

Toronto Noise Mitigation Initiatives Summary Report on Stakeholder Roundtables

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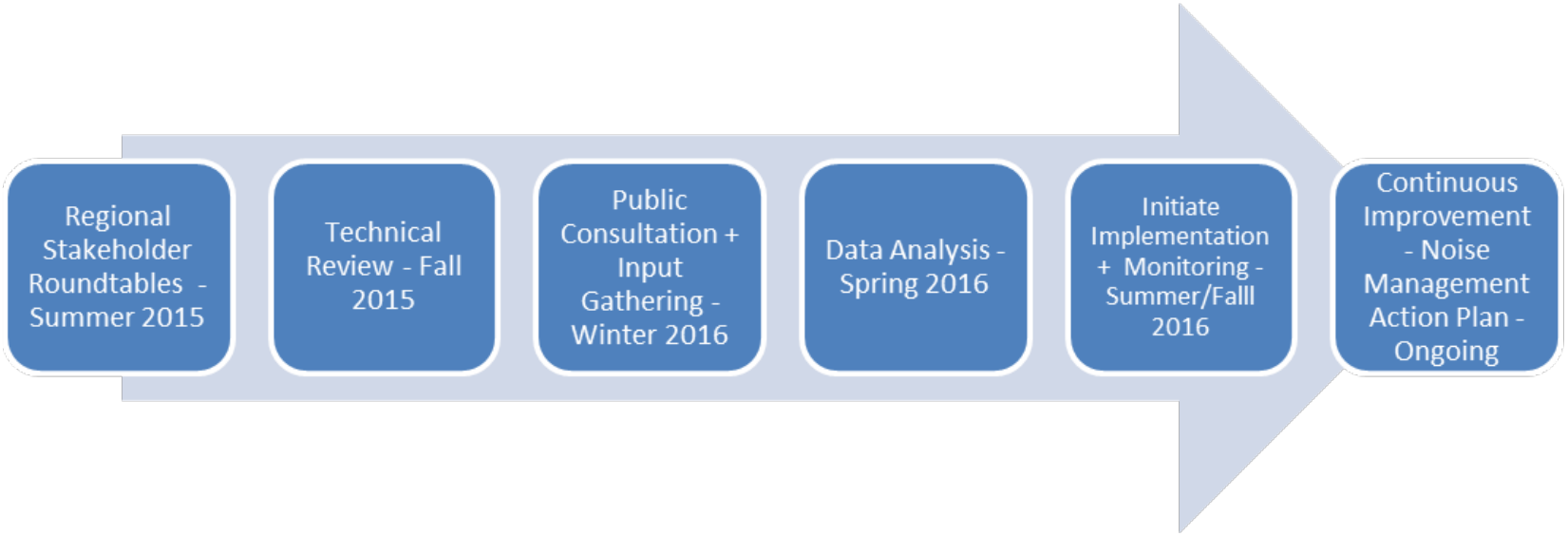
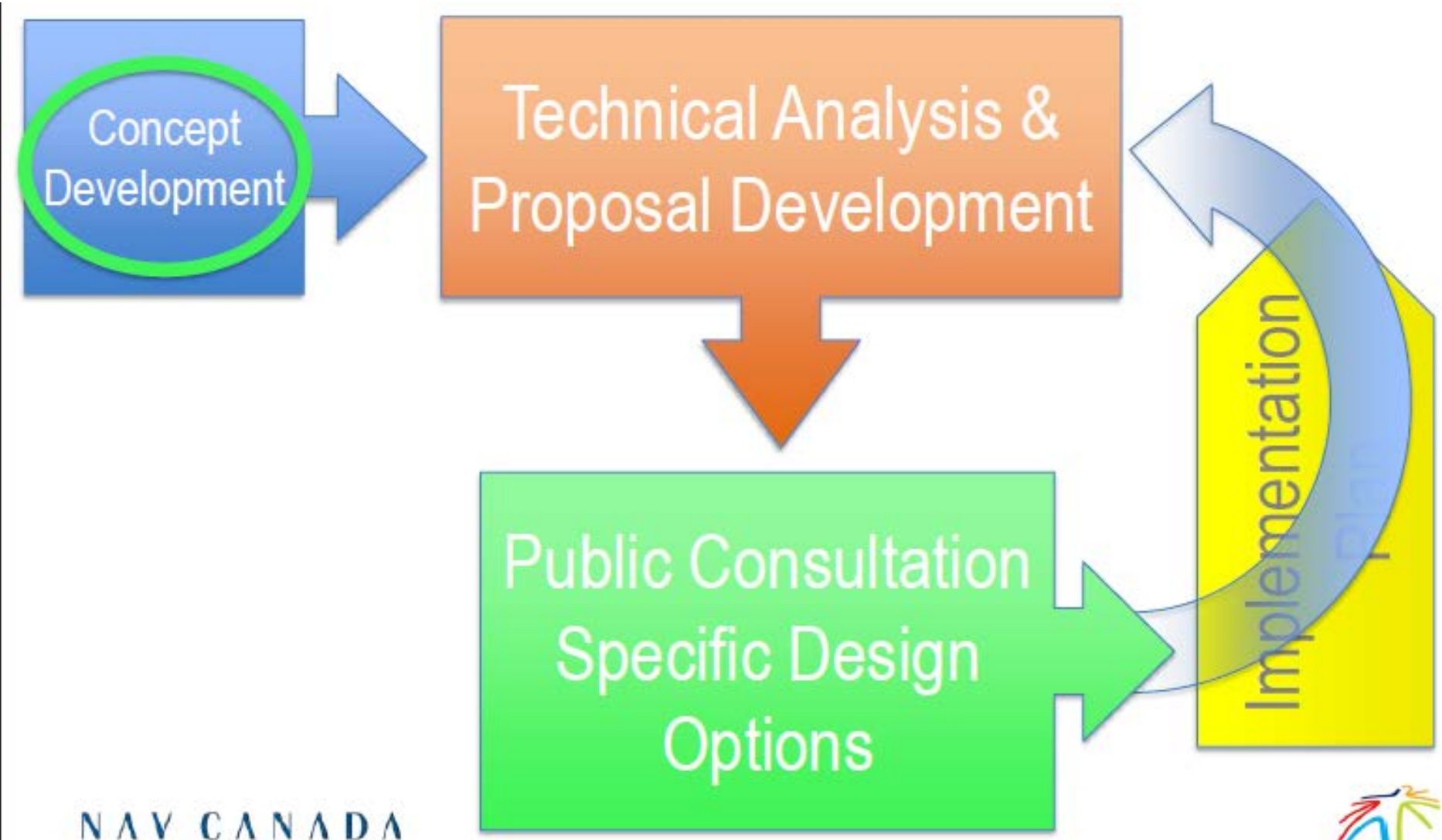
Toronto Noise Mitigation Initiative

Between July 29th and August 24th 2015, NAV CANADA and GTAA hosted a series of eight roundtable discussions with invited stakeholders to explore six concepts/ideas related to noise mitigation in the community, as part of a broader plan




Concept Development
Technical Analysis & Proposal Development
Public Consultation Specific Design Options
Implementation

Stakeholder Roundtables

What?

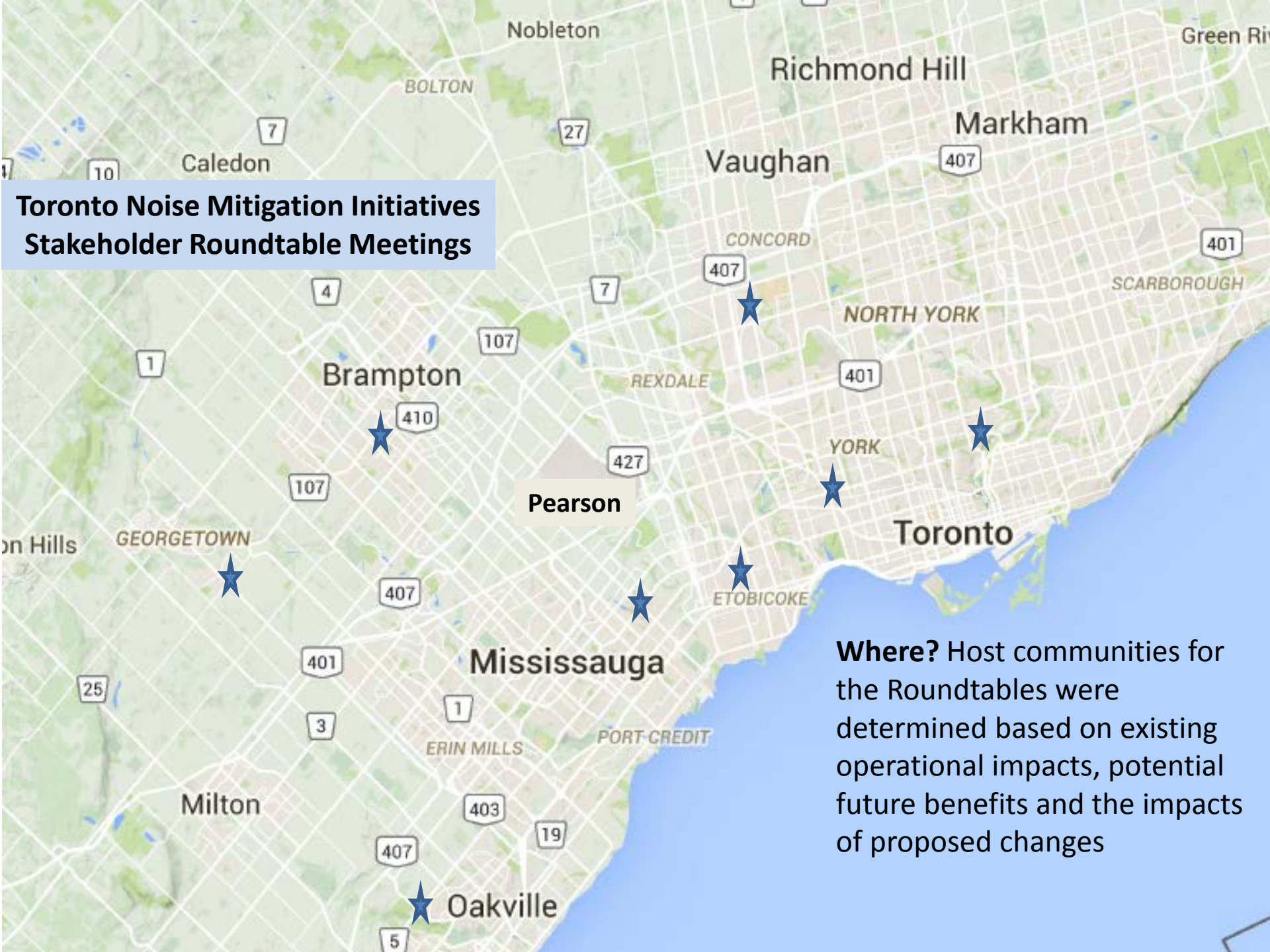
- Small focused meetings to engage in an in-depth conversation with an invited group of highly-engaged community members to get some initial feedback on scope and approach on studying noise mitigation ideas further

Who?

- Worked closely with local elected officials to identify the roundtable participants. Invitations were extended to:
  - Leaders of local community associations and groups
  - Local representatives from Community Environment & Noise Advisory Committee (CENAC)

Why? Roundtables Purpose:

- Review and discuss feasibility of 6 concepts/ideas to mitigate impacts due to flight paths and aircraft noise
- Obtain community input on community engagement process, criteria for decision-making, and next steps

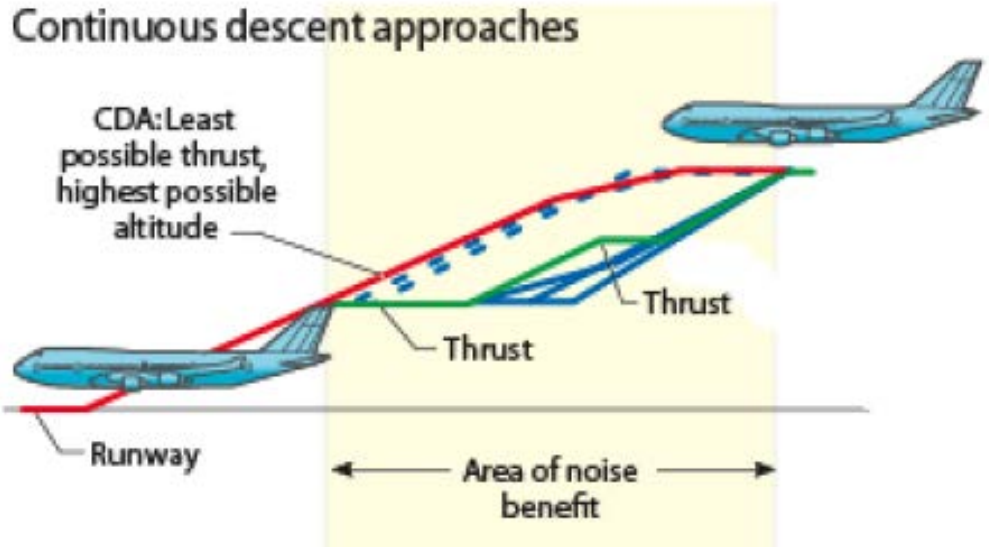

Toronto Noise Mitigation Initiatives
Stakeholder Roundtable Meetings
Nobleton
Richmond Hill
BOLTON
Markham
Caledon
Vaughan
CONCORD
SCARBOROUGH
NORTH YORK
Brampton
REXDALE
YORK
Pearson
Toronto
GEORGETOWN
ETOBICOKE
Mississauga
ERIN MILLS
PORT CREDIT
Milton
Oakville
Where? Host communities for the Roundtables were determined based on existing operational impacts, potential future benefits and the impacts of proposed changes

What We Heard at the Stakeholder Roundtables

- The Stakeholder Roundtables engaged 95 participants
  - 25 hard-copy discussion guides and 22 online submissions (Total 47)
  - Valuable feedback on the six ideas to mitigate noise and on criteria and public engagement
  - Overall summary report prepared summarizing key feedback themes (8 individual meeting reports to be appended to summary report)

Idea #1
New Approaches for Night-Time Operations

- When traffic volumes are lighter at night and single runway operations are being used, there are options to improve descent profiles that could reduce noise impacts
- **Proposed Approach: NAV Canada will design new RNAV approach for use during designated night-time operations**



Stakeholder Feedback on Idea #1
New Approaches for Night-Time Operations

What do you like about this idea?

- Considers continuous descent as an option to mitigate noise at night-time
- Allows aircraft to fly at a higher altitude as they make the final turn to align with runways, reducing drag and noise
- Provides flexibility to modify altitudes and flight paths to avoid residential areas, particularly those under flight paths originating from runways 23/05 and 24/06
- Appears logical, more efficient and easy to implement

Stakeholder Feedback on Idea #1
New Approaches for Night-Time Operations

What concerns do you have?

- May extend night-time hours of operation
- Could facilitate an increase in night-time air traffic over the short- and long-term
- Does not address the frequency of air traffic over residential areas
- Shifts noise from one community to another, introducing noise to new residential areas
- Concentrates flight paths and noise over certain residential areas
- Change if there are significant changes to the fleet mix

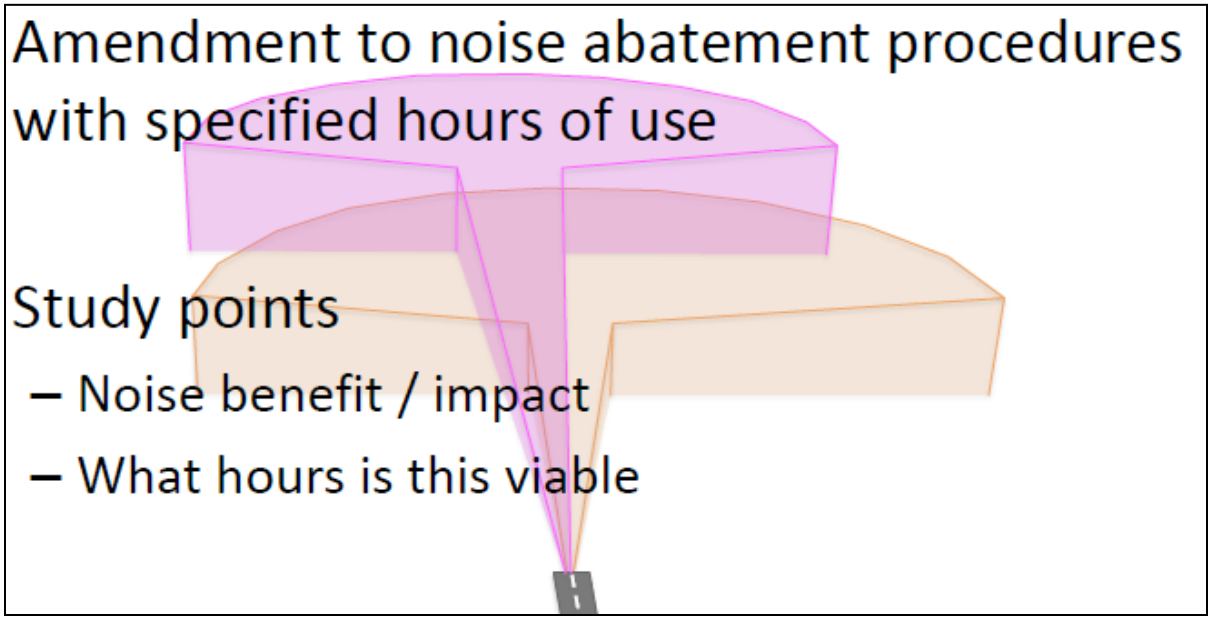
Stakeholder Feedback on Idea #1
New Approaches for Night-Time Operations

Further Considerations:

- Identify a volume threshold for noise from night-time aircraft operations
- Monitor noise from night-time operations, utilize the data to assess the benefits
- Collaborate with CENAC's acoustician to identify the estimated change in noise
- Identify a specific time window when this approach would be in effect (e.g., 11:00 pm to 6:30 am)
- Consider the full range of environmental impacts associated with this idea (e.g., noise pollution, air quality, sleep disturbance)
- Design and move the flight path where it does not impact residents

Idea #2 – New Departure Procedure for Night-Time Operations

- Opportunities to alter night-time departure procedures during lower traffic volume period
- Increasing the altitude achieved before aircraft turns are permitted may deliver noise reduction benefits under the flight path
- **Proposed Approach: NAV Canada will design new departures for use during designated night-time periods**



Stakeholder Feedback on Idea #2
New Departure Procedure for Night-Time Operations

What do you like about this idea?

- Keeps aircraft on a narrower flight path, at a higher altitude primarily over industrial areas *[Mississauga Session]*
- Would provide benefits to the community *[Brampton + Davenport Sessions]*
- Need to reduce night-time operations between certain hours (e.g., 11:00 am to 6:30 am) *[Other Sessions]*

Stakeholder Feedback on Idea #2
New Departure Procedure for Night-Time Operations

What concerns do you have?

- Concentrates noise from night-time operations over one community
- May lead to an increase in night-time air traffic
- Need to ensure there is a measurable reduction in noise
- This idea will negatively impact some residents while providing relief to others
  - However, some participants showed support for sharing noise among different communities

Stakeholder Feedback on Idea #2
New Departure Procedure for Night-Time Operations

Further Considerations:

- Consider the trade-off of sharing the noise (e.g., providing relief to some communities while creating issues for others)
- Monitor noise from night-time operations, utilize the data to assess the benefits
- Explore applying this idea to arrivals and daytime operations

Idea #3
Increase Downwind Arrival Speeds

- Changing published speeds in the “downwind” portion of the arrival flight path from 200 kts to 210 kts may reduce noise by decreasing the need for flap use
- **Proposed Approach: NAV Canada will study the noise benefits of increasing arrival flight speeds**

Stakeholder Feedback on Idea #3 Increase Downwind Arrival Speeds

What do you like about this idea?

- Appears to be logical
- Provides another opportunity to mitigate noise
- Reduces the use of vectored flight paths over residential areas
- Holds the most prospect of noise relief of the six ideas presented *[Davenport Session]*

Stakeholder Feedback on Idea #3 Increase Downwind Arrival Speeds

What concerns do you have?

- Prioritize safety (e.g., avoid the potential for air collisions over residential areas)
- Consider the operational limits of different carriers
- Identify the actual noise benefit and how it is measured

Stakeholder Feedback on Idea #3 Increase Downwind Arrival Speeds

Further Considerations:

- Assess the benefits and potential risks to ensure safety
- Explore whether there is a net reduction in noise; the speed difference appears marginal
- Ensure other stakeholders (e.g., pilots) are given the opportunity to review this idea
- Consider flight paths at higher altitudes to mitigate noise
- Explore the potential of this idea at higher speeds (e.g., 215-220 knots) *[Davenport Session]*

Idea #4 – Use Technology to Reduce the Need for Low Altitude Leveling

- Aircraft arriving at parallel runways require a level portion in descent to ensure safe separation
- **Proposed Approach: NAV Canada will study the potential use of Required Navigation Performance (RNP) Technologies**

Only a subset of aircraft are eligible:

	2014 arrivals/week	
	145	3%
	31	1%
	761	18%
	588	14%
	210	5%
		41%

NAV CANADA

Stakeholder Feedback on Idea #4
Use Technology to Reduce the Need for Low Altitude Leveling

What do you like about this idea?

- Reduces noise by using constant descent
- Technology should be studied if being implemented at other airports
- Helps move away from high/low operations at Pearson

Stakeholder Feedback on Idea #4
Use Technology to Reduce the Need for Low Altitude Leveling

What concerns do you have?

- Amount of time for implementation (provides no immediate noise relief)
- Cost to implement the technology
- Concerns with maintaining safe separation of aircraft
- No guarantee that airlines will adopt the technology
- One flight path will concentrate aircraft noise over one area
- Increased complexity of managing air traffic

Stakeholder Feedback on Idea #4
Use Technology to Reduce the Need for Low Altitude Leveling

Further Considerations:

- Identify the cost-benefit of the idea (i.e., financial investment vs noise benefit)
- Consider designing the RNP tracks over the Greenbelt or low density residential areas
- Use data generated by other airports in studying this idea
- Consider the impact to communities below any flight paths
- Explore whether government subsidies are feasible to encourage technology adoption

Idea #5
Establish Weekend Preferential Runways

- Traffic volumes on weekends tend to be lower than other days of the week
- Alternating runways could provide periods of weekend respite from noise for communities
- **Proposed Approach: NAV Canada and GTAA will study the feasibility of establishing weekend preferential runways**

Current

Possible Option

Stakeholder Feedback on Idea #5
Establish Weekend Preferential Runways

What do you like about this idea?

- Provides a more fair distribution of noise amongst communities surrounding the airport
- Potential for faster implementation

Stakeholder Feedback on Idea #5
Establish Weekend Preferential Runways

What concerns do you have?

- Concern for how the preferential runways will be determined / what criteria will be used
- May not be feasible in the long-term due to increasing traffic volumes at Pearson
- Changing current operations may lead to new issues for residents not accustomed to flight paths over their homes
- The Rockwood community has unique circumstances and is already inundated due to its proximity to Pearson *[Mississauga Session]*
- Residents' expectations may not be met if noise sharing is inconsistent
- Final approach will be shared by alternating runways and the downwind leg will be short; may produce more noise *[Davenport Session]*

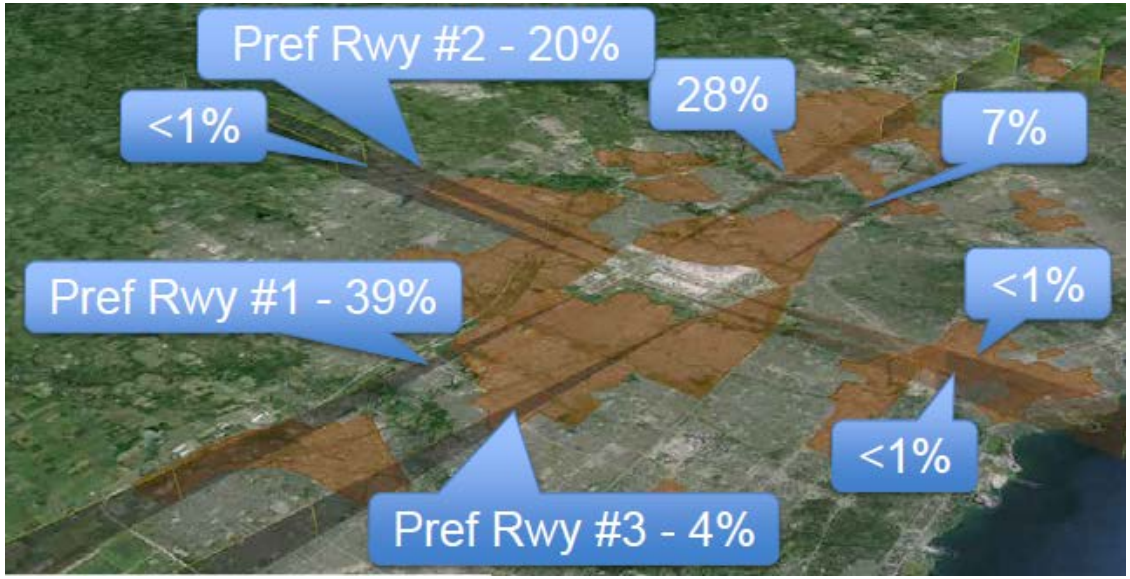
Stakeholder Feedback on Idea #5
Establish Weekend Preferential Runways

Further Considerations:

- Impacts on communities currently not experiencing noise
- Seasonal changes (i.e. summer is most important for providing relief when people spend time outdoors)
- Application of idea to lower traffic times during the week
- Controller managed descents during lower traffic times
- Ability to provide consistent runway alternation given the variables of maintenance, traffic loads, etc.

Idea #6
Alternate Night-Time Preferential Runways

- The possibility to alternate use of night-time runways might result in sharing night time noise impacts
- **Proposed Approach: GTAA is currently reviewing the continued appropriateness of its existing night-time preferential runways to ensure they meet stated objectives**



Preferential Runway Order

	Depart	Arrive	2014
#1	23	05	39%
#2	33R	15L	20%
#3	24R	06L	4%

Stakeholder Feedback on Idea #6 Alternate Night-Time Preferential Runways

What do you like about this idea?

- Requires revisiting outdated procedures on preferential runways; this is long overdue
- Any measure that helps to spread out the noise impacts should be pursued
- Utilizes the entire east/west runway complex reflecting the current configuration

Stakeholder Feedback on Idea #6 Alternate Night-Time Preferential Runways

What concerns do you have?

- Concern for how the preferential runways will be determined / what criteria will be used
- Changing current operations may lead to new issues for residents not accustomed to flight paths over their homes
- Does not provide the benefits residents are looking for *[Davenport Session]*
- Causes issues for residents under the runway 24/06 flight path and will result in increased noise complaints *[Brampton Session]*
- Concerns about the impact to the Rockwood community *[Mississauga Session]*

Stakeholder Feedback on Idea #6 Alternate Night-Time Preferential Runways

Further Considerations

- Overall number of night-time flights should be reduced
- Criteria to determine which runway should be used should include safety, wind, construction, equitability of noise, emissions, fuel savings, etc.
- Identify where residential growth is planned to be located and avoid high growth areas
- Use the north/south runways to disperse the noise at night-time
- Investigate whether alternating runways could be applied to lower traffic times during the week
- Consider cumulative noise impacts from flight paths at Billy Bishop airport
- Five mile offset for runway 23 should be shifted to the north

Additional Feedback and Ideas on Noise Mitigation

- The six noise mitigation ideas do not address community concerns for noise between 6:00am and 12:30am regardless of frequency of air traffic
- Consider additional noise mitigation initiatives, such as:
  - Descents controlled by air traffic controllers (this is used around the world) instead of using standard terminal arrival routes (STARS) when traffic volumes allow for it
  - Flight paths at higher altitudes and/or over Lake Ontario to mitigate noise in residential communities
  - Eliminate unnecessary track miles
  - Introduce continuous climb to cruising level
  - Introduce the point merge method of sequencing arrival flows
  - Delay of vectoring south/southwest bound aircraft to greatly reduce noise over Oakville and Burlington
- Consider global best practices on managing community noise impacts (e.g., Germany)

Other Factors to Consider in Evaluating Noise Mitigation Initiatives

- Safety
- Human health
- Greatest noise mitigation over residential areas
- Establishing volume thresholds baseline of current noise levels
- Avoidance of creating new noise
- Sharing noise / balancing the use of all runways
- Mitigating noise at specific times (e.g., season, day of week, time of day)
- Environmental impacts
- Time required for implementation
- Frequency of flights
- Relocating flight paths over non-residential areas
- Population density
- Flight altitude
- Changes in fleet mix over time
- Workload pressures on pilots or air traffic controller

Feedback on Increasing Transparency

- Provide the public with the long list of noise mitigation ideas submitted by individuals, community groups and organizations to enhance traceability and transparency
- Explain how the long list of ideas submitted by individuals, community groups and organizations was evaluated and which criteria were used to arrive at the six ideas presented
- Provide a summary of the changes made in 2012 and the rationale for them

Suggestions Regarding Community Engagement

Broaden Outreach Efforts

- Partnerships with constituency offices
- More notice of consultation events
- Use innovative tools to engage the public (e.g., on-line and social media)
- Provide regular updates and report back to residents
- Consider the demographics of each target community (i.e., need for non-English notifications)
- Ensure meaningful stakeholder and public consultation at each step in the process

Education and Resources

- Educate the public and build awareness about airport operations
- Use plain language and visual aids to explain technical concepts and impacts of proposed changes
- Provide more information about each idea (i.e., clarify opportunities and limitations)
- Provide information specific to the community you are consulting to facilitate obtaining meaningful feedback

Questions?



Thank You!

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LISTEN · UNDERSTAND · RELATE · ADVANCE

Next Steps

Review + Response to Stakeholder Feedback

- Continue to review feedback
- Full list of community suggestions
- Final report with response to feedback available September 30

Technical Review

- 6 concepts remain on table for technical review; additional items may be added once review of feedback is complete
- Will report back on Technical Review structure once concepts are finalized

Next Steps

Community Engagement + Communications

- Regular updates via email and website
- Potential additional touch points could include:
  - Ad hoc CENAC meetings for updates on Technical Review
  - Explore the option of a Community Liaison Sub-Committee with CENAC and resident members for ongoing check-ins

Accountability + Decision-Making

- Joint between GTAA and NAV CANADA