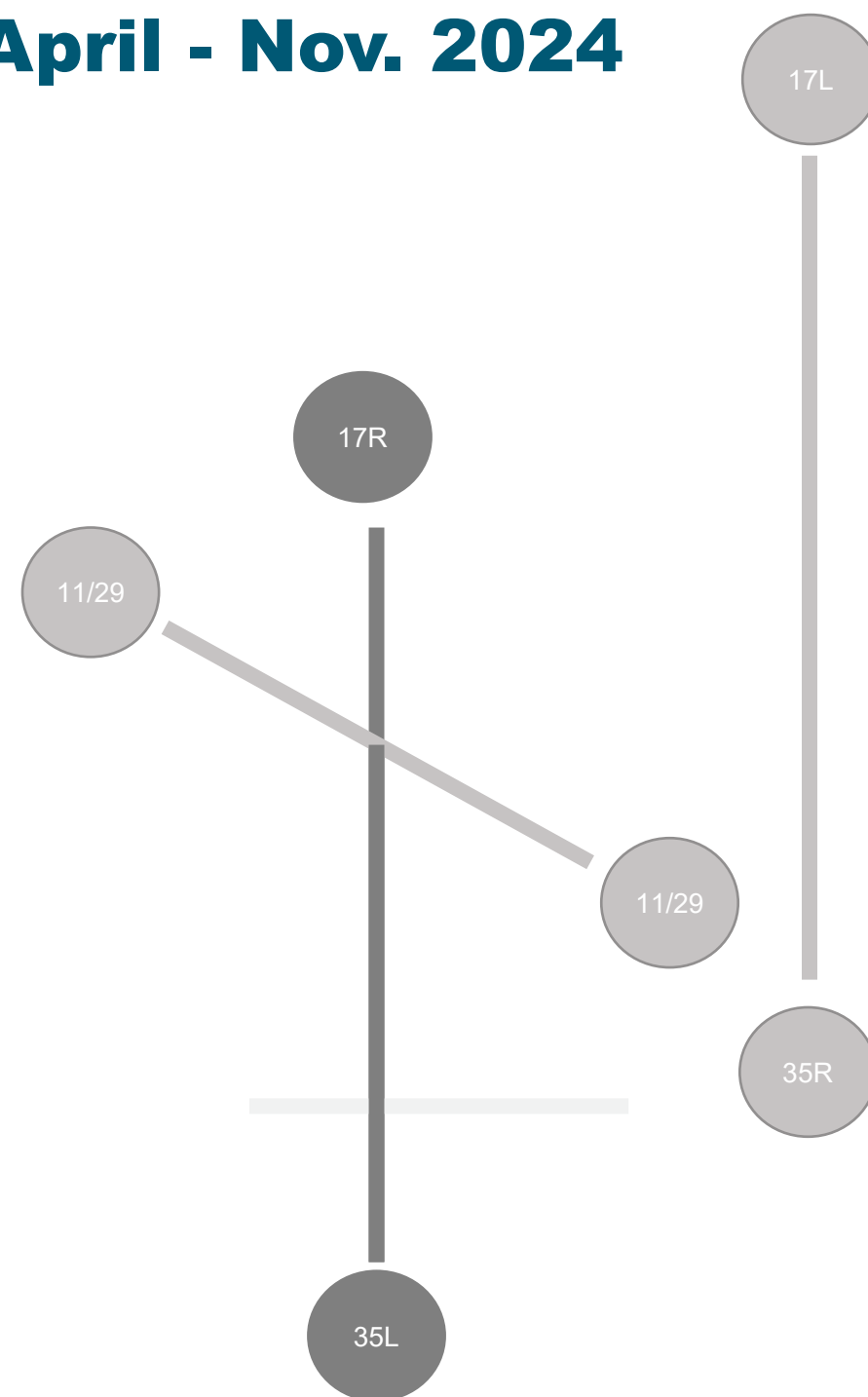
# WHICH RUNWAY CLOSURES WILL BE NECESSARY?

**April – Nov. 2023**



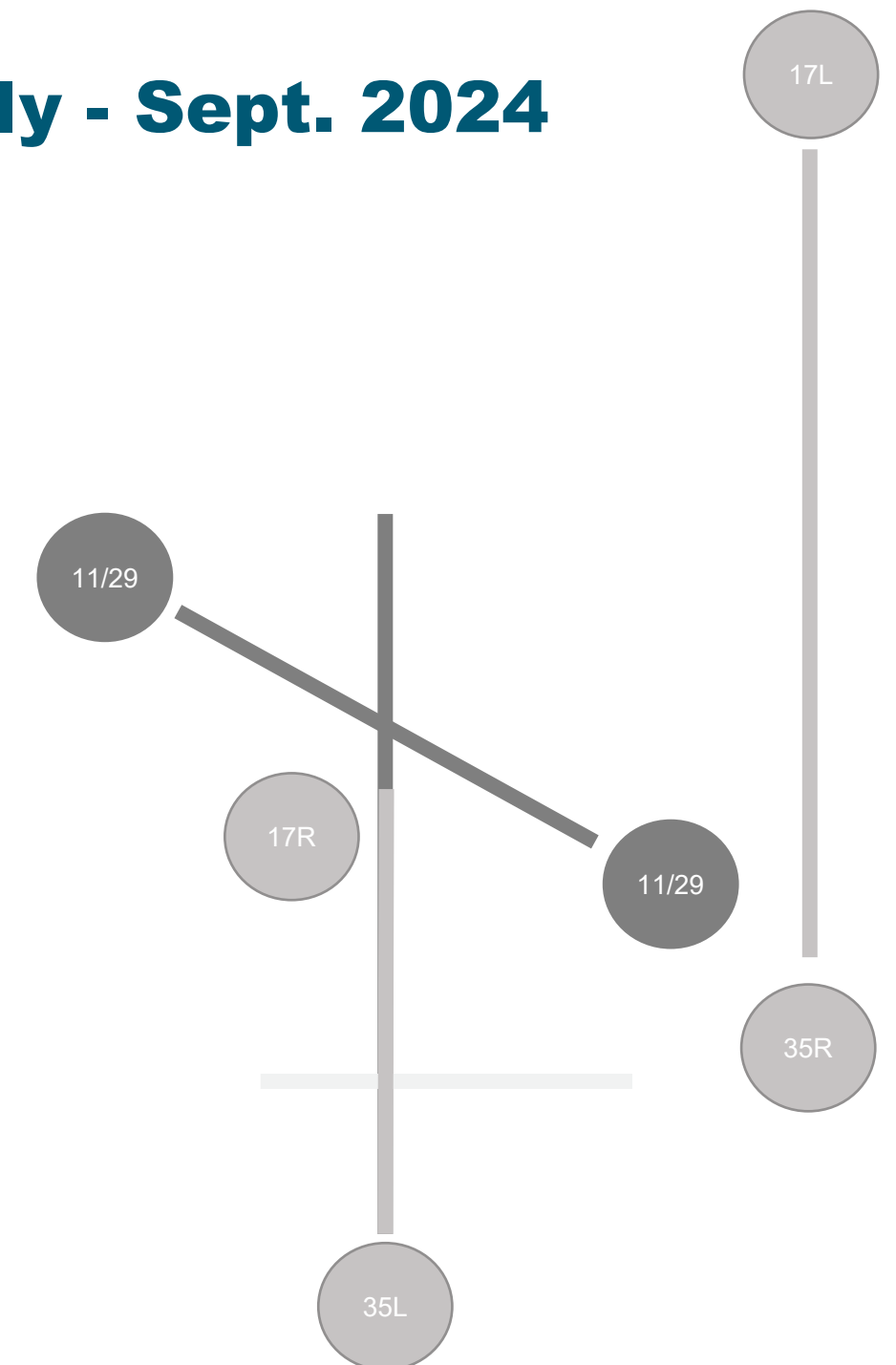
**PHASE 1 –  
FULL 17R/35L CLOSURE**

**April - Nov. 2024**



**PHASE 2A – NORTH SIDE CLOSURE**

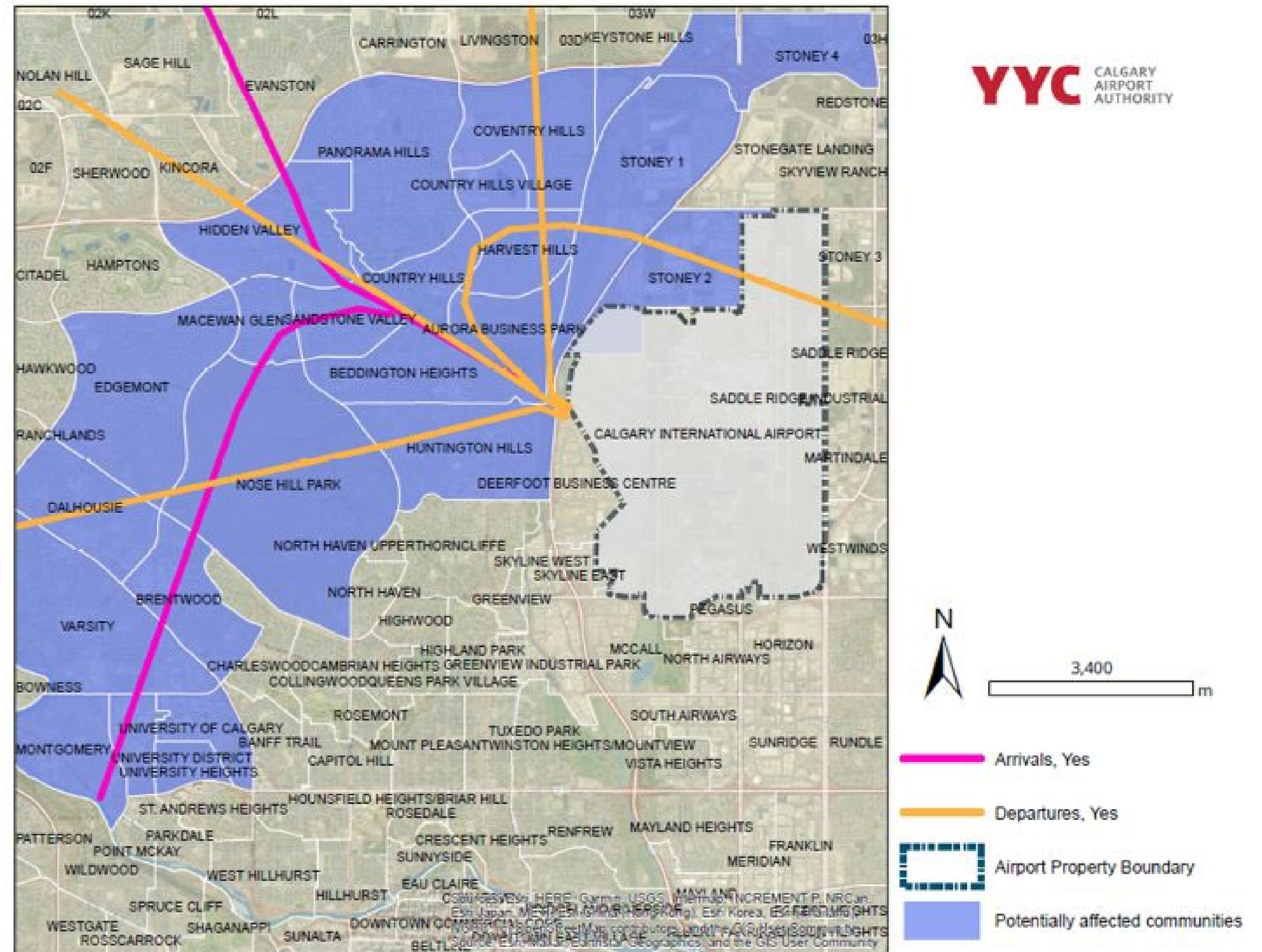
**July - Sept. 2024**



**PHASE 2B – 11/29 CLOSURE**

# WHAT ARE THE POTENTIAL IMPACTS TO NEIGHBOURING COMMUNITIES?

- Throughout this project, there will be increased use of the crosswind runway that places aircraft over parts of northwest Calgary and southeast Calgary.
- During peak construction times, those communities may experience higher volume of traffic overhead than previous summers.





**Questions? Comments?**



# AIR TRAFFIC DASHBOARD

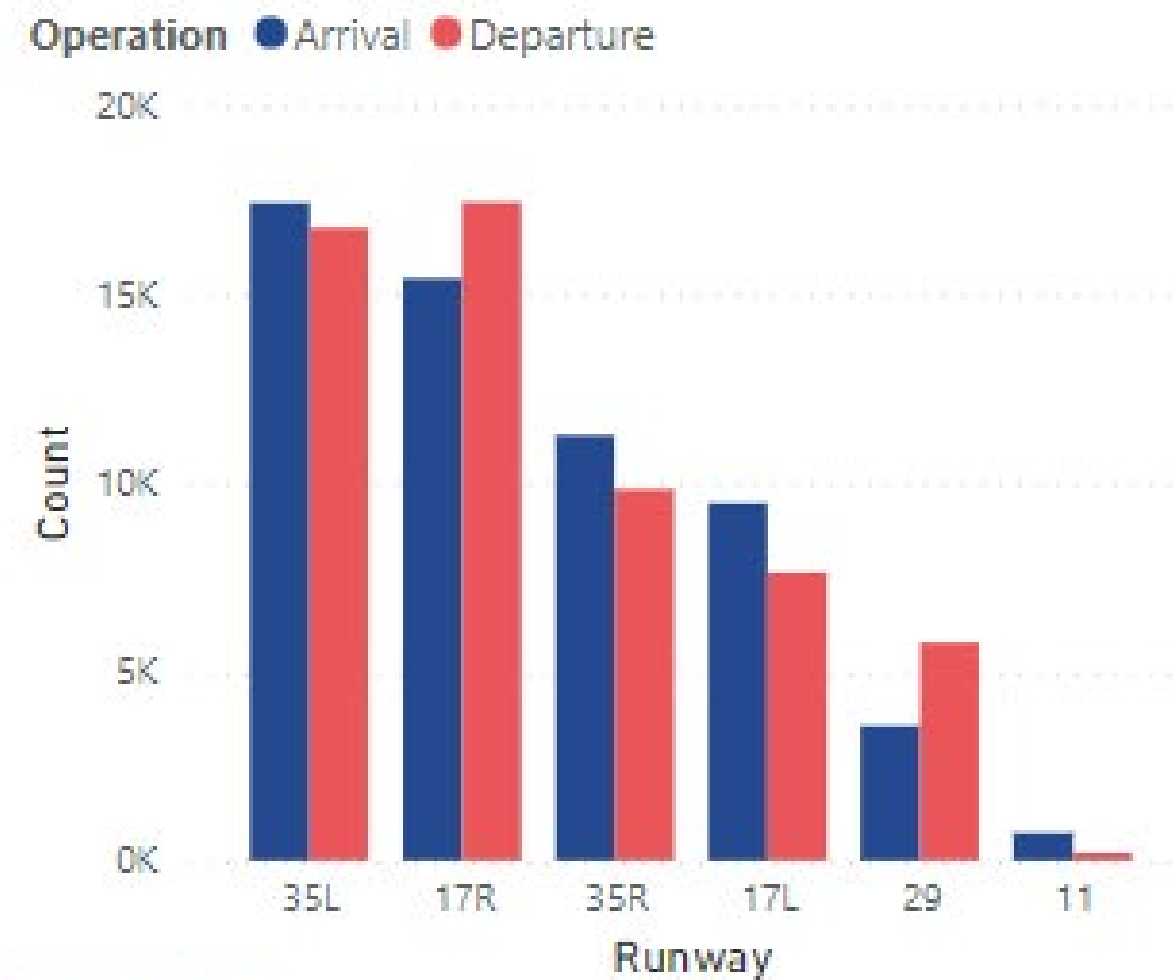
- Year
- 2018
  - 2019
  - 2020
  - 2021
  - 2022

- Month
- 01 Jan
  - 02 Feb
  - 03 Mar
  - 04 Apr
  - 05 May
  - 06 Jun
  - 07 Jul
  - 08 Aug
  - 09 Sep
  - 10 Oct
  - 11 Nov
  - 12 Dec

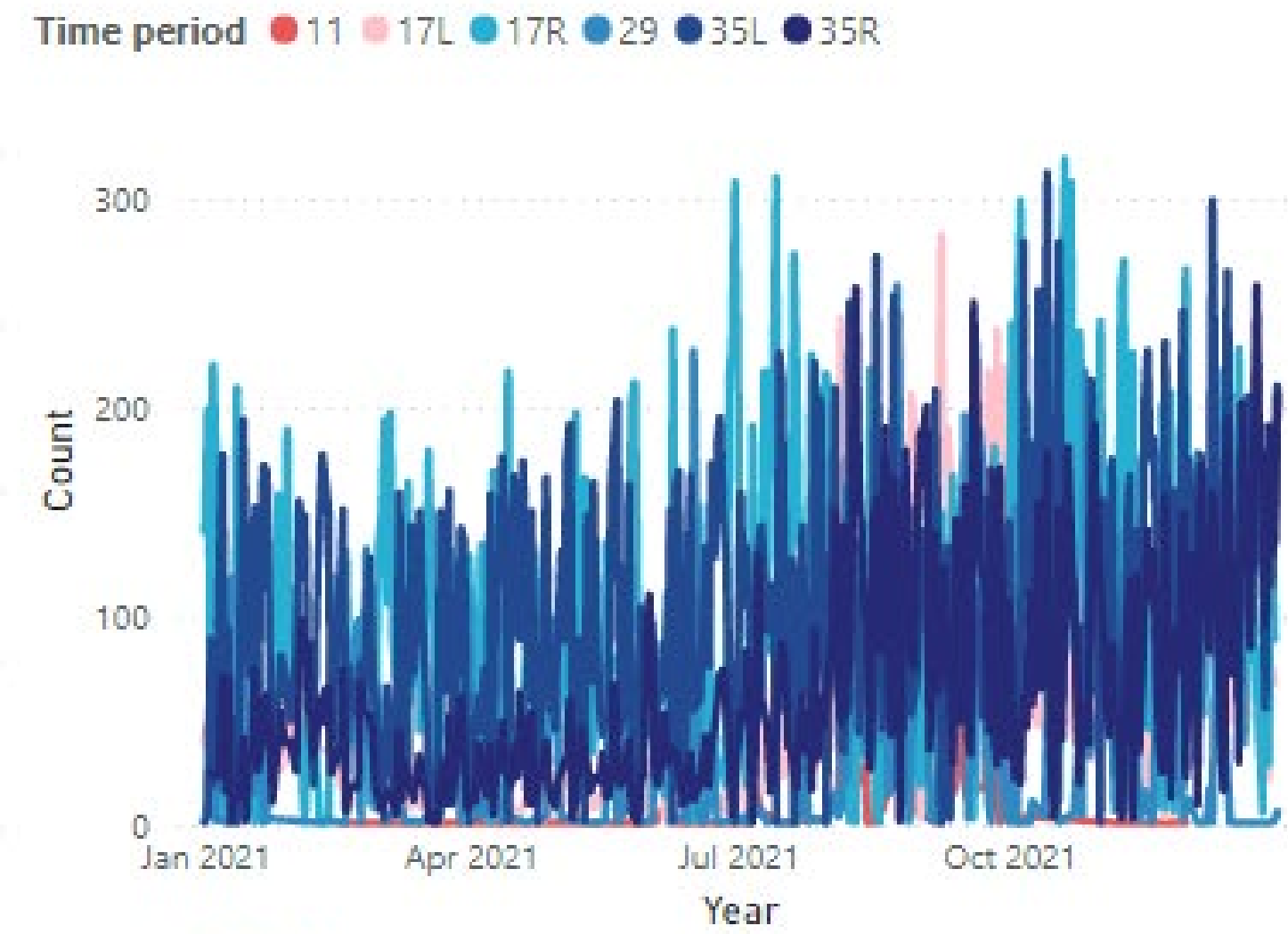
View Tabular Data

VRF Traffic and Aircraft Type

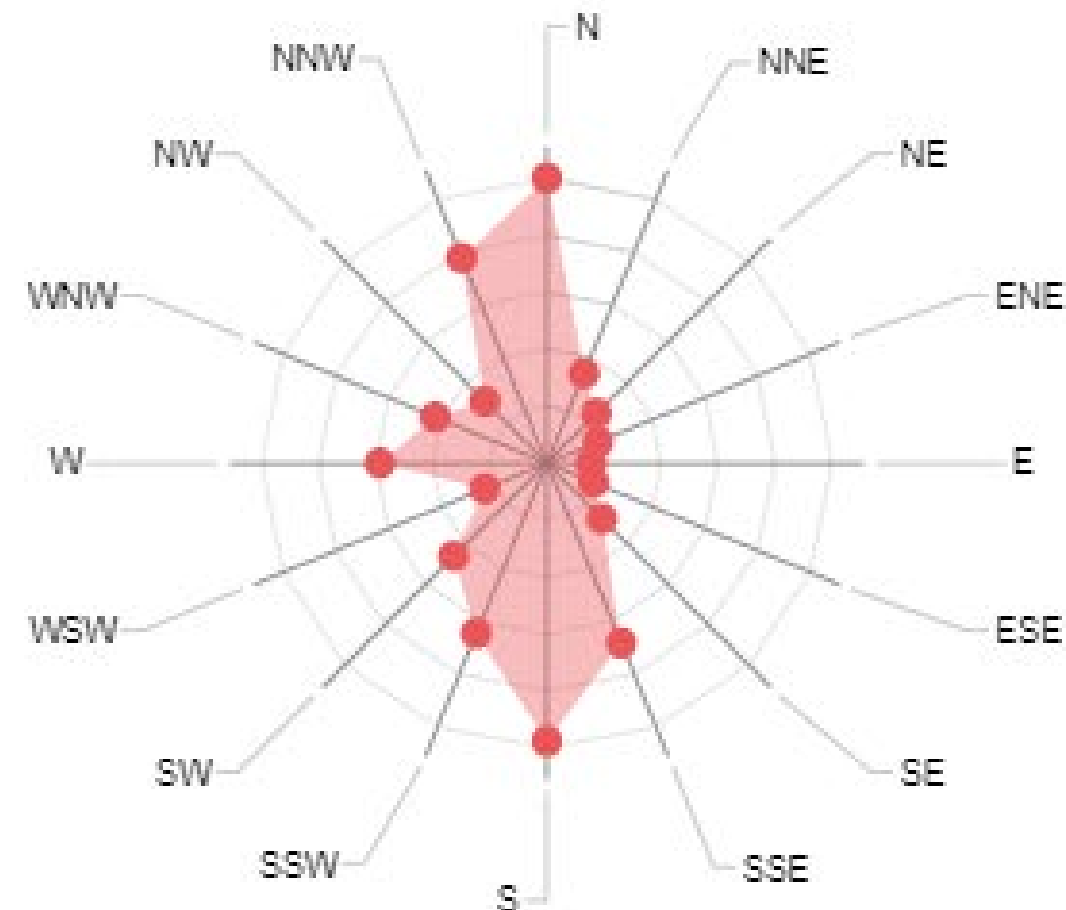
Breakdown by Runway for Selected Timeframes



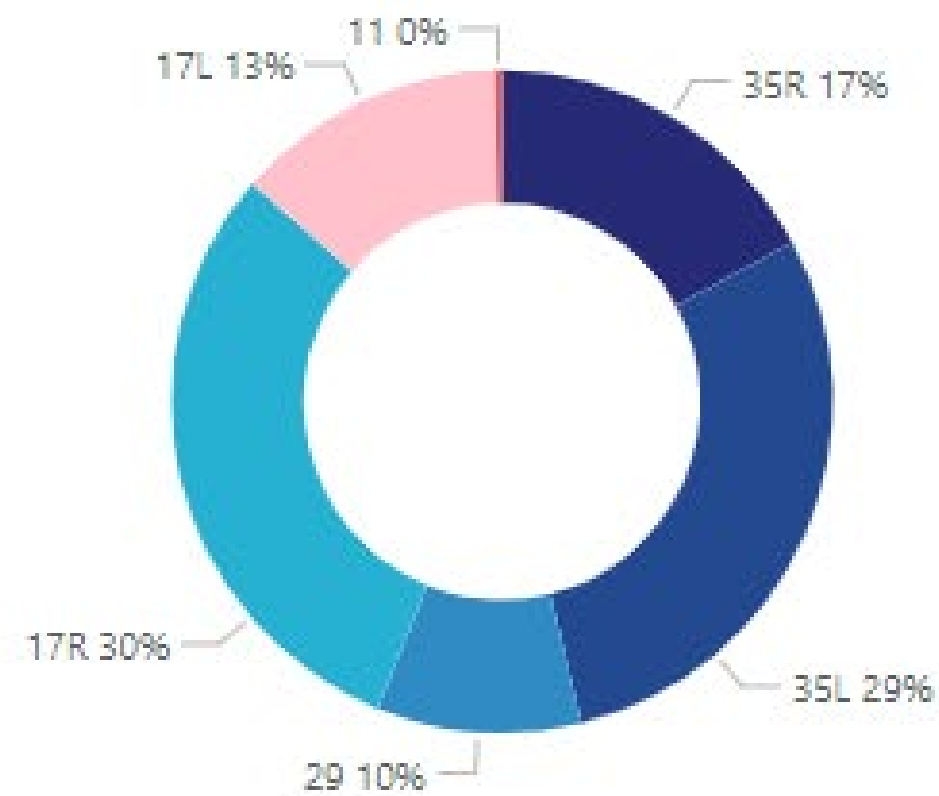
Breakdown Over Time for Selected Timeframes



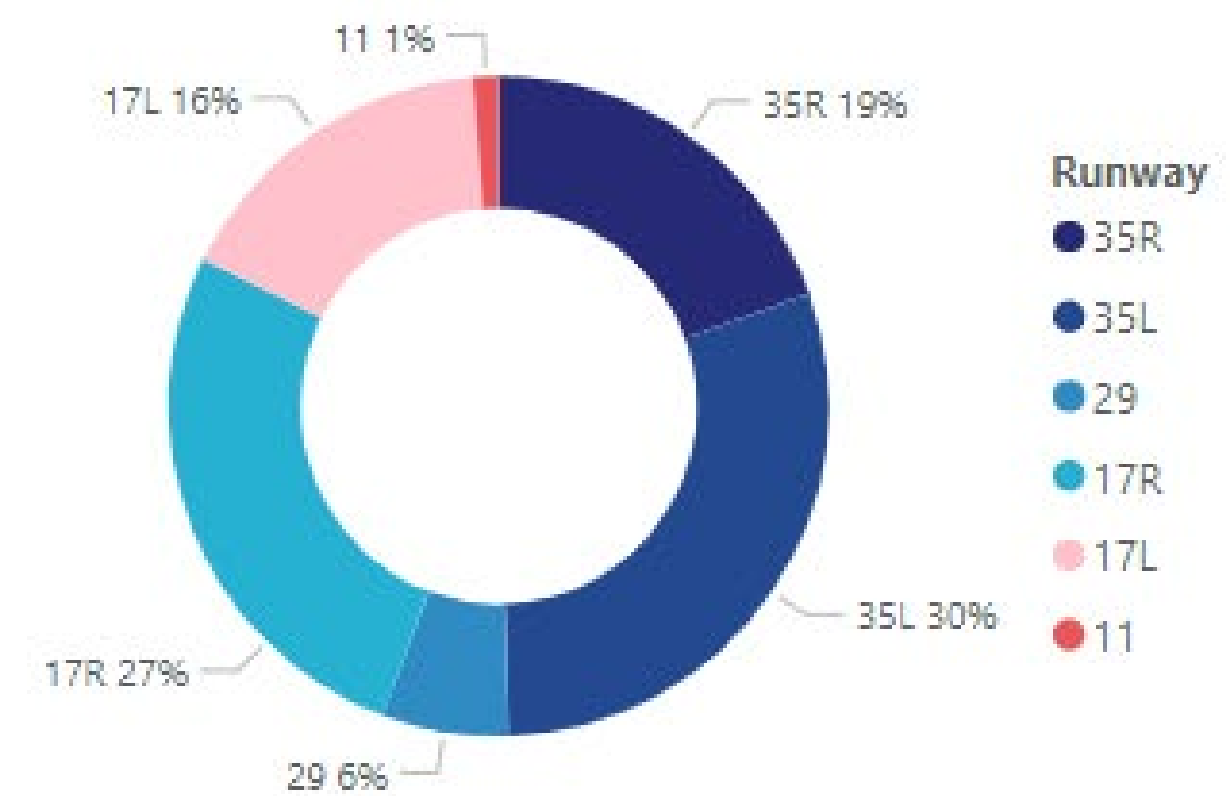
Wind Rose (3-Hourly Observations @ 10m)



Departures



Arrivals



# SIGNAL HILL ACOUSTICS

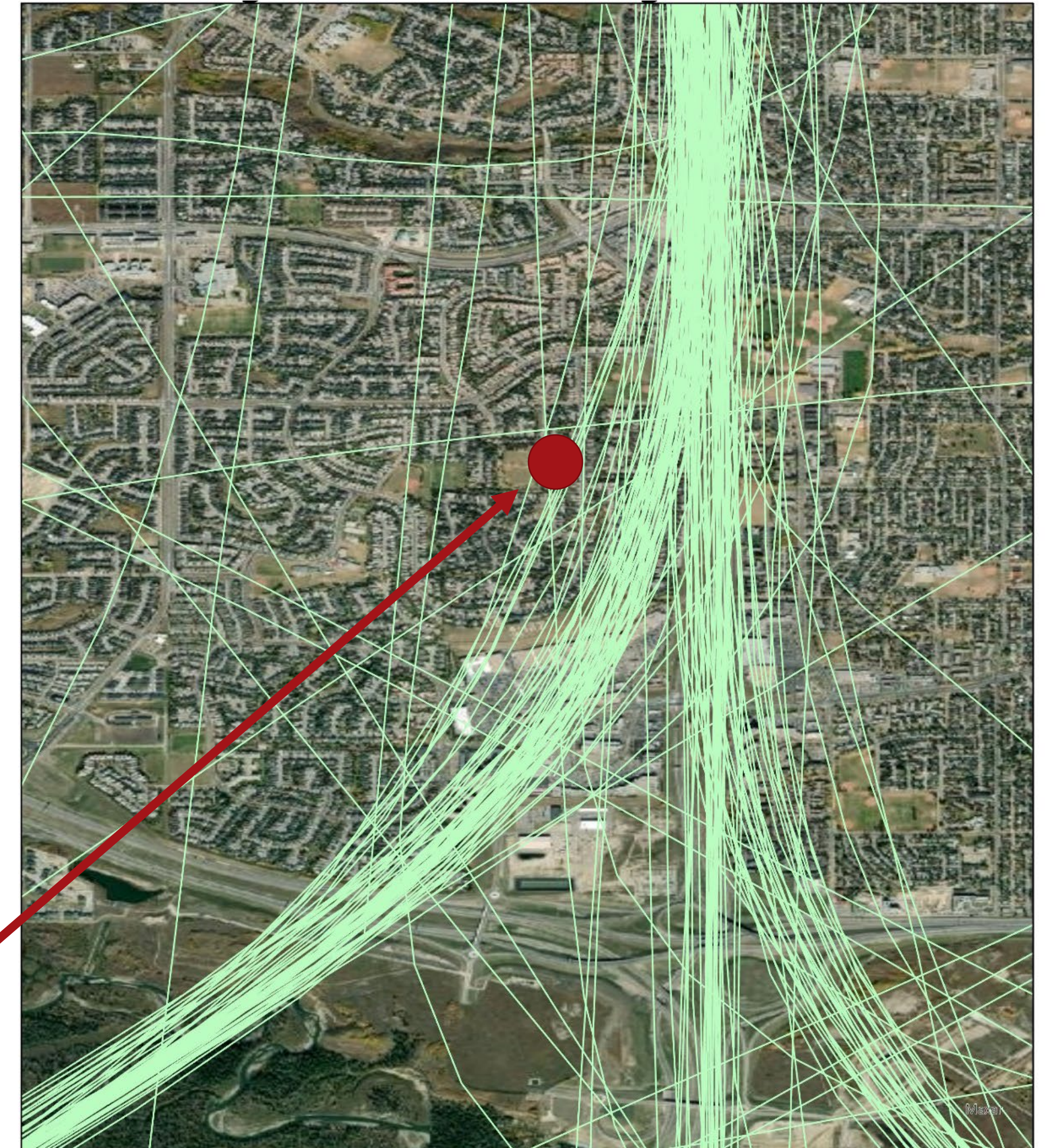


## Signal Hill Arrival Flight Tracks July 10, 2019

# PURPOSE OF THIS ANALYSIS

- To characterize the acoustic profile of overflights in Signal Hill
- To understand what information and analysis will be helpful to community members

Signal Hill  
NMT  
location



Legend

— Arrivals

0 0.25 0.5 1 Miles

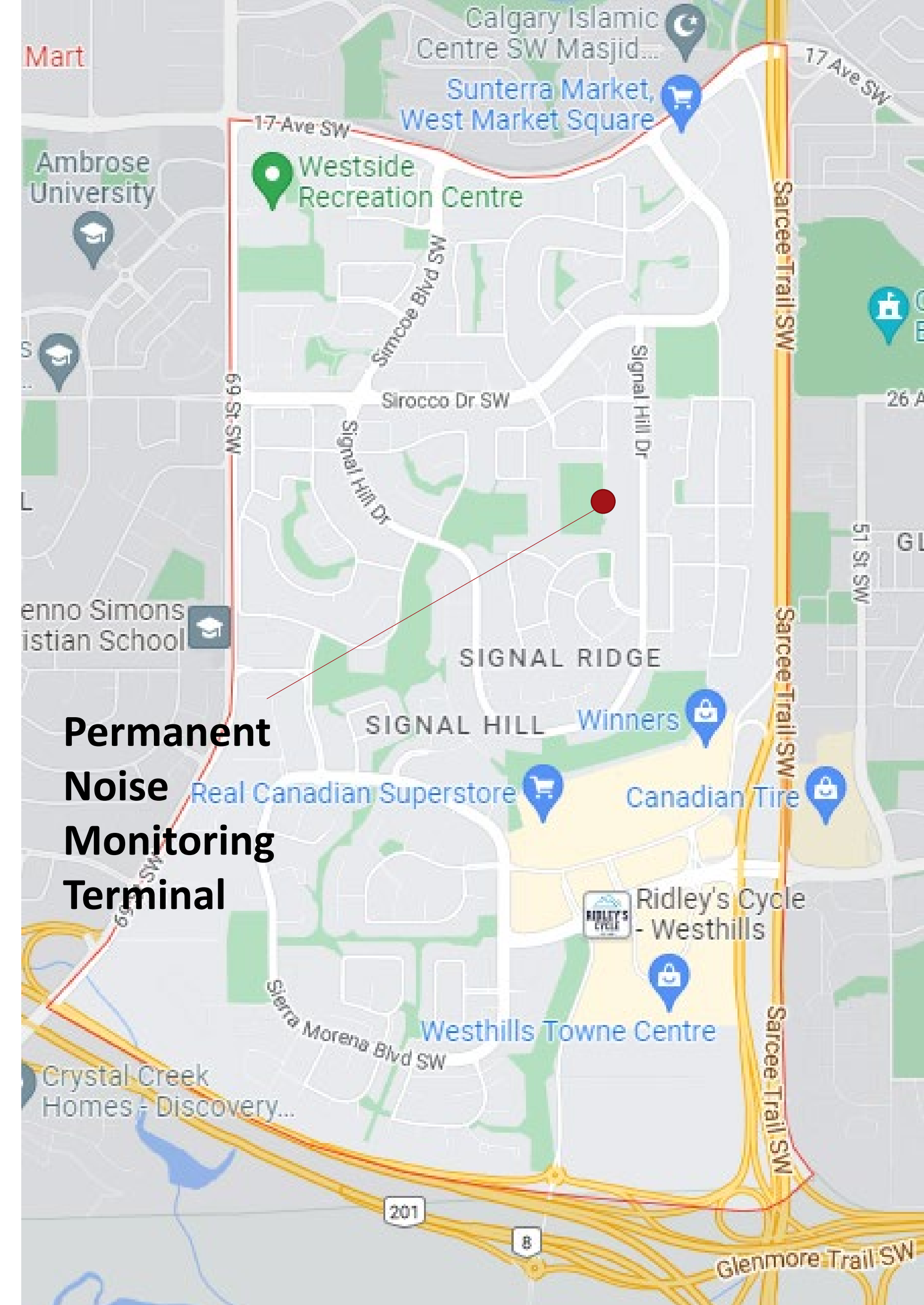


# ANALYSIS AREA AND APPROACH

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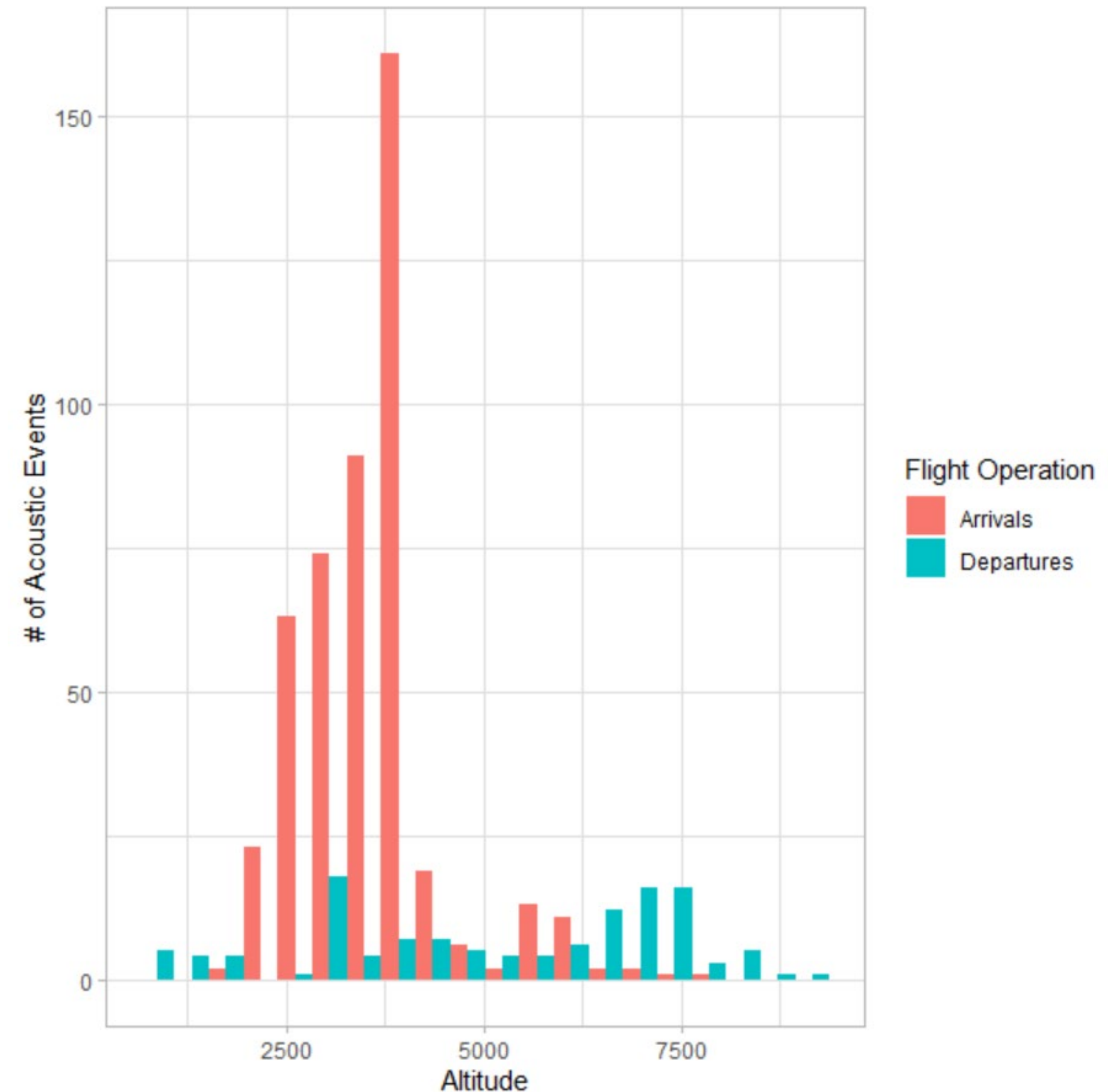
## Background:

- Community identified an increase in noise impacts due to aircraft arrivals
- Mobile noise monitoring terminal deployed from July 9 to August 16, 2019
- Permanent noise monitoring terminal installed May 27, 2021
- Analysis conducted from June 1 – August 30, 2022



# OVERVIEW OF FLIGHTS BY ALTITUDE AND AIRCRAFT TYPE

Aircraft Type	% of Noise Events for Each Station	Lowest Aircraft Elevation During Noise Event (AGL)
Dash 8 Q400	40%	2190
737-700	10%	2790
737-300	9%	2190
737-800	8%	3611
Dash 8 Q300	4%	2090
737- MAX	3%	3205
Beechcraft 1900	3%	2105
SAAB 340	3%	2248
737-500	3%	2377
Other	17%	-



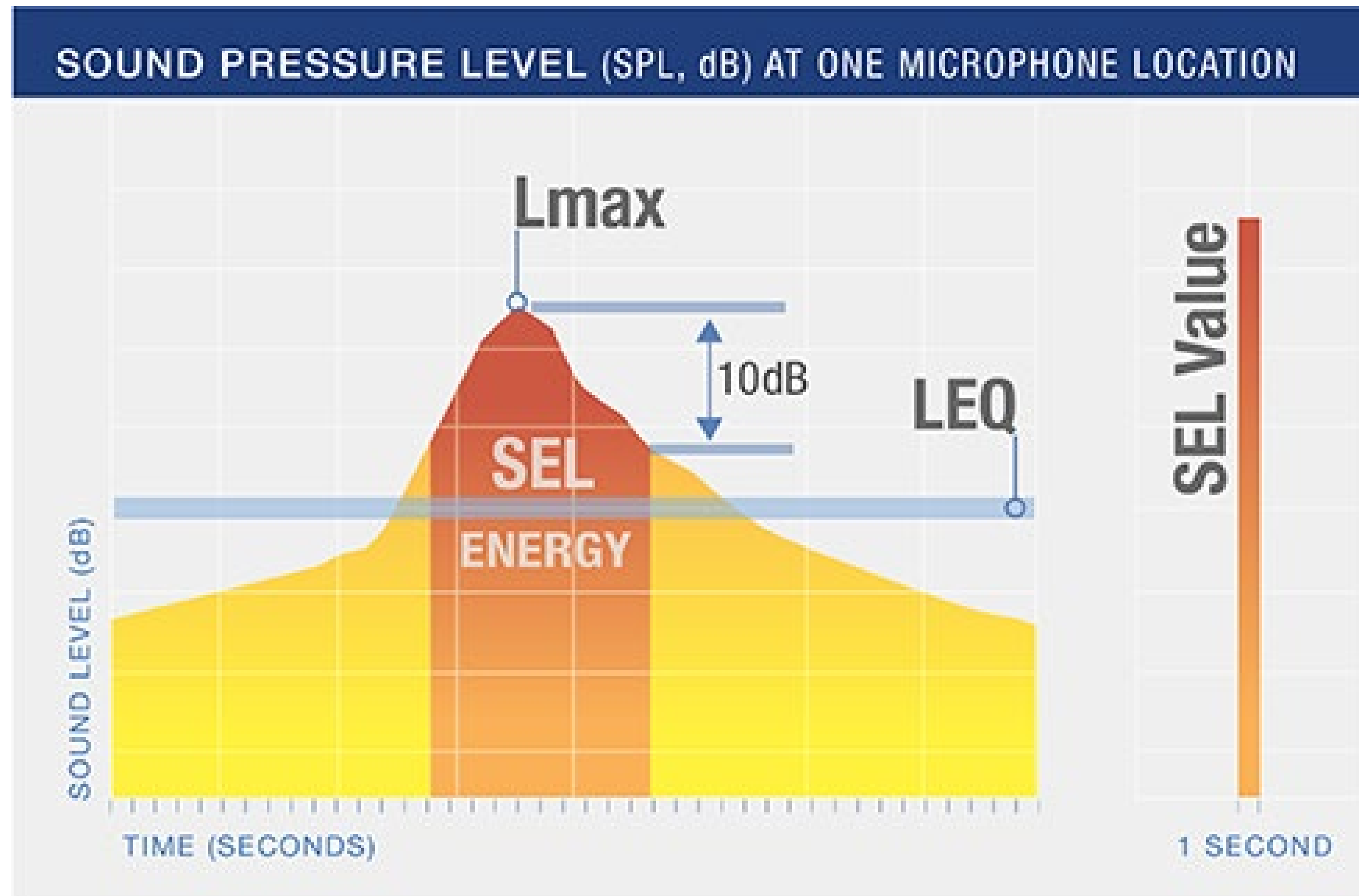
# AIRCRAFT ACOUSTICS 101

## Lmax

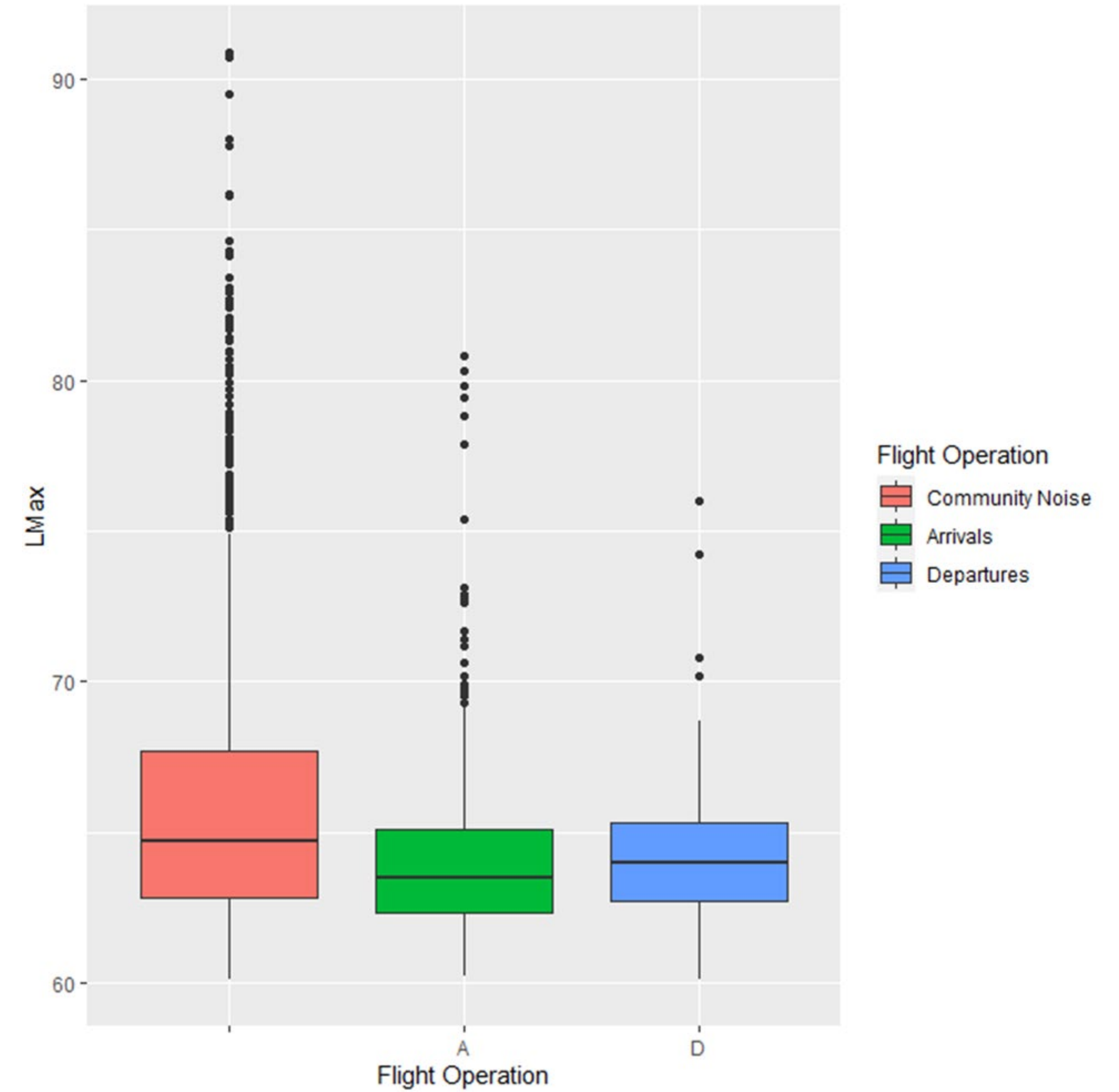
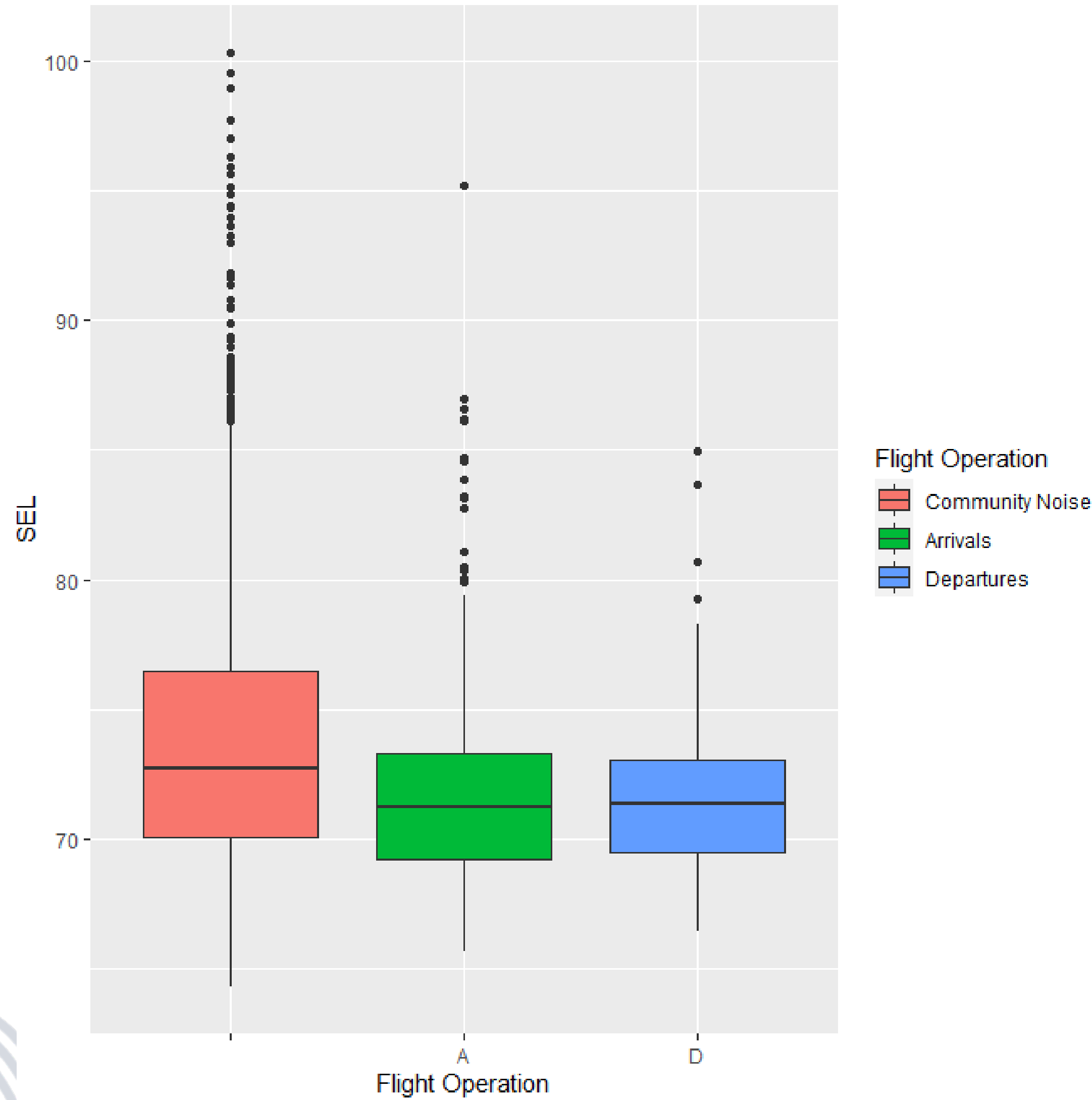
- Maximum instantaneous sound pressure

## Sound Exposure Level (SEL)

- Metric for comparing acoustic events of different durations



# SIGNAL HILL ACOUSTICS (SEL & Lmax)



# LMAX SUMMARY

Sound pressure levels  
(dBA)

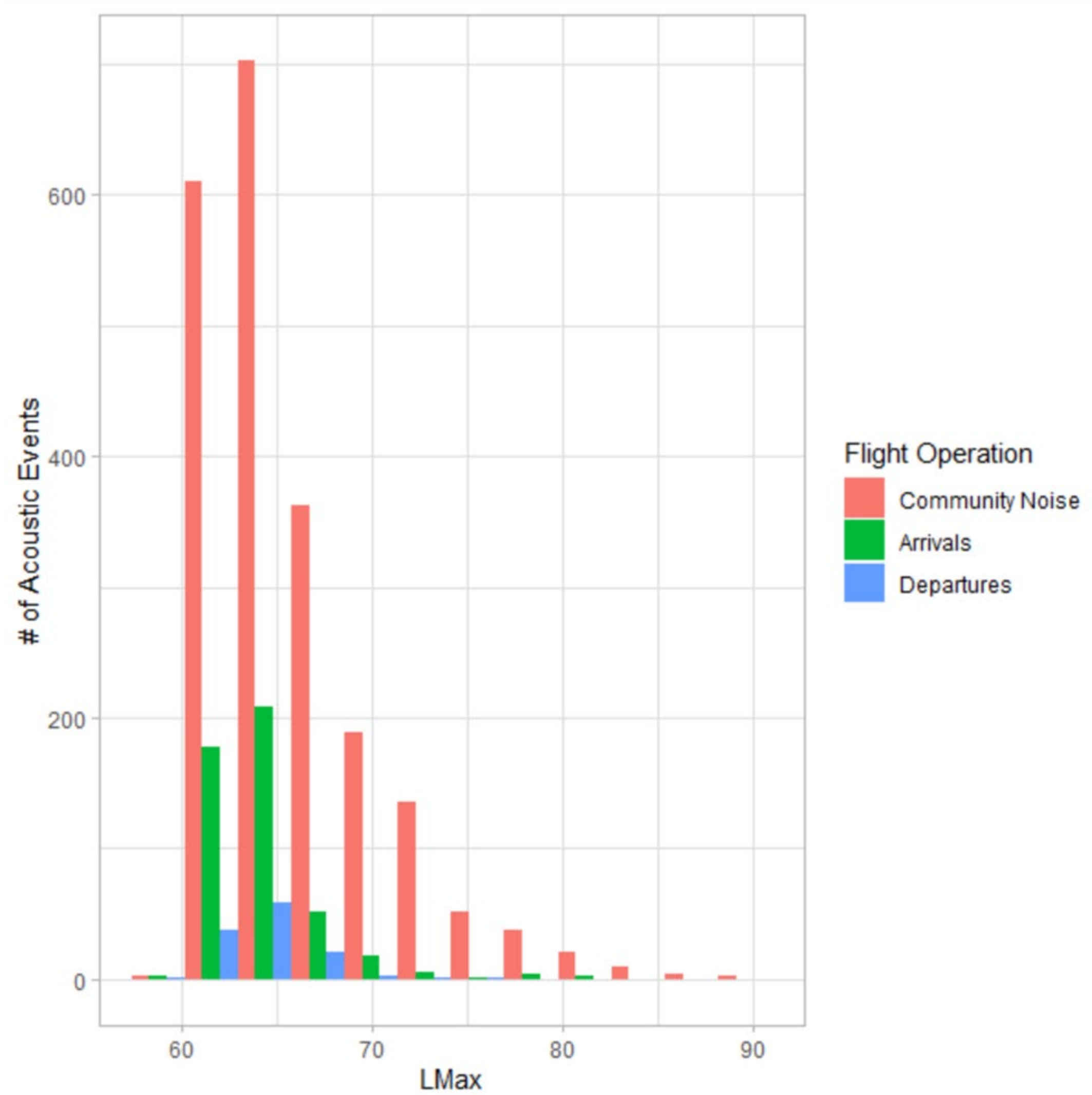
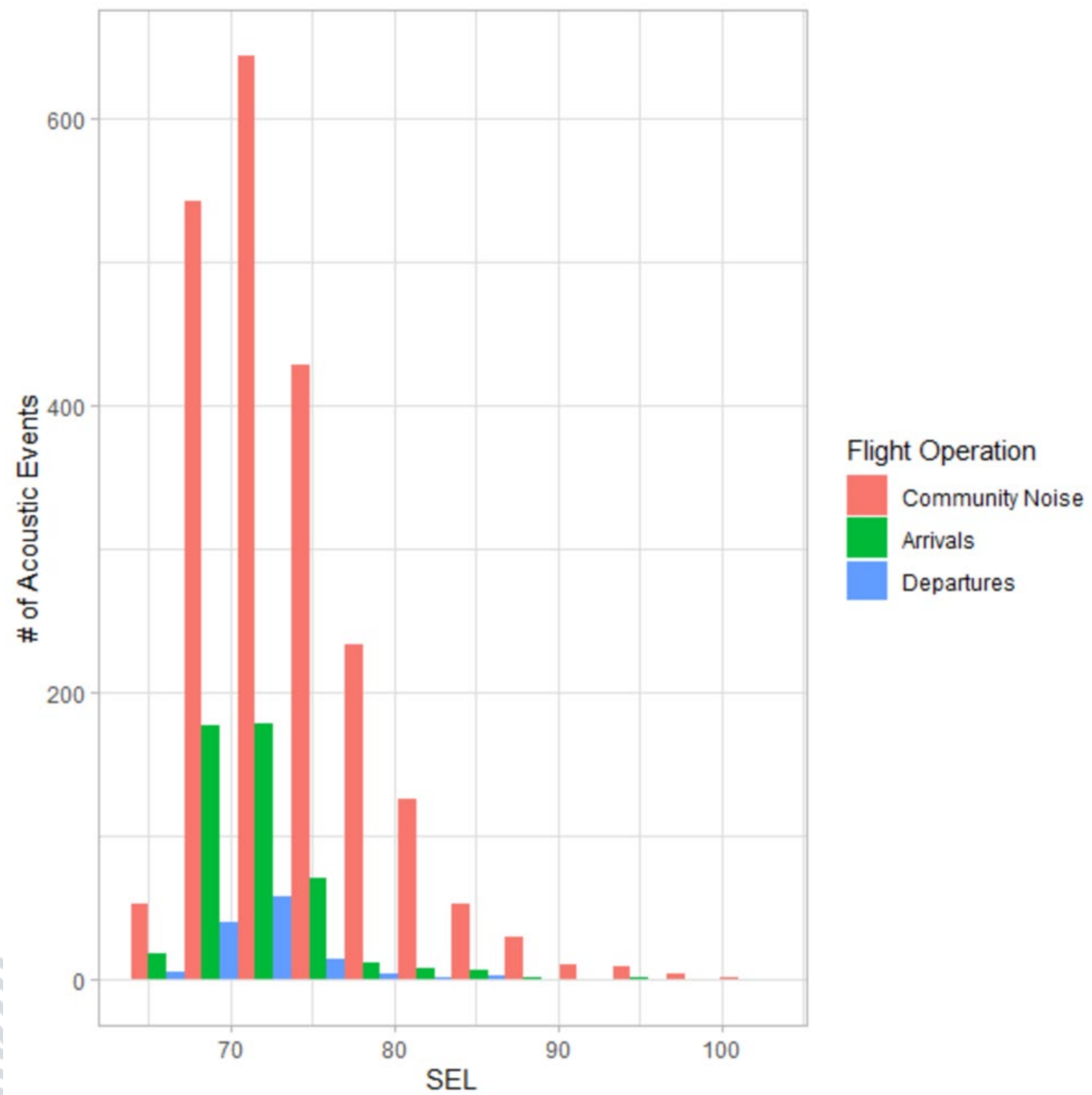
Common indoor and  
outdoor noises



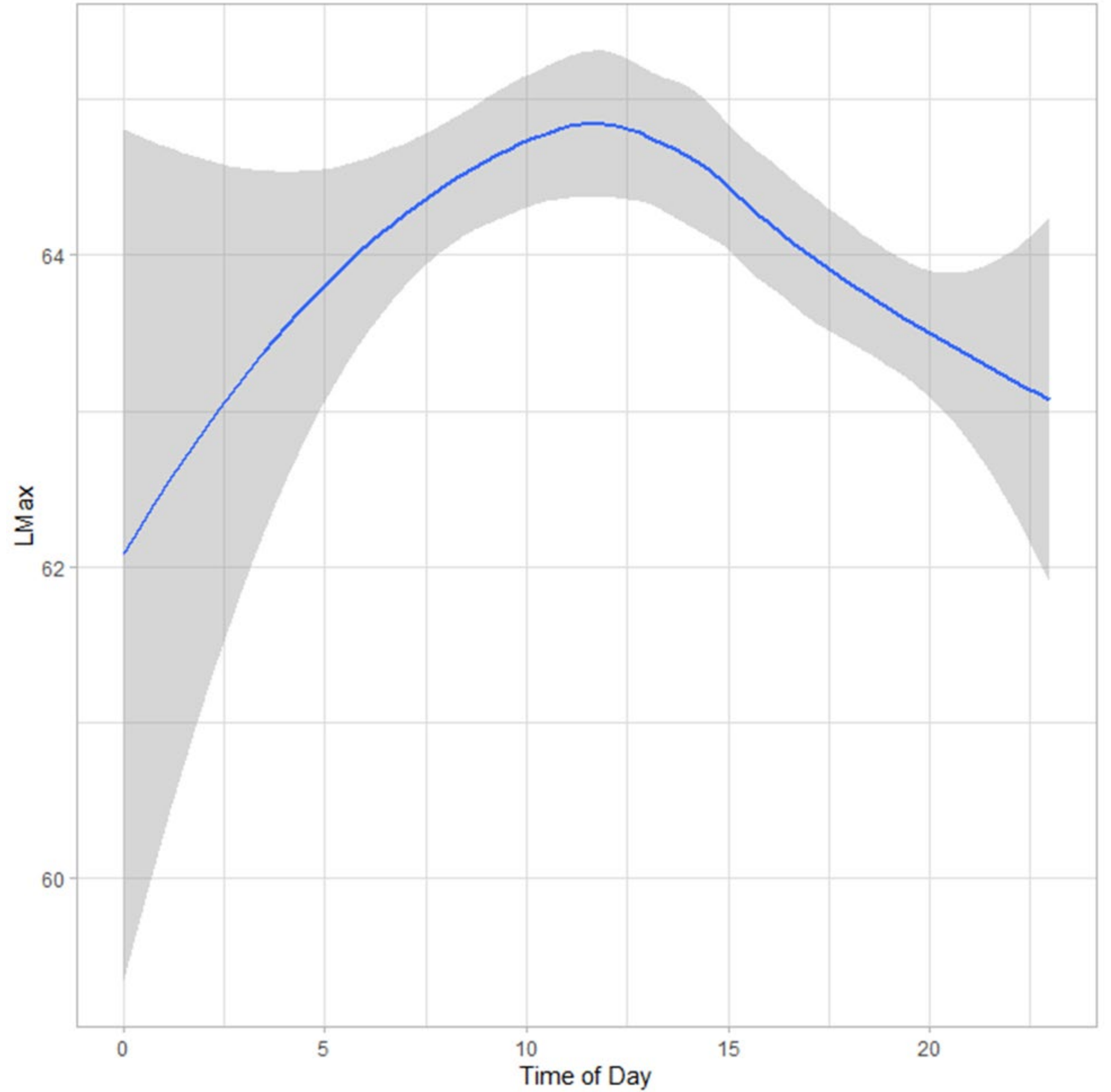
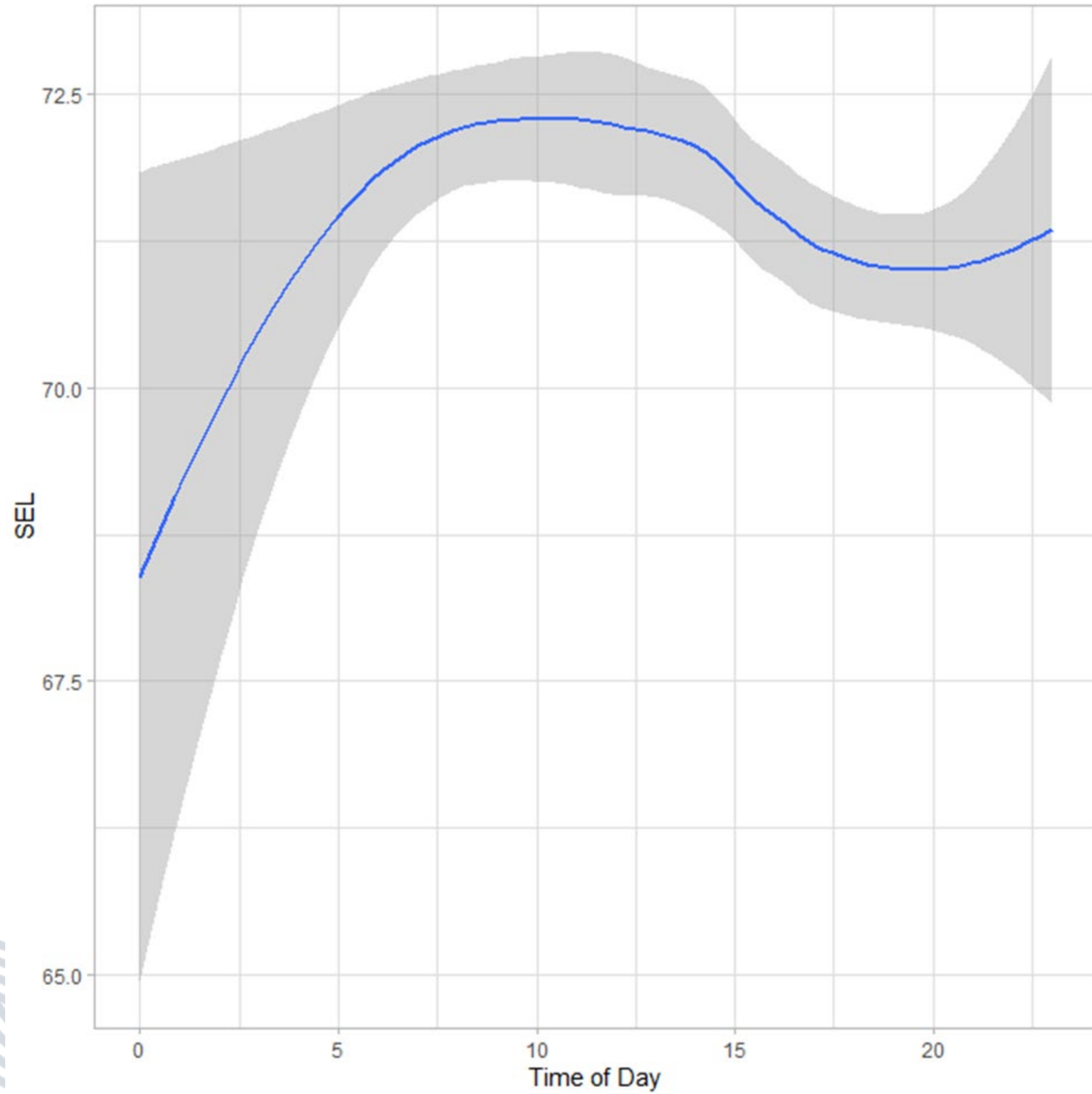
**Range measured in  
Signal Hill outdoor**



# NUMBER OF ACOUSTIC EVENTS



# DAILY TRENDS IN AIRCRAFT ACOUSTIC NOISE EVENTS



# PRELIMINARY FINDINGS

June 1 – Aug. 31, 2022

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- Average altitude of overflights is 3936m AGL
- Range of Sound Exposure Level (SEL) for aircraft noise events is 69-74 dBa
- Range of Lmax for aircraft noise events is 62-66 dBa
- Average number of flights per day that registered a noise event 6.5

