Toronto Pearson Noise Management Forums Public Meeting

September 28, 2022

Welcome + Introductions

Pearson Public Meetings

- The Pearson Public Meetings are part of the Noise Management Forums.

- The meetings provide residents with:
  - A chance to learn more about airport operations and how your area is impacted
  - Hear updates from GTAA and NAV CANADA about noise management
  - Ask questions or raise concerns related to airport operations

- Each meeting has a drop-in style session where residents can ask questions about operations in their area and a public meeting session which includes presentations and a public question period. Both the drop-in session and public meetings are virtual

- The Public Meetings are recorded and posted online at www.torontopearson.com/nmf

Noise Management Roles and Responsibilities

The Greater Toronto Airports Authority (GTAA) is a not-for-profit private business that has managed and operated the airport since 1996. The GTAA develops and manages a Noise Management Program and explores new opportunities for noise mitigation. It is also responsible to maintain the airport infrastructure including surfaces such as runways

NAV CANADA is the air navigation provider in Canada, responsible for safe and efficient movement of aircraft. NAV CANADA designs and publishes a network of air routes to design criteria set by Transport Canada and ICAO. It also assigns runways at Toronto Pearson considering winds, weather, capacity and the preferential runway system.

Transport Canada is the regulator for aviation in Canada. It ensures Canadian aircraft are compliant with the international noise standards through the aircraft certification process, establishes flight path design criteria and land-use guidelines based on noise exposure. It approves proposed changes to and enforces the Noise Abatement Procedures and Noise Operating Restrictions. Transport Canada also audits the airport's Night Flight Restriction Program annually.

Agenda

- Operations + Community Impacts
- GTAA Updates
  - Runway 06L/24R Rehabilitation Project Progress Update
- NAV CANADA Updates
- Questions

Operations + Community Impacts

About Toronto Pearson

Prior to COVID-19, Toronto Pearson was the sixth most connected airport in the world, facilitating almost 50 million passengers and 478,000 aircraft movements a year, directly employing 49,000 people and enabling $42 billion of Ontario's GDP

Toronto Pearson is open 24 hours a day. A typical day is divided into normal operating hours (6:30 a.m. to midnight), preferential runway system hours and restricted hours

Preferential hours (midnight to 6:29 a.m.): prioritize runways that overfly the fewest people

Restricted Hours (12:30 to 6:29 a.m.): governed by a Night Flight Restriction Program which limits number of movements. Runs from Nov 1 to Oct 31. Annual budget increases with passenger growth

Our Runways

Toronto Pearson has five runways

- Two runways go in the north-south direction:
  - Runway 15L/33R
  - Runway 15R/33L
- Three runways go in the east-west direction:
  - Runway 05/23
  - Runway 06L/24R
  - Runway 06R/24L

- Runways can be used from both ends, so while there are five runways, there are 10 operational ends for arrivals and departures

Runway Selection

Air Traffic Controllers consider many factors when selecting a runway configuration:

Wind - direction, windspeed, crosswinds

Surface conditions - (wet, dry, ice, snow) combined with wind conditions

Traffic Demand & Capacity – traffic levels vary seasonally and even throughout the day. Runway configurations are selected for optimal capacity

Runway and Taxiway Availability - can be affected by maintenance, snow clearing and other factors

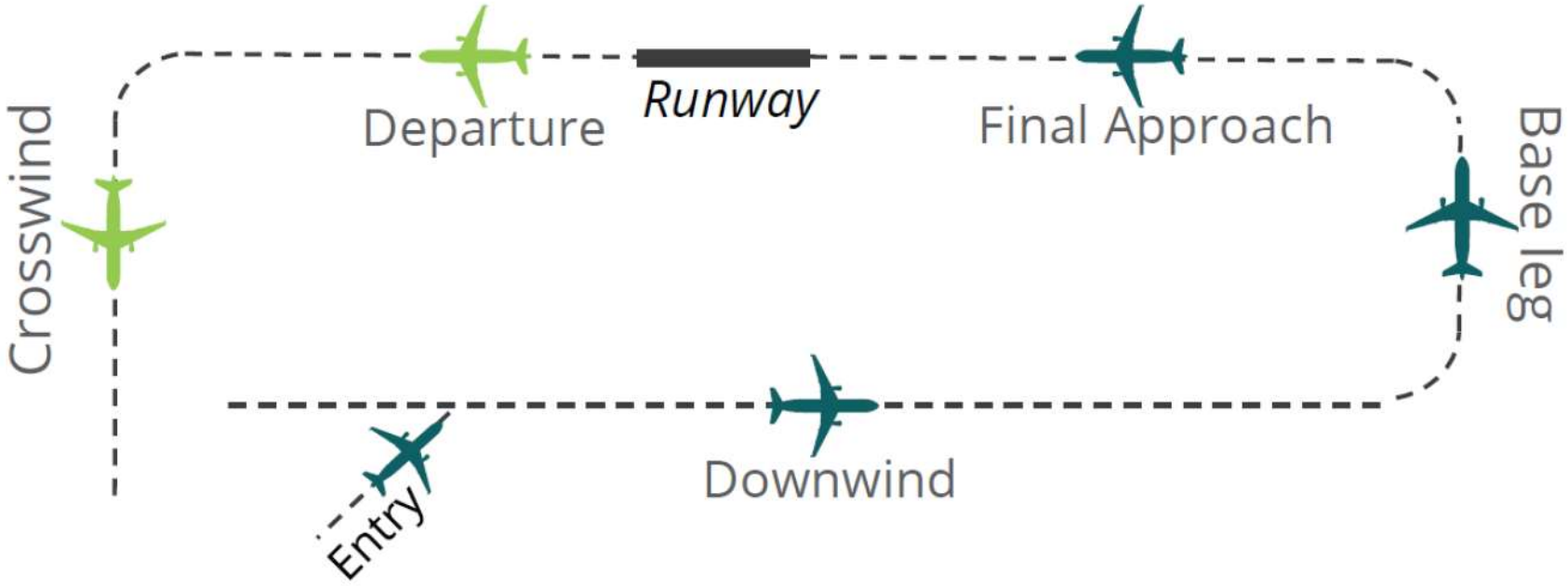
Distance to Runway – the primary departure runway is typically the shortest distance from the terminal – less fuel consumption, less GHG

Time of Day – the Nighttime Preferential Runway System is used between midnight and 6:30 am. It is designed to affect the fewest people in the nighttime hours

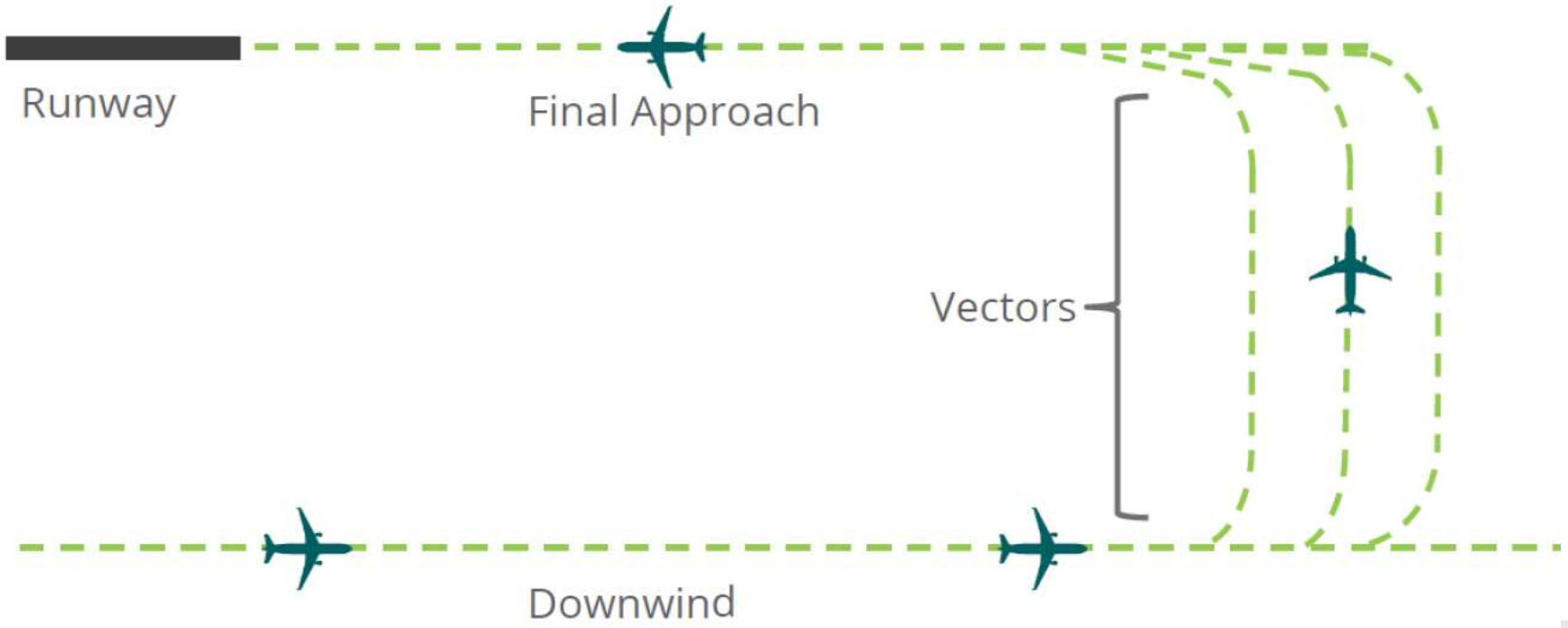
Runway Length –sometimes a longer runway is needed for long haul, large/heavy aircraft

The east/west runways are used for ~95% of traffic, due to predominant easterly/westerly winds, and capacity

Runway Circuit Pattern



Runway Circuit Pattern

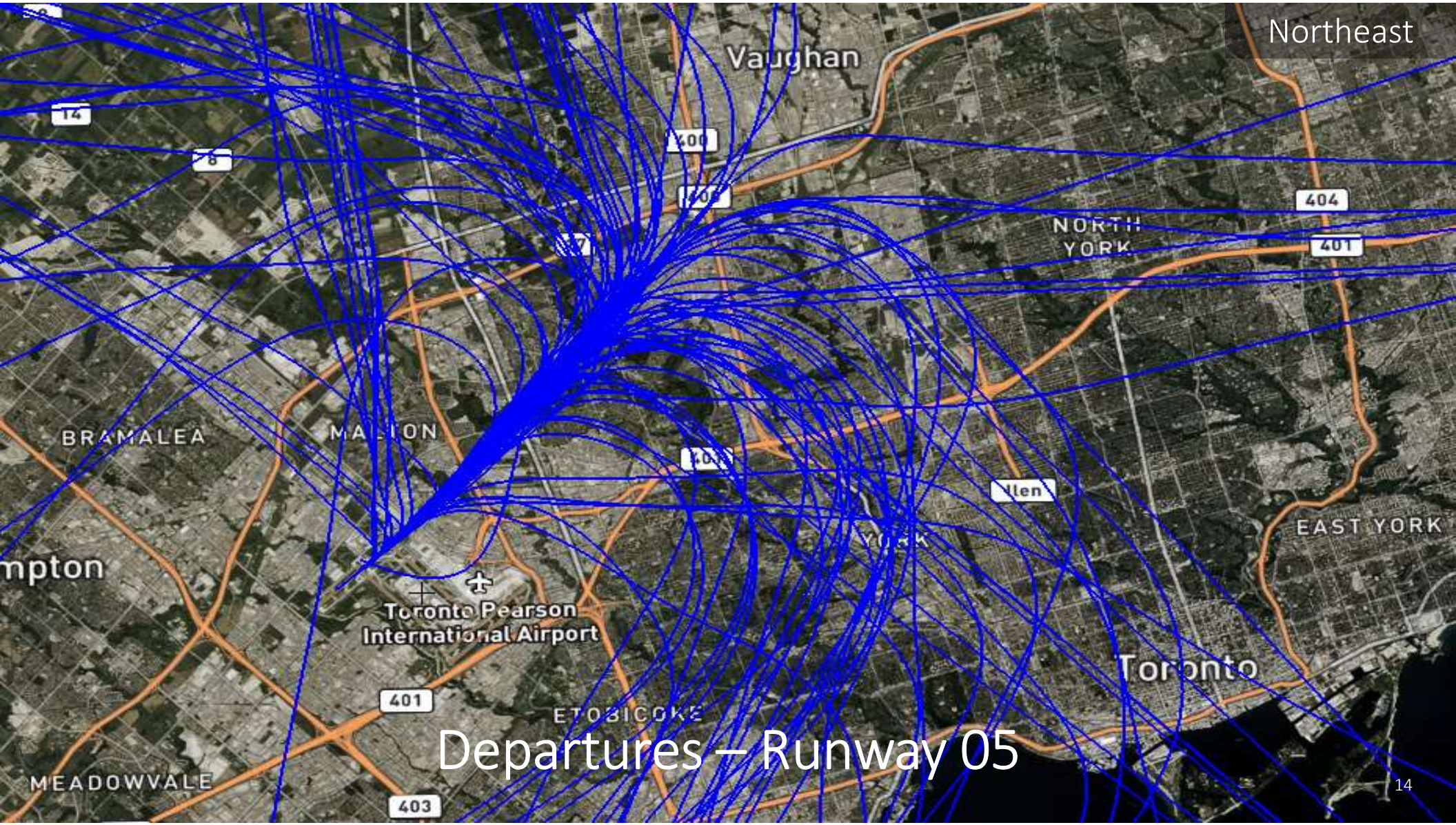


Arrivals Runway 23
Departures Runway 05

Communities impacted:

Maple/Vaughan, Richmond Hill, Thornhill, Rexdale


Northeast
Bolton
Kleinburg
Richmond Hill
Vaughan
BRAMALEA
MALTON
NORTH YORK
400
50
6
27
7
14
8
17
410
401
Arrivals - Runway 23



Departures – Runway 05

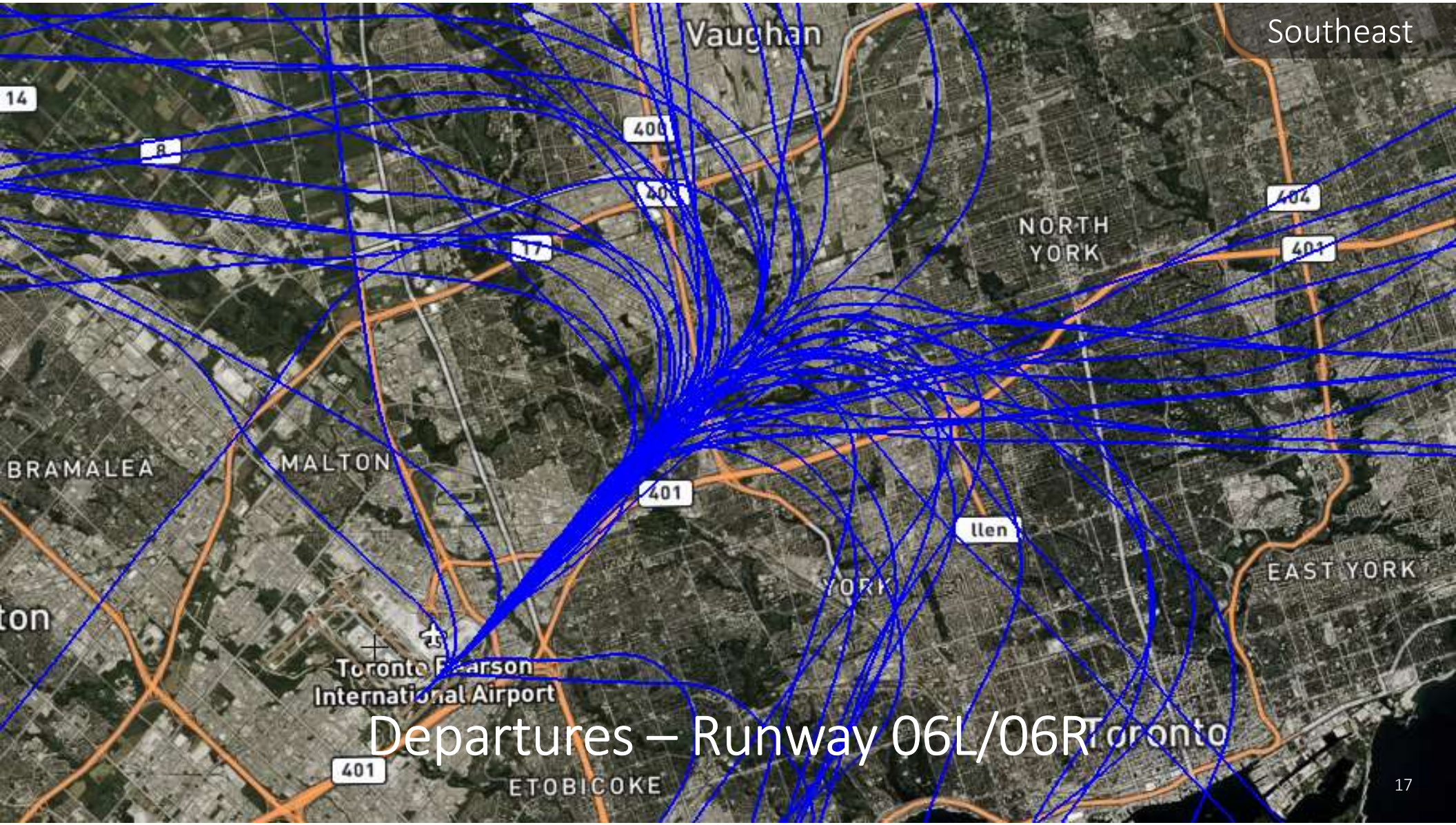
Arrivals Runway 24L/R
Departures Runway 06L/R

Communities impacted:

Midtown Toronto, North York, Weston, Markham


Southeast
400
400
17
404
401
MALTON
401
YORK
EAST YORK
Toronto Pearson
International Airport
401
ETOBICOKE
Arrivals - Runway 24L/24R

16



Departures – Runway 06L/06R

Arrivals Runway 05
Departures Runway 23

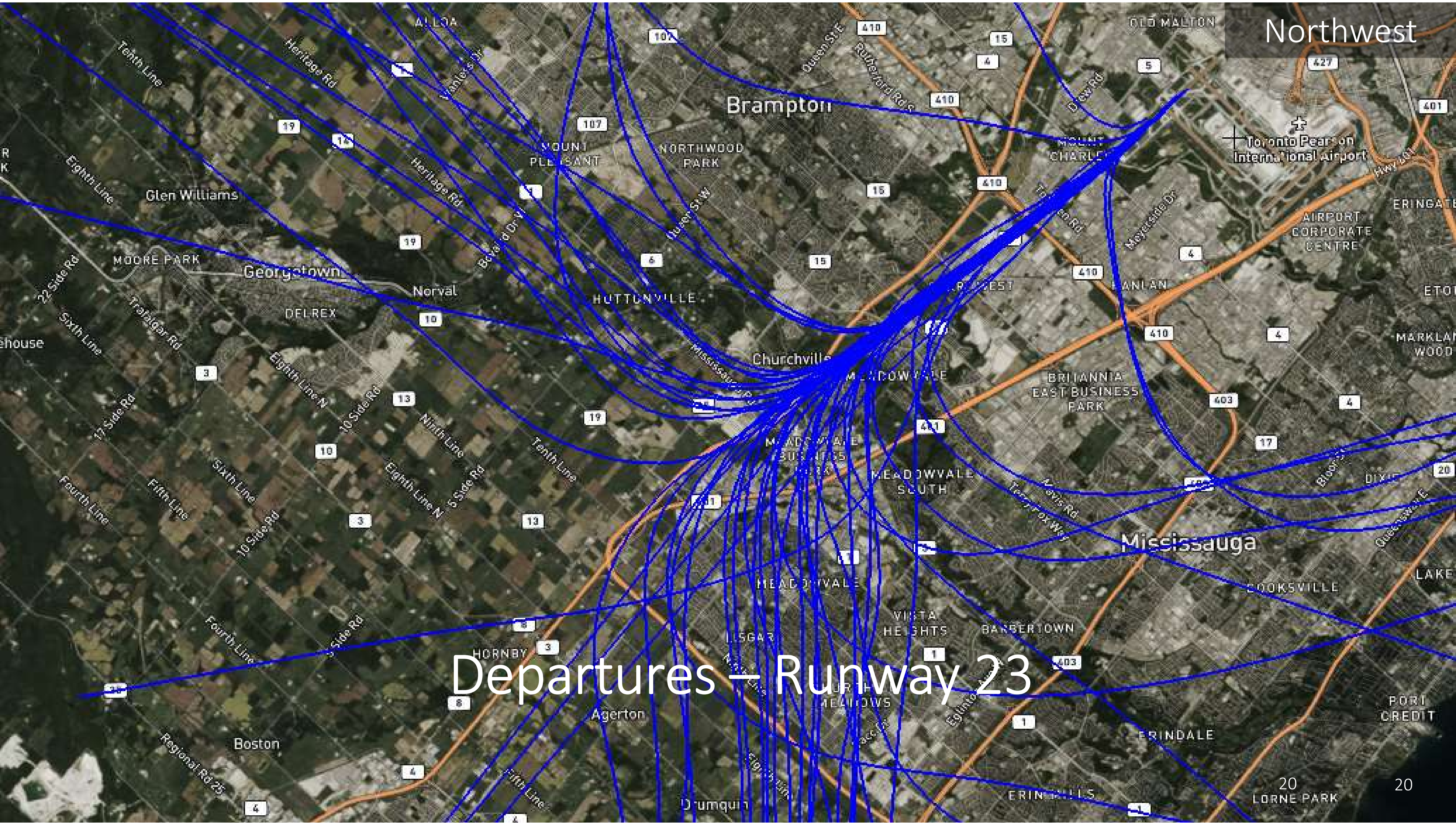
Communities impacted:

Brampton, Georgetown, Milton, Meadowvale, Streetsville


Northwest
Brampton
Georgetown
Norval
HUTTONVILLE
Churchville
MEADOWVALE
MEADOWVALE SOUTH
MEADOWVALE BUSINESS PARK
BRITANNIA EAST BUSINESS PARK
Mississauga
COOKSVILLE
VISTA HEIGHTS
BARBERTOWN
LISGAR
ERINDALE
ERIN MILLS
LORNE PARK
PORT CREDIT
DIXIE
MARKLAND WOOD
ERINGATE
AIRPORT CORPORATE CENTRE
HANLAN
DERRY WEST
MOUNT CHARLES
NORTHWOOD PARK
OLD MALTON
MOORE PARK
DELREX
Boston
Orumquin
Toronto Pearson International Airport
Arrivals - Runway 05

Departures – Runway 23

Northwest



Arrivals Runway 06L/R
Departures Runway 24L/R

Communities impacted:

Meadowvale, Alderwood, Erin Mills, Streetsville, Clarkson, Port Credit, Oakville

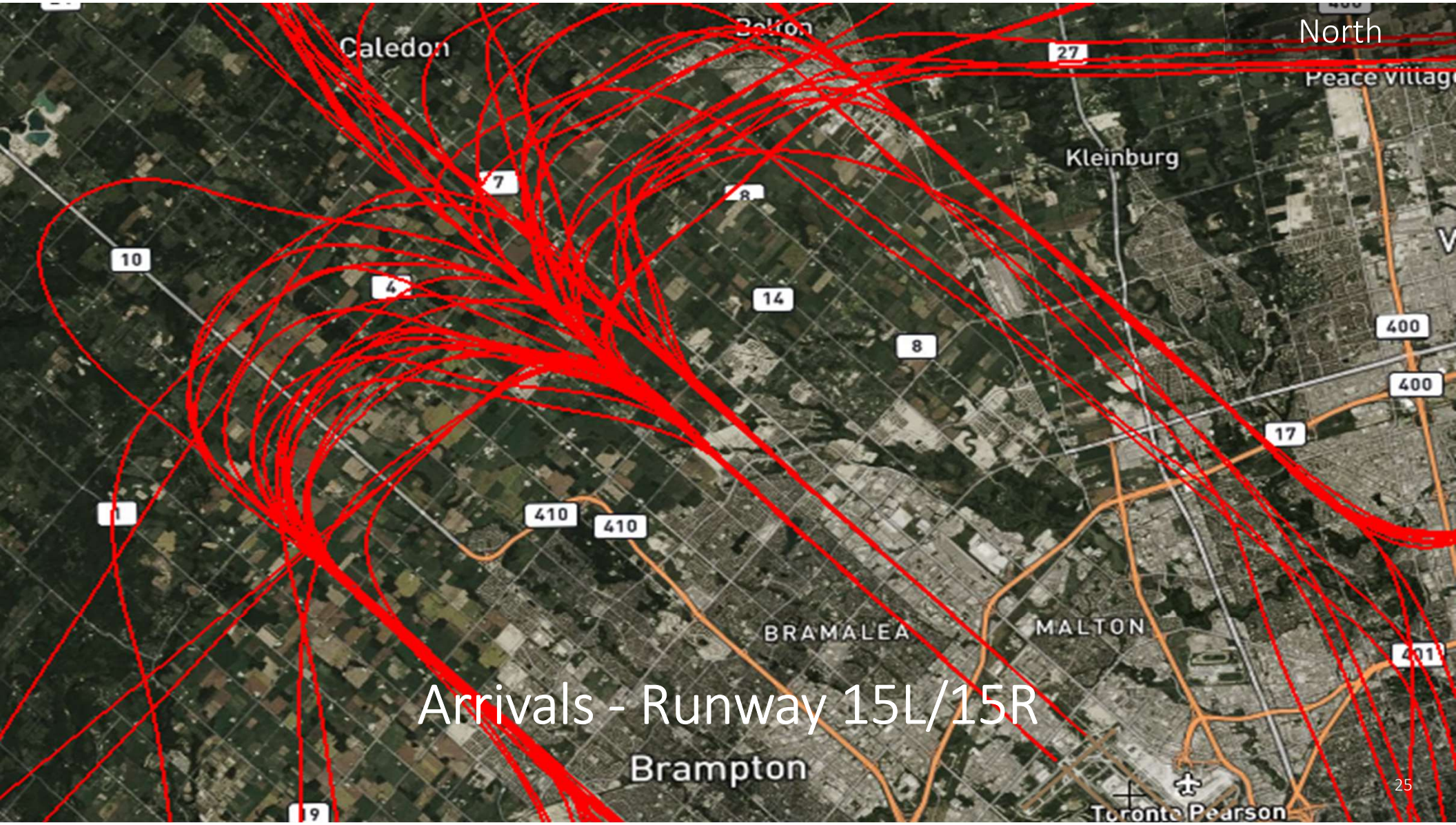
Arrivals – Runways 06L/06R

Departures – Runway 24L/24R

Arrivals Runway 15L/R
Departures Runway 33L/R

Communities impacted:

Brampton, Malton

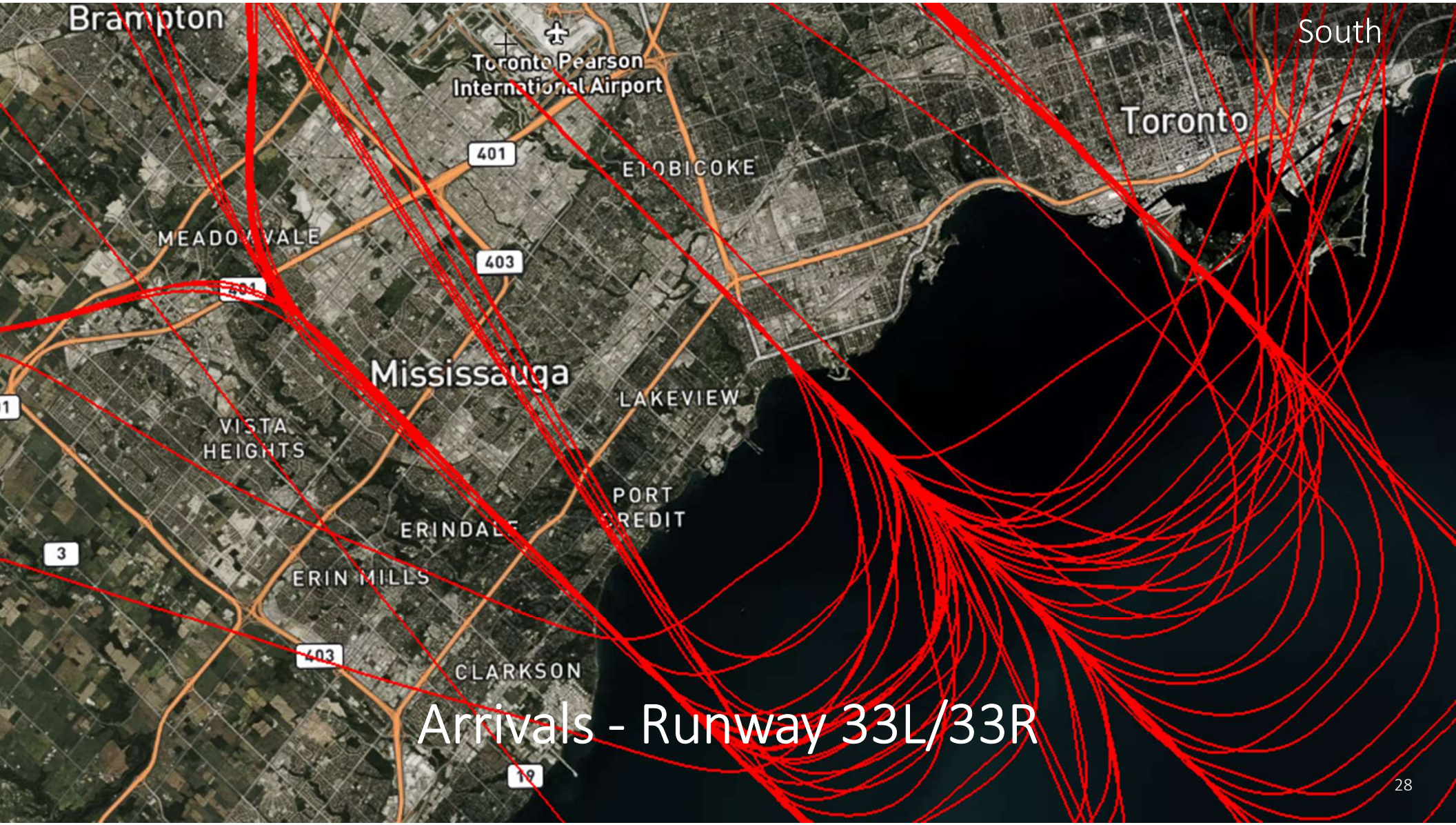

North
Caledon
Kleinburg
Peace Village
BRAMALEA
MALTON
Brampton
Toronto Pearson
Arrivals - Runway 15L/15R

Departures – Runway 33L/33R

Arrivals Runway 33L/R
Departures Runway 15L/R

Communities impacted:

Etobicoke-Lakeshore, Alderwood, Long Branch, Markland Wood


Brampton
Toronto Pearson International Airport
Toronto
South
401
ETOBICOKE
MEADOWVALE
403
Mississauga
LAKEVIEW
VISTA HEIGHTS
PORT CREDIT
ERINDALE
3
ERIN MILLS
403
CLARKSON
Arrivals - Runway 33L/33R


South
BRAMALEA
MALTON
401
Allen
YORK
Brampton
Toronto Pearson International Airport
Toronto
401
ETOBICOKE
MEADOWVALE
403
401
Mississauga
LAKEVIEW
VISTA HEIGHTS
Departures – Runway 15L/15R
PORT CREDIT
ERINDALE
3
ERIN MILLS

GTAA Updates

Runway 06L/24R Rehabilitation Project Progress Update

Temporary Closure of 06L/24R

- Like all major infrastructure, our runways need regular maintenance to keep them safe.
- On April 4, Pearson started an eight-month rehabilitation of 06L/24R, the airport's second-busiest runway.
- First built in the 1960s, the 3-km runway needed to be fully rehabilitated due to the wearing down of its concrete sub-structure as a result of weather conditions, use and time.

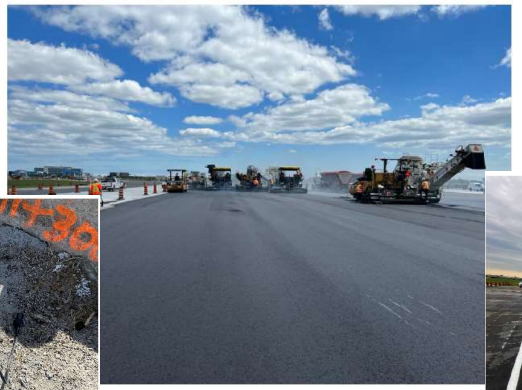
Restoration Work in Action

Remove inset lights

Break and remove the concrete

Build up the subsurface and granular placement (using recycled concrete)

Install base cans for inset lights



Pave Asphalt

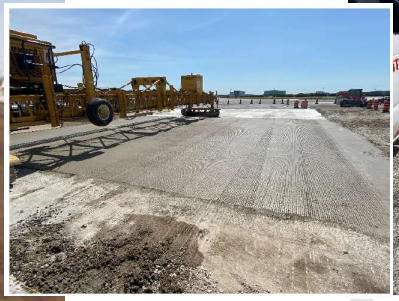
Complete Line Painting

Mill the surface to remove the asphalt

Crush the concrete

Install the Cement Stabilized base (CSB)

Pave concrete



Install Inset lights

Project Progress (06L/24R): September 2022

- Work is sequenced to proceed from left to right (west to east).
- The project is currently focused on east end of the runway including the high-speed taxiways and hold bays.

Project is progressing well and currently on track to be completed by end of November as planned.

Photos of the Rehabilitation Area

Stage 2A: Breaking existing concrete slabs on Runway keel section at Taxiway D5 intersection for removal.

Stage 1D: Stripping runway edges for grass adjustments.

Stage 1C: Placing sod at Taxiway D1 along asphalt edg

Stage 1D: Burlap, tining and white cure finishing of PCC slip form paving.

Stage 1D: Taxiway D3 centreline and double yellow edge markings painted.

Stage 1D: Installing old D3 sign on new guidance sign base.

Stage 2C: Placement of granular base and installation of geotextile and geogrid.

Stage 1D: Runway centreline markings at Taxiway D3 ibntersection (1st coat)

Stage 1C: Surveyor marking vertices of concrete slabs below asphalt for routting and sealing.

Stage 1C: Rolling and compaction of base asphalt on ru keel section.

Stage 1C: 6 asphalt spreaders paving in escalon Taxiway D1.

Stage 1C: Pouring concrete for Taxi D2 stop bar.

Stage 1D: Pouring the guidance signs base on Taixway D3.

Stage 1C: Re-connect the cables from north runway side Taxiway D3 stop bar to the transformers in the pull pit

Stage 1C: PCC slip form paving via concrete belt feeder.

Stage 1C: Installation of electrical manhole at Taxiway stop bar.

Stage 1C: Relief cuts on new PCC slab joints.

Night Shift: Thermoplastic paint at Taxi C4

Operational & Community Impacts Look Forward

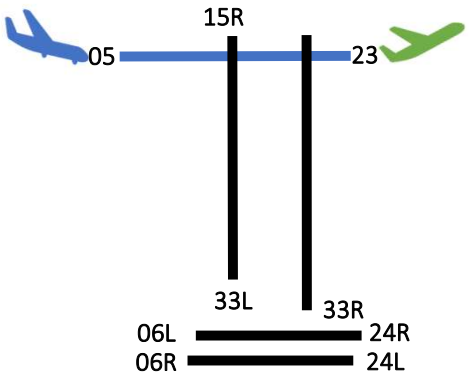
Runway Configurations

Runways are configured as a system to maximize efficiency based on traffic levels. There are four main options:

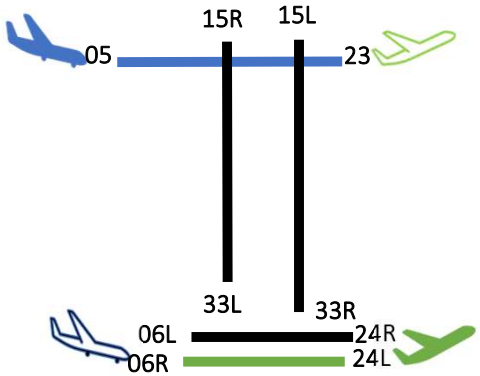
1. **Single** – very low traffic
2. **Land One, Depart One** – low traffic
3. **Dual** – high traffic
4. **Triple** – very high traffic

Due to runway closure - Land One, Depart One configuration is currently being used despite high traffic levels. This means a higher concentration of traffic on main runways in use. **This higher than typical rate of traffic is driving increased complaints.**

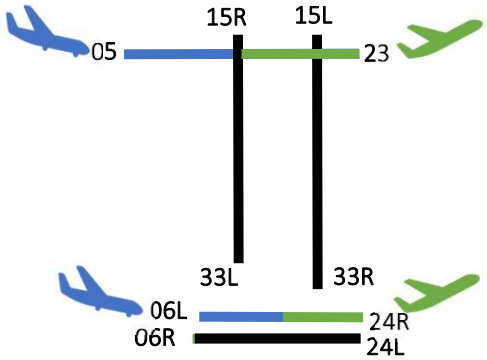
Single



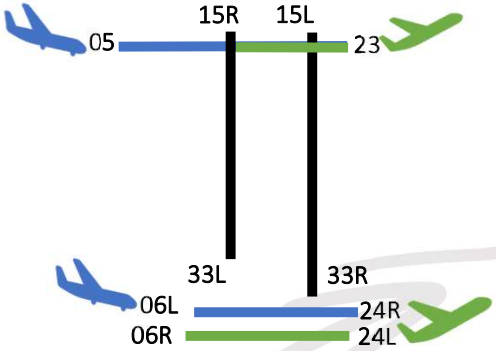
Land One, Depart One



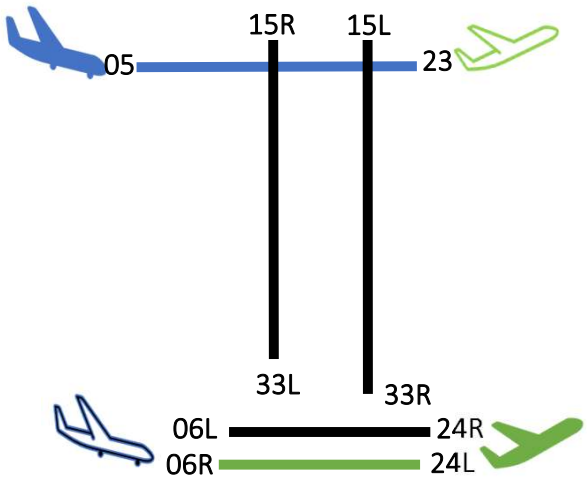
Dual



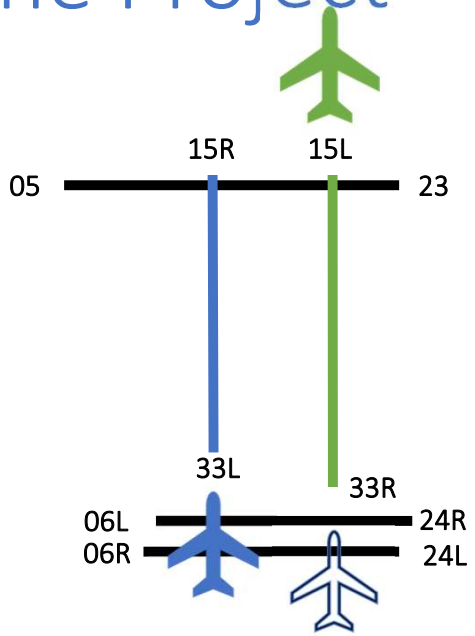
Triple



Runway Configurations During the Project



Land One, Depart One



East/West –the airport is using the east/west runways in a land one, depart one configuration in a traffic level scenario that would usually call for dualling or tripling.

- offloads may be more frequent, and residents affected by the 'main' runways can expect more traffic. **It may feel like more traffic than in 2019**.

North/South – at times, depending on temporary restrictions on the airfield during different phases of the runway rehabilitation, the North/South configuration will be the most suitable choice to handle a higher rate of traffic than a land one, depart one East/West configuration. This means that residents affected by North/South runway operations can expect more traffic.

WC0

Northeast

Arrivals Runway 23, Departures Runway 05

Main Ridings impacted:

Etobicoke North, Humber River-Black Creek, Vaughan-Woodbridge, Thornhill, King Vaughan

Slide 39

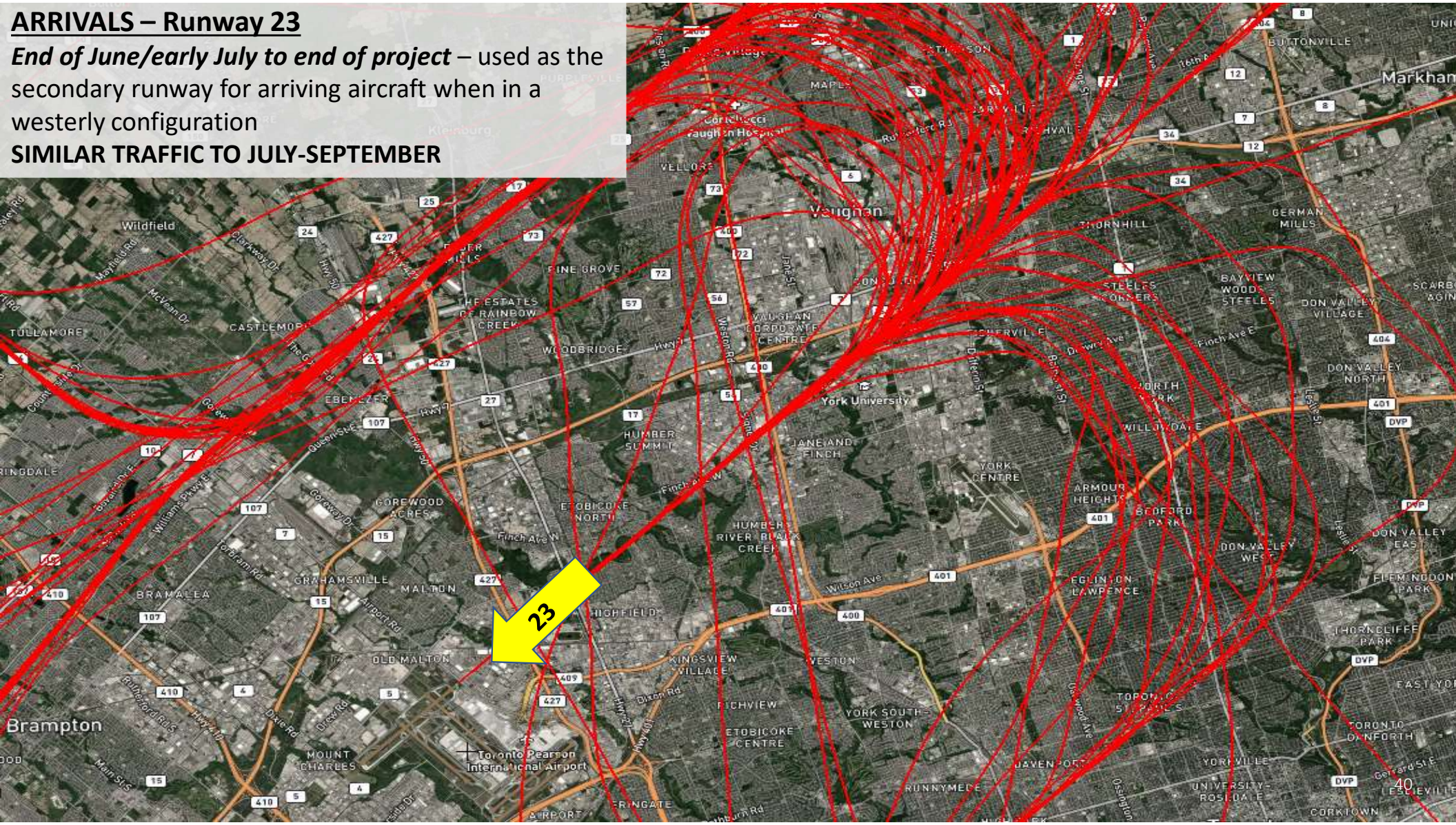
WC0 [@Belanger, Michael] I've kept the impacts the same as for June-Sep with an indication of higher use of the North/South ops. We did have percentages last time of what was used in phase 1, but I don't have here. I don't really think it's necessary. I can have something ready from the monday updates

Woods, Cynthia, 2022-09-19T17:12:16.540

ARRIVALS – Runway 23

End of June/early July to end of project – used as the secondary runway for arriving aircraft when in a westerly configuration

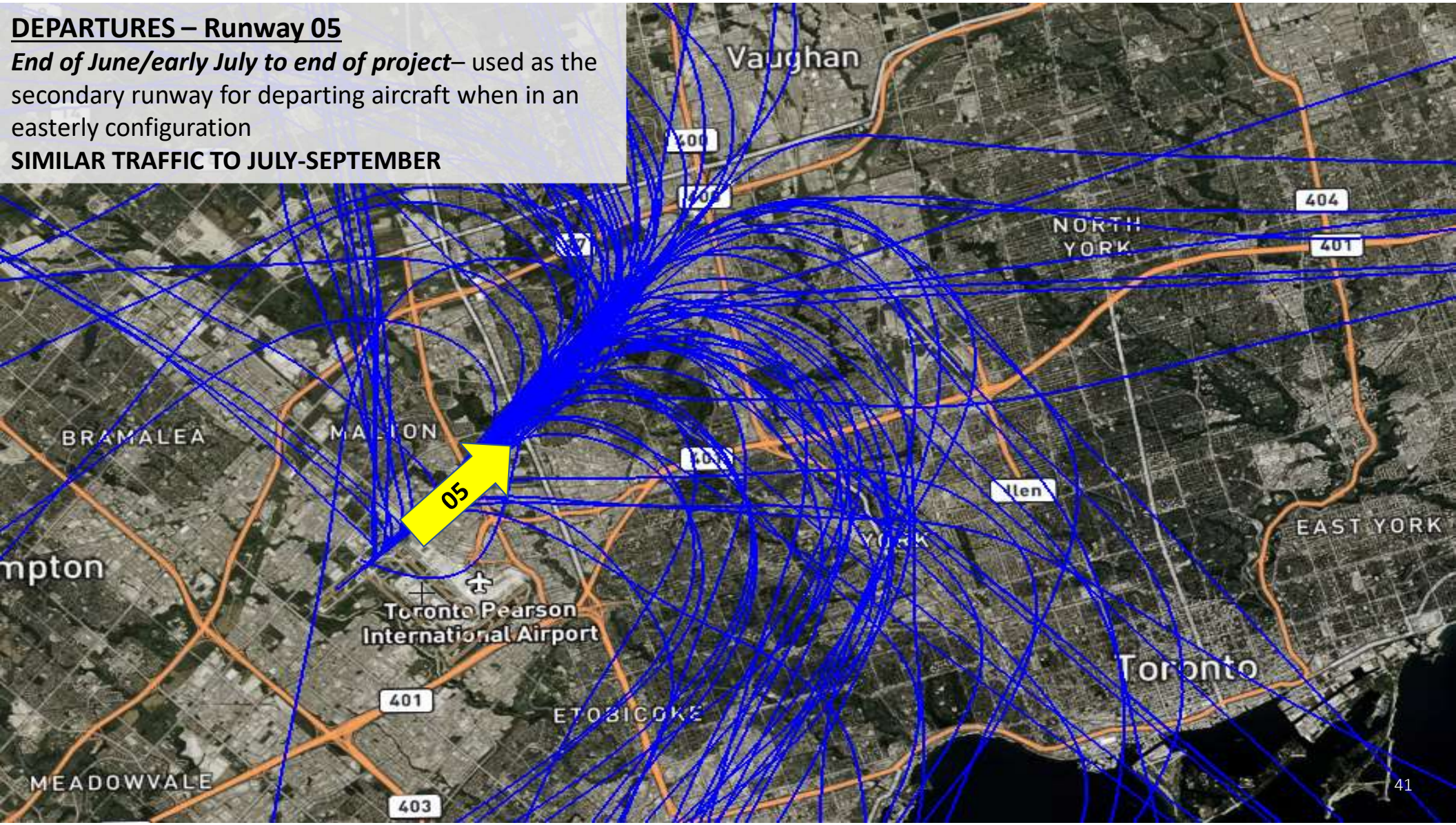
SIMILAR TRAFFIC TO JULY-SEPTEMBER



DEPARTURES – Runway 05

End of June/early July to end of project– used as the secondary runway for departing aircraft when in an easterly configuration

SIMILAR TRAFFIC TO JULY-SEPTEMBER



Southeast
Arrivals Runway 24L/R
Departures Runway 06L/R

Main Ridings Impacted:

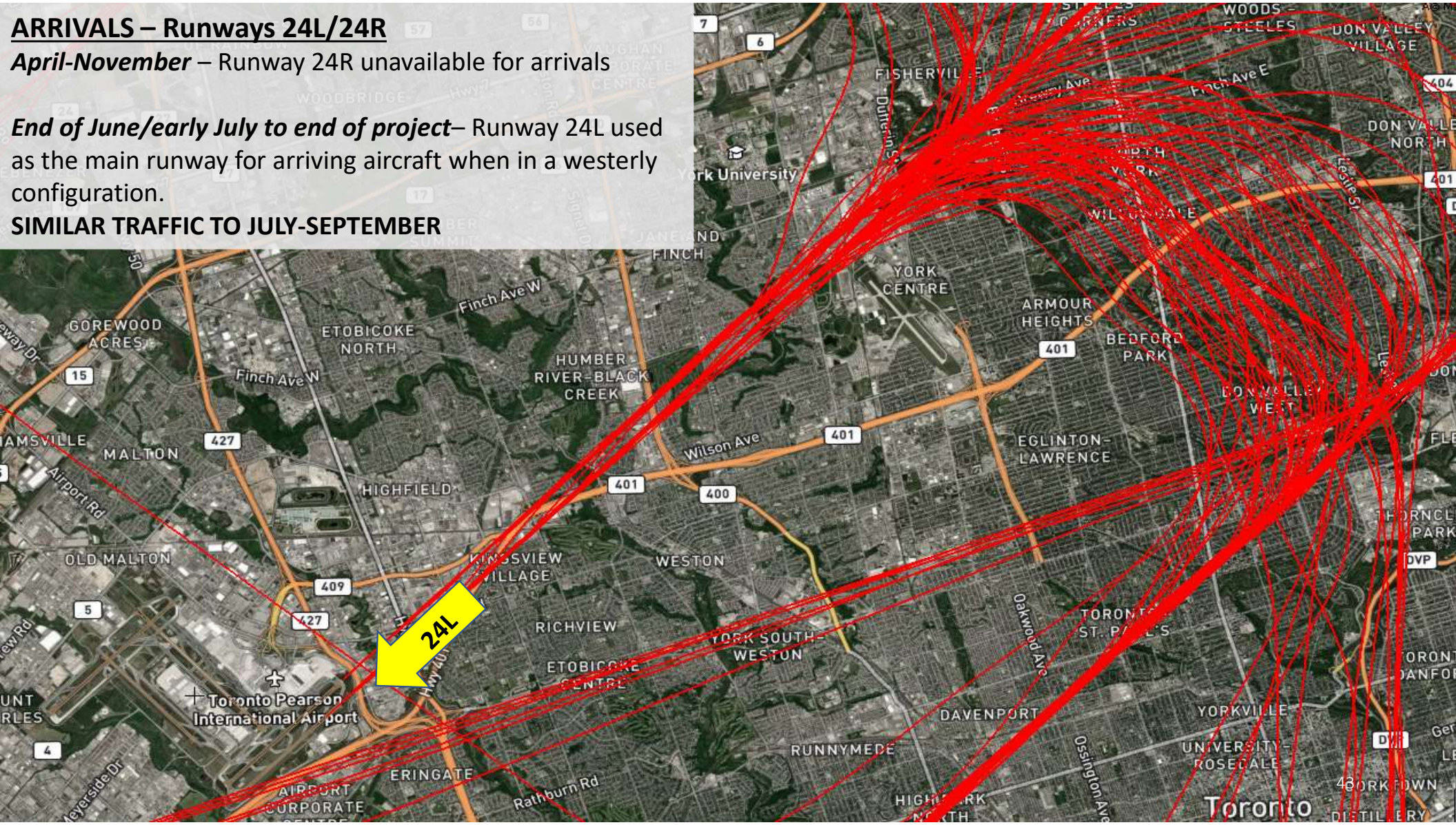
Etobicoke-Centre (northeast), Etobicoke-North (south), Humber River Black Creek (south), York South Weston, York Centre, Willowdale, Don Valley North, Don Valley East, Don Valley West, Toronto St Paul's, Davenport, High Park Parkdale

ARRIVALS – Runways 24L/24R

April-November – Runway 24R unavailable for arrivals

End of June/early July to end of project– Runway 24L used as the main runway for arriving aircraft when in a westerly configuration.

SIMILAR TRAFFIC TO JULY-SEPTEMBER



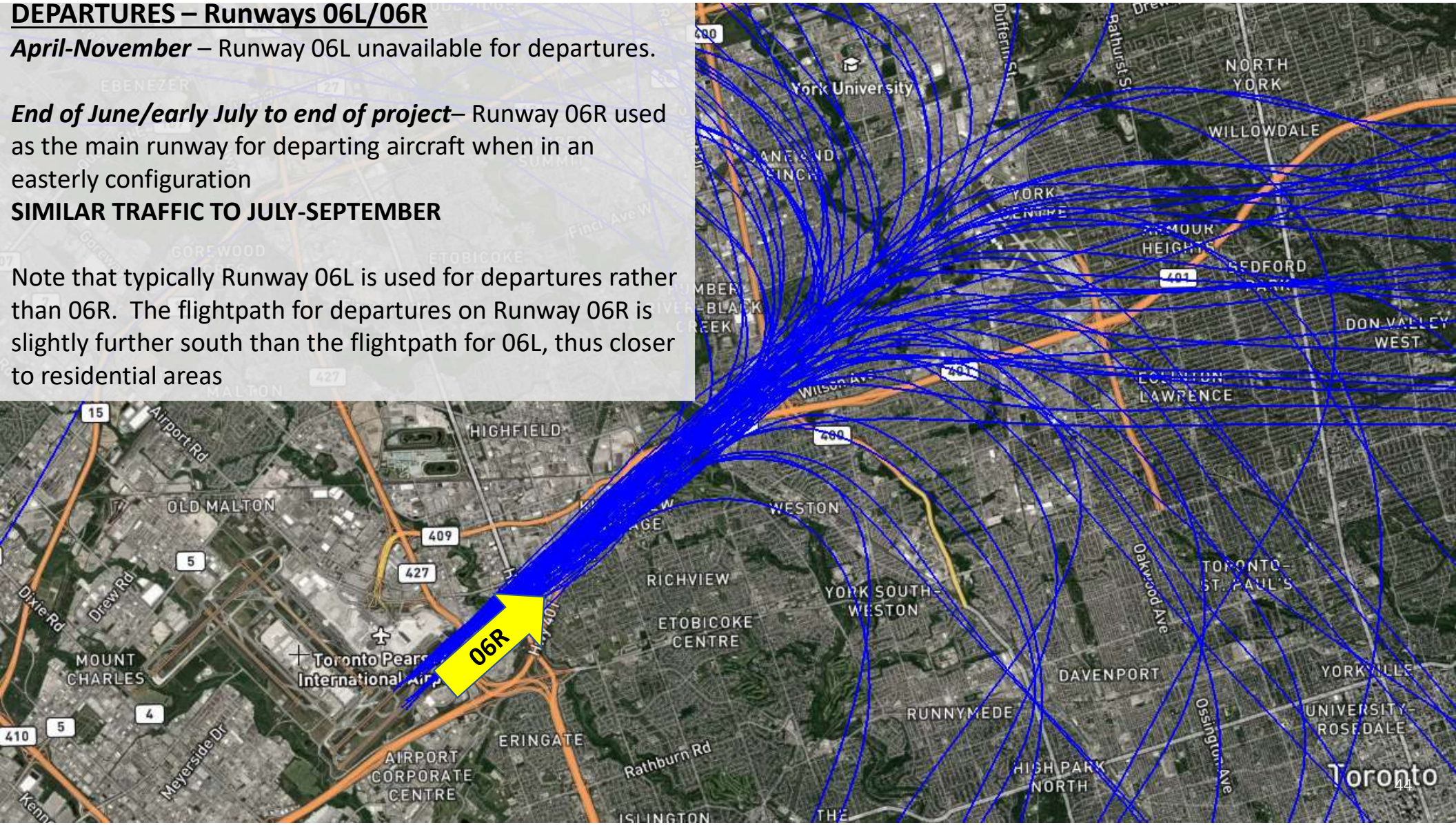
DEPARTURES – Runways 06L/06R

April-November – Runway 06L unavailable for departures.

End of June/early July to end of project– Runway 06R used as the main runway for departing aircraft when in an easterly configuration

SIMILAR TRAFFIC TO JULY-SEPTEMBER

Note that typically Runway 06L is used for departures rather than 06R. The flightpath for departures on Runway 06R is slightly further south than the flightpath for 06L, thus closer to residential areas



Northwest
Arrivals Runway 05
Departures Runway 23

Main Ridings Impacted:

Brampton, Georgetown, Milton, Meadowvale, Streetsville

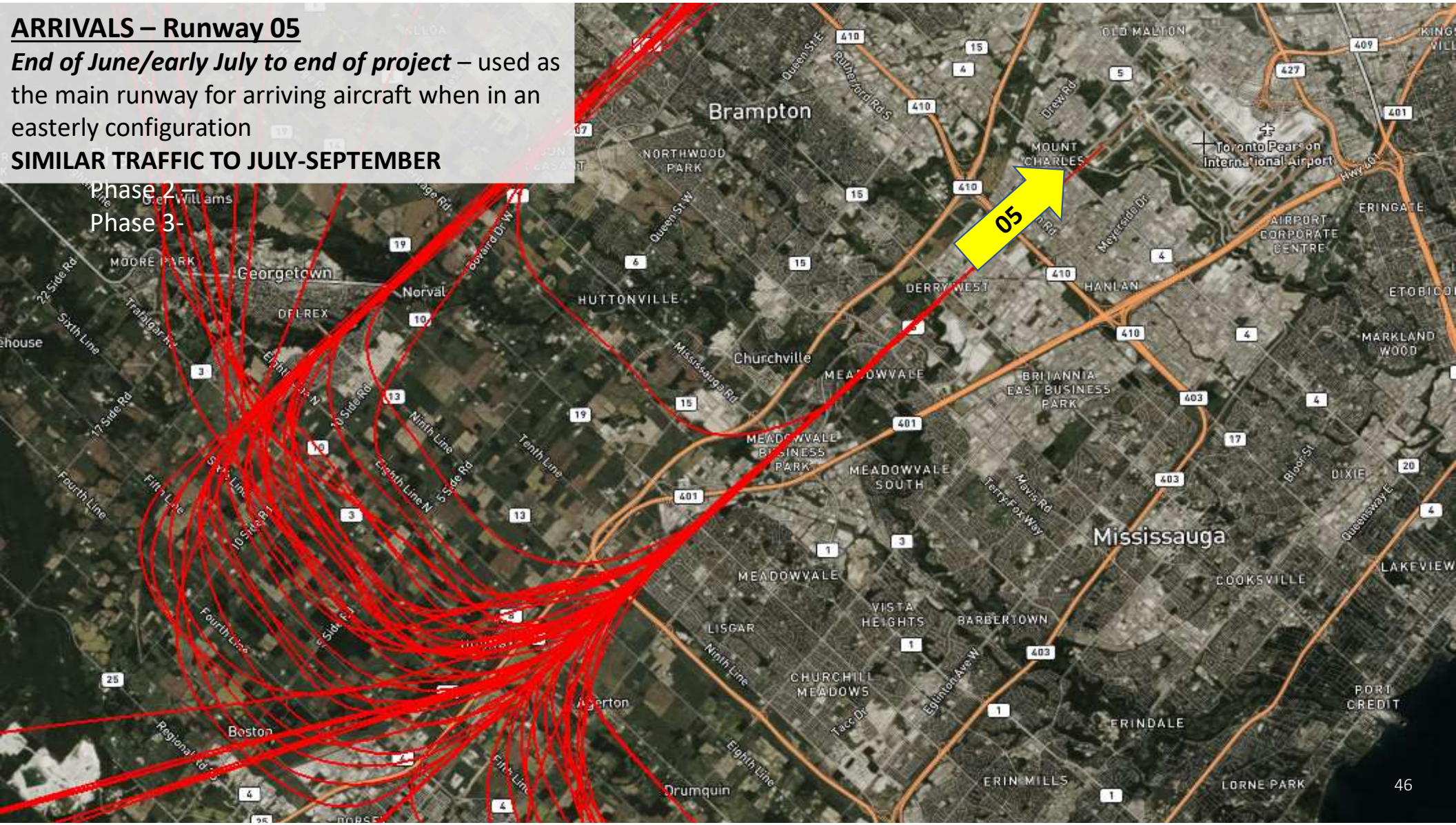
ARRIVALS – Runway 05

End of June/early July to end of project – used as the main runway for arriving aircraft when in an easterly configuration

SIMILAR TRAFFIC TO JULY-SEPTEMBER

Phase 2 –

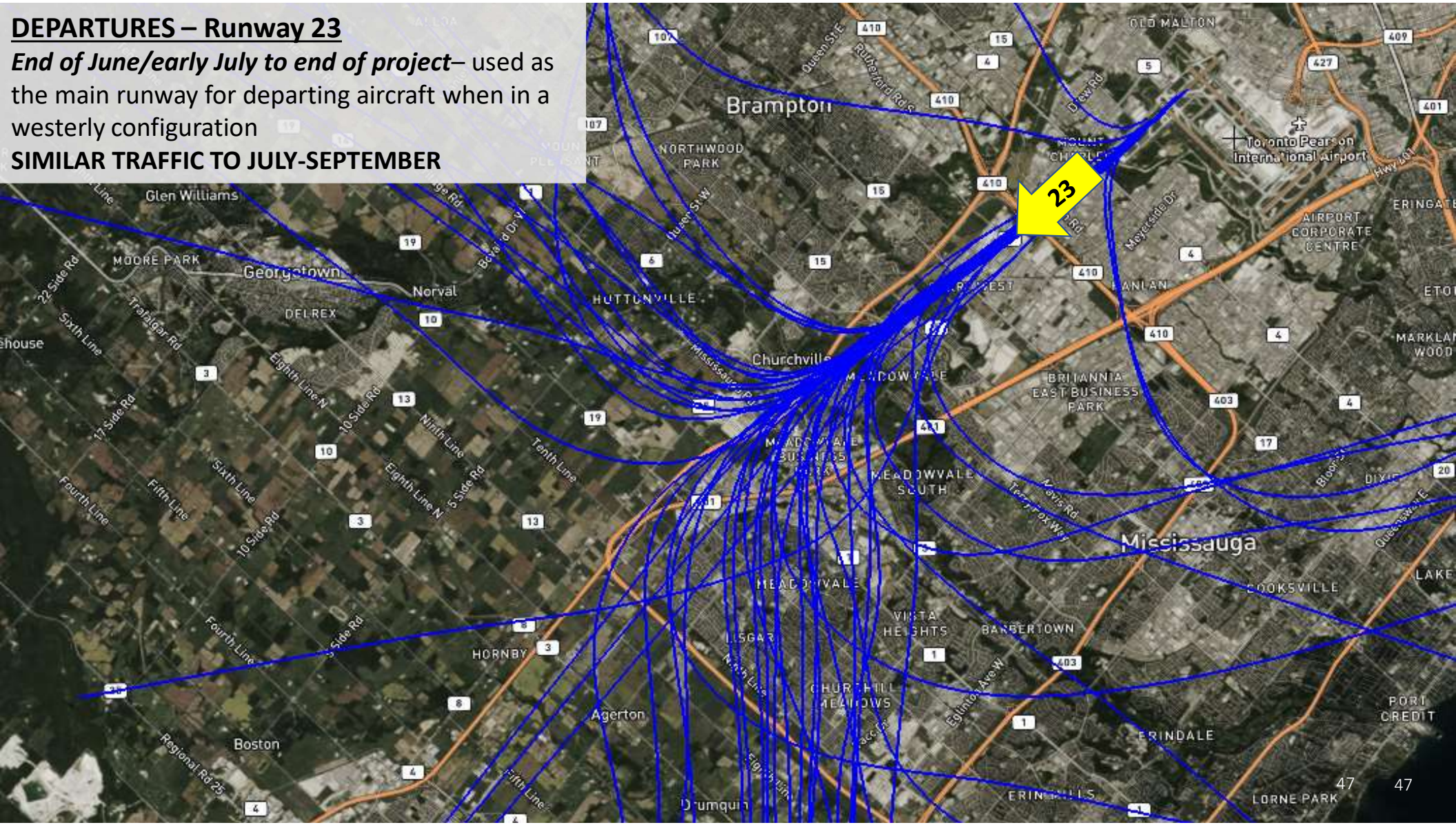
Phase 3-



DEPARTURES – Runway 23

End of June/early July to end of project– used as the main runway for departing aircraft when in a westerly configuration

SIMILAR TRAFFIC TO JULY-SEPTEMBER



47

Southwest
Arrivals Runway 06L/R
Departures Runway 24L/R

Main Ridings impacted:

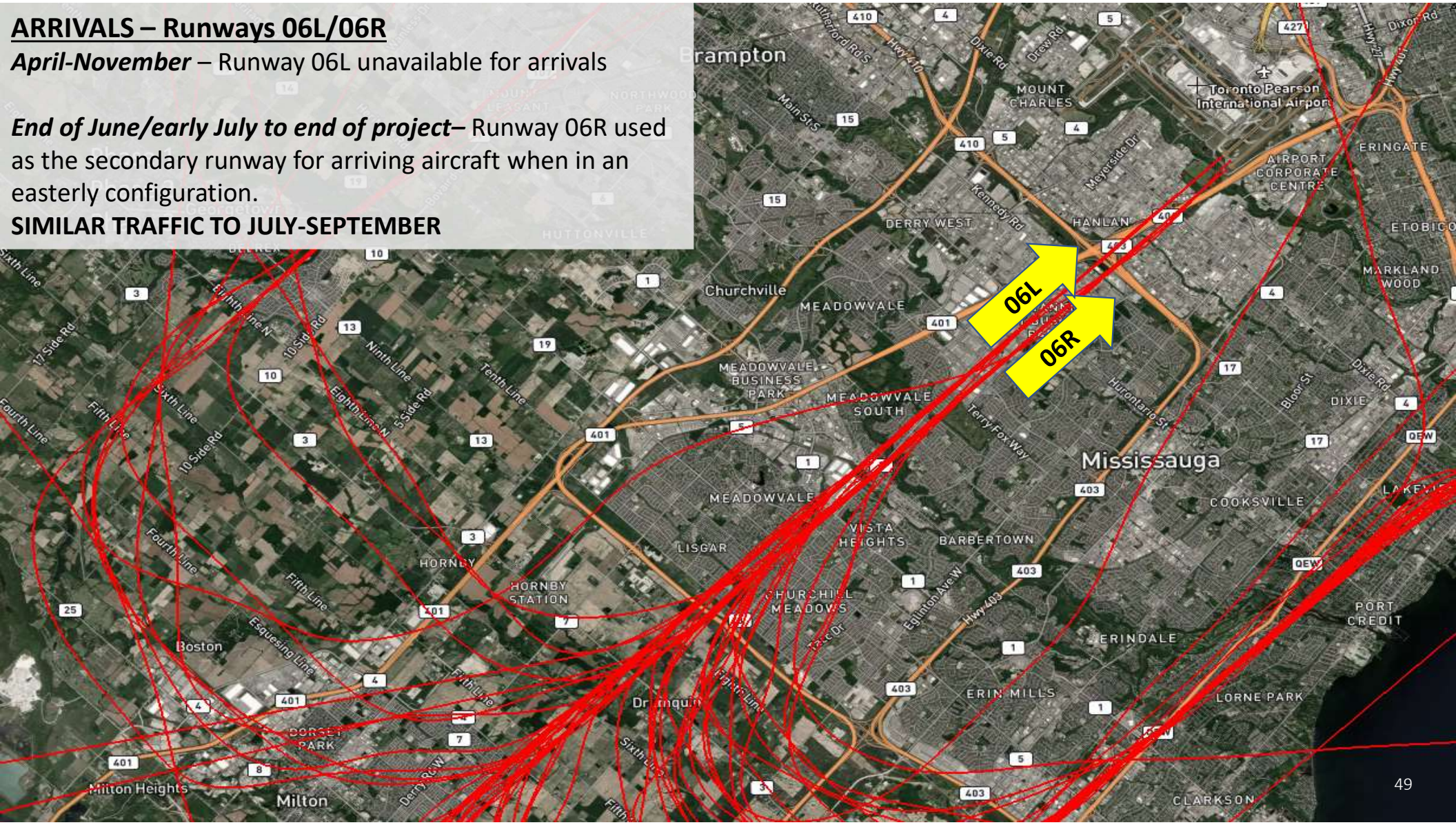
Mississauga-Malton (south), Mississauga-Streetsville, Mississauga-Erin Mills, Milton, Oakville-North Burlington

ARRIVALS – Runways 06L/06R

April-November – Runway 06L unavailable for arrivals

End of June/early July to end of project– Runway 06R used as the secondary runway for arriving aircraft when in an easterly configuration.

SIMILAR TRAFFIC TO JULY-SEPTEMBER



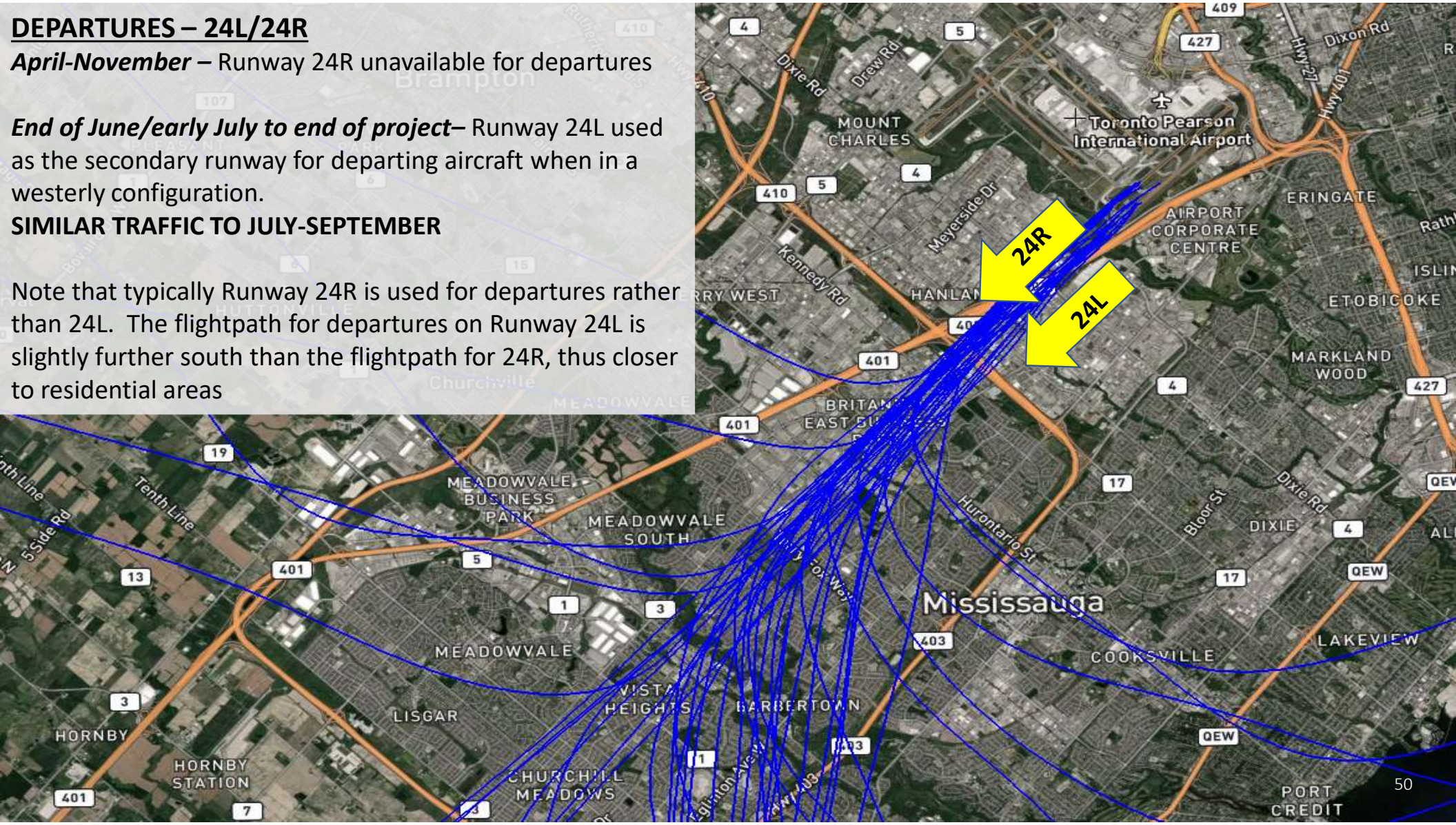
DEPARTURES – 24L/24R

April-November – Runway 24R unavailable for departures

End of June/early July to end of project– Runway 24L used as the secondary runway for departing aircraft when in a westerly configuration.

SIMILAR TRAFFIC TO JULY-SEPTEMBER

Note that typically Runway 24R is used for departures rather than 24L. The flightpath for departures on Runway 24L is slightly further south than the flightpath for 24R, thus closer to residential areas



North
Arrivals Runway 15L/R
Departures Runway 33L/R

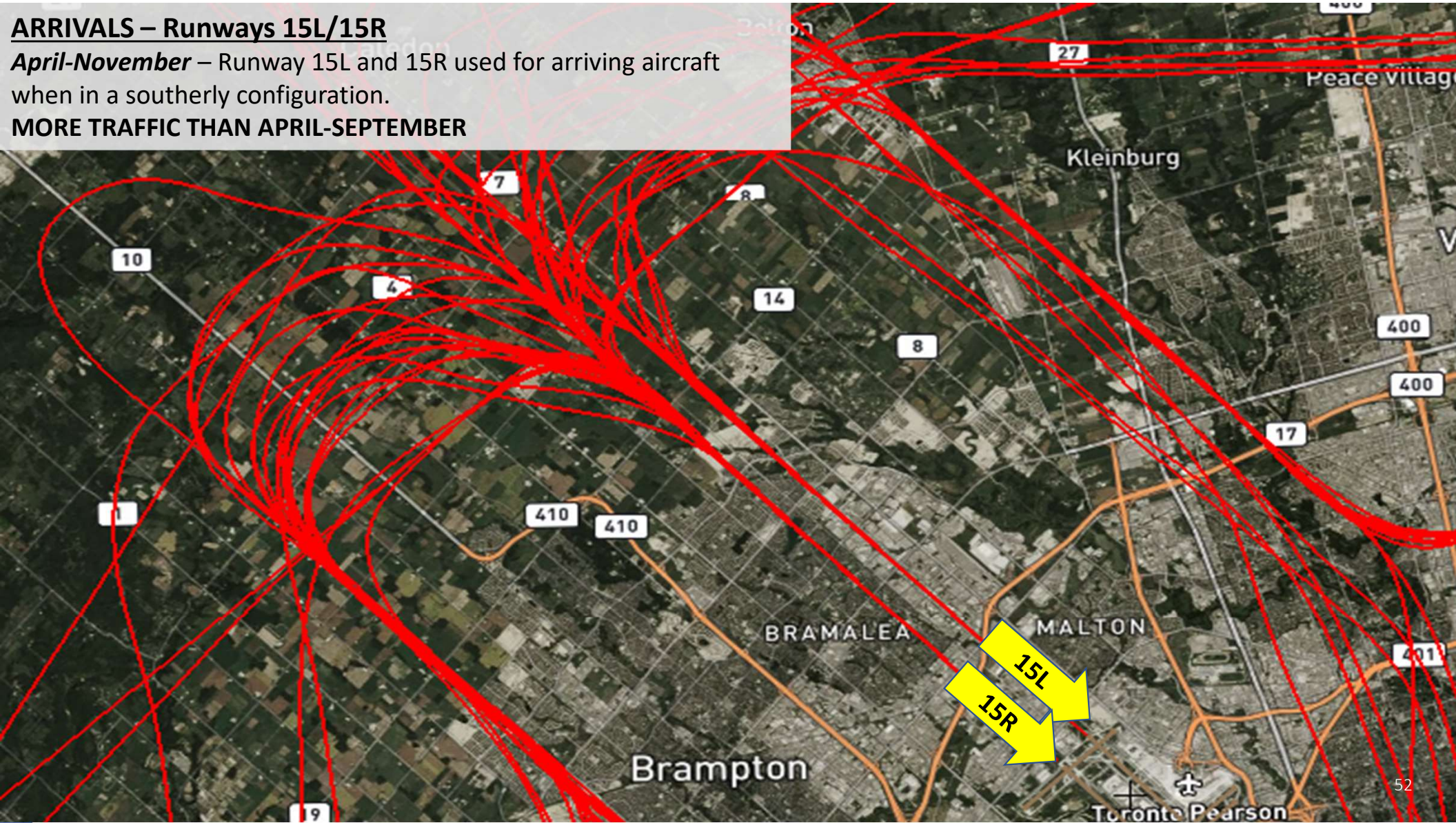
Main Ridings impacted:

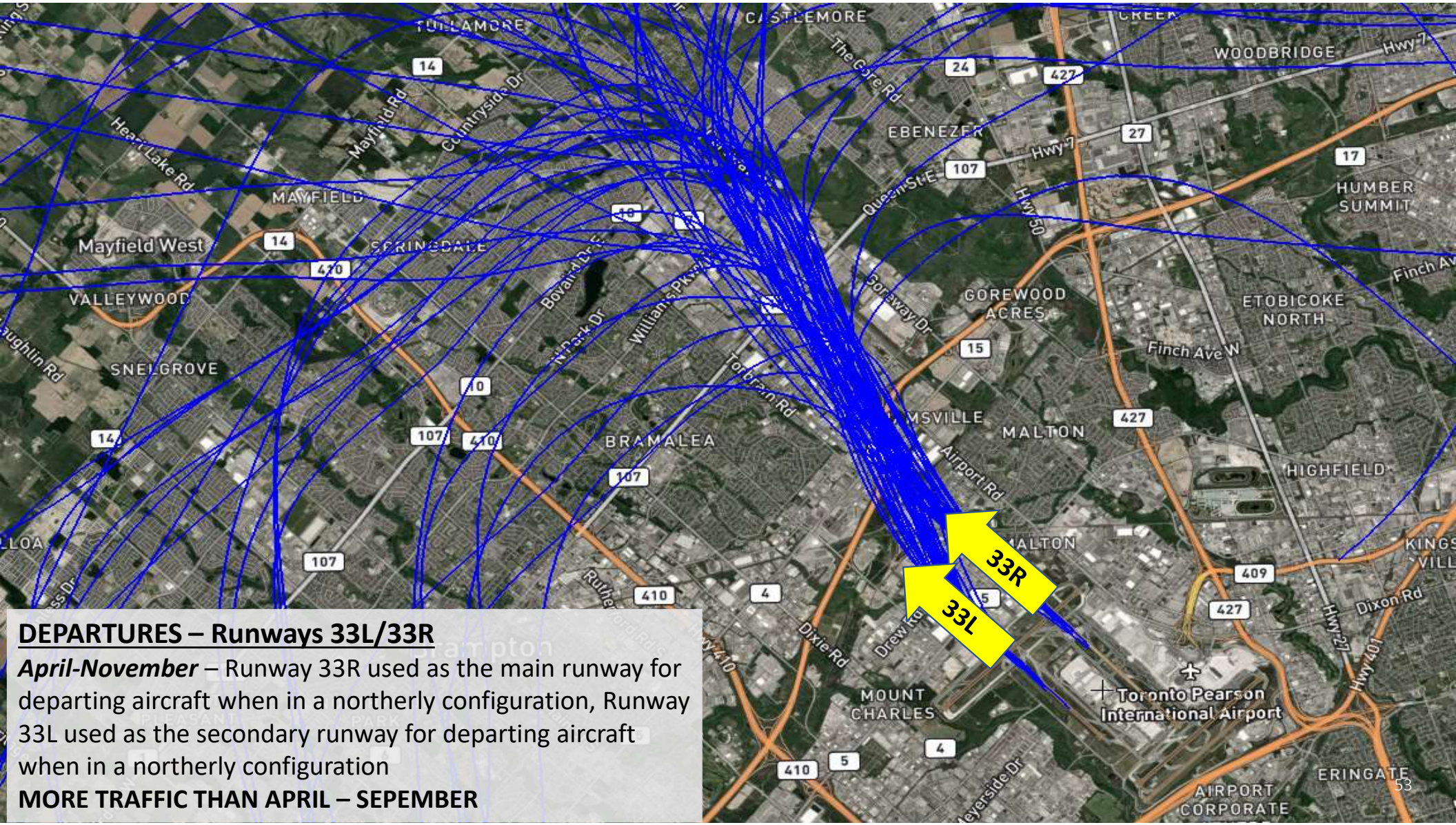
Mississauga-Malton (north), Brampton-East, Brampton Centre, Brampton North, Dufferin-Caledon

ARRIVALS – Runways 15L/15R

April-November – Runway 15L and 15R used for arriving aircraft when in a southerly configuration.

MORE TRAFFIC THAN APRIL-SEPTEMBER





DEPARTURES – Runways 33L/33R

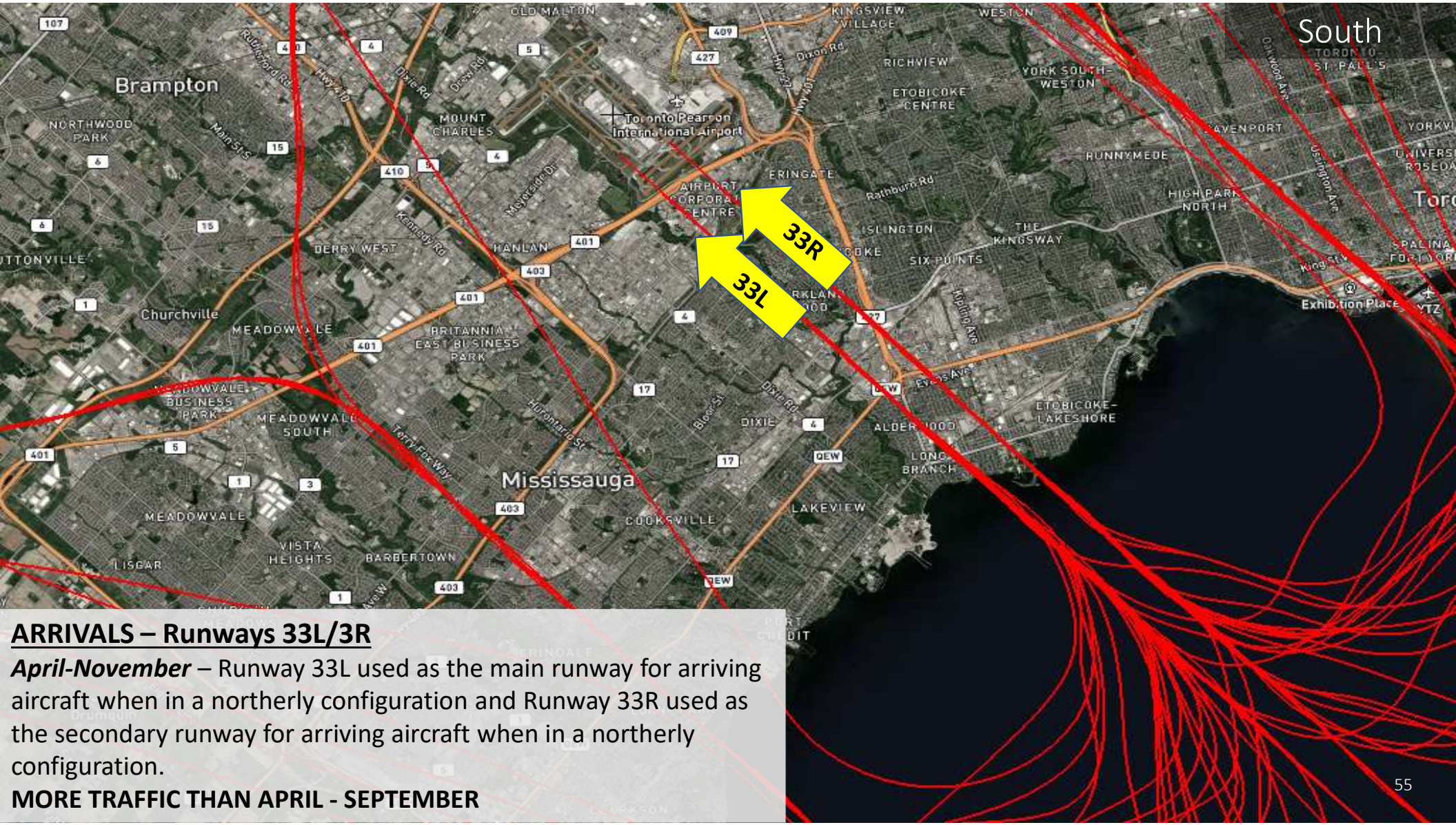
April-November – Runway 33R used as the main runway for departing aircraft when in a northerly configuration, Runway 33L used as the secondary runway for departing aircraft when in a northerly configuration

MORE TRAFFIC THAN APRIL – SEPEMBER

South
Arrivals Runway 33L/R
Departures Runway 15L/R

Main Ridings impacted:

Etobicoke-Centre, Etobicoke-Lakeshore, Mississauga – East Cooksville



ARRIVALS – Runways 33L/3R

April-November – Runway 33L used as the main runway for arriving aircraft when in a northerly configuration and Runway 33R used as the secondary runway for arriving aircraft when in a northerly configuration.

MORE TRAFFIC THAN APRIL - SEPTEMBER

DEPARTURES – Runways 15L/15R

April-November – Runway 15L used as the main runway for departing aircraft when in a southerly configuration and Runway 15R used as the secondary runway for departing aircraft when in a southerly configuration

MORE TRAFFIC THAN APRIL - SEPTEMBER

Summary – Community Impacts

Main Impacted Ridings	Operations	April-June	July-Sep	Sep-Nov
Northeast - Etobicoke North, Humber River-Black Creek, Vaughan-Woodbridge, Thornhill, King Vaughan	Arr Rwy 23, Dep Rwy 05	Heavy use	Lower use	Lower use
Southeast - Etobicoke-Centre(northeast), Etobicoke-North (south), Humber River Black Creek (south), York South Weston, York Centre, Willowdale	Arr Rwy 24L, Dep Rwy 06R	Very low use	Heavy use	Heavy use
Northwest - Mississauga Malton, Mississauga Streetsville, Brampton South, Brampton West, Brampton North Wellington Halton Hills, Milton	Arr Rwy 05, Dep Rwy 23	Relatively low use	Heavy use	Heavy use
Southwest - Mississauga-Malton (south), Mississauga-Streetsville, Mississauga-Erin Mills, Milton, Oakville-North Burlington	Arr Rwy 06R, Dep Rwy 24L	Heavy use	Lower use.	Lower use.
North - Mississauga-Malton (north), Brampton-East, Brampton Centre, Brampton North, Dufferin-Caledon	Arr Rwy 15L/15R Dep Rwy 33L/33R	Relatively low use April and May, increasing in June	Higher use	Higher use
South - Etobicoke-Centre, Etobicoke-Lakeshore, Mississauga-East Cooksville	Arr Rwy 33L/33R Dep Rwy 15L/15R	Relatively low use	Higher use	Higher use

Stay in Touch

Visit dedicated web page torontopearson.com/runwayrehab

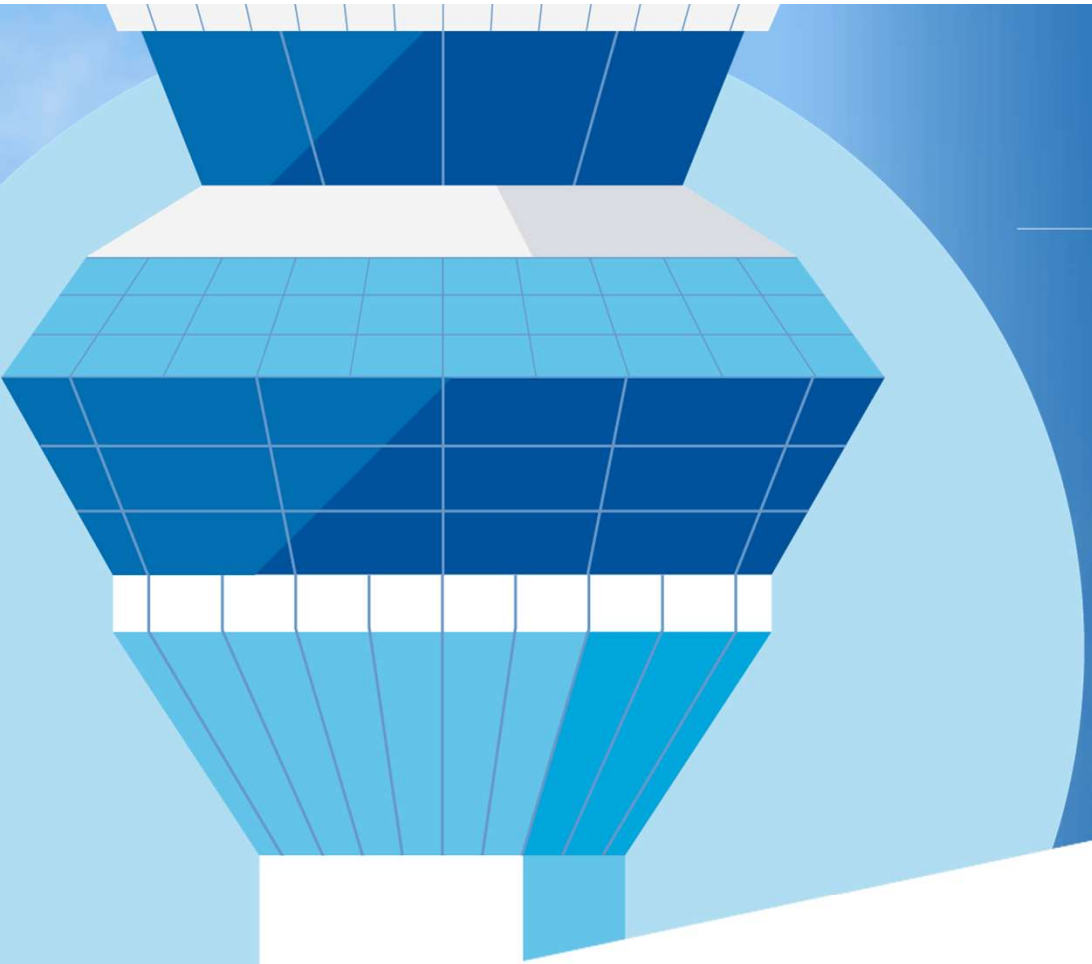
Sign up for our monthly community e-newsletter, Checking In at torontopearson.com/checkingin

Learn more about airport operations and community impacts at airportnoise.torontopearson.com

Email us a question, or invite us to attend a community meeting at community.engagement@gtaa.com

To log a complaint, call us at 416-247-7682 or submit online

NAV CANADA Updates



NAV CANADA UPDATE

Serving a world in motion
navcanada.ca

NAV CANADA

RNP-AR – THE PROJECT

- Leveraging RNP-AR to introduce new procedures to Toronto Pearson
- Originates from recommendations made in the Helios Report
- Opportunity to reduce the need for the High-Low split
- Delivers CDO and shorter track mileage
- No changes to departures or existing RNAV procedures
- Leverages new ICAO standard (Established on RNP)

Recommendation 3A: NAV CANADA should design Required Navigation Performance Authorization Required procedures that can reduce the need for a high / low operation, taking due consideration of the location of the tracks, and proceed to consultation to facilitate implementation as soon as is practicable.

Recommendation 3B: NAV CANADA should maximise the use of the Required Navigation Performance Authorization Required (RNP AR) procedure to incentivise those airlines not already capable of RNP AR to invest, as the RNP AR approach route will offer airlines a more fuel efficient arrival route.

PUBLIC CONSULTATION

PUBLIC CONSULTATION

Goals

- Accurately communicate information about expected changes and benefits to communities, as per the Airspace Change Communications and Consultation Protocol.
- Ensure that residents and businesses have the opportunity to learn about the proposed changes and provide their input.
- Consultation took place during winter 2021/2022.

PUBLIC CONSULTATION

Information Sessions

Public Information Sessions

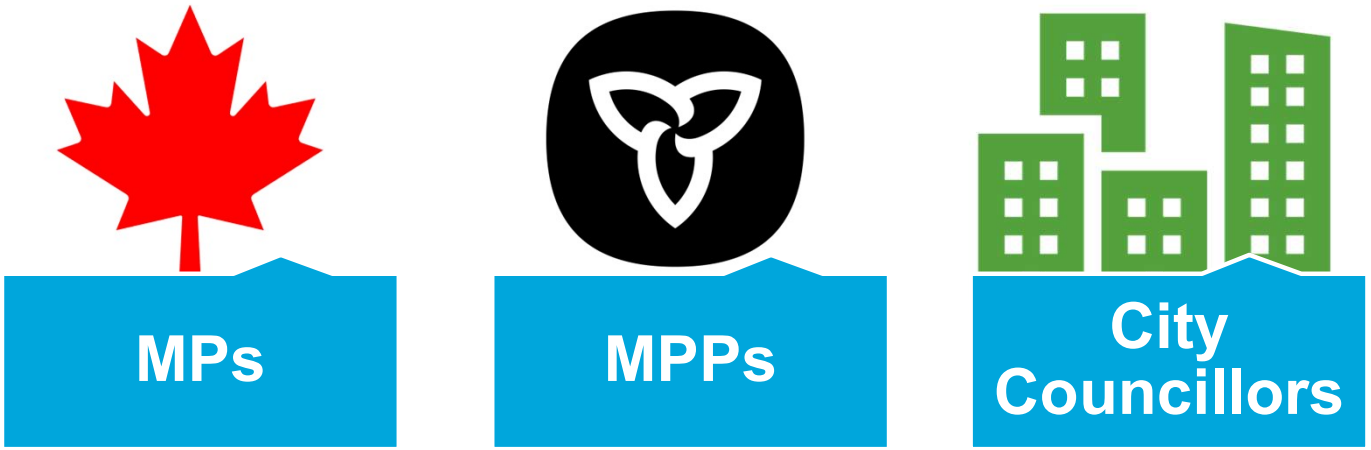
- 8 sessions
- 557 session registrations by 460 unique people
- 269 recorded attendees

One-on-One Information Sessions

- 119 sessions made available for booking
- 14 30-minute sessions delivered

PUBLIC CONSULTATION

Briefings to Elected Officials



Conducted proactive outreach to offices of 71 elected officials. Additional communications through the GTAA Noise Forums (Elected Official Briefing).

REPORT AND FINDINGS

REPORT AND FINDINGS

Feedback Summary

- Feedback gathered through online survey and during meetings
- Concerns related to aircraft overflight already experienced today versus proposed changes; this was echoed in the survey results.
- Many comments related to historical changes during past airspace changes in the region.
- Feedback about proposal showed preference for flight paths that avoid overflying populated areas where possible and aircraft altitudes that are higher for as long as possible.

REPORT AND FINDINGS

Adjustment Overview

Aircraft Altitude Increases

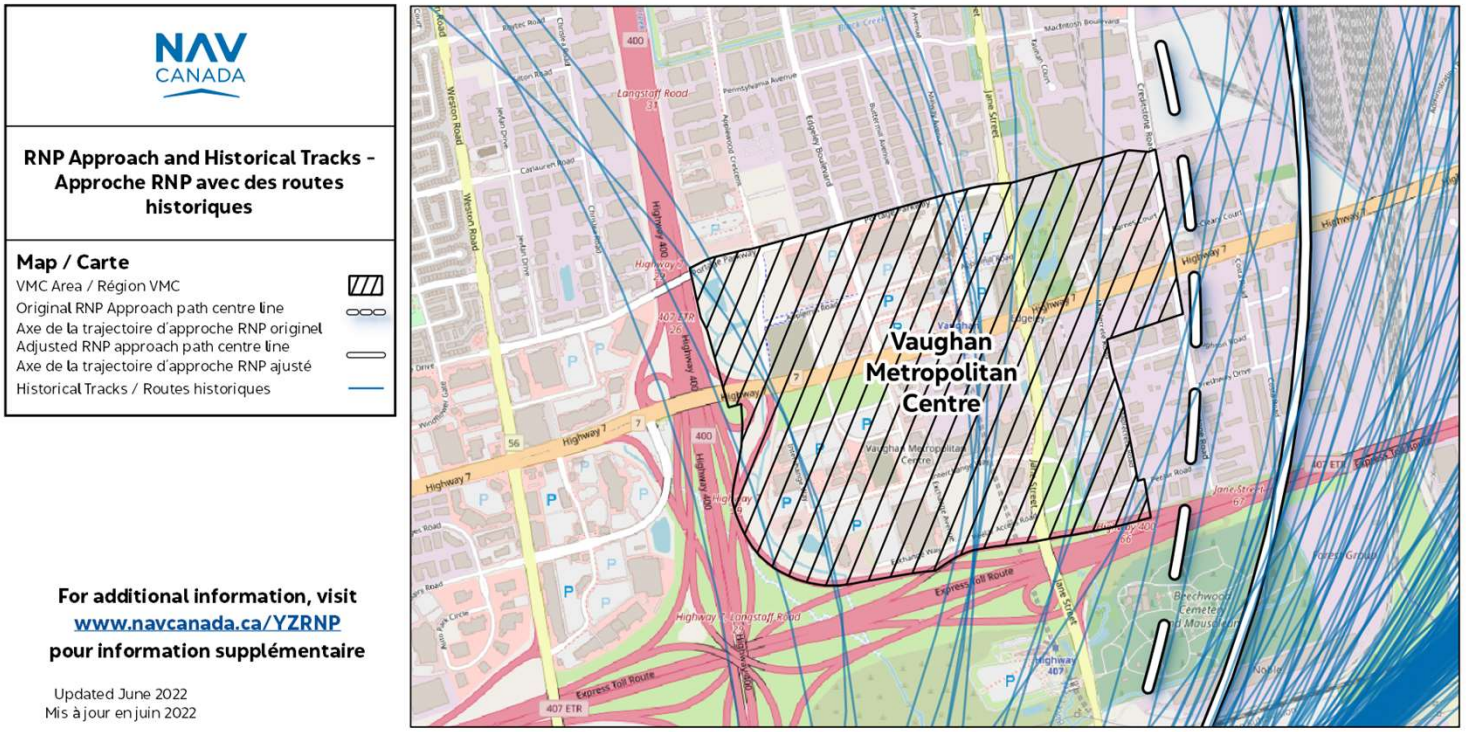
- Analysis identified the requirement for a steeper descent gradient.
- This lowers engine power required for aircraft to maintain constant descent.
- Practically, aircraft will stay at a higher altitude for longer while on the downwind prior to starting to descend on the RNP approach procedure.

Runway 23 Arc Location

- Received input from residents and City of Vaughan officials about the arc segment location with respect to the Vaughan Metropolitan Centre (VMC).
- Found that the arc segment could be relocated ~600 m further east.
- This places RNP flight path further away from the VMC development area and closer to the CN MacMillan train yard.

REPORT AND FINDINGS

Runway 23 Arc Segment Relocation



REPORT AND FINDINGS

Expected Result of Adjustments

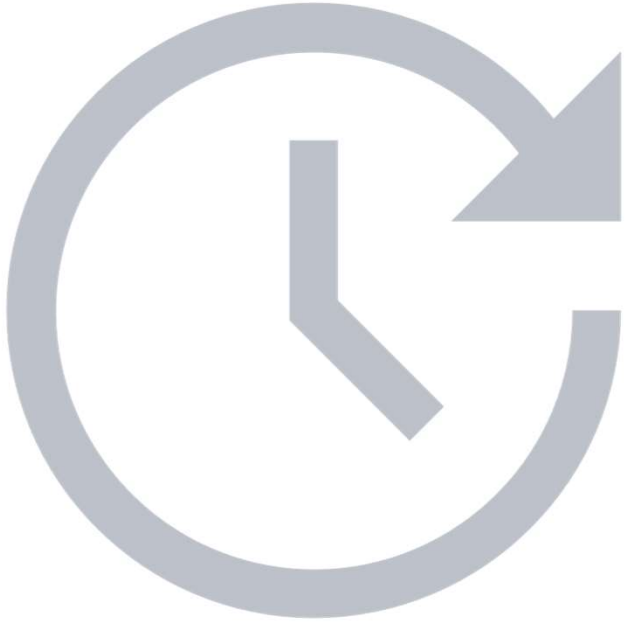
- Additional reduction expected in the number of people and homes estimated to be overflown by the RNP AR approach procedures.
  - RNP AR Runway 23 approach: Adjustments further reduce estimated overflight at noise levels at or above 60 dB(A) by 4,645 people and 1,296 homes.
  - RNP AR Runway 05 approach: Adjustments result in an estimated further reduction of 152 people in 45 homes overflown at noise levels at or above 60 dB(A).

REPORT AND FINDINGS

Consultation Report

- Consultation report is published
- Available on the Toronto RNP AR page on the NAV CANADA website (link below)

https://www.navcanada.ca/yzrnp



NEXT STEPS

NEXT STEPS

- RNP AR approach procedures to be published in November 2022
  - Start of actual usage will be adjusted based on 06L/24R construction project currently underway.
- An assessment of the change will be made by NAV CANADA and the GTAA following 180 days from implementation of RNP AR arrival routes.
  - 180-day review will be shared with the Noise Management Forums and published on NAV CANADA's website.

THANK YOU

Question Period

Thank You

Next Meeting: December 8, 2022