



# UPDATE ON THE 6 IDEAS (1-4)



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# THE 6 INITIATIVES

1. New approaches for night-time operations -  
**Implemented**
2. New departure procedures for night-time operations -  
**Implemented**
3. Increased downwind arrival speeds - **Implemented**
4. New technology to reduce the need for low altitude leveling by arriving aircraft – February Implementation
5. Weekend runway alternation 
6. Review of night-time Preferential Runway system 

# INITIATIVE #1 – NIGHT TIME APPROACHES

## Goal

- Minimize use of the downwinds at night
- Create RNAV approaches that incorporate quieter, continuous descent to the runway
- Design approaches to overfly greenbelt and industrial areas, where possible
- Ensure designs are user friendly for both ATC and customers, to maximise usage

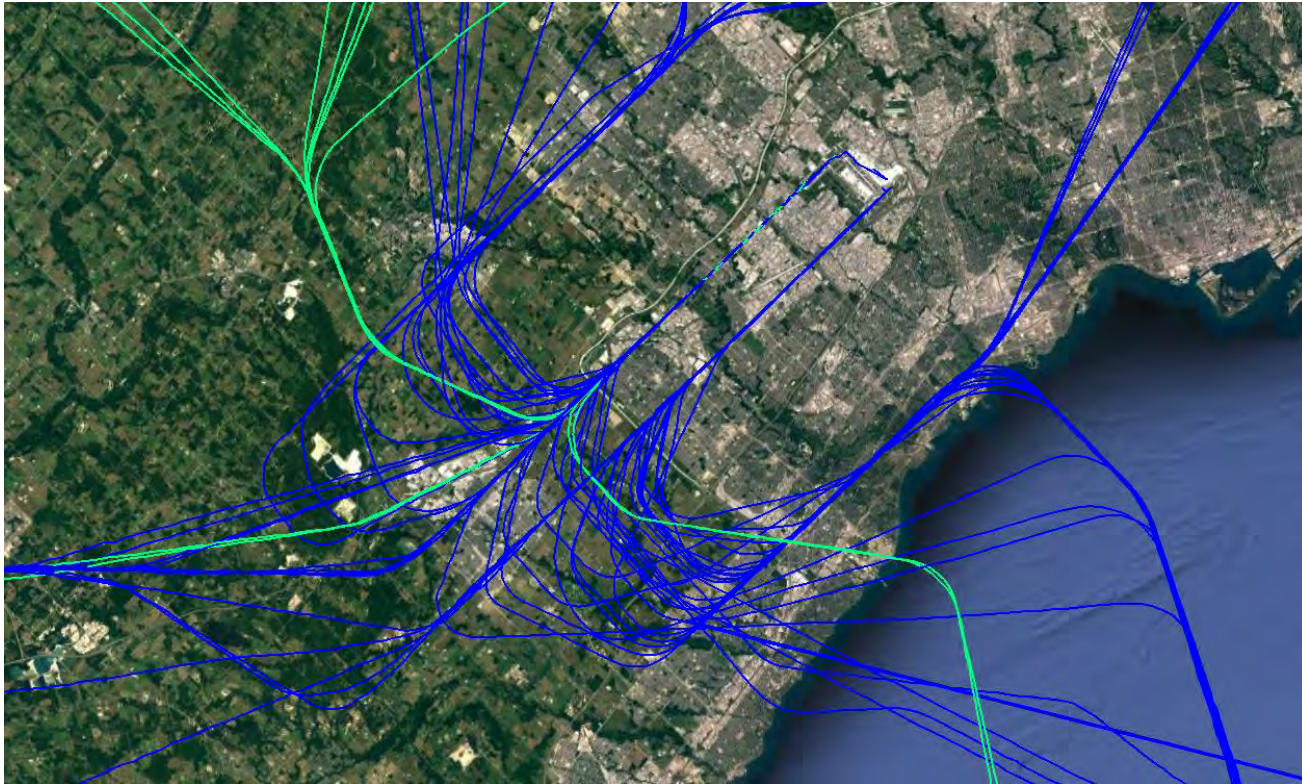
## Runway 05 nighttime arrivals



Noise analysis suggests that **29,000 fewer** people will be affected by noise levels  $>60\text{dBA}$  from overnight flights when Runway 05 is in use. This represents a reduction by as much as 22 percent depending on transition flown.



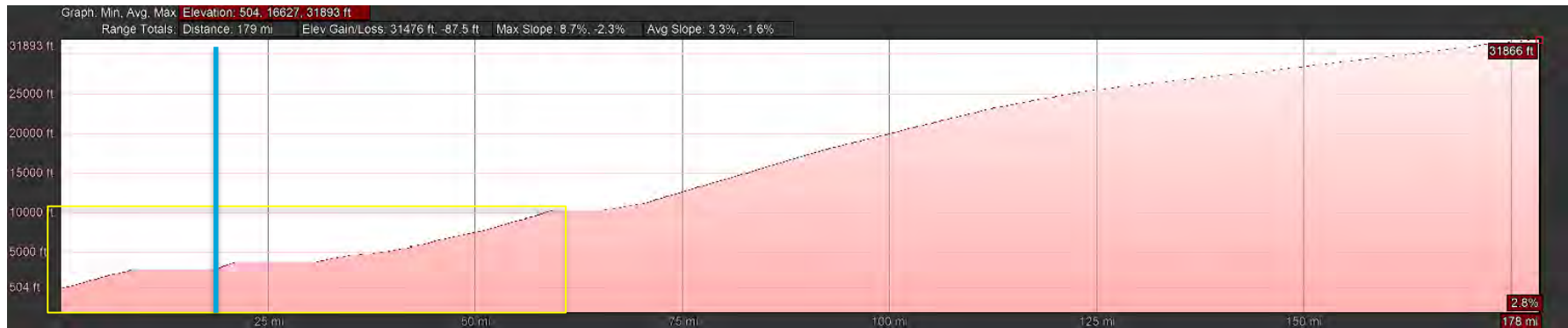
## Runway 05 nighttime arrivals



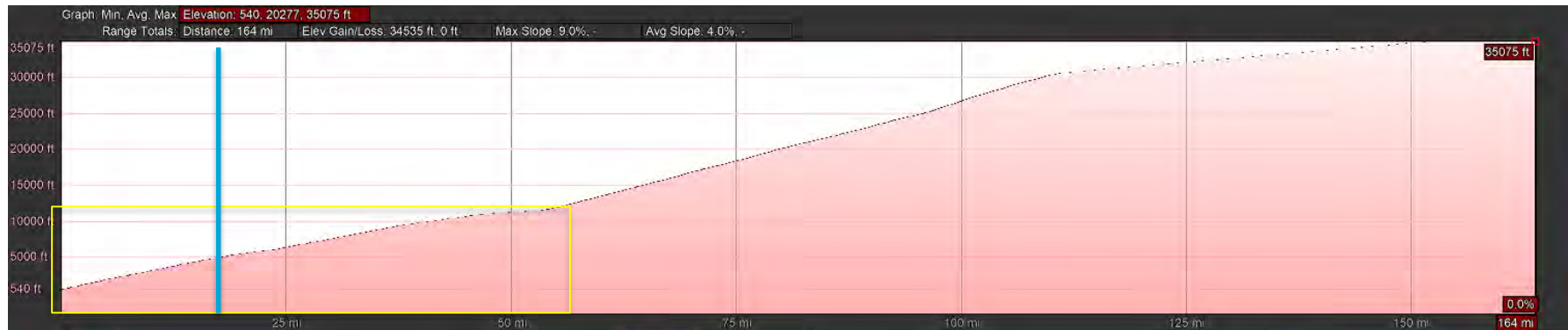
*Day + night traffic sample*

Noise analysis suggests that **29,000 fewer** people will be affected by noise levels  $>60\text{dBA}$  from overnight flights when Runway 05 is in use. This represents a reduction by as much as 22 percent depending on transition flown.

## Stepped down



## Continuous descent (night approach)



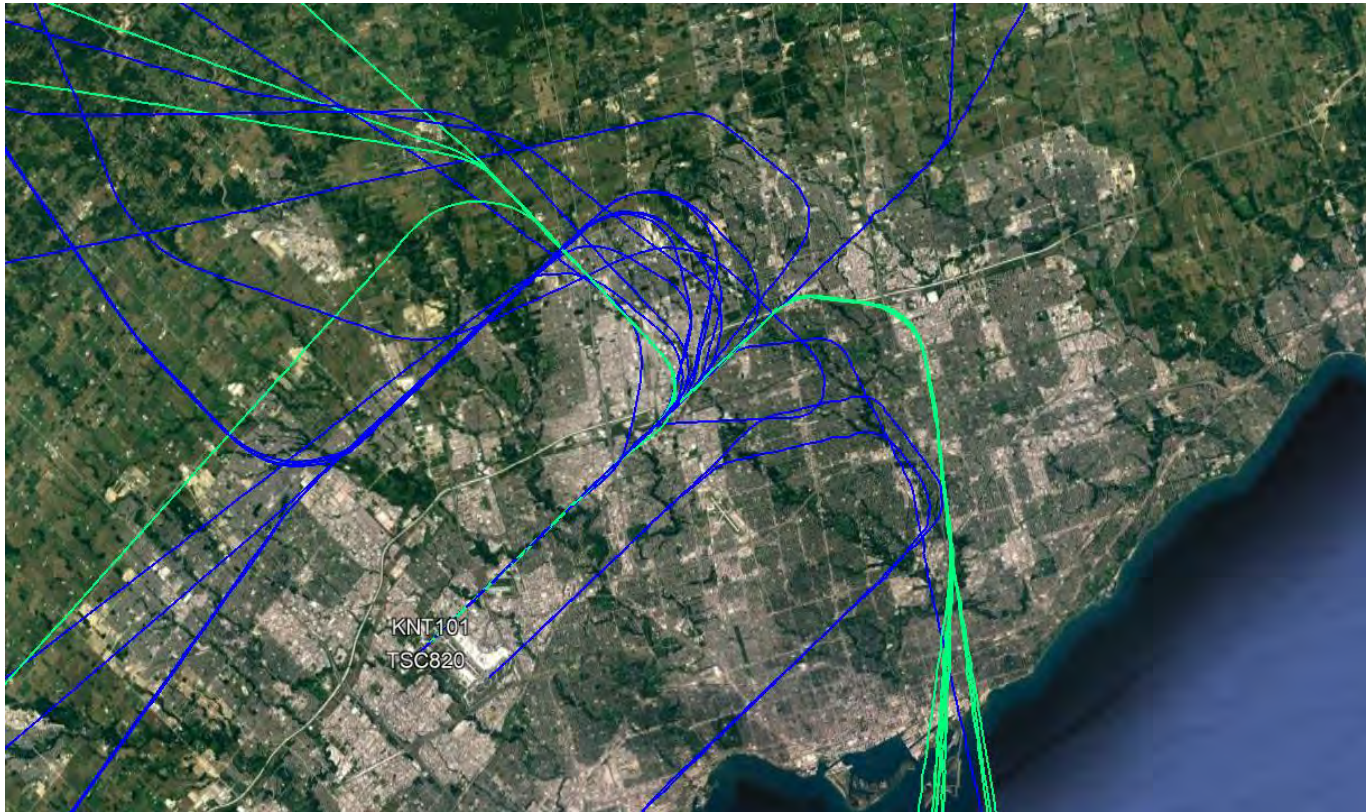


## Runway 23 nighttime arrivals



Noise analysis suggests that **112,000 fewer** people will be affected by noise levels >60dBA from overnight flights when Runway 05 is in use. This represents a reduction by as much as 44 percent depending on transition flown.

## Runway 23 nighttime arrivals



*Day + night traffic sample*

Noise analysis suggests that **112,000 fewer** people will be affected by noise levels >60dBA from overnight flights when Runway 05 is in use. This represents a reduction by as much as 44 percent depending on transition flown.



## INITIATIVE #2 – NIGHT TIME DEPARTURES

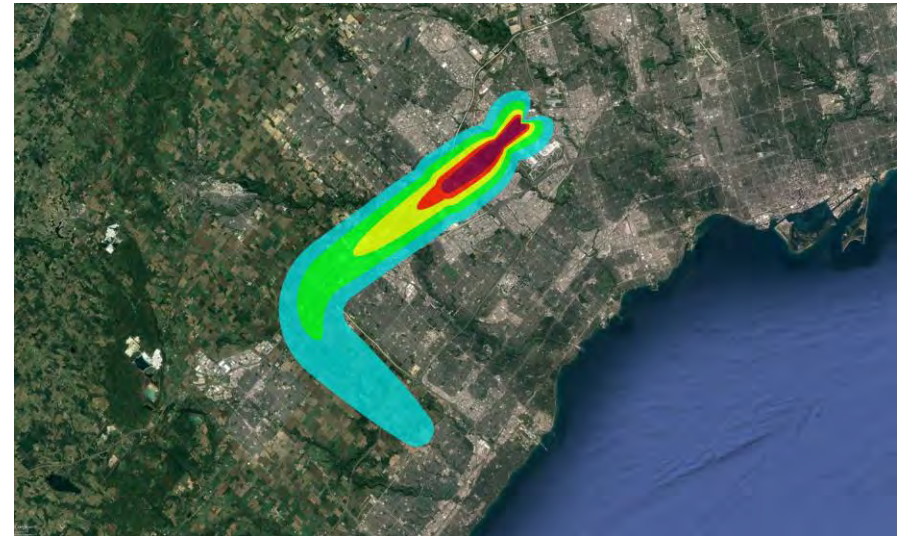
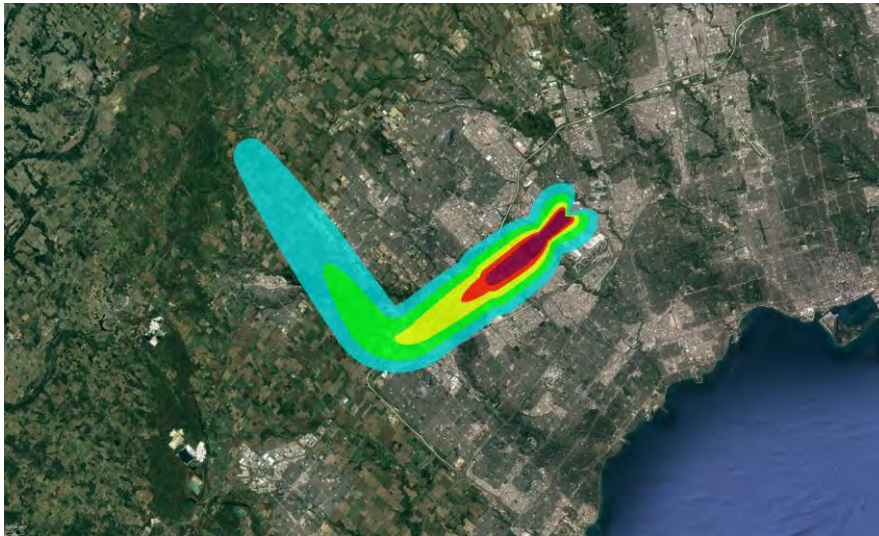
- › Looks at opportunities to target non-residential spaces on departure where possible between 12:30 and 6:30 a.m.
- › Required to delay turn until after a certain point or a certain altitude.

# NIGHT DEPARTURES – RWY 23



## New nighttime departures

Runway 23 departures would depart at 10 degree heading and climb until they pass the boundaries of communities before turning towards destination. Noise analysis suggest that as many as **221,000 fewer people** will be exposed to noise levels >60





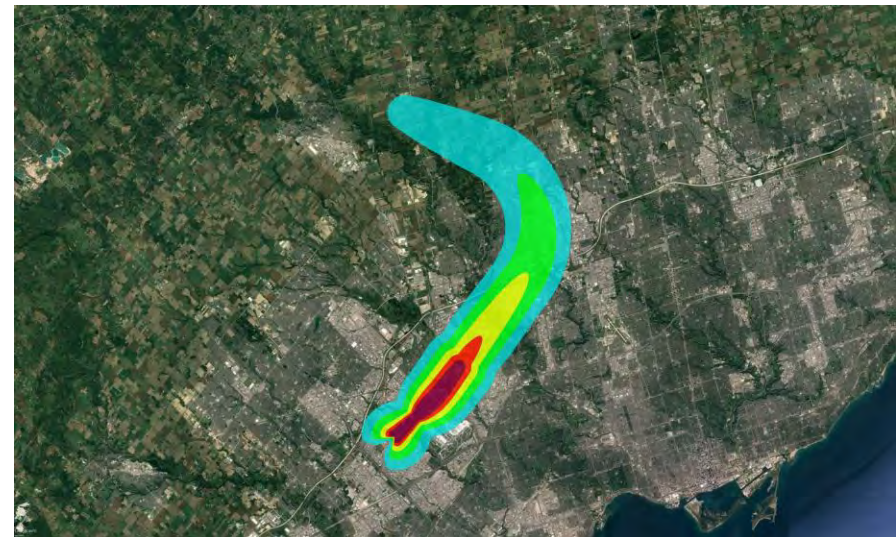
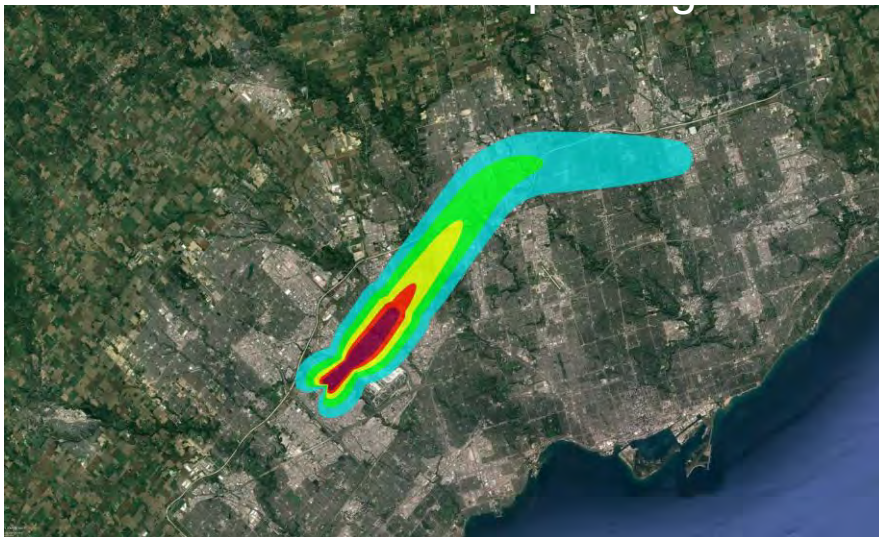
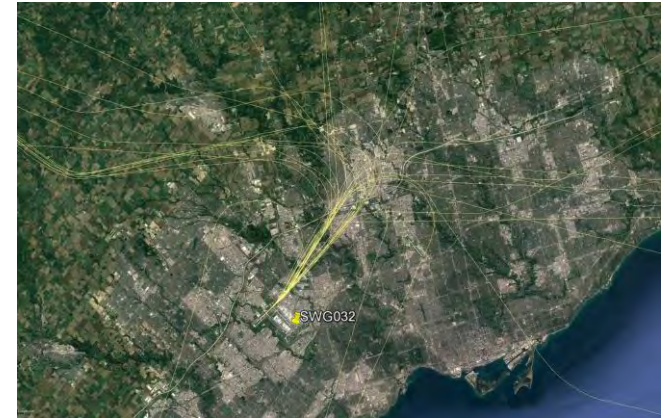
## New nighttime departures





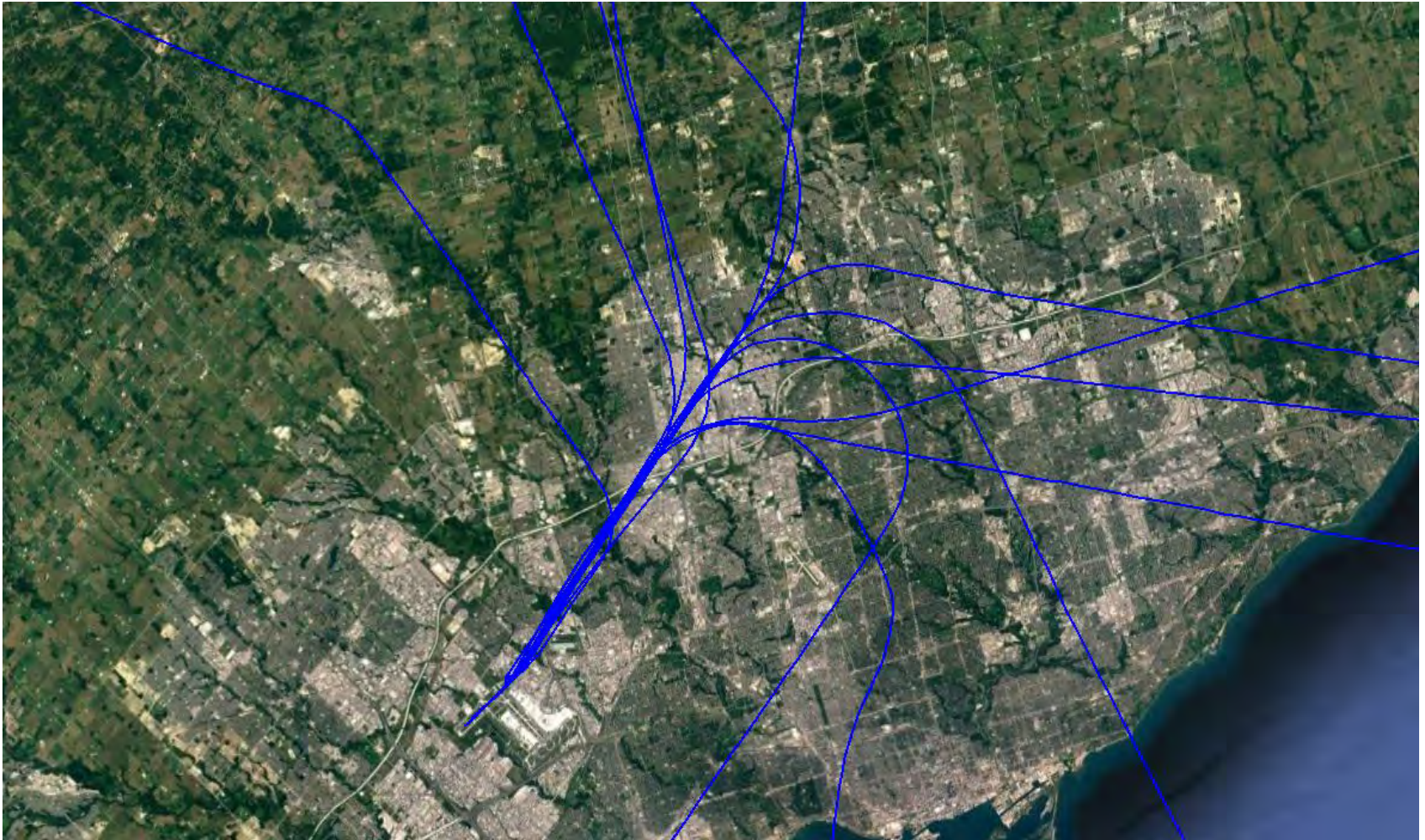
## New nighttime departures

Runway 05 departures would depart at 10 degree heading and climb to 5,000 ft before turning towards destination. Noise analysis suggest that as many as **172,000 fewer people** will be exposed to





## New nighttime departures





## Idea 3 - Increased downwind arrival speeds

### → What was proposed

Changes to the published speeds on the “downwind” portion of the arrival flight path from 200 knots to 210 knots.

### → What are the benefits

A potential reduction in the need for flaps to be deployed by pilots of certain aircraft types in order to slow their speed on the downwind. Reducing flap use may reduce airframe noise.

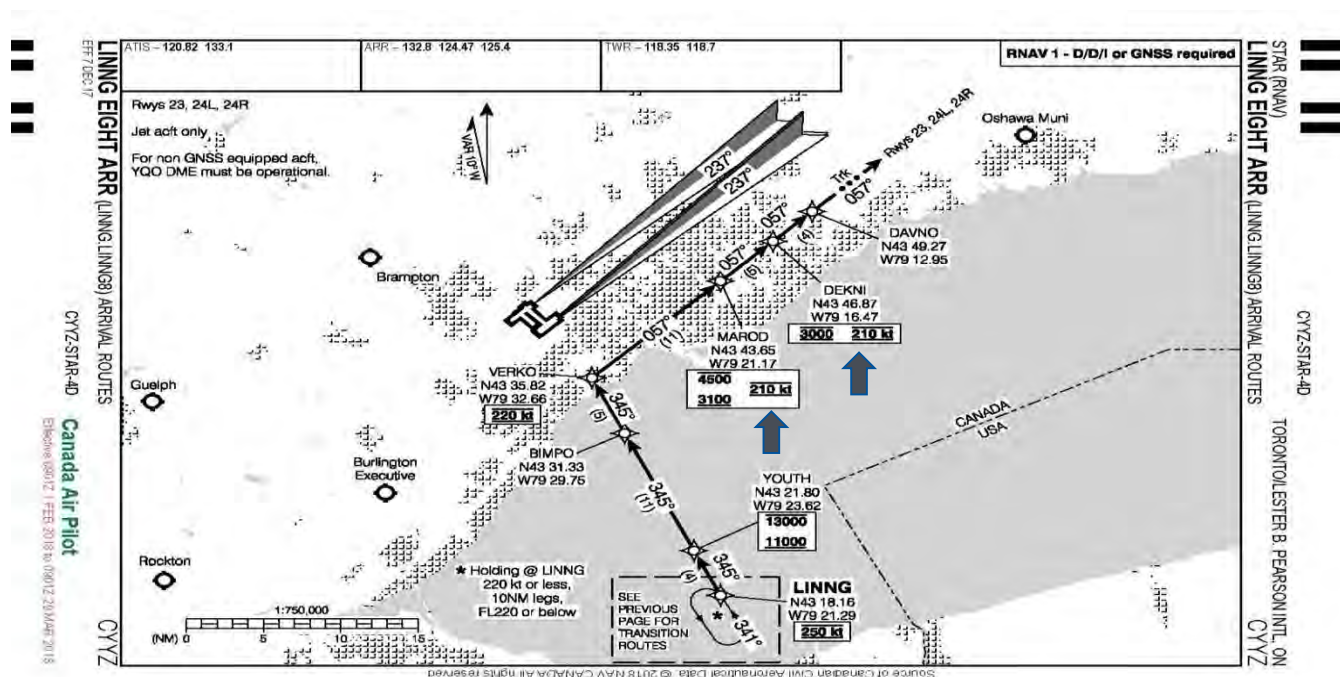
### → What has happened

The change to the published speed was implemented effective **April 27, 2017** via an amendment to the Canada Air Pilot, the aeronautical publication used by pilots.

# Increased downwind arrival speeds

In 2012 the speed was increased from 190 to 200 knots. At the time, this was the highest speed allowable by design criteria.

Today the criteria enable **210 knots**.



## **Idea 4 - New technology to reduce the need for low altitude levelling by arriving aircraft**

### **→ What we studied**

Use of Performance Based Navigation technology to increase achievement of continuous descent during periods in which the “high low” is not required.

Ways to reduce use of the downwind during low traffic periods.



## Runway 23 RNAV arrivals



Noise modelling suggests that **22,000 fewer** people will be exposed to noise >60 dBA when





## Runway 06R RNAV arrivals



Noise modelling suggests that **27,000 fewer** people will be exposed to noise >60 dBA when the new RNAV approaches to runway 06R are





# Questions?

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