

A QUIETER OPERATIONS ROADMAP

Six Ideas to reduce noise impacts for our neighbours

Public Engagement Report

JUNE 2018

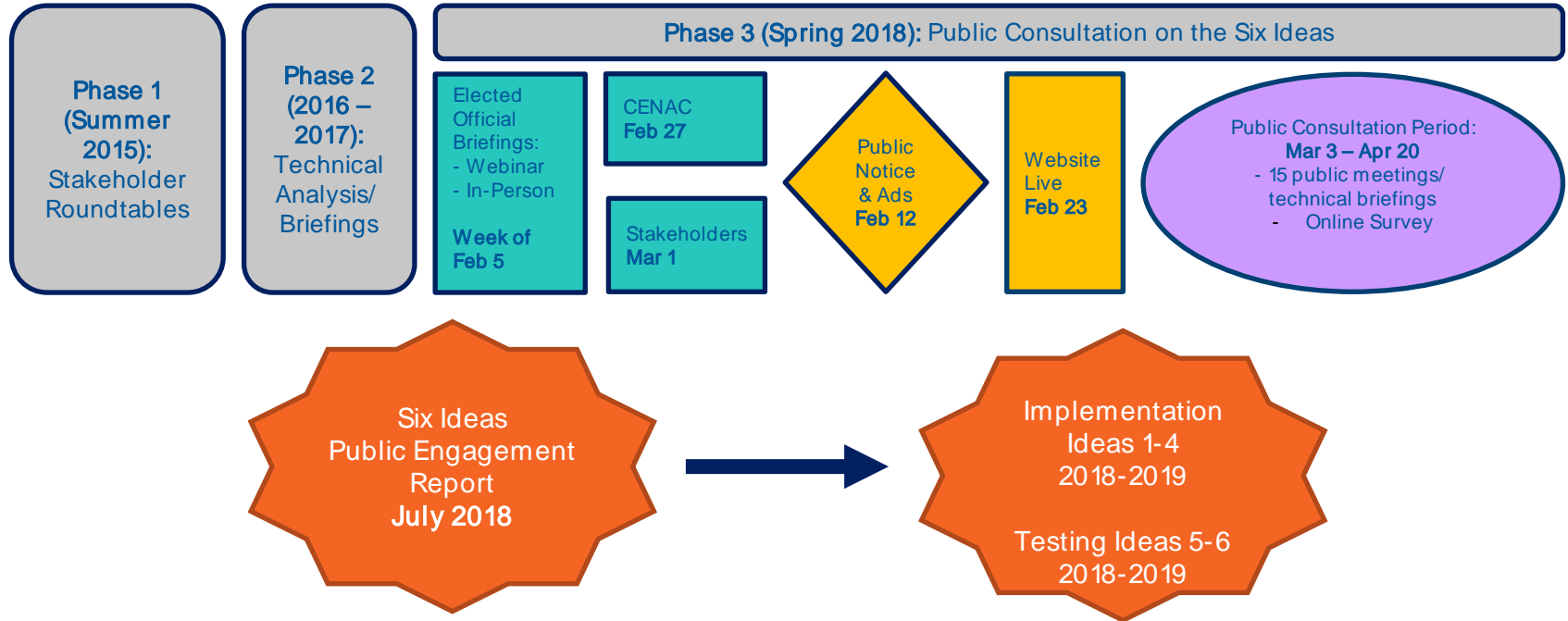


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The GTAA and NAV CANADA
are **addressing aircraft noise**
for residents.

The Six Ideas

In June 2015, in response to community feedback, the GTAA and NAV CANADA began a study of **six ideas with the potential to reduce the noise impact of Toronto Pearson's operations on surrounding neighbourhoods.**



Outreach by the numbers

2.9+M traditional advertising

250,000 social impressions

160,000 automated calls

8,700 website visits

~430 residents at 19 public meetings

900+ survey responses

What we heard

The Six Ideas.

The Six Ideas



Idea 1 - New approach procedures for nighttime operations

Idea 2 - New departure procedures for nighttime operations

Idea 3 - Increased downwind arrival speeds

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

Idea 5 - Summer weekend runway alternation

Idea 6 - Review of nighttime Preferential Runway System

Ideas 1 - 4

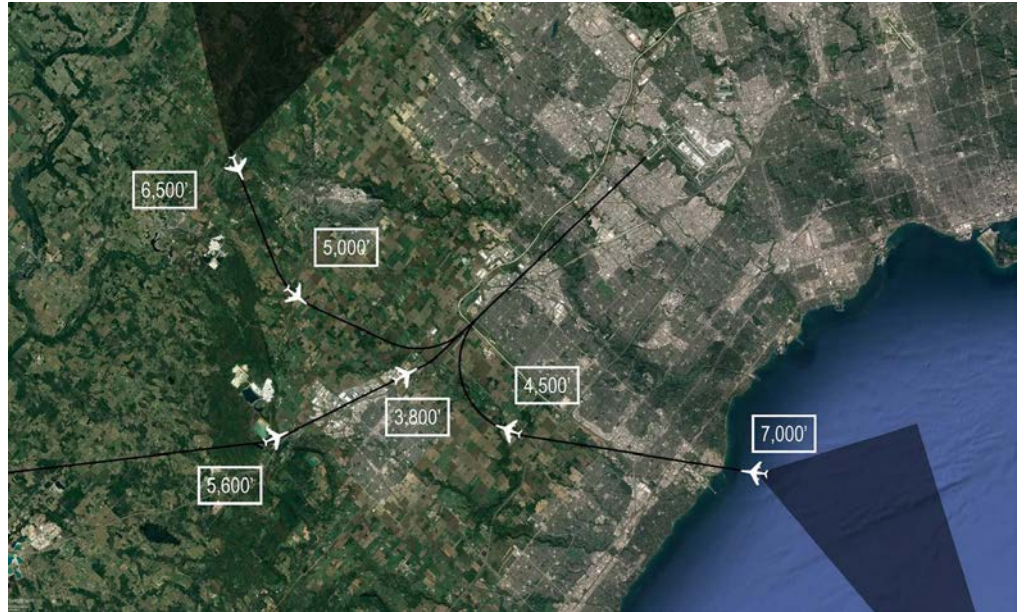
NAV CANADA

Idea 1 - New nighttime arrivals

→ What we proposed

New RNAV approaches, specifically constructed where possible to fly over fewer residential areas, designed to provide for continuous descent and enable aircraft to be higher in portions of the flight path.

→ Noise analysis suggests that up to **112,000 fewer** people will be affected by noise levels $>60\text{dBA}$ from overnight flights depending on the runway in use.



Idea 1 - New nighttime arrivals

→ **What we heard** (480 respondents)

Support the concept

Neutral

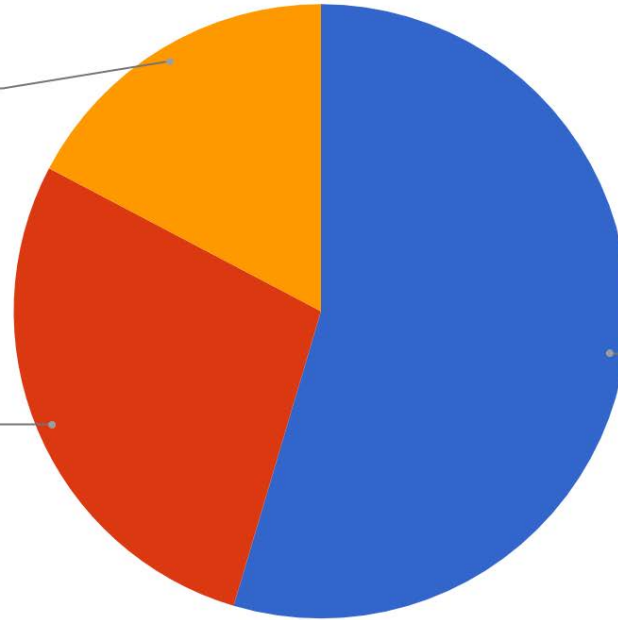
17.3%

No

28.1%

Yes

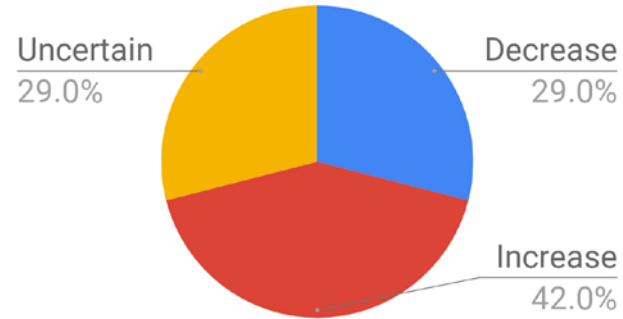
54.6%



Idea 1 - New nighttime arrivals

- Residents had balanced perspective in regards to the changes bringing improvements across the region.
- Some concern about increased impact depending on respondents location.
- Residents at meetings in Georgetown, Leaside, parts of Oakville and Vaughan were particularly supportive of this idea.
- In survey feedback, the greatest number of those opposed to the idea were from Etobicoke.

Expected change in noise



Improvements across the region



Idea 1 - New nighttime arrivals

→ What's Next

Implementation planned for November 2018



To be published in the Canada Air Pilot

Utilization to be studied as part of 180-day review

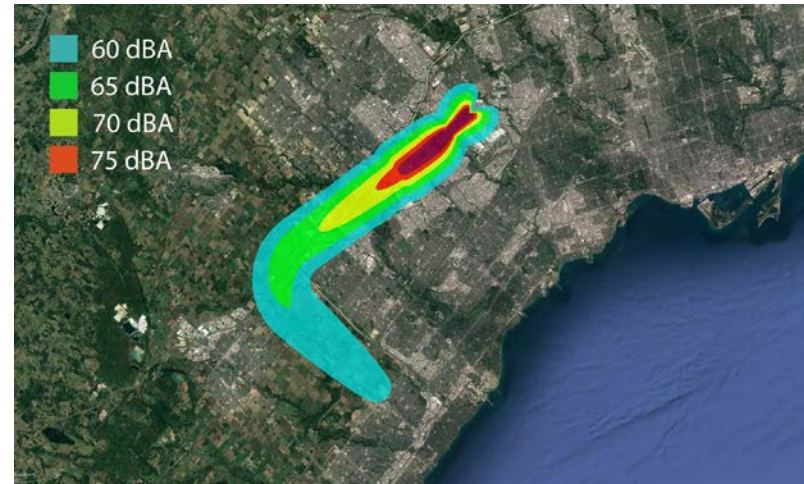
Close monitoring of community concerns

Idea 2 - New nighttime departures

→ What we proposed

A mix of strategies to reduce residential impacts, including changing the location where aircraft turn or altering current headings.

→ Noise analysis suggest that as many as **221,000 fewer people** will be exposed to noise levels >60 dBA depending on direction.



Idea 2 - New nighttime departures

→ **What we heard** (464 respondents)

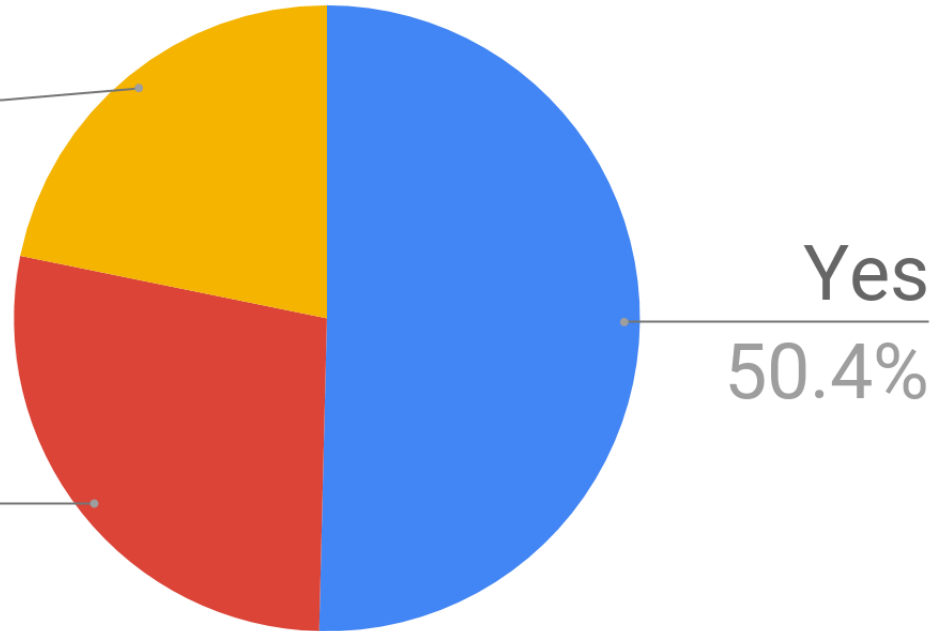
Support the concept

Neutral

21.8%

No

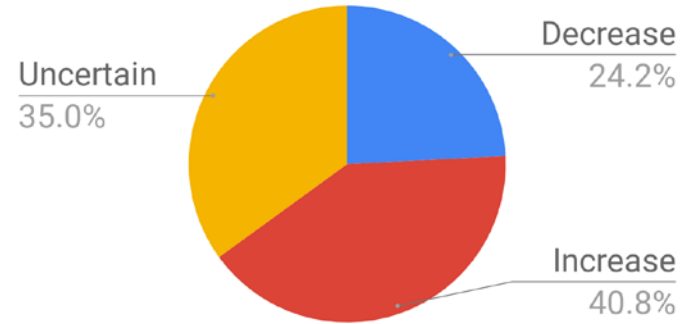
27.8%



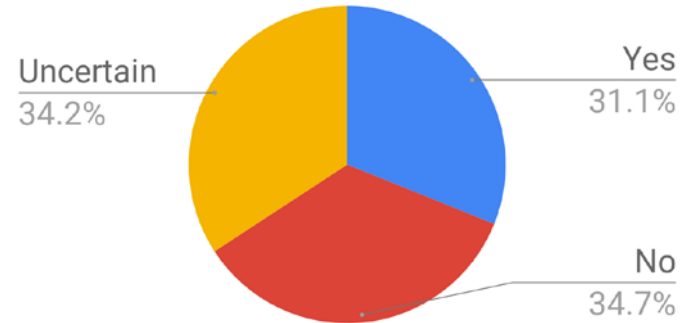
Idea 2 - New nighttime departures

- **What we heard**
- Night departure routings are not a significant concern in many communities because of the low number of departures that occur at night
- Similar trends as Idea # 1
- Residents attending consultation meetings in locations west of the airport were generally supportive.
- Greatest number of those supporting the idea in the survey were from Mississauga, which stands to gain from changes.

Expected change in noise



Improvements across the region



Idea 2 - New nighttime departures

→ What's Next

Implementation planned for November 2018



Flight tracks to be studied as part of 180-day review

Close monitoring of community concerns

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 the benefits are

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.

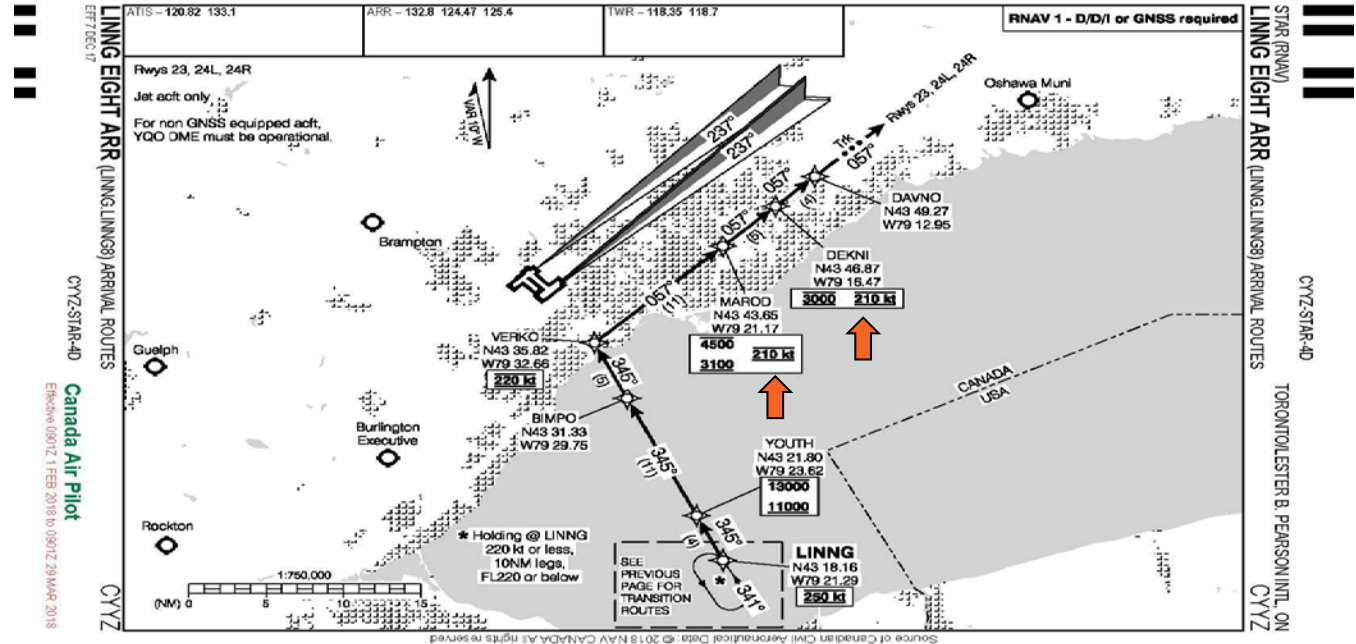
→ What has happened

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 - Increased use of CDO

→ What we studied

Use of Performance Based Navigation technology to increase use of continuous descent during periods in which the “high/ low” is not required. Ways to reduce use of the downwind when possible.

→ Noise modelling suggests that as many as **80,000 fewer** people will be exposed to noise >60 dBA when the new approaches are used.



Idea 4 - Increased use of CDO

→ **What we heard** (458 respondents)

Support for the concept

Neutral

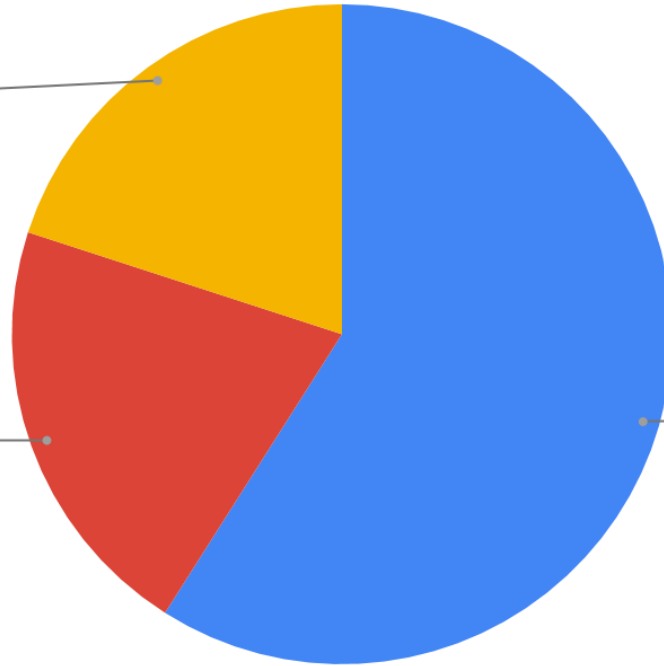
20.0%

No

21.0%

Yes

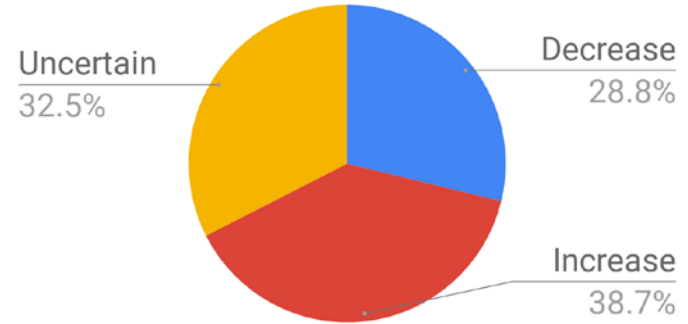
59.0%



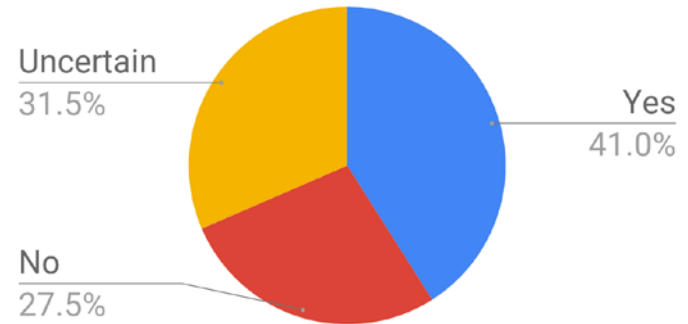
Idea 4 - Increased use of CDO

- Significant support for Idea # 4
- Residents under downwind segments view increases in altitude and potential for reduced low altitude leveling positively.
- Greater number view this as bringing improvements across the region.
- All communities viewed this option as a positive development.

Expected change in noise



Improvements across the region



Idea 4 - Increased use of CDO

→ What's Next

Implementation planned for early 2019



To be published in Canada Air Pilot

Flight track analysis to be undertaken as part of 180-day review

Close monitoring of community concerns

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Ideas 5 & 6

Greater Toronto Airports Authority

Idea 5

Summer Weekend Runway Alternation

Idea 5 - Summer Weekend Runway Alternation

→ What we studied

Two operational concepts, measured against the same set of criteria:

- Adhere to a published schedule
- Maintain ability to meet capacity requirements
- Consider the values and guiding principles provided by the Residents' Reference Panel

Option 1:

Runway alternation program with east/ west AND north/ south runways



Not feasible

Did not meet all criteria
Not included in proposal.

Residents living north or south of the airport will NOT experience a change due to Idea 5

Option 2:

Runway alternation program with only the east/ west runways



Deemed Feasible

Met all viability criteria.
Final proposal based on this option.

Idea 5 - Summer Weekend Runway Alternation

→ What we proposed

- Summer weekend runway alternation program involving the three **east/ west runways**
 - Will provide some predictable respite for residents living under **final approach** or **initial departure** paths
 - Residents living under the downwind would not see respite from this program
- May to October, inclusive (26 weekends) between 6:30 a.m. and 11:59 p.m.
 - Residents could experience **13 weekends of relief** over the summer months
 - A published schedule so residents would know in advance what to expect and could plan accordingly

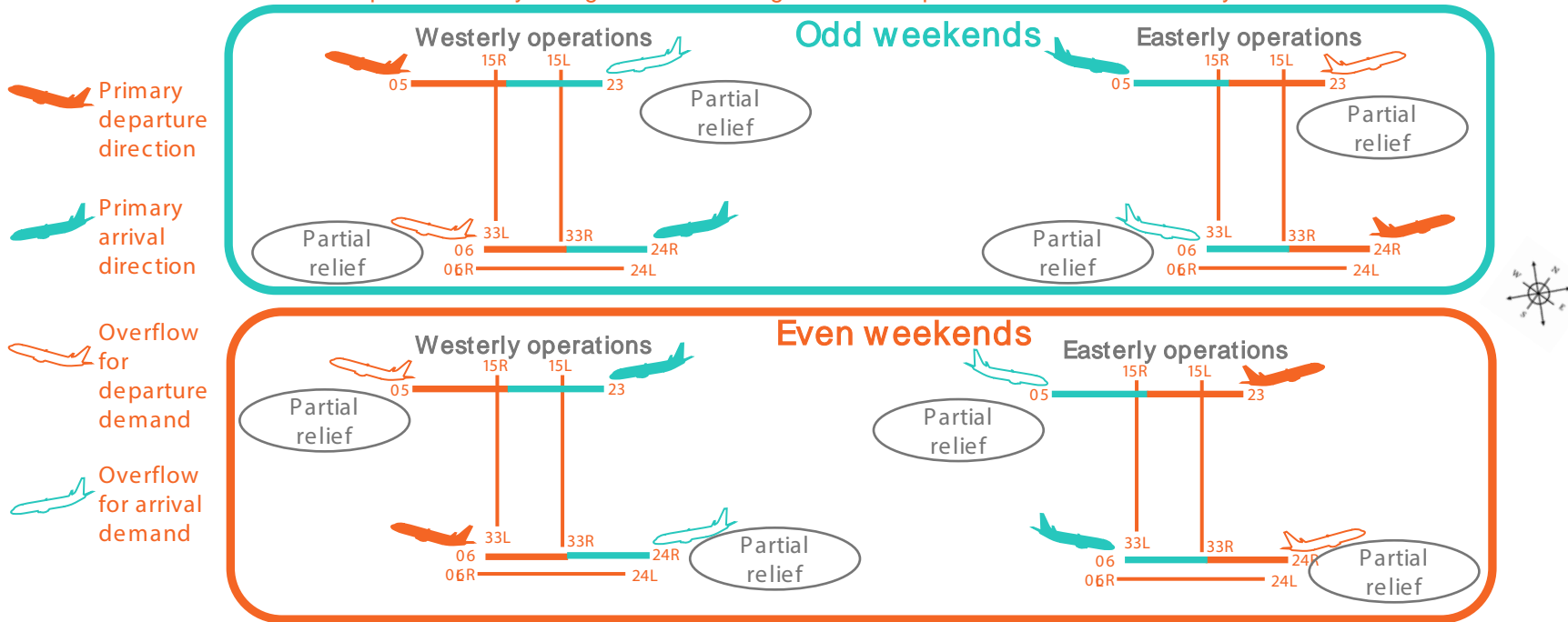
Idea 5 – Summer Weekend Runway Alternation

→ How it will work

Residents would receive full or partial respite on alternate weekends. Partial respite relates to the “offload” of additional arrivals or departures on a primary runway.

Residents would receive full impact on alternate weekends.

Published schedule of expected runway configurations allowing residents to plan weekends. In effect May-October.

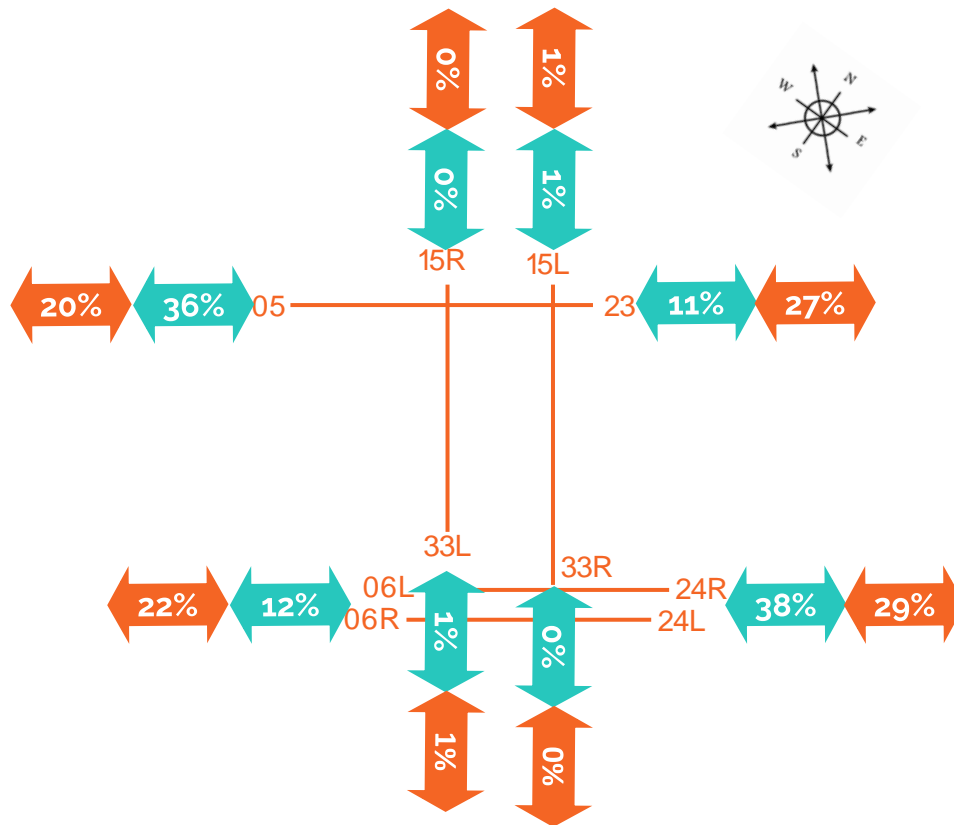


Idea 5 – Summer Weekend Runway Alternation

→ Status quo versus program

This graphic shows traffic distribution (arrivals and departures) over the entire summer period (26 weekends).

It compares actual traffic distribution from 2015 against modeled future traffic distribution.

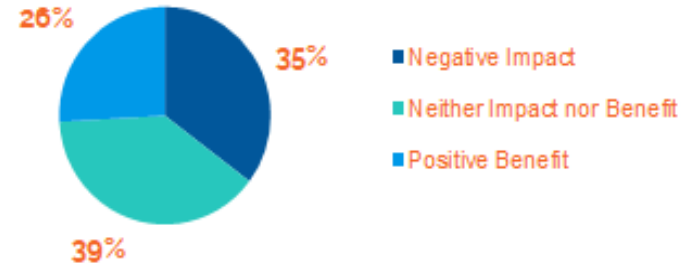


Idea 5 - Community Feedback

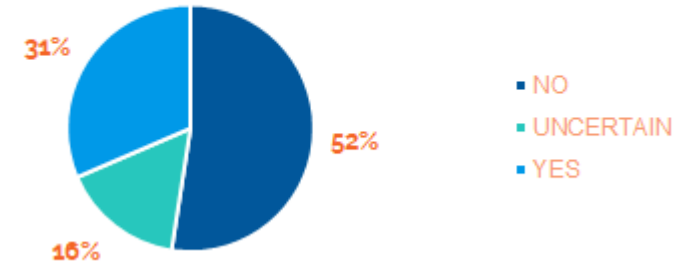
Idea 5 - Summer Weekend Runway Alternation Do you think a summer weekend runway alternation program would impact or benefit you?

What we heard

- Residents impacted by east/ west runway operations had mixed opinions about a summer weekend runway alternation program, with the majority unsure about possible benefits or impacts
- Of the residents impacted by east/ west operations, **68% either did not oppose to a test or were uncertain about the benefits of a test**, while 31% objected to testing.
- **Residents' Reference Panel** advised that a noise sharing program should only be pursued if respite afforded to communities is meaningful and predictable



Idea 5 - Summer Weekend Runway Alternation Do you object to a test of Idea 5?



Idea 5 - Summer Weekend Runway Alternation

→ What's next

Eight-weekend test period: **July 28 – September 16, 2018**



- Validate our understanding about benefits to the communities **east and west** of the airport
- Enable residents to provide informed feedback and allow us to collect data for analysis

Idea 5 – Test Success Criteria

A successful test means...

→ **Schedule can be used reliably**

Runway configurations according to schedule within 10% of predicted 98% (within justifiable variances)

→ **Review of data (noise and traffic) supports predicted operational impact change**

→ **Operationally feasible**

- No operational issues preventing implementation

→ **Community feedback supports implementation**

- Survey results indicate that respite was meaningful/ predictable

Idea 5 – Community Feedback During Testing

Community feedback on Idea 5 testing will tell us whether the respite is meaningful and predictable.

Feedback Tools include:

- Targeted tele-town hall (like a live radio show) that includes a survey
- Open online survey (mandatory postal code identification), open for a two-week period before the testing starts

What are we asking the community?

- Same questions for both the targeted tele-town hall and the open online survey
- **Pre-test:** questions on current perception of noise impacts and perceived benefits of a summer weekend runway alternation program
- **Post test:** questions on whether or not residents perceived a difference during their respite weekends and if they found having a predictable schedule useful

Idea 5 – Communications & Outreach During Testing

How and when we're communicating:

Before the Test

(Late June and throughout July)

- Stakeholder briefing
- CENAC update
- New webpages on [torontpearson.com/ conversations](http://torontpearson.com/conversations)
- Social media - Toronto Pearson channels
- Print ads in Metroland and Toronto Star
- Email newsletter (Checking In)
- Email to engaged stakeholders and community groups
- Targeted Phone Calls + Tele-Town halls
- Online surveys



At the end of Test

(Mid- and Late September)

- Stakeholder briefings
- CENAC update
- Website updated
- Social media - Toronto Pearson channels
- Email newsletter (Checking In)
- Email to engaged stakeholders and community groups
- Targeted Phone Calls + Tele-Town halls
- Online surveys

Idea 6

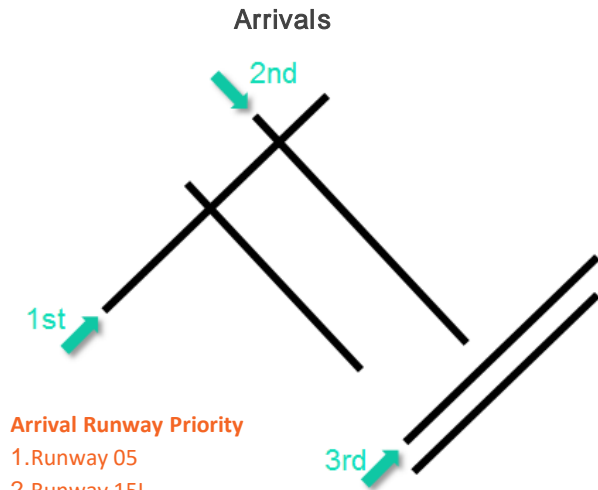
Preferential Runway System Review

Idea 6 - Preferential Runway System Review

Toronto Pearson's preferential runway system is intended to minimize the population overflow between midnight and 06:30.

The current system was designated in the 1970s. As the population around the airport has changed and additional runways have been built since the system was put in place, it was time to review the system.

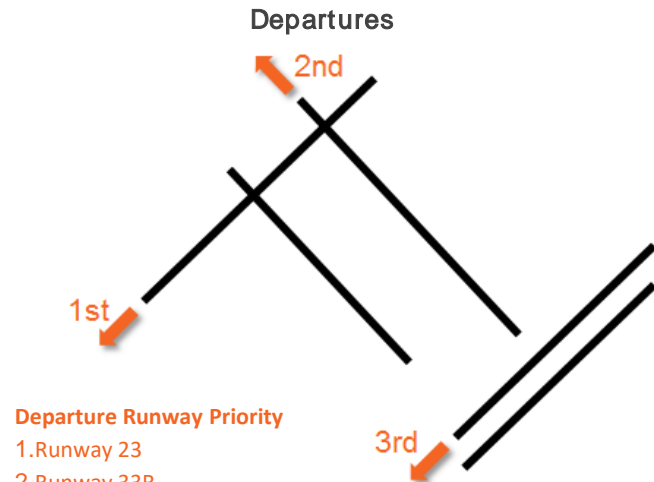
→ Current Program



Arrival Runway Priority

1. Runway 05
2. Runway 15L
3. Runway 06L

**Consistent with operational safety*



Departure Runway Priority

1. Runway 23
2. Runway 33R
3. Runway 24R

**Consistent with operational safety*

Idea 6 - Preferential Runway System Review

→ What we studied

The current nighttime preferential runway system was implemented in the 1970s, and since then the population around the airport has changed, and additional runways have been built.

Objective: fly over the fewest people possible at nighttime.

→ Results of review and technical analysis:

- Need to update the current preferential runway system to meet this objective
- Updating the preferential runway system will also to provide more reliable usage

Note: Analysis based on implementation of Idea 1 new nighttime arrival and Idea 2 new nighttime departure routes.

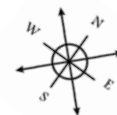
Idea 6 - Preferential Runway System Review

→ What we proposed

A revised nighttime preferential runway system which provides feasible runway pairings that:

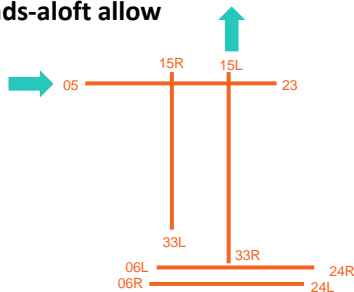
- minimize the total population impacted by aircraft noise of 45dB CNEL or higher between midnight and 6:30 a.m.
- will improve the reliability of the system
- provides alternatives for “into the wind” configurations

Idea 6 - Preferential Runway System Review

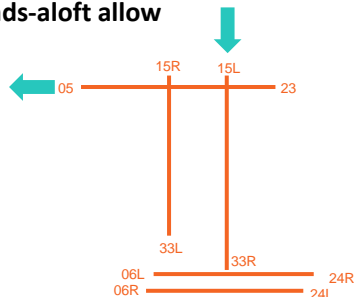


→ Recommended Night Preferences

1st Choice - Whenever crosswind, tailwinds & winds-aloft allow

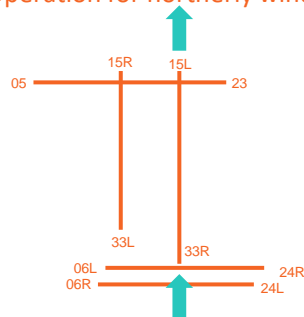


2nd Choice - Whenever crosswind, tailwinds & winds-aloft allow

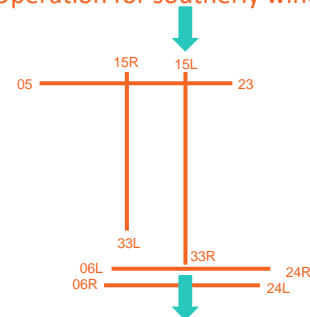


Selection driven by weather conditions and infrastructure availability when 1st or 2nd choice are not operable. Ultimately any single or pair of runways can be used.

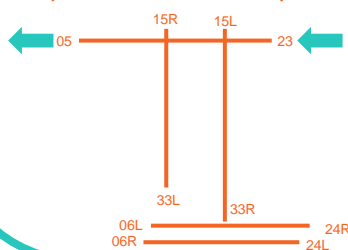
Operation for northerly wind



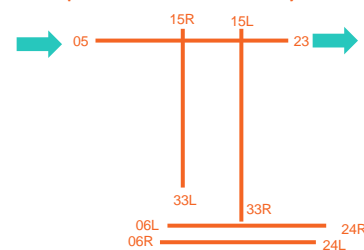
Operation for southerly wind



Operation for westerly wind



Operation for easterly wind



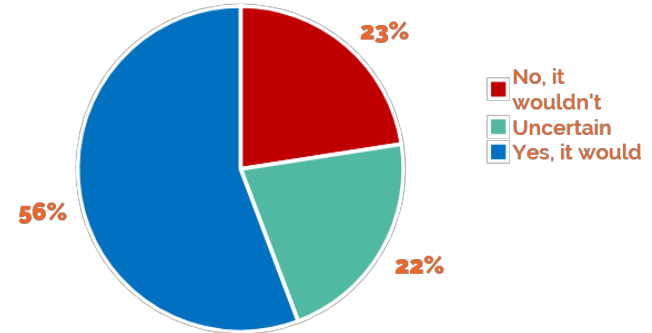
Idea 6 - Community Feedback

What we heard

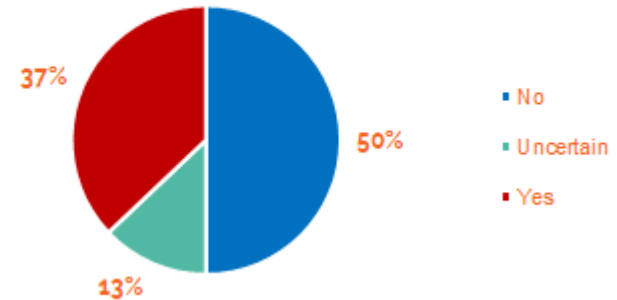
→ Idea 6 is also designed to improve reporting on the effectiveness of the preferential runway system. When asked if this type of reporting would be beneficial, 56% of residents said yes, 22% were unsure of the benefits, and 23% did not think it would be beneficial

→ Of the survey respondents, **63% either did not oppose to a test or were uncertain about the benefits of a test of Idea 6**, while 37% objected to testing.

Idea 6 - Preferential Runway System Review
Would reporting on preferential runway usage be beneficial?



Idea 6 - Preferential Runway System Review
Do you object to a test of Idea 6?



Idea 6 – Preferential Runway System Review

→ What's next

Testing Period in Late 2018 / Early 2019



- Validate our understanding about benefits of an updated preferential runway system
- Improve communications about runway usage at nighttime

Idea 6 – Test Success Criteria

A successful test means...

→ **Improved usage of preferential runways**

- Usage of preferential runways higher than for same period of winter/ spring 2017-2018

→ **Review of data (noise and traffic) supports predicted operational impact change**

→ **Operationally feasible**

- No operational issues preventing implementation

→ **Community feedback indicates better understanding and greater level of acceptance for preferential runway usage**

- Survey feedback
- Elected officials are better informed

Idea 6 - Community Feedback During Testing

Engagement goals:

- Inform impacted community of the new preferential runway system test and that they may see a change in operations overhead
- Inform impacted community that we will communicate about the new preferential runway system to help clarify which runways are used overnight and in what conditions
- *Include opportunity for community to provide feedback on reporting effectiveness*

What are we asking the community?

- We are looking for feedback from the community that it understands and accepts preferential runway usage decisions
- Did you find the information in the communications helpful?
- Did you find the frequency of updates helpful?
- Do you better understand how we use preferential runways at night?
- Did you notice a difference in operations?

Idea 6 - Communications & Outreach During Testing

Pre-Test Communications

- Stakeholder briefings
- CENAC briefing
- New webpages on torontopearson.com/conversations
- Social media – Toronto Pearson channels
- Email newsletter (Checking In)
- Email to engaged stakeholders and community groups
- Targeted telephone outreach to communities impacted by preferential runways

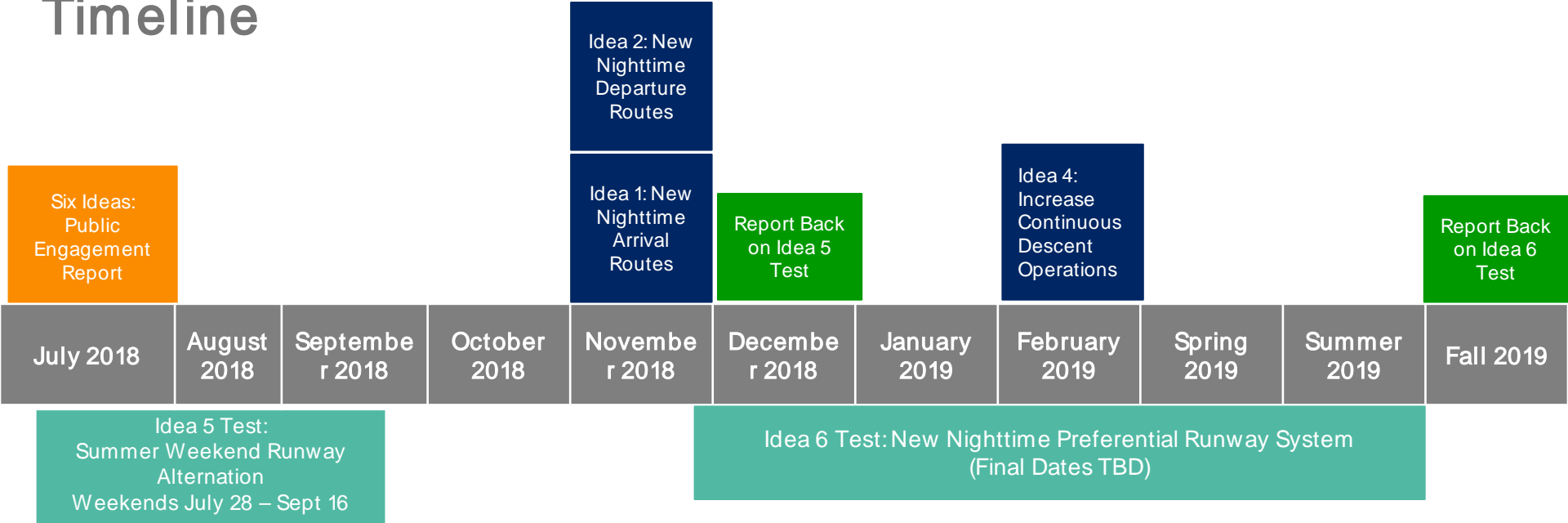
TEST PERIOD

Regular updates to the website to report on new preferential runway system usage decisions and adherence statistics

Post-Test Communications & Survey

- Testing Complete Update
 - Website, Social media, Checking In, Elected Officials, CENAC, Engaged stakeholders and community groups
- Post-Test Survey (2 week period after test ends)
 - Online survey promoted through communications channels, postal codes mandatory for analysis of feedback

Timeline



A QUIETER OPERATIONS ROADMAP

THANK YOU

JUNE 2018

