

# YYC Update

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**YYC presentation to the Calgary Airport Authority Community Consultative Committee (ACCC)**

December 21 | 2023



# Agenda

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- **Welcome**
- **Land Acknowledgment**
- **YYC Executive Update**
- **YYC Operations Update**
- **West Runway Rehabilitation Update**
- **NAV Canada Update**
- **Environment, Sustainability & Governance**
- **Gord Falk Presentation**
- **Round-Table Discussion**



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.



# Executive Update

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## **Departure - Rob Palmer**

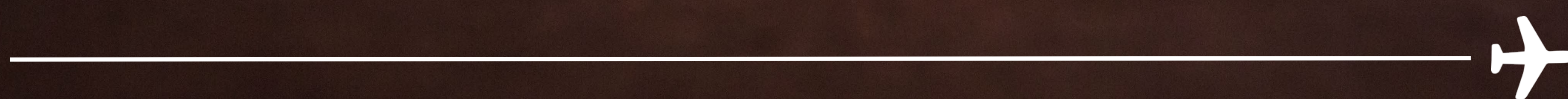
Vice President, Commercial, Strategy  
& Chief Financial Officer



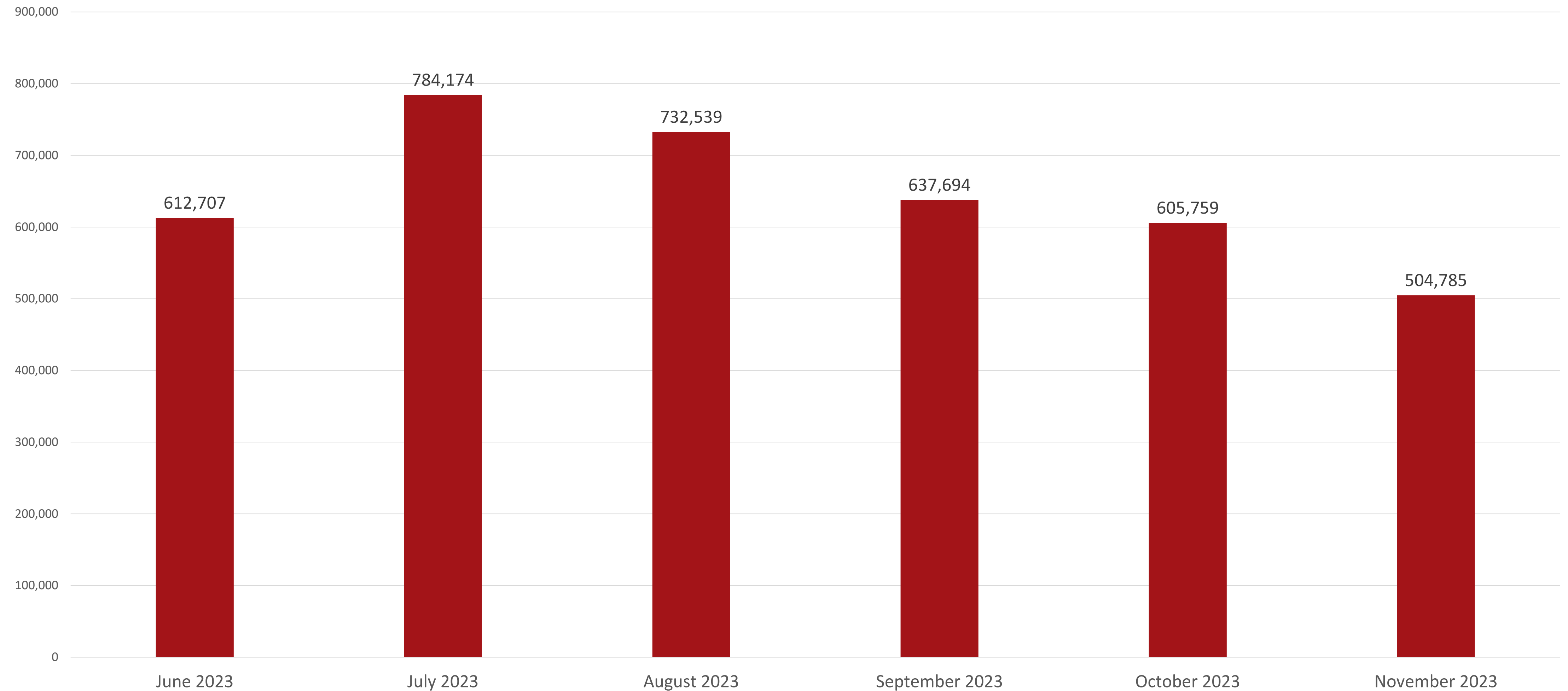


# June - November YYC Update

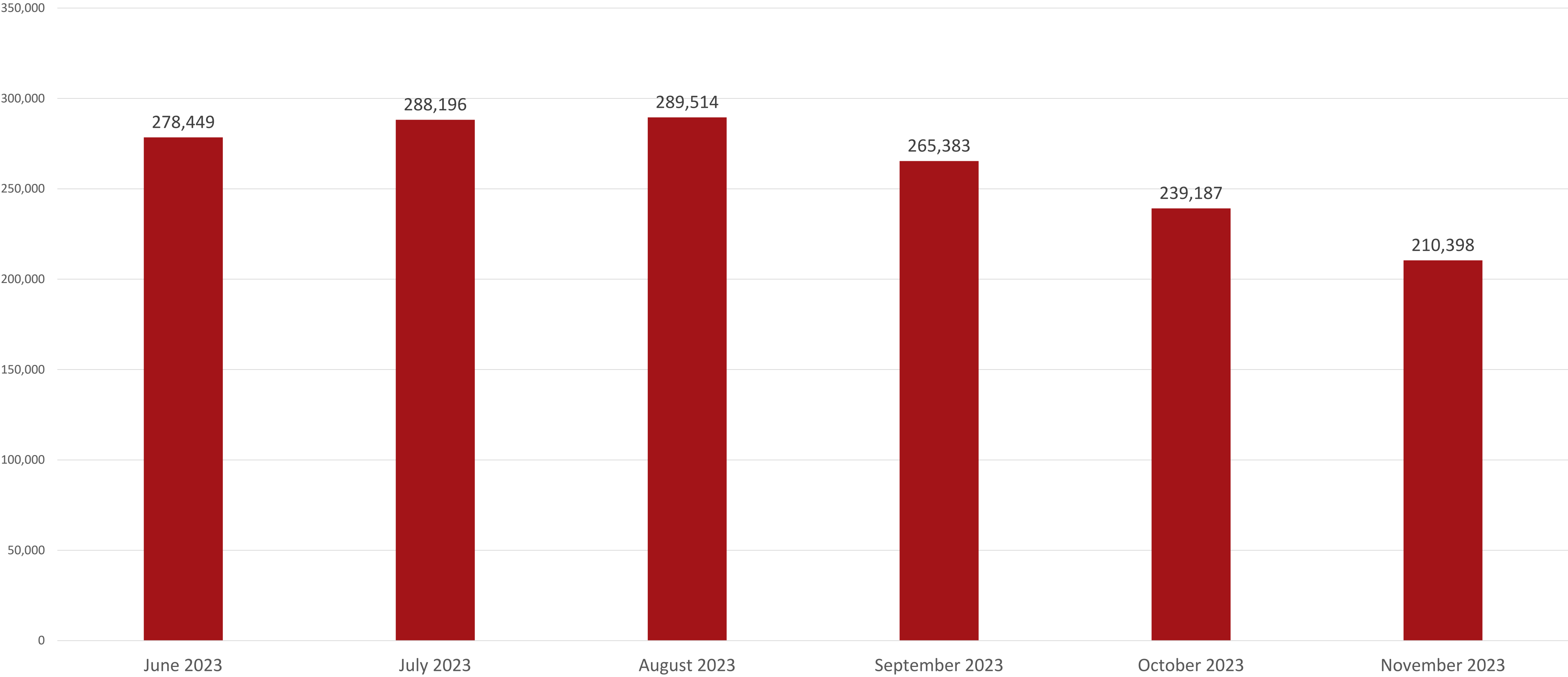
- Dionne Crutchley, General Manager, Terminal Operations



# YYC-Originating Passengers (previous 6 months)



# International and Transborder Traffic (previous 6 months)



# West Runway Rehabilitation Project Update

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Airport Community Consultative Committee

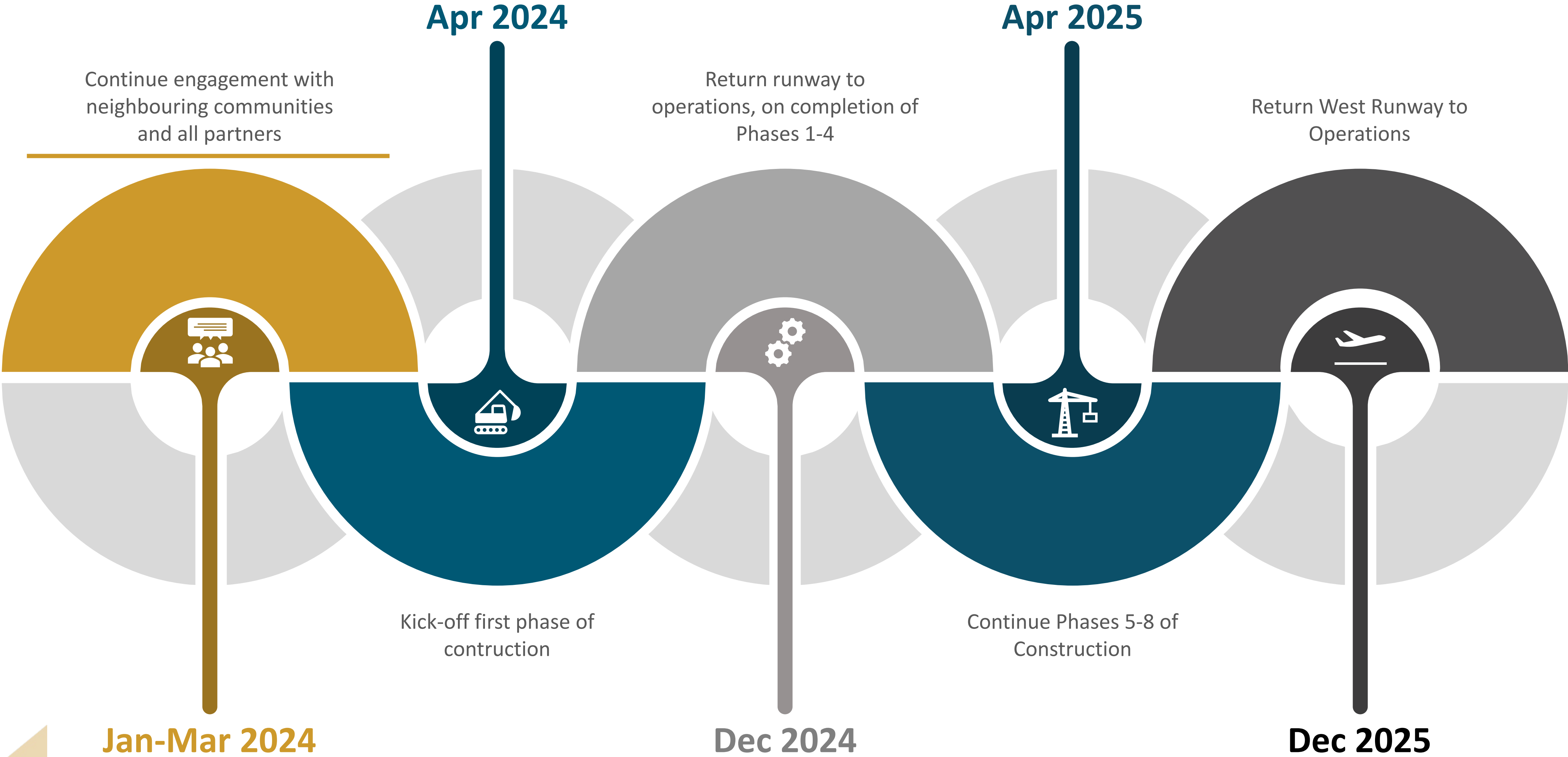
December 21 | 2023



1. Project Roadmap
2. 2024 Construction Focus
3. Runway Availability
4. 2024 Information Sessions
5. Questions

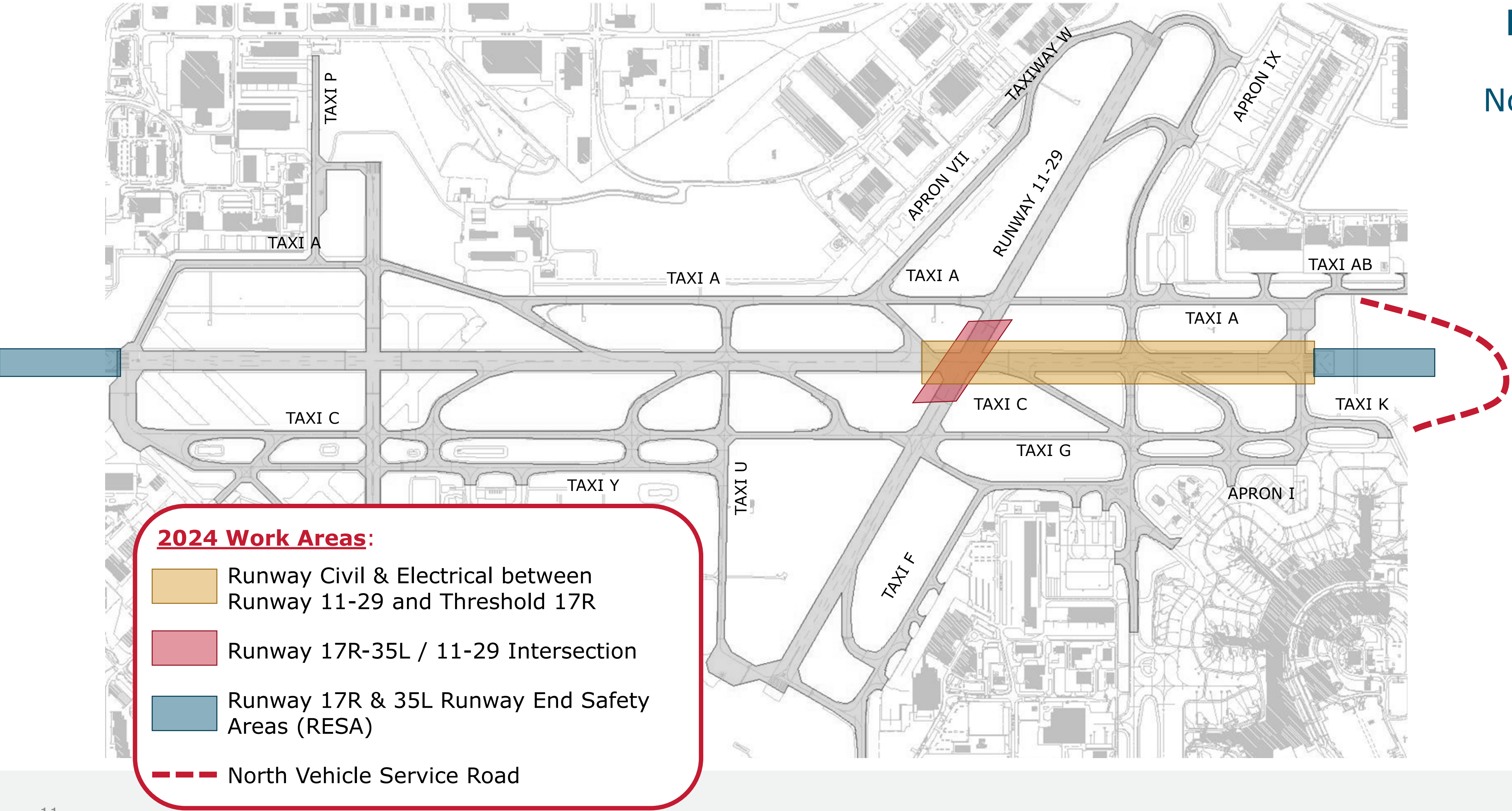
# AGENDA

# WRR PROJECT ROADMAP

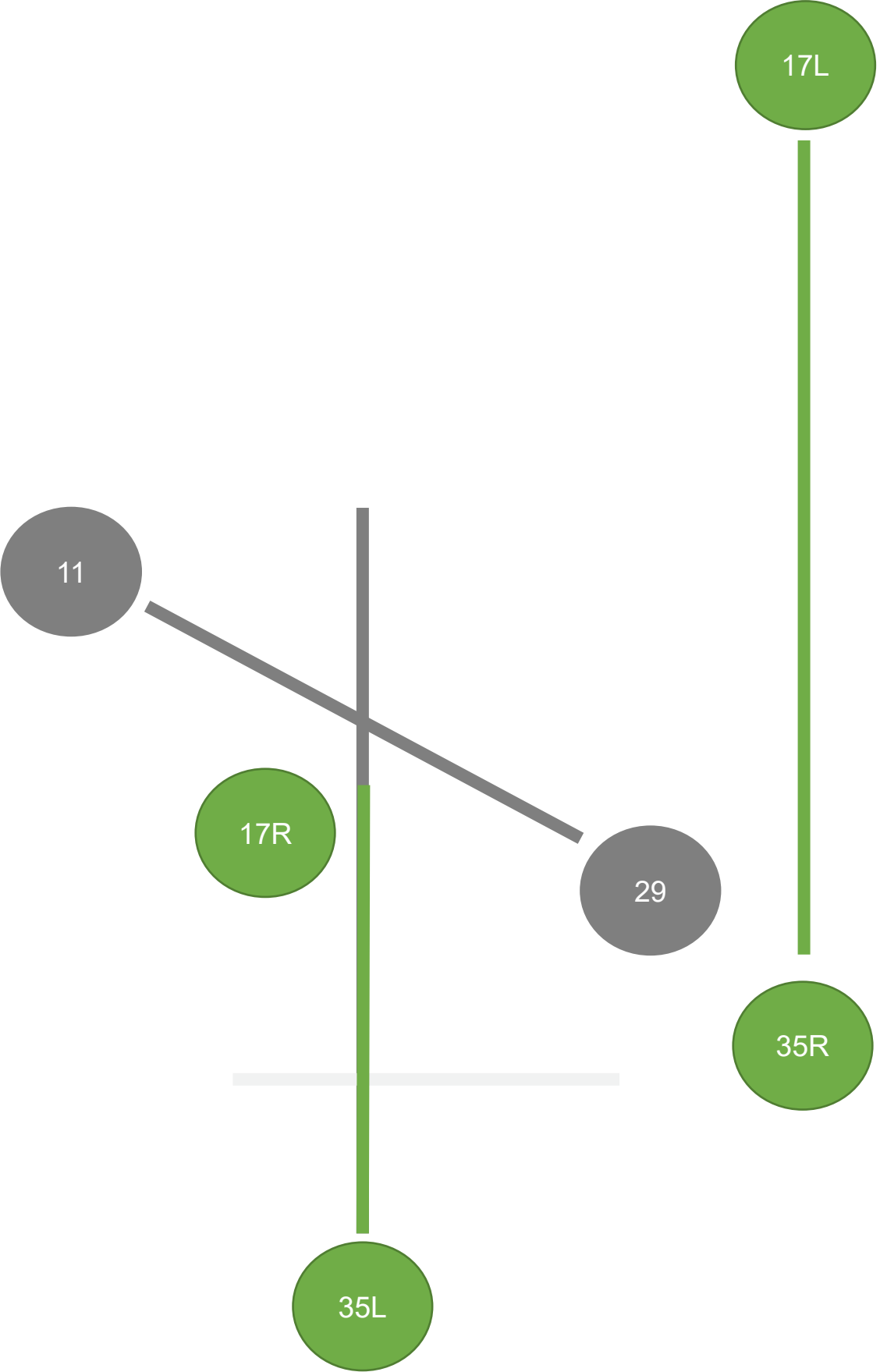
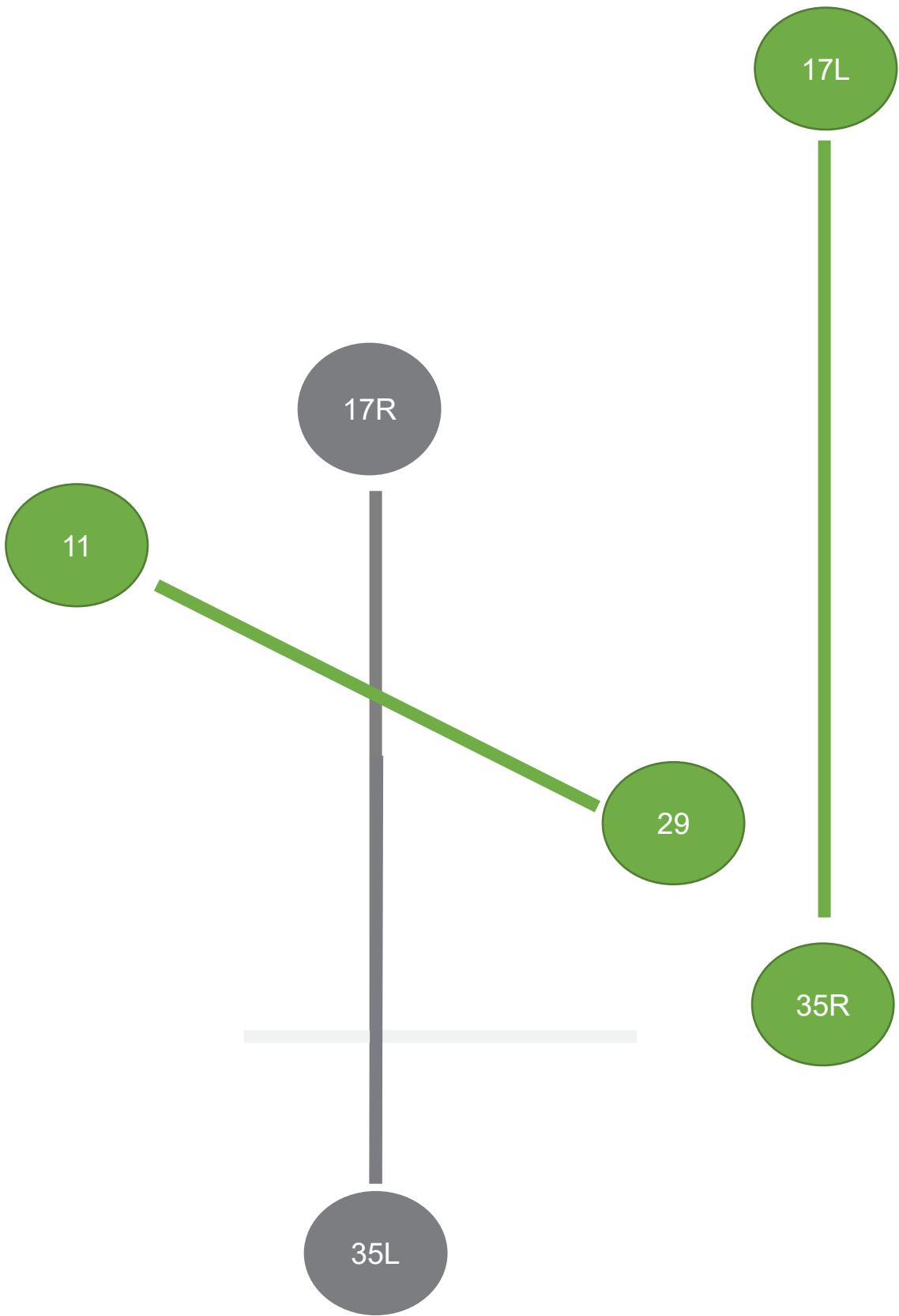


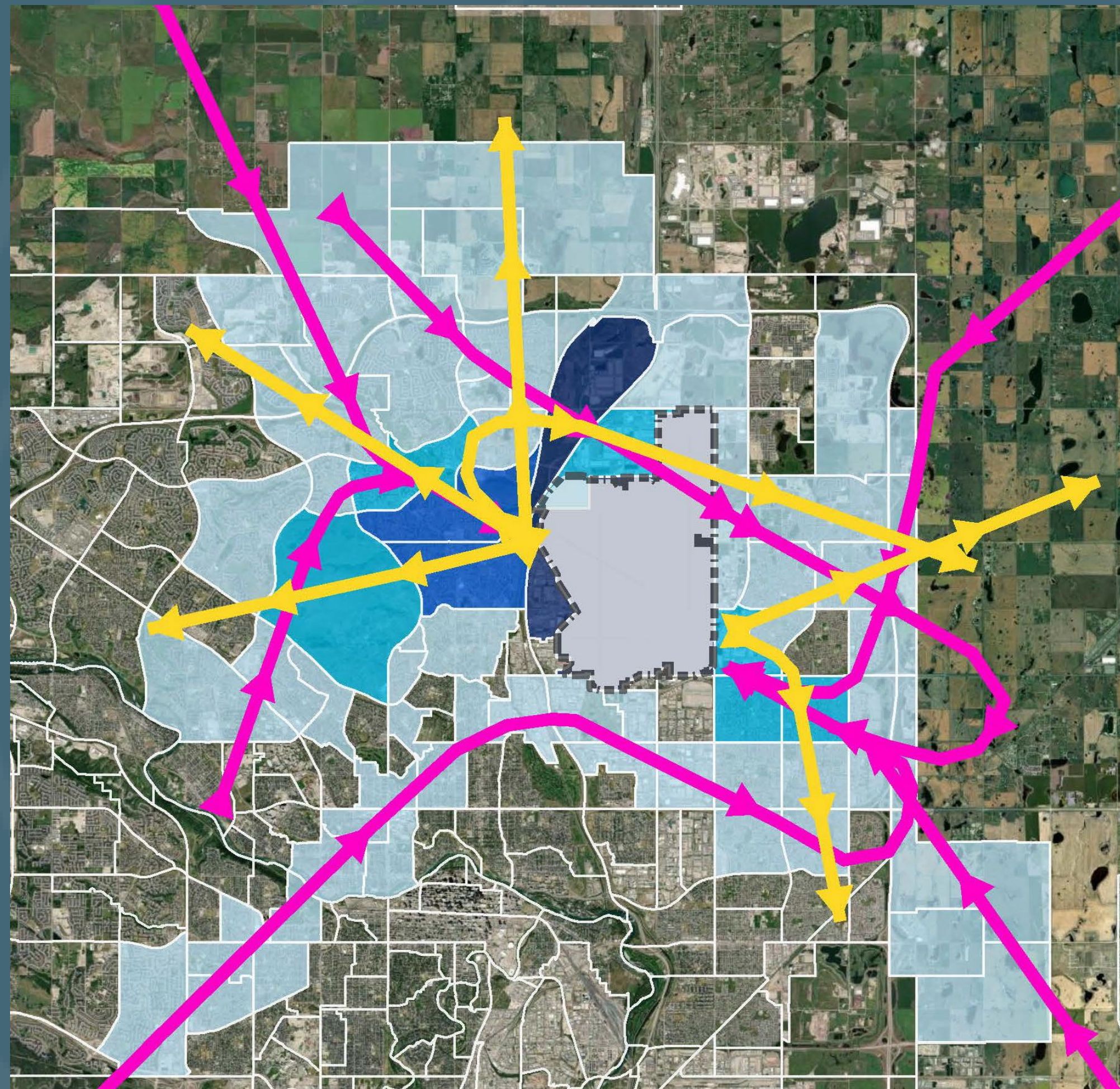
# 2024 CONSTRUCTION | Phases 1-4

**DURATION:**  
April 2024 to  
November 2024



# WHICH RUNWAY CLOSURES WILL BE NECESSARY?





Calendar invites coming soon!

## LOCAL INFORMATION SESSIONS

Four Information Session being planned for late February 2024 (based on anticipated impact areas):

1. Beddington Theatre Arts Centre
2. Vivo for Healthier Generation
3. The Genesis Centre
4. Brentwood Community Centre

**Purpose:** opportunity for all community members to learn more about the project, ask questions and meet the team



**QUESTIONS?**

# THANK YOU!

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**YYC** CALGARY  
AIRPORT  
AUTHORITY

NAV CANADA ► PROPRIETARY

# NAV CANADA Update to ACCC December 21, 2023

Ian Giesbrecht

Manager, Stakeholder and  
Community Engagement



Serving a world in motion  
[navcanada.ca](http://navcanada.ca)





# Overview

• 1

• Alternate Runway Headings

• 2

• Questions / Discussion

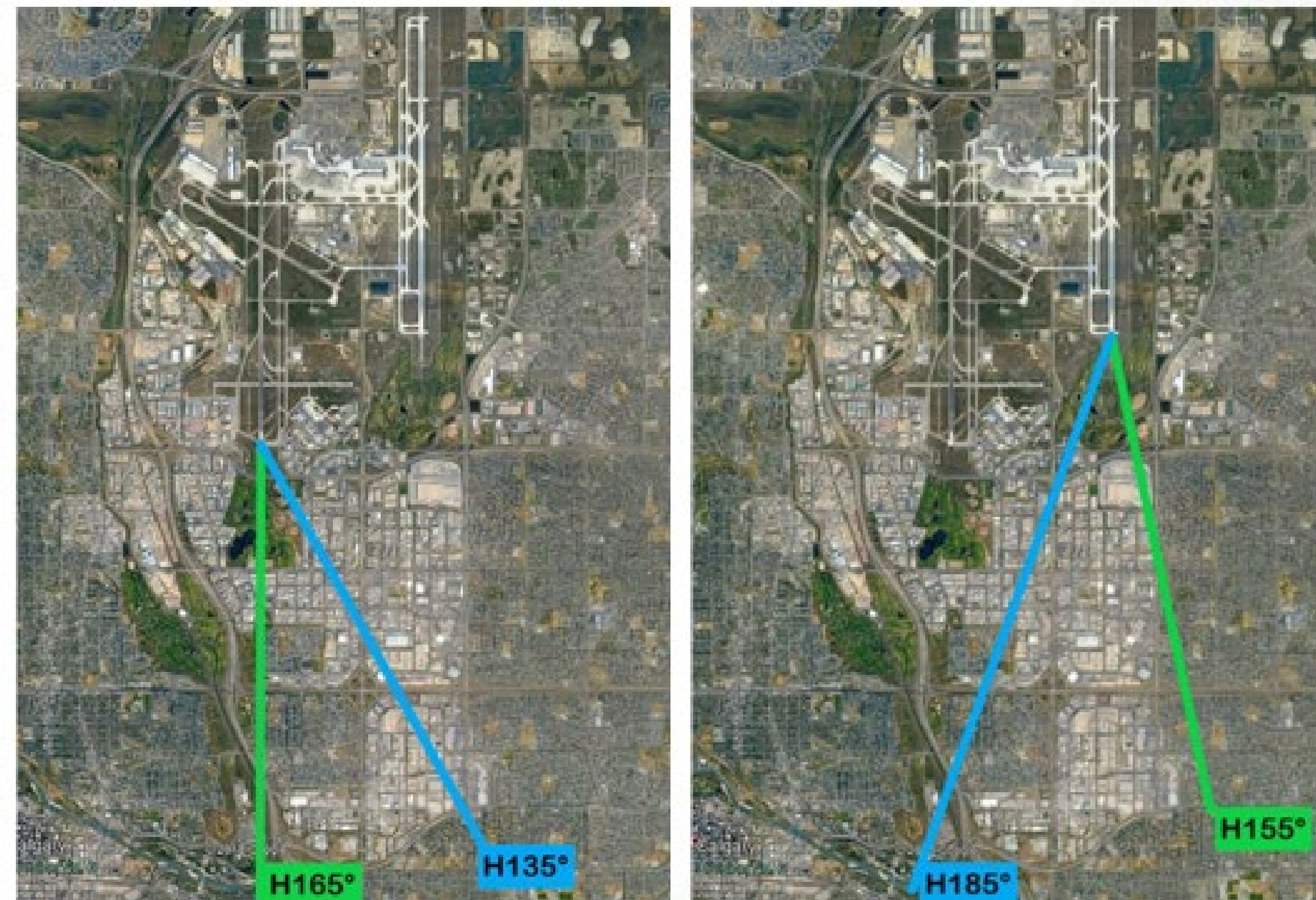
# CYYC RWY 17R/17L Jet Alternate Headings

Previously prepared slide: Alternate headings trial context from late 2019 early 2022

## Alternate Runway Heading Initiative

- Started as trial in late 2019; extended to garner more data
- Public Consultation conducted January-March 2022
- Recommendation to implement
- Adjustments made to the proposal flowing from consultation (alternate headings do not apply from 0000-0600 daily)

Runway	% on alternate headings (pre-trial estimate)	Actual % alternate headings (during trial)
17L	5-10%	3-11%
17R	30-50%	27-49%



# CYYC RWY 17R/17L Jet Alternate Headings

Results: Start of Sept. 2022 to start of Sept. 2023, Visuals: Sept. 2022 to end of Dec. 2022

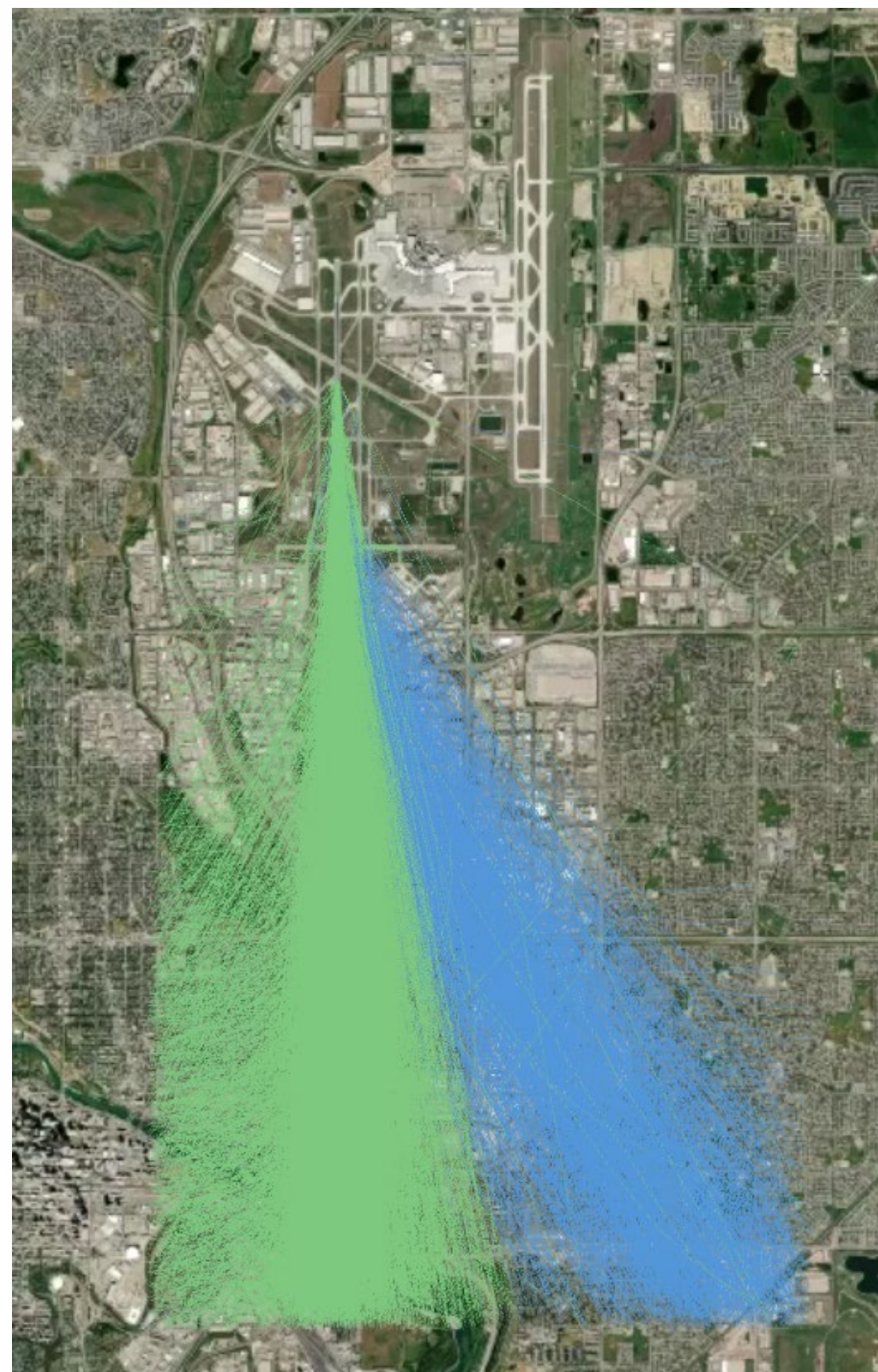
■ Standard Jet Dep.  
■ Alternate Heading Jet Dep.

## Percent (%) on Alternate Headings

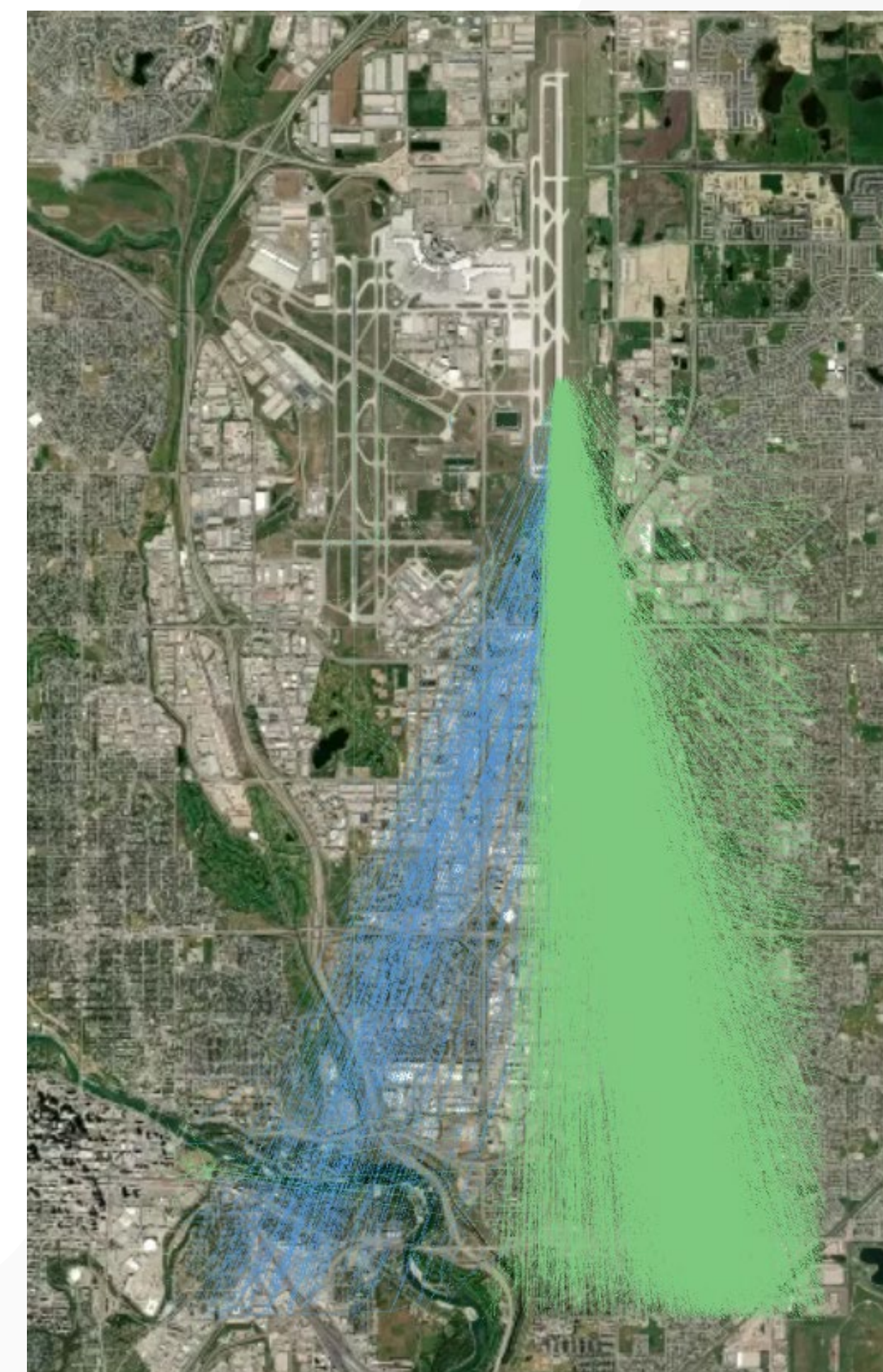
Criteria

- Jets
- Between 0600 and 0000
- Start of September 2022 to start of September 2023

RWY	Pre-Trial Estimate	Actual During Trial	Actual Sept 2022 to 2023
17R	30-50%	27-49%	27-45%
17L	5-10%	3-11%	3-10%



RWY 17R



RWY 17L

# Final Report Next steps

- Include more details about usage
- Noise complaint data
- Noise monitoring data
- Operation insights
- Data shows what we predicted, usage of the procedure will continue.



# • Questions / Discussion

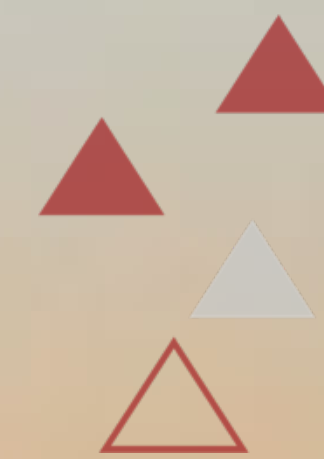
And Thank you!

# ENVIRONMENT & SUSTAINABILITY UPDATE

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Noise Reporting at YYC

# Approach to Noise Reporting



# 2024 Baseline Noise Analysis

- YYC will be conducting a baseline analysis of all our noise monitoring terminals
- Today's objectives are to:



Review examples from other airports and past reports



Provide input on what is important to you and your community



# Monthly/Yearly NMT Analysis

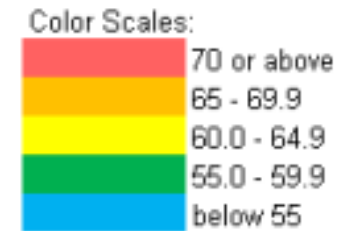
## JFK Noise Monitoring Data

Monthly Average – Aircraft Day-Night Average Sound Level (ADNL)

Noise Monitoring Data is for information purposes only

Month	J13RP	J13LP	J22RP	J04BP	J31RP	J31LP	CEDAH	ATL65	FLPRK	ARV64	JBYSWTR	JMLVRN	JOLDBRK	JEHLS	JHB165AV	J132BH
Dec-21	63.5	71.2	64.9	67.4	59.0	64.4	67.8	50.7	61.0	67.4	59.0	55.8	NA	52.6	67.4	52.3
Jan-22	63.4	70.7	63.2	64.8	54.2	61.6	67.6	48.6	59.5	66.1	57.3	52.6	48.7	52.2	66.1	50.2
Feb-22	63.1	70.6	63.2	66.9	60.7	61.0	66.7	51.9	60.6	66.8	59.2	55.1	NA	53.8	65.3	49.9
Mar-22	65.4	72.0	64.6	66.6	62.9	62.8	68.1	53.8	60.3	65.3						
Apr-22	66.5	72.3	63.6	66.7	65.0	64.1	68.3	56.5	58.7	65.7						
May-22	64.1	68.1	67.5	69.8	64.4	61.7	65.3	56.0	60.9	68.0						
Jun-22	67.4	70.1	67.1	65.2	66.9	64.6	68.4	60.0	61.3	64.5						
Jul-22	66.9	69.0	68.2	66.5	65.9	63.3	67.6	58.3	61.8	66.4						
Aug-22	66.7	67.1	68.2	66.4	65.8	NA	61.5	59.4	62.6	66.7						
Sep-22	66.7	72.0	65.6	67.9	63.9	67.6	67.4	57.5	60.3	66.2						
Oct-22	64.5	69.7	67.3	69.5	63.4	65.2	NA	56.1	60.9	68.6						
Nov-22	65.5	72.1	NA	66.2	63.8	63.9	NA	55.9	61.0	66.1						
Dec-22	63.3	71.6	NA	69.5	59.6	63.4	NA	52.1	60.2	67.8						

Note:  
 NA: Equipment malfunction  
 RM: Unit removed as requested by the homeowner



Data Source: PANYNJ Airport Noise and Operations Management System

TABLE 2: Annual Average Noise Level (in dBA), 2018-2022

YEAR	NOISE MONITORING TERMINAL										
	1	2	3	4	5	6	7	8	9	10	11
2018	61.3	66.3	52.8	60.5	58.5	57.4	58.4	54.2	50.4	56.3	60.9
2019	66.2	66.7	53.6	60.6	58.3	57.6	58.7	59.9	50.5	56.7	61.3
2020	74.4	62.8	51.7	59.6	56.3	56.0	57.6	51.4	49.3	60.6	58.3
2021	72.4	62.2	53.5	60.1	55.6	56.4	58.0	50.2	49.7	57.2	57.0
2022	67.8	63.0	51.1	59.1	56.5	55.8	57.6	50.2	49.1	55.2	59.2

YEAR	12	13	14	15	16	17	18	19	20	21	22	23
2018	72.8	62.1	56.4	55	54.3	53	54.3	56.5	60.9	-	-	-
2019	71.9	62.3	60.2	53.9	54.4	53.9	53.9	60.5	53.2	52.5	-	-
2020	68.7	59.8	55.4	55.4	58.5	53.9	53.5	55.1	52.6	51.0	-	-
2021	65.8	59.5	55.3	59.8	54.5	57.1	53.8	54.8	56.9	51.0	51.0	49.7
2022	74.9	60.5	54.6	54.7	53.4	53.6	51.8	53.2	61.8	51.2	51.2	52.0

# Noise Contours



## ANNUAL CNEL VALUES (dBA)

ESG1	ESG2	ESG3	ESG4	ESG5*	DEL1*	WCH1	WCH2	WCH3	WCH4	WCH5	WCH6	WCH7
67	61	63	67	61	60	61	61	60	72	63	63	63
SLG2	SLG3	SLG4	SLG5	SLG6	SLG7	SLG8	SLG9	SLG10	SLG11	SLG12	SLG13	SLG14
65	64	63	61	74	64	63	65	64	64	62	64	64

## TECHNICAL NOTES

\*The annual values shown for ESG5 and DEL1 are not true annual values since they were calculated using less than four quarters of data.

## NOTES

Noise Contours are generated using the Federal Aviation Administration's Aviation Environmental Design Tool (AEDT) version 4.0. The modeled contours are based on annualized operational information gathered for the 12-month period ending September 30, 2023. The AEDT program is run quarterly and the resultant contours are adjusted to the current quarter's Noise Monitoring Station (NMS) annual average annual CNEL.

Sources of information include: FAA's System Wide Information Management (SWIM) Data, and FAA's Tower Traffic Records.

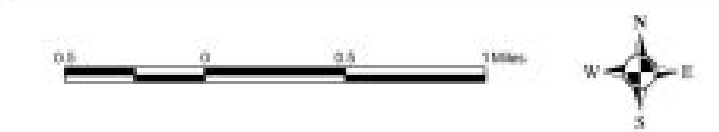
Daylight and nighttime calculations are based on estimates made using 2009 census information, supplemented with local land-use updates. Population estimates reflect the 2020 census data. For persons per dwelling unit. The land-use database used to generate this report reflects all program runs through LAWA's Sound Insulation Grant Program through December 31, 2021.

Map projection is in State Plane Feet based on North American Datum of 1983 (NAD83), and is located in Zone 5 of the California Coordinate System of 1983.

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## LEGEND

- Residential - Single Family
- Residential - Multi-Family
- Residential - Mobile Home
- Airport Property
- Landmarks
- Noise Contours
- Streets
- Noise Monitor (Required for Title 21)
- Places of Worship
- Hospitals
- Schools



# Noise Level Analysis

FIGURE 3  
Noise level and duration comparison between NADP1 and NADP2

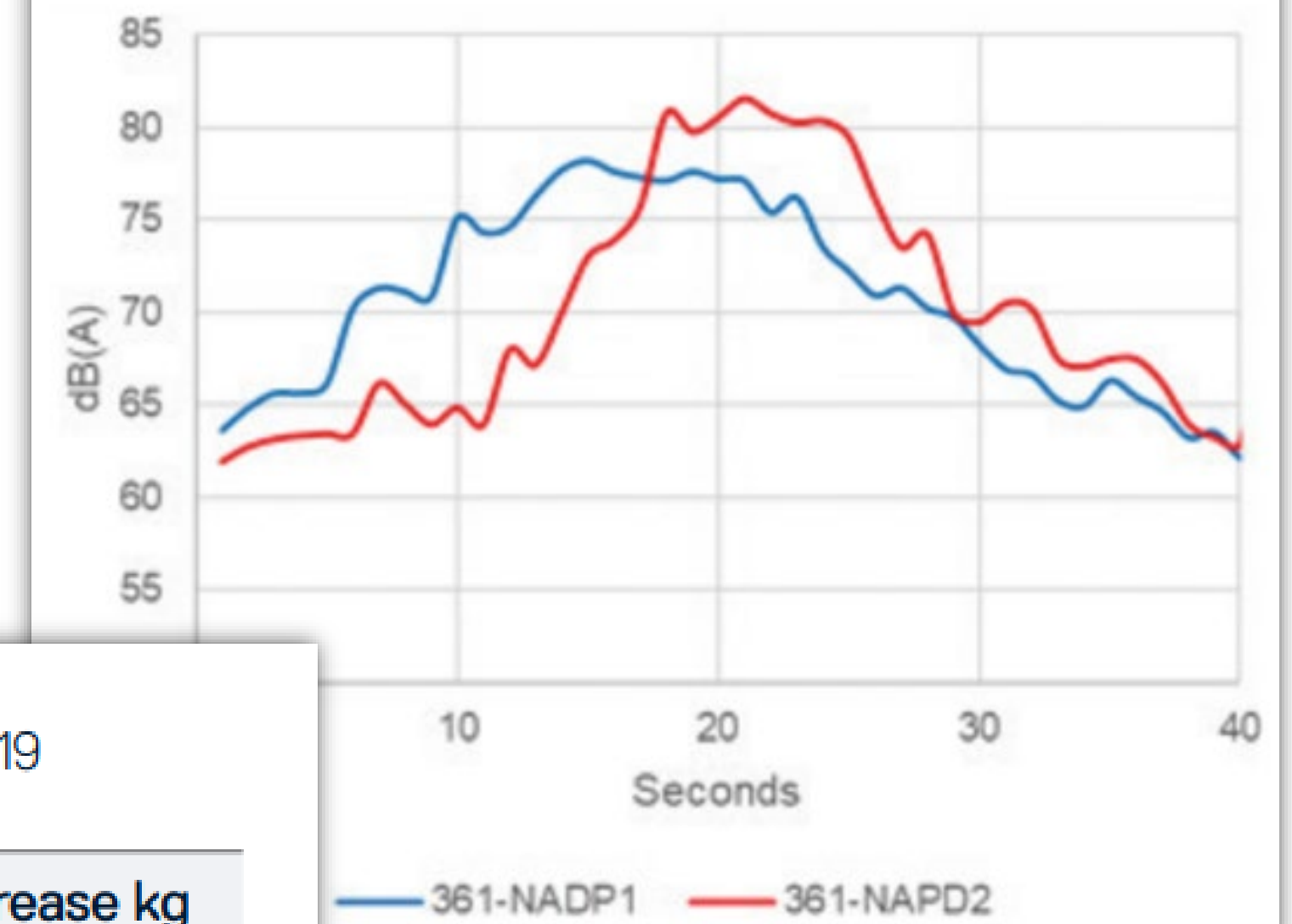


TABLE 1

Noise and emissions differences by aircraft type departing Brisbane Airport Runway 19L during the NADP1 trial in October-November 2019

	Noise improvement AVE LA max (dB(A))	Noise improvement AVE SEL (dB(A))		*Fuel Increase kg (over 12 months)	*CO <sub>2</sub> increase kg (over 12 months)
<b>B738 Northern destinations</b>	1.0 (dB(A))	0.4 (dB(A))	<b>B738 North and South</b>	560,440 kg	1,797,406 kg
<b>B738 Southern destinations</b>	1.1 (dB(A))	0.5 (dB(A))			
<b>A320 Northern destinations</b>	3.6 (dB(A))	2.0 (dB(A))	<b>A320 North and South</b>	295,694 kg	937,760 kg
<b>A320 Southern destinations</b>	2.0 (dB(A))	1.6 (dB(A))			
<b>A330</b>	2.6 (dB(A))	1.5 (dB(A))	<b>A330</b>	178,800 kg	554,280 kg
<b>B787</b>	3.1 (dB(A))	2.8 (dB(A))	<b>B787</b>	75,600 kg	239,910 kg
<b>B777</b>	1.5 (dB(A))	1.4 (dB(A))	<b>B777</b>	52,800 kg	168,000 kg
<b>A350</b>	3.4 (dB(A))	2.7 (dB(A))	<b>A350</b>	54,180 kg	171,570 kg

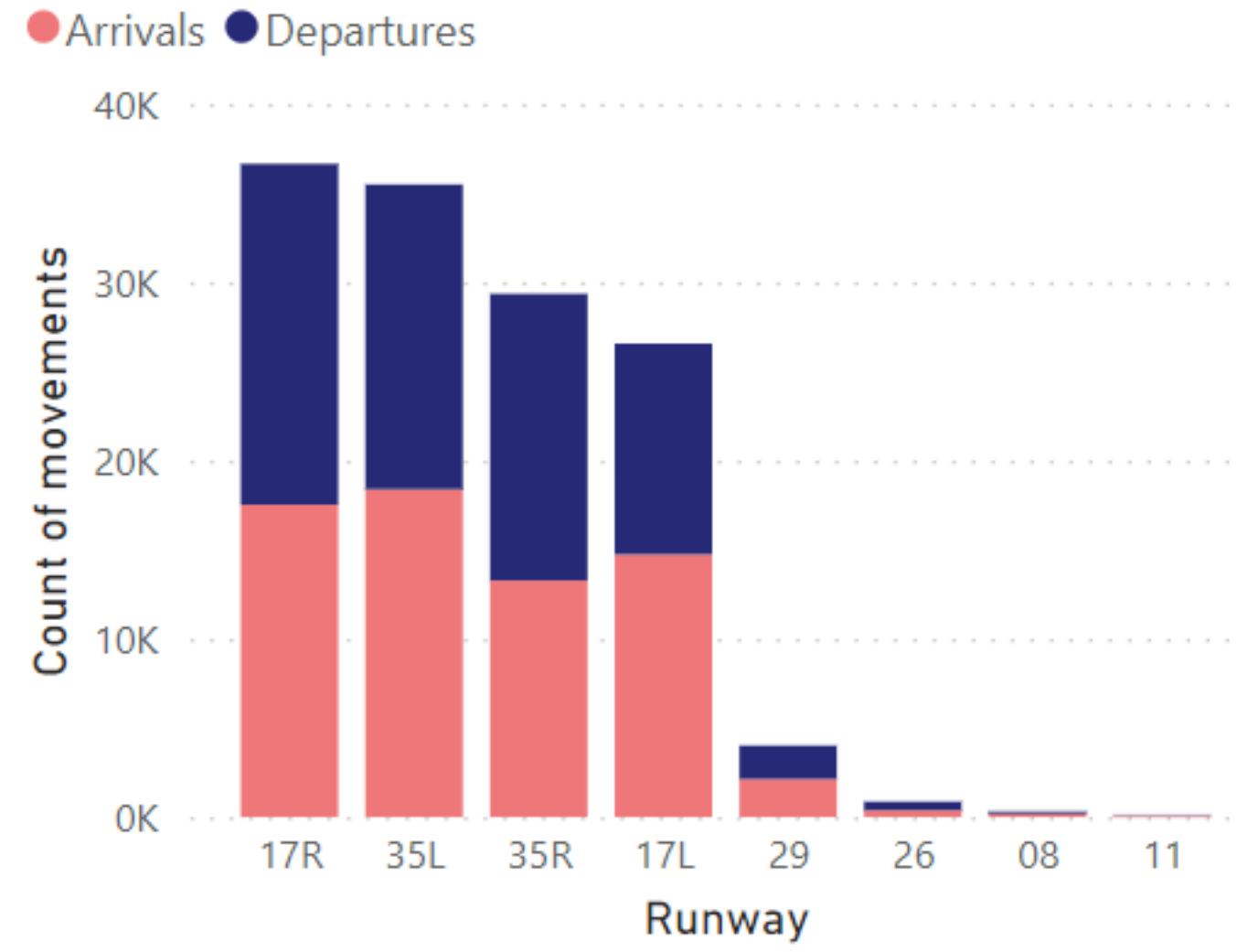
- Year
- 2018
  - 2019
  - 2020
  - 2021
  - 2022
  - 2023

- 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

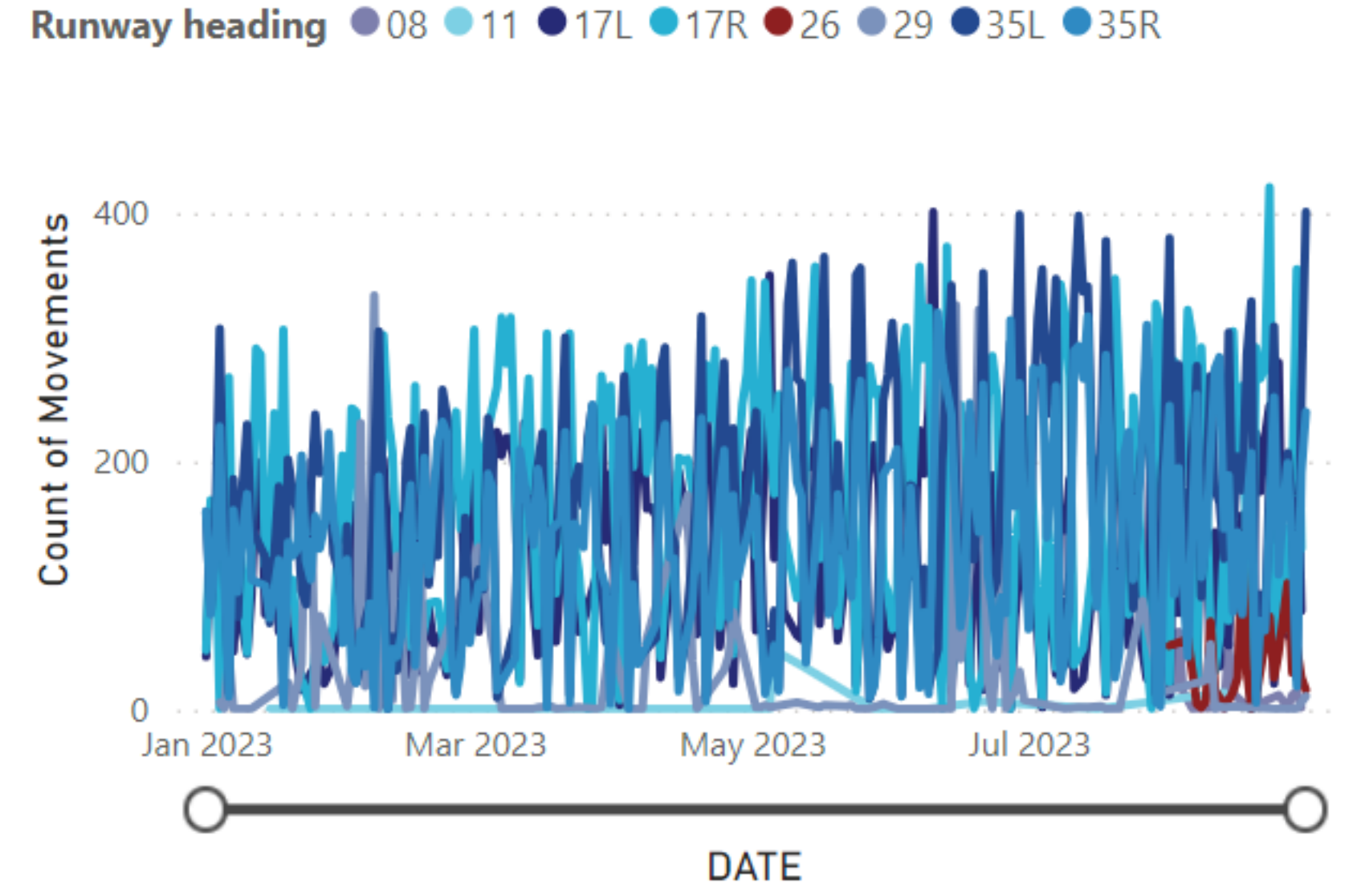
View Tabular Data

Traffic by Hour and Aircraft Type

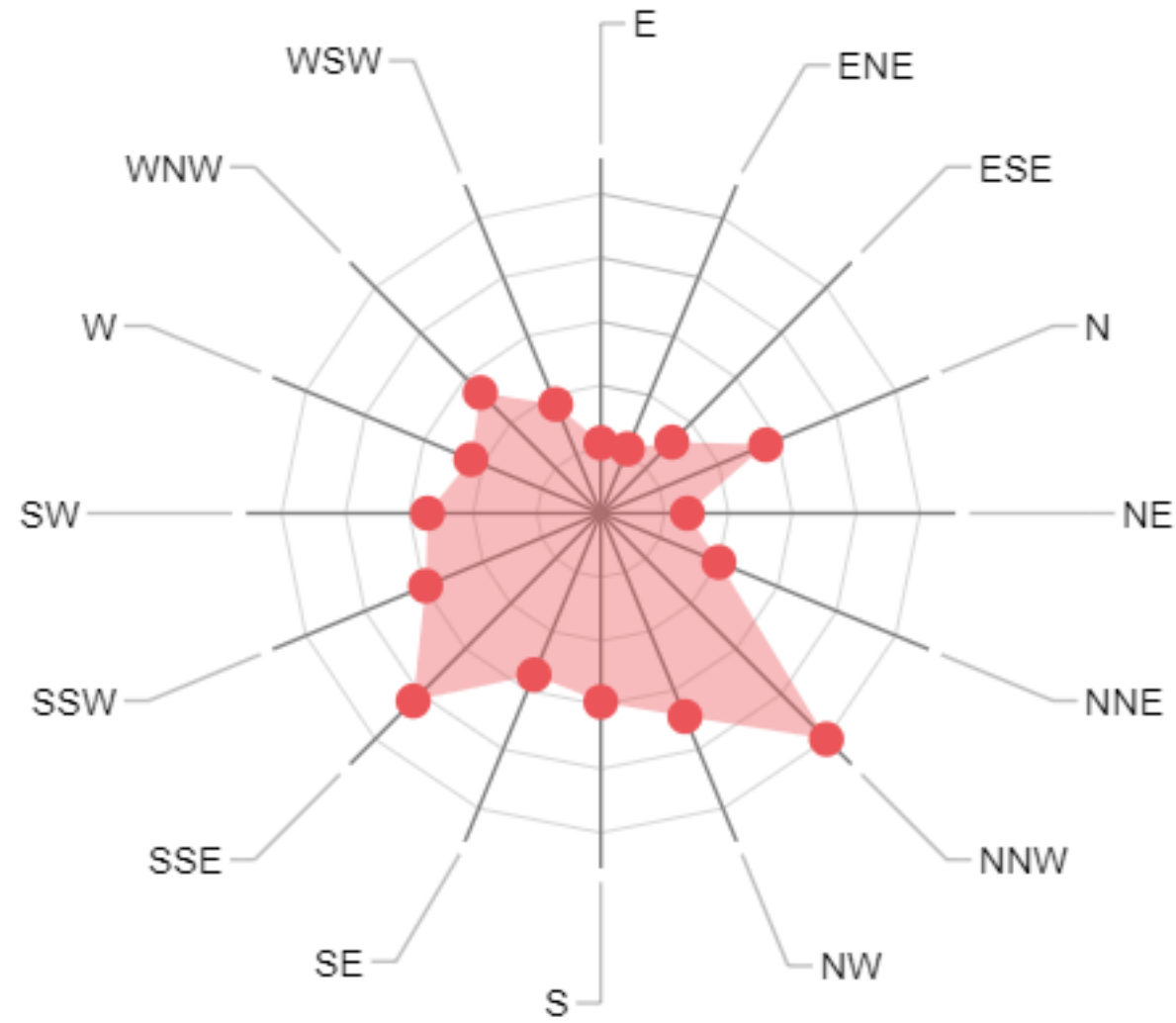
### Breakdown by Runway for Selected Timeframes



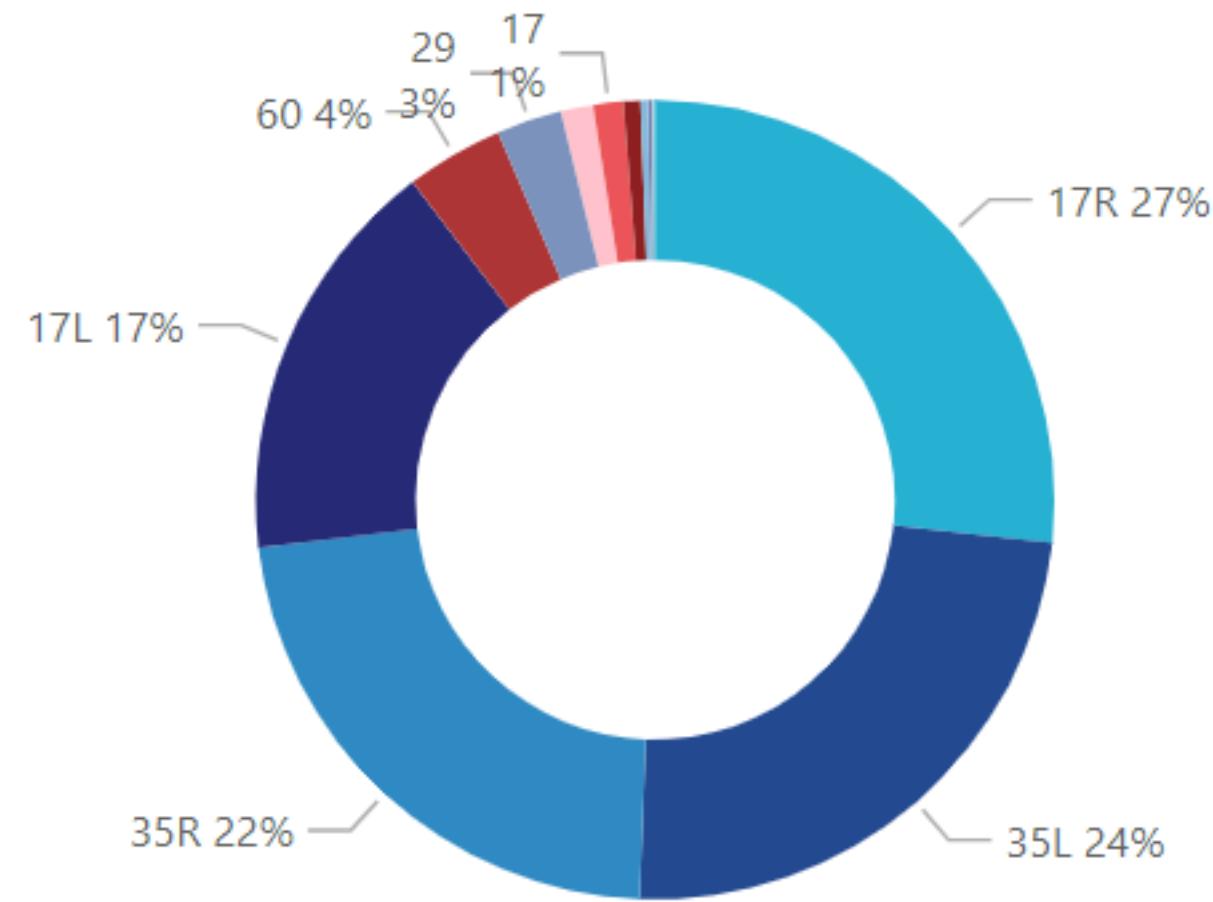
### Breakdown Over Time for Selected Timeframes



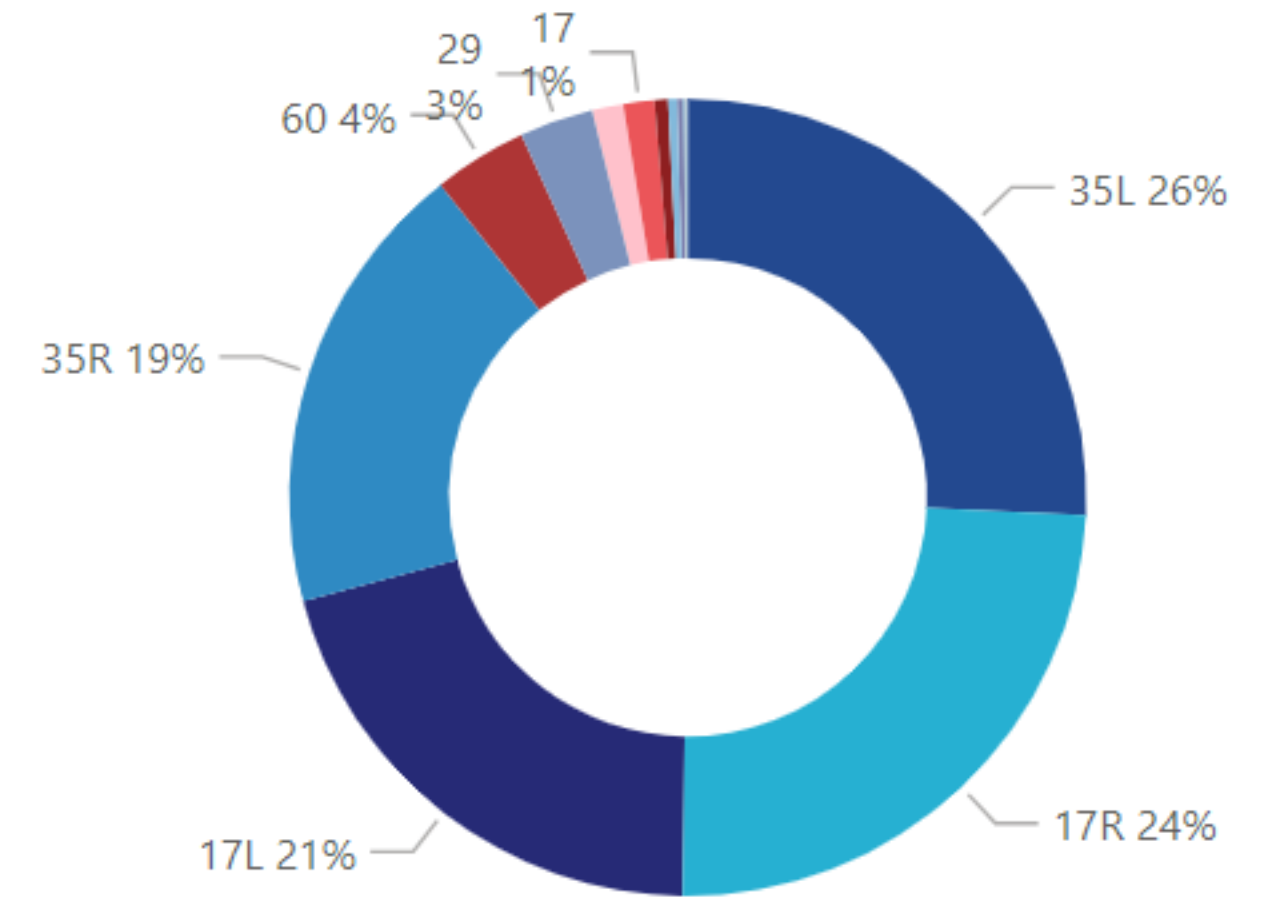
### Wind Rose (3-Hourly Observations @ 10m)



### Departures by Runway for Selected Timeframe



### Arrivals by Runway for Selected Timeframe

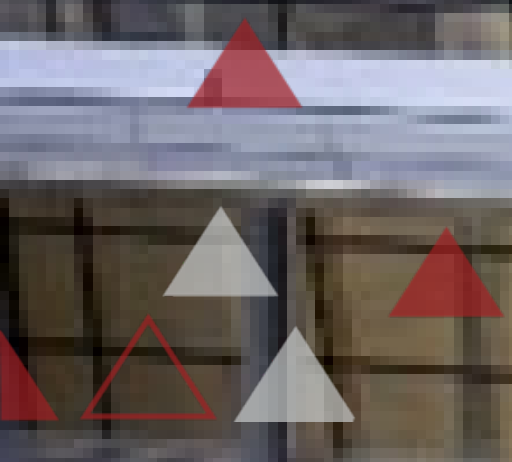
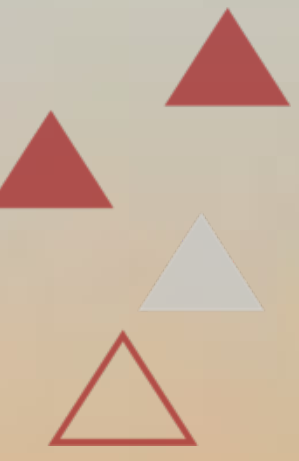


Go back

Runway Usage



# Questions



# Special Guest: Gord Falk

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Director, Planning

December 21 | 2023



# **AIRPORT MASTER PLANS and A HISTORY OF DEVELOPMENT AT YYC**

presentation to:

**Airport Community Consultation Committee**



DECEMBER 21, 2023

# Introduction

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# THE CALGARY AIRPORT AUTHORITY OVERVIEW:

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## Our Legislative Mandate:

The Calgary Airport Authority is a not-for-profit corporation established under the Alberta Regional Airports Authorities Act.

## Our Purpose under the Act is to:

- Manage and operate the airports for which we are responsible for in a safe, secure and efficient manner;
- Advance economic and community development by means that include promoting and encouraging improved airline and transportation service and an expanded aviation industry

for the general benefit of the public in our region.

## Our Airports:

**YYC** CALGARY  
INTERNATIONAL  
AIRPORT

**YBW** SPRINGBANK  
AIRPORT

# How Airports are Funded in Canada

Airports are required to cover their cost, with revenues generated from:

- Aeronautical Revenues (i.e. landing fees)
- Non-Aeronautical Revenues (i.e. leased space, parking, concessions, etc.)
- Airport Improvement Fee (AIF)

All surpluses are invested back into operations, capital ex and restoration.



# Airport Master Plans

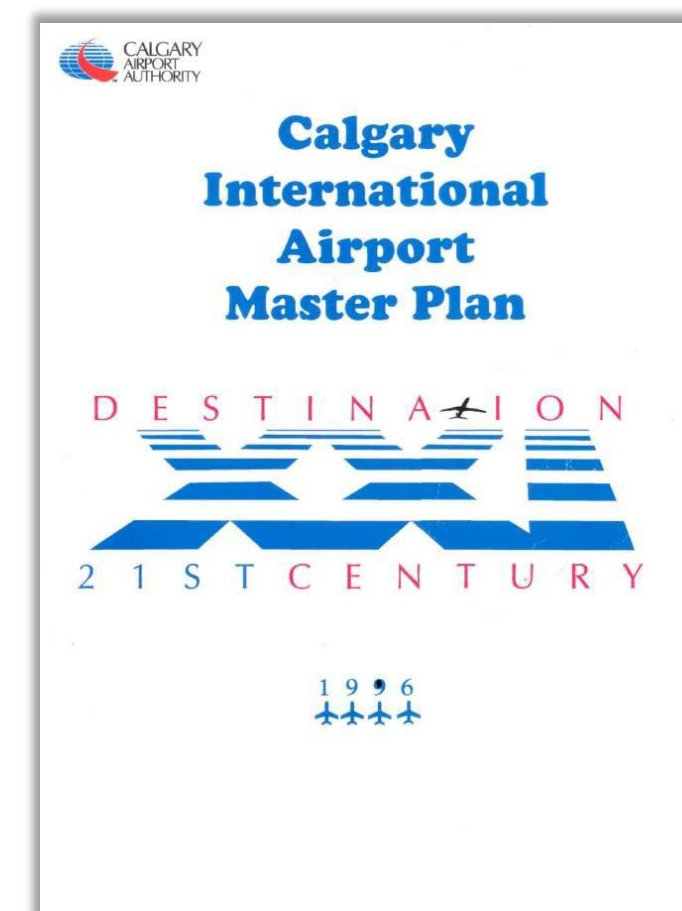
## Airport Master Plan Purpose:

Establish a framework for the orderly, rational and sequential development of the Calgary International Airport

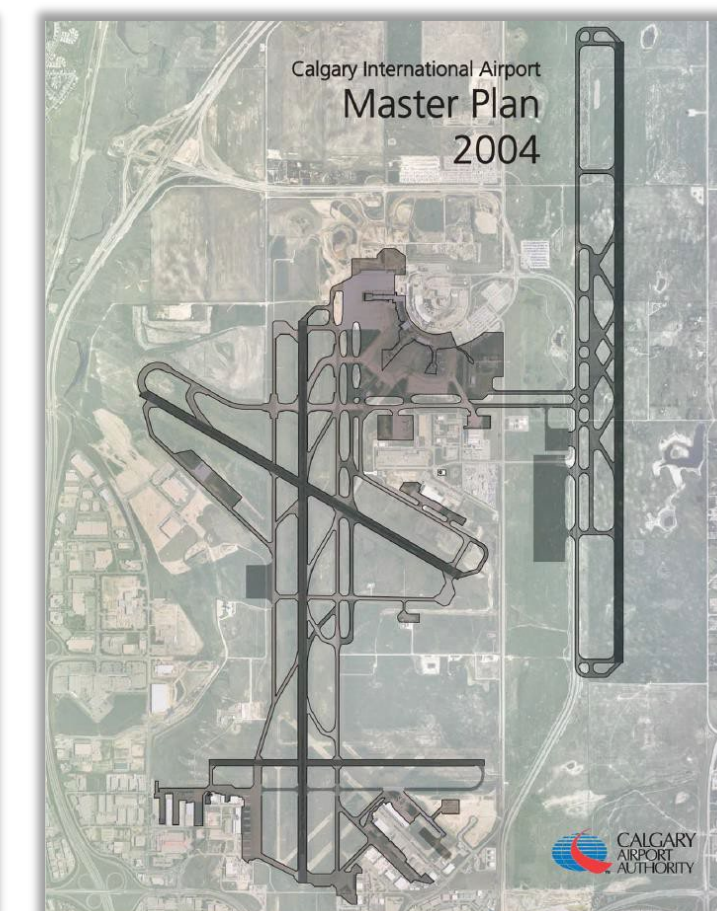
- Framework to be in alignment with:
  - Ground Lease with Federal Government
  - Mandate under the Regional Airport Authorities Act
  - YYC Strategic Plan
- AMP Planning Horizon = 20 Years

## History:

- 3 Airport Master Plans have been created since transfer in 1992:



1996



2004



2014

- We are embarking upon our next update to The Calgary International Airport Master Plan

# Airports are an Eco-system

## WHO DOES WHAT AT AN AIRPORT?

Non-Government	Airline	Check-in, boarding, baggage handling
	Airport Authority	Overall strategic direction and operation of the airport, including building and airfield operations and maintenance, and commercial development
	Private Vendors	Retail shops, restaurants, car rental agents, hotels and other airport services when not operated directly by the airport
	Nav Canada	Air traffic control
Government	Canadian Air Transport Security Authority	Security screening of passengers and their bags, screening of airport workers
	Canada Border Services Agency	Customs and Border Services, Canada
	U.S. Customs and Border Protection	U.S. Pre-Clearance
	Police Services	Policing and security response

Source: Canadian Airports Council (CAC)



# A HISTORY OF DEVELOPMENT AT YYC

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Past Master Plans

# A History of Development at YYC

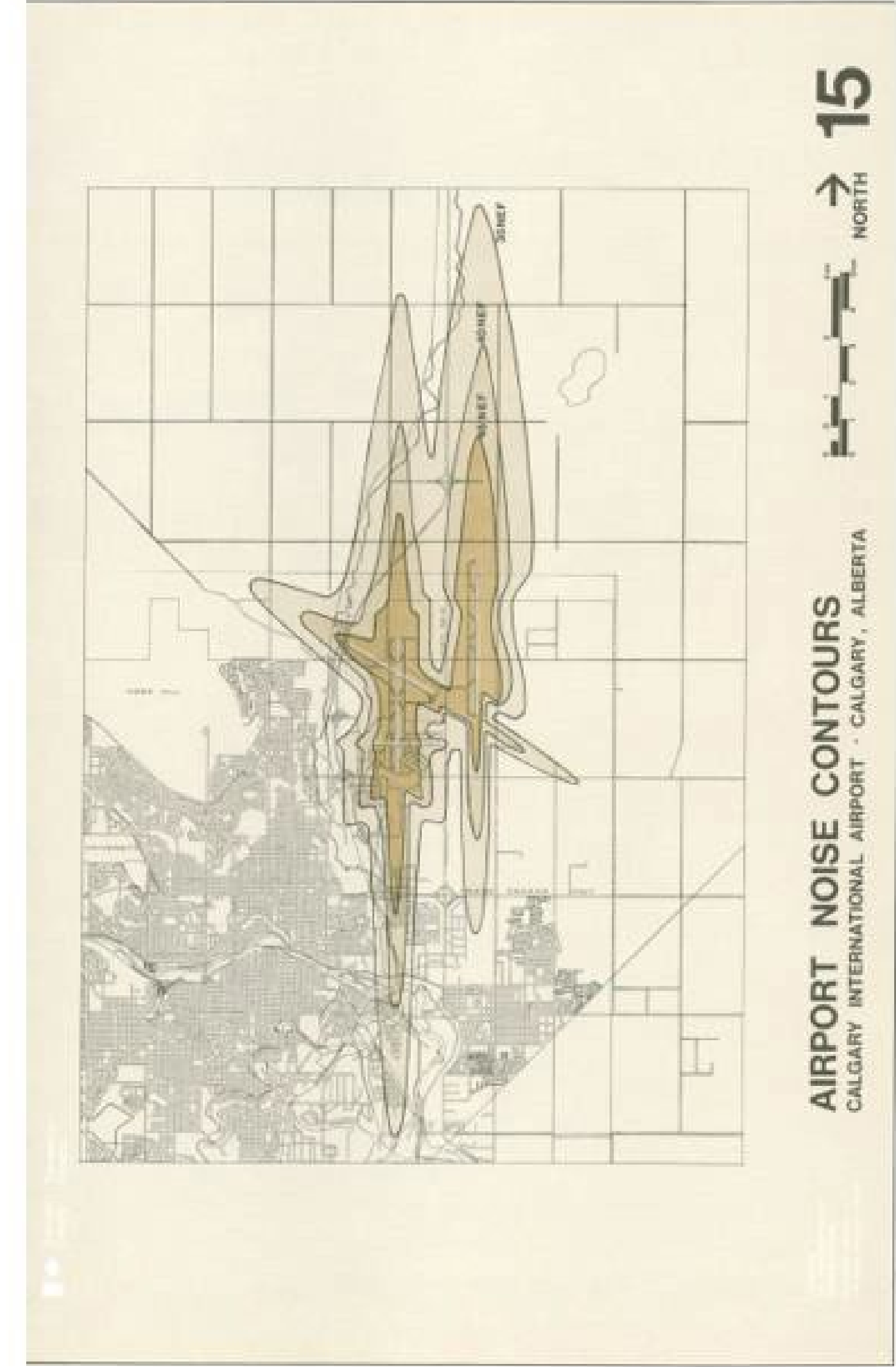
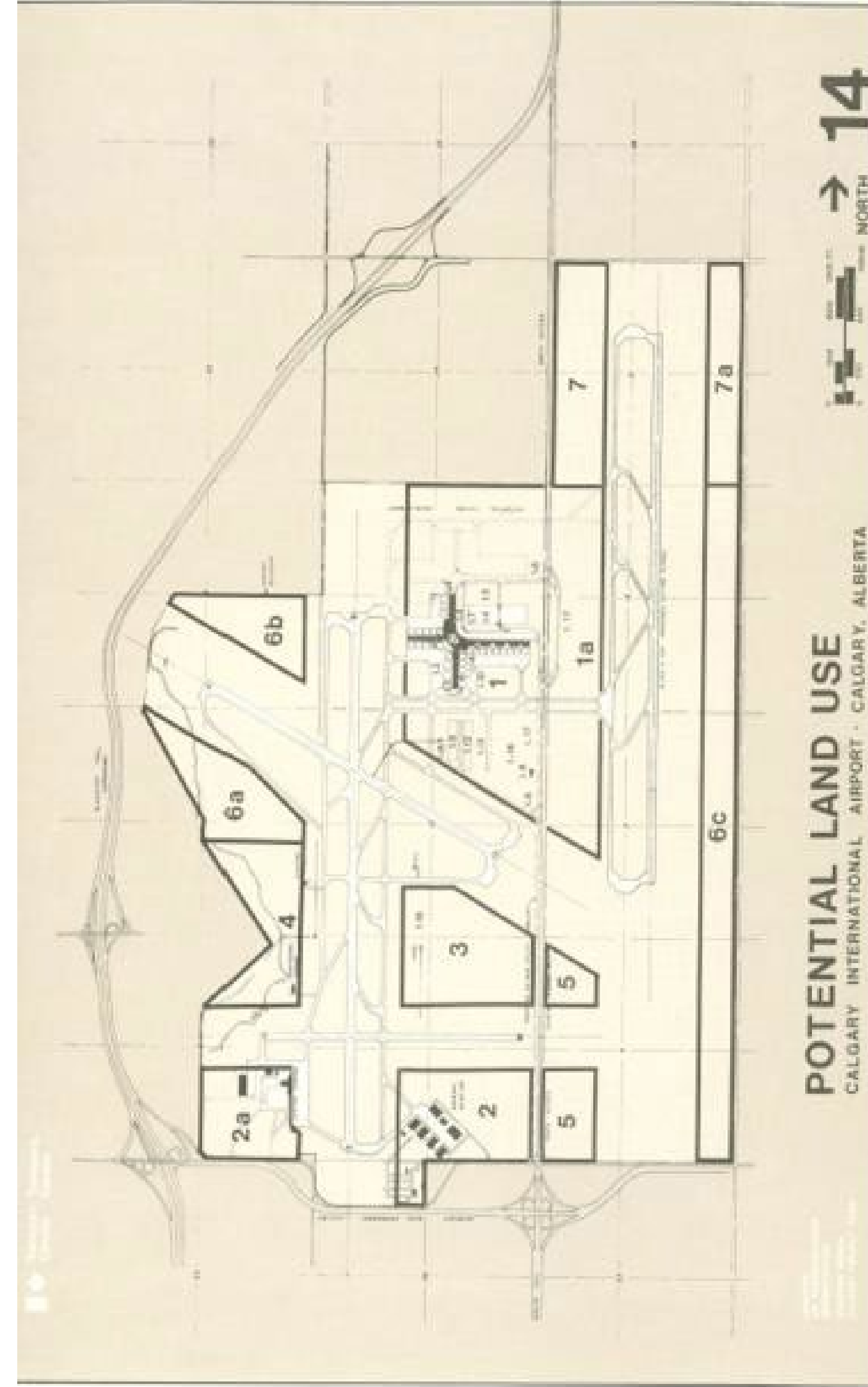
It can be challenging to predict what the future has in store ...  
Calgary's 1956 Terminal was an unfortunate "miss" ...



# A History of Development at YYC

1970's "mega project":

Airport is sold back to Federal Government with a promise to construct a new modern Air Terminal Building for Calgary





The control tower in the background with the present control room in the foreground.



Three main escalators ensure efficient flow of traffic in the central portion while stair structures also conveniently located throughout the terminal.



The South-west structure of the central portion serving a regional provincial center (Photo No. 1).



### CALGARY NEW INTERNATIONAL AIRPORT IN OPERATION - 1978



A typical waiting area in the international depart area.

A typical waiting area in the international depart area.



The departures level concourse features long open unobstructed areas and the openness of the design creates a visual link between the three main levels of the building. Paved concrete is a dominant feature throughout the interior of the terminal building.



A typical departure and arrival area at the domestic gate house.



One of the two large waiting areas providing the public with a direct view of arriving and departing aircraft.



The drive-to-gate departure level providing area for ground service between the Cities of Calgary and Edmonton.

Calgary's McCall Field Airport was originally constructed in 1958 to handle about 300,000 air travelers annually. A temporary addition was constructed in the mid sixties to more than double this capacity and the airport was given "international" status. Within a few years the total facility was inadequate to handle the growth in air traffic as Calgary became the fourth busiest airport in Canada. In the late sixties, the Federal Ministry of Transport decided to construct a complete new terminal 1.5 miles (2.4 km) North East of the existing facilities.

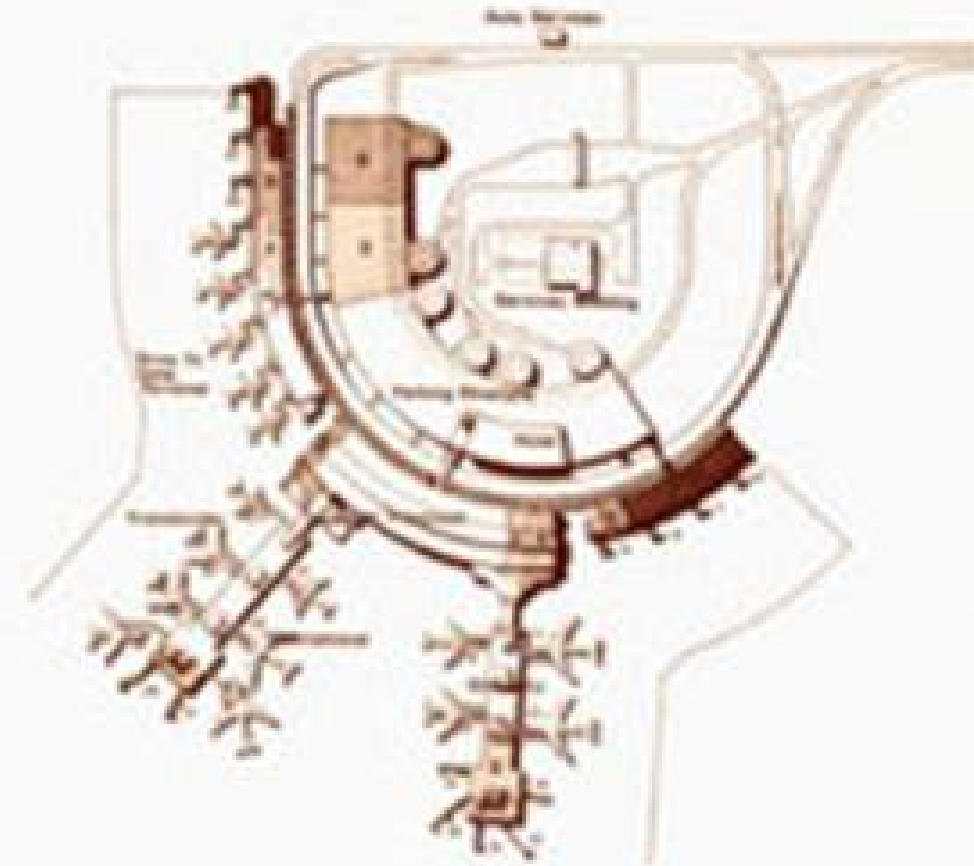
The Architectural and Engineering firm of Stevenson Raines Barrett Fulton Seton & Partners were the prime consultants for Calgary's new International Airport. In order to expedite construction the firm used the technique of segmental tendering. The first on site contract was let in March 1974 and the major contract covering the terminal building was awarded to a joint venture of Cans - Poole - Foundation, all of Calgary on May 1, 1975. The terminal was officially opened on October 12, 1977 with traffic fully accommodated by November 29, 1977.

## CALGARY INTERNATIONAL AIRPORT

The initial phase of the Air Terminal Building is designed to accommodate an anticipated 3,100,000 air travelers annually. There are 11 aircraft loading positions at the main Terminal four of which are designed for B-747's and seven designed for L-1011's and DC-10's. The four aircraft loading positions at the drive-to-gate portion of the building are designed to accommodate B-727-100's. In addition there are four off-gate loading positions for smaller aircraft.

The project consists of two phases, the Terminal Building proper which cost \$60 million and the power plant, landscaping, roadways, taxiways, aprons, underground parking system and 2000 car parking structure which totalled \$70 million.

The complex is designed for expansion in three increments over the next eighteen years to meet the needs of anticipated air traffic in Calgary in 1985, 1990 and 1995.



A plan view of the new aircraft layout shown above in white with future pre-planned additions noted in (1), (2) and (3) to be constructed when required to service future airport traffic.





# Development flowing from 1996 AMP

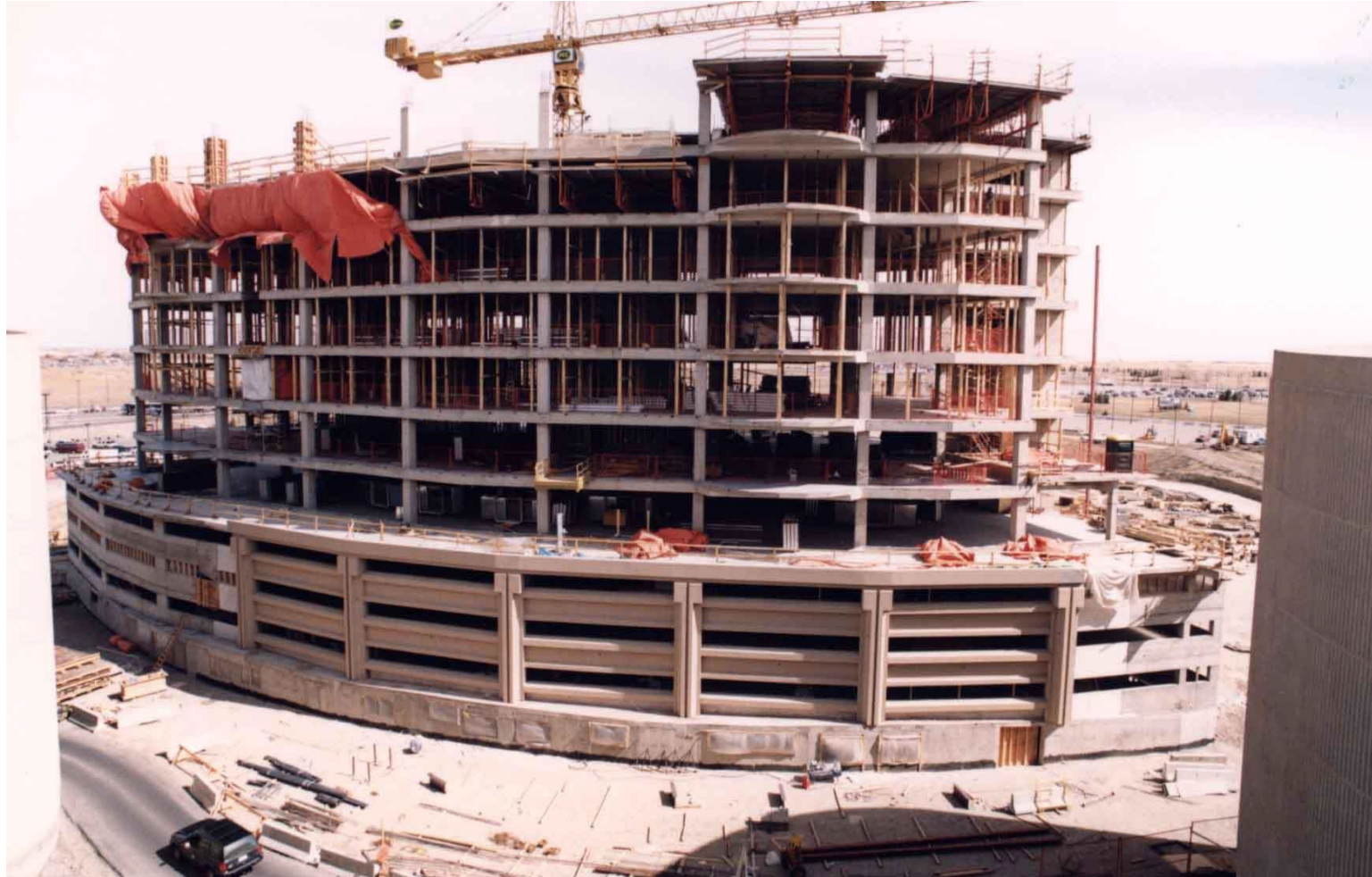
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## 1998 – 2000: Phase 1 of Airport Trail

- Joint project between Province, City and Airport Authority
- New interchange developed at Deerfoot Trail
- New alternative / direct access to Airport created

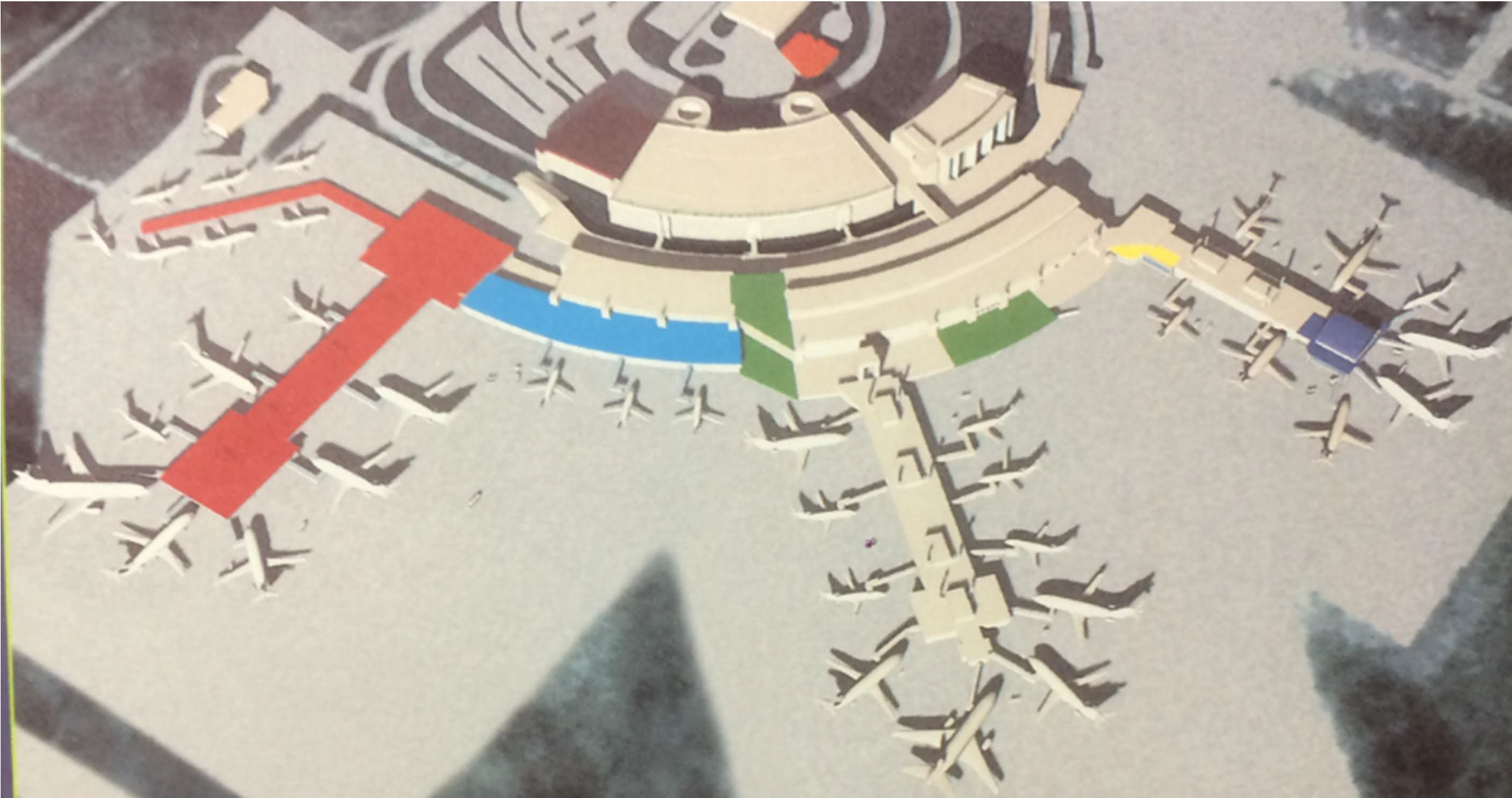


# Development flowing from 1996 AMP



# Development flowing from 1996 AMP

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ATB Development Program  
1999 to 2005

# Development flowing from 1996 AMP

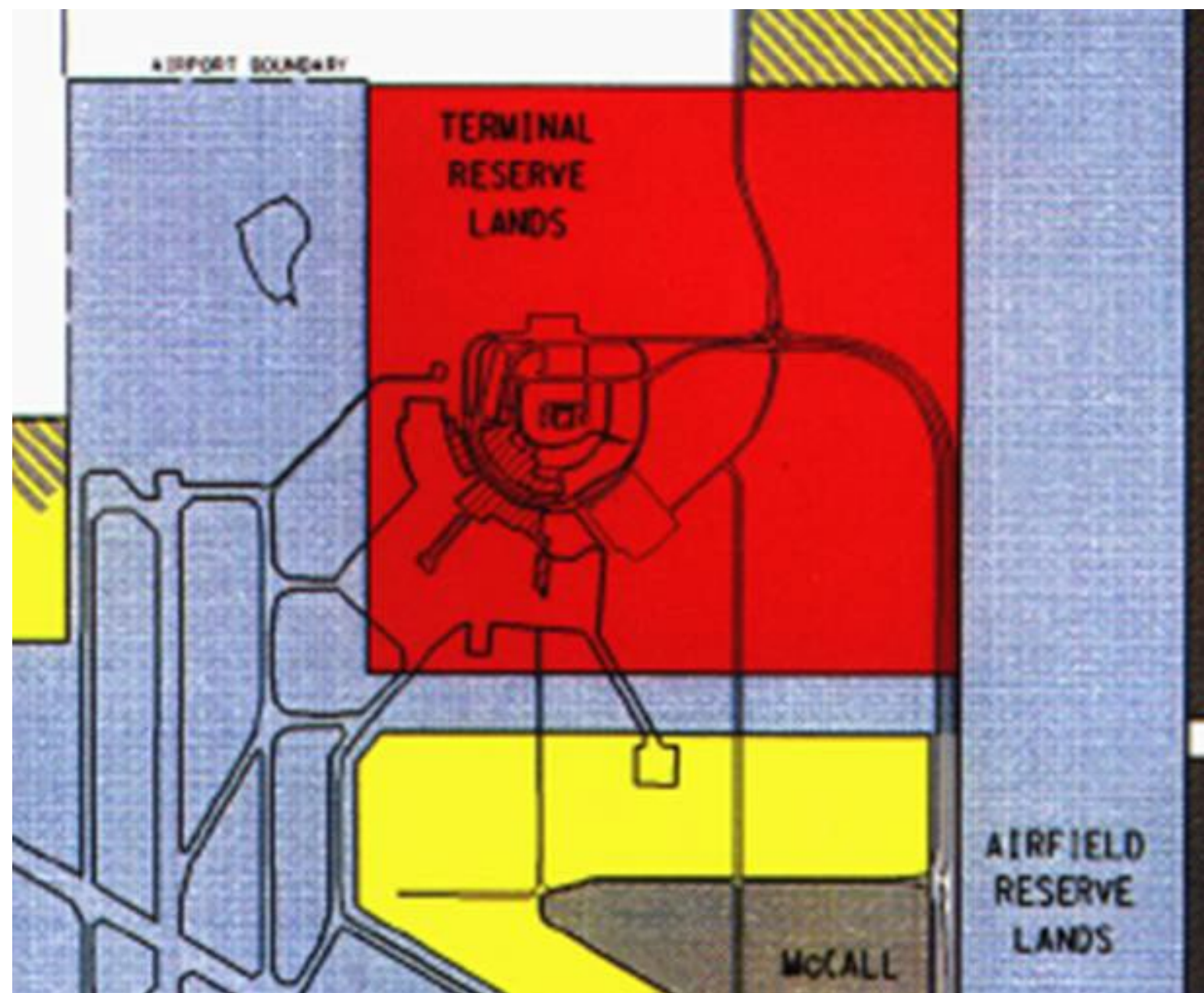
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# 2004 AMP

## Full-build out of Terminal Reserve Refined New Long-Term Vision established

To ensure that the Calgary International Airport is capable of being expanded to provide for the needs of the travelling public well beyond the master plan horizon, a Long-Term Vision for the Passenger Terminal has been prepared. The Vision, illustrated below, provides an indication of the scale of development that can be accommodated within the vicinity of the existing Passenger Terminal, showing a conceptual full build-out of the facility.



# 2004 AMP

**Airport Technical Team established consisting of representatives from City Planning, Transportation and Airport Authority.**

- Terms of Reference Established
- First major joint initiative: North-East Road Network Study

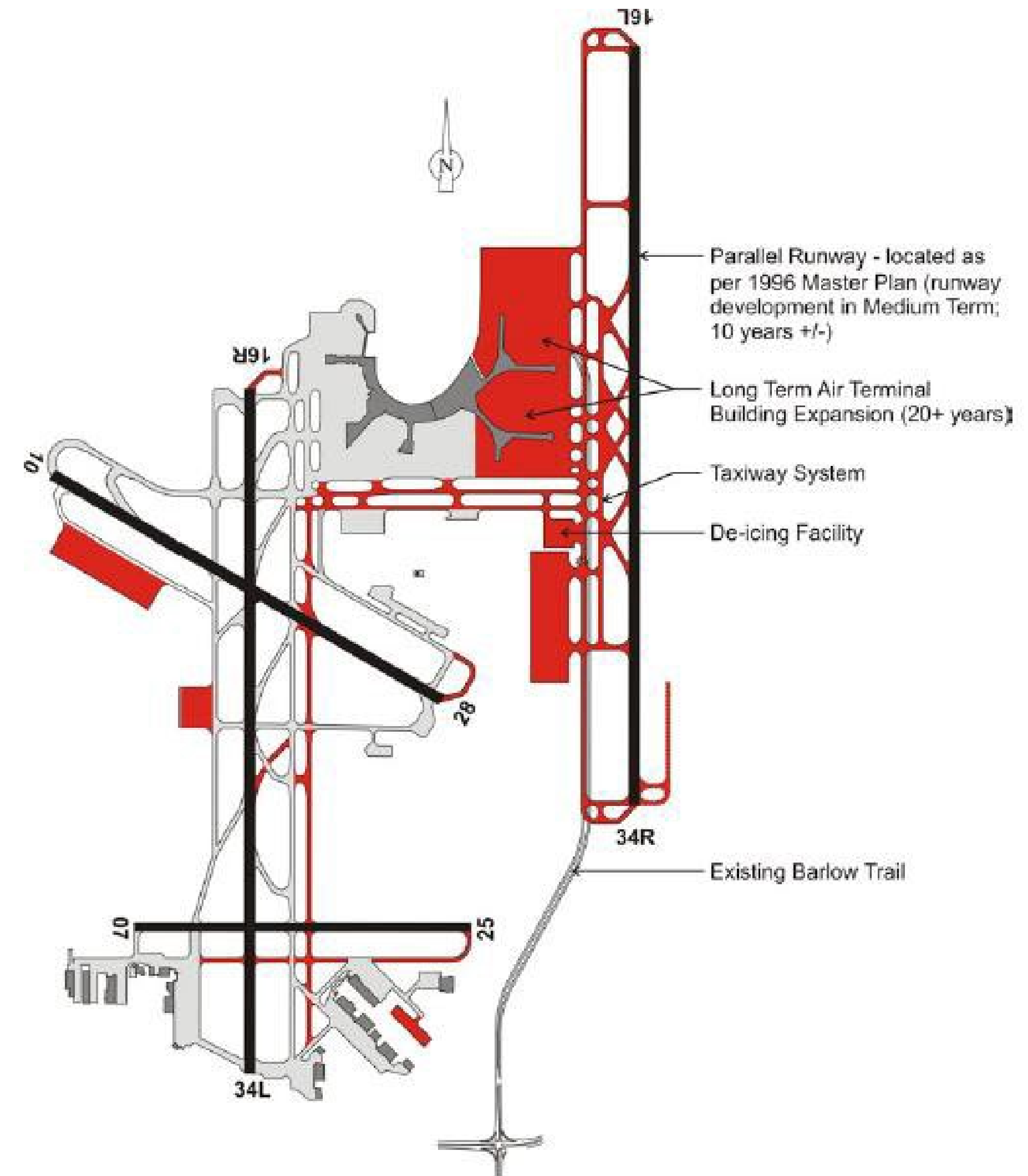


Figure 10.7 - Impact on Barlow Trail

# 2004 AMP

## North-East Road Network Study undertaken in partnership with City of Calgary

- Integrated long-term Plans of City, Province and Airport
- Airport fully integrated into City of Calgary's Transportation Model
- Numerous Scenarios generated, evaluated
- Provided a recommended solution for regional road network
- Airport Trail Tunnel
- Extension of Airport Trail to future East Freeway (Stoney Trail)

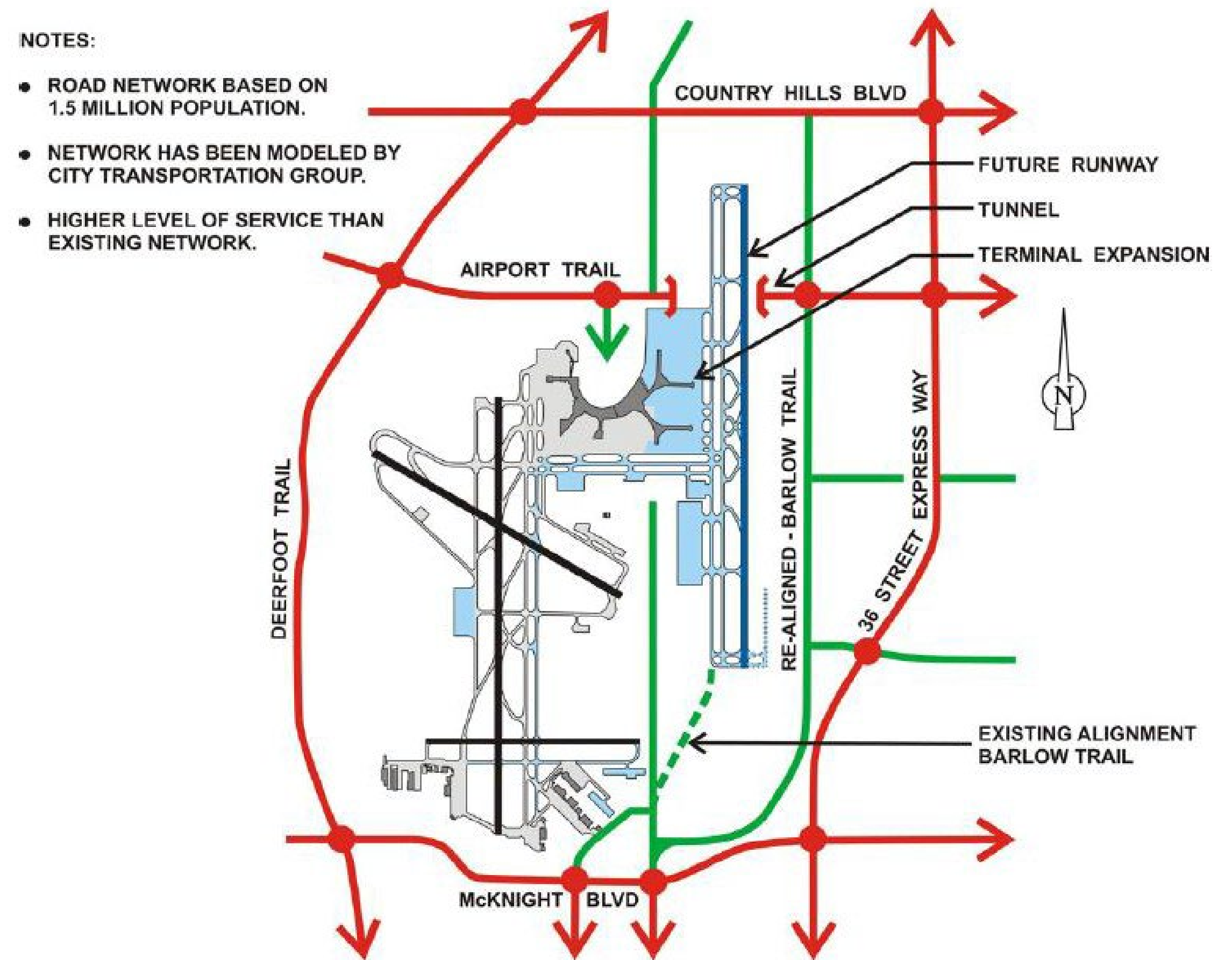
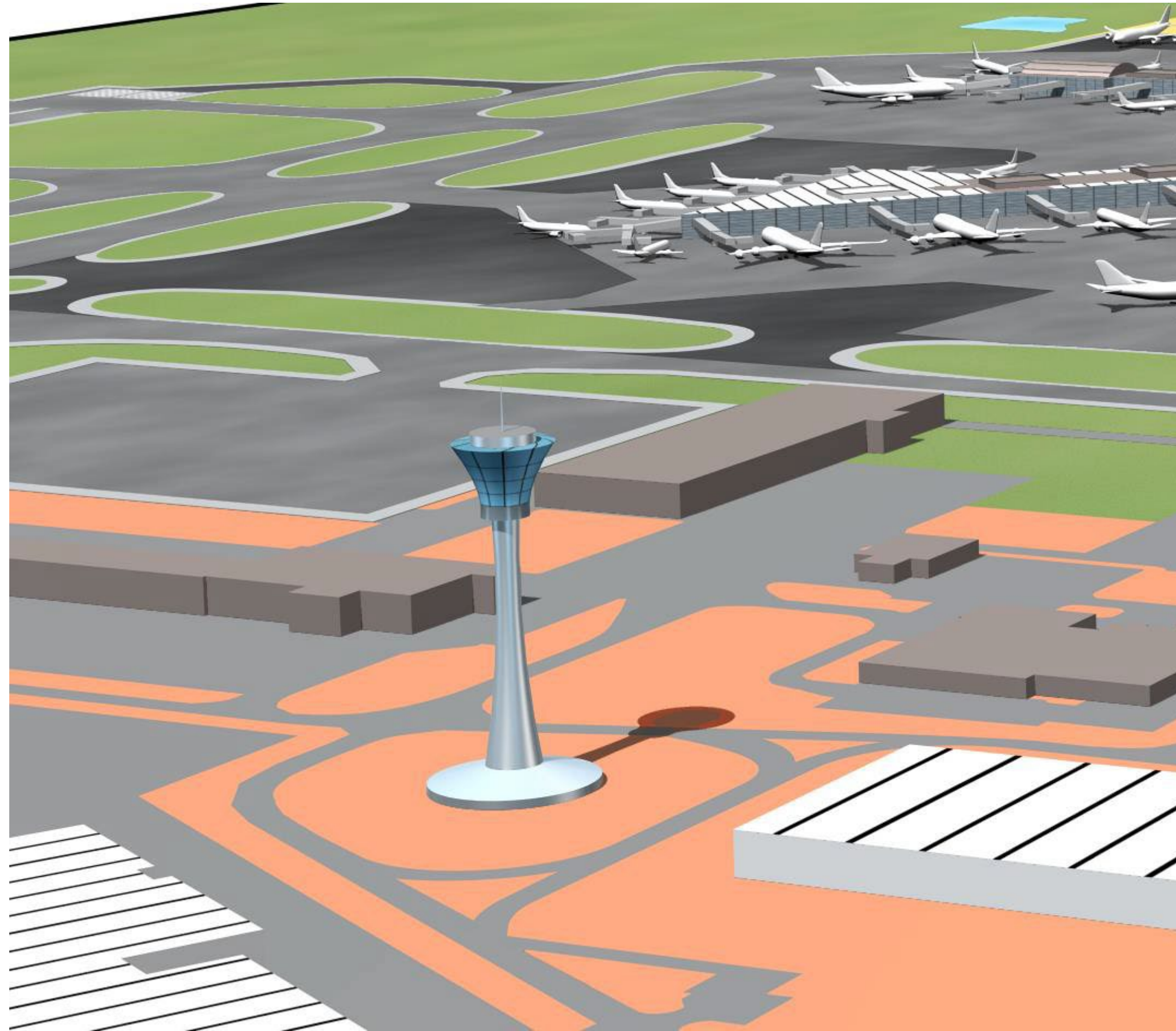


Figure 10-8 - Recommended Regional Road Network Scenario



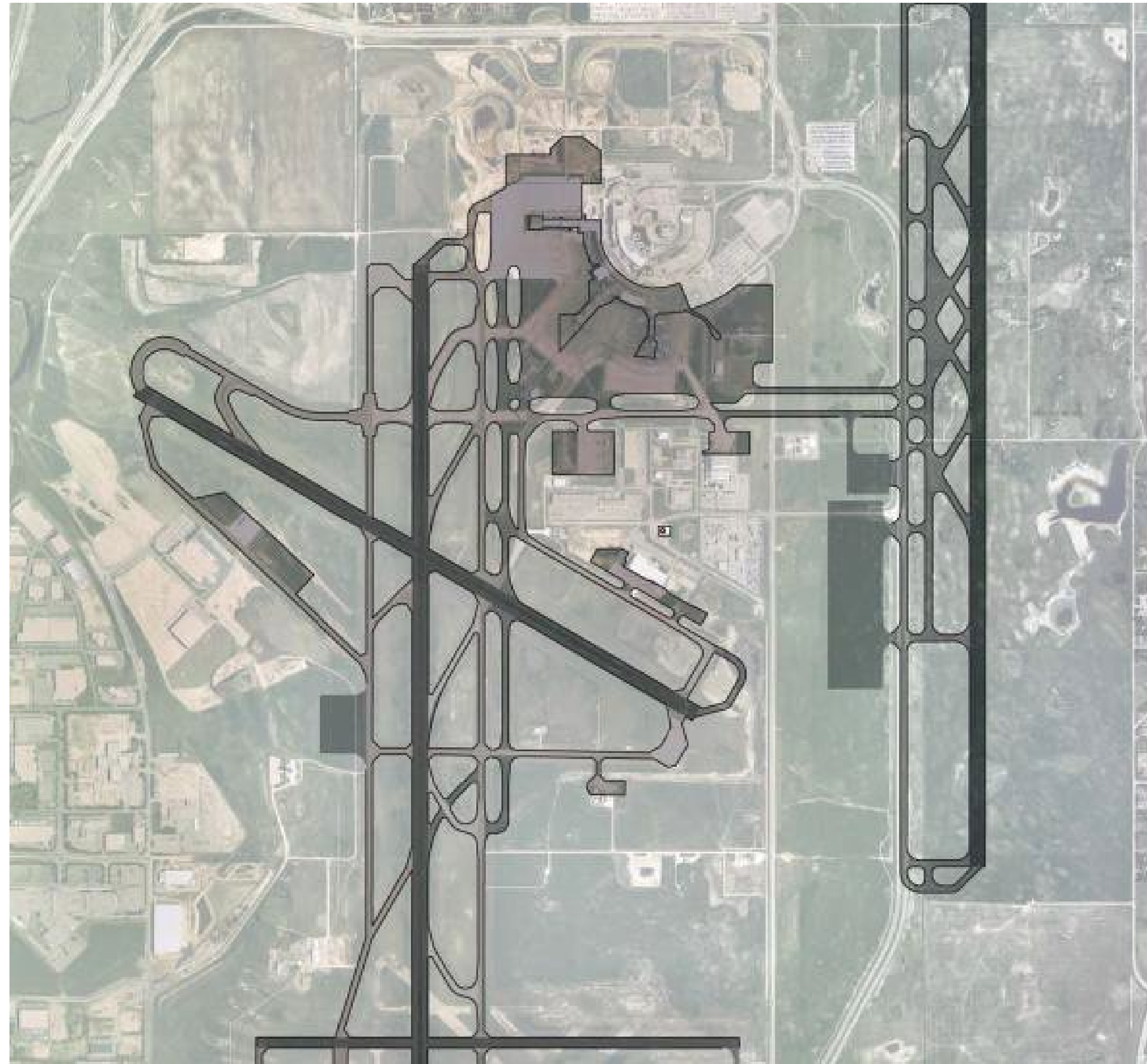
# 2004 AMP

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# Development flowing from 2004 Master Plan

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# 2014 AMP

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**2011 – 2012: City Airport Trail Tunnel Under Construction**  
• **Project coordinated with YYC Parallel Runway Project**





# 2014 AMP

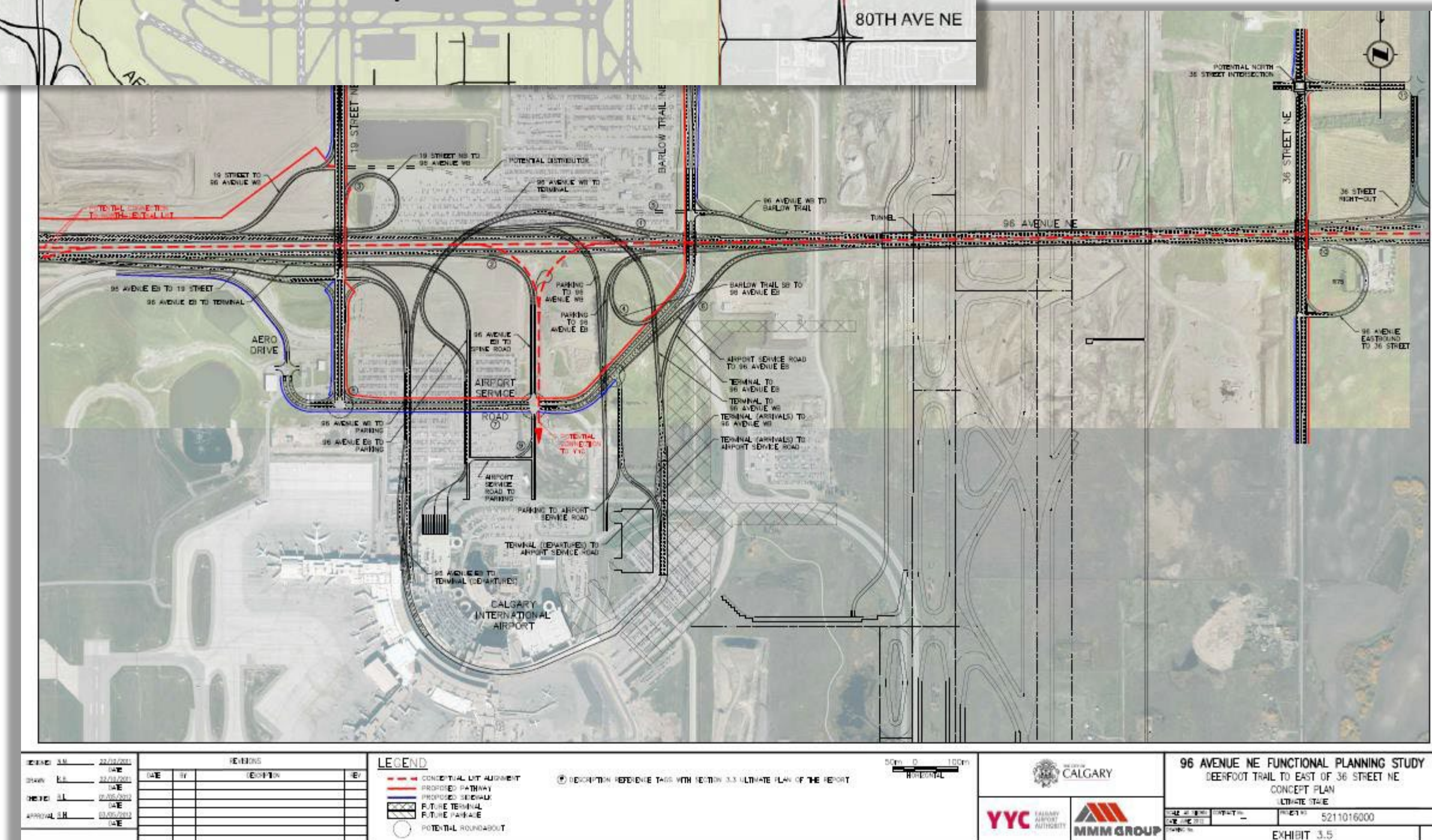
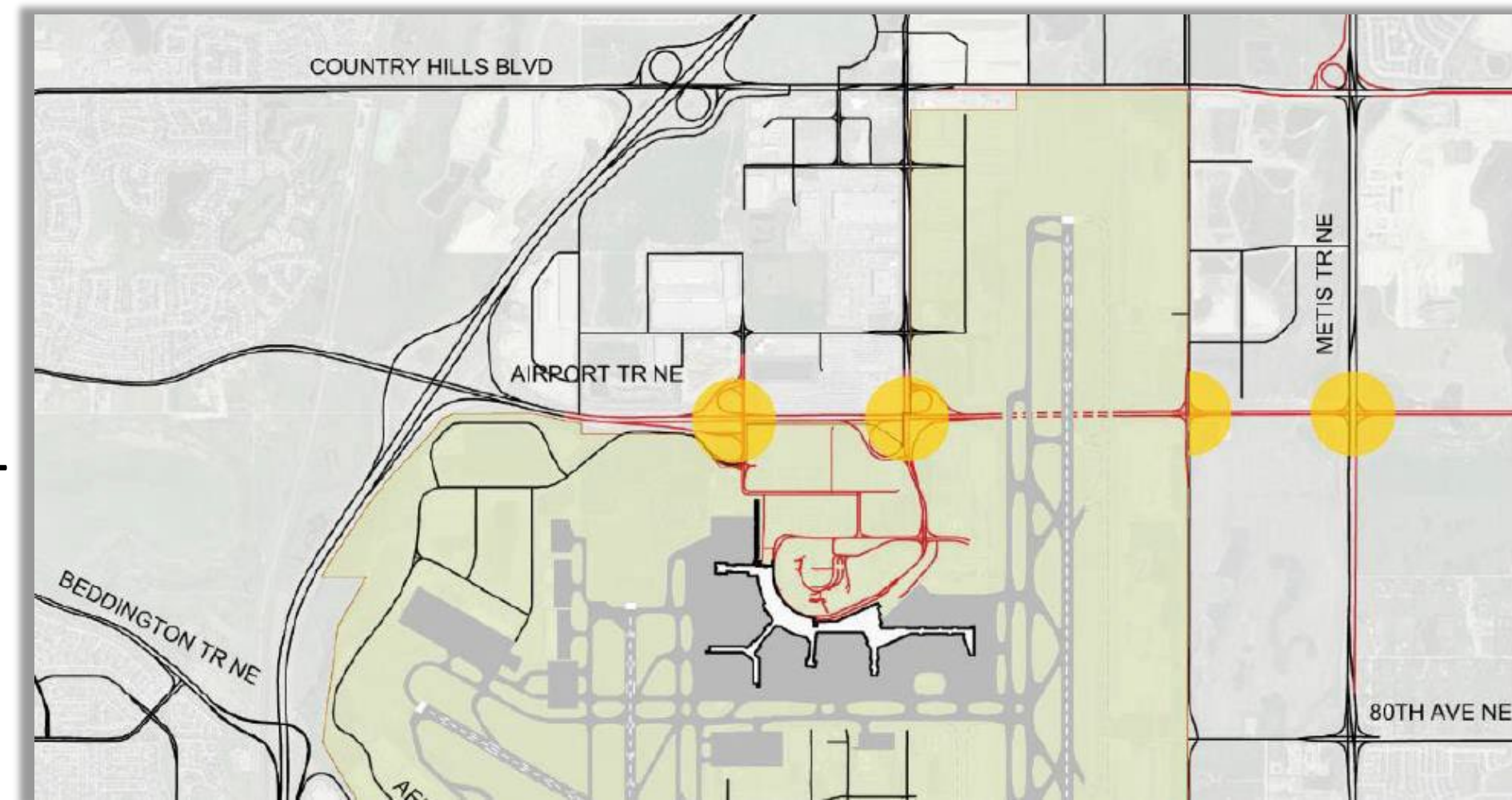
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# 2014 AMP – City / Airport Collaboration

## Airport Trail Functional Design

- Joint project between City and Airport
- Further refined – at a Functional Planning Level – long term access to the Air Terminal Complex and surrounding lands
- Considered:
  - Full build-out of Terminal Complex and Terminal Reserve lands
  - Phasing
  - Future LRT access



# Development flowing from 2014 AMP

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## Airport Trail Interchange Project (Phase 2)





# 1998 - 2023

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The Airport has evolved over the past 30 years  
Significant additions to infrastructure have been added









CALGARY INTERNATIONAL AIRPORT

JULY 2022

1:115,000



**YYC**  
CALGARY  
INTERNATIONAL  
AIRPORT

THIS PRODUCT IS THE PROPERTY OF THE CITY OF CALGARY. SOURCE: CITY OF CALGARY

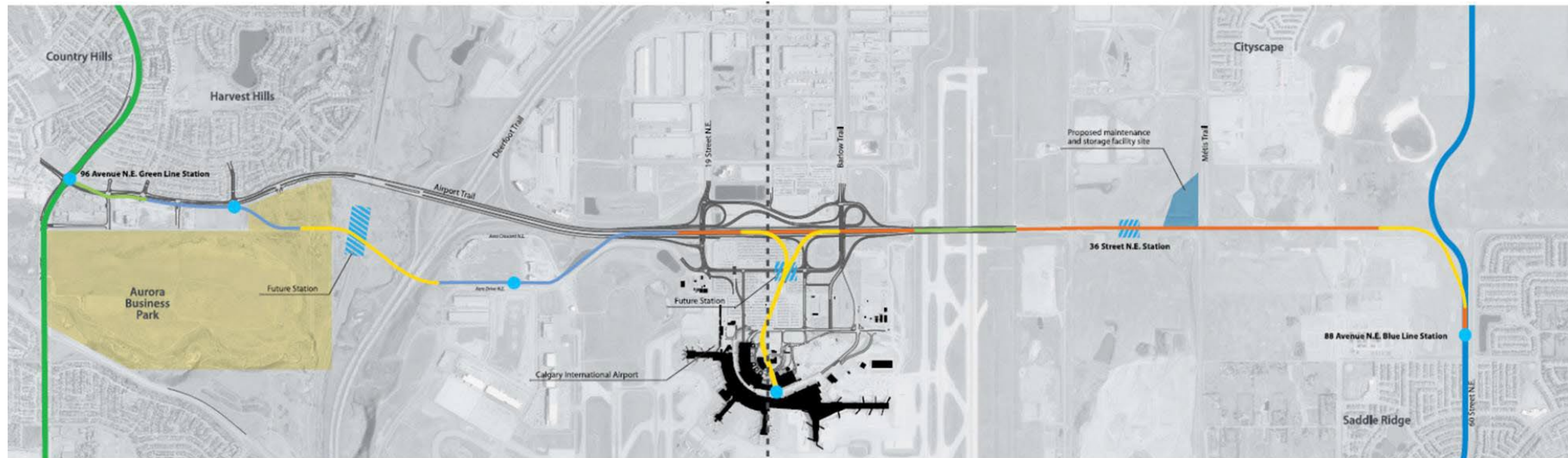
# LOOKING AHEAD

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The 2024 Airport Master Plan Update

# Looking Ahead – 2024 AMP Update

Rail Connectivity will likely be one of the key themes in the 2024 AMP Update, amongst others



## West Leg: YYC to Green Line

- Approx. \$500M to \$1B capital cost
- Approx. \$20.5M annual operating cost
- Estimated peak service frequency: every 4.5 minutes

## East Leg: Blue Line to YYC

- Approx. \$400M to \$800M capital cost
- Approx. \$14.5M annual operating cost
- Estimated peak service frequency: every 4 minutes

# Looking Ahead – 2024 Airport Master Plan Update

The airport is an eco-system ... we are working with our key stakeholders as we draft the next update to the AMP

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Some key themes:

- Significant capacity has been added over the past decade; maximizing the use of existing infrastructure will be a primary focus
- Focus on Restoration
- Focus on leveraging technology
- Rail Connectivity
- Focus on Sustainability

Further updates to the ACCC to be provided as we move through 2024.

**Skip the line  
at security.**

***Évitez l'attente  
à la sécurité.***

Book your spot and jump to the front of the line.  
*Réservez votre place et passez devant les autres.*



**YVC**

**YYC** CALGARY  
INTERNATIONAL  
AIRPORT

**Thank-you**



# MEMBER ROUND-TABLE

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- TOPIC IDEAS GOING FORWARD
  - MEETING DATES IN 2024
  - NEXT MEETING: MARCH 21
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